Table of Contents

I. Introduction .......................................................................................................................................... 4
   A. Purpose of Annual Report................................................................................................................ 5
   B. Organization of Annual Report........................................................................................................ 5
   C. Summary of Program Portfolio........................................................................................................ 6

II. Program Performance ......................................................................................................................... 10
   A. Residential Sector Programs .......................................................................................................... 10
      1. Summary .................................................................................................................................... 10
      2. Residential Programs ................................................................................................................. 13
         a. Residential New Construction & Major Renovation ............................................................ 13
         b. Residential Heating & Water Heating ................................................................................... 16
         c. Residential Mass Save/Weatherization ................................................................................. 18
         d. Residential Multi-Family Retrofit ......................................................................................... 22
      3. Residential Pilot Programs ........................................................................................................ 25
         a. Deep Energy Retrofit .............................................................................................................. 25
   B. Low-Income Sector Programs ....................................................................................................... 27
      1. Summary .................................................................................................................................... 27
      2. Low-Income Programs .............................................................................................................. 29
         a. Low-Income Single-Family Retrofit ..................................................................................... 29
         b. Low-Income Multi-Family Retrofit ......................................................................................... 31
   C. Commercial & Industrial Sector Programs .................................................................................... 33
      1. Summary .................................................................................................................................... 33
      2. C&I Programs ............................................................................................................................ 36
a. C&I New Construction & Major Renovation ................................................................. 36  
b. C&I Retrofit ...................................................................................................................... 39  
c. C&I Direct Install................................................................................................................ 42  

3. C&I Pilot Programs ........................................................................................................... 45  
a. Deep Energy Retrofit ....................................................................................................... 45  

III. Evaluation Measurement and Verification Activities ....................................................... 49  
A. Summary .............................................................................................................................. 49  
B. Residential Studies ........................................................................................................... 51  
1. Massachusetts New Homes with ENERGY STAR Estimated Maximum Potential Savings from Enhanced Code Compliance with the IECC 2009 Residential Building Code in Massachusetts (Study 1) ................................................................. 51  
2. Massachusetts New Homes with ENERGY STAR Mystery Shopping (Study 2) ........... 52  
3. The Massachusetts New Homes with ENERGY STAR Program 2011 Baseline Phase 1: Completion of Planning (Study 3). .............................................................................................................. 54  
4. Massachusetts 2010 Residential Retrofit and Low Income Evaluation: Mass Save (Study 5) 54  
5. 2010 Net to Gross Findings: Home Energy Assessment (Study 6) .............................. 57  
6. Cross-Cutting Net-to-Gross Methodology Study for Residential Programs – Suggested Approaches (Final) (Study 10) .............................................................................. 58  
7. Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential HEHE and Multi-Family Gas Programs, and C&I Gas Programs (Study 11) ........................................................................ 59  
8. HEHE Process and Impact Evaluation (Study 12) .......................................................... 61  
C. Low-Income Studies ........................................................................................................ 65  
1. Final Report for Low Income Program – Massachusetts 2010 Residential Retrofit and Low Income Evaluation (Study 18) ........................................................................................................ 65  
D. C&I Studies ......................................................................................................................... 67  
2. FINAL Commercial New Construction Customer Quantitative Profile Project 1A New Construction Market Characterization (Study 22) ................................................................. 69
3. Supply Chain Profile Project 1A New Construction Market Characterization (Study 23) ...... 70
4. Final Report Project 1B Chain & Franchise Market Characterization (Study 24) .................. 72
5. Project 6B Comprehensive Design Approach Process Evaluation (Study 27) ....................... 73
6. Project 7 General Process Evaluation Final Report (Study 29) ............................................ 79
7. Cross Cutting C&I Free-Ridership and Spillover Methodology Study Final Report (Study 34) .... 81
8. Prescriptive Condensing Boiler Impact Evaluation Project 5 Prescriptive Gas (Study 35) .... 82
E. Special and Cross Sector Studies ......................................................................................... 83
   1. Industry Practices and Policies on Energy Efficiency Program Rebate/Incentives (Study 36) .... 83
   2. Community Based Partnership Interim Process Evaluation (Study 37) ............................ 84
F. Future Studies ..................................................................................................................... 86
IV. Statutory Budget Requirements .......................................................................................... 89
   A. Introduction ................................................................................................................... 89
   B. Minimization of Administrative Costs ............................................................................ 89
   C. Competitive Procurement ............................................................................................... 90
   D. Low-Income Spending .................................................................................................... 91
V. Performance Incentives......................................................................................................... 92
VI. Audits .................................................................................................................................. 94
VII. Appendices ....................................................................................................................... 97
    APPENDIX A: Glossary of Defined Terms ........................................................................... 98
    APPENDIX B: Cost-Effectiveness Supporting Tables and Documentation ......................... 103
    APPENDIX C: Program and Pilot Program EM&V Studies .................................................. 106
    APPENDIX D: Performance Incentives Supporting Documentation ...................................... 107
    APPENDIX E: Other Supporting Documentation ................................................................. 109
    APPENDIX F: Lost Base Revenue Information ................................................................... 111
I. INTRODUCTION

In the first full year of the three-year energy efficiency plans, as reviewed and approved by the Department on January 28, 2010 in D.P.U. 09-116 through 09-127 (the “Gas and Electric Orders”), program year 2010 showed remarkable success with respect to goal attainment and achievement of real benefits for the environment and the economy in the Commonwealth of Massachusetts. Collectively, Bay State Gas Company d/b/a Columbia Gas of Massachusetts (the “Company”), along with all the gas and electric distribution companies and municipal aggregators (together, the “Program Administrators” or “PAs”) were able to deliver on their goals during program year 2010, as established in the Gas and Electric Orders, while maintaining the balance between meeting the budget for their programs and complying with the directives of the Green Communities Act in ensuring that they make available all cost-effective energy efficiency opportunities. Overall, the Company and other Program Administrators worked diligently with the Department of Public Utilities (“Department”), the Department of Energy Resources (“DOER”), the Energy Efficiency Advisory Council (“EEAC”), and other interested stakeholders to meet what were intentionally designed to be very challenging 2010 program year goals. In many cases, achievements in savings and benefits exceeded those goals. Program year 2010 performance showed that strong savings levels were achieved, that both residential and C&I program implementation showed strong results, and that the Program Administrators worked well to implement the programs in the field while also ramping up programs to unprecedented spending and savings levels so as to meet obligations not just for program year 2010, but for the full life of the three-year plans.

On a statewide basis, the results shown by the Program Administrators are generally at or in excess of initially projected amounts for annual mWh and therm goals. In fact, as noted by the EEAC in its recent 2010 annual report to the Massachusetts General Court and the Department, the combined efforts of the PAs resulted in enough savings to power 85,000 households and heat 14,000 homes annually. At the same time, the results show greenhouse gas emission reductions equivalent to the annual output of over 74,000 cars, and significant progress towards greenhouse gas, NOx, and SO2 emission reductions. The ability to achieve or exceed nearly all of the statewide goals and targets, despite a very difficult economic climate in the Commonwealth, results in significant benefits for the environment, the economy, and end-use customers.

In addition, while working to achieve their programmatic goals for 2010, the Company and other Program Administrators have worked diligently to establish statewide marketing of energy efficiency program offerings through the use of the Mass Save label, which won the AESP Outstanding Achievement in Marketing and Communications Award based on work accomplished in 2010. Simultaneously, the Program Administrators have engaged in over 35 studies across a wide span of program sectors to ensure that the Evaluation, Monitoring, and Verification (“EM&V”) elements of these program offerings remain a critical and vital tool to evaluate and transform measures in the future to meet demand in an ever-changing marketplace. The Company and other Program Administrators have worked diligently with financial institutions, and, through the partnership with the Massachusetts Bankers Association, worked to
develop financing options to expand access to energy efficiency measures for customers in 2010, for the life of the three-year plans, and beyond.

The Company and other Program Administrators have continued to be engaged in the monthly EEAC process, and have worked collaboratively with each other and the EEAC’s consultants to meet stringent reporting and data collection deadlines so as to adequately monitor and review where the Three-Year Plan efforts have succeeded, and where improvement could be anticipated for the future. Given the unprecedented nature of these efforts and the significantly ambitious goals established in the Three-Year Plans, the Company and other Program Administrators contend that the 2010 program year performance has been an unmitigated success and has in many ways exceeded the expectations for the first year of the Three-Year Plan. The Company and other Program Administrators continue to endeavor to achieve deeper savings from participating customers, and have worked to reach a broader range of customers for the implementation of all cost-effective energy efficiency program offerings.

A. Purpose of Annual Report

The Company is pleased to provide its Energy Efficiency Annual Report (“Annual Report”) for 2010. The purpose of the Annual Report is to:

- Provide a comparison of the Company’s planned, preliminary year-end, and evaluated (where applicable) expenses, savings, and benefits at the portfolio, sector, and program levels for the program year.
- Identify significant variances between the Company’s planned and evaluated costs, savings, and benefits for the program year, and discuss reasons for such variances.
- Discuss how program performance during the program year informs the Company’s proposed modifications to program implementation, if any, during upcoming years.
- Describe the evaluation, measurement and verification (“EM&V”) activities undertaken by the Company (both individually and jointly with other Program Administrators (“PAs”)) that have not been included in previous Annual Reports, and explain how the results of the EM&V studies impact program cost-effectiveness.
- Describe the performance incentives that the Company proposes to collect.

B. Organization of Annual Report

The Company’s 2010 Annual Report is organized as follows:

- Section I.C provides summary information on program performance at the portfolio and sector levels.
- Section II provides detailed information on program performance at the sector and program levels for the residential, low-income, and commercial and industrial (“C&I”) sectors.
Bay State Gas Company d/b/a Columbia Gas of Massachusetts

2010 Energy Efficiency Annual Report

- Section III provides detailed information on the EM&V studies included in the Annual Report for each sector.
- Section IV addresses statutory budget requirements.
- Section V addresses the performance incentives the Company proposes to collect.
- Section VI addresses energy efficiency audits conducted during the past five years.
- Section VII provides detailed supporting documentation.

C. Summary of Program Portfolio

The purpose of this section is to provide summary information on program performance at the portfolio and sector levels.

Tables I.A and I.B provide summary information on program performance at the portfolio and customer sector levels, respectively.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>15,022,052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>903,687</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Savings &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td>therms</td>
<td>56,904,748</td>
<td>46,385,488</td>
<td>-18%</td>
</tr>
<tr>
<td>Annualized</td>
<td>therms</td>
<td>2,826,282</td>
<td>2,936,163</td>
<td>4%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy Summer</td>
<td>kWh</td>
<td>131,026</td>
<td>124,396</td>
<td>-5%</td>
</tr>
<tr>
<td>Annualized Energy Winter</td>
<td>kW</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>60,445,112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>22,353,749</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>38,091,363</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>2.70</td>
<td>2.43</td>
<td></td>
</tr>
</tbody>
</table>

Note: The Planned Values in Table I.A and all subsequent tables which contain Planned Values in this Annual Report were originally filed in Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-20 (Supplemental 12-21-09).

1 The Company is also providing the Department of Public Utilities (the “Department”) with working Microsoft Excel spreadsheets for all of the tables included in this Annual Report. Such tables include all formulas and functions used in each table.
As shown in Table 1.A above, significant variances exist at the portfolio level between planned and evaluated values for Total Program Costs, Performance Incentives, Lifetime Therms, TRC Benefits, TRC Costs, and Net Benefits.

Each sector contributed to these variances as follows:

- **Residential Total Program Costs, Lifetime Therms, TRC Benefits, and Net Benefits**: See section II.A.1 for a more detailed discussion of the causes of the variances for this sector.
- **Low Income Total Program Costs, Performance Incentives, Lifetime Therms, TRC Benefits, TRC Costs, and Net Benefits**: See section II.B.1 for a more detailed discussion of the causes of the variances for this sector.
- **C&I Performance Incentive, Lifetime Therms, TRC Benefits, TRC Costs, and Net Benefits**: See section II.C.1 for a more detailed discussion of the causes of the variances for this sector.

### Table 1.B: Customer Sector Summary

<table>
<thead>
<tr>
<th>Sector</th>
<th>Units</th>
<th>Planned Value</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>23,712,787</td>
<td>17,753,261 -25%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>11,832,571</td>
<td>9,546,076 -19%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>11,880,216</td>
<td>8,207,185 -31%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>2.00</td>
<td>1.86 -7%</td>
</tr>
<tr>
<td>Low-Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>5,159,255</td>
<td>3,011,818 -42%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>2,949,131</td>
<td>1,839,518 -38%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>2,210,124</td>
<td>1,172,300 -47%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>1.75</td>
<td>1.64 -6%</td>
</tr>
<tr>
<td>C&amp;I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>31,573,071</td>
<td>21,487,919 -32%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>7,572,047</td>
<td>6,032,533 -20%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>24,001,024</td>
<td>15,455,386 -36%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>4.17</td>
<td>3.56 -15%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>60,445,112</td>
<td>42,252,997 -30%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>22,353,749</td>
<td>17,418,126 -22%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>38,091,363</td>
<td>24,834,871 -35%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>2.70</td>
<td>2.43 -10%</td>
</tr>
</tbody>
</table>

As shown in Table 1.B above, significant variances exist at the sector level between planned and evaluated values for the following metrics: Residential TRC Benefits and Net Benefits; Low-Income TRC Benefits, TRC Costs, and Net Benefits; and C&I TRC Benefits, TRC Costs, and Net Benefits.

---

2 Unless otherwise noted, “Significant” variances are defined throughout this Annual Report as variances of +/-20% or more between the stated values.
• Within the Residential sector, all programs contribute to the variance between planned and evaluated values. Please reference section II.A.2 for a more detailed discussion of the cause of the variances by program within this sector.

• Within the Low Income sector, all programs contribute to the variance between planned and evaluated values. Please reference section II.B.2 for a more detailed discussion of the cause of the variances by program within this sector.

• Within the C&I sector, all programs contribute to the variance between planned and evaluated values. Please reference section II.C.2 for a more detailed discussion of the cause of the variances by program within this sector.

Residential Sector

The residential sector’s overall lower results are primarily due to the impact of the Residential New Construction & Major Renovations program (lower than anticipated participation) and the Residential Heating and Water Heating program (an impact study reduced savings). The overall residential negative impact was somewhat offset by the positive impact of the Weatherization program.

Residential programs with significant variances include:

• Residential New Construction & Major Renovation
• Residential Heating and Water Heating
• Residential Mass Save/ Residential Weatherization
• Residential Multi-Family Retrofit

A more detailed discussion of these variances can be found in Section II.A.1

Low-Income

The Low-Income sector saw some challenges in 2010, mainly due to the influx of American Recovery and Reinvestment Act (ARRA) funds into the Commonwealth’s Weatherization program and the ramp up of the new Low-Income Multi-family program. While CMA’s Low-Income program performance was below its target, it should be noted that CMA customers were well served with energy efficiency services through ARRA funding as opposed to rate payer funds. The Company expects significant demand for the programs over the coming years, especially as ARRA funding expires.

Low-Income programs with significant variances include:

• Low-Income Single Family Retrofit
• Low-Income Multi-Family Retrofit

A more detailed discussion of these variances can be found in Section II.B.1

Commercial & Industrial

Overall, the Commercial & Industrial sector performed nearly to expectations in most areas during a period of intense program changes. Evaluation results did have a noticeable effect on the overall sector’s results, but the sector’s annual therm savings were in line with program
goals. Lifetime savings were significantly lower due to the particular mix of installed projects in the sector.

C&I programs with significant variances include:

- C&I New Construction and Major Renovation
- C&I Retrofit
- C&I Direct Install

A more detailed discussion of these variances can be found in Section II.C.1
II. PROGRAM PERFORMANCE

A. Residential Sector Programs

1. Summary

During 2010 the Company implemented the following residential programs and pilots:

Residential Programs

- Residential New Construction & Major Renovation
- Residential Heating & Water Heating Equipment
- Residential Mass Save/Residential Weatherization
- Residential Multi-Family Retrofit

Residential Pilots

- Deep Energy Retrofit

Tables II.A.1 and II.A.2 provide summary information on the performance of the residential programs at the sector, end use, and program levels, respectively.

Sections II.A.2 and II.A.3 provide detailed information on the performance of each residential program and pilot program, respectively.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value % Change from Planned</td>
<td>Value % Change from Preliminary % Change from Planned</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>7,908,508</td>
<td>6,144,629 -22%</td>
<td></td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>317,493</td>
<td>282,622 -11%</td>
<td></td>
</tr>
<tr>
<td>Savings &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td>therms</td>
<td>20,516,800</td>
<td>21,329,339 4%</td>
<td>15,693,043 -26% -24%</td>
</tr>
<tr>
<td>Annualized</td>
<td>therms</td>
<td>1,001,640</td>
<td>1,092,919 9%</td>
<td>748,209 -32% -25%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>kWh</td>
<td>131,026</td>
<td>124,396 -5%</td>
<td>121,202 3% -7%</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>kW</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>kW</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$</td>
<td>0</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>Cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>23,712,787</td>
<td>17,753,261 -25%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>11,832,571</td>
<td>9,546,076 -19%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>11,880,216</td>
<td>8,207,185 -31%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>2.00</td>
<td>1.86 -7%</td>
<td></td>
</tr>
<tr>
<td>Program / Performance Category</td>
<td>Units</td>
<td>Planned Value</td>
<td>Evaluated Results</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------</td>
<td>---------------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
<td></td>
</tr>
<tr>
<td><strong>Residential New Construction &amp; Major Renovation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 6,221,793</td>
<td>1,640,040</td>
<td>-74%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 3,630,148</td>
<td>1,620,924</td>
<td>-55%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ 2,591,645</td>
<td>19,116</td>
<td>-99%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>1.71</td>
<td>1.01</td>
<td>-41%</td>
</tr>
<tr>
<td><strong>Residential Heating and Water Heating</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 9,966,471</td>
<td>6,144,337</td>
<td>-38%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 3,064,272</td>
<td>2,517,017</td>
<td>-18%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ 6,902,200</td>
<td>3,627,320</td>
<td>-47%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>3.25</td>
<td>2.44</td>
<td>-25%</td>
</tr>
<tr>
<td><strong>MassSAVE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 0</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 819,314</td>
<td>647,342</td>
<td>-21%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ -819,314</td>
<td>-647,342</td>
<td>-21%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weatherization Program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 6,639,783</td>
<td>9,842,149</td>
<td>48%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 3,511,975</td>
<td>4,409,948</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ 3,127,808</td>
<td>5,432,201</td>
<td>74%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>1.89</td>
<td>2.23</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Multi-Family Retrofit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 884,740</td>
<td>126,734</td>
<td>-86%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 425,384</td>
<td>155,999</td>
<td>-63%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ 459,355</td>
<td>-29,265</td>
<td>-106%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>2.08</td>
<td>0.81</td>
<td>-61%</td>
</tr>
<tr>
<td><strong>O Power</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 0</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 0</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ 0</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>0.00</td>
<td>0.00</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Deep Energy Retrofit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 0</td>
<td>0</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 92,110</td>
<td>3,304</td>
<td>-96%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ n/a</td>
<td>-3,304</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>0.00</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td><strong>Hard-to-Measure Initiatives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 289,368</td>
<td>191,541</td>
<td>-34%</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$ 23,712,787</td>
<td>17,753,261</td>
<td>-25%</td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$ 11,832,571</td>
<td>9,546,076</td>
<td>-19%</td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$ 11,880,216</td>
<td>8,207,185</td>
<td>-31%</td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>2.00</td>
<td>1.86</td>
<td>-7%</td>
</tr>
</tbody>
</table>
The programs with significant variances between planned and evaluated values in Table II.A.2, and the reason for such variances, are:

- **Residential New Construction & Major Renovation** – Variances are primarily due to significantly lower than forecasted participation.

- **Residential Heating & Water Heating Equipment** – The variances between planned and evaluated values in this program are primarily due to higher than forecasted participation and the results of the HEHE Process and Impact Evaluation.

- **Mass Save/Weatherization** – The variances between planned and evaluated in this program are primarily due to higher than forecasted participation and a lower than expected cost per participant.

- **Multi-Family Retrofit** – Variances are primarily due to significantly lower than expected participation.

During 2010, the Company built upon existing residential programs and significantly expanded initiatives to increase participation in all residential programs. Selected highlights are presented below:

- **Residential New Construction & Major Renovation**: In 2010, the program faced changing energy codes, slower single family development, and increasingly difficult opportunities to capture future energy savings. To address these barriers, the program engaged in code support activities and introduced new marketing efforts. These efforts resulted in the fourth consecutive ENERGY STAR award for Sustained Excellence in Program Delivery. However, demographic factors (significantly fewer units in the Company’s service territory) played a major role in the Company coming in under goal. Please refer to section II.A.2.a for a more detailed discussion of the variances in this program.

- **Residential Heating & Water Heating Equipment**: The Company continued to have success promoting high efficiency heating and water heating technologies during 2010 through the GasNetworks® program. While savings were extensive in this program, the impact of evaluation studies reduced the Company’s post evaluation savings significantly. Please refer to section II.A.2.b for a more detailed discussion of the variances in this program.

- **Mass Save/Weatherization**: During 2010, the PAs focused on improving consistency in program delivery, and developed a plan for increasing independent contractor participation. The Company continued initiatives to advance the integration of the RCS/Mass Save and other residential programs. The RCS assessment provides a comprehensive approach to homes, ensuring the installation of both gas and electric savings recommendations. A statewide Request for Proposal was issued for a new third party QA/QC vendor, as well as separate RFPs for new RCS Lead Vendors for implementation in 2011. In 2010 the number of participants increased by 10% and the average savings per program participant increased approximately 11%. Please
refer to section II.A.2.c for a more detailed discussion of the variances in this program.

- **Multi-Family Retrofit**: Multifamily Market Integrator (“MMI”) integration began in July 2010 and was a primary focus all year. PAs addressed start up tasks such as data tracking/reporting, and coordination with program vendors. The Company did not meet its Multi Family program goals in 2010, however, the program is progressing on schedule with projects and new leads for both gas and electric. Requests through the MMI have increased as customers use the new single telephone number. Please refer to section II.A.2.d for a more detailed discussion of the variances in this program.

- **Deep Energy Retrofit Pilot**: In order for projects to succeed, extensive technical support and training is essential. The challenges of retrofitting a building to the degree targeted by the pilot, while ensuring the durability of the structure and the health and safety of the occupants, was a paramount area of concern to the Company. Company staff attended many working group sessions to gain knowledge, to learn about the detailed application process and the technical resources required, and to identify barriers that need to be overcome in order to reach the desired level of DER. The Company did not achieve its goal in the DER pilot due to the complexity of DER projects and limited resources available within the planned budget. Please refer to section II.A.3.a for a more detailed discussion of the variances in this program.

A more detailed program-level discussion can be found in Section 2.

2. **Residential Programs**

   a. **Residential New Construction & Major Renovation**

**Purpose/Goal**: The purpose of the Residential New Construction & Major Renovation program was to capture lost opportunities, encourage the construction of energy-efficient homes, and drive the market to one in which new homes are moving towards net-zero energy.

**Targeted Customers**: The target market for this program included homebuilders, contractors, architects/designers, trade allies, Home Energy Rating System (“HERS”) raters, homebuyers, realtors, developers, low income and affordable housing developers, code officials, and consumers in the market for new homes and/or major renovations.

**Definition of Program Participant**: A newly-constructed 1 – 4 unit residential dwelling.

**Targeted End-Uses**: Technologies targeted by the Residential New Construction & Major Renovation program included energy-efficient building shells, proper duct and air sealing techniques, quality installation of Heating, Ventilation, and Air Conditioning (“HVAC”) equipment, increased use of energy-efficient lighting, energy efficient water and heating upgrades, and increased indoor air quality.

**Delivery Mechanism**: The program was administered by each Program Administrator in its service territory and coordinated regionally through the Joint Management Committee (“JMC”).
The JMC’s contractor was responsible for tracking and reporting program activity. The contractor also conducted quality assurance/quality control of field activities and advised the JMC on necessary program changes and enhancements. The JMC utilized a market-based network of trained contractors who offered energy efficiency and rating services to homebuilders for a fee.

Significant Differences in Actual Program Design from Approved Program Design: None.

Docket/Exhibit where the Program is Discussed and Approved: The program was discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 135-144 (bates numbering 00136-00145). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.

Table II.A.3 provides information on the performance of the Residential New Construction & Major Renovation program.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>1,942,395</td>
<td>672,649</td>
<td>-65%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>65,689</td>
<td>0</td>
<td>-100%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>625</td>
<td>269</td>
<td>-57%</td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$</td>
<td>3,106</td>
<td>2,501</td>
<td>-19%</td>
</tr>
<tr>
<td>Savings &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td>therms</td>
<td>5,156,490</td>
<td>1,333,365</td>
<td>-74%</td>
</tr>
<tr>
<td>Annualized</td>
<td>therms</td>
<td>214,515</td>
<td>54,483</td>
<td>-75%</td>
</tr>
<tr>
<td>Average Measure Life</td>
<td>yrs</td>
<td>24.0</td>
<td>24.5</td>
<td>2%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>kWh</td>
<td>84,569</td>
<td>17,935</td>
<td>-79%</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Summer</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric</td>
<td>$</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Resources (Lifetime)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>6,221,793</td>
<td>1,640,040</td>
<td>-74%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>3,630,148</td>
<td>1,620,924</td>
<td>-55%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>2,591,645</td>
<td>19,116</td>
<td>-99%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>1.71</td>
<td>1.01</td>
<td>-41%</td>
</tr>
</tbody>
</table>

The Company had significantly lower participants than forecasted and budgeted: 625 homes budgeted compared to 269 actual, which resulted in lower program costs and savings achieved. The corresponding performance incentive was lower than budget. This is due to a decline in overall new home building within the Company’s service territory. The overall savings, both

---

3 For each program and pilot program, the Company has defined “participant”, and updated the “units” column in the program or pilot program table to be consistent with that definition.
Bay State Gas Company d/b/a Columbia Gas of Massachusetts  
2010 Energy Efficiency Annual Report

lifetime and annual, did not meet goal due to significantly fewer participants. The combination of fewer participants and lower savings resulted in lower TRC Benefits and Net Benefits yielding a BCR of 1.01%. The Company is currently examining this program for its viability on a going-forward basis, including potential ways to reduce costs in this program.

Evaluated savings are the same as preliminary year-end estimates.

EM&V studies included in the Annual Report that apply to this program:

- **The Massachusetts New Homes with ENERGY STAR® Program Estimated Maximum Potential Savings from Enhanced Compliance with the IECC 2009 Residential Building Code in Massachusetts**
  This study estimated the maximum potential savings for the years 2011, 2012, and 2013 that might be achieved through promoting compliance with the newly-adopted IECC 2009 energy code for four measures - wall insulation, basement insulation, proper insulation of ducts in unconditioned spaces, and fifty percent high efficacy lamp requirement - in order to provide needed guidance to the PAs on the implementation and evaluation costs that might be justified. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.B.1, Study #1.

- **Massachusetts New Homes with Energy Star® Mystery Shopping**
  This study provided insight into the current marketing strategies of real estate agents listing ENERGY STAR homes, and the effect of program-sponsored trainings on these marketing strategies. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.B.2, Study #2.

- **The Massachusetts New Homes with Energy Star® Program, 2011 Baseline Phase 1: Completion of Planning**
  This study describes the planning process for the 2011 Baseline Study and the work done to develop a sample of eligible homes. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.B.3, Study #3.

- **Cross-Cutting Net-to-Gross Methodology Study for Residential Programs – Suggested Approaches (Final)**
  The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ residential programs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.B.6, Study #10.

- **Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential and Multi-Family HEHE Gas Programs, and Commercial and Industrial Gas Programs**
  This study estimated a NTG factor for Residential New Construction participant homes. The estimated NTG factor is 1.00, therefore there are no changes to program savings. This study is discussed in more detail in Section III.B.7, Study #11.
Due to the variation of savings results generated by homes in the various tiers during 2010, the program changed the tier structure in 2011. The program now requires each qualifying home to obtain a minimum percent savings over the baseline for each of the incentive tiers. The intent of this change is to produce more consistency in the results.

The Company filed a mid-term modification for this program in 2011. The Company is examining ways to modify this program to lower administrative costs and increase participation.

This program was cost-effective for 2010 with a BCR of 1.01, and the Company does not intend to discontinue the program.

b. Residential Heating & Water Heating

**Purpose/Goal:** The purpose of the Residential Heating & Water Heating program was to overcome market barriers to the installation of energy efficient heating/hot water equipment and to increase program awareness among consumers, plumbing/heating contractors, and home builders/developers, by means of rebates, marketing, and training courses.

**Targeted Customers:** The program targeted residential home owners with natural gas heating/hot water heating equipment (both new construction and existing homes); home designers/architects; engineers, plumbing and HVAC contractors and technicians; high efficiency heating equipment and related parts/accessory suppliers, manufacturers, and distributors, and new home building and remodeling contractors.

**Definition of Program Participant:** A participant is defined as a residential customer.

**Targeted End-Uses:** The technologies targeted by the program are residential space and water heating fueled by natural gas.

**Delivery Mechanism:** The program is administered by each Program Administrator in its service territory and coordinated regionally through the GasNetworks collaborative. GasNetworks utilized a third-party contractor, secured through a competitive bidding process, to administer the rebate processing to customers. This vendor is responsible for tracking and reporting program activity to the Program Administrators.

**Significant Differences in Actual Program Design from Approved Program Design:** None.

**Docket/Exhibit where the Program is Discussed and Approved:** The program is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 108-116 (bates numbering 00109-00117). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.
Table II.A.4 provides information on the performance of the Residential Heating & Water Heating Program.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>1,740,747</td>
<td>2,628,554</td>
<td>51%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>158,411</td>
<td>170,133</td>
<td>7%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>4,329</td>
<td>5,796</td>
<td>34%</td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$</td>
<td>402</td>
<td>454</td>
<td>13%</td>
</tr>
<tr>
<td>Savings &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td>therms</td>
<td>8,530,700</td>
<td>12,952,710</td>
<td>52%</td>
</tr>
<tr>
<td>Annualized</td>
<td>therms</td>
<td>475,952</td>
<td>711,480</td>
<td>49%</td>
</tr>
<tr>
<td>Average Measure Life</td>
<td>yrs</td>
<td>17.9</td>
<td>18.2</td>
<td>2%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>kWh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric</td>
<td>$</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Resources (Lifetime)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>9,966,471</td>
<td>6,144,337</td>
<td>-38%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>3,064,272</td>
<td>2,517,017</td>
<td>-18%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>6,902,200</td>
<td>3,627,320</td>
<td>-47%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>3.25</td>
<td>2.44</td>
<td>-25%</td>
</tr>
</tbody>
</table>

Preliminary year-end program costs are 51% greater than planned, with a corresponding increase in annualized savings (49% greater) and lifetime saving (52% greater). These variances are due to higher than forecasted participation. In part, the higher than planned results can be attributed to the Federal tax credits available in 2010, which resulted in more customers taking advantage of the program to purchase high efficiency equipment.

Evaluated annual and lifetime savings are 59% lower than preliminary estimates. This decrease can be attributed to the impact evaluation study described below. The evaluation results were also the major contributing factor in the TRC benefits, Net Benefits, and BCR being lower than forecasted.

EM&V studies included in the Annual Report that apply to this program:

- **Cross-Cutting Net-to-Gross Methodology Study for Residential Programs – Suggested Approaches (Final)**
  The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ residential programs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.B.6, Study #10.
• **Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential and Multi-Family HEHE Gas Programs, and Commercial and Industrial Gas Programs**

This study estimated the NTG factors for HEHE measures that were not included in the HEHE Process and Impact Evaluation, and spillover rates for those that were included in the study. NTG factors were determined for thermostats, storage water heaters, and condensing gas water heaters. Spillover rates were estimated for furnaces and boilers. The results of this study vary for each measure within the program. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.B.7, Study #11.

• **HEHE Process and Impact Evaluation**

This study evaluated the therms saved and the free-ridership rates for furnaces, boilers, indirect water heaters, and on-demand tankless water heaters. The results of this study vary for each measure within the program. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.B.8, Study #12.

• **Industry Practices and Policies on Energy Efficiency Program Rebate/Incentives**

The primary objective of this high-level scoping study of statewide energy efficiency program incentive and rebate levels was to help inform the policy debate for statewide programs in Massachusetts and to support fourth quarter 2010 programmatic planning. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.E.1, Study #36.

Required design and/or implementation changes to this program as a result of the evaluation results described above have yet to be determined. The results of the impact evaluations described above will be used to adjust the savings estimates for this program for PY 2011 and PY 2012.

This program was cost-effective for 2010 with a BCR of 2.44, and the Company does not intend to discontinue the program.

c. **Residential Mass Save/Weatherization**

**Purpose/Goal:** The purpose of the Mass Save program is to provide residential customers with energy efficiency recommendations that enable them to identify and initiate the process of installing cost-effective energy efficiency upgrades.

**Targeted Customers:** The customers targeted by the program are non-low-income residential customers living in single-family houses or one- to-four-unit multi-family buildings, fueled by natural gas, who are committed to making their homes more energy efficient.

**Definition of Program Participant:** A participant in the Residential MassSAVE/Weatherization program is defined as an individual housing unit, which is identified by a Company specific location number.
**Targeted End-Uses:** Technologies targeted by the program included the building envelope, HVAC/mechanical systems, water heating, appliances, lighting, and deeper retrofit measures.

**Delivery Mechanism:** The program is administered by Program Administrators and coordinated statewide through the Residential Management Committee (“RMC”). The RMC actively manages and steers the statewide Mass Save program. The program was delivered by program vendors selected through a competitive bidding process.

Customers are required to have a site visit, conducted by the Program Administrator’s vendor, to identify and prioritize all cost effective energy efficiency upgrades in order to receive incentives, instant savings, and zero percent loans. All customers are entitled to have a free inspection for quality control by the Program Administrator’s vendor when the work is completed.

The RMC members worked together towards a “best practices” approach to provide more coordinated statewide training as a means to ensure correct installation techniques for the Residential Conservation Services (“RCS”)/Mass Save program.

Contractors must maintain a high level of customer satisfaction to continue in the program.

RMC applied a “best practices” approach to make quality control an integral part of the RCS/Mass Save Program. The Program Administrators issued an RFP and selected a third-party Quality Control (“QC”) vendor responsible for performing QC inspections of program implementation vendors, subcontractors, and contractors.

**Significant Differences in Actual Program Design from Approved Program Design:** None.

**Docket/Exhibit where the Program is Discussed and Approved:** The program is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009 and the Company’s 2010 RCS Budget filing, filed November 1, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 117-128 (bates numbering 00118-00129) and Bay State Gas Company, D.P.U 09-105, respectively. The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125 and on December 30, 2009 in Bay State Gas Company, D.P.U. 09-105, respectively.

Table II.A.5 and Table II.A.6 provide information on the performance of the Residential MassSAVE and Weatherization programs.
### Table II.A.5: MassSAVE

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$919,314</td>
<td>819,314</td>
<td>647,342</td>
<td>-21%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>3,000</td>
<td>2,984</td>
<td>-1%</td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$273</td>
<td>273</td>
<td>217</td>
<td>-21%</td>
</tr>
<tr>
<td><strong>Savings &amp; Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime thersms</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Annualized thersms</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Average Measure Life yrs</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy kWh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand Summer kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Cost-Effectiveness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$919,314</td>
<td>819,314</td>
<td>647,342</td>
<td>-21%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$-819,314</td>
<td>-819,314</td>
<td>-647,342</td>
<td>-21%</td>
</tr>
<tr>
<td>SCR</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

### Table II.A.6: Weatherization Program

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$2,727,037</td>
<td>2,727,037</td>
<td>1,956,325</td>
<td>-28%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$82,048</td>
<td>82,048</td>
<td>112,490</td>
<td>37%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>1,274</td>
<td>1,762</td>
<td>38%</td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$2,140</td>
<td>2,140</td>
<td>1,110</td>
<td>-48%</td>
</tr>
<tr>
<td><strong>Savings &amp; Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime thersms</td>
<td>6,030,910</td>
<td>6,030,910</td>
<td>8,903,297</td>
<td>29%</td>
</tr>
<tr>
<td>Annualized thersms</td>
<td>274,469</td>
<td>274,469</td>
<td>394,970</td>
<td>25%</td>
</tr>
<tr>
<td>Average Measure Life yrs</td>
<td>21.9</td>
<td>21.8</td>
<td>22.5</td>
<td>3%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy kWh</td>
<td>36,197</td>
<td>36,197</td>
<td>103,267</td>
<td>-3%</td>
</tr>
<tr>
<td>Annualized Demand Summer kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Cost-Effectiveness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$6,639,783</td>
<td>6,639,783</td>
<td>9,642,149</td>
<td>48%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$3,511,975</td>
<td>3,511,975</td>
<td>4,409,948</td>
<td>26%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$3,127,808</td>
<td>3,127,808</td>
<td>5,432,201</td>
<td>74%</td>
</tr>
<tr>
<td>SCR</td>
<td>n/a</td>
<td>1.89</td>
<td>2.23</td>
<td>18%</td>
</tr>
</tbody>
</table>
The 21% variance in Mass SAVE cost is attributed to lower than anticipated cost to deliver home energy assessments, with forecasted average costs of $186 versus actual costs of $151. The 28% lower than forecasted cost for Weatherization is primarily due to lower than forecasted installation costs for major measures.

The Company experienced 38% more participants than forecast due, in part, to the way participants were forecasted versus the way actual participants were counted. The forecast included only customers with major measures; the actual participant count includes customers that installed any measures - i.e., actual participant count would include customers that only installed a programmable thermostat.

The significant variance between planned and preliminary annualized electric energy savings in this program is due to the Company’s conservative estimate of savings resulting from bulbs installed for customers of municipal electric companies.

The significant variances between planned and evaluated savings numbers of 48% is due to higher than forecasted participation, deeper savings, and the results of the NTGR review of the program (described below). The corresponding performance incentive was higher than budget. The same NTGR review resulted in a variance between planned and evaluated values for both TR Benefits and TR Costs. This directly contributes to the significant variance in Net Benefits. Absent the NTGR evaluation, the variance in the TR Benefits would have been 16% (6,639,783 vs. 7,694,550), and variance in the TR Costs would have been 4% (3,511,975 vs. 3,663,687).

EM&V studies included in the Annual Report that apply to this program:

- **Massachusetts 2010 Residential Retrofit and Low Income Evaluation: Mass Save**
  This study assessed program processes with a particular focus on identifying similarities and differences in the perspectives and assumptions of program staff, implementation staff, and customers regarding program goals, design, and implementation across the PAs. The process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.B.4, Study #5.

- **2010 Net-to-Gross Findings: Home Energy Assessment**
  This study evaluated the free-ridership and spillover rates for all customers participating in the Residential Conservation Services (RCS) program. Rates are determined for each of the following measures in the RCS program: Air Sealing, Insulation, Thermostats, Compact Fluorescent Lightbulbs (CFLs), Heating Systems, Refrigerators and Water Heaters. The results of this study vary for each measure within the program. In some cases, the net effect of these results increased program savings and in other cases the net effect of these results decreased program savings. The overall effect of these results was to increase savings. This study is discussed in detail in Section III.B.5, Study #6.

- **Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Cross-Cutting Net-to-Gross Methodology Study for Residential Programs – Suggested Approaches (Final)**
The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ residential programs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section IIIIB.B.7, Study #11.

- **Industry Practices and Policies on Energy Efficiency Program Rebate/Incentives**
  The primary objective of this high-level scoping study of statewide energy efficiency program incentive and rebate levels was to help inform the policy debate for statewide programs in Massachusetts and to support fourth quarter 2010 programmatic planning. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.E.1, Study #36.

Required design and/or implementation changes to this program as a result of the evaluation results described above have yet to be determined. The results of the impact evaluation described above will be used to adjust the planning estimates for the program for 2012.

The Residential Weatherization program was cost-effective for 2010 with a BCR of 2.23, and the Company does not intend to discontinue the program.

d. **Residential Multi-Family Retrofit**

**Purpose/Goal:** The purpose of the Residential Multi-Family Retrofit program is to address the energy efficiency retrofit opportunities in facilities with five or more residential units in the non-low income sector.

**Targeted Customers:** Residential facilities with five or more dwelling units are the targeted customers in this program.

**Definition of Program Participant:** Individual units in residential multi-family properties consisting of five or more units.

**Targeted End-Uses:** This program addresses all cost-effective applications, systems, and building shell improvements that impact gas and electric consumption. The technologies targeted by the Residential Multi-Family Retrofit program include, but are not limited to, lighting, domestic hot water, building shell improvements, appliances, motors, variable-speed drives, HVAC, energy management and building controls, chillers, compressed air, and other site specific end-uses.

**Delivery Mechanism:** The program is administered cooperatively by the gas and electric Program Administrators. The Multi-Family Market Integrator, implemented in July 2010, is responsible for facilitating the delivery of program services as well as acting as the conduit through which participant questions and concerns were directed to ensure that participants were not required to contact multiple parties directly during the project lifecycle.

**Significant Differences in Actual Program Design from Approved Program Design:** None.
Docket/Exhibit where the Program is Discussed and Approved: The program is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 145-160 (bates numbering 00146-00161). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.

Table II.A.7 provides information on the performance of the Residential Multi-Family Retrofit Program.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>339,537</td>
<td>44,913</td>
<td>-87%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>11,345</td>
<td>0</td>
<td>-100%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>300</td>
<td>140</td>
<td>-53%</td>
</tr>
<tr>
<td>Program Cost/Participant</td>
<td>$</td>
<td>1,132</td>
<td>321</td>
<td>-72%</td>
</tr>
<tr>
<td>Savings &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime therms</td>
<td></td>
<td>798,700</td>
<td>129,357</td>
<td>-84%</td>
</tr>
<tr>
<td>Annualized therms</td>
<td></td>
<td>36,305</td>
<td>10,238</td>
<td>-72%</td>
</tr>
<tr>
<td>Average Measure Life yrs</td>
<td></td>
<td>22.0</td>
<td>12.6</td>
<td>-43%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy kWh</td>
<td></td>
<td>10,260</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>884,740</td>
<td>126,734</td>
<td>-86%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>425,394</td>
<td>155,999</td>
<td>-63%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>459,355</td>
<td>-29,265</td>
<td>-106%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>2.08</td>
<td>0.81</td>
<td>-61%</td>
</tr>
</tbody>
</table>

Total program costs are 87% less than planned with annual and lifetime savings corresponding lower than planned. Preliminary annual savings was 72% lower, and lifetime savings was 84% lower, resulting in significantly lower Cost-Effectiveness results than planned. The corresponding performance incentive was lower than budget. This is a new program for the Company; ramp up took time, and was focused heavily on coordination efforts, consistency, and program communications. Demographic factors (i.e., relatively fewer multi-family units in the Company’s service territory) played a significant role in the Company’s achieved results, with 53% fewer participants than planned.

Evaluated annual savings are 15% less than preliminary year-end estimates (with a corresponding 14% drop in lifetime savings). This decrease is due to the Company using the results of the impact evaluation described below to calculate final savings.
EM&V studies included in the Annual Report that apply to this program:

- **Cross-Cutting Net-to-Gross Methodology Study for Residential Programs – Suggested Approaches (Final)**
  The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ residential programs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.B.6, Study #10.

- **Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential and Multi-Family HEHE Gas Programs, and Commercial and Industrial Gas Programs**
  This study estimated the NTG factors for HEHE measures that were not included in the HEHE Process and Impact Evaluation and spillover rates for those that were included in the study. NTG factors were determined for thermostats, storage water heaters and condensing gas water heaters. Spillover rates were estimated for furnaces and boilers. The results of this study vary for each measure within the program. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.B.7, Study #11.

Required design and/or implementation changes to this program as a result of the factors described above have yet to be determined. The results of the impact evaluations described above will be used to adjust the planning estimates for the program in 2012.

As a result of the very low participation level, the Residential Multi-Family Retrofit was not cost-effective in 2010 with a BCR of 0.81. The Company is unable to perform a comparison cost-effectiveness analysis from previous years because 2010 is the first year of this new program.

Factors relating to the program’s lack of cost-effectiveness:

- The Multi-family Market Integrator (MMI) was not selected until May 5, 2010 by the PA working group, providing protocols, workflow process, data tracking and training. Ownership configuration can be challenging and can contribute to long project lead times. These factors contributed to the Company’s slow start in achieving its goal in 2010.

- This program is still in transition as a statewide integrated program, but is progressing with projects and new leads for both gas and electric. The Company may modify program budgets and goals as it gains experience, as projects are identified in its service territory, and as completion lead times become clearer.

The Company does not intend to discontinue the program at this time.
3. Residential Pilot Programs

a. Deep Energy Retrofit

Description of Pilot/Specific Activities Intended to Study: The Deep Energy Retrofit pilot was implemented to investigate the potential for energy savings of at least 50 percent of total on-site energy use through deep retrofits of existing residential buildings and to identify how to reduce the costs and challenges associated with deep retrofits.

Why Implemented on Pilot Basis rather than as a Full Program: This initiative was offered as a pilot to determine if the initiative is cost-effective with the intention of determining cost effectiveness once an evaluation of the pilot was completed.

Targeted Customers: The pilot targeted home owners, property owners, and property managers considering renovations and willing to invest in extensive carbon reductions. In addition, the pilot targeted advanced building remodelers, architects, designers, trade allies, and others involved in renovation or restoration of residential buildings.

Definition of Pilot Program Participant: A 1 – 4 unit residential building with a target of 50% reduction in energy usage.

Targeted End-Uses: The technologies targeted to dramatically reduce the amount of energy used in existing residences were advanced building shells, high-performance lighting, high-efficiency heating and cooling systems, advanced controls, high-efficiency appliances and products, advanced energy use feedback and monitoring technology, mechanical ventilation, solar photovoltaic systems, and solar thermal systems.

Delivery Mechanism: Project design details and assistance to the Deep Energy Retrofit contractors performing the work was handled through technical specialist organizations under contract and/or utilizing American Recovery and Reinvestment Act funds.

Significant Differences in Actual Program Design from Approved Program Design: None.

How Achievement of the Pilot’s Stated Goal was Measured: The DER process evaluation is completed; the results, findings and recommendations are included in Section III.B.9, Study #13. The impact evaluation is scheduled for a future date.

Docket/Exhibit where the Program is Discussed and Approved: The pilot is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 158-163 (bates numbering 00129-00134). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.
Table II.A.9 provides information on the performance of Deep Energy Retrofit pilot. Because of the nature of pilot programs, the table for this pilot program is incomplete with regard to savings and benefits. The Company has provided all available table inputs.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>50,110</td>
<td>3,304</td>
<td>-93%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td><strong>Savings &amp; Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>therms</td>
<td>n/a</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>therms</td>
<td>n/a</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Average Measure Life</td>
<td>yrs</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>kWh</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Annualized Demand</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$</td>
<td>n/a</td>
<td>n/a</td>
<td>0%</td>
</tr>
</tbody>
</table>

During 2010, the Company’s representatives attended many working group meetings to gain knowledge, learn about the detailed application process and technical resources required, and identify barriers to be overcome in order to reach the desired level of DER. The Company received some interest in the program; however, most potential projects were not currently using natural gas. The Company did not achieve its goal in the pilot due to the complexity of the DER and the projects and expected energy savings of the projects presented.

The Company intended to deliver DER participants in its service territory during the three years of the Plan. After the Company’s participation in workshops during 2010, the Company has determined that the infrastructure needed to guide project planning, and to provide for strong quality control, is not feasible at the proposed budget levels in the Plan.

The Company will continue to be involved in the working group to determine what common definitions can be include in a ‘partial’ DER. It is evident through the evaluation report and in practice that DER’s are extremely complex projects and require additional research and cost effectiveness study. The Company supports the idea of further research in this area and is discussing with other PAs how to incorporate lessons learned from the DER into existing programs. The Company does not view this as a stand alone program going forward.

EM&V study included in the Annual Report that applies to this pilot:
• **Massachusetts 2010 Residential Retrofit/Low Income Evaluation: Deep Energy Retrofit**

The overarching goal of the 2010 DER pilot evaluation was to provide the PAs/implementers with actionable findings and recommendations aimed at increasing customer and contractor participation, as well as refining pilot program delivery. The process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.B.9, Study #13.

**B. Low-Income Sector Programs**

1. **Summary**

During 2010 the Company implemented the following low-income programs:

- Low-Income Single Family Retrofit
- Low-Income Multi-Family Retrofit

Tables II.B.1 and II.B.2 provide summary information on the performance of the low-income programs at the sector and program levels, respectively.

Section II.B.2 provides detailed information on the performance of each low-income program.

---

### Table II.B.1: Low-Income Sector Summary

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>2,870,871</td>
<td>1,785,042</td>
<td>-38%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>78,260</td>
<td>54,476</td>
<td>-30%</td>
</tr>
<tr>
<td><strong>Savings &amp; Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td>therms</td>
<td>4,709,020</td>
<td>2,755,501</td>
<td>-41%</td>
</tr>
<tr>
<td>Annualized</td>
<td>therms</td>
<td>216,010</td>
<td>123,145</td>
<td>-43%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>kWh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Summer</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas/Non-Electric Resources (Lifetime)</td>
<td>$</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Cost-Effectiveness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>5,159,255</td>
<td>3,011,818</td>
<td>-42%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>2,949,131</td>
<td>1,839,518</td>
<td>-38%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>2,210,124</td>
<td>1,172,300</td>
<td>-47%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>1.75</td>
<td>1.64</td>
<td>-6%</td>
</tr>
</tbody>
</table>

---

4 The Company did not offer any pilot programs in the low-income sector during 2010.
### Table II.B.2: Low-Income Program Summary

<table>
<thead>
<tr>
<th>Program / Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Evaluated Results</th>
<th>% Change from Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value</td>
<td></td>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td></td>
<td>$3,308,472</td>
<td>$2,878,693</td>
<td>-13%</td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>$2,158,844</td>
<td>$1,553,210</td>
<td>-28%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>$1,149,628</td>
<td>$1,325,483</td>
<td>15%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>1.53</td>
<td>1.85</td>
<td>21%</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>$1,850,783</td>
<td>$133,125</td>
<td>-93%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>$607,333</td>
<td>$138,217</td>
<td>-77%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>$1,243,450</td>
<td>-$5,092</td>
<td>-100%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>3.05</td>
<td>0.96</td>
<td>-68%</td>
</tr>
<tr>
<td>Hard-to-Measure Initiatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>$182,954</td>
<td>$148,091</td>
<td>-19%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>$5,159,255</td>
<td>$3,011,818</td>
<td>-42%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>$2,949,131</td>
<td>$1,839,518</td>
<td>-38%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>$2,210,124</td>
<td>$1,172,300</td>
<td>-47%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>1.75</td>
<td>1.64</td>
<td>-6%</td>
</tr>
</tbody>
</table>

During 2010, the Company continued to build upon existing Low-Income programs. Selected highlights are presented below:

- **Low-Income Single Family:** The variance in the Low-Income Single-Family program was mainly due to the influx of American Recovery and Reinvestment Act (ARRA) funds into the Commonwealth’s Low-Income Weatherization Program. While the Company’s Low-Income Single-Family program performance was below its target, it should be noted that the Company’s customers were still well served with energy efficiency services through ARRA funding as opposed to utility funds.

- **Low-Income Multi-family:** The Low-Income Multi-family program was a new program for 2010. The majority of the program year was spent ramping up and establishing program guidelines, protocols, and structure. It was a challenging task to launch this type of comprehensive program into the market in less than a year. While it was a challenge to complete jobs within 2010, the program built up significant demand for the program for 2011 and 2012.

A detailed program-level discussion can be found below.
2. **Low-Income Programs**

   a. **Low-Income Single-Family Retrofit**

**Purpose/Goal:** The Low-Income Single-Family Retrofit program was designed to increase energy efficiency and reduce the energy cost burden for income-eligible customers. Through education and the installation of electric and gas energy efficiency measures, the program aims to achieve deeper and broader energy savings.

**Targeted Customers:** This program targeted residential customers with natural gas heating living in one to four-unit dwellings that are at sixty percent (60%) of the state median income level.

**Definition of Program Participant:** A low-income customer living in a 1 – 4 unit building that received energy efficiency services through the Company.

**Targeted End-Uses:** Targeted technologies under this comprehensive, whole house approach included, but were not limited to, building shells, heating, domestic water heating, HVAC/mechanical systems, and general waste heat.

**Delivery Mechanism:** Program Administrators, when warranted, used a lead vendor to administer the program. The Program Administrators worked closely with their lead vendor and/or respective Network agencies on all aspects of the program design and implementation.

**Significant Differences in Actual Program Design from Approved Program Design:** None.

**Docket/Exhibit where the Program is Discussed and Approved:** The program is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See *Bay State Gas Company, D.P.U. 09-125*, Exhibit Bay State-1, pages 161-168 (bates numbering 00162-00169). The program was approved by the Department on January 28, 2010 in *Bay State Gas Company, D.P.U. 09-125*.

Table II.B.3 provides information on the performance of the Low-Income Single-Family Retrofit Program.
Total Program Costs are 29% below planned values, with a corresponding reduction in TRC Costs. The lower costs are primarily driven by lower program participation due to the Commonwealth’s Low-Income Weatherization program taking advantage of available ARRA funding. Additionally, 2010 required the Low Income agencies and installation contractors to ramp up staff, resulting in lower production in the beginning of the year.

Preliminary year-end savings are 13% less than planned results, due to the factors above. This change is within the expected variance. Evaluated savings are the same as preliminary year-end estimates.

The overall affect of these variances is a 21% increase in the BCR for the program.

Additionally, the Company notes that while utility funds were underspent, the focus on spending federal ARRA dollars allowed the Company’s Low-Income customers to receive energy efficiency services without the use of rate payer funds.

EM&V study included in the Annual Report that applies to this program:

- **Massachusetts 2010 Residential Retrofit and Low Income Evaluation: Low Income Process Evaluation**

  This study assessed program processes with a particular focus on identifying similarities and differences in the perspectives and assumptions of program staff, implementation staff, and customers regarding program goals, design and implementation across the PAs. The process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.C.1, Study #18.
Required design and/or implementation changes to this program as a result of the evaluation results described above have yet to be determined. The Company will determine any necessary changes as part of the 2012 Mid-Term Modification process.

This program was cost-effective for 2010 with a BCR of 1.85, and the Company does not intend to discontinue the program.

b.  Low-Income Multi-Family Retrofit

**Purpose/Goal:** The purpose of the Low-Income Multi-Family Retrofit program was to deliver energy efficient products and services directly to the dwellings of: 1) residential customers living in facilities (with five or more units) on the low-income rate or 2) eligible income-eligible residents living in multi-family non-institutional facilities (with five or more units) owned or operated by a non-profit entity or a public housing authority.

**Targeted Customers:** Residential customers on the low-income rate or individuals living in non-institutional dwellings owned or operated by non-profit entities or public housing authorities with five or more units who are at 60 percent of median income level as well as landlords and property managers of these buildings were targeted by this program.

**Definition of Program Participant:** A Low-Income customer living in a building with 5 or more units, or properties owned or operated by non-profit entities or public housing authorities.

**Targeted End-Uses:** The following gas and electric technologies in both dwelling units and common areas were targeted under the program through a comprehensive, whole building audit approach: building shell, heating and cooling, domestic water heating, HVAC and other mechanical systems and controls; lighting and appliances; general waste heat; and all other cost-effective site-specific end uses that impact gas and electric consumption.

**Delivery Mechanism:** The program was administered cooperatively by the gas and electric Program Administrators in conjunction with interested stakeholders.

**Significant Differences in Actual Program Design from Approved Program Design:** None.

**Docket/Exhibit where the Program is Discussed and Approved:** The program is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 177-190 (bates numbering 00178-00191). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.

Table II.B.4 provides information on the performance of the Low-Income Multi-Family Retrofit Program.
### Table II.B.4: Low-Income MultiFamily Retrofit

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>570,259</td>
<td>130,513</td>
<td>-77%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>37,074</td>
<td>7,704</td>
<td>-79%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>25</td>
<td>24</td>
<td>-4%</td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$</td>
<td>22,810</td>
<td>5,438</td>
<td>-76%</td>
</tr>
<tr>
<td><strong>Savings &amp; Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td>therms</td>
<td>1,689,270</td>
<td>120,885</td>
<td>-93%</td>
</tr>
<tr>
<td>Annualized</td>
<td>therms</td>
<td>77,489</td>
<td>5,892</td>
<td>-92%</td>
</tr>
<tr>
<td>Average Measure Life</td>
<td>yrs</td>
<td>21.8</td>
<td>20.5</td>
<td>-6%</td>
</tr>
<tr>
<td><strong>Electric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>kWh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Non-Gas Non-Electric Resources (Lifetime)</strong></td>
<td>$</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Cost-Effectiveness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>1,850,763</td>
<td>133,125</td>
<td>-93%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>607,333</td>
<td>138,217</td>
<td>-77%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>1,243,450</td>
<td>-5,092</td>
<td>-100%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>3.05</td>
<td>0.96</td>
<td>-68%</td>
</tr>
</tbody>
</table>

Preliminary year-end savings are 93% less than planned results, with related decreases in costs, performance incentives, and benefits. This was a new program in 2010 and had a delayed start; therefore, the program could not serve as many facilities as planned. The PAs focused heavily on program structure, customer outreach, and contract requirements. The Low-Income Multi-family Steering Committee managed to generate very strong interest in the program, thus creating a substantial pipeline for the Company for 2011 and 2012.

Evaluated savings are the same as preliminary year-end estimates.

The net effect of the factors above is a 68% decrease in the BCR, to 0.96.

EM&V study included in the Annual Report that applies to this program:

- **Massachusetts 2010 Residential Retrofit and Low Income Evaluation: Low Income Process Evaluation**
  This study assessed program processes with a particular focus on identifying similarities and differences in the perspectives and assumptions of program staff, implementation staff, and customers regarding program goals, design and implementation across the PAs. The process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.C.1, Study #18.
Required design and/or implementation changes to this program as a result of the evaluation results described above have yet to be determined. The Company will determine any necessary changes as part of the 2012 Mid-Term Modification process.

Factors relating to the program’s lack of cost-effectiveness:

- The Company incurred expenses throughout the year associated with the long-term program ramp-up. Savings in the program did not materialize until the last quarter of the year.
- The Company expects that the program in its current form will be cost-effective over the three years of the Plan, due to the very strong pipeline of projects in the Company’s territory.

The Company is unable to perform a comparison cost-effectiveness analysis from previous years because 2010 is the first year of this new program.

The Company does not intend to discontinue the program at this time.

C. Commercial & Industrial Sector Programs

1. Summary

During 2010 the Company implemented the following Commercial & Industrial (“C&I”) programs and C&I pilots:

C&I Programs
- C&I New Construction and Major Renovation
- C&I Retrofit
- C&I Direct Install

C&I Pilots
- Deep Energy Retrofit

Tables II.C.1 and II.C.2 provide summary information on the performance of the C&I programs at the sector and program levels, respectively.

Sections II.C.2 and II.C.3 provide detailed information on the performance of each C&I program and pilot program, respectively.
### Table II.C.1: C&I Sector Summary

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>4,242,672</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>507,934</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Savings &amp; Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td>therms</td>
<td>31,678,930</td>
<td>22,300,848</td>
<td>-30%</td>
</tr>
<tr>
<td>Annualized</td>
<td>therms</td>
<td>1,608,632</td>
<td>1,720,099</td>
<td>7%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy</td>
<td>kWh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter</td>
<td>kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources (Lifetime)</td>
<td>$</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Cost-Effectiveness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>31,573,071</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>7,572,047</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>24,001,024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>4.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program / Performance Category</td>
<td>Units</td>
<td>Planned Value</td>
<td>Evaluated Results</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------</td>
<td>---------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
</tr>
<tr>
<td>C&amp;I New Construction and Major Renovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>14,175,472</td>
<td>7,549,173</td>
<td>-47%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>3,955,210</td>
<td>2,417,063</td>
<td>-39%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>10,220,262</td>
<td>5,132,110</td>
<td>-50%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>3.58</td>
<td>3.12</td>
<td>-13%</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>17,012,143</td>
<td>13,726,928</td>
<td>-19%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>3,329,635</td>
<td>3,500,494</td>
<td>5%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>13,682,507</td>
<td>10,226,434</td>
<td>-25%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>5.11</td>
<td>3.92</td>
<td>-23%</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>385,456</td>
<td>211,818</td>
<td>-45%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>49,408</td>
<td>21,250</td>
<td>-57%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>336,049</td>
<td>190,568</td>
<td>-43%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>7.80</td>
<td>9.97</td>
<td>28%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>0</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>94,206</td>
<td>3,987</td>
<td>-96%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>n/a</td>
<td>-3,987</td>
<td>n/a</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>n/a</td>
<td>0.00</td>
<td>n/a</td>
</tr>
<tr>
<td>Hard-to-Measure Initiatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>143,587</td>
<td>89,739</td>
<td>-38%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>31,573,071</td>
<td>21,487,919</td>
<td>-32%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>7,572,047</td>
<td>6,032,533</td>
<td>-20%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>24,001,024</td>
<td>15,455,386</td>
<td>-36%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>4.17</td>
<td>3.56</td>
<td>-15%</td>
</tr>
</tbody>
</table>

During 2010, the Company built upon existing Commercial and Industrial programs and significantly expanded initiatives to increase participation in all C&I programs. Selected highlights are presented below:

- On a sector basis, the C&I programs performed near expectations in 2010. Pre-evaluation savings were very close to goal, while costs were within expected variances. The sector’s lifetime therm savings and TRC Benefits lagged behind expectations somewhat due to the particular mix of measures installed during the year, with a corresponding decrease in TRC benefits. Overall, the sector was robustly cost-effective.
- The Company’s single C&I pilot, Deep Energy Retrofit, did not have any 2010 participants.
All three programs had significant variances between planned and evaluated values in Table II.C.2. A more detailed program-level discussion can be found below.

2. **C&I Programs**

   a. **C&I New Construction & Major Renovation**

**Purpose/Goal:** The C&I New Construction & Major Renovation program was designed to optimize the efficiency of equipment, building design, and systems in new construction, and renovation of commercial, industrial, institutional, and government facilities. Focusing on offering a comprehensive set of electric and gas efficiency options specific to the needs unique to each customer, the program also targeted the brief window of opportunity to install premium grade replacements when equipment fails or is near the end of its useful life. In doing so, the Program Administrators worked to ensure that the best practices propagated by the program are ultimately built into the evolution of better building requirements.

**Targeted Customers:** The target market for this program was all time-dependent gas and electric energy efficiency opportunities in the C&I sector – commercial, industrial, institutional, and government customers.

**Definition of Program Participant:** A program participant is defined as an individual project undertaken by a customer who has received a financial incentive for the completed implementation of one or more time-dependent gas (and/or electric) energy efficiency measures. One customer may undertake multiple projects at different locations during the program year. Each project is, therefore, counted as an individual participant.

**Targeted End-Uses:** Technologies targeted by the program included: lighting equipment and controls, lighting design, motors, variable speed drives, high performance HVAC equipment, chilled water systems/ refrigeration systems, building envelope measures, compressed air, high efficiency heating and water heating, and industry-specific gas and electric industrial processes. Site-specific custom measures, including CHP distributed generation, were also considered.

**Delivery Mechanism:** The Program Administrators worked together to market and implement the program as a unitary statewide effort to maximize the acquisition of potential energy savings (gas and electric) in the ongoing market for new facilities and replacement equipment in the Commonwealth.

**Significant Differences in Actual Program Design from Approved Program Design:** None.

**Docket/Exhibit where the Program is Discussed and Approved:** The program is discussed in detail in the Company's 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 203-214 (bates numbering 00204-00215). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.
Table II.C.3 provides information on the performance of the C&I New Construction and Major Renovation Program.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from Planned</td>
<td>Value</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>2,180,585</td>
<td></td>
<td>1,466,280</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>218,183</td>
<td></td>
<td>2,917</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>453</td>
<td></td>
<td>259</td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$</td>
<td>4,814</td>
<td></td>
<td>5,669</td>
</tr>
<tr>
<td>Savings &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime therms</td>
<td></td>
<td>14,167,930</td>
<td>-43%</td>
<td>7,467,280</td>
</tr>
<tr>
<td>Annualized therms</td>
<td></td>
<td>706,315</td>
<td>-30%</td>
<td>459,819</td>
</tr>
<tr>
<td>Average Measure Life</td>
<td>yrs</td>
<td>20.1</td>
<td>-18%</td>
<td>16.2</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy kWh</td>
<td>kWh</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer kW</td>
<td>kW</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Winter kW</td>
<td>kW</td>
<td>n/a</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>14,175,472</td>
<td></td>
<td>7,549,173</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>3,965,210</td>
<td></td>
<td>2,417,063</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>10,220,262</td>
<td></td>
<td>5,132,110</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>3.58</td>
<td></td>
<td>3.12</td>
</tr>
</tbody>
</table>

Preliminary year-end annualized gas savings are 30% lower than planned results, and lifetime gas savings are 43% lower than planned results. The corresponding performance incentive was significantly lower than budget. The majority of the savings in this program comes from custom projects. Fewer savings were brought in through custom new construction projects than anticipated, but the shortfall in annualized savings for the C&I New Construction program is more than offset by greater than anticipated savings through the C&I Retrofit program. This is the first year that the Company has reported their C&I program by New Construction vs. Retrofit, and initial projections of the ratio between the two programs were not supported by in-the-field experience. The Company notes that the overall savings delivered to commercial customers did not vary significantly from projections.

Lifetime savings are lower than expected due the mix of actual installed measures – the average measure life of installed measures was 18% lower than projected.

Total program costs are 33% lower than anticipated, with all program cost areas being below plan.

Evaluated results decreased from preliminary year-end estimates by 7% for annual results and 8% lifetime results. This decrease is due to the combined effects of the results of impact evaluations described below.
The overall affect of all factors is a slight decrease in the program BCR, from 3.58 to 3.12.

EM&V studies included in the Annual Report that apply to this program:

- **Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential and Multi-Family HEHE Gas Programs, and Commercial and Industrial Gas Programs**
  This study estimated the NTG factors for Commercial & Industrial Gas measure categories. NTG factors were determined for custom and prescriptive measures. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.B.7, Study #11.

- **New Construction Market Characterization - Commercial New Construction Customer Quantitative Profile**
  The study’s goal was to develop a comprehensive characterization of the large commercial and industrial new construction market in MA. This market characterization study has no impact on the evaluated results. This study is discussed in more detail in Section III.D.2, Study #22.

- **New Construction Market Characterization - Supply Chain Profile**
  The study’s goal was to characterize the design, engineering, and construction management firms involved with recent large commercial construction projects in MA. This market characterization study has no impact on the evaluated results. This study is discussed in more detail in Section III.D.3, Study #23.

- **New Construction Market Characterization – Chain and Franchise**
  The study’s goal was to characterize the chain and franchise market in MA, including estimates of size and key segments (big box, retail, restaurant, etc). This market characterization study has no impact on the evaluated results. This study is discussed in more detail in Section III.D.4, Study #24.

- **Comprehensive Design Approach Process Evaluation Project 6B**
  The objective of this process evaluation was to review the Comprehensive Design Approach and Advanced Buildings tracks offered by some PAs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.D.5, Study #27.

- **C&I General Process Evaluation**
  The objective of this process evaluation was to look at ways to improve the design and delivery of MA C&I energy efficiency programs that would be applicable to multiple programs. This process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.D.6, Study #29.

- **Cross Cutting C&I Free-Ridership and Spillover Methodology Study Final Report**
The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ commercial and industrial programs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.D.7, Study #34.

- **Impact Evaluation of Prescriptive Condensing Gas Boilers**
  The objective of this impact evaluation was to develop annual gas savings impacts for all five size categories of prescriptive condensing boilers installed through the C&I gas programs. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.D.8, Study #35.

Required design and/or implementation changes to this program as a result of the evaluation results described above have yet to be determined. The Company will determine any necessary changes as part of the 2012 Mid-Term Modification process.

This program was cost-effective for 2010 with a BCR of 3.12, and the Company does not intend to discontinue the program.

b. **C&I Retrofit**

**Purpose/Goal:** The C&I Large Retrofit program focused on comprehensive gas and electric energy efficiency opportunities associated with mechanical, electrical, and thermal systems in existing commercial, industrial, governmental and institutional buildings. Through this program, technical assistance and incentives were provided to encourage retrofitting of equipment that continued to function, but was outdated and inefficient, and could be replaced with a premium efficient product. In addition, this program helped participants identify specific peak load management opportunities and assisted occupants in improving their ongoing operation and maintenance practices.

**Targeted Customers:** The target market for this program was all non-residential customers - commercial, industrial, governmental, and institutional.

**Definition of Program Participant:** A program participant is defined as an individual project undertaken by a customer who has received a financial incentive for the completed implementation of one or more gas (and/or electric) energy efficiency measures. One customer may undertake multiple projects at different locations during the program year. Each project is, therefore, counted as an individual participant.

**Targeted End-Uses:** Targeted technologies included, but were not limited to, lighting and lighting controls, motors and drives, HVAC equipment, energy management systems, compressed air and unique industrial processes. Targeted gas end uses included: building envelope and glazing, commercially sized heating and water heating equipment, system and building controls. Consideration was provided for any commercially available energy efficiency technology.
Delivery Mechanism: Program Administrator staff, trade allies and project administrators performed most sales, marketing, program administration, and implementation functions while outside contractors were retained for technical review of applications, on-site energy analysis, technical and design assistance for comprehensive projects, project commissioning services, and the actual measure installations, including turn-key services.

Significant Differences in Actual Program Design from Approved Program Design: None.

Docket/Exhibit where Program is Discussed and Approved: The program is discussed in detail in the Company's 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 191-202 (bates numbering 00192-00203). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.

Table II.C.4 provides information on the performance of the C&I Retrofit Program.

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Units</th>
<th>Planned Value</th>
<th>Preliminary Year-End Results</th>
<th>Evaluated Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
<td>% Change from</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Planned</td>
<td>Preliminary</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Program Costs</td>
<td>$</td>
<td>1,825,896</td>
<td>1,849,061</td>
<td>1%</td>
</tr>
<tr>
<td>Performance Incentive</td>
<td>$</td>
<td>280,742</td>
<td>278,509</td>
<td>-1%</td>
</tr>
<tr>
<td>Participants</td>
<td>TBD</td>
<td>396</td>
<td>118</td>
<td>-70%</td>
</tr>
<tr>
<td>Program Cost / Participant</td>
<td>$</td>
<td>4,611</td>
<td>15,670</td>
<td>240%</td>
</tr>
<tr>
<td>Savings &amp; Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime therms</td>
<td>17,138,250</td>
<td>13,918,038</td>
<td>-19%</td>
<td>13,352,157</td>
</tr>
<tr>
<td>Annualized therms</td>
<td>866,267</td>
<td>1,185,074</td>
<td>37%</td>
<td>1,137,060</td>
</tr>
<tr>
<td>Average Measure Life</td>
<td>yrs</td>
<td>19.8</td>
<td>11.7</td>
<td>-41%</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Energy kWh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Annualized Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Winter kW</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Gas Non-Electric Resources (Lifetime)</td>
<td>$</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC Benefits</td>
<td>$</td>
<td>17,012,143</td>
<td>13,726,928</td>
<td>-19%</td>
</tr>
<tr>
<td>TRC Costs</td>
<td>$</td>
<td>3,329,635</td>
<td>3,500,494</td>
<td>5%</td>
</tr>
<tr>
<td>Net Benefits</td>
<td>$</td>
<td>13,682,507</td>
<td>10,226,434</td>
<td>-25%</td>
</tr>
<tr>
<td>BCR</td>
<td>n/a</td>
<td>5.11</td>
<td>3.92</td>
<td>-23%</td>
</tr>
</tbody>
</table>

Preliminary year-end annualized gas savings are 37% higher than planned results, and lifetime gas savings are 19% lower than planned results. More savings were brought in through custom retrofit projects than anticipated, which more than offset the savings shortfall in the C&I New Construction program. As noted above, this is the first year that the Company has reported their C&I program by New Construction vs. Retrofit, and initial projections of the ratio between the
two programs were not supported by in-the-field experience. The Company notes that the overall savings delivered to customers did not vary significantly from projections.

Lifetime savings are lower than expected due the mix of actual installed measures. There were several large projects with a relatively short measure life, which caused the average measure life of installed measures to be 41% lower than projected.

Evaluated savings decreased from preliminary year-end estimates very slightly - by just 4%—for both annual and lifetime results. This decrease is due to the combined effects of the results of impact evaluations described below.

Total participants are significantly lower than projected (70%); however, costs align to projections with savings above projections. This leads to a higher cost per participant, but a similar cost per therm.

The program is still robustly cost effective, with a 3.92 BCR, a 23% decrease from the projected 5.11 BCR.

EM&V studies included in the Annual Report that apply to this program:

- **Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential and Multi-Family HEHE Gas Programs, and Commercial and Industrial Gas Programs**
  
  This study estimated the NTG factors for Commercial & Industrial Gas measure categories. NTG factors were determined for custom and prescriptive measures. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.B.7, Study #11.

- **New Construction Market Characterization - Commercial New Construction Customer Quantitative Profile**
  
  The study’s goal was to develop a comprehensive characterization of the large commercial and industrial new construction market in MA. This market characterization study has no impact on the evaluated results. This study is discussed in more detail in Section III.D.2, Study #22.

- **New Construction Market Characterization - Supply Chain Profile**
  
  The study’s goal was to characterize the design, engineering, and construction management firms involved with recent large commercial construction projects in MA. This market characterization study has no impact on the evaluated results. This study is discussed in more detail in Section III.D.3, Study #23.

- **New Construction Market Characterization – Chain and Franchise**
  
  The study’s goal was to characterize the chain and franchise market in MA, including estimates of size and key segments (big box, retail, restaurant, etc.). This market characterization study has no impact on the evaluated results. This study is discussed in more detail in Section III.D.4, Study #24.
• **C&I General Process Evaluation**
  The objective of this process evaluation was to look at ways to improve the design and delivery of MA C&I energy efficiency programs that would be applicable to multiple programs. This process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.D.6, Study #29.

• **Cross Cutting C&I Free-Ridership and Spillover Methodology Study Final Report**
  The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ commercial and industrial programs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.D.7, Study #34.

• **Impact Evaluation of Prescriptive Condensing Gas Boilers**
  The objective of this impact evaluation was to develop annual gas savings impacts for all five size categories of prescriptive condensing boilers installed through the C&I gas programs. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.D.8, Study #35.

• **Industry Practices and Policies on Energy Efficiency Program Rebate/Incentives**
  The primary objective of this high-level scoping study of statewide energy efficiency program incentive and rebate levels was to help inform the policy debate for statewide programs in Massachusetts and to support fourth quarter 2010 programmatic planning. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.E.1, Study #36.

Required design and/or implementation changes to this program as a result of the evaluation results described above have yet to be determined. The Company will determine any necessary changes as part of the 2012 Mid-Term Modification process.

This program was cost-effective for 2010 with a BCR of 3.92, and the Company does not intend to discontinue the program.

c. **C&I Direct Install**

**Purpose/Goal:** The primary objective of the C&I Direct Install Program was to provide cost-effective, comprehensive electric and prescriptive gas retrofit services to business customers on a turnkey basis using the same delivery model throughout the Commonwealth.

**Targeted Customers:** While 2010 stood as a transition year, all PAs moved toward targeting direct install retrofit business customers with electric consumption below 300kW.

**Definition of Program Participant:** A Program Participant is defined as a customer who has received turnkey retrofit services and incentive dollars through the C&I Direct Install program.
One customer may undertake multiple projects at different locations during the program year. Each project is, therefore, counted as an individual participant.

**Targeted End-Uses:** Targeted technologies included a variety of prescriptive gas and comprehensive electric measures including but not limited to: lighting and lighting controls, HVAC equipment, water heating, variable speed drives, and refrigeration, heating system controls, commercial dishwashing - water heating and potentially building envelope.

**Delivery Mechanism:** Vendors were selected through a competitive bidding process to implement the program. These vendors marketed the program, performed facility audits, and offered recommendations to customers while completing audit forms and questionnaires. In addition the same vendors purchased materials, installed measures, entered data into a database, and prepared progress reports for the Program Administrators on a regular basis. These vendors were managed by the electric Program Administrators, with the gas measures billed to the appropriate gas Program Administrator.

**Significant Differences in Actual Program Design from Approved Program Design:** None.

**Docket/Exhibit where Program is Discussed and Approved:** The program is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 215-219 (bates numbering 00216-00220). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.

Table II.C.5 provides information on the performance of the C&I Direct Install Program.
While preliminary year-end savings for annualized gas results are only slightly higher than planned results (9% increase), lifetime therms are 34% less than plan. Measures used to achieve the results had a shorter measure life than proposed in the plan (a 40% reduction, from 10.3 to 6.2 years). Additionally, fewer than expected participants in the program led to a higher cost per participant than anticipated (48% increase).

This reduction in actual participants also led to total program costs being 56% lower than anticipated, with all program cost areas being below Plan. Due to the lower than projected benefits and the performance metrics results, the Performance Incentive for this project was 36% lower than expected.

Evaluated savings decreased 17% from preliminary year-end estimates. This decrease was due to the effects of the free-ridership and spillover evaluation described below.

While the Total Benefits, Total Costs, and Net Benefits all decreased based on the factors above, the BCR increased as the costs dropped more dramatically than the benefits. The increase in BCR from the planned 7.8 to the actual 9.97 represents a 28% increase.

EM&V studies included in the Annual Report that apply to this program:

- Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential and Multi-Family HEHE Gas Programs, and Commercial and Industrial Gas Programs
This study estimated the NTG factors for Commercial & Industrial Gas measure categories. NTG factors were determined for custom and prescriptive measures. The net effect of these results was to decrease program savings. This study is discussed in more detail in Section III.B.7, Study #11.

- **Massachusetts Non-Residential Small Business Direct Install Program: Multi-Tier Structure Assessment 2010 Process Evaluation.**
  The main objective of the Multi-Tier Program Structure Assessment is to document progress towards statewide integration of the C&I Direct Install programs during 2010, and to gauge customer interest in different program design options such as varying incentive levels, zero interest financing, and on-bill financing options. The process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.D1, Study #20.

- **Cross Cutting C&I Free-Ridership and Spillover Methodology Study Final Report**
  The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ commercial and industrial programs. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.D.7, Study #34.

- **Industry Practices and Policies on Energy Efficiency Program Rebate/Incentives**
  The primary objective of this high-level scoping study of statewide energy efficiency program incentive and rebate levels was to help inform the policy debate for statewide programs in Massachusetts and to support fourth quarter 2010 programmatic planning. The results of this study did not impact the 2010 evaluated results. This study is discussed in more detail in Section III.E.1, Study #36.

Required design and/or implementation changes to this program as a result of the evaluation results described above have yet to be determined. The Company will determine any necessary changes as part of the 2012 Mid-Term Modification process.

This program was cost-effective for 2010 with a BCR of 9.97, and the Company does not intend to discontinue the program.

3. **C&I Pilot Programs**
   a. **Deep Energy Retrofit**

**Description of Pilot/Specific Activities Intended to Study:** The Deep Energy Retrofit pilot was implemented to investigate the potential for energy savings of at least 50 percent of total on-site energy use through deep retrofits of existing commercial buildings and to identify how to reduce the costs and challenges associated with deep retrofits.
Why Implemented on Pilot Basis rather than as a Full Program: This initiative was offered as a pilot to determine if the initiative is cost-effective. Once an impact evaluation of the pilot is completed, the pilot may be offered as a program in the future.

Targeted Customers: The pilot targeted commercial customers considering renovations and willing to invest in extensive carbon reductions. In addition, the pilot targeted advanced building remodelers, architects, designers, trade allies, and others involved in renovation or restoration of residential buildings.

Definition of Pilot Program Participant: A commercial building with a target of 50% reduction in energy usage.

Targeted End-Uses: The technologies targeted to dramatically reduce the amount of energy used in existing buildings were advanced building shells, high-performance lighting, high-efficiency heating and cooling systems, advanced controls, high-efficiency appliances and products, advanced energy use feedback and monitoring technology, mechanical ventilation, solar photovoltaic systems, and solar thermal systems.

Delivery Mechanism: Project design details and assistance to the Deep Energy Retrofit contractors performing the work was handled through technical specialist organizations under contract and/or utilizing American Recovery and Reinvestment Act funds.

Significant Differences in Actual Program Design from Approved Program Design: None.

How Achievement of the Pilot’s Stated Goal was Measured: The DER process evaluation is completed; the results, findings, and recommendations are included in Section III.B.9, Study #13. The impact evaluation is scheduled for a future date.

Docket/Exhibit where the Program is Discussed and Approved: The pilot is discussed in detail in the Company’s 2010-2012 Three-year Gas Energy Efficiency Plan, filed October 30, 2009. See Bay State Gas Company, D.P.U. 09-125, Exhibit Bay State-1, pages 158-163 (bates numbering 00164-00169). The program was approved by the Department on January 28, 2010 in Bay State Gas Company, D.P.U. 09-125.

Table II.C.6 provides information on the performance of Deep Energy Retrofit pilot. Because of the nature of pilot programs, the table for this pilot program is incomplete with regard to savings and benefits. The Company has provided all information that is available.
During 2010, the Company’s representatives attended many working group meetings to gain knowledge, learn about the detailed application process and technical resources required, and identify barriers to be overcome in order to reach the desired level of DER. The Company intended to deliver DER participants in its service territory during the three years of the Plan. After the Company’s participation in workshops during 2010, the Company has determined that the infrastructure needed to guide project planning, and to provide for strong quality control, is not feasible at the proposed budget levels in the Plan.

The Company will continue to be involved in the working group to determine what common definitions can be include in a ‘partial’ DER. It is evident through the evaluation report and in practice that DER’s are extremely complex projects and require additional research and cost-effectiveness study. The Company supports the idea of further research in this area and is discussing with other PAs how to incorporate lessons learned from the DER into existing programs. The Company does not view this as a stand alone program going forward.

Similar to the Residential Deep Energy Pilot, the Company did not have any participants in this pilot for 2010.

EM&V study included in the Annual Report that applies to this pilot:

- Massachusetts 2010 Residential Retrofit and Low Income Evaluation: Deep Energy Retrofit
The overarching goal of the 2010 DER pilot evaluation was to provide the PAs/implementers with actionable findings and recommendations aimed at increasing customer and contractor participation, as well as refining pilot program’s delivery. The process evaluation has no impact on the evaluated results. This study is discussed in more detail in Section III.B.9, Study #13.

The Company has not yet made a determination about the future of this pilot; instead the Company is learning from the experiences of other Program Administrators and its own experiences within its service territory to shape the future direction of this pilot.
### III. EVALUATION MEASUREMENT AND VERIFICATION ACTIVITIES

#### A. Summary

Table III.A summarizes the EM&V studies that have not been included in previous Annual Reports.

<table>
<thead>
<tr>
<th>Studies</th>
<th>Location of Complete Study in Annual Report</th>
<th>Docket &amp; Exhibit Approving Planned Evaluation Studies</th>
<th>Implemented as Approved? (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Program Studies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts New Homes with ENERGY STAR Estimated Maximum Potential Savings from Enhanced Code Compliance with the IECC 2009 Residential Building Code in Massachusetts (Study 1)</td>
<td>App. C, Study 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts New Homes with ENERGY STAR Mystery Shopping (Study 2)</td>
<td>App. C, Study 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Massachusetts New Homes with ENERGY STAR Program 2011 Baseline Phase 1: Completion of Planning (Study 3)</td>
<td>App. C, Study 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts 2010 Residential Retrofit and Low Income Evaluation: Mass Save (Study 5)</td>
<td>App. C, Study 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010 Net to Gross Findings: Home Energy Assessment (Study 6)</td>
<td>App. C, Study 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-Cutting Net-to-Gross Methodology Study for Residential Programs – Suggested Approaches (Final) (Study 10)</td>
<td>App. C, Study 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs, Residential HEHE and Multi-Family Gas Programs, and C&amp;I Gas Programs (Study 11)</td>
<td>App. C, Study 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEHE Process and Impact Evaluation (Study 12)</td>
<td>App. C, Study 12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table III.A: Evaluation Studies in Annual Report (cont.)

#### Residential Pilot Studies

<table>
<thead>
<tr>
<th>Study Description</th>
<th>App. C, Study</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts 2010 Residential Retrofit and Low Income Evaluation – Deep Energy Retrofit (Study 13)</td>
<td>13</td>
<td>All Studies are pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010); some studies were initiated prior to the MTM filing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All Studies are implemented as described in the 2011 MTM (filed Oct. 2010, pending before the Department)</td>
</tr>
</tbody>
</table>

#### Low-Income Studies

<table>
<thead>
<tr>
<th>Study Description</th>
<th>App. C, Study</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Report for Low Income Program - Massachusetts 2010 Residential Retrofit and Low Income Evaluation (Study 18)</td>
<td>18</td>
<td>All Studies are pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010); some studies were initiated prior to the MTM filing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All Studies are implemented as described in the 2011 MTM (filed Oct. 2010, pending before the Department)</td>
</tr>
</tbody>
</table>

#### Commercial & Industrial Studies

<table>
<thead>
<tr>
<th>Study Description</th>
<th>App. C, Study</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts Non-Residential Small Business Direct Install Program: Multi-Tier Structure Assessment 2010 Process Evaluation (Study 20)</td>
<td>20</td>
<td>All Studies are pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010); some studies were initiated prior to the MTM filing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All Studies are implemented as described in the 2011 MTM (filed Oct. 2010, pending before the Department)</td>
</tr>
<tr>
<td>FINAL Commercial New Construction Customer Quantitative Profile Project 1A New Construction Market Characterization (Study 22)</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Supply Chain Profile Project 1A New Construction Market Characterization (Study 23)</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Final Report Project 1B Chain &amp; Franchise Market Characterization (Study 24)</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Project 6B Comprehensive Design Approach Process Evaluation (Study 27)</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Project 7 General Process Evaluation Final Report (Study 29)</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>
B. Residential Studies

1. **Massachusetts New Homes with ENERGY STAR Estimated Maximum Potential Savings from Enhanced Code Compliance with the IECC 2009 Residential Building Code in Massachusetts (Study 1)**

**Type of Study:** Other

**Objective of the Study:** The objective of this study was to estimate the maximum potential savings for the years 2011, 2012, and 2013 that may be achieved through promoting compliance with the newly-adopted International Energy Conservation Code (“IECC”) 2009 energy code for four measures (wall insulation, basement insulation, proper insulation of ducts in unconditioned spaces, and fifty percent high efficacy lamp requirement) in order to provide needed guidance to the PAs on the implementation and evaluation costs that may be justified. Compliance enhancement efforts would focus on PAs’ trainings of builders, subcontractors, and code officials as the potential savings presented in
the report focus on homes that do not participate in the Massachusetts New Homes with ENERGY STAR Program.

**Programs to which the Results of the Study Apply:**
- Residential New Construction & Major Renovation (Electric & Gas)
- Low-Income Residential New Construction (Electric & Gas)

**Recommendations Derived from the Study:** There are no recommendations from this study as the main purpose was to derive potential savings from code enhancement efforts for the measures mentioned above.

**How the Study Came to the Recommended Conclusions:** Not Applicable.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:** Not Applicable.

A copy of the complete study can be found in Appendix C, Study 1.

2. Massachusetts New Homes with ENERGY STAR Mystery Shopping (Study 2)

**Type of Study:** Other

**Objective of the Study:** This report presents the findings of ten mystery shopping visits to ENERGY STAR® homes conducted in the summer of 2010. The results presented provide insight into the current marketing strategies of agents listing ENERGY STAR homes, and the effect of program-sponsored trainings on these marketing strategies.

**Programs to which the Results of the Study Apply:**
- Residential New Construction & Major Renovation (Electric & Gas)
- Low-Income Residential New Construction (Electric & Gas)

**Recommendations Derived from the Study:**

| 1 | Continue *Be a Star with ENERGY STAR* trainings. There was a noticeable difference in the knowledge of agents who had attended the training compared to those who had not. The agents who had attended training seemed to understand and market more aspects of their ENERGY STAR listings, and generally spent more time discussing the energy efficiency features of the home. |
2. Expand trainings to include builders. Builders are well versed in their homes’ specific energy efficiency measures and the benefits of those measures, but that knowledge often was not passed on to the developments’ sales representatives. Builders might benefit from training that provides guidance on how to train their own sales representatives to fully market the benefits of ENERGY STAR homes.

3. Focus a portion of trainings on the HERS index and HERS ratings. All ENERGY STAR homes are not created equal, and agents should take advantage of the increased marketability of homes with low HERS ratings.

4. Encourage agents to attend all of the inspection stages of an ENERGY STAR home. This will ensure that agents have a better understanding of both the components (e.g., insulation and duct work) of an ENERGY STAR home, and the thoroughness of the certification process. In addition, by attending the various inspection stages, agents are likely to gain a better understanding of the technical terms (e.g., blower door and duct blaster) that are associated with ENERGY STAR homes.

5. Encourage agents to walk through an ENERGY STAR brochure or fact sheet with potential homebuyers. This simple step will guide potential buyers through the benefits of ENERGY STAR qualified homes, providing technical reference where needed, and it will ensure that the major bullet points of ENERGY STAR homes are covered during every showing.

6. Encourage agents to build on consumers’ preexisting knowledge of ENERGY STAR for appliances and electronics, emphasizing the value of the ENERGY STAR brand name. Agents might have better success marketing these homes by emphasizing to buyers that the ENERGY STAR label for homes is just an extension of the ENERGY STAR label they already know and trust, found on appliances, heating and cooling equipment, lighting and electronic products in their homes.

How the Study Came to the Recommended Conclusions: Recommendations are based on findings from ten mystery shopping visits to ENERGY STAR® homes, conducted in the summer of 2010. Four of the real estate and sales agents visited had recently attended a program-sponsored Be a Star with ENERGY STAR training session (these were the only attendees that had suitable homes for sale at the time of the visits). All ten agents visited were ranked on a scale of zero to ten, where zero was “not at all willing or knowledgeable” and ten was “extremely willing or knowledgeable” in the following four areas: knowledge of energy efficiency, knowledge of ENERGY STAR certification, willingness to use energy efficiency as a selling point, and willingness to use ENERGY STAR certification as a selling point.

Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why: All recommendations above have been adopted and are being incorporated into the program through continuation and enhancement of various training efforts.
A copy of the complete study can be found in Appendix C, Study 2.

3. The Massachusetts New Homes with ENERGY STAR Program 2011 Baseline Phase 1: Completion of Planning (Study 3)

**Type of Study:** Baseline

**Objective of the Study:** This report describes the planning process for the 2011 Baseline Study and the work done to develop a sample of eligible homes to recruit from; on-site inspections will be conducted in the summer of 2011. This study will include on-site inspections of 100 non-ENERGY STAR homes built to meet the new IECC 2009 code, which became mandatory in Massachusetts on July 1, 2010. The results of this study will be used to update the baseline or User Defined Reference Home used in calculating Program savings and to assess building code compliance at the beginning of a code cycle.

**Programs to which the Results of the Study Apply:**
- Residential New Construction & Major Renovation (Electric & Gas)
- Low-Income Residential New Construction (Electric & Gas)

**Recommendations Derived from the Study:** There are no recommendations from this study as the main purpose was to document the planning process of the Baseline study.

**How the Study Came to the Recommended Conclusions:** Not Applicable.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:** Not Applicable

A copy of the complete study can be found in Appendix C, Study 3.

4. Massachusetts 2010 Residential Retrofit and Low Income Evaluation: Mass Save (Study 5)

**Type of Study:** Process

**Objective of the Study:** For the 2010 process evaluation, the Cadmus team focused on assessing program processes and identifying similarities and differences between the perspectives and assumptions of program staff, implementation staff, and customers regarding program goals, design, and implementation. The Cadmus team also reviewed the process by which program data are collected, managed, and reported, including an assessment of the quality and consistency of the program data across PAs.
Programs to which the Results of the Study Apply:

- MassSAVE (Electric & Gas)

Recommendations Derived from the Study:

<table>
<thead>
<tr>
<th></th>
<th>Due to concerns among all stakeholders, the potential integration of Home Performance Contractors (“HPCs”) should occur slowly and in collaboration with PAs, vendors, and program contractors. Clear protocols for and expectations regarding program delivery by HPCs should be developed and disseminated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Consider developing a standard set of tasks and responsibilities assigned to contractors installing measures in a customer’s home, uniform across all PA territories. These would include how jobs are presented to contractors, contractors’ responsibilities, and reports and invoices contractors are expected to submit to vendors upon completion of jobs.</td>
</tr>
<tr>
<td>3</td>
<td>Explore opportunities to assist customers in addressing health and safety issues, as well as knob and tube wiring removal, to further eliminate barriers and improve participation rates. The Cadmus team suggests expanding the existing financing options to cover these critical pre-participation issues.</td>
</tr>
</tbody>
</table>

|   | Develop a standardized identification system for participants, premises, projects, and measures. The consistent use of customer and premise identification associated with the tracking record will allow tracking of historic program activity and activity in other programs. |
|   | Ensure a minimum set of fields is collected and maintained for future evaluation work (see Appendix H). |
|   | Maintain a data dictionary for all critical program datasets that includes all field definitions, value definitions, and the sources of the data. The data dictionaries should be provided as part of all data requests, allowing evaluators (or any other third-party) to decode field names and data values efficiently. The data dictionaries would also ensure internal knowledge of the database is not lost in the event of critical personnel turnover. |
|   | Develop and employ a standardized measure naming convention. The Technical Reference Manual (“TRM”) could be used as the basis for standard names. This convention would allow for improved evaluability and add transparency to the measure-tracking process. The Cadmus team specifically recommends a four-part measure naming convention, which includes varying levels of detail for each program stakeholder, denoting the measure’s end-use, group, type, and detail. Such a measure
naming convention would clearly relate each measure in the program tracking data to its TRM counterpart.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Revisit customer service and follow-up strategies. Although all vendors reported use of a rigorous follow-up procedure, and vendors ensure customer support is readily available when customers call, additional customer service in the form of outreach, regular check-ins, and follow-up phone calls could improve participation and satisfaction.</td>
</tr>
<tr>
<td>6</td>
<td>Consider offering incentives to auditors based on implementation percentages or another participation goal designed to increase follow-through participation.</td>
</tr>
</tbody>
</table>

**How the Study Came to the Recommended Conclusions:** The RCS program evaluation included PA program manager interviews, program vendor staff interviews, program contractor interviews, PA data manager interviews, a data review, and participant interviews. Based on information obtained from these stakeholders, the Cadmus team used its professional judgment and experience evaluating energy efficiency programs to offer recommendations aimed at improving program processes where appropriate.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The integration of HPCs began with a small pilot in 2010. In 2011, the introduction of additional HPCs is being rolled out using information gained from the 2010 pilot. Clear energy assessment, software use and reporting guidelines are in place.</td>
</tr>
<tr>
<td>2</td>
<td>The PAs have developed consistent statewide material and installation standards, as well as, Energy Assessment standards.</td>
</tr>
<tr>
<td>3</td>
<td>The PAs are also exploring the opportunity to expand financing to include the mitigation of health and safety barriers. This will require regulatory approval and will be addressed using proper regulatory avenues.</td>
</tr>
<tr>
<td>4</td>
<td>The PAs are working with the evaluation team to ensure they are better able to aggregate and/or compare measure savings in the future, where possible.</td>
</tr>
<tr>
<td>5</td>
<td>The PAs are developing concrete follow up strategies to ensure constant follow up communication with customers. Many PA lead vendors have already established follow up protocols.</td>
</tr>
<tr>
<td>6</td>
<td>The Company currently offers incentives to auditors. CSG auditors are compensated based on performance and the Company intends on providing a customer acquisition marketing bonus to independent installation contractors and HPCs who solicit a customer and facilitate a completed weatherization job.</td>
</tr>
</tbody>
</table>
A copy of the complete study can be found in Appendix C, Study 5.

5. **2010 Net to Gross Findings: Home Energy Assessment (Study 6)**

**Type of Study:** Impact

**Objective of the Study:** The objective of the study was to develop Net-to-Gross ("NTG") estimates for the Home Energy Services program at the measure level. The Home Energy Services program incorporates both Mass Save and the gas Weatherization programs. The research was designed to include freeridership, participant spillover and non-participant spillover in the analysis.

**Programs to which the Results of the Study Apply:**
- MassSAVE (Electric & Gas)
- Weatherization (Gas)

**Results of the Study and How the Study Determined those Results:**

<table>
<thead>
<tr>
<th>Measure Category</th>
<th>Measure</th>
<th>Participant Free-ridership</th>
<th>Participant Spillover</th>
<th>Non-participant Spillover</th>
<th>NTG</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFL Direct Installs</td>
<td>CFL</td>
<td>22%</td>
<td>19%</td>
<td>0%</td>
<td>97%</td>
</tr>
<tr>
<td>Direct Installs</td>
<td>Air Leak Sealing</td>
<td>7%</td>
<td>0%</td>
<td>0%</td>
<td>93%</td>
</tr>
<tr>
<td></td>
<td>Programmable Thermostat</td>
<td>11%</td>
<td>0%</td>
<td>0%</td>
<td>89%</td>
</tr>
<tr>
<td>Incented Measures</td>
<td>Heating System</td>
<td>28%</td>
<td>0%</td>
<td>0%</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td>Insulation</td>
<td>20%</td>
<td>8%</td>
<td>50%</td>
<td>138%</td>
</tr>
<tr>
<td></td>
<td>Refrigerator</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>Water Heater</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td></td>
<td><strong>18%</strong></td>
<td><strong>7%</strong></td>
<td><strong>23%</strong></td>
<td><strong>112%</strong></td>
</tr>
</tbody>
</table>

The 2010 Home Energy Services program NTG estimates are based on three combined approaches:

1. **Customer Self-Reports.** Customer self-reported Free Rider ("FR") and Participant Spillover ("SP") through surveys of 2010 RCS (electric) and gas Weatherization participants. As shown in Table
1, this analysis considered all program measures. A survey of 1,200 electric and 400 gas participants informed the analysis.

2. **Statistical Market Share Modeling.** Discrete choice modeling of FR and Non Participant Spillover (“NPS”) used 400 gas Weatherization participant and 400 nonparticipant surveys. This analysis did not include the 1,200 electric participants surveyed in fall 2010, as the questionnaire used was not designed for these models. The 2010 NTG analysis also focused on insulation and duct sealing/duct insulation (collectively referred to as insulation), the most important measures in terms of savings.

3. **Trade Ally Research.** Interviews with more than 30 insulation contractors focused on participant and nonparticipant insulation installations, and attribution of self-reported nonparticipant jobs as spillover.

Final participant FR, PS, NPS, and NTG values are composite estimates (rather than a simple average) of the various research methods employed. The estimates were developed using a triangulation process, incorporating the Cadmus teams’ experience, professional judgment, and understanding of the programs.

**How the Results of the Study Impact each Identified Program’s Savings:** The results of this study will be used to derive net energy savings by multiplying the gross reported savings by the NTG factors.

**Formulas Necessary to Understand the Impact of the Study on the PA’s Programs:**

\[
NTG = 1 - \text{[participant freeridership]} + \text{[participant spillover]} + \text{[nonparticipant spillover]}
\]

**If the Results of the Study are Not Adopted, Fully Explain Why:** The results of the study are adopted.

A copy of the complete study can be found in Appendix C, Study 6.

6. **Cross-Cutting Net-to-Gross Methodology Study for Residential Programs – Suggested Approaches (Final) (Study 10)**

**Type of Study:** Process

**Objective of the Study:** The primary objective of this methodology study was to develop suggested approaches for consideration by the PAs for estimating net program impacts for the Massachusetts PAs’ residential programs by reviewing the revised methodology report for C&I programs (2010) and adapting the decision framework and methodology guidelines to programs targeted to
residential customers. The study team particularly sought to identify residential programs for which market-level approaches to measuring net-to-gross effects, rather than standard self-report methods, might be appropriate and feasible.

**Programs to which the Results of the Study Apply:**

- Residential New Construction & Major Renovation (Electric and Gas)
- Residential Cooling & Heating Equipment (Electric)
- Multi-Family Retrofit (Electric and Gas)
- MassSave (Electric and Gas)
- Behavior/Feedback Program (Electric and Gas)
- ENERGY STAR Lighting (Electric)
- ENERGY STAR Appliances (Electric)
- Residential Heating and Water Heating (Gas)
- Weatherization Program (Gas)

**Recommendations Derived from the Study:** The study included suggested methodologies for PAs to consider in future NTG evaluations for the above programs.

**How the Study Came to the Recommended Conclusions:** The evaluation team first conducted a review of the PAs’ current residential programs, focusing on program elements most relevant to methodological decisions regarding the estimation of net effects. As part of the program review, the study team reviewed the three-year plans and information collected from the PAs by the NMR team and interviewed PA staff about their residential programs. Based on the program information garnered from the program review, the Net Savings Scoping Paper, and the decision matrix from the C&I report (adapted to the context of the residential programs), the evaluation developed suggested approaches for consideration by the PAs for estimating net-to-gross effects for each residential program.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:** In general, the Company adopts results from an evaluation study which are supported by the data generated from the study. The Company will incorporate the findings of this study into the planning process for future evaluations of Net-to-Gross ratios for residential programs.

A copy of the complete study can be found in Appendix C, Study 10.

7. **Estimated Net-To-Gross (NTG) Factors for the Massachusetts Program Administrators (PAs) 2010 Residential New Construction Programs,**
Type of Study: Impact

Objective of the Study: The object of the study was to assist the Massachusetts PAs in identifying a reasonable estimated NTG factor for the 2010 Residential New Construction programs; C&I programs; Multi-Family Retrofit and Residential High Efficiency Heating and Water Heating programs.

Programs to which the Results of the Study Apply:
- Residential New Construction and Major Renovation (Electric & Gas)
- Residential Heating and Water Heating (Gas)
- Multi-Family Retrofit (Gas)
- C&I New Construction & Major Renovation (Gas)
- C&I Retrofit (Gas)
- C&I Direct Install (Gas)

Results of the Study and How the Study Determined those Results:

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Recommended NTGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential New Construction</td>
<td>1.00</td>
</tr>
<tr>
<td>C&amp;I Gas</td>
<td></td>
</tr>
<tr>
<td>Custom</td>
<td>0.96</td>
</tr>
<tr>
<td>Prescriptive</td>
<td>0.83</td>
</tr>
<tr>
<td>Residential HEHE and Multi-family</td>
<td></td>
</tr>
<tr>
<td>Boiler controls—HEHE</td>
<td>NTGR 1.0 (Residential)</td>
</tr>
<tr>
<td>Boilers—HEHE</td>
<td>Spillover: 0.14 (Residential)</td>
</tr>
<tr>
<td>Furnace/ECM furnace—HEHE</td>
<td>Spillover: 0.19 (Residential)</td>
</tr>
<tr>
<td>Insulation</td>
<td>NTGR 0.8 (Multifamily)</td>
</tr>
<tr>
<td>Programmable thermostats</td>
<td>NTGR 0.88 (Multifamily) 0.42 (Residential)</td>
</tr>
<tr>
<td>Misc water heating equipment</td>
<td>NTGR 0.63 (Residential)</td>
</tr>
<tr>
<td>Water saving devices</td>
<td>NTGR 0.77 (Multifamily)</td>
</tr>
<tr>
<td>Windows</td>
<td>NTGR 0.8 (Combined MF &amp; Res)</td>
</tr>
</tbody>
</table>

The evaluation contractors (Tetra Tech, NMR, and KEMA) reviewed secondary literature including program impact evaluations, utility filings, and Market Effects studies to develop the above recommendations. Given the short time frame allotted for this work, they focused the search for information on a limited number of readily available sources.

---

5 HEHE is an acronym for the Residential High Efficiency Heating and Water Heating Equipment Program
How the Results of the Study Impact each Identified Program’s Savings: Please refer to the tables in Sections II.A.2 and II.C.2 for each of the programs listed above.

Formulas Necessary to Understand the Impact of the Study on the PA’s Programs: Not Applicable

If the Results of the Study are Not Adopted, Fully Explain Why: The results of the study are adopted.

A copy of the complete study can be found in Appendix C, Study 11.

8. HEHE Process and Impact Evaluation (Study 12)

Type of Study: Process and Impact

Objective of the Study: The objective of the process portion of this study was to assess the effectiveness of marketing efforts, program satisfaction and data tracking. The process evaluation focused on understanding the program: (1) from program implementation and delivery perspectives including program staff, implementation contractors, circuit riders, supply houses, rebate processors, and participating and nonparticipating heating and plumbing contractors; and (2) from end use customer perspectives including program participants and nonparticipants.

Programs to which the Results of the Study Apply:

- Residential Heating and Water Heating (Gas)

Recommendations Derived From The Study:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Drop all current rebates for furnaces, forced hot water boilers, steam boilers, and water heaters</td>
</tr>
<tr>
<td>2</td>
<td>Assess the feasibility of working to effect a change in the state standards for forced hot water boilers to 90% AFUE</td>
</tr>
<tr>
<td>3</td>
<td>Consider a new program for early replacement of newer, less efficient boilers</td>
</tr>
</tbody>
</table>
| 4 | Continue to nurture relationship with contractors because of the key role they play in customer education and energy-efficient equipment purchase and installation.  
  i. The program should evaluate the potential savings from offering an installation incentive to contractors for adhering to energy-efficient |
criteria for equipment sizing, duct testing, and duct sealing.

ii. The program should educate contractors and participants on correct usage of ECM furnace fans, and check settings during verification visits.

iii. The HEHE program can further increase its value to contractors by helping them grow their businesses through energy-efficient installations. Examples of approaches that would be attractive to them include offering co-op advertising and providing referrals.

iv. Make greater efforts to reach out to nonparticipating contractors. Approaches to doing so could include:

   - Facilitating program participation by older contractors. Examples of approaches might be to have exhibits at trade shows that demonstrate installations of high-efficiency systems, and if possible, demonstrate how the installation practices are simply an extension of what techniques they are already familiar with.
   - Increasing the number and frequency of educational offerings.

5 Conduct a survey of distributors in HEHE states and elsewhere to get a better estimate of market-level sales by efficiency level, and the possible long-term spillover both within and outside the HEHE states

How the Study Came To The Recommended Conclusions: The recommendations were based on information gathered during the data collection activities for the process evaluation. These included in-depth interviews with program staff, program implementer staff, program contractors, rebate processing contractors, circuit riders, and supply houses / big box stores; and telephone surveys of HEHE program participants from the 2007-08 and 2009 program years, oil-to-gas conversion customers including HEHE participants and nonparticipants, general population program nonparticipants, participating and nonparticipating contractors, and contractors attending the Fall 2009 HEHE Annual Conference.

Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why: In general, the Company adopts results from an evaluation study which are supported by the data generated from the study.

Lower efficiency furnaces (92% without ECMs) and steam boilers were dropped from the program. Incentive levels for other furnaces (92% and 94% with ECM) and water heaters were dropped as a result of this study. The 85% boiler will no longer be offered starting in January 2012.

The Company as part of GasNetworks believes influencing federal standards is the priority since the state needs federal approval.
The Company reviewed the savings and costs for an early retirement program for newer (less than 20 year old) boilers and it was determined to not be cost effective.

Due to program budget constraints the Company as part of GasNetworks decided not to offer an incentive to contractors. GasNetworks is exploring conducting ECM training in conjunction with CoolSmart. The Company already helps contractors grow their business through energy efficient installations via co-op advertising and though trainings offered through GasNetworks. The Company feels that utilities should not undertake the role of providing referrals.

The Company, as part of GasNetworks, already has exhibits at trade shows and demonstrates installation practices. The Company usually increases the number of training it offers each year.

The Company plans to conduct the survey of distributors in 2011 as part of the Residential Retrofit research area.

A copy of the complete study can be found in Appendix C, Study 112.


Type of Study: Process

Objective of the Study: The overarching goal of the 2010 Deep Energy Retrofit pilot evaluation was to provide the PAs/implementers with actionable findings and recommendations aimed at increasing customer and contractor participation, as well as refining pilot program’s delivery. As the investigations progressed, effort focused on identifying information to aid in formulating a consensus about the pilot’s mission and goals, rather than fine-tuning delivery mechanisms.

Programs to which the Results of the Study Apply:
- Deep Energy Retrofit Pilot (Electric & Gas)

Recommendations Derived from the Study:

| 1 | Restructure and refocus the pilot. The pilot is primarily focused on completing projects. Though pilot performance will clearly fall short of the cost-effective energy saving goals, it is still valuable. The Cadmus team recommends restructuring the pilot as a research effort with a voluntary board and implementation team (both of which could include PA members) and refocusing the research on activities that will lead to a scalable program. Resolving some inherent policy issues and establishing a pathway to lowering costs and overall cost-effectiveness should be a near term focus |
Seek to fill program gaps. Customers, as well as some stakeholders, have identified the need for energy efficiency services that fill the gap between basic PA programs (e.g., Home Energy Assessment) and comprehensive deep retrofits: Two possible solutions are:

Partial deep retrofits. Identify a DER track that meets the needs of customers who are prepared for a major project but are not willing or able to commit to all the requirements of a comprehensive DER project. This could be accomplished by providing incentives for deep retrofits of one building system at a time, possibly when normal maintenance would take place, such as re-roofing, re-siding, or window replacements. Such partial deep retrofits, with much smaller up-front costs, might attract a larger number of homeowners, and would greatly reduce the size of an incentive provided to any one customer.

Deep (but not as deep) retrofits. As reported by several PAs and also in the Massachusetts Clean Energy and Climate Plan for 2020, there is need for a middle ground between the level of savings provided by the current relatively low-cost programs and the very high savings achieved at a high cost in the pilot homes. Customer re-roofing and re-siding events present opportunities for additional savings at a relatively low cost.

How the Study Came to the Recommended Conclusions: The process evaluation included interviews with 40 of the approximately 120 participating customers (including in process, completed and drop-out participants), fifteen contractors, and nine stakeholders. Pilot material was reviewed, including marketing material, websites, and project files. Based on the information obtained, the Cadmus team used evaluation experience to offer recommendations aimed at improving program processes where appropriate.

Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why: It is both evident in this report and in practice that deep energy retrofits are extremely complex projects and require additional research and cost-effectiveness study for it to be a viable initiative as a stand alone program or for its complex measures to be incorporated into existing programs going forward. The Company supports the idea of further research in this area to better quantify incremental costs of these deeper savings measures and to focus on what can be done to reduce the costs associated with complex efforts such as this. Future study should provide PAs with data on the true incremental costs, as well as quantification of all the program benefits (energy, non-energy, and other resources) associated with these projects.

The Company is fully supportive of filling program gaps by implementing deeper measures within programs. However, the Company believes these measures need
to be deemed cost-effective before they can be mainstreamed through programs such as the Home Energy Services program.

A copy of the complete study can be found in Appendix C, Study 13.

C. **Low-Income Studies**

1. **Final Report for Low Income Program – Massachusetts 2010 Residential Retrofit and Low Income Evaluation (Study 18)**

**Type of Study:** Process

**Objective of the Study:** For the 2010 process evaluation, the Cadmus team focused on assessing program processes and identifying similarities and differences between the perspectives and assumptions of program staff, implementation staff, and customers regarding program goals, design, and implementation. The Cadmus team also reviewed the process by which program data are collected, managed, and reported, including an assessment of the quality and consistency of the program data across PAs.

**Programs to which the Results of the Study Apply:**
- Low-Income 1-4 Family Retrofit (Electric and Gas)
- Low-Income Multifamily Retrofit (Electric and Gas)

**Recommendations Derived from the Study:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To address any concerns related to funding and resource management, PAs and lead Community Action Program (“CAP”) agency could increase communication during the goal-setting processes, and track spending throughout implementation.</td>
</tr>
<tr>
<td>2</td>
<td>The PAs should schedule a meeting or series of meetings in coordination with LEAN for the express purpose of clearly defining standardization and integration objectives for the program. Once the definition of standardization is communicated and agreed upon, strategies should be determined for meeting those objectives over a specified time period. This will ensure all stakeholders work toward commonly agreed upon objectives, and enhance progress toward meeting objectives to be measured.</td>
</tr>
<tr>
<td>3</td>
<td>The PAs should strongly consider all options for creating a streamlined, independent, third-party QA/QC process that serves the needs of the PA-funded program, while minimizing participant intrusion. Such a process could reduce existing inefficiencies including the potential number of visits to participants’ homes, ensure CAPs do not perform quality control on their own projects, free up CAP auditors’ time to reach more low income participants.</td>
</tr>
</tbody>
</table>
customers, and align this program’s QA/QC process with that proposed for the Home Energy Assessment program. This does not necessarily have to be an additional QA/QC process, just a streamlined process that is collaborative in nature.

### 4. Data Dictionary

The PAs should maintain a data dictionary for all critical program datasets that includes all field definitions, value definitions, and the sources of the data. The data dictionaries should be provided as part of all data requests thereby allowing evaluators (or any other third-party) to decode field names and data values efficiently. The data dictionaries would also ensure internal knowledge of the database is not lost in the event of critical personnel turnover. Once created, draft data dictionaries should be circulated among the low income working group to ensure that all PAs are collecting the same data and using the same naming conventions whenever possible. If such data dictionaries do not exist, the Data Management Working Group established as part of the 2011 Residential Retrofit and Low Income evaluation could assist with their creation.

### 5. Minimum Set of Critical Data Fields

The PAs should ensure the collection and availability of a minimum set of critical data fields for current and future evaluation work.

### 6. Standard Audit Data Fields

The PAs should consider mandating that a standard set of critical audit data fields be entered into an electronic format and maintained/archived for future internal and external use. The PAs should collaborate with the CAPs and the evaluators to identify valuable audit information not currently maintained electronically.

### 7. Field Technician Collection

The PAs should also explore the potential of having field technicians use electronic hardware (a PDA or laptop) to collect and enter onsite data whenever possible. This approach would minimize manual data entry, reduce program administrative costs, and improve data quality through the institution of unique keys, foreign key constraints, lookup tables, and other database design best practices.

### 8. Measure ID System

The PAs should work collaboratively on integration of a common Measure ID system to allow tracking of each installed measure from the participant tracking database to the BCR input sheet and to the TRM. In addition, PAs should develop and maintain standardized ID fields (standardized internally, not across PAs) linking data across programs, customers, contractors, and billing data.

### 9. Measure Naming Convention

Through a collaborative process with the PAs and the TRM working group, continue to develop and employ a standardized measure naming convention for all PAs and CAPs. The TRM should be used as a basis to develop standard names and codes. A naming convention would allow for faster and more accurate statewide reporting, improve evaluability, and add transparency to the measure tracking process. The Cadmus team specifically recommends consideration of a four-part measure naming convention that includes varying levels of detail for each program stakeholder: denoting the measure’s end-use, group, type, and detail. Examples of several common program measures are provided in the report.
**How the Study Came to the Recommended Conclusions:** The Low Income Program evaluation included PA program manager interviews, CAP agency staff interviews, PA data manager surveys, a data review, and participant interviews. Based on information obtained from these stakeholders, the Cadmus team used its professional judgment and experience evaluating low income programs to offer recommendations aimed at improving program processes where appropriate.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:** In general, the PAs adopt results from an evaluation study which are supported by the data generated from the study.

The PAs already track spending throughout the implementation. Starting in July 2011, for 2012 goal setting, PAs and LEAN will start discussions about budgets and savings goals in advance of the program year.

The PAs will use the Best Practice Meetings to clearly define standardization and integration objectives for the program and a timeline.

There is already a new QA/QC process being initiated that would minimize the number of visits to customer homes.

The PAs will explore the potential of having field technicians use electronic hardware to collect and enter onsite data. There is some current use of handheld devices for auditors. Due to the high cost and since some of the audits requiring the auditors to crawl into small spaces, it may not be feasible.

The PAs are working with the evaluation team to ensure in the future we are better able to aggregate and/or compare measure savings where possible.

A copy of the complete study can be found in Appendix C, Study 18.

**D. C&I Studies**

1. **Massachusetts Non-Residential Small Business Direct Install Program: Multi-Tier Structure Assessment 2010 Process Evaluation (Study 20)**

**Type of Study:** Process

**Objective of the Study:** The main objective of the Multi-Tier Program Structure Assessment is to document progress towards statewide integration of the C&I Direct Install programs during 2010, and to gauge customer interest in different program design options such as varying incentive levels, zero interest financing, and on-bill financing options. The assessment is also designed to gather
information related to program satisfaction and awareness. In particular, the evaluation sought to address the following research questions:

- What kind of program changes has each PA implemented? How is this process going? What are the challenges? How do customers and market actors view these changes?

- How is the integration of electric and gas progressing? What are the challenges? What is being done to overcome them?

- How has the workload of PA program staff and vendors changed as integration and standardization of the Small Business Direct Install program has moved forward?

- What is the level of program awareness and customer satisfaction with the program? What are the barriers to participation and what are the most important factors in participant decision making around participation.

**Programs to which the Results of the Study Apply:**
- C&I Small Retrofit (Electric and Gas)

**Recommendations Derived from the Study:**

|   | Use the Direct Install program facility audit as a way to disseminate information about other PA C&I programs. In the process, identify for customers the equipment or systems that may need replacement in the future. |

**How the Study Came to the Recommended Conclusions:** The recommendation presented above is based on results from quantitative telephone surveys with participating customers, as well as a review of program materials and in-depth interviews with PA program staff and vendors. In-depth interviews provided the evaluation team with a comprehensive understanding of the audit process while a review of program materials further contributed to knowledge of what the program currently provides onsite. The survey with 2009 and 2010 program participants allowed the team to assess the degree to which participating customers receive information about other PA programs.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:** PAs began addressing the recommendation from this study in the second half of 2010, following an initial focus on integrating electric and gas measures during the first 8 months. An audit checklist was developed that program vendors use to note the existence and condition of energy consuming equipment outside the standard prescriptive measures offered. PAs and their
vendors are using the information gathered to inform direct install program participants of other C&I programs that can be accessed.

Future evaluation work during 2011 and 2012 should allow examination of the effectiveness of this approach in motivating direct install program participants to undertake additional energy efficiency projects by channeling them to other C&I programs. This may be accomplished through a combination of additional process interviews and mining of data from PA program tracking database systems.

A copy of the complete study can be found in Appendix C, Study 20.

2. **FINAL Commercial New Construction Customer Quantitative Profile**  
   Project 1A New Construction Market Characterization (Study 22)

**Type of Study:** Market Assessment

**Objective of the Study:** The overarching objective of all LCIEC Market Characterization studies is: “To define the attributes of a specific market area in enough detail that the program planners and administrators can use the information for improving program implementation.” The principal research objectives of the Commercial New Construction Customer Quantitative Profile are:

1. Develop a comprehensive characterization of the large C&I new construction market in Massachusetts, in terms of building type, size, ownership, geographic location, chain or franchise status, and energy use.

2. Assess how the trends for large C&I projects have changed over the past 15 years.

3. Characterize the presence of the PAs new construction projects in the market in terms of the number of projects that participated in them and the portion of floor space and energy use they represent in key commercial market segments.

**Programs to which the Results of the Study Apply:**
- C&I New Construction and Major Renovation (Electric and Gas)
- C&I New Construction and Major Renovation - Government (Electric)
- C&I Large Retrofit (Electric and Gas)
- Large C&I Retrofit – Government (Electric)

**Recommendations Derived from the Study:** None.
How the Study Came to the Recommended Conclusions: The LCIEC team acquired and analyzed the entire F. W. Dodge Players Database for non-residential construction projects for the State of Massachusetts for the years 1996 through 2009. The Dodge Players database contains retrospective information on C&I construction projects that, according to Dodge, have begun construction. A sample of new construction projects from the Dodge Database were matched with PA billing data and program tracking data to characterize the new construction market and assess program penetration.

Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why: Not Applicable.

A copy of the complete study can be found in Appendix C, Study 22.

3. Supply Chain Profile Project 1A New Construction Market Characterization (Study 23)

Type of Study: Market Assessment

Objective of the Study: The overarching objective of all LCIEC Market Characterization studies is: “To define the attributes of a specific market area in enough detail that the program planners and administrators can use the information for improving program implementation.” The principal research objectives of the New Construction Supply Chain Profile are:

- Characterize the design, engineering, and construction management firms involved with recent large commercial construction projects in Massachusetts.
- Characterize the design and specification practices with regard to energy efficiency.
- Assess changes in design and specification practices as a result of contact with the program.
- Assess awareness and participation in new construction programs offered by the PAs.

Programs to which the Results of the Study Apply:

- C&I New Construction and Major Renovation (Electric and Gas)
- C&I New Construction and Major Renovation - Government (Electric)
- C&I Large Retrofit (Electric and Gas)
- Large C&I Retrofit – Government (Electric)
**Recommendations Derived from the Study:** The New Construction Supply Chain Profile recommendations are provided in the following table. For a more detailed discussion please refer to the full report.

<table>
<thead>
<tr>
<th>Recommendation Summaries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Consider alternative incentive approaches such as tiered incentives for higher levels of efficiency. Consider expanding financial or technical assistance offerings for life cycle cost analysis to demonstrate the longer term value of accepting higher first costs.</td>
</tr>
<tr>
<td><strong>2</strong> Improve the value of technical assistance offerings by being consistently engaged with project design teams. The impact of the utility intervention is not fully realized because information about incentives and alternative technologies choice is not delivered on time to design teams. Modeling firms need to quickly upgrade models and turnaround results to customers.</td>
</tr>
<tr>
<td><strong>3</strong> Assist architects and engineers in understanding appropriate high performance building envelope design strategies for the Massachusetts climate. We suggest a two pronged approach to advance high performance envelope design: 1) Convene a working group consisting of stakeholders to study the challenges associated with high performance building envelope design, and 2) based on input from the working group, commission a study of advanced building envelope designs beyond what is required by code and provide examples of appropriate, high performance designs for Massachusetts.</td>
</tr>
<tr>
<td><strong>4</strong> Continue to build upon educational seminars, similar to Advanced Building seminars, to provide education and programmatic support on integrated design and whole building performance.</td>
</tr>
<tr>
<td><strong>5</strong> Streamline the application process by reducing the amount of paperwork that is required for participation.</td>
</tr>
<tr>
<td><strong>6</strong> Establish contacts within the top 25 architects, design engineers and construction management firms.</td>
</tr>
</tbody>
</table>

**How the Study Came to the Recommended Conclusions:** The New Construction Supply Chain Profile included the following research activities:

- Examination of the F. W. Dodge Players Database for non-residential construction projects in Massachusetts.

- In-depth Interviews with:
- 31 architects,
- 11 design engineers, and
- 9 construction engineers.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:** The Program Administrators accept the results of the study and are considering all recommendations at this time. The recommendations resulting from this study are based on solely on interviews with market actors in the commercial new construction market and therefore do not necessarily provide an objective view of the programs.

A copy of the complete study can be found in Appendix C, Study 23.

4. **Final Report Project 1B Chain & Franchise Market Characterization (Study 24)**

**Type of Study:** Market Assessment

**Objective of the Study:** The overarching objective of all LCIEC Market Characterization studies is: “To define the attributes of a specific market area in enough detail that the program planners and administrators can use the information for improving program implementation.” The principal research objectives of the Chain & Franchise (“C&F”) Market Characterization are:

1. Characterize the C&F market in Massachusetts, including estimates of size and key segments (big box, retail, restaurant, etc).

2. Identify the key decision-maker at C&F customers and the major barriers to the adoption of energy efficiency measures

3. Understand the decision-making process, in particular free-ridership, regarding energy efficiency at C&F businesses in Massachusetts and in comparable non-program states.

4. Assess the current level of program participation and methods to increase participation.

5. Identify the opportunities for increased energy efficiency through on-site inventories of building shell characteristics, end use technologies, and missed opportunities.

**Programs to which the Results of the Study Apply:**
- C&I New Construction and Major Renovation (Electric and Gas)
• C&I New Construction and Major Renovation - Government (Electric)
• C&I Large Retrofit (Electric and Gas)
• Large C&I Retrofit – Government (Electric)

Recommendations Derived from the Study: There are no recommendations for program changes resulting from the study.

How the Study Came to the Recommended Conclusions: This project included the follow research activities:

• Literature Review of existing C&F studies.
• Re-analysis of interview data from past NSTAR C&I program impact evaluations in order to investigate potential differences in free-ridership and spillover rates of C&F and non-C&F participants.
• A Customer Quantitative Profile of the C&F Market. This analysis characterizes the size and composition of the population of Massachusetts’ C&F customers.
• In-depth Interviews with:
  o PA National Account Managers
  o C&F company managers.

Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why: There are no recommendations for program changes resulting from the study.

A copy of the complete study can be found in Appendix C, Study 24.

5. Project 6B Comprehensive Design Approach Process Evaluation (Study 27)

Type of Study: Process

Objective of the Study: This process evaluation had two research objectives. The first was to examine whether the Comprehensive Design Approach (“CDA”) tracks that are being delivered by National Grid, Western Massachusetts Electric Company (“WMECo”) and NSTAR are meeting their primary goals. These primary goals are to: 1) maximize energy and demand reduction in new construction projects; and 2) influence energy efficiency best practices in the commercial design sector.

CDA is a track within the custom C&I New Construction and Major Renovation programs offered by these PAs. It is an integrated approach that is ideally initiated at the beginning of the building design stage in order to ensure that cost-effective
energy efficiency opportunities are incorporated such that energy use reduction of twenty percent or more is achieved relative to the requirements of state building code. The CDA track also offers financial incentives that are usually larger than those offered by prescriptive or the traditional custom new construction programs. The second research objective was to conduct a comparative study of the Advanced Buildings (“AB”) track. This study compares the AB tracks delivered by the Massachusetts PAs to those delivered in Maine and Vermont. The AB track is similar to CDA but it targets smaller buildings within the commercial new construction market and aims to simplify and expedite the participation process by using standardized incentive and savings assumptions. In order for customers to receive monetary incentives through the AB track, they must incorporate a series of thirteen Core Performance requirements into their building designs.

Programs to which the Results of the Study Apply:
- C&I New Construction and Major Renovation (Electric and Gas)
- C&I New Construction and Major Renovation - Government (Electric)

Recommendations Derived from the Study: The following are two different sets of recommendations, one for the CDA track and one for the AB track.

<table>
<thead>
<tr>
<th>Recommendation Summaries for CDA Track</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Reduce the costs associated with the energy modeling study required for the CDA or alter the payment arrangement so that it is less burdensome on the customer upfront. Although technical study costs are split between the PA and the customer, it is still an upfront cost that is incurred by the customer that would not necessarily be faced if a non-comprehensive program track were used. A possible solution would be for the PA to initially absorb the cost of the study, and then deduct the amount from the final incentive offer. This would relieve the customer of the burden of facing an upfront cost to participating in CDA.</td>
</tr>
<tr>
<td>2 Use a variety of marketing methods to inform customers of the CDA track, including printed materials and communication via AEs. In the process, make sure to inform customers of the relative benefits of CDA over competing approaches that may be simpler to use, but result in smaller long term energy savings and offer lower incentives. These marketing methods are needed to address key barriers to using the CDA track include a lack of customer awareness about the CDA track and competition with alternative energy efficiency programs that may be simpler or faster to use.</td>
</tr>
<tr>
<td>3 Since AEs are usually the first to hear about new construction projects, the Sponsors should ensure that they are well informed about the CDA track so that they can explain the program requirements and benefits to customers when they are first in contact about a potentially qualifying project. AEs are in a unique position to</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>4</strong></td>
</tr>
<tr>
<td><strong>5</strong></td>
</tr>
<tr>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>7</strong></td>
</tr>
<tr>
<td><strong>8</strong></td>
</tr>
<tr>
<td><strong>9</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>
Implementation plan takes advantage of the favorable environment of “green building.” Efficiency Vermont, for example, supports the construction of Advanced Buildings with press releases, letters of recognition and NBI certification plaques. These elements of green advertising are particularly attractive to institutional customers, such as universities, who place significant value upon their public image. In Massachusetts, however, none of these green marketing strategies were observed among the implementation activities.

3 **Emphasize importance of long-term savings:** While there is no remedy for the downturn in new construction, it is possible to mitigate the budgetary concerns of customers. A successful program design may benefit from shifting the emphasis from incentives to long-term savings.

4 **Maintain interest with follow-up communications:** It is important for program staff to take a proactive approach in maintaining customer and design team interest. Program staff can’t afford to wait for the owner or design firm to call when the critical steps are being made. Staff has to stay on top of the project and do its own duty to ensure that the owners and design team are staying on track.

5 **Improve lead tracking:** A cohesive system of documenting and monitoring the status of program leads is important to the success of program implementation. For example, Efficiency Maine employs Efficiency Reporting & Tracking, an online database, to track project leads, contact and status descriptors. Among the PAs program staff did not use such a method of tracking prospective customers. In the case of National Grid and NSTAR, information such as customers contacted, outreach efforts, and lead status are not linked to their respective tracking system, InDemand or eTrack. According to program managers, the progress and status of project leads is documented in a spreadsheet, which is typically not shared among various levels of staff.

6 **Minimize customer burden:** One of the greatest deterrents to program participation has been apprehension regarding the application process. Therefore an effective implementation strategy should make it well known to customers and design firms that staff will be available to assist in filling out application forms and understanding program requirements. The Efficiency Maine staff said they made ease-of-use a selling point for potential customers.

7 **Take advantage of American Institute of Architects (“AIA”) continuing education requirements:** An excellent method of engaging the design community is to take advantage of the AIA continuing education requirements. In order to attract design firms, some implementers offer Advanced Buildings seminars paired with continuing education courses valid for credit towards the continuing education requirement. Under the current MassSave platform, attendees may earn four AIA Learning Units but are required to pay $199 per session. PAs
<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td><strong>Anticipate advancements in code and standard practice:</strong> The National Building Institute (“NBI”) – which develops rules for the AB track -- has not been diligent in maintaining AB requirements that exceed building code to a satisfactory degree. The PAs have been active in pushing NBI to keep their product ahead of the model codes. The PA should continue to push NBI to maintain program requirements well ahead of recent code developments and standard building practices.</td>
</tr>
<tr>
<td>9</td>
<td><strong>Present the AB track as a learning opportunity for design firms:</strong> One interviewee suggested that the architects and engineers who work on AB projects are not necessarily of the same caliber as those who work on CDA projects. The program can advertise the expertise brought by experienced program staff as a means of attracting design teams to working with the program.</td>
</tr>
<tr>
<td>10</td>
<td><strong>Discuss ideas with design team before presenting them to the customer:</strong> The actions of program staff have shown that it is best to work out any suggestions or changes to the design plan prior to engaging the customer in significant decisions regarding energy efficiency measures. Such consideration is useful in maintaining the support and cooperation of the involved design firms.</td>
</tr>
<tr>
<td>11</td>
<td><strong>Maintain “soft cap” on building size:</strong> Program staff has been receptive towards accommodating a wide range of buildings types, regardless of whether or not the building exceeds stipulated size guidelines. The AB track is offered as an option even for those building greater than 100,000 square feet so that customers are never reluctantly pushed towards the CDA track as the result of size requirements. It is the responsibility of NBI to issue some guiding principles regarding how such offers or exceptions should be framed.</td>
</tr>
<tr>
<td>12</td>
<td><strong>Investigate “box” retail stores as a potential customer segment:</strong> It is recommended that NBI examine the designs of various large retailers with respect to code requirements to identify any buildings that are performing below their potential efficiency. If certain big box stores are not using an efficient building design, program staff should investigate the contributing factors and explore opportunities for program participation. Program implementers can exploit these inefficient building designs and possibly tap into a new customer segment.</td>
</tr>
<tr>
<td>13</td>
<td><strong>Consider the benefits of a common platform:</strong> Under the MassSave initiative, the PAs have already taken the first steps in creating such a platform. It is unlikely, however, that various implementers will come to a consensus because there are obvious difficulties in making uniform the AB platform. While it is assumed that the MassSave platform is working with the PAs to attain uniformity in implementation, design and marketing, the evaluation team feels that this objective is worth restating in the specific context of program branding.</td>
</tr>
</tbody>
</table>
How the Study came to the Recommended Conclusions: Both the CDA and AB process evaluations relied primarily on in-depth interviews for their program findings. These evaluations completed 58 in-depth interviews with:

- Participating and non-participating customers;
- Participating design teams;
- PA C&I new construction program managers and staff;
- PA AEs;
- PA technical staff;
- Technical assistance consultants; and
- AB program managers and staff in Massachusetts, Maine, and Vermont and other AB program actors.

The evaluations also reviewed 24 new construction projects for a case study analysis. Finally the evaluators also reviewed program tracking databases, program marketing materials, and other program documents.

Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why: All recommendations are being considered for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes program design and operations.

A copy of the complete study can be found in Appendix C, Study 27.

6. Project 7 General Process Evaluation Final Report (Study 29)

Type of Study: Process

Objective of the Study: The objective of this process evaluation was to look at ways to improve the design and delivery of Massachusetts C&I energy efficiency programs that would be applicable to multiple programs. Issues that the PAs and the EEAC were particularly interested in included how to increase program participation levels, how to obtain deeper energy savings from energy efficiency projects, how to improve the integration of electric and gas energy efficiency programs, and how to increase the general uniformity of program delivery across the state.

Programs to which the Results of the Study Apply:

- C&I New Construction and Major Renovation (Electric and Gas)
- C&I New Construction and Major Renovation - Government (Electric)
- C&I Large Retrofit (Electric and Gas)
- Large C&I Retrofit – Government (Electric)

### Recommendations Derived from the Study:

<table>
<thead>
<tr>
<th>#</th>
<th><strong>Recommendation</strong></th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Increase AE and technical advisor staffing levels:</strong></td>
<td>Interviewees with nearly all the PAs cited the need for additional staff to help achieve the expanded program savings goals. Adding AEs will allow more face-to-face meetings with customers, which should yield more projects. Adding technical staff will speed up the project technical analysis process (which was too slow according to some interviewees) and will help make up for the lack of technical knowledge among some AEs.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Increase program incentive levels and limits:</strong></td>
<td>Many interviewees recommended increasing incentives in order to recruit more projects and achieve deeper savings. Raising the limit on the cumulative incentive allowed per project would help C&amp;I customers overcome barriers to participation related to lack of capital. Raising the maximum $/unit (kWh or therms) will encourage customers to install longer-payback measures which are critical to achieving the expanded program savings goals.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Offer turnkey financing:</strong></td>
<td>Nearly all program staff and AEs cited the lack of capital as the primary barrier preventing customers from moving forward with projects. A turnkey financing program to provide financing for eligible efficiency projects would help C&amp;I customers overcome the important lack-of-capital barrier. In 2011 the PAs are preparing to launch several prescriptive load products for C&amp;I customers that would buy down the interest rate to 0%.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Improve the design of marketing materials:</strong></td>
<td>The AEs recommended that program marketing materials be easier to understand and make greater use of case studies and testimonials.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Organize AEs by industry sector:</strong></td>
<td>At least for the larger PAs, it may be more productive to organize all AEs by industry sector (e.g., vs. by geography). If AEs are only responsible for understanding a few select industries, this should improve their level of technical and business knowledge for those industries.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Tie AE performance to program energy savings:</strong></td>
<td>PAs should consider tying AE bonuses to the level of savings achieved by the projects completed by their customers. Although some PAs currently do consider energy efficiency programs in AE performance assessments, it is not tied to a specific energy savings goal. Only one third of the AEs reported that the current performance structure clearly motivates them.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Systematize the process for making requests for technical assistance:</strong></td>
<td>A common complaint among AEs was that technical staff members did</td>
</tr>
</tbody>
</table>
not reply promptly to their requests for technical assistance. AEs suggested establishing a central email inbox that technical staff can access and respond to questions. It would also be useful to develop clear guidelines for responding to most technical requests within a certain timeframe so that AEs can notify their customers when to expect a response.

8   Help large C&I customers establish long-term commitments to energy efficiency: At least one PA is developing multi-year non-binding commitments with the corporate management of their large C&I customers to establish specific energy-saving goals. An efficiency plan should lead to longer-term consistent budgeting for energy projects and draw the attention of higher-level management.

**How the Study Came to the Recommended Conclusions:** These conclusions and recommendations are primarily based on 28 in-depth interviews with C&I program staff, AEs, and utility technical staff. These interviews were conducted in September and October 2010 and included representatives from seven different PAs.

**Explain Why Or Why Not The Program Administrator Decided To Adopt Recommendations From The Study:** The PAs have reviewed the recommendations resulting from this study. As stated in recommendation three, the PAs are now offering financing mechanisms to help address our customer’s capital constraints. All other recommendations are being considered for adoption by the PAs at this time.

A copy of the complete study can be found in Appendix C, Study 29.

7. **Cross Cutting C&I Free-Ridership and Spillover Methodology Study Final Report (Study 34)**

**Type of Study:** Process

**Objective of the Study:** Programs to which the Results of the Study Apply: The focus of this study was on the general methods for estimating what would have happened absent C&I programs in Massachusetts. The net program effect is the observed effect, less the estimate of what would have happened absent the program. The objectives of this study were to develop a standardized methodology for situations where C&I end-users are able to report on program impacts via self-report methods, and to provide a decision framework and guidelines for when the standardized self-report methodology is appropriate and when other methods need to be used (e.g., upstream programs).
Programs to which the Results of the Study Apply:

- C&I New Construction and Major Renovation (Electric & Gas)
- C&I New Construction and Major Renovation—Government (Electric)
- C&I Large Retrofit (Electric)
- C&I Large Retrofit—Government (Electric)
- C&I Small Retrofit (Electric)
- C&I Small Retrofit—Government (Electric)
- C&I Retrofit (Gas)
- C&I Direct Install (Gas)

Recommendations derived from the study: There were no recommendations derived from this study, rather, the study suggested methodologies for PAs to consider in future NTG evaluations.

Explain Why Or Why Not The Program Administrator Decided To Adopt Recommendations From The Study: In general, the Company adopts results from an evaluation study which are supported by the data generated from the study. The Company will incorporate the findings of this study into the planning process for future evaluations of Net-to-Gross ratios for Commercial & Industrial programs.

A copy of the complete study can be found in Appendix C, Study 34.

8. Prescriptive Condensing Boiler Impact Evaluation Project 5 Prescriptive Gas (Study 35)

Type of Study: Impact

Objective of the Study: The objective of this impact evaluation was to develop annual gas savings impacts for all five size categories of prescriptive condensing boilers installed through the C&I gas programs.

Programs to which the Results of the Study Apply:

- C&I New Construction and Major Renovation (Gas)
- C&I Large Retrofit (Gas)

Results of the Study and How the Study Determined those Results: The study produced impact estimates for condensing boilers in all size categories. The results were also presented as realization rates to apply to prescribed savings provided in the 2011 Program Year TRM.
The results were developed using telephone and on-site sample interview results to update estimates of site-level savings. The updated results were combined in a ratio estimator framework to produce estimates of realization rates and impacts.

**How the Results of the Study Impact each Identified Program’s Savings:** Please refer to the tables in Section II.C.2 of the Gas Energy Efficiency Annual Reports for each of the programs listed above.

**Formulas Necessary to Understand the Impact of the Study on the PA’s Programs:** The report provides realization rates and updated unit level savings estimates for:

- Condensing boiler <= 300 mbh
- Condensing boiler 301-499 mbh
- Condensing boiler 500-999 mbh
- Condensing boiler 1000-1700 mbh
- Condensing boiler 1701+ mbh

The formulas necessary to understand the impacts are described in the TRM.

**If the Results of the Study are Not Adopted, Fully Explain Why:** All results have been adopted by the Program Administrators.

A copy of the complete study can be found in Appendix C, Study 35.

---

**E. Special and Cross Sector Studies**

1. **Industry Practices and Policies on Energy Efficiency Program Rebate/Incentives (Study 36)**

**Type of Study:** Process

**Objective of the Study:** Tetra Tech and the Energy Center of Wisconsin (ECW) (“the research team”) conducted a high-level scoping study of statewide energy efficiency program incentive and rebate levels to help inform the policy debate for statewide programs in Massachusetts and to support fourth quarter 2010 programmatic planning.

**Programs to which the Results of the Study Apply:**

- ENERGY STAR Lighting (Electric)
- Residential Cooling and Heating Program (Electric)
- Residential Heating and Water Heating (Gas)
- Residential Weatherization (Gas)
- C&I Large Retrofit (Electric)
- C&I Large Retrofit—Government (Electric)
- C&I Small Retrofit (Electric)
- C&I Small Retrofit—Government (Electric)
- C&I Retrofit (Gas)
- C&I Direct Install (Gas)

**Recommendations derived from the study:** The study presented key findings without specific recommendations. The key findings indicated that residential incentives and rebates in Massachusetts were not consistently higher or lower than those in the other states programs. Those incentives that were not in the mid-range when compared to other industry programs included:

- Residential gas furnace incentives in Massachusetts are among the higher incentives offered and are currently under review. Massachusetts also ranked the highest for hot water boiler rebates.
- Massachusetts weatherization incentives fall in the upper half of offerings, but these are complex programs and difficult to compare.
- Massachusetts commercial rebates examined for lighting were on the low end of lighting rebates offered in other states.
- The Massachusetts small business incentive at 70 percent of installed cost of existing building projects is higher than two other state programs and higher than the cap on custom incentives for large commercial projects.
- Massachusetts rebates appear to be at the high end of offerings in other states for hot-air furnaces.

**Explain Why Or Why Not The Program Administrator Decided To Adopt Recommendations From The Study:** Not Applicable

A copy of the complete study can be found in Appendix C, Study 36.

2. **Community Based Partnership Interim Process Evaluation (Study 37)**

**Type of Study:** Process

**Objective of the Study:** The overall objectives of the evaluation are to assess the effectiveness of each community-based partnership that falls within the scope of the evaluation and determine their potential for replication and/or full-scale implementation.
As the evaluation of community-based partnerships is still ongoing, the *Interim Process Evaluation* provides an overview of each effort’s structure and performance against the goals and presents findings from the research activities already conducted with a goal of providing early feedback and identifying areas for program improvement early on. The report also presents comparative analysis of community-based efforts under evaluation with the goal of developing best practices for design and implementation of such efforts.

**Programs to which the Results of the Study Apply:**

- Renew Boston (Electric and Gas)
- Western Mass Saves Challenge (Electric)
- New Bedford Community Mobilization Initiative (Electric and Gas)

**Recommendations Derived from the Study:**

<table>
<thead>
<tr>
<th>Overarching Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Articulate program design to reflect the target market</strong> – when planning and designing a community outreach effort, it is important to lay out what each partnership is intending to accomplish, why such an effort is needed for a specific population, and how they fit into existing programs. This will help ensure that the target audience and barriers are clearly documented, and the most effective interventions are selected.</td>
</tr>
<tr>
<td><strong>Draw on the strengths of local and existing resources and ensure that the community group efforts align with partnership goals</strong> – while there is no right or wrong model for structuring a community engagement network, it is important to consider the existing infrastructure and the amount of resources required to engage the network when planning and designing a community-based effort. A full analysis of the financial and local resources may also enhance these efforts. In addition, program leaders or organizers should focus local organizations on their strengths and, where relevant, consider the sustainability of the effort if this is a desired outcome.</td>
</tr>
<tr>
<td><strong>Understand the unique nature of the target market</strong> – community-based efforts could benefit from bringing together local knowledge on the front end and revisiting the existing program designs to ensure that they are anticipating unique characteristics in the population to the extent that they can prior to fielding the effort. This would include looking beyond the assumed cultural barriers to understand what other logistical or technical barriers may present a challenge to program implementation in the specific market (and finding resources to overcome these challenges). Pre-screening communities and their barriers will be useful to this effort.</td>
</tr>
<tr>
<td><strong>Tracking information to help improve efforts and demonstrate success</strong> – tracking core performance metrics is integral to the success of any effort.</td>
</tr>
</tbody>
</table>
Effective tracking is essential to measuring milestones and progress, as well as energy impacts of community-based efforts. When designing and implementing community-based efforts, stakeholders should carefully consider which performance metrics to track, and develop mechanisms to track them, while balancing this effort with resource constraints.

**How the Study Came to the Recommended Conclusions:** The findings presented in the study were developed through analysis of program materials and tracking databases, in-depth interviews with the PA staff, and in-depth interviews with program stakeholders and community groups. As part of the research, the evaluation team has also conducted a literature review of community-based programs implemented across the United States, and developed both partnership-specific logic models and an overarching theory of change for community-based partnerships. Additional primary research will be conducted in 2011.

**Explain Whether or Not the PA Decided to Adopt Recommendations from the Study, and Why:** These initial findings are targeted at future efforts, and will be considered by the PAs and interested stakeholders as additional efforts are launched.

A copy of the complete study can be found in Appendix C, Study 37.

**F. Future Studies**

Table III.B summarizes the studies expected to be included in next year’s Annual Report. ⁶

<table>
<thead>
<tr>
<th>Studies</th>
<th>Docket &amp; Exhibit Approving Planned Evaluation Studies</th>
<th>Expected to be Implemented as Approved? (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Studies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Products - Market assessment on CFL</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
</tr>
<tr>
<td>use, saturation and reported purchase behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Products - Shelf stocking survey of MA</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
</tr>
<tr>
<td>retailers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Products - Lighting Exploratory</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
</tr>
<tr>
<td>Evaluation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Retrofit &amp; Low Income - Impact</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
</tr>
<tr>
<td>evaluation of Mass Save program</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

⁶ See D.P.U. 09-116 through D.P.U. 09-120, at 132; D.P.U. 09-121 through D.P.U. 09-128, at 122.
<table>
<thead>
<tr>
<th>Study Description</th>
<th>Status</th>
<th>Approval Details</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Retrofit &amp; Low Income - Potential Study of the Multifamily Program</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010). Study was initialed prior to the filing of the MTM.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Residential Retrofit &amp; Low Income - Process and Impact evaluation of Multifamily Program</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Residential Retrofit &amp; Low Income - Net-to-Gross study on Residential Cooling &amp; Heating Equipment (Cool Smart)</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction - Phase II: Baseline Study/Code Compliance Assessment</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction - Major Renovation Pilot</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction - Homebuyer Survey</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction - Assessment of New Technologies</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction - Builder Focus Groups</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Low-Income Studies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Retrofit &amp; Low Income - Process and Impact evaluation of Low Income program</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial &amp; Industrial Studies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small C&amp;I - Integrated Program Process Evaluation</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Small C&amp;I - Lighting Billing Analysis Evaluation</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Small C&amp;I - Lighting Fixture Summer Metering Impact Evaluation</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Small C&amp;I - Lighting Controls Impact Evaluation</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I - Process Evaluation of the Large Commercial and Industrial Energy Efficiency Programs</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I - Phase II: Non-Residential New Construction Market Assessment Study</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I - Custom Electric Measures Impact Evaluations (Lighting, Process, Compressed Air)</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Study Description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I - Prescriptive Gas Measures Impact Evaluation</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I - Custom Gas Measures Impact Evaluation</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I - Prescriptive Measure Impact Evaluation (Lighting, VSDs)</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I - CHP Impact Evaluation</td>
<td>Study is pending approval of the 2011 MTM, D.P.U. 10-144, Exhibit C (filed Oct. 2010)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Large C&amp;I – Impact of Gas Training</td>
<td>Study is planned but not yet submitted for approval</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

### Special & Cross-Cutting Studies

<table>
<thead>
<tr>
<th>Study Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase II: Behavioral Pilots</td>
</tr>
<tr>
<td>Phase II: Community Based Pilots</td>
</tr>
<tr>
<td>Phase II: Umbrella Marketing</td>
</tr>
<tr>
<td>C&amp;I Net-to-Gross Study</td>
</tr>
<tr>
<td>Non-Energy Impacts 2011 – Residential &amp; Low Income</td>
</tr>
<tr>
<td>Non-Energy Impacts 2011 – Deep Energy Retrofit</td>
</tr>
<tr>
<td>Non-Energy Impacts 2011 - C&amp;I: non-Custom</td>
</tr>
</tbody>
</table>
IV. STATUTORY BUDGET REQUIREMENTS

A. Introduction

The Green Communities Act requires that energy efficiency programs minimize administrative costs, utilize competitive procurement processes, and spend a certain amount on low-income programs. G.L. c. 25 §§ 19(a)-(c).

For each sector, Tables IV.A through IV.C summarize and compare planned and actual program planning and administration (“PP&A”) costs, outsourced activities, and budget allocation, respectively.

B. Minimization of Administrative Costs

The most significant factor in the Company’s approach to controlling administrative costs is its active participation in the statewide planning process. While this participation requires a significant dedication of resources, the benefits of collaborative planning, the adoption of consistent programs and processes and the coordination of program design, EM&V studies, and regulatory proceedings outweigh the cost of participation and brings immense benefits to the Company’s customers. The extent and benefits of the statewide planning process were reflected in the Statewide Three-Year Electric/Gas Plans which created the over-arching framework for the Company’s individual Three-Year Plan filing. This included a significant commitment to competitive procurement and program integration, as well as other design features described in detail in both the Statewide and Company-specific Plans.

A second factor in the Company’s efforts to control administrative costs is its coordination of energy efficiency program delivery, where appropriate, with other customer service activities such as customer acquisition, key account management and trade ally relationships. For example, a key account manager may be in contact with a business customer to discuss electric or gas service or metering issues – at the same time they will seek to recruit the customer into the Company’s energy efficiency programs, and will then serve as a key point of contact through the process. Through this sharing of staff resources, the Company is able to control the costs of delivering energy efficiency services to its customers.

The Company continues to be committed to managing its energy efficiency programs in the most cost-effective manner possible. This includes careful attention to controlling administrative costs. All of the Program Administrators recognize that high quality, effective administration at the lowest possible cost is essential to the delivery of quality programs and achievement of maximum benefits and savings to customers.
### Table IV.A: Program Planning and Administration Costs

<table>
<thead>
<tr>
<th>Customer Sector / Program</th>
<th>Planned Value ($)</th>
<th>% of Total Program Costs</th>
<th>Actual Value ($)</th>
<th>% of Total Program Costs</th>
<th>Change from Planned to Actual Value</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>129,461</td>
<td>7%</td>
<td>87,068</td>
<td>13%</td>
<td>-42,394</td>
<td>6%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>116,021</td>
<td>7%</td>
<td>127,960</td>
<td>5%</td>
<td>11,939</td>
<td>-2%</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>143,963</td>
<td>18%</td>
<td>128,370</td>
<td>20%</td>
<td>-15,593</td>
<td>2%</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>181,756</td>
<td>7%</td>
<td>147,144</td>
<td>8%</td>
<td>-34,614</td>
<td>1%</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>37,935</td>
<td>11%</td>
<td>12,836</td>
<td>29%</td>
<td>-25,099</td>
<td>17%</td>
</tr>
<tr>
<td>O Power</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>3,340</td>
<td>7%</td>
<td>1,900</td>
<td>58%</td>
<td>-1,439</td>
<td>51%</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Community-based Pilots</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>3,120</td>
<td>7%</td>
<td>2,491</td>
<td>8%</td>
<td>-629</td>
<td>1%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>96,993</td>
<td>100%</td>
<td>14,599</td>
<td>100%</td>
<td>-82,393</td>
<td>0%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>69,167</td>
<td>100%</td>
<td>76,289</td>
<td>100%</td>
<td>7,122</td>
<td>0%</td>
</tr>
<tr>
<td>Residential Total</td>
<td>781,758</td>
<td>10%</td>
<td>598,658</td>
<td>10%</td>
<td>-183,100</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Low-Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>129,725</td>
<td>6%</td>
<td>110,060</td>
<td>7%</td>
<td>-19,665</td>
<td>1%</td>
</tr>
<tr>
<td>Low-Income Multi Family Retrofit</td>
<td>58,407</td>
<td>10%</td>
<td>21,351</td>
<td>16%</td>
<td>-37,056</td>
<td>6%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>56,988</td>
<td>100%</td>
<td>32,246</td>
<td>100%</td>
<td>-24,742</td>
<td>0%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>25,421</td>
<td>100%</td>
<td>28,038</td>
<td>100%</td>
<td>2,617</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Total</td>
<td>270,542</td>
<td>9%</td>
<td>191,696</td>
<td>11%</td>
<td>-78,846</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Commercial &amp; Industrial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>267,122</td>
<td>12%</td>
<td>184,834</td>
<td>13%</td>
<td>-82,288</td>
<td>0%</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>233,441</td>
<td>13%</td>
<td>169,254</td>
<td>9%</td>
<td>-64,186</td>
<td>-4%</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>4,793</td>
<td>12%</td>
<td>3,207</td>
<td>18%</td>
<td>-1,586</td>
<td>6%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>4,424</td>
<td>12%</td>
<td>2,624</td>
<td>92%</td>
<td>-1,800</td>
<td>80%</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>6,194</td>
<td>12%</td>
<td>3,674</td>
<td>92%</td>
<td>-2,520</td>
<td>80%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>49,658</td>
<td>100%</td>
<td>28,515</td>
<td>100%</td>
<td>-21,143</td>
<td>0%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>35,412</td>
<td>100%</td>
<td>39,058</td>
<td>100%</td>
<td>3,646</td>
<td>0%</td>
</tr>
<tr>
<td>C&amp;I Total</td>
<td>601,044</td>
<td>14%</td>
<td>431,167</td>
<td>13%</td>
<td>-169,877</td>
<td>-2%</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>1,653,344</td>
<td>11%</td>
<td>1,221,521</td>
<td>11%</td>
<td>-431,823</td>
<td>0%</td>
</tr>
</tbody>
</table>

The Company did not have any increases greater than ten percent between planned and actual PP&A spending at the sector level.

C. Competitive Procurement
The Company did not have any significant differences between planned and actual outsourced activities and competitively procured activities.

### D. Low-Income Spending

The low-income budget did not meet the statutory minimum of twenty percent of the amount expended for energy efficiency programs. While all sectors were under spent, Low Income had proportionally lower spending due to the lower-than-expected participation levels. The Residential sector was under spent by 22%, the Low Income sector by 38%, and the C&I sector by 19%. These factors combined to cause Low Income sector spending to total only 17% of the non-RCS budget.
V. PERFORMANCE INCENTIVES

Table V below summarizes the performance incentives.

<table>
<thead>
<tr>
<th>Incentive Components</th>
<th>Threshold</th>
<th>Design</th>
<th>Exemplary</th>
<th>Actual Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings Mechanism</td>
<td>$324,133</td>
<td>432,177</td>
<td>$540,221</td>
<td>$335,132</td>
</tr>
<tr>
<td>Value Mechanism</td>
<td>$298,261</td>
<td>397,682</td>
<td>$497,102</td>
<td>$232,121</td>
</tr>
<tr>
<td>Performance Metrics</td>
<td>$55,371</td>
<td>73,829</td>
<td>$92,286</td>
<td>$56,998</td>
</tr>
<tr>
<td>Total Incentive (before-tax)</td>
<td>$677,766</td>
<td>$903,687</td>
<td>$1,129,609</td>
<td>$624,251</td>
</tr>
<tr>
<td>Total Incentive (after-tax)</td>
<td>$411,912</td>
<td>$549,216</td>
<td>$686,520</td>
<td>$379,389</td>
</tr>
</tbody>
</table>

NOTES:
- Provide the tax rate used to calculate the before-tax total incentive.
- Applied Corporate tax rate of 39.225%

The planned values referenced in the Performance Incentives Summary Table above were originally filed in the performance incentives model in Bay State Gas Company, D.P.U. 09-125, Exhibit Common-28 (gas) (Supplemental 3-12-10).

The Company followed the same methodology that was used in the performance incentive model filed with the Department on March 12, 2010 as a supplement to Exhibit Common-28. For purposes of this Annual Report, the approved components of the incentives, including net benefits, savings, and achieved performance metric, were calculated by the Company in comparison to actual results. The Company has calculated the savings and value mechanisms of its Performance Incentives based on the pre-evaluation savings, in accordance with the Resolution of the EEAC dated October 13, 2009.

Savings: The approved incentive model provided incentives only on the sector level. The Company calculated program specific baseline incentives for the savings metric based on each program’s planned savings goals within the sector. The Company used pre-evaluated savings when calculating the savings performance metric.

Net Benefits: The approved incentive model provided incentives only on the sector level. The Company calculated program specific baseline incentives for the net benefit metric based on each program’s planned net benefit within the sector. The Company used pre-evaluated savings when calculating the net benefit performance metric.

Performance Metrics: The approved incentive model shows specific amounts of incentive for each metric at design level. For the calculation of threshold level, the planned amount was multiplied by 0.75 and for exemplary level multiplied by 1.25. The Company counted actual performance incentives from each performance metric toward programs based on each metric’s relation to the particular program.

Please see Appendix D, Attachment D-1 for a working Excel model.
For each performance incentive component, the Company is providing information to support its determination of actual performance incentives for which it seeks recovery in Section VII, Appendix D.
VI. AUDITS

DSM & Energy Efficiency Program – Process Review

This audit, conducted and completed by the Company’s internal audit department in early 2011, reviews the Company’s energy efficiency activities. It is the only audit that has been conducted in the previous five years.

Purpose: The energy efficiency audit was performed to understand current procedures and controls in place for the program and identify process improvement opportunities to ensure the program is operating efficiently and effectively.

Scope:

1) Assess internal quality control (QC) procedures over the program to ensure work completed by third party vendors is valid and efficiency measures have been installed.

2) Evaluate program expenditures to confirm invoices are valid, reconciled to the general ledger, and recovered through the Energy Efficiency Surcharge (“EES”) mechanism.

3) Review “key” third party vendor contracts to ensure contracts are current, contain critical contract components, and are enforceable.

4) Evaluate program information technology (IT) systems to ensure systems are current, program data are properly archived, and information security controls are in place to ensure customer data is properly secured.

5) Assess management’s tracking and monitoring of program performance metrics to ensure program objectives are achieved, regulatory reporting requirements are satisfied, and third party program vendor performance is monitored.

Entity that Conducted the Audit: NiSource Internal Audit Department

Describe how the audit was conducted: Staff from the corporate internal audit department, located in Ohio, traveled to Massachusetts to perform the process review. They met with members of the Energy Efficiency department to review procedures, documentation, and performed tests of the procedures.

The date the audit was completed: March 3, 2011

Recommendations, if any, included in the final audit:

[Redacted]
Recommendations in the audit have either already been implemented or are in the process of being addressed.

Recommendations were implemented and the impact on the energy efficiency programs:

Energy Efficiency management has implemented a number of recommendations.

For those recommendations that were rejected, the reasoning behind the rejection:

Management was in agreement with all recommendations, and therefore did not reject any of the recommendations made by Internal Audit.
VII. APPENDICES
APPENDIX A: Glossary of Defined Terms

1. Types of Costs in each Budget Category

Please see the following descriptions of budget cost categories. The categories described below are generally consistent among all Program Administrators, with the exception of the categorization of employee salaries and related expenses. This difference is due to different historical practices and differing staff sizes and staff assignments, as well as internal tracking mechanisms. The Company has accounted for all employee labor costs and related expenses in the PP&A category.

The Company and the other electric and gas Program Administrators have worked together to develop consistent cost categories to the extent that they are efficient and appropriate for each Program Administrator, and the Program Administrators will continue to strive for consistency in this area.

Costs that cannot be assigned directly to a program are allocated among relevant programs on an appropriate basis and tracked accordingly.

Planning and Administration include costs associated with developing program plans, including market transformation plans, research and development (excluding R&D assigned to Evaluation & Market Research), and day-to-day program administration, including labor, benefits, expenses, materials, supplies, and overhead costs, and any regulatory costs associated with energy efficiency activities. Also includes costs for energy efficiency services contracted to non-affiliated companies such as outside consultants used to prepare plans, screen programs, improve databases, and perform legal services.

Marketing and Advertising includes costs to advertise, through television, radio, billboards, brochures, telemarketing, web-sites, and mailings, the existence and availability of energy efficiency programs or technologies, and to induce customers or trade allies to participate in energy efficiency programs.

Participant Incentives are funds paid by the reporting Program Administrator to customers or trade allies as rebates or in other forms.

Sales, Technical Assistance & Training are administration, sales technical assistance and training costs to motivate (1) customers to install energy efficiency products and services, (2) retailers to stock energy efficiency products, (3) trade professionals to offer energy efficiency services, (4) manufacturers to make energy efficiency products; and (5) vendor services and supplies that demonstrate benefits of energy efficiency.

Evaluation and Market Research include costs associated with evaluation activities, including costs related to cost-effectiveness evaluation, market research (e.g., baseline studies, market assessments, surveys), impact and process evaluation reports, tracking and reporting program inputs and outputs, funding studies, and other costs clearly associated with evaluating the program.
Performance Incentives are funds earned by a Program Administrator. For 2010, the Company’s performance incentives are based on the Energy Efficiency Advisory Council Resolution approved on October 13, 2009, which outlined Statewide Savings Targets and Performance Incentives for Gas. As such, the Company used the “Pre-eval” 08-50 tables for purposes of calculating Performance Incentives. These 08-50 tables correspond to the preliminary year-end results listed by program and by sector in the narrative tables.
# Glossary of Terms and Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>Advanced Buildings</td>
</tr>
<tr>
<td>ABCD</td>
<td>Action for Boston Community Development</td>
</tr>
<tr>
<td>AE</td>
<td>Account Executive</td>
</tr>
<tr>
<td>AESC</td>
<td>Avoided Energy Supply Component</td>
</tr>
<tr>
<td>AESP</td>
<td>Association of Energy Service Professionals</td>
</tr>
<tr>
<td>AFUE</td>
<td>Annual Fuel Utilization Efficiency</td>
</tr>
<tr>
<td>AIA</td>
<td>American Institute of Architects</td>
</tr>
<tr>
<td>ARRA</td>
<td>American Recovery and Reinvestment Act</td>
</tr>
<tr>
<td>BCR</td>
<td>Benefit/Cost Ratio</td>
</tr>
<tr>
<td>BPI</td>
<td>Building Performance Institute</td>
</tr>
<tr>
<td>C&amp;F</td>
<td>Chain &amp; Franchise</td>
</tr>
<tr>
<td>C&amp;I</td>
<td>Commercial and Industrial</td>
</tr>
<tr>
<td>CAP</td>
<td>Community Action Program</td>
</tr>
<tr>
<td>CDA</td>
<td>Comprehensive Design Approach</td>
</tr>
<tr>
<td>CFL</td>
<td>Compact Fluorescent Light</td>
</tr>
<tr>
<td>CHP</td>
<td>Combined Heat and Power</td>
</tr>
<tr>
<td>CMI</td>
<td>Community Mobilization Initiatives</td>
</tr>
<tr>
<td>Consultants</td>
<td>Consultants employed by the Energy Efficiency Advisory Council</td>
</tr>
<tr>
<td>Council</td>
<td>Energy Efficiency Advisory Council</td>
</tr>
<tr>
<td>Department</td>
<td>Massachusetts Department of Public Utilities</td>
</tr>
<tr>
<td>DER</td>
<td>Deep Energy Retrofit</td>
</tr>
<tr>
<td>DHCD</td>
<td>Massachusetts Department of Housing and Community Development</td>
</tr>
<tr>
<td>DOE</td>
<td>Department of Energy</td>
</tr>
<tr>
<td>DOER</td>
<td>Massachusetts Department of Energy Resources</td>
</tr>
<tr>
<td>DPU</td>
<td>Massachusetts Department of Public Utilities</td>
</tr>
<tr>
<td>DSM</td>
<td>Demand-Side Management</td>
</tr>
<tr>
<td>ECM</td>
<td>Electronically Commutated Motor</td>
</tr>
<tr>
<td>EEAC</td>
<td>Energy Efficiency Advisory Council</td>
</tr>
<tr>
<td>EM&amp;V</td>
<td>Evaluation, Monitoring, and Verification</td>
</tr>
<tr>
<td>ENERGY STAR®</td>
<td>Brand name for the voluntary energy efficiency labeling initiative sponsored by the U.S. Environmental Protection Agency and Department of Energy.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
</tr>
<tr>
<td>FR</td>
<td>Free Rider</td>
</tr>
<tr>
<td>Free Riders</td>
<td>Customers who participate in an energy efficiency program but would have installed the same measure(s) on their own if the program had not been available.</td>
</tr>
<tr>
<td>Free-Ridership Rate</td>
<td>The percent of savings attributable to Free Riders.</td>
</tr>
<tr>
<td>Gas and Electric Orders</td>
<td>Orders of the Department dated January 28, 2010 in D.P.U. 09-116 through 09-127 approving the Program Administrators’ Three-Year Plans</td>
</tr>
<tr>
<td>GHGs</td>
<td>Greenhouse Gas Emissions</td>
</tr>
<tr>
<td>HEHE</td>
<td>High Efficiency Heating and Water Heating</td>
</tr>
<tr>
<td>HERS</td>
<td>Home Energy Rating System</td>
</tr>
<tr>
<td>HPCs</td>
<td>Home Performance Contractors</td>
</tr>
<tr>
<td>HVAC</td>
<td>Heating, Ventilation, and Air Conditioning</td>
</tr>
<tr>
<td>IECC</td>
<td>International Energy Conservation Code</td>
</tr>
<tr>
<td>Impact Factor</td>
<td>Generic term for persistence, realization rates, in-service rates, non-coincident connected demand factors, etc., developed during the evaluation of energy efficiency programs and used to calculate net savings.</td>
</tr>
<tr>
<td>ISO-NE</td>
<td>Independent System Operation – New England</td>
</tr>
<tr>
<td>JMC</td>
<td>Joint Management Committee of utility and non-utility parties that manages the ENERGY STAR® Homes Program.</td>
</tr>
<tr>
<td>LEAN</td>
<td>The Low-Income Energy Affordability Network</td>
</tr>
<tr>
<td>LED</td>
<td>Light Emitting Diode</td>
</tr>
<tr>
<td>LBR</td>
<td>Lost Base Revenue (For companies not operating under decoupled rate structure, these costs account for revenues not collected by the Company’s distribution business as a result of the energy efficiency undertaken during the program year)</td>
</tr>
<tr>
<td>LCIEC</td>
<td>Large Commercial &amp; Industrial Evaluation Contractor</td>
</tr>
<tr>
<td>Lifetime</td>
<td>The expected length of time, in years, that an installed measure will be in service and producing savings.</td>
</tr>
<tr>
<td>Measure</td>
<td>Specific technology or practice that produces energy and/or demand savings for which the Company provides financial incentives.</td>
</tr>
<tr>
<td>MMI</td>
<td>Multi-Family Market Integrator</td>
</tr>
<tr>
<td>MTM</td>
<td>Mid-Term Modification</td>
</tr>
<tr>
<td>NBI</td>
<td>National Building Institute</td>
</tr>
<tr>
<td>NEEP</td>
<td>Northeast Energy Efficiency Partnerships</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Net to Gross Ratio or NTGR</td>
<td>A factor representing net program savings divided by gross program savings that is applied to gross program impacts to convert them into net program load impacts.</td>
</tr>
<tr>
<td>Network</td>
<td>Low-Income Weatherization and Fuel Assistance Program Network</td>
</tr>
<tr>
<td>NPS</td>
<td>Non Participant Spillover</td>
</tr>
<tr>
<td>NTG</td>
<td>Net-to-Gross</td>
</tr>
<tr>
<td>PAs or Program Administrators</td>
<td>Utilities and municipal aggregators that offer energy efficiency programs.</td>
</tr>
<tr>
<td>Participant Cost</td>
<td>The total cost of a project or measure less the customer incentive.</td>
</tr>
<tr>
<td>Performance Incentive (PI)</td>
<td>Compensation for the Company’s successful execution of the energy efficiency programs during the program year as determined by Massachusetts Department of Public Utilities.</td>
</tr>
<tr>
<td>PP&amp;A</td>
<td>Program Planning and Administration</td>
</tr>
<tr>
<td>QC</td>
<td>Quality Control</td>
</tr>
<tr>
<td>RCS</td>
<td>Residential Conservation Services</td>
</tr>
<tr>
<td>RFP</td>
<td>Request For Proposal</td>
</tr>
<tr>
<td>RGGI</td>
<td>Regional Greenhouse Gas Initiative</td>
</tr>
<tr>
<td>RMC</td>
<td>Residential Management Committee</td>
</tr>
<tr>
<td>SO</td>
<td>Participant Spillover</td>
</tr>
<tr>
<td>Spillover</td>
<td>Additional energy efficient equipment installed by customers that was influenced by the Company’s sponsored program, but without direct financial or technical assistance from the program. Spillover is separated into Participant and Non-participant factors. Non-participating customers may be influenced by product availability, publicity, education and other factors that are affected by the program.</td>
</tr>
<tr>
<td>Spillover Rate</td>
<td>Estimate of energy savings attributable to spillover effects expressed as a percent of savings installed by participants through an energy efficiency program.</td>
</tr>
<tr>
<td>T&amp;D</td>
<td>Transmission and Distribution</td>
</tr>
<tr>
<td>Term</td>
<td>Three-year term of the energy efficiency plan</td>
</tr>
<tr>
<td>TRC</td>
<td>Total Resource Cost</td>
</tr>
<tr>
<td>WAP</td>
<td>Weatherization Assistance Program</td>
</tr>
</tbody>
</table>
APPENDIX B: Cost-Effectiveness Supporting Tables and Documentation

1. **D.P.U. 08-50 Tables**

   Please see the tables attached hereto as Attachment B-1.
### Program Administrator Budget, Planned (1)

<table>
<thead>
<tr>
<th>Customer Sector / Program</th>
<th>Program Planning and Administration</th>
<th>Marketing and Advertising</th>
<th>Participant Incentive</th>
<th>Sales, Technical Assistance &amp; Training</th>
<th>Evaluation and Market Research</th>
<th>Total Program Costs</th>
<th>Performance Incentive (2)</th>
<th>Total PA Budget (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential (total)</td>
<td>$781,758</td>
<td>$441,030</td>
<td>$5,425,341</td>
<td>$1,029,427</td>
<td>$230,953</td>
<td>$7,908,508</td>
<td>$317,493</td>
<td>$8,226,001</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>129,461</td>
<td>93,762</td>
<td>1,567,517</td>
<td>92,267</td>
<td>59,387</td>
<td>1,942,395</td>
<td>65,669</td>
<td>2,008,064</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>116,021</td>
<td>84,028</td>
<td>1,412,550</td>
<td>74,928</td>
<td>53,222</td>
<td>1,740,747</td>
<td>158,411</td>
<td>1,899,158</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>143,963</td>
<td>34,928</td>
<td>46,800</td>
<td>571,500</td>
<td>22,123</td>
<td>819,314</td>
<td>0</td>
<td>819,314</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>181,758</td>
<td>131,637</td>
<td>2,110,107</td>
<td>220,157</td>
<td>83,377</td>
<td>2,727,037</td>
<td>82,048</td>
<td>2,809,086</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>37,935</td>
<td>15,598</td>
<td>246,367</td>
<td>29,758</td>
<td>9,880</td>
<td>339,537</td>
<td>11,345</td>
<td>350,882</td>
</tr>
<tr>
<td>O Power</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>3,340</td>
<td>2,419</td>
<td>42,000</td>
<td>819</td>
<td>1,532</td>
<td>50,110</td>
<td>0</td>
<td>50,110</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>3,120</td>
<td>0</td>
<td>40,000</td>
<td>1,431</td>
<td>44,551</td>
<td>0</td>
<td>44,551</td>
<td>0</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>78,658</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>78,658</td>
<td>0</td>
<td>78,658</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>96,993</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>96,993</td>
<td>0</td>
<td>96,993</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>69,167</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>69,167</td>
<td>0</td>
<td>69,167</td>
</tr>
<tr>
<td>Low Income (total)</td>
<td>$207,542</td>
<td>$143,635</td>
<td>$1,802,422</td>
<td>$569,924</td>
<td>$84,348</td>
<td>$2,870,871</td>
<td>$76,269</td>
<td>$2,949,131</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>129,725</td>
<td>34,267</td>
<td>1,426,721</td>
<td>459,868</td>
<td>67,077</td>
<td>2,117,658</td>
<td>41,188</td>
<td>2,158,844</td>
</tr>
<tr>
<td>Low-Income Multi Family Retrofit</td>
<td>58,407</td>
<td>8,923</td>
<td>375,701</td>
<td>110,057</td>
<td>17,271</td>
<td>570,259</td>
<td>37,074</td>
<td>607,333</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>100,545</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100,545</td>
<td>0</td>
<td>100,545</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>56,988</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>56,988</td>
<td>0</td>
<td>56,988</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>25,421</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25,421</td>
<td>0</td>
<td>25,421</td>
</tr>
<tr>
<td>Commercial &amp; Industrial (total)</td>
<td>$601,044</td>
<td>$212,289</td>
<td>$2,759,633</td>
<td>$545,074</td>
<td>$124,652</td>
<td>$4,242,672</td>
<td>$507,934</td>
<td>$4,750,607</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>267,122</td>
<td>100,970</td>
<td>1,514,930</td>
<td>231,681</td>
<td>65,881</td>
<td>2,180,585</td>
<td>218,183</td>
<td>2,398,768</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>233,441</td>
<td>84,031</td>
<td>1,701,203</td>
<td>283,393</td>
<td>54,826</td>
<td>1,825,896</td>
<td>280,742</td>
<td>2,106,638</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>4,793</td>
<td>1,879</td>
<td>32,500</td>
<td>0</td>
<td>1,226</td>
<td>40,398</td>
<td>9,010</td>
<td>49,408</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>4,424</td>
<td>1,734</td>
<td>0</td>
<td>30,000</td>
<td>1,132</td>
<td>37,290</td>
<td>0</td>
<td>37,290</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>6,194</td>
<td>2,428</td>
<td>42,000</td>
<td>0</td>
<td>1,584</td>
<td>52,206</td>
<td>0</td>
<td>52,206</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>21,272</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>21,272</td>
<td>0</td>
<td>21,272</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>49,658</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49,658</td>
<td>0</td>
<td>49,658</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>35,412</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>35,412</td>
<td>0</td>
<td>35,412</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>$1,653,344</strong></td>
<td><strong>$796,934</strong></td>
<td><strong>$9,987,396</strong></td>
<td><strong>$2,144,426</strong></td>
<td><strong>$439,952</strong></td>
<td><strong>$15,022,052</strong></td>
<td><strong>$903,687</strong></td>
<td><strong>$15,925,739</strong></td>
</tr>
<tr>
<td>Program Planning and Administration</td>
<td>Marketing and Advertising</td>
<td>Participant Incentive</td>
<td>Sales, Technical Assistance &amp; Training</td>
<td>Evaluation and Market Research</td>
<td>Total Program Costs</td>
<td>Performance Incentive (1)</td>
<td>Total PA Budget (3)</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------</td>
<td>----------------------</td>
<td>--------------------------------------</td>
<td>-----------------------------</td>
<td>-------------------</td>
<td>--------------------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>Residential (total)</td>
<td>598,658</td>
<td>3399,202</td>
<td>4,059,769</td>
<td>119,580</td>
<td>6,144,629</td>
<td>282,622</td>
<td>6,427,251</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>87,068</td>
<td>27,962</td>
<td>423,625</td>
<td>114,391</td>
<td>19,603</td>
<td>672,649</td>
<td>0</td>
<td>672,649</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>127,960</td>
<td>156,246</td>
<td>2,175,965</td>
<td>122,764</td>
<td>45,619</td>
<td>2,628,554</td>
<td>170,133</td>
<td>2,798,687</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>128,370</td>
<td>31,180</td>
<td>18,804</td>
<td>458,775</td>
<td>10,214</td>
<td>647,342</td>
<td>0</td>
<td>647,342</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>147,144</td>
<td>102,433</td>
<td>1,425,511</td>
<td>242,494</td>
<td>38,692</td>
<td>1,956,325</td>
<td>112,490</td>
<td>2,068,814</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>12,836</td>
<td>3,036</td>
<td>15,814</td>
<td>8,661</td>
<td>4,566</td>
<td>44,913</td>
<td>0</td>
<td>44,913</td>
</tr>
<tr>
<td>O Power</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>1,900</td>
<td>80</td>
<td>0</td>
<td>616</td>
<td>708</td>
<td>3,304</td>
<td>0</td>
<td>3,304</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>2,491</td>
<td>776</td>
<td>0</td>
<td>28,712</td>
<td>186</td>
<td>32,164</td>
<td>0</td>
<td>32,164</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>68,489</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>68,489</td>
<td>0</td>
<td>68,489</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>14,599</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>14,599</td>
<td>0</td>
<td>14,599</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>76,289</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>76,289</td>
<td>0</td>
<td>76,289</td>
</tr>
<tr>
<td>Low Income (total)</td>
<td>191,696</td>
<td>151,788</td>
<td>1,062,612</td>
<td>339,838</td>
<td>39,108</td>
<td>1,785,042</td>
<td>54,476</td>
<td>1,839,518</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>110,060</td>
<td>58,240</td>
<td>985,472</td>
<td>321,545</td>
<td>31,121</td>
<td>1,506,438</td>
<td>46,772</td>
<td>1,553,210</td>
</tr>
<tr>
<td>Low-Income Multi Family Retrofit</td>
<td>21,351</td>
<td>5,742</td>
<td>77,140</td>
<td>18,294</td>
<td>7,987</td>
<td>130,513</td>
<td>7,704</td>
<td>138,217</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>87,807</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>87,807</td>
<td>0</td>
<td>87,807</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>32,246</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>32,246</td>
<td>0</td>
<td>32,246</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>28,038</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28,038</td>
<td>0</td>
<td>28,038</td>
</tr>
<tr>
<td>Commercial &amp; Industrial (total)</td>
<td>431,167</td>
<td>108,315</td>
<td>2,535,389</td>
<td>283,671</td>
<td>70,430</td>
<td>3,428,973</td>
<td>287,153</td>
<td>3,716,126</td>
</tr>
<tr>
<td>CAI New Construction &amp; Major Renovation</td>
<td>184,834</td>
<td>43,177</td>
<td>1,031,386</td>
<td>169,428</td>
<td>39,514</td>
<td>1,468,280</td>
<td>2,917</td>
<td>1,471,197</td>
</tr>
<tr>
<td>CAI Retrofit</td>
<td>169,254</td>
<td>45,208</td>
<td>1,489,987</td>
<td>114,235</td>
<td>7,987</td>
<td>1,649,061</td>
<td>7,704</td>
<td>1,727,570</td>
</tr>
<tr>
<td>CAI Direct Install</td>
<td>3,207</td>
<td>508</td>
<td>14,016</td>
<td>5</td>
<td>169</td>
<td>17,906</td>
<td>5,727</td>
<td>23,632</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>2,624</td>
<td>69</td>
<td>0</td>
<td>1</td>
<td>154</td>
<td>2,848</td>
<td>0</td>
<td>2,848</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>3,674</td>
<td>96</td>
<td>0</td>
<td>1</td>
<td>216</td>
<td>3,987</td>
<td>0</td>
<td>3,987</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0</td>
<td>19,317</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>19,317</td>
<td>0</td>
<td>19,317</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>28,515</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28,515</td>
<td>0</td>
<td>28,515</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>39,058</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>39,058</td>
<td>0</td>
<td>39,058</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>$1,221,521</td>
<td>$650,306</td>
<td>$7,657,770</td>
<td>$1,599,921</td>
<td>$229,126</td>
<td>$11,358,644</td>
<td>$624,251</td>
<td>$11,982,895</td>
</tr>
<tr>
<td>Program Planning and Administration</td>
<td>Marketing and Advertising</td>
<td>Participant Incentive</td>
<td>Sales, Technical Assistance &amp; Training</td>
<td>Evaluation and Market Research</td>
<td>Total Program Costs</td>
<td>Performance Incentive</td>
<td>Total PA Costs</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------</td>
<td>-----------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------</td>
<td>---------------------</td>
<td>-----------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Residential (total)</td>
<td>-23%</td>
<td>-12%</td>
<td>-25%</td>
<td>-5%</td>
<td>-48%</td>
<td>-22%</td>
<td>-11%</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>-33%</td>
<td>-70%</td>
<td>-73%</td>
<td>24%</td>
<td>-67%</td>
<td>-65%</td>
<td>-100%</td>
<td></td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>10%</td>
<td>86%</td>
<td>54%</td>
<td>64%</td>
<td>-14%</td>
<td>51%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>MassSAVE</td>
<td>-11%</td>
<td>-11%</td>
<td>-60%</td>
<td>-20%</td>
<td>-54%</td>
<td>-21%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>-19%</td>
<td>-22%</td>
<td>-32%</td>
<td>10%</td>
<td>-54%</td>
<td>-28%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>-66%</td>
<td>-81%</td>
<td>-94%</td>
<td>-71%</td>
<td>-54%</td>
<td>-87%</td>
<td>-100%</td>
<td></td>
</tr>
<tr>
<td>O Power</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-43%</td>
<td>-97%</td>
<td>-100%</td>
<td>-25%</td>
<td>-54%</td>
<td>-93%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0%</td>
<td>-13%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-13%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>-85%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-85%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Low Income (total)</td>
<td>-29%</td>
<td>6%</td>
<td>-41%</td>
<td>-40%</td>
<td>-54%</td>
<td>-38%</td>
<td>-30%</td>
<td></td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>-15%</td>
<td>70%</td>
<td>-31%</td>
<td>-30%</td>
<td>-54%</td>
<td>-29%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Low-Income Multi Family Retrofit</td>
<td>-63%</td>
<td>-35%</td>
<td>-79%</td>
<td>-83%</td>
<td>-54%</td>
<td>-77%</td>
<td>-77%</td>
<td></td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0%</td>
<td>-13%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-13%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>-43%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-43%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Commercial &amp; Industrial (total)</td>
<td>-28%</td>
<td>-49%</td>
<td>-8%</td>
<td>-43%</td>
<td>-43%</td>
<td>-19%</td>
<td>-43%</td>
<td></td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>-31%</td>
<td>-57%</td>
<td>-32%</td>
<td>-27%</td>
<td>-40%</td>
<td>-33%</td>
<td>-99%</td>
<td></td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>-27%</td>
<td>-46%</td>
<td>27%</td>
<td>-60%</td>
<td>-45%</td>
<td>1%</td>
<td>-1%</td>
<td></td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-33%</td>
<td>-73%</td>
<td>-57%</td>
<td>0%</td>
<td>-86%</td>
<td>-56%</td>
<td>-36%</td>
<td></td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>-41%</td>
<td>-96%</td>
<td>0%</td>
<td>-100%</td>
<td>-86%</td>
<td>-92%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>-43%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-43%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>-26%</td>
<td>-18%</td>
<td>-23%</td>
<td>-25%</td>
<td>-48%</td>
<td>-24%</td>
<td>-31%</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
(1) All parties would refer to common definitions (in Appendix) for allocation of costs.
(2) Values listed in this table represent pre-tax performance incentive amounts. See Section IV.H. Shareholder Performance Incentives for supporting calculations.
(3) The Total PA Budget is the sum of Total Program Costs and Performance Incentives.
### IV.D. Cost Effectiveness

#### 1. Summary Table

<table>
<thead>
<tr>
<th>Sector</th>
<th>B/C Ratio</th>
<th>Net Benefits</th>
<th>Benefits</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>2.00</td>
<td>$11,880,216</td>
<td>$23,712,787</td>
<td>$11,832,571</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>1.71</td>
<td>2,591,645</td>
<td>$6,221,793</td>
<td>$3,630,148</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>3.25</td>
<td>6,902,200</td>
<td>$9,966,471</td>
<td>$3,064,272</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>1.89</td>
<td>3,127,808</td>
<td>$6,639,783</td>
<td>$3,511,975</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>1.95</td>
<td>3,127,808</td>
<td>$6,639,783</td>
<td>$3,511,975</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>2.08</td>
<td>459,355</td>
<td>$884,740</td>
<td>$425,384</td>
</tr>
<tr>
<td>O Power</td>
<td>0.00</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>0.00</td>
<td>-92,110</td>
<td>0</td>
<td>$92,110</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>0.00</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0.00</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0.00</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>0.00</td>
<td>-44,551</td>
<td>$0</td>
<td>$44,551</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0.00</td>
<td>-78,658</td>
<td>0</td>
<td>$78,658</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>0.00</td>
<td>-96,993</td>
<td>$0</td>
<td>$96,993</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>0.00</td>
<td>-69,167</td>
<td>0</td>
<td>$69,167</td>
</tr>
<tr>
<td>Low Income</td>
<td>1.75</td>
<td>$2,210,124</td>
<td>$5,159,255</td>
<td>$2,949,131</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>1.53</td>
<td>1,149,628</td>
<td>$3,308,472</td>
<td>$2,158,844</td>
</tr>
<tr>
<td>Low-income MultiFamily Retrofit</td>
<td>3.05</td>
<td>1,243,450</td>
<td>$1,850,783</td>
<td>$607,333</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0.00</td>
<td>-100,545</td>
<td>0</td>
<td>$100,545</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>0.00</td>
<td>-56,988</td>
<td>0</td>
<td>$56,988</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>0.00</td>
<td>-25,421</td>
<td>0</td>
<td>$25,421</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>4.17</td>
<td>$24,001,024</td>
<td>$31,573,071</td>
<td>$7,572,047</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>3.58</td>
<td>10,220,262</td>
<td>$14,175,472</td>
<td>$3,955,210</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>5.11</td>
<td>13,682,507</td>
<td>$17,012,143</td>
<td>$3,329,635</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>7.80</td>
<td>336,049</td>
<td>$385,456</td>
<td>$49,408</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>0.00</td>
<td>-37,290</td>
<td>0</td>
<td>$37,290</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>0.00</td>
<td>-94,206</td>
<td>0</td>
<td>$94,206</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0.00</td>
<td>-21,227</td>
<td>0</td>
<td>$21,227</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>0.00</td>
<td>-49,658</td>
<td>0</td>
<td>$49,658</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>0.00</td>
<td>-35,412</td>
<td>0</td>
<td>$35,412</td>
</tr>
</tbody>
</table>

**GRAND TOTAL**

<table>
<thead>
<tr>
<th>B/C Ratio</th>
<th>Net Benefits</th>
<th>Benefits</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.70</td>
<td>$38,091,363</td>
<td>$60,445,112</td>
<td>$22,353,749</td>
</tr>
<tr>
<td>Sector</td>
<td>B/C Ratio</td>
<td>Net Benefits</td>
<td>Benefits</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------</td>
<td>--------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Residential</td>
<td>1.86</td>
<td>$8,207,185</td>
<td>$17,753,261</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>1.01</td>
<td>19,116</td>
<td>$1,640,040</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>2.44</td>
<td>3,627,320</td>
<td>$6,144,337</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>-647,342</td>
<td>$0</td>
<td>$647,342</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>2.23</td>
<td>5,432,201</td>
<td>$9,842,149</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>0.81</td>
<td>-29,265</td>
<td>$126,734</td>
</tr>
<tr>
<td>O Power</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-3,304</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-32,164</td>
<td>0</td>
<td>32,164</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>-68,489</td>
<td>0</td>
<td>68,489</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>-14,599</td>
<td>0</td>
<td>14,599</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>-76,289</td>
<td>0</td>
<td>76,289</td>
</tr>
<tr>
<td>Low Income</td>
<td>1.64</td>
<td>$1,172,300</td>
<td>$3,011,818</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>1.85</td>
<td>1,325,483</td>
<td>$2,878,693</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td>0.96</td>
<td>-5,092</td>
<td>$133,125</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>-87,807</td>
<td>0</td>
<td>87,807</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>-32,246</td>
<td>0</td>
<td>32,246</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>-28,038</td>
<td>0</td>
<td>28,038</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>3.56</td>
<td>$15,455,386</td>
<td>$21,487,919</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>3.12</td>
<td>5,132,110</td>
<td>$7,549,173</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>3.92</td>
<td>10,226,434</td>
<td>$13,726,928</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>9.97</td>
<td>190,568</td>
<td>$211,818</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-2,848</td>
<td>0</td>
<td>2,848</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-3,987</td>
<td>0</td>
<td>3,987</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>-19,317</td>
<td>0</td>
<td>19,317</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>-28,515</td>
<td>0</td>
<td>28,515</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>-39,058</td>
<td>0</td>
<td>39,058</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>2.43</strong></td>
<td><strong>$24,834,871</strong></td>
<td><strong>$42,252,997</strong></td>
</tr>
</tbody>
</table>
### Total Resource Cost Test, Percent Variance

<table>
<thead>
<tr>
<th>Sector</th>
<th>B/C Ratio</th>
<th>Net Benefits</th>
<th>Benefits</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>-7%</td>
<td>-31%</td>
<td>-25%</td>
<td>-19%</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>-41%</td>
<td>-99%</td>
<td>-74%</td>
<td>-55%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>-25%</td>
<td>-47%</td>
<td>-38%</td>
<td>-18%</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>18%</td>
<td>74%</td>
<td>48%</td>
<td>26%</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>-61%</td>
<td>-106%</td>
<td>-86%</td>
<td>-63%</td>
</tr>
<tr>
<td>O Power</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>0%</td>
<td>-96%</td>
<td>0%</td>
<td>-96%</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>0%</td>
<td>-28%</td>
<td>0%</td>
<td>-28%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0%</td>
<td>-13%</td>
<td>0%</td>
<td>-13%</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>0%</td>
<td>-85%</td>
<td>0%</td>
<td>-85%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Low Income</td>
<td>-6%</td>
<td>-47%</td>
<td>-42%</td>
<td>-38%</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>21%</td>
<td>15%</td>
<td>-13%</td>
<td>-28%</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td>-68%</td>
<td>-100%</td>
<td>-93%</td>
<td>-77%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0%</td>
<td>-13%</td>
<td>0%</td>
<td>-13%</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>0%</td>
<td>-43%</td>
<td>0%</td>
<td>-43%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>-15%</td>
<td>-36%</td>
<td>-32%</td>
<td>-20%</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>-13%</td>
<td>-50%</td>
<td>-47%</td>
<td>-39%</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>-23%</td>
<td>-25%</td>
<td>-19%</td>
<td>5%</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>28%</td>
<td>-43%</td>
<td>-45%</td>
<td>-57%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>0%</td>
<td>-92%</td>
<td>0%</td>
<td>-92%</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>0%</td>
<td>-96%</td>
<td>0%</td>
<td>-96%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>0%</td>
<td>-9%</td>
<td>0%</td>
<td>-9%</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>0%</td>
<td>-43%</td>
<td>0%</td>
<td>-43%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
<td>10%</td>
</tr>
</tbody>
</table>

**GRAND TOTAL**

-10%  -35%  -30%  -22%
IV.D. Cost Effectiveness

2.1. Cost Summary Table

<table>
<thead>
<tr>
<th>Programs</th>
<th>Program Costs (1)</th>
<th>Performance Incentive (2)</th>
<th>Participant Costs</th>
<th>Total Resource Costs (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>$7,908,508</td>
<td>$317,493</td>
<td>$3,606,570</td>
<td>$11,832,571</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Reno</td>
<td>1,942,395</td>
<td>65,689</td>
<td>1,622,065</td>
<td>3,630,148</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>1,740,747</td>
<td>158,411</td>
<td>1,165,114</td>
<td>3,064,272</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>819,314</td>
<td>0</td>
<td>0</td>
<td>819,314</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>2,727,037</td>
<td>82,048</td>
<td>702,889</td>
<td>3,511,975</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>339,537</td>
<td>11,345</td>
<td>74,502</td>
<td>425,384</td>
</tr>
<tr>
<td>O Power</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>50,110</td>
<td>0</td>
<td>42,000</td>
<td>92,110</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstr</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>44,551</td>
<td>0</td>
<td>0</td>
<td>44,551</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>78,658</td>
<td>0</td>
<td>0</td>
<td>78,658</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>96,993</td>
<td>0</td>
<td>0</td>
<td>96,993</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>69,167</td>
<td>0</td>
<td>0</td>
<td>69,167</td>
</tr>
<tr>
<td>Low Income</td>
<td>$2,870,871</td>
<td>$78,260</td>
<td>$0</td>
<td>$2,949,131</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>2,117,658</td>
<td>41,186</td>
<td>0</td>
<td>2,158,844</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td>570,259</td>
<td>37,074</td>
<td>0</td>
<td>607,333</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>100,545</td>
<td>0</td>
<td>0</td>
<td>100,545</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network F</td>
<td>56,988</td>
<td>0</td>
<td>0</td>
<td>56,988</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>25,421</td>
<td>0</td>
<td>0</td>
<td>25,421</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>$4,242,672</td>
<td>$507,934</td>
<td>$2,821,440</td>
<td>$7,572,047</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>2,180,585</td>
<td>218,183</td>
<td>1,556,443</td>
<td>3,955,210</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>1,825,896</td>
<td>280,742</td>
<td>1,222,998</td>
<td>3,329,635</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>40,398</td>
<td>9,010</td>
<td>0</td>
<td>49,408</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>37,290</td>
<td>0</td>
<td>0</td>
<td>37,290</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>52,206</td>
<td>0</td>
<td>42,000</td>
<td>94,206</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>21,227</td>
<td>0</td>
<td>0</td>
<td>21,227</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>49,658</td>
<td>0</td>
<td>0</td>
<td>49,658</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>35,412</td>
<td>0</td>
<td>0</td>
<td>35,412</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>$15,022,052</td>
<td>$903,687</td>
<td>$6,428,010</td>
<td>$22,353,749</td>
</tr>
<tr>
<td>Programs</td>
<td>Program Costs (1)</td>
<td>Performance Incentive (2)</td>
<td>Participant Costs</td>
<td>Total Resource Costs (3)</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Residential</td>
<td>$6,144,629</td>
<td>$282,622</td>
<td>$3,118,825</td>
<td>$9,546,076</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovation</td>
<td>672,649</td>
<td>0</td>
<td>948,275</td>
<td>1,620,924</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>2,628,554</td>
<td>170,133</td>
<td>-281,670</td>
<td>2,517,017</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>647,342</td>
<td>0</td>
<td>0</td>
<td>647,342</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>1,956,325</td>
<td>112,490</td>
<td>2,341,133</td>
<td>4,409,948</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>44,913</td>
<td>0</td>
<td>111,086</td>
<td>155,999</td>
</tr>
<tr>
<td>O Power</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>3,304</td>
<td>0</td>
<td>0</td>
<td>3,304</td>
</tr>
<tr>
<td>Residential Building Practices and Demos</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community Based Pilots</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>32,164</td>
<td>0</td>
<td>0</td>
<td>32,164</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>68,489</td>
<td>0</td>
<td>0</td>
<td>68,489</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>14,599</td>
<td>0</td>
<td>0</td>
<td>14,599</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>76,289</td>
<td>0</td>
<td>0</td>
<td>76,289</td>
</tr>
<tr>
<td>Low Income</td>
<td>$1,785,042</td>
<td>$54,476</td>
<td>$0</td>
<td>$1,839,518</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>1,506,438</td>
<td>46,772</td>
<td>0</td>
<td>1,553,210</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td>130,513</td>
<td>7,004</td>
<td>0</td>
<td>138,217</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>87,807</td>
<td>0</td>
<td>0</td>
<td>87,807</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network F</td>
<td>32,246</td>
<td>0</td>
<td>0</td>
<td>32,246</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>28,038</td>
<td>0</td>
<td>0</td>
<td>28,038</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>$3,428,973</td>
<td>$287,153</td>
<td>$2,316,407</td>
<td>$6,032,533</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>1,468,280</td>
<td>2,917</td>
<td>945,866</td>
<td>2,417,063</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>1,849,061</td>
<td>278,509</td>
<td>1,372,923</td>
<td>3,500,494</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>17,906</td>
<td>5,727</td>
<td>-2,383</td>
<td>21,250</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>2,848</td>
<td>0</td>
<td>0</td>
<td>2,848</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>3,987</td>
<td>0</td>
<td>0</td>
<td>3,987</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>19,317</td>
<td>0</td>
<td>0</td>
<td>19,317</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>28,515</td>
<td>0</td>
<td>0</td>
<td>28,515</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>39,058</td>
<td>0</td>
<td>0</td>
<td>39,058</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>$11,358,644</td>
<td>$624,251</td>
<td>$5,435,231</td>
<td>$17,418,126</td>
</tr>
<tr>
<td>Programs</td>
<td>Program Costs (1)</td>
<td>Performance Incentive (2)</td>
<td>Participant Costs</td>
<td>Total Resource Costs (3)</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Residential</td>
<td>-22%</td>
<td>-11%</td>
<td>-14%</td>
<td>-19%</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Reno</td>
<td>-65%</td>
<td>-100%</td>
<td>-42%</td>
<td>-55%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>51%</td>
<td>7%</td>
<td>-124%</td>
<td>-18%</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>-21%</td>
<td>0%</td>
<td>0%</td>
<td>-21%</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>-28%</td>
<td>37%</td>
<td>233%</td>
<td>26%</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>-87%</td>
<td>-100%</td>
<td>49%</td>
<td>-63%</td>
</tr>
<tr>
<td>O Power</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-2%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-93%</td>
<td>0%</td>
<td>-100%</td>
<td>-96%</td>
</tr>
<tr>
<td>Residential Building Practices and Demons</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-2%</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-28%</td>
<td>0%</td>
<td>0%</td>
<td>-28%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>-13%</td>
<td>0%</td>
<td>0%</td>
<td>-13%</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>-21%</td>
<td>0%</td>
<td>0%</td>
<td>-21%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-38%</td>
<td>-30%</td>
<td>0%</td>
<td>-38%</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>-29%</td>
<td>14%</td>
<td>13%</td>
<td>-28%</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td>-77%</td>
<td>-79%</td>
<td>-123%</td>
<td>-77%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>-13%</td>
<td>0%</td>
<td>0%</td>
<td>-13%</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network F</td>
<td>-43%</td>
<td>0%</td>
<td>0%</td>
<td>-43%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>-19%</td>
<td>-43%</td>
<td>-18%</td>
<td>-20%</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>-33%</td>
<td>-99%</td>
<td>-39%</td>
<td>-39%</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>1%</td>
<td>-1%</td>
<td>12%</td>
<td>5%</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>-56%</td>
<td>-36%</td>
<td>0%</td>
<td>-57%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-92%</td>
<td>0%</td>
<td>0%</td>
<td>-92%</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-92%</td>
<td>0%</td>
<td>-100%</td>
<td>-96%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>-9%</td>
<td>0%</td>
<td>0%</td>
<td>-9%</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>-43%</td>
<td>0%</td>
<td>0%</td>
<td>-43%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>-24%</td>
<td>-31%</td>
<td>-15%</td>
<td>-22%</td>
</tr>
</tbody>
</table>
### IV.D. Cost Effectiveness

#### 3.1. Benefits Summary Table

<table>
<thead>
<tr>
<th>Program</th>
<th>Gas</th>
<th>Electric</th>
<th>Non-Gas Non-Electric</th>
<th>TOTAL TRC Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity</td>
<td>Energy</td>
<td>No. 2 Distillate</td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>$23,712,787</td>
<td>$0</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renov.</td>
<td>$6,221,793</td>
<td>$0</td>
<td>$0</td>
<td>$6,221,793</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>$9,966,471</td>
<td>$0</td>
<td>$0</td>
<td>$9,966,471</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>$6,639,783</td>
<td>$0</td>
<td>$0</td>
<td>$6,639,783</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>$884,740</td>
<td>$0</td>
<td>$0</td>
<td>$884,740</td>
</tr>
<tr>
<td>O Power</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Residential Building Practices and Demonst.</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Energy Analysis, Internet Audit Program</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Low Income</td>
<td>$5,159,255</td>
<td>$0</td>
<td>$0</td>
<td>$5,159,255</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>$3,308,472</td>
<td>$0</td>
<td>$0</td>
<td>$3,308,472</td>
</tr>
<tr>
<td>Low-Income Multifamily Retrofit</td>
<td>$1,850,783</td>
<td>$0</td>
<td>$0</td>
<td>$1,850,783</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>$31,573,071</td>
<td>$0</td>
<td>$0</td>
<td>$31,573,071</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>$14,175,472</td>
<td>$0</td>
<td>$0</td>
<td>$14,175,472</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>$17,012,143</td>
<td>$0</td>
<td>$0</td>
<td>$17,012,143</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>$385,456</td>
<td>$0</td>
<td>$0</td>
<td>$385,456</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>$60,445,112</td>
<td>$0</td>
<td>$0</td>
<td>$60,445,112</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------</td>
<td>------------------------------------------</td>
<td>-------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Gas Benefits, Evaluated (Lifetime $)</td>
<td>$17,525,755</td>
<td>$1,529,396</td>
<td>$6,144,337</td>
<td>$0</td>
</tr>
<tr>
<td>Residential Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. 2 Distillate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. 4 Fuel Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. 6 Fuel Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerosene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Resource</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL TRC Benefits</td>
<td>$17,525,755</td>
<td>$1,529,396</td>
<td>$6,144,337</td>
<td>$0</td>
</tr>
<tr>
<td>Program</td>
<td>Gas</td>
<td>Electric</td>
<td>Resource</td>
<td>Non-Gas Non-Electric</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----</td>
<td>----------</td>
<td>----------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summer Capacity</td>
<td>Energy</td>
<td>No. 2 Fuel Oil</td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td>-26%</td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovation</td>
<td></td>
<td>-75%</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td></td>
<td>-38%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MassSAVE</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weatherization Program</td>
<td></td>
<td>48%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td></td>
<td>-86%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O Power</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Building Practices and Demonstrat</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workforce Development</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td></td>
<td>-42%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td></td>
<td>-13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-Income Multifamily Retrofit</td>
<td></td>
<td>-93%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td></td>
<td>-32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td></td>
<td>-47%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td></td>
<td>-19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td></td>
<td>-45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workforce Development</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td></td>
<td>-30%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Gas Savings (Annualized), Planned

<table>
<thead>
<tr>
<th>Program</th>
<th>Gas (MMBTU)</th>
<th>Gas (Therms)</th>
<th>Electric</th>
<th>Non-Gas Non-Electric * Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Capacity (kW)</td>
<td>Energy (kW)</td>
</tr>
<tr>
<td>Residential</td>
<td>100,164</td>
<td>1,001,640</td>
<td>0</td>
<td>131,026</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>21,452</td>
<td>214,515</td>
<td>84,569</td>
<td>0</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>47,955</td>
<td>476,952</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>-</td>
<td>-</td>
<td></td>
<td>36,197</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>27,487</td>
<td>274,869</td>
<td>36,197</td>
<td></td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>3,930</td>
<td>36,305</td>
<td>10,260</td>
<td></td>
</tr>
<tr>
<td>O Power</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community based pilots</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>100,164</td>
<td>1,001,640</td>
<td>0</td>
<td>131,026</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>13,852</td>
<td>138,521</td>
<td>121,202</td>
<td>0</td>
</tr>
<tr>
<td>Low-Income Multifamily Retrofit</td>
<td>7,749</td>
<td>77,489</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>160,164</td>
<td>1,601,164</td>
<td>0</td>
<td>131,026</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>70,632</td>
<td>706,315</td>
<td>706,315</td>
<td>0</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>86,027</td>
<td>866,267</td>
<td>29,008</td>
<td>0</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>3,605</td>
<td>36,050</td>
<td>10,260</td>
<td></td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>282,628</td>
<td>2,826,282</td>
<td>0</td>
<td>131,026</td>
</tr>
</tbody>
</table>

## Gas Savings (Annualized), Evaluated

<table>
<thead>
<tr>
<th>Program</th>
<th>Gas (MMBTU)</th>
<th>Gas (Therms)</th>
<th>Electric</th>
<th>Non-Gas Non-Electric * Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Summer Capacity (kW)</td>
<td>Energy (kW)</td>
</tr>
<tr>
<td>Residential</td>
<td>74,621</td>
<td>748,209</td>
<td>0</td>
<td>121,202</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>5,448</td>
<td>54,483</td>
<td>-</td>
<td>17,035</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>20,098</td>
<td>200,988</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>29,008</td>
<td>290,080</td>
<td>103,267</td>
<td></td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>30,477</td>
<td>304,757</td>
<td>103,267</td>
<td></td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>868</td>
<td>8,677</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>O Power</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Community based pilots</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Low Income</td>
<td>12,315</td>
<td>123,145</td>
<td>0</td>
<td>121,202</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>11,725</td>
<td>117,253</td>
<td>117,253</td>
<td>0</td>
</tr>
<tr>
<td>Low-Income Multifamily Retrofit</td>
<td>869</td>
<td>8,639</td>
<td>8,639</td>
<td>0</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>162,964</td>
<td>1,629,638</td>
<td>0</td>
<td>121,202</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>45,982</td>
<td>459,819</td>
<td>459,819</td>
<td>0</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>113,706</td>
<td>1,137,060</td>
<td>1,137,060</td>
<td>0</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>3,276</td>
<td>32,759</td>
<td>32,759</td>
<td>0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>250,099</td>
<td>2,500,993</td>
<td>0</td>
<td>121,202</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>-------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Gallons MMBTU</td>
<td>-25%</td>
<td>-25%</td>
<td>0%</td>
<td>-75%</td>
</tr>
<tr>
<td>Residential -25% Gallons MMBTU</td>
<td>-25%</td>
<td>-25%</td>
<td>0%</td>
<td>-75%</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations -25% Gallons MMBTU</td>
<td>-25%</td>
<td>-25%</td>
<td>0%</td>
<td>-75%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating -25% Gallons MMBTU</td>
<td>-25%</td>
<td>-25%</td>
<td>0%</td>
<td>-75%</td>
</tr>
<tr>
<td>MassSAVE -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Weatherization Program -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Multifamily Retrofit -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>S-Power -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Community based pilots -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Workforce Development -25% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low Income -15% Gallons MMBTU</td>
<td>-15%</td>
<td>-15%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit -15% Gallons MMBTU</td>
<td>-15%</td>
<td>-15%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Multi-Family Retrofit -15% Gallons MMBTU</td>
<td>-15%</td>
<td>-15%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Commercial &amp; Industrial -1% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation -1% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>C&amp;I Retrofit -1% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>C&amp;I Direct Install -1% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Workforce Development -1% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit -1% Gallons MMBTU</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>GRAND TOTAL -11% Gallons MMBTU</td>
<td>-11%</td>
<td>-11%</td>
<td>0%</td>
<td>-7%</td>
</tr>
<tr>
<td>Program</td>
<td>Residential</td>
<td>Residential Heating and Water Heating</td>
<td>MassaSAVE</td>
<td>Weatherization Program</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------</td>
<td>---------------------------------------</td>
<td>-----------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Yes</td>
<td>$13,315</td>
<td>$11,933</td>
<td>$18,694</td>
<td>$2,215</td>
</tr>
<tr>
<td>No</td>
<td>$116,146</td>
<td>$110,864</td>
<td>$163,064</td>
<td>$0</td>
</tr>
<tr>
<td>% Outsourced</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>$116,041</td>
<td>$93,762</td>
<td>$132,865</td>
<td>$15,598</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>$92,267</td>
<td>$53,222</td>
<td>$202,157</td>
<td>$29,778</td>
</tr>
<tr>
<td>% Outsourced</td>
<td>69%</td>
<td>10%</td>
<td>69%</td>
<td>100%</td>
</tr>
<tr>
<td>Residential Building Practices &amp; Demonstration Program</td>
<td>$116,041</td>
<td>$93,762</td>
<td>$132,865</td>
<td>$15,598</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>$92,267</td>
<td>$53,222</td>
<td>$202,157</td>
<td>$29,778</td>
</tr>
<tr>
<td>% Outsourced</td>
<td>69%</td>
<td>10%</td>
<td>69%</td>
<td>100%</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>$116,041</td>
<td>$93,762</td>
<td>$132,865</td>
<td>$15,598</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>$92,267</td>
<td>$53,222</td>
<td>$202,157</td>
<td>$29,778</td>
</tr>
<tr>
<td>% Outsourced</td>
<td>69%</td>
<td>10%</td>
<td>69%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Outsourced Summary
## Outourced Services Actual, 2010

<table>
<thead>
<tr>
<th>Program</th>
<th>Outsourced?</th>
<th>Program Planning and Administration</th>
<th>Marketing and Advertising</th>
<th>Sales, Technical Assistance &amp; Training</th>
<th>Evaluation and Market Research</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>Yes</td>
<td>$6,366</td>
<td>$20,319</td>
<td>$114,258</td>
<td>$19,571</td>
<td>$160,413</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>Yes</td>
<td>$50,353</td>
<td>$116,604</td>
<td>$121,169</td>
<td>$44,860</td>
<td>$329,289</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>Yes</td>
<td>$1,877</td>
<td>$19,906</td>
<td>$458,775</td>
<td>$10,214</td>
<td>$490,771</td>
</tr>
<tr>
<td>O Power</td>
<td>Yes</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>Yes</td>
<td>$1,877</td>
<td>$19,906</td>
<td>$458,775</td>
<td>$10,214</td>
<td>$490,771</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>Yes</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>Yes</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Community based pilots</td>
<td>Yes</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>Yes</td>
<td>$68,774</td>
<td>$6,879</td>
<td>$528,758</td>
<td>$180</td>
<td>$658,091</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>No</td>
<td>$20,767</td>
<td>$2,369</td>
<td>$33</td>
<td>$10</td>
<td>$23,376</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>No</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>Yes</td>
<td>$76,289</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$76,289</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>No</td>
<td>$62,492</td>
<td>$30,652</td>
<td>$943,059</td>
<td>$118,598</td>
<td>$1,650,375</td>
</tr>
</tbody>
</table>

### Low Income

<table>
<thead>
<tr>
<th>Program</th>
<th>Outsourced?</th>
<th>Program Planning and Administration</th>
<th>Marketing and Advertising</th>
<th>Sales, Technical Assistance &amp; Training</th>
<th>Evaluation and Market Research</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>Yes</td>
<td>$27,562</td>
<td>$58,240</td>
<td>$321,399</td>
<td>$31,121</td>
<td>$438,323</td>
</tr>
<tr>
<td>Low-Income Multifamily Retrofit</td>
<td>No</td>
<td>$62,492</td>
<td>$0</td>
<td>$146</td>
<td>$0</td>
<td>$62,638</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>No</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>No</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>No</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>No</td>
<td>$103,264</td>
<td>$32,369</td>
<td>$319,569</td>
<td>$105,622</td>
<td>$554,515</td>
</tr>
</tbody>
</table>

### Commercial & Industrial

<table>
<thead>
<tr>
<th>Program</th>
<th>Outsourced?</th>
<th>Program Planning and Administration</th>
<th>Marketing and Advertising</th>
<th>Sales, Technical Assistance &amp; Training</th>
<th>Evaluation and Market Research</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>Yes</td>
<td>$19,273</td>
<td>$33,027</td>
<td>$169,089</td>
<td>$39,394</td>
<td>$260,783</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>No</td>
<td>$165,561</td>
<td>$10,090</td>
<td>$340</td>
<td>$120</td>
<td>$176,111</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>No</td>
<td>$157,388</td>
<td>$28,855</td>
<td>$34,322</td>
<td>$122</td>
<td>$186,749</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>No</td>
<td>$2,918</td>
<td>$47</td>
<td>$2</td>
<td>$0</td>
<td>$3,501</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>No</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>Yes</td>
<td>$3,665</td>
<td>$90</td>
<td>$1</td>
<td>$0</td>
<td>$3,761</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>No</td>
<td>$0</td>
<td>$18,577</td>
<td>$0</td>
<td>$0</td>
<td>$18,577</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>No</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>No</td>
<td>$39,058</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$39,058</td>
</tr>
<tr>
<td>C&amp;I TOTAL</td>
<td>No</td>
<td>$98,999</td>
<td>$69,168</td>
<td>$282,895</td>
<td>$70,187</td>
<td>$521,250</td>
</tr>
<tr>
<td>Commercial TOTAL</td>
<td>No</td>
<td>$373,873</td>
<td>$589,439</td>
<td>$1,597,038</td>
<td>$227,883</td>
<td>$2,788,233</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>No</td>
<td>$847,646</td>
<td>$60,867</td>
<td>$2,883</td>
<td>$1,243</td>
<td>$892,644</td>
</tr>
</tbody>
</table>

## Percentage Outsourced

<table>
<thead>
<tr>
<th>Program</th>
<th>Outsourced?</th>
<th>Program Planning and Administration</th>
<th>Marketing and Advertising</th>
<th>Sales, Technical Assistance &amp; Training</th>
<th>Evaluation and Market Research</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>Yes</td>
<td>7%</td>
<td>73%</td>
<td>100%</td>
<td>100%</td>
<td>73%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>No</td>
<td>1%</td>
<td>64%</td>
<td>100%</td>
<td>100%</td>
<td>64%</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>Yes</td>
<td>14%</td>
<td>64%</td>
<td>100%</td>
<td>100%</td>
<td>64%</td>
</tr>
<tr>
<td>O Power</td>
<td>Yes</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>Yes</td>
<td>1%</td>
<td>64%</td>
<td>100%</td>
<td>100%</td>
<td>64%</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>Yes</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Energy Analysis: Internet Audit Program</td>
<td>Yes</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Community based pilots</td>
<td>Yes</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>Yes</td>
<td>34%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>64%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>No</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>Yes</td>
<td>25%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>64%</td>
</tr>
<tr>
<td>Low-Income Multifamily Retrofit</td>
<td>No</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>No</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>No</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>No</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>No</td>
<td>31%</td>
<td>95%</td>
<td>100%</td>
<td>99%</td>
<td>75%</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>No</td>
<td>33%</td>
<td>91%</td>
<td>100%</td>
<td>99%</td>
<td>75%</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>No</td>
<td>31%</td>
<td>95%</td>
<td>100%</td>
<td>99%</td>
<td>75%</td>
</tr>
<tr>
<td>Residential Building Practices and Demonstration Program</td>
<td>Outsource%</td>
<td>Program Planning and Administration</td>
<td>Marketing and Advertising</td>
<td>Sales, Technical Assistance &amp; Training</td>
<td>Evaluation and Market Research</td>
<td>TOTAL</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>------------</td>
<td>-------------------------------------</td>
<td>---------------------------</td>
<td>--------------------------------------</td>
<td>-------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>Yes</td>
<td>-52%</td>
<td>-78%</td>
<td>24%</td>
<td>-67%</td>
<td>-38%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-31%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-24%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>Yes</td>
<td>322%</td>
<td>86%</td>
<td>62%</td>
<td>-10%</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-32%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-24%</td>
</tr>
<tr>
<td>MA Keystone-SAVE</td>
<td>Yes</td>
<td>-43%</td>
<td>-20%</td>
<td>0%</td>
<td>0%</td>
<td>-32%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-12%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-4%</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>Yes</td>
<td>97%</td>
<td>-22%</td>
<td>0%</td>
<td>-54%</td>
<td>-32%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-32%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-24%</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>Yes</td>
<td>138%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-32%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>Yes</td>
<td>-82%</td>
<td>-71%</td>
<td>-54%</td>
<td>2%</td>
<td>-71%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-16%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>O-Power</td>
<td>Yes</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>Yes</td>
<td>-55%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-55%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-37%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-36%</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>Yes</td>
<td>-96%</td>
<td>-96%</td>
<td>-96%</td>
<td>-96%</td>
<td>-96%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-27%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-27%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>Yes</td>
<td>-82%</td>
<td>-71%</td>
<td>-54%</td>
<td>2%</td>
<td>-71%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-16%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>Yes</td>
<td>-12%</td>
<td>-16%</td>
<td>-36%</td>
<td>-14%</td>
<td>-24%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-28%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-24%</td>
</tr>
<tr>
<td>Low Income</td>
<td>Yes</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>Yes</td>
<td>101%</td>
<td>70%</td>
<td>-30%</td>
<td>-54%</td>
<td>-24%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-29%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-29%</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>Yes</td>
<td>13%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-16%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-16%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>Yes</td>
<td>83%</td>
<td>-26%</td>
<td>-87%</td>
<td>-26%</td>
<td>-26%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-32%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-32%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>Yes</td>
<td>-12%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-12%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>Yes</td>
<td>-85%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-85%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>Yes</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>Yes</td>
<td>-12%</td>
<td>-16%</td>
<td>-5%</td>
<td>-14%</td>
<td>-24%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-28%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-24%</td>
</tr>
<tr>
<td>Commercial &amp; Industrial</td>
<td>Yes</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>Yes</td>
<td>101%</td>
<td>70%</td>
<td>-30%</td>
<td>-54%</td>
<td>-24%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-29%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-29%</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td>Yes</td>
<td>-83%</td>
<td>-62%</td>
<td>-83%</td>
<td>-78%</td>
<td>-78%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-62%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-62%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>Yes</td>
<td>-12%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-12%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income Energy Affordability Network Funding</td>
<td>Yes</td>
<td>-43%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-43%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>Yes</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Low-Income TOTAL</td>
<td>Yes</td>
<td>-11%</td>
<td>-16%</td>
<td>-25%</td>
<td>-14%</td>
<td>-34%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-28%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-24%</td>
</tr>
<tr>
<td>C&amp;I Total</td>
<td>Yes</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>Yes</td>
<td>52%</td>
<td>-67%</td>
<td>-27%</td>
<td>-46%</td>
<td>-37%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-35%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-31%</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>Yes</td>
<td>12%</td>
<td>-81%</td>
<td>-60%</td>
<td>-49%</td>
<td>-49%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-29%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-16%</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>Yes</td>
<td>25%</td>
<td>-75%</td>
<td>0%</td>
<td>0%</td>
<td>-75%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-36%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-36%</td>
</tr>
<tr>
<td>Workforce Development</td>
<td>Yes</td>
<td>-99%</td>
<td>-100%</td>
<td>-100%</td>
<td>-100%</td>
<td>-100%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-38%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-36%</td>
</tr>
<tr>
<td>Business Energy Analyzer</td>
<td>Yes</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deep Energy Retrofit</td>
<td>Yes</td>
<td>-99%</td>
<td>-100%</td>
<td>-99%</td>
<td>-100%</td>
<td>-100%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-38%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-36%</td>
</tr>
<tr>
<td>Statewide Marketing &amp; Education</td>
<td>Yes</td>
<td>-99%</td>
<td>-100%</td>
<td>-99%</td>
<td>-100%</td>
<td>-100%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-38%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-36%</td>
</tr>
<tr>
<td>EEAC Consultants</td>
<td>Yes</td>
<td>-83%</td>
<td>-96%</td>
<td>0%</td>
<td>0%</td>
<td>-83%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-85%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-85%</td>
</tr>
<tr>
<td>DOER Assessment</td>
<td>Yes</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>C&amp;I TOTAL</td>
<td>Yes</td>
<td>-99%</td>
<td>-100%</td>
<td>-99%</td>
<td>-100%</td>
<td>-100%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-38%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-36%</td>
</tr>
<tr>
<td>Residential TOTAL</td>
<td>Yes</td>
<td>-11%</td>
<td>-25%</td>
<td>-25%</td>
<td>-48%</td>
<td>-37%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>-28%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>-24%</td>
</tr>
</tbody>
</table>
### VII. Appendix

#### B.1. Master Summary

<table>
<thead>
<tr>
<th>Sector</th>
<th>Capacity</th>
<th>Energy</th>
<th>Non-Gas</th>
<th>Non-Residential</th>
<th>TOTAL BENEFITS</th>
<th>PA</th>
<th>Customer</th>
<th>TOTAL</th>
<th>TRC B/C Ratio</th>
<th>Net Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential</strong></td>
<td>$23,712,787</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$23,712,787</td>
<td>$8,226,001</td>
<td>$3,606,570</td>
<td>$11,832,571</td>
<td>2.00</td>
<td>$11,880,216</td>
</tr>
<tr>
<td><strong>Low Income</strong></td>
<td>$5,159,255</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$5,159,255</td>
<td>$2,949,131</td>
<td>$0</td>
<td>$2,949,131</td>
<td>1.75</td>
<td>$2,210,124</td>
</tr>
<tr>
<td><strong>C&amp;I</strong></td>
<td>$31,573,071</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$31,573,071</td>
<td>$4,750,607</td>
<td>$2,821,440</td>
<td>$7,572,047</td>
<td>4.17</td>
<td>$24,001,024</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$60,445,112</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$60,445,112</td>
<td>$15,925,739</td>
<td>$6,428,010</td>
<td>$22,353,749</td>
<td>2.70</td>
<td>$38,091,363</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector</th>
<th>Capacity</th>
<th>Energy</th>
<th>Non-Gas</th>
<th>Non-Residential</th>
<th>TOTAL BENEFITS</th>
<th>PA</th>
<th>Customer</th>
<th>TOTAL</th>
<th>TRC B/C Ratio</th>
<th>Net Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential</strong></td>
<td>$17,525,755</td>
<td>$0</td>
<td>$227,506</td>
<td>$0</td>
<td>$17,753,261</td>
<td>$6,427,251</td>
<td>$3,118,825</td>
<td>$9,546,076</td>
<td>1.86</td>
<td>$8,207,185</td>
</tr>
<tr>
<td><strong>Low Income</strong></td>
<td>$3,011,818</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$3,011,818</td>
<td>$1,839,518</td>
<td>$0</td>
<td>$1,839,518</td>
<td>1.64</td>
<td>$1,172,300</td>
</tr>
<tr>
<td><strong>C&amp;I</strong></td>
<td>$21,487,919</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$21,487,919</td>
<td>$3,716,126</td>
<td>$2,316,407</td>
<td>$6,032,533</td>
<td>3.56</td>
<td>$15,455,386</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$42,025,492</td>
<td>$0</td>
<td>$227,506</td>
<td>$0</td>
<td>$42,252,997</td>
<td>$11,982,895</td>
<td>$5,435,231</td>
<td>$17,418,126</td>
<td>2.43</td>
<td>$24,834,871</td>
</tr>
</tbody>
</table>

**Percent Variance**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Residential</th>
<th>Low Income</th>
<th>C&amp;I</th>
<th><strong>TOTAL</strong></th>
<th>Residential</th>
<th>Low Income</th>
<th>C&amp;I</th>
<th><strong>TOTAL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential</strong></td>
<td>-26%</td>
<td>0%</td>
<td>0%</td>
<td>-26%</td>
<td>-26%</td>
<td>0%</td>
<td>0%</td>
<td>-26%</td>
</tr>
<tr>
<td><strong>Low Income</strong></td>
<td>-42%</td>
<td>0%</td>
<td>0%</td>
<td>-42%</td>
<td>-42%</td>
<td>0%</td>
<td>0%</td>
<td>-42%</td>
</tr>
<tr>
<td><strong>C&amp;I</strong></td>
<td>-32%</td>
<td>0%</td>
<td>0%</td>
<td>-32%</td>
<td>-32%</td>
<td>0%</td>
<td>0%</td>
<td>-32%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>-30%</td>
<td>0%</td>
<td>0%</td>
<td>-30%</td>
<td>-30%</td>
<td>0%</td>
<td>0%</td>
<td>-30%</td>
</tr>
</tbody>
</table>

**Notes:**

(1) GHG for information purposes only; it is not included in TRC test.
## VII. Appendix
### B.1 Master Summary

<table>
<thead>
<tr>
<th>Sector</th>
<th>Gas (Therm)</th>
<th>Energy (kW)</th>
<th>Annualized Life (yrs.)</th>
<th>TR Energy Cost ($/Lifetime-Therms saved)</th>
<th>Emissions Reductions (Short Tons) (1)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CO2 (Regional)</td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>201,160</td>
<td>55,000</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>36,000</td>
<td>6,000</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>C&amp;I</td>
<td>1,608,632</td>
<td>31,678,929</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,826,282</td>
<td>56,904,748</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Evaluated</td>
<td>748,209</td>
<td>15,693,043</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>123,145</td>
<td>2,755,501</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>C&amp;I</td>
<td>1,629,638</td>
<td>21,022,925</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,500,993</td>
<td>39,471,468</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
1. GHG for information purposes only; it is not included in TRC test
2. Lifetime term savings have been updated from what filed with DPU 09-124. The calculation error has been corrected. These values are also consistent with 2010 quarterly report previously filed EEAC

### Gas P&I Master Summary of Energy Efficiency Activities

<table>
<thead>
<tr>
<th>Sector</th>
<th>Gas (Therm)</th>
<th>Energy (kW)</th>
<th>Annualized Life (yrs.)</th>
<th>TR Energy Cost ($/Lifetime-Therms saved)</th>
<th>Emissions Reductions (Short Tons) (1)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CO2 (Regional)</td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>201,160</td>
<td>55,000</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>36,000</td>
<td>6,000</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>C&amp;I</td>
<td>1,608,632</td>
<td>31,678,929</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,826,282</td>
<td>56,904,748</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Evaluated</td>
<td>748,209</td>
<td>15,693,043</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>123,145</td>
<td>2,755,501</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>C&amp;I</td>
<td>1,629,638</td>
<td>21,022,925</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,500,993</td>
<td>39,471,468</td>
<td>2.0</td>
<td>0.01</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
1. GHG for information purposes only; it is not included in TRC test
2. Lifetime term savings have been updated from what filed with DPU 09-124. The calculation error has been corrected. These values are also consistent with 2010 quarterly report previously filed EEAC
Notes for Cost-Effectiveness Support Tables:

1. Tables are for the program year on which the Annual Report focuses, and not for the three-years of the three-year plan.

2. Tables provide: (1) planned information (with cites to the Department docket and exhibit within the docket that provide and approve the planned values); (2) evaluated information based on the Annual Report; and (3) the percent variance between the planned and evaluated information.

3. Tables have not been re-numbered from the Plan template approved by the Department in D.P.U. 08-50-B.
2. **Screening Tool**

Please see Attachment B-2, the screening tool in Microsoft Excel format, on CD-ROM.

The Annual Report template approved by the Department requires Program Administrators to provide the reported version of the TRM, as well as a summary of any changes between the planned and reported versions of the TRM and the impact of these changes on the relevant energy efficiency programs. See Order Adopting Energy Efficiency Annual Report Template, D.P.U. 08-50-C at 5, 20 (May 5, 2011). However, 2011 is the first year in which plan and report versions of a TRM will be available. See the Massachusetts Technical Reference Manual for Estimating Savings from Energy Efficiency Measures, 2011 Program Year – Plan Version, October 2010, Revised March 3, 2011 at Page 8. Therefore, 2011 is the first year that a summary of changes document will be available in the TRM format.

The Company recognizes that implicit in D.P.U. 08-50-C is the understanding that the Annual Report template is intended to serve as the model for all future annual reports and that any content that is not applicable to a given program year will be noted as such. Since there is no plan and report version of the TRM for 2010, the Company notes that it cannot populate this section of the report with a plan and report version of the TRM.

However, in recognition of the needs of the Department and other stakeholders for transparency and given time and resource requirements, the Company is providing a spreadsheet showing the cells that changed in the evaluated BCR model as compared to the preliminary BCR model due to: 1) impact evaluation studies; and 2) the use of actual results instead of plan estimates. The Company notes that the format of this document is different than the likely format of the summary of changes document that will be filed in 2011, which will more closely align with the plan and report TRM formats.

Please see Attachment B-3.
Columbia Gas of Massachusetts
2010 Energy Efficiency Annual Report
August 15, 2011
Attachment B-3
Page 1 of 2
Program

Measure Name

Annual Fuel Savings
(MMBTU)
Plan

Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential New Construction & Major Renovations
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Residential Heating and Water Heating
Weatherization Program
Weatherization Program
Multifamily Retrofit
Multifamily Retrofit
Deep Energy Retrofit
MassSave
Low-Income Single Family Retrofit
Low-Income MuiltiFamily Retrofit
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I New Construction & Major Renovation
C&I Retrofit
C&I Retrofit
C&I Retrofit
C&I Retrofit
C&I Retrofit
C&I Retrofit
C&I Retrofit
C&I Direct Install
C&I Direct Install
C&I Direct Install
Deep Energy Retrofit

Energy Star I SF
Energy Star II SF
Energy Star III SF
Energy Star I MF
Energy Star II MF
Energy Star III MF
Lighting (CFL bulbs)
Refrigerators
Dishwashers
DHW
Rolled Up ES Homes Savings
Furnace 92+ AFUE (<150)
Furnace 92+ AFUE (<150) w/ECM Motor
Furnace 92+ AFUE (<150) w/ECM Motor MUNI
Furnace 94+ AFUE (<150) w/ECM Motor
Steam boiler
Boiler (forced hot water) >=85% AFUE
Boiler (forced hot water) >=90% AFUE
On demand, Tankless Water Heater >=.82,
Indirect Water Heaters (attached to gas Energy Star FHW boiler)
Condensing Gas water heater>.80%
Integrated water heater/condensing boiler (0.9 EF, 0.9 AFUE)
Integrated water heater/condensing boiler (0.86 EF, 0.85 AFUE)
Condensing Stand Alone >.62%
Heat Recovery Ventilator
Boiler Reset Controls
Programmable thermostat
Furnace (from previous years)
Slider + Window
FURNACE with ECM >= 94% Muni
Weatherization YR1
CFL Bulbs
Multifamily Retrofit YR1
CFL Bulbs
Deep Retrofit
Audits YR1
Low-Income Single Family Retrofit YR1
low-Income MuiltiFamily Retrofit YR1
Furnace 92+ AFUE (<150)
Furnace 92+ AFUE (<150) w/ECM Motor
Furnace 94+ AFUE (<150) w/ECM Motor
Steam boiler
Condensing boiler <= 300 mbh >90% AFUE (Residential rebate)
Condensing boiler <= 300 mbh >90% AFUE
Hydronic boiler <= 300 mbh >85% AFUE <90% AFUE (Residentia
Infrared
On demand, Tankless Water Heater >=.82,
Indirect Water Heaters (Combined appliance efficiency rating >=85
Condensing Stand Alone >95% TE, >75000 btu
Intergrated water heater/condensing boiler (0.9 EF, 0.9 AFUE)
Intergrated water heater/condensing boiler (0.86 EF, 0.85 AFUE)
Condensing boiler 301-499 mbh
Condensing boiler 500-999 mbh
Condensing boiler 1000-1700 mbh
Condensing boiler 1701+ mbh
Hydronic boiler 301-499 mbh
Hydronic boiler 500-999 mbh
Hydronic boiler 1000-1700 mbh
Hydronic boiler 1701+ mbh
Condensing Unit Heaters
Water Heater (Res Type)
Fryers
High Efficiency Gas Steamer (Energy Star >=38% efficiency)
High Efficiency Gas Convection Oven (>=40% efficiency)
High Efficiency Gas Combiniation Oven (>=40% efficiency)
High Efficiency Gas Conveyer Oven (>=40% efficiency)
High Efficiency Gas Rack Oven (>=50% efficiency)
High Efficiency Gas Griddle
Multifamily New Construction - Custom YR1
C&I Custom New Construction -Small YR1
C&I custom New Construction -Large YR1
Programable Thermostat
Boiler Reset Controls (retrofit only)
Steam Traps
Multifamily Retrofit Custom YR1
C&I Custom Retrofit -Small YR1
C&I custom Retrofit -Large YR1
Rolled Up Custom Measure
Pre-Rinse Spray Valve
Thermostat
Rolled Up Custom Measure
Pilot

Eval

31.00
31.00
31.00
31.00
31.00
31.00
3.30
21.10
19.60
19.60
23.60
12.30
8.00
15.00
7.80
4.00
7.40
21.10
13.50
1.90
7.70
7.90
7.70

21.57
12.10
30.11
311.77
21.10
19.60
23.60
36.50
15.00
32.30
8.00
74.40
7.10
30.40
25.00
24.60
20.00
78.30
146.70
264.10
337.60
35.30
66.20
119.10
150.00
40.90
58.60
153.60
24.80
40.30
84.50
211.30
18.50
500.13
378.70
2,809.31
7.70
35.50
25.30
517.38
388.17
3,009.98
33.60
7.70
-

1.07
19.19
11.80
12.70
12.70
15.30
10.90
7.20
13.70
9.70
8.00
7.40
21.10
13.50
1.90
7.70
7.90
7.70
11.80
0.20
15.30
17.97
7.31
30.53
24.55
21.10
19.60
23.60
36.50
13.70
21.10
7.20
74.40
7.10
30.40
25.00
24.60
20.00
42.30
77.10
142.60
249.00
35.30
66.20
119.10
150.00
40.90
0.76
58.60
153.60
24.80
40.30
84.50
211.30
18.50
672.66
378.70
2,809.31
7.70
35.50
25.30

1,639.41
43.85

Gross Annual kWh
Saved
Plan

Eval
75
75
75
75
75
75
50
21
5
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

0
603
0
684
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

0.02
66.66

55.08

Maximum Load
Reduction (kW)
Plan

Eval
-

-

0.00
0.08

0.02

Annual Water
Savings (gal/unit)
Plan

Eval

Free-Ridership
Rate
Plan

-

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

-

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

-

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

Eval

0
0
0.67
0.62
0.62
0.62
0.67
0.69
0.6
0.63
0.66
0.37
0.6
0.39
0.37
0.58
0.67
0.62
0.22

Spillover Rate
(Participant)
Plan
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

Eval

0
0
0.19
0.19
0.19
0.19
0.14
0.14
0.14
0
0
0
0.14
0.14
0
0
0.19
0.19
0.19

Spillover Rate
(Non-Participant)
Plan
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

Eval

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

Net-to-Gross Ratio
(NTGR)
Plan
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00

1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

-

-

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%

1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00
1.00

0
0

-

-

0.00%
0.00%

0.00%
0.00%

0.00%
0.00%

1.00
1.00

0

-

-

0.00%

0.00%

0.00%

1.00

Eval
1
1
1
1
1
1
1
1
1
1
1
0.52
0.57
0.57
0.57
0.47
0.45
0.54
0.37
0.34
0.63
0.54
0.45
0.63
1
1
0.42
0.52
0.8
0.57
1.247
0.97
0.847
1
1
1
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.83
0.96
0.96
0.96
0.83
0.83
0.83

0.96
0.83


This program has not yet been evaluated for NTG.

This program has not yet been evaluated for NTG.
APPENDIX C: Program and Pilot Program EM&V Studies

Please see VOLUME II, Appendix C (Evaluation Studies)
APPENDIX D: Performance Incentives Supporting Documentation

1. Model

Please see Attachment D-1.
<table>
<thead>
<tr>
<th>Program</th>
<th>Program Planning and Administration*</th>
<th>Marketing and Advertising*</th>
<th>Participant Incentive*</th>
<th>Sales, Technical Assistance &amp; Training*</th>
<th>Evaluation and Market Research*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential (total)</td>
<td>$609,138</td>
<td>$359,953</td>
<td>$5,383,341</td>
<td>$988,608</td>
<td>$227,990</td>
</tr>
<tr>
<td>Residential New Construction &amp; Major Renovations</td>
<td>129,461</td>
<td>93,762</td>
<td>1,567,517</td>
<td>92,267</td>
<td>56,387</td>
</tr>
<tr>
<td>Residential Heating and Water Heating</td>
<td>116,021</td>
<td>84,028</td>
<td>1,412,550</td>
<td>74,926</td>
<td>53,222</td>
</tr>
<tr>
<td>MassSAVE</td>
<td>143,963</td>
<td>34,928</td>
<td>46,800</td>
<td>571,500</td>
<td>22,123</td>
</tr>
<tr>
<td>Weatherization Program</td>
<td>181,758</td>
<td>131,637</td>
<td>2,110,107</td>
<td>220,157</td>
<td>83,377</td>
</tr>
<tr>
<td>Multifamily Retrofit</td>
<td>37,935</td>
<td>15,598</td>
<td>246,367</td>
<td>29,758</td>
<td>9,880</td>
</tr>
<tr>
<td><strong>Low Income (total)</strong></td>
<td><strong>$188,132</strong></td>
<td><strong>$43,091</strong></td>
<td><strong>1,862,422</strong></td>
<td><strong>$569,924</strong></td>
<td><strong>$84,348</strong></td>
</tr>
<tr>
<td>Low-Income Single Family Retrofit</td>
<td>129,725</td>
<td>34,287</td>
<td>1,426,721</td>
<td>459,868</td>
<td>67,077</td>
</tr>
<tr>
<td>Low-Income MultiFamily Retrofit</td>
<td>58,407</td>
<td>8,823</td>
<td>375,701</td>
<td>110,057</td>
<td>17,271</td>
</tr>
<tr>
<td><strong>Commercial &amp; Industrial (total)</strong></td>
<td><strong>$505,356</strong></td>
<td><strong>$186,880</strong></td>
<td><strong>2,717,833</strong></td>
<td><strong>$515,074</strong></td>
<td><strong>$121,938</strong></td>
</tr>
<tr>
<td>C&amp;I New Construction &amp; Major Renovation</td>
<td>267,122</td>
<td>100,970</td>
<td>1,514,930</td>
<td>231,681</td>
<td>65,881</td>
</tr>
<tr>
<td>C&amp;I Retrofit</td>
<td>233,441</td>
<td>64,031</td>
<td>1,170,203</td>
<td>283,393</td>
<td>54,829</td>
</tr>
<tr>
<td>C&amp;I Direct Install</td>
<td>4,793</td>
<td>1,879</td>
<td>32,500</td>
<td>0</td>
<td>1,226</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>$1,302,626</strong></td>
<td><strong>$589,924</strong></td>
<td><strong>$9,903,396</strong></td>
<td><strong>$2,073,607</strong></td>
<td><strong>$434,273</strong></td>
</tr>
</tbody>
</table>

* As filed in Bay State Gas Company, D.P.U. 09-125, Exhibit Bay-20 (Supplemental 12-21-09).
** Sector totals are as filed in updated gas statewide PI model on 3-12-10, allocations among each program are based on planned savings
*** Sector totals are as filed in updated gas statewide PI model on 3-12-10, allocations among each program are based on planned net benefits
<table>
<thead>
<tr>
<th></th>
<th>Planned Costs*</th>
<th>Performance Incentive*</th>
<th>Savings Goal*</th>
<th>Net Benefit Goal*</th>
<th>PI from Savings**</th>
<th>PI from Net Benefit***</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7,569,030</td>
<td>$317,493</td>
<td>1,001,640</td>
<td>$23,712,787</td>
<td>$175,296</td>
<td>$125,649</td>
<td></td>
</tr>
<tr>
<td>1,942,395</td>
<td>65,689</td>
<td>214,515</td>
<td>6,221,793</td>
<td>37,542</td>
<td>32,968</td>
<td></td>
</tr>
<tr>
<td>1,740,747</td>
<td>158,411</td>
<td>475,952</td>
<td>9,666,471</td>
<td>83,296</td>
<td>52,810</td>
<td></td>
</tr>
<tr>
<td>819,314</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2,727,037</td>
<td>82,048</td>
<td>274,869</td>
<td>6,639,783</td>
<td>48,104</td>
<td>35,183</td>
<td></td>
</tr>
<tr>
<td>339,537</td>
<td>11,345</td>
<td>36,305</td>
<td>884,740</td>
<td>6,354</td>
<td>4,686</td>
<td></td>
</tr>
<tr>
<td>$2,687,917</td>
<td>$78,260</td>
<td>216,010</td>
<td>$5,159,255</td>
<td>$23,478</td>
<td>$19,566</td>
<td></td>
</tr>
<tr>
<td>2,117,658</td>
<td>41,186</td>
<td>138,521</td>
<td>3,308,472</td>
<td>15,056</td>
<td>12,546</td>
<td></td>
</tr>
<tr>
<td>570,259</td>
<td>37,074</td>
<td>77,489</td>
<td>1,850,783</td>
<td>8,422</td>
<td>7,019</td>
<td></td>
</tr>
<tr>
<td>$4,046,879</td>
<td>$507,934</td>
<td>1,008,632</td>
<td>$31,573,071</td>
<td>$233,403</td>
<td>$252,468</td>
<td></td>
</tr>
<tr>
<td>2,180,585</td>
<td>218,163</td>
<td>706,315</td>
<td>14,175,472</td>
<td>102,482</td>
<td>113,351</td>
<td></td>
</tr>
<tr>
<td>1,825,996</td>
<td>280,742</td>
<td>866,267</td>
<td>17,012,143</td>
<td>125,690</td>
<td>136,034</td>
<td></td>
</tr>
<tr>
<td>40,398</td>
<td>9,010</td>
<td>36,050</td>
<td>385,456</td>
<td>5,231</td>
<td>3,082</td>
<td></td>
</tr>
<tr>
<td>$14,303,826</td>
<td>$903,587</td>
<td>2,826,282</td>
<td>$60,445,112</td>
<td>$432,177</td>
<td>$397,688</td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>Final Earned Performance Incentives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Savings</td>
<td>%</td>
<td>Net Benefit</td>
<td>%</td>
<td>Savings</td>
<td>Net Benefits</td>
<td>Metrics</td>
</tr>
<tr>
<td>1,092,919</td>
<td>25%</td>
<td>2,494,895</td>
<td>26%</td>
<td>162,839</td>
<td>114,420</td>
<td>8,894</td>
</tr>
<tr>
<td>54,483</td>
<td>25%</td>
<td>1,640,040</td>
<td>15%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>711,480</td>
<td>14%</td>
<td>15,013,097</td>
<td>15%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>316,718</td>
<td>14%</td>
<td>7,694,550</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>10,238</td>
<td>14%</td>
<td>147,208</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>123,145</td>
<td>14%</td>
<td>3,011,918</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>117,253</td>
<td>14%</td>
<td>2,870,893</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>5,892</td>
<td>14%</td>
<td>133,125</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>1,720,099</td>
<td>14%</td>
<td>22,796,987</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>495,556</td>
<td>14%</td>
<td>8,232,690</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>1,185,074</td>
<td>14%</td>
<td>14,309,095</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>39,469</td>
<td>14%</td>
<td>255,202</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>2,936,163</td>
<td>14%</td>
<td>50,303,700</td>
<td>14%</td>
<td>12,744</td>
<td>10,917</td>
<td>2,917</td>
</tr>
<tr>
<td>Sector</td>
<td>Amount at design level per model</td>
<td>Multiplying factor used for calculation</td>
<td>Achieved Level</td>
<td>Allocate to Which Program?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------</td>
<td>----------------------------------------</td>
<td>----------------</td>
<td>---------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Deep Savings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. MassSAVE/Weatherization</td>
<td>25%</td>
<td>$3,620</td>
<td>125%</td>
<td>$4,525</td>
<td>Exemplary</td>
<td>Weatherization</td>
</tr>
<tr>
<td>2. MassSAVE/Increase DI bulb penetration</td>
<td>25%</td>
<td>$3,620</td>
<td>125%</td>
<td>$4,525</td>
<td>Exemplary</td>
<td>Weatherization</td>
</tr>
<tr>
<td><strong>Infrastructure Metrics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Community Initiatives</td>
<td>25%</td>
<td>$3,620</td>
<td>100%</td>
<td>$3,620</td>
<td>Design</td>
<td>Weatherization</td>
</tr>
<tr>
<td><strong>Contribution to Funding Metric</strong></td>
<td>1,034</td>
<td>0%</td>
<td>$ -</td>
<td>-</td>
<td>Did not meet</td>
<td></td>
</tr>
<tr>
<td><strong>Contribution to Financing Metric</strong></td>
<td>1,034</td>
<td>0%</td>
<td>$ -</td>
<td>-</td>
<td>Did not meet</td>
<td></td>
</tr>
<tr>
<td><strong>Total Residential</strong></td>
<td>$16,548</td>
<td>$16,289</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Hard to reach landlords</td>
<td>33.3%</td>
<td>$10,272</td>
<td>125%</td>
<td>$12,840</td>
<td>Exemplary</td>
<td>LI Single family</td>
</tr>
<tr>
<td>2. New Measures</td>
<td>33.3%</td>
<td>$10,272</td>
<td>100%</td>
<td>$10,272</td>
<td>Design</td>
<td>LI Single family</td>
</tr>
<tr>
<td>3. MF Building inventory</td>
<td>33.3%</td>
<td>$10,272</td>
<td>75%</td>
<td>$7,704</td>
<td>Threshold</td>
<td>LI Multi family</td>
</tr>
<tr>
<td><strong>Contribution to Funding Metric</strong></td>
<td>19,810</td>
<td>0%</td>
<td>$ -</td>
<td>-</td>
<td>Did not meet</td>
<td></td>
</tr>
<tr>
<td><strong>Contribution to Financing Metric</strong></td>
<td>19,810</td>
<td>0%</td>
<td>$ -</td>
<td>-</td>
<td>Did not meet</td>
<td></td>
</tr>
<tr>
<td><strong>Total Low Income</strong></td>
<td>$35,217</td>
<td>$30,815</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Commercial &amp; Industrial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Small Business Electric and Gas Integration</td>
<td>25%</td>
<td>$3,861</td>
<td>0%</td>
<td>$ -</td>
<td>None</td>
<td>Direct Install</td>
</tr>
<tr>
<td>2. Targeted Customer Segments</td>
<td>13%</td>
<td>$1,931</td>
<td>0%</td>
<td>$ -</td>
<td>Design</td>
<td>New Construction and</td>
</tr>
<tr>
<td>3. Combined Heat &amp; Power</td>
<td>0%</td>
<td>$3,861</td>
<td>100%</td>
<td>$3,861</td>
<td>None</td>
<td>Retrofit based on % of</td>
</tr>
<tr>
<td>4. Depth of Savings</td>
<td>31%</td>
<td>$4,826</td>
<td>125%</td>
<td>$6,033</td>
<td>Design</td>
<td>actual savings</td>
</tr>
<tr>
<td>5. New Construction</td>
<td>31%</td>
<td>$4,826</td>
<td>0%</td>
<td>$ -</td>
<td>None</td>
<td>New Construction only</td>
</tr>
<tr>
<td><strong>Contribution to Funding Metric</strong></td>
<td>1,379</td>
<td>0%</td>
<td>$ -</td>
<td>-</td>
<td>Did not meet</td>
<td></td>
</tr>
<tr>
<td><strong>Contribution to Financing Metric</strong></td>
<td>1,379</td>
<td>0%</td>
<td>$ -</td>
<td>-</td>
<td>Did not meet</td>
<td></td>
</tr>
<tr>
<td><strong>Total Commercial &amp; Industrial</strong></td>
<td>$22,064</td>
<td>$9,894</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Performance Metrics</strong></td>
<td>$73,829</td>
<td>$56,998</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Metrics

a. RESIDENTIAL

<table>
<thead>
<tr>
<th>METRIC NUMBER AND NAME</th>
<th>ACHIEVEMENT LEVEL</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MassSAVE/Weatherization: Deeper Savings {Electric &amp; Gas} – Statewide</td>
<td>Exemplary</td>
<td>Customers: 1,038 Savings: 281,466</td>
</tr>
<tr>
<td>2. MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration {Electric &amp; Gas} – Statewide</td>
<td>Exemplary</td>
<td>Bulbs: 14 See also 5/28/10 memo</td>
</tr>
<tr>
<td>3. CoolSmart: Increase % of correct installations {Electric} – Statewide</td>
<td>N/A – electric only</td>
<td>N/A</td>
</tr>
<tr>
<td>4. Community Initiatives {Electric &amp; Gas} – Statewide</td>
<td>Design</td>
<td>See memo</td>
</tr>
<tr>
<td>5. MassSAVE: Facilitate Inclusion of Independent Energy Auditors {Electric &amp; Gas} – Statewide</td>
<td>Design</td>
<td>See 5/1/10 memo; 7/1/10 memo</td>
</tr>
</tbody>
</table>

b. LOW-INCOME

<table>
<thead>
<tr>
<th>METRIC NUMBER AND NAME</th>
<th>ACHIEVEMENT LEVEL</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hard to Reach Landlords {Electric &amp; Gas} – Statewide</td>
<td>Exemplary</td>
<td>See supporting documentation</td>
</tr>
<tr>
<td>2. New Measures</td>
<td>Design</td>
<td>See supporting documentation</td>
</tr>
<tr>
<td>3. Multi-family Building Inventory</td>
<td>Threshold</td>
<td>See supporting documentation</td>
</tr>
</tbody>
</table>

c. COMMERCIAL & INDUSTRIAL

<table>
<thead>
<tr>
<th>METRIC NUMBER AND NAME</th>
<th>ACHIEVEMENT LEVEL</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;I #1 Small Business Electric and Gas Integration</td>
<td>Did not meet</td>
<td>6,911 therms</td>
</tr>
<tr>
<td>C&amp;I #2 Targeted Customer Segments</td>
<td>Did not meet</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;I #3 Combined Heat &amp; Power</td>
<td>Design</td>
<td>See supporting documentation</td>
</tr>
<tr>
<td>C&amp;I #4 Retrofit -- Depth of savings</td>
<td>Exemplary</td>
<td>See supporting documentation</td>
</tr>
<tr>
<td>C&amp;I #5 New Construction -- Comprehensiveness and depth of savings</td>
<td>Did not meet</td>
<td></td>
</tr>
</tbody>
</table>

d. OTHER FUNDING

<table>
<thead>
<tr>
<th>METRIC NUMBER AND NAME</th>
<th>ACHIEVEMENT LEVEL</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Other program funding metric</td>
<td>Did not meet</td>
<td>None</td>
</tr>
<tr>
<td>2. “Other financing capital” metric</td>
<td>Did not meet</td>
<td>None</td>
</tr>
</tbody>
</table>

Please see Attachments D-2(a), D-2(b), and D-2(c).
Residential Metric #1

Deeper Savings {Electric & Gas} – Statewide
## Gas Weatherization Deeper Savings Metric Report 2010

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Participants</th>
<th>Avg Savings</th>
<th>Total Thems</th>
<th>Mmbtu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Weatherization</td>
<td>1,038</td>
<td>252</td>
<td>261,844</td>
<td>26,184</td>
</tr>
<tr>
<td>Gas Weatherization Participants also participated Gas Network HEHE&amp;DHW within the year of 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOILER</td>
<td>4</td>
<td>80</td>
<td>320</td>
<td>32</td>
</tr>
<tr>
<td>BOILERS_90*</td>
<td>36</td>
<td>150</td>
<td>5,400</td>
<td>540</td>
</tr>
<tr>
<td>Condensing BoilerWater Htr Combo</td>
<td>5</td>
<td>211</td>
<td>1,055</td>
<td>106</td>
</tr>
<tr>
<td>Boiler Reset</td>
<td>1</td>
<td>79</td>
<td>79</td>
<td>8</td>
</tr>
<tr>
<td>ECM_FURNACE_92*****</td>
<td>16</td>
<td>196</td>
<td>3,136</td>
<td>314</td>
</tr>
<tr>
<td>ECM_FURNACE_94**</td>
<td>27</td>
<td>236</td>
<td>6,372</td>
<td>637</td>
</tr>
<tr>
<td>INDIRECT_DHW</td>
<td>26</td>
<td>40</td>
<td>1,040</td>
<td>104</td>
</tr>
<tr>
<td>ON_DEM_TANKLESS_DHW</td>
<td>19</td>
<td>78</td>
<td>1,482</td>
<td>148</td>
</tr>
<tr>
<td>STEAM_BOILER</td>
<td>6</td>
<td>123</td>
<td>738</td>
<td>74</td>
</tr>
<tr>
<td>Unique count Customers who participant Gas Weatherization/Gas Network</td>
<td>1,038</td>
<td>281,466</td>
<td>28,147</td>
<td>271</td>
</tr>
<tr>
<td>2009 Baseline</td>
<td>940</td>
<td>220,500</td>
<td>235</td>
<td></td>
</tr>
<tr>
<td>Progress to GOAL - 2009 Baseline</td>
<td>10.4%</td>
<td>27.6%</td>
<td>15.6%</td>
<td></td>
</tr>
</tbody>
</table>
Residential Metric #2

MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration {Electric & Gas} – Statewide
The purpose of this memo is to satisfy the Threshold Level of Mass Save Metric #2: Increase Direct Installation (DI) Bulb Penetration.

Background

Residential lighting presents an excellent cost effective energy saving opportunity. Electric & Gas Program Administrators (PAs) have been installing Compact Fluorescent Light bulbs (CFL) as part of the Home Energy Assessment for several years. Although the net install averages vary across PAs (Attachment A), the overall impact of direct install lighting has proven to be extremely effective in terms of realized kWh/kW savings and increased socket penetration of program participants. However, research conducted by Nexus Market Research in 2009 indicated that the household median socket penetration in Massachusetts is only +/- 20%\(^1\). This number illustrates that there is still significant potential for increasing overall socket penetration through direct installs during Home Energy Assessments. Historically, the majority of CFL’s installed through the program were the traditional spiral style. As spiral style bulbs have become more regularly used in households throughout Massachusetts, PAs have seen an increase in the number of specialty bulbs being installed through the program\(^2\). PAs understand the importance of adding a greater selection of direct install specialty bulbs in order to increase bulb penetration rates.

---


\(^2\) 2009 NSTAR & National Grid Direct Install Data; 54% Specialty CFL’s
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threshold</strong></td>
</tr>
</tbody>
</table>

**Strategy of Identifying & Increasing DI of Specialty Bulbs Statewide**

Each PA lead vendor supplied a list of bulbs (Attachment B) currently offered as direct install measures during Home Energy Assessments in their respective service territories. The data was compiled and evaluated to determine current types of bulbs offered statewide. Through this effort the PAs identified certain specialty bulbs as potentially missed opportunities.

The PAs subsequently surveyed auditors in order to identify CFL’s routinely noted as missed opportunities during Home Energy Assessments and worked with the Lighting & Appliance program to identify the most commonly used readily available, cost effective specialty bulbs. The PAs also reviewed a 2009 NSTAR Retail Inventory Analysis (Attachment C) of commonly stocked specialty bulbs to ensure that bulbs installed through the program will be available to customers for replacement when needed. Upon completion of researching specialty bulb missed opportunities; the PAs met to discuss the feasibility of adding the identified specialty bulbs as consistently offered direct install measures. Currently, PAs are in different stages of implementation, as the PAs gain experience delivering specialty bulbs, the lessons learned will be shared among PAs. All PAs will work to increase direct installation of specialty bulbs beginning in 2010. The PAs will also consider a future direct install bulk procurement strategy similar to an initiative conducted in 2007. This approach could serve as a mechanism to gain consistency of bulb inventories across the vendor network and provide opportunities to achieve economies of scale bulk purchase pricing.
Missed Opportunity Specialty Bulbs

The RCS/Mass Save 2010 program will offer the specialty bulbs listed below:

1. Reflectors
2. Reflectors-Dimmable
3. A-Bulbs
4. 3Way Spiral
5. Candelabra Style

Next Steps to Implement Specialty Bulb Installation

Each PA will coordinate directly with its lead vendor to procure the high quality specialty bulbs listed above. While a preference should be given to lighting products that meet the most rigorous testing protocols (i.e. PEARL); limiting available program offerings to only products that meet specific testing may delay the introduction of new available products and result in missed opportunities. The goal is to identify the types of missed opportunities that could be mitigated by the expansion of the available product mix. It is expected that PAs and lead vendors will apply due diligence when procuring specialty bulbs based on reliability information provided by manufacturers and distributors.

PAs will require vendors to track installation of all types and quantities of specialty bulbs in order to determine those that are most desired and accepted by customers. This will allow adjustments to stock and increase installations of specialty bulbs during the initial home energy assessment. PAs will continue to work with lead vendors in order to gather current information related to the opportunities present in the housing stock served through the program. If additional missed opportunities are identified; PAs intend on adjusting specialty bulb offerings accordingly. PAs believe that the addition of the identified specialty bulbs will allow for greater DI penetration rates, thus leading to successful completion of Mass Save Metric #2.
### 2009 Baseline Data

<table>
<thead>
<tr>
<th>Company</th>
<th>Average Bulbs per Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay State Gas Company</td>
<td>8.57</td>
</tr>
<tr>
<td>The Berkshire Gas Company</td>
<td>9.65</td>
</tr>
<tr>
<td>New England Gas Company</td>
<td>7.63</td>
</tr>
<tr>
<td>National Grid Electric Company</td>
<td>12.00</td>
</tr>
<tr>
<td>National Grid Gas Company</td>
<td>9.70</td>
</tr>
<tr>
<td>NSTAR Electric Company</td>
<td>12.22</td>
</tr>
<tr>
<td>NSTAR Gas Company</td>
<td>10.43</td>
</tr>
<tr>
<td>Unitil Electric Company</td>
<td>13.18</td>
</tr>
<tr>
<td>Unitil Gas Company</td>
<td>8.00</td>
</tr>
<tr>
<td>Western Massachusetts Electric Company</td>
<td>9.50</td>
</tr>
</tbody>
</table>
### Current Lead Vendor Bulb Inventory

<table>
<thead>
<tr>
<th>Rise</th>
<th>CSG</th>
<th>EEI</th>
<th>CET</th>
<th>Honeywell</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF 15w Spiral Earthmate</td>
<td>15w Harmony Spiral</td>
<td>13w Spiral</td>
<td>15w Harmony Spiral</td>
<td>15w R-30 Dimmable Flood</td>
</tr>
<tr>
<td>CF20EL 20w Earthmate</td>
<td>20w Harmony Spiral</td>
<td>20w Spiral</td>
<td>20w Harmony Spiral</td>
<td>15w R-30 Flood</td>
</tr>
<tr>
<td>CF 30w Spiral</td>
<td>15w Feit Globe</td>
<td>25w Spiral</td>
<td>15w Feit Globe</td>
<td>15w CFL</td>
</tr>
<tr>
<td>GE9w A Lamp</td>
<td>25w Harmony Spiral</td>
<td>20w Capsule</td>
<td>25w Harmony Spiral</td>
<td>20w CFL</td>
</tr>
<tr>
<td>GE 15w A Lamp</td>
<td>15w Max Dim Spiral</td>
<td>25w Capsule</td>
<td>33w Harmony Spiral</td>
<td>24w CFL</td>
</tr>
<tr>
<td>Maxlite 20w A Lamp</td>
<td>Phillips 15w R-30 Reflector</td>
<td>15w Globe</td>
<td>Feit 15w R-30 Reflector</td>
<td></td>
</tr>
<tr>
<td>FEIT 15w R30</td>
<td>TCP 14w A Lamp</td>
<td>15w Reflector</td>
<td>TCP 14w A Lamp</td>
<td></td>
</tr>
<tr>
<td>FEIT 18w PAR38 Ext Flood</td>
<td>TCP 14w Mini Spiral Lamp</td>
<td>20w Reflector</td>
<td>TCP 14w Mini Spiral Lamp</td>
<td></td>
</tr>
<tr>
<td>FEIT 23w PAR38 Exterior Flood</td>
<td>GE 15 w R-30 Dimmable Flood</td>
<td>15w Reflector dimmer</td>
<td>GE 15w R-30 Dimmable Flood</td>
<td></td>
</tr>
<tr>
<td>GE FLE 15/2DVR/R30 15w Dimmable</td>
<td>Phillips 16w R-30 Reflector</td>
<td>3-way Spirals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 9625 TCP1G2509.9 w Globe</td>
<td>Phillips 16w R-30 Dimmable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF 14G26 TPC 2G2514 Globe</td>
<td>23w Harmony Spiral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF19G30 TCP 19 w G30 Globe</td>
<td>33w Harmony 3-way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF33EL/3wau/Twist630G/1</td>
<td>9w TCP Candle Base New in 2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF3 9w Torpedo WWadp</td>
<td>Sylvania 15 w Dimmable New in 2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Earth Black Torchiere 55w Dimmable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Earth White Torchiere 55 w GE643-WH-1460 A Dimmable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Availability of ENERGY STAR® Qualified Lighting Products - March 2009

<table>
<thead>
<tr>
<th>Product Category</th>
<th>EFL Web</th>
<th>MassSAVE</th>
<th>Lowe's</th>
<th>Home Depot</th>
<th>BJs</th>
<th>Costco</th>
<th>Sam's</th>
<th>Wallmart</th>
<th>Target</th>
<th>Stop &amp; Shop</th>
<th>Shaw's</th>
<th>AuBuchon's</th>
<th>Rocky's</th>
<th>Incandescent Equiv. (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard CFL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9w to 13w spiral</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>40</td>
</tr>
<tr>
<td>13w to 15w spiral</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>60</td>
</tr>
<tr>
<td>18w to 25w spiral</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>75</td>
</tr>
<tr>
<td>23w to 30w spiral</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td>30w to 52w spiral</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>7w A bulb</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>13w A19 bulb</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>40</td>
</tr>
<tr>
<td>20w A20 bulb</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>75</td>
</tr>
<tr>
<td><strong>Specialty CFL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11w globe</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>40</td>
</tr>
<tr>
<td>14w globe</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>60</td>
</tr>
<tr>
<td>25w 3-way CFL</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>30-70-100</td>
</tr>
<tr>
<td>33w 3-way CFL</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>50-100-150</td>
</tr>
<tr>
<td>15w dimmable CFL</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>60</td>
</tr>
<tr>
<td>25w dimmable CFL</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>9w flame tip</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>40</td>
</tr>
<tr>
<td>11w ceiling fan</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>40</td>
</tr>
<tr>
<td>14w torpedo</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>40</td>
</tr>
<tr>
<td>15w flood</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>60</td>
</tr>
<tr>
<td>15w reflector</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>60</td>
</tr>
<tr>
<td>20w reflector</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>75</td>
</tr>
<tr>
<td>23w reflector</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td>23w PAR 38 flood</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td>20w reflector flood</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td>15w dimmable flood</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>60</td>
</tr>
<tr>
<td>25w dimmable flood</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>100</td>
</tr>
<tr>
<td><strong>LED</strong></td>
<td>Recessed downlights</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NSTAR - Locked Martin Inventory Analysis
Columbia Gas of Massachusetts Direct Install Bulb Penetration 2010

<table>
<thead>
<tr>
<th></th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers Served</td>
<td>154</td>
<td>177</td>
<td>224</td>
<td>254</td>
<td>335</td>
<td>301</td>
<td>1,445</td>
</tr>
<tr>
<td>CFLs Installed *</td>
<td>2344</td>
<td>2910</td>
<td>2945</td>
<td>3347</td>
<td>4178</td>
<td>4557</td>
<td>20,281</td>
</tr>
<tr>
<td>Average CFLs per Customer</td>
<td>15.2</td>
<td>16.4</td>
<td>13.1</td>
<td>13.2</td>
<td>12.5</td>
<td>15.1</td>
<td>14.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2009 Baseline</th>
<th>Design (+25%)</th>
<th>Exemplary (+25%)</th>
<th>2010 Metric Results</th>
<th>Metric Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>11.25</td>
<td>12.6</td>
<td>14</td>
<td>Exemplary</td>
</tr>
</tbody>
</table>

* CFLs are paid for by the electric utilities except in the case of a municipal customer.
Residential Metric #4

Community Initiatives {Electric & Gas} – Statewide
# Community Initiatives (Electric and Gas) - Statewide

## I. THRESHOLD

The Program Administrators (PAs) have been developing initiatives in conjunction with community partners to advance the aggressive savings goals of the Green Communities Act. The following list summarizes the various community initiatives as led by the PAs who met the Threshold Community Initiative Metric by having developed and implemented at least one community-based initiative to deliver energy-efficiency services with community personnel in at least six communities (e.g., cities, towns, neighborhoods) in the Commonwealth.

### List of Community Initiatives and Organizations

<table>
<thead>
<tr>
<th>Community Initiative</th>
<th>Organization Name</th>
<th>Organization Role Within the Program</th>
<th>Role Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Bedford</strong></td>
<td>NSTAR Electric PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NSTAR Gas PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green Jobs Green Economy /Marion Institute</td>
<td>Residential and small business outreach</td>
<td>Market programs to New Bedford businesses and residents</td>
</tr>
<tr>
<td></td>
<td>City of New Bedford</td>
<td>Local Govt. Coordinator</td>
<td>Coordinate and facilitate program delivery with municipal offices</td>
</tr>
<tr>
<td></td>
<td>YouthBuild New Bedford/ PACE, Inc.</td>
<td>Sub-contractors (installers)</td>
<td>Workforce training, weatherization</td>
</tr>
<tr>
<td></td>
<td>Environment Northeast</td>
<td>EEAC representative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Grid Gas PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NSTAR Electric PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green Justice Coalition/Community Labor United</td>
<td>Project Coordination</td>
<td>Coordinates program delivery, identifies geographic areas and local contractors</td>
</tr>
<tr>
<td></td>
<td>Chelsea Collaborative</td>
<td>Residential outreach organization</td>
<td>Conducts outreach</td>
</tr>
<tr>
<td></td>
<td>Conservation Services Group (CSG)</td>
<td>Lead Vendor</td>
<td>Audit scheduling, performing the audits, writing the contracts and work orders, providing quality control services, data tracking</td>
</tr>
<tr>
<td></td>
<td>InsulPro Implementation sub-contractor</td>
<td>Weatherization installer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Town of Chelsea</td>
<td>City Contact</td>
<td>Assist in permitting; provide voter database information to outreach group</td>
</tr>
<tr>
<td></td>
<td>New England Regional Council of Carpenters</td>
<td>Workforce Development</td>
<td>Establish recruitment goals, recruit Chelsea residents into NERCC Apprentice Training</td>
</tr>
<tr>
<td></td>
<td>Environment Northeast</td>
<td>EEAC representative</td>
<td>EEAC representative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------</td>
<td>-----------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Boston Chinatown</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSTAR</td>
<td>Electric PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td>National Grid</td>
<td>Gas PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td>Chinese Progressive Assn.</td>
<td>Residential outreach organization</td>
<td>Conducts outreach</td>
<td></td>
</tr>
<tr>
<td>Green Justice Coalition/Community Labor United</td>
<td>Project Coordination</td>
<td>Coordinates program delivery, identifies geographic areas and local contractors</td>
<td></td>
</tr>
<tr>
<td>Conservation Services Group (CSG)</td>
<td>MultiFamily vendor</td>
<td>Performs MultiFamily Audits</td>
<td></td>
</tr>
<tr>
<td>Next Step Living</td>
<td>1-4 Family vendor</td>
<td>Performs 1-4 Family Audits</td>
<td></td>
</tr>
<tr>
<td>Mass Energy</td>
<td>Renew Boston Partner</td>
<td>Income Verification</td>
<td></td>
</tr>
<tr>
<td>International Union of Painters and Allied Trades DC 35</td>
<td>Workforce Development</td>
<td>Runs &quot;Green Collar Pathways&quot; workforce development program</td>
<td></td>
</tr>
<tr>
<td>Aulson Company</td>
<td>Implementation sub-contractor</td>
<td>Weatherization installer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Western Mass Saves Challenge: Four Towns Amherst Easthampton Ludlow Sunderland</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WMECO</td>
<td>Electric PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td>SmartPower</td>
<td>Project Coordination and outreach to contractors and community groups</td>
<td>Coordinates program delivery, identifies geographic areas, local contractors, and community partners</td>
<td></td>
</tr>
<tr>
<td>Amherst Conservation Task Force</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easthampton Conservation Commission</td>
<td>Local Govt. Coordinators</td>
<td>Work with SmartPower to promoting this program across their community.</td>
<td></td>
</tr>
<tr>
<td>Ludlow Conservation Commission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunderland Conservation Commission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amherst Chamber of Commerce</td>
<td>Business community outreach</td>
<td>Work with SmartPower to promote community outreach through local business participation in Rewards program.</td>
<td></td>
</tr>
<tr>
<td>Easthampton Chamber of Commerce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amherst School Department</td>
<td>Community outreach through students</td>
<td>Working with SmartPower to promote program through student engagement</td>
<td></td>
</tr>
<tr>
<td>Ludlow School Department</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Massachusetts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Water Action</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitchcock Center for the Environment</td>
<td>Grass roots organizations performing outreach to members</td>
<td>Various organizations that are working with program to utilize this program to help them promote environmental stewardship</td>
<td></td>
</tr>
<tr>
<td>Massachusetts Interfaith Power &amp; Light</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunderland Women's Club/Men's Club</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Springfield</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WMECO</td>
<td>Electric PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td>Columbia Gas of Massachusetts</td>
<td>Gas PA</td>
<td>Program Administrator</td>
<td></td>
</tr>
<tr>
<td>Alliance to Develop Power</td>
<td>Residential Outreach</td>
<td>Conducts outreach</td>
<td></td>
</tr>
<tr>
<td>United for Hire</td>
<td>Implementation Subcontractor</td>
<td>Weatherization Installer</td>
<td></td>
</tr>
</tbody>
</table>
II. DESIGN

The PAs established a Community Initiatives Working Group to provide a venue for discussion of community initiatives being planned and implemented throughout the state. The working group also consisted of several members of the EEAC Council that were recommended by Consultant John Livermore. PAs share information on program design, goals and implementation strategies to try and identify best practices, minimize barriers and maximize program impact. The first CIWG meeting was convened on 9/30/2010 at NSTAR headquarters with PAs attending in-person and by phone. A second meeting occurred via teleconference on 11/30/2010. The group intends to meet at a minimum on a quarterly basis. The CIWG includes the following individuals:

**NSTAR**
Bill Stack
Jan Gudell
Tina Haggerty
Suzanne Farrington

**National Grid**
Monica Ibrahim
Ellen Pféiffer
Robert O’Brien
Wendy Todd

**Berkshire**
Robert Gyurjan
Columbia
Kara Gray

New England Gas
Jim Carey

Unitil
Derek Kimball

Cape Light Compact
Margaret Song

WMECO
Aprille Soderman

Danah Tench  ENE
John Livermore  Livermore Energy Associates
Danielle Rathbun  Attorney General's Office
Lyn Huckabee  DOER
Paul Horowitz  EEAC Consultant
Mike Guerard  Opt Energy

Columbia Gas of Massachusetts and Berkshire Gas have achieved the DESIGN status for this metric.

III. EXEMPLARY

In consideration for the “Exemplary” rating, NSTAR Electric & Gas, WMECO and National Grid, the contributing PAs, submit the following overviews which documents the results of the initiatives and lessons learned. Individual, utility specific, detailed reports will be independently submitted from each PA to document its clear and distinct role in the respective community initiatives.

NSTAR Community Initiatives Overview
NSTAR participated in three community pilot initiatives in 2010: New Bedford, Chinatown and Chelsea. The New Bedford community pilot was the first to launch with NSTAR as the sole PA as NSTAR provides both electric and gas service to the City of New Bedford. The New Bedford pilot is the most mature of all the community pilots in which NSTAR has participated and thus has produced the most extensive body of data, highest participation levels and provided the deepest opportunities for lessons learned. The Chinatown and Chelsea pilots launched later (Fall 2010) and are jointly overseen by
NSTAR as the Electric Program Administrator and National Grid as the Gas Program Administrator. Each pilot is a unique collaboration with local community organizations and weatherization contractors. The community organizations perform outreach to local residents to increase participation levels in the Mass Save 1-4 family and multi-family programs. In addition to helping residents save money and energy, the New Bedford, Chinatown and Chelsea initiatives seek to provide employment opportunities and career pathways for community residents who are trained and qualified to perform residential weatherization work. Attached is a memo describing the New Bedford community initiative in detail, including program partner descriptions, goals, outreach efforts, training, results, and lessons learned. The Chelsea and Chinatown pilots started in late 2010 and do not yet have significant results report on at this point.

NSTAR believes it has achieved exemplary status as it has participated in three community initiatives and assumed a leadership role in: creating the Community Initiatives Working Group, scheduling and hosting meetings conference calls, developing the basic procedures and criteria for the New Bedford, Chelsea and Chinatown pilots, developing this report and presenting a unique community grant funding distribution tool created by NSTAR.

**Pilot Goals**

The goals of each community initiative include:

- Installing weatherization measures in 50 1-4 family dwellings
- Installing weatherization and/or lighting fixtures in 4 multi-family buildings with 5-20 units each
- Provide lighting upgrades to 25 small businesses (New Bedford initiative only)

**WMECO Community Initiatives Overview**

WMECO participated in community mobilization pilot initiatives in six (6) communities in 2010: Amherst, Easthampton, Sunderland, Ludlow, Pittsfield and Springfield. The largest of the pilot initiatives was “Western Mass Saves Challenge” which combines on-the-ground marketing and outreach, direct mail, a website that engages and interacts with customers (www.westernmasssaves.com), and resources that address many of the barriers that traditionally impeded energy efficiency actions. As a pilot, “Western Mass Saves Challenge” will provide WMECO customers with targeted, personalized recommendations for reducing their home electricity usage, will encourage them to commit to personal savings plans, and will track their progress by analyzing their WMECO bills through a web portal service. When customers save energy relative to a personal baseline determined by their (seasonally-adjusted) energy usage over the course of the previous 12 months, the program will provide them with reward points for each kilowatt-hour they save. Reward points can be used for discounts and merchandise from retailers in Western Massachusetts as administered by RecycleBank. Customers who sign up will receive rewards points...
during the pilot program. The pilot rolled out in November 2010 and will continue to grow and broaden throughout 2011. By end of December 2010, more than 1,000 customers had already signed up to engage, review and improve their energy savings through this web-based service. As of the time of this memo, the program continues to grow at a significant rate with close to 2,000 customers engaged by end of January 2011.

While all WMECO customers can utilize the “Western Mass Saves” program, 25,000 customers in nine towns have received personalized recommendations via direct mail as a starting baseline. These towns include:

Challenge towns
- Amherst
- Easthampton
- Ludlow
- Sunderland

Control towns
- Agawam
- Montgomery
- West Springfield
- Springfield
- Huntington

The four challenge towns noted above will be participating in the “Western Mass Saves Challenge” as a whole community, an effort which offers an incentive in the form of a free 1kw solar PV system to each town that succeeds in achieving its residential energy reduction goals. Outreach has been ongoing to various municipal and local community groups in these towns to enhance local participation. The other towns will be a “control group” by which the pilot will be evaluating the results of the Challenge. Customers will be able to opt out of receiving further mailers using a toll-free number.

Western Mass Saves – (4) Town Challenge Timeline Synopsis:
- Week ending 11/5/10: Mailers sent to 25,000 customers in listed towns
- Week ending 11/12/10: Hard “roll-out” with press releases and other media
- December cycle billing: Bill insert to ALL WMECo customers describing “Western Mass Saves” program
- TBA: Other media and PR events to promote program continue in 2011

In addition to the Western Mass Saves Challenge, WMECO also developed a broad-based pilot for Pittsfield, MA in collaboration with Berkshire Gas, CET and local community organizations. This pilot was designed to educate and motivate residents of Pittsfield and surrounding communities to increase awareness and adoption of energy efficiency and renewable energy programs. In particular, efforts were made to reach underserved, hard-to-reach households. On behalf of WMECO and Berkshire Gas, CET employed multiple strategies to engage with such local stakeholder groups as the
Pittsfield Green Commission, Chamber of Commerce, Pittsfield Community TV, Berkshire County HR Directors, West Side Neighborhood Steering Committee, Pittsfield Rental Association and the Superintendent of Pittsfield Public Schools. The community organizations perform outreach to local residents to increase participation levels in the Mass Save 1-4 family and multi-family programs. In addition to helping residents save money and energy, this pilot also seeks to enhance awareness, education and career development for community residents who are trained and qualified to perform residential weatherization work. Neighborhood informational meetings, large employer presentations and outreach, and civic events will continue to be a focus throughout 2011, as this pilot continues to its community mission.

In the southern portion of its service territory, WMECO and Columbia Gas also began development in 2010 of a Springfield area pilot designed to engage collaboratively with community-based Alliance to Develop Power (ADP) as a weatherization subcontractor working with Environmental Compliance Services, of Agawam, MA as a newly registered Home Performance contractor for WMECO. Seventy-five (75) homes will be served with audit and weatherization services in the first phase of this pilot. It is expected that upon successful completion of these homes, ADP and ECS will revisit with WMECO, the future expansion of other neighborhood initiatives in greater Springfield, MA and surrounding communities.

**National Grid Community Initiatives**

In addition to the Chelsea and Chinatown community pilots jointly administered with NSTAR, National Grid participated in another community initiative in the western Massachusetts semi-rural town of Athol. Goals of this community initiative were to create a scalable model for a community driven, no-to-low cost community initiative using only pre-existing program design and delivery elements. This initiative also tested the viability of community outreach to increase residential and business energy efficiency participation in this underserved town. Further details on National Grid’s involvement and lessons learned from the Chelsea Community Mobilization Initiative and Athol community initiative can be found in the National Grid specific memo.
Residential Metric #5

MassSAVE: Facilitate Inclusion of Independent Energy Auditors {Electric & Gas} – Statewide
MEMORANDUM

To: Lyn Huckabee, Esq., Department of Energy Resources
   Mike Sherman, Department of Energy Resources
   John Livermore
   Jeff Schlegel
   Paul Horowitz

From: Bay State Gas Company

Date: May 1, 2010

Re: Bay State Gas Company, D.P.U. 09-125
   Residential Metric No. 5: MassSAVE:
   Facilitate Inclusion of Independent Energy Auditors

A. Introduction/Metric Text

Bay State Gas Company (the “Company”) is pleased to submit this memorandum pursuant the performance incentive metrics submitted to the Department of Public Utilities on March 12, 2010, specifically the Residential Metric No. 5: MassSAVE: Facilitate Inclusion of Independent Energy Auditors. The performance incentive metrics proposal is currently awaiting Department action. The text of the threshold portion of the metric is as follows:

<table>
<thead>
<tr>
<th>5. MassSAVE: Facilitate Inclusion of Independent Energy Auditors {Electric &amp; Gas} – Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
</tr>
<tr>
<td>To address the need to engage independent energy auditors in the auditing services of the RCS auditing service of the MassSAVE program, the PAs will:</td>
</tr>
<tr>
<td>• Document the standards for vendor services (e.g. accreditation/certifications, cost-effectiveness, administration, reporting to DOER and PAs, training requirements, pricing) and provide a detailed specification on each component of the new program audit process.</td>
</tr>
<tr>
<td>• Prepare and send an RFQ to independent energy auditors to determine the approximate pool of qualified individuals and companies.</td>
</tr>
<tr>
<td>Each PA to submit a memo to EEAC consultants and DOER by May 1, 2010 detailing their distinct and clear role in accomplishing these activities.</td>
</tr>
</tbody>
</table>
The Company is committed to assessing opportunities to provide pathways for the inclusion of energy professionals in utility sponsored programs. In order to assess the benefits and viability of engaging independent energy auditors in the assessment/auditing services of the RCS assessment/auditing service of the MassSAVE program, the Company has committed to documenting the standards for vendor services (e.g. accreditation/certifications, cost-effectiveness, administration, reporting to DOER and PAs, training requirements, pricing), providing a detailed specification on each component of the new program audit process, and preparing and sending a Request for Qualifications (“RFQ”) to independent energy auditors to determine the approximate pool of qualified individuals and companies.

B. **The Issuance of the RFQ**

The Company has had, and continues to have, a clear and distinct role in the achievement of these goals, most specifically including the issuance on April 30, 2010 by the Company of an RFQ for the Company’s service territory, which is attached hereto as Attachment A. The Company has worked with its current lead vendor, Honeywell Utility Solutions (“Honeywell”) to prepare and issue an RFQ that seeks to identify interested parties that are qualified to provide Home Performance Services (“HPS”), including providers of energy assessments and of weatherization services. This RFQ is intended to assess the benefits and viability of engaging independent energy auditors in the comprehensive home assessment services of the RCS/MassSAVE program, including determining the approximate pool of qualified individuals and companies, in accordance with the threshold level of this metric. The RFQ was prepared by Honeywell at the Company’s direction and with its input, and pertains to the Company’s service territory.

Through the RFQ, the Company specifically addresses and documents certain core standards for vendor services and requires respondents to provide information regarding their Building Performance Institute (“BPI”) credentials, training history, Quality Assurance and Quality Control procedures, service capacity, expertise in air sealing, insulation, and assessments, computer and software technology, and customer service. The RFQ also addresses standards for pricing and how such pricing could be set. Additionally, Honeywell will oversee the providers by providing training and information, collecting data for reporting to the Company and the Massachusetts Department of Energy Resources, performing quality assurance, and providing customer assistance where needed.

The RFQ is designed to gather information on qualified, interested parties who can provide consistent, quality services on behalf of the Company to the Company’s customers. Through the information requested in the RFQ, the Company will be able to identify providers who meet the high standards for vendor services identified by the Company.
C. Core Information for Standards and Specifications

The metric calls for documentation of standards for vendor services and specifications of program components. These core elements (as currently developed) are summarized below and are addressed in more detail in the RFQ included as Attachment A and the draft MassSave Home Energy Assessment Standards (“Standards”) included in Attachment B. The Company emphasizes that final standards and specifications are collaboratively developed and evolve over time. Accordingly, the draft materials and the following information are subject to ongoing, active review, and indeed, the Company welcomes feedback from DOER and the consulting team.

- Accreditation/Certifications - the Company’s RFQ requires that all HPS providers must either be BPI accredited or all energy auditors and crew chiefs must be BPI certified Building Analysts. Alternatively, the RFQ allows that crew chiefs could be BPI certified Air Sealing and/or Insulation Crew Chiefs when these certifications become available. The RFQ specifically inquires about HPS providers’ staff accreditations and certifications. Additionally, the Standards sets forth additional certification standards, including the requirement that Tier Two Energy Specialists must be properly trained and certified to perform a comprehensive assessment of the home.

- Cost-Effectiveness - the Company calculates cost effectiveness of its energy efficiency programs in accordance with requirements set forth by the Department of Public Utilities (“DPU”) and stated in the Company’s Three-Year Plan. Cost-effectiveness is determined through the Total Resource Cost (“TRC”) test. To conduct the TRC test, the Company routinely updates benefit/cost screening models to reflect new assumptions relating to program costs and benefits, the discount rate, the general rate of inflation, and avoided costs. The Program Administrators contracted with Synapse Energy Economics to provide an updated Avoided Cost Study, which was completed on August 21, 2009 (and revised on October 23, 2009). In general, the benefit categories in the TRC test include the value of energy savings, gas and electric system benefits, and other measurable benefits. Costs included in the TRC test include all the Company costs and program participant costs. The Company costs generally include program implementation expenses, evaluation costs, proposed performance incentives, and the tax liability for performance incentives. Program participant costs include initial costs incurred by customers as a result of their participation in the program. The benefit/cost screening model uses all of this data to calculate the present value of the program benefits and costs, and then calculates ratios of these values to produce Benefit Cost Ratios (“BCR”) for the TRC test. The present value of costs and benefits is calculated over the expected duration of the useful life of the measures installed through the program.

- Administration - the RCS assessment elements of the Company’s residential program offerings will be administered by the Company in accordance with the DPU approval of its Three-Year Plan and applicable statutes. The Company’s lead vendor, currently

3
Honeywell, will oversee the process of engaging independent energy auditors and will perform quality assurance and customer service, as stated in the RFQ.

- **Reporting to DOER and PAs** - the Company’s RFQ requires Honeywell to collect data for reporting to the Company and the DOER. In addition to this data collection standard, the Standards require that approved Tier Two Vendors use an appropriate Home Energy Assessment software tool, which requirement is supported in the RFQ. The RFQ notes that energy assessments will be performed using a provided software package installed on a laptop and used during the assessment, and asks respondents to describe any experience with the use of computer software and hardware in the field. Use of such software will allow for greater ease of reporting to the DOER and the Company.

- **Training Requirements** - the Company’s has determined that Honeywell will assist in overseeing the HPS providers by providing training and information. Additionally, the RFQ seeks information from respondents, including the names of primary trainers for the provider’s staff, the location of training, the length of training, and the types of follow-up on continuing education provided. As noted above, the RFQ also has requirements for BPI certification. Additionally, the Standards emphasize consistent training programs, including annual statewide training, continuous staff training by vendors, BPI certification, on-site training for contractors, and web resources.

- **Pricing** - as stated in the RFQ, for energy assessments, following identification of qualified companies, each company will be asked for the prices they believe are appropriate. A standard price will be established for each service based on the information obtained and other market information. These standard prices will be set by Honeywell after consultation with the Company. Qualified companies willing to work for the standard price chosen may be able to sign contracts with Honeywell to participate, but there is no advance guaranty of selection or contracting. For weatherization services, several pricing methods are currently under consideration. One possible method the Company described in its RFQ would set standard prices, similar to the energy assessment method described above. Another possible pricing method described in the RFQ would allow providers to set their own prices to charge customers for weatherization work. In this proposed pricing method, customers could obtain multiple bids from different companies and select any approved HPS company. Prior to work being performed, the HPS provider would submit the customer contract, description of to be performed and the prices charged to Honeywell in order for Honeywell to approve a utility incentive. As noted in the RFQ, the core goal of the RFQ is to assess the pool of qualified parties to provide assessment/audit work, and final pricing of contracting terms, if any, will be dependent on the responses to the RFQ.
D. The Company’s Clear and Distinct Role

In addition to its clear and distinct role in issuing the Company-specific RFQ, the Company has also had a clear and distinct role in developing standards and specifications in order to engage independent energy auditors by participating actively during the first quarter of 2010 with the Residential Management Committee (“RMC”). Working with the RMC, the Company is developing standards and protocols to be used as selection criteria for further opening the MassSAVE program to independent energy auditors. The Company has also been directly involved in preparing the MassSAVE Technical and Process Manual, which provides standard, consistent specifications on each component of the audit process.

Additionally, the Company communicated with others members of the RMC regarding feedback from contractors who received the RFQ issued by Conservation Services Group on behalf of National Grid and NSTAR. The Company’s RFQ attempts to address lessons learned from contractors’ initial questions by providing details that should enable them to respond in a meaningful way. Also, the RFQ issued by Honeywell on behalf of the Company allows for a day of questions from contractors prior to the due date of the RFQ.

The Company is pleased to provide this initial, threshold-level report to the Department of Energy Resources and the Energy Efficiency Advisory Council’s consultants in accordance with the applicable metric, and looks forward to providing additional status reports as the programs progress.

If you have any questions regarding this report, please do not hesitate to contact Derek Buchler at (508) 836-7344.
ATTACHMENT A
REQUEST FOR QUALIFICATIONS
Request for Qualifications (RFQ)
Home Performance Services Providers
April 30, 2010

Part I: General Information

Overview
Honeywell, Inc. is issuing this Request for Qualifications (RFQ) on behalf on Bay State Gas Company ("Bay State") and New England Gas Company ("New England") to identify interested companies that are qualified to provide Home Performance Services ("HPS"), including energy assessments and/or weatherization, to customers in the Mass Save Residential Conservation Service (RCS) program. All interested parties are invited to respond to this RFQ.

Honeywell is contracted to serve as lead vendor for Bay State and New England for its Mass Save Residential Conservation Services (RCS) program. Honeywell will oversee the work of the Home Performance Services providers. Each respondent should indicate if they are interested in becoming an energy assessment provider, a weatherization provider or both.

New England Gas Company’s service territory is comprised of the towns of Somerset, Swansea, Westport, Plainville and North Attleboro as well as the City of Fall River. Each of these municipalities is located in the Commonwealth of Massachusetts. Honeywell will oversee the work of the HPS providers as part of its contracts with these two utility companies.

Please see the attached list of towns served by Bay State Gas Company.

Deadline
Responses to this RFQ must be received by 5:00 pm on May 28, 2010 to be considered. Responses must be submitted in hard copy and electronic format. Each response will receive a confirmation email that the submittal was received. All responses must be emailed to:

Steven Finnegan
Program Manager
steven.finnegan@honeywell.com

All responses must be mailed to:
Honeywell Utility Solutions
Steven Finnegan - Program Manager
65 Shawmut Road – 2nd floor
Canton, MA 02021

Questions & Answers
Questions may be emailed to Mr. Finnegan until 5:00 pm on Wednesday, May 12, 2010 or may be asked in person at the Q&A session from 10:00 to 12:00 on Wednesday, May 19, 2010. All emailed questions will be responded to within 7 days. The questions and answers that are emailed will be collected and copies of these questions and answers will be provided to all attendees of the Q&A session.
Who is Honeywell Utility Solutions?

Honeywell Utility Solutions (Honeywell) is a business unit of Honeywell International. Honeywell has been implementing energy-efficiency programs in Massachusetts for over 32 years. Additionally, Honeywell is considered one of the leading providers of energy conservation management services to electric, gas, and water utilities across North America.

Part II: Description of Program

Description of Program

The services provided as a result of this RFQ will complement the existing energy assessment and weatherization work being performed in the Mass Save RCS program. Honeywell will oversee the HPS providers by providing training and information, collecting data and reporting to the utility and the Massachusetts Department of Energy Resources, performing quality assurance, and providing customer assistance where needed.

The following steps are provided as an illustration of how the program is expected to work. This program is for non-low income customers with 1-4 family homes. Please note that program details have not been finalized and could change significantly.

In general, each customer will participate in the following steps:

1. **Screening Visit:** At the screening visit, an Energy Specialist identifies health and safety barriers (if any) and determines if the home is a good candidate for air sealing and/or insulation. In addition, the Energy Specialist installs energy saving devices like compact fluorescent lightbulbs (CFL’s), digital clock thermostats, and other Instant Savings Measures. The screening visit and installs are free to the customer.

2. **Air Sealing:** If specified by the Energy Specialist at the screening visit, one or more air sealing technicians perform targeted cost-effective air sealing at no charge to the customer. This typically happens during the diagnostic visit.

3. **Diagnostic Visit:** If the Energy Specialist determined that the home needs insulation, a diagnostic visit is scheduled for the customer. The diagnostic visit may occur at the same time as the air sealing visit. At the diagnostic visit, an Energy Specialist performs diagnostic tests (blower door, infrared, and duct leakage as appropriate) and specifies the materials, areas, and depths of insulation needed in all parts of the house. The diagnostic visit, including all diagnostic tests, is free to the customer. At the conclusion of the diagnostic visit, the customer is presented with multiple options for getting the insulation installed.

4. **Insulation:** The customer signs a contract with an insulation provider and work proceeds.

5. **Inspection:** A Quality Assurance inspection occurs to verify the work was performed to the standards of the Mass Save RCS program.

Information for companies interested in providing energy assessments only:

1. Should the HPS provider market the Mass Save program to customers, the HPS provider will submit each proposed use of the Mass Save logo or program name to Honeywell for review and approval to ensure it appropriately portrays the RCS program and the HPS provider’s role?
2. When customers contact the HPS provider, the HPS provider will provide information to the customer about how the program works and if appropriate schedule a screening visit for the customer.

3. **Prior to performing the assessment**, the HPS provider will contact Honeywell to confirm customer eligibility. Honeywell will record customer information so that appropriate customer service can be provided if the customer contacts Honeywell.

4. HPS provider will perform the screening visit. If the home would benefit from air sealing, the HPS provider will either schedule and perform air sealing on their own or will contact Honeywell to schedule the air sealing with a Honeywell air sealing crew. If the home is a good candidate for insulation work, the HPS provider will schedule a diagnostic visit for the customer.

5. HPS provider will perform the diagnostic visit. At the conclusion of the diagnostic visit, the HPS provider will present the customer with a list of the companies that are approved for weatherization work. Customer will also be provided with quote for what the work might cost based on the prices offered by Honeywell and will be given the option of contacting Honeywell for a contract. (Honeywell may mail the customer a letter explaining their choices)

---

**For companies interested in providing weatherization work only:**

1. Should the HPS provider market the Mass Save program to customers, the HPS provider will submit each proposed use of the Mass Save logo or program name to Honeywell for review and approval to ensure it appropriately portrays the RCS program and the weatherization provider’s role.

2. When customers contact the HPS provider, HPS provider will provide information to the customer about how the program works and if appropriate schedule a sales visit with the customer.

3. At the sales visit, the HPS provider will determine if the customer’s home is a good candidate for the program. Customer will sign a form that indicates that they have met with the contractor and would like to proceed with the program using the contacting contractor. The form will also indicate that the customer will be given a list of other contractors that can provide the services.

4. The HPS provider will submit the form to Honeywell and Honeywell will schedule a diagnostic visit for the customer.

5. At the conclusion of the diagnostic visit, Honeywell will present the customer with a list of the companies that are approved for weatherization work. Customer will also be provided with quote for what the work might cost based on the prices offered by Honeywell and will be given the option of contacting Honeywell for a contract. Note: Honeywell will not air seal the home during this visit.

6. If the customer chooses to work with the HPS provider, the HPS provider will sign a contract with the customer to complete the air sealing and insulation work. The utility incentive (free air sealing and 75% off insulation up to $2000) will be credited toward the customer’s cost and the weatherization provider will bill Honeywell for the utility incentive upon completion of the work.

7. Honeywell will inspect the job to ensure it meets the Mass Save RCS standards and if there are no major problems will proceed with paying the incentive to the HPS provider.

---

**For companies interested in both energy assessments and weatherization work:**

1. Should the HPS provider market the Mass Save program to customers, the HPS provider will submit each proposed use of the Mass Save logo or name to Honeywell for review and approval to ensure it appropriately portrays the RCS program and the energy assessment provider’s role.
2. When customers contact the HPS provider, the HPS provider will provide information to the customer about how the program works and if appropriate schedule a screening visit for the customer.

3. **Prior to performing the assessment**, the HPS provider will contact Honeywell to confirm customer eligibility. Honeywell will record customer information so that appropriate customer service can be provided if the customer contacts Honeywell.

4. HPS provider will perform the screening visit. If the home would benefit from air sealing, the HPS provider may schedule and perform air sealing. If the home is a good candidate for insulation work, the HPS provider will schedule a diagnostic visit for the customer.

5. HPS provider will perform the diagnostic visit. At the conclusion of the diagnostic visit, the HPS provider will present the customer with a list of the companies that are approved for weatherization work. Customer will also be provided with quote for what the work might cost based on the prices offered by Honeywell and will be given the option of contacting Honeywell for a contract. (Honeywell may mail the customer a letter explaining their choices)

6. If the customer chooses to have the insulation work installed by the HPS provider, the HPS provider will sign a contract with the customer to complete the air sealing and insulation work. The utility incentive (free air sealing and 75% off insulation up to $2000) will be applied to the customer’s cost and the HPS provider will bill Honeywell for the utility incentive upon completion of the work.

7. Honeywell will inspect the job to ensure it meets the Mass Save RCS standards and if there are no major problems will proceed with paying the incentive to the contractor.

**Part III: Scope of weatherization work**

The scope of weatherization work for the home will be based on the Mass Save RCS Auditing Standards and the Mass Save RCS Materials and Installation Standards. The energy auditor will determine which measures are needed in the home.

**Part IV: Limitations and payments**

This RFQ is an attempt to identify companies interested and qualified in providing home performance services in Massachusetts. The program could change substantially as details and standards are worked out. Services performed as a result of this RFQ are expected to begin July 1, 2010. The quantity of HPS providers as a result of this RFQ are expected to be limited for several reason including, but not limited to: budgetary reasons, and so that potential problems with the program can be identified and resolved before too many customers have participated, changes in the RCS program, or unforeseen circumstances.

**Company Selection**

This RFQ does not commit Honeywell to award a contract to any company or pay any costs associated with preparing submittals. Honeywell reserves the right to select any, all, or none of the companies responding to this RFQ. Interested companies are not guaranteed any amount of work.

**Customer Fees**

The customer may not be charged for any fees as part of the energy assessment process. The screening and diagnostic visits, installation of instant savings measures, diagnostic tests, and specification of work
will be paid solely by Honeywell based on the prices established. Weatherization work may be charged to the customer as described in Part III – Scope of weatherization work.

Quality Assurance
Honeywell will perform quality assurance visits to verify that energy assessments, air sealing, and weatherization work are being performed to the Mass Save RCS standards. HPS providers will be expected to correct any problems identified immediately.

Energy assessment fees and payment schedules
Once qualified companies have been identified, each company will be asked for the prices they believe are appropriate. A standard price will be established for each service based on the information obtained and other market information. These standard prices will be set by Honeywell after consultation with Bay State and New England. Qualified companies willing to work for the standard price chosen may be able to sign contracts with Honeywell to participate.

Energy assessment providers will submit invoices each month to Honeywell for services completed along with information that must be completed and submitted by HPS providers in order for Honeywell to approve invoices. Will Honeywell will establish invoice periods and deadlines.

The following pricing structure for Weatherization services are being considered
Once qualified companies have been identified, each company will be asked for the price that they deem appropriate for installed measures. Standard prices will be established for installed measures based on the information obtained and other market information. This standard price will be set by Honeywell after consultation with Bay State and New England. Qualified companies willing to work for the standard price chosen may be able to sign contracts with Honeywell to participate.

OR

Each company will be free to set their own prices to charge customers for weatherization work. Customers will have the opportunity to get multiple bids from different companies and to select any approved HPS company they want. Prior to work being performed, approved HPS providers would submit the customer contract, description of to be performed and the prices charged to Honeywell in order for Honeywell to approve a utility incentive.

HPS providers will contract directly with the customer for the weatherization work, but will apply the utility incentive to the customer balance and submit customer invoices to Honeywell. Upon receiving an invoice and other required paperwork, Honeywell will schedule an inspection with the customer. The inspection will occur within a reasonable time of receiving the invoice, assuming the customer responds to Honeywell’s request for inspection. If the inspection shows that there are no major problems, Honeywell will pay the utility incentive directly to the HPS provider on behalf of the customer. However, if there are problems with the work, Honeywell will hold the incentive until the problems are resolved. Problems are defined as either work that does not appear to have been completed, or work that does not comply with the Mass Save RCS Materials and Installation Standard.
Insurance:
Honeywell’s complete insurance requirements are found in the terms and conditions of the contract between Honeywell and its sub-contractors. In general, no less than $1 Million of liability insurance and workmen’s compensation insurance in accordance with the laws of the state will be required.

Part V: Information to provide

Please provide the following information. Label your responses using the letters and numbers that follow:

A. **Type of Response**
   Please indicate whether you are submitting qualifications to provide energy assessments, weatherization work, or both. Please describe how this fits into your business model and your plans for the future of your company.

B. **General Information**
   Please provide the following general information about your company:
   1. Legal Name and Address of Company, or any other names used, i.e. dba
   2. Primary Contact Name
   3. Telephone Number (general, primary contact office, primary contact cellular)
   4. Fax Number
   5. E-Mail Address (general mailbox and/or primary contact address)
   6. Federal Employer Identification Number
   7. Year firm was established
   8. Name and address of parent company (if applicable)
   9. Type of firm:
      - Sole Proprietor; Partnership; Corporation (indicate state incorporated in and corporation type- C,S, Non-Profit, LLP, LLC, PC, FPC); Branch Office of (give details of parent company); Joint Venture (list venture partners); Other (explain).

C. **Building Performance Institute (BPI) Credentials**
   All Home Performance Services providers must either be BPI accredited or all energy auditors and crew chiefs must be BPI certified Building Analysts. (Alternatively, crew chiefs could be BPI certified Air Sealing and/or Insulation Crew Chiefs when these certifications become available).
   Given this requirement, please respond to these questions:
   1. Is your company BPI accredited? If yes, indicate the year of accreditation and attach proof of accreditation. (company listing on BPI website is adequate for proof)
   2. Are any staff BPI certified? If yes, provide a list of staff and which BPI certifications they hold, indicate what their roles are in the company, and attach proof of certification.
   3. Will you need to certify additional staff in order to meet the requirement described? If so, identify the staff that would seek certification if selected for this work.

D. **Professional References**
Please provide at least 2 letters of reference from professional associates and at least 2 letters of reference from customers of your Home Performance Services business. Please provide contact information for references so that Honeywell can follow up with references if needed.

E. **Geographic Preference**
   Please list all of the towns that you would like to serve in response to this RFQ. Or, if you are interested in serving all the towns in a given county, list the county or counties you would like to serve.

F. **Staff Training**
   Please describe the training that you provide staff for each of the types of Home Performance Services staff you employ (for example, energy auditors, weatherization crew members, weatherization crew chiefs). Please provide the following information about staff training:
   1. Who are the primary trainers for your staff?
   2. Where does training occur?
   3. How long is the training?
   4. What kind of follow-up or continuing education is provided?

G. **Quality Assurance and Quality Control**
   It is imperative that all services provided to Mass Save RCS customers be consistent and of high quality. Honeywell must have confidence that your company is capable of providing a consistent service and of changing as needed to reflect program requirements. Please describe the Quality Assurance and Quality Control procedures you currently have in place to ensure your Home Performance Services are consistent and of high quality. Please include descriptions of any kinds of internal reviews, random checking, or approvals you perform.

H. **Service Capacity**
   Please provide answers to the following questions concerning the capacity of your company to provide services in the service territories of Bay State and New England:
   1. How many energy assessments per month could your company reasonably provide in the period of July through December, 2010?
   2. How many air sealing jobs could your company reasonably provide in the period of July through December, 2010?
   3. How many insulation jobs could your company reasonably provide in the period of July through December, 2010?

I. **Air Sealing**
   Air sealing is a service that could be provided by both energy assessment providers and weatherization providers. It is an important element of home energy efficiency and is a focus of the Mass Save RCS program. Please describe the experience your company has with air sealing. Please respond to the following questions:
   1. How many staff in your company has experience with performing blower door assisted air sealing? For each staff member, please list the names, the year they began doing blower door assisted air sealing, the approximate number of blower door assisted air sealing jobs they have completed, and whether or not they have been authorized at the Basic or Advanced Air Sealing levels through the Weatherization Boot Camp program.
2. How many blower doors does your company own? How many of these could be used to support air sealing?
3. Will you need to train additional staff or purchase additional equipment in order to perform air sealing work in response to this RFQ?

J. **Insulation**
All Home Performance Services providers must either be BPI accredited or all energy auditors and crew chiefs must be BPI certified Building Analysts. (Alternatively, crew chiefs could be BPI certified Air Sealing and/or Insulation Crew Chiefs when these certifications become available).
Given this requirement, please respond to these questions:
1. How many staff in your company has experience with leading densepack cellulose jobs? For each staff member, please list the names, the year they began leading densepack cellulose jobs, the approximate number of jobs led, and whether or not they have been authorized at the Basic or Advanced Insulation levels through the MASS SAVE Weatherization Boot Camp program.
2. How many cellulose blowers does your company own?
3. Will you need to train additional staff or purchase additional equipment in order to perform insulation work in response to this RFQ?

K. **Energy Assessments and Diagnostic Testing**
While it will certainly be possible to purchase additional equipment, it is helpful to know how much equipment your company currently has to support its Home Performance Services. Please answer the following questions:
1. How many staff in your company has experience performing energy assessments? For each staff member, please list the names, the year they began doing energy assessments, the approximate number of energy assessments performed, and any relevant certifications.
2. How many blower doors could be used for this work? How many
3. How many infrared cameras does your company own? How many
4. Combustion analyzers

L. **Computer Hardware and Software**
It is expected that energy assessments will be performed using a provided software package installed on a laptop and used during the assessment. Please describe any experience your company has had with use of computer software and hardware in the field.

M. **Customer Service**
All Home Performance Services providers must provide an exemplary level of customer service to Mass Save RCS customers. All calls must be returned within 24 hours and responses must be professional and informative. Please describe how your company will staff its customer service activities and any previous experience with this.
ATTACHMENT B

DRAFT MASSSAVE HOME ENERGY ASSESSMENT STANDARDS
MassSave Home Energy Assessment Standards

Version 1.3 - DRAFT

For Screening and Diagnostic Visits

By:
National Grid
NSTAR Electric & Gas
Western Massachusetts Electric
Cape Light Compact
Bay State Gas
Berkshire Gas
New England Gas
UNITIL
# TABLE OF CONTENTS

## 1.0 Program Overview
- 1.1 General Overview 2
- 1.2 Screening Visit Overview 4
- 1.3 Diagnostic Visit Overview 4

## 2.0 Screening Visit Specifics
- 2.1 Customer Interview 5
- 2.2 Refrigerator Assessment 5
- 2.3 Combustion Safety Testing 5
- 2.4 Recommendation for Replacing Heating Systems 6
- 2.5 Assessment of Basement, Walls, and Attic 6
  - 2.5.1 Assessment of Basement/Crawlspace 6
  - 2.5.2 Assessment of Exterior Walls and Other Enclosed Cavities 8
  - 2.5.3 Assessment of Attic 8
  - 2.5.4 Attic Ventilation 9
  - 2.5.5 Guidelines for Outside Assessment 10
  - 2.5.6 Electric Heat Thermostats 10
- 2.6 Assessing Air Sealing Potential 10
- 2.7 Identifying Roadblocks 11
- 2.8 In-Home Installation Measures 14
- 2.9 Presentation of Recommendations and Next Steps 14
- 2.10 Explanation of Incentives 15

## 3.0 Diagnostic Visit Specifics
- 3.1 Customer Interview 15
- 3.2 Assessment of the Basement/Crawlspace 15
- 3.3 Assessment of the Exterior Walls and Enclosed Cavities 15
- 3.4 Assessment of the Attic and Attic Ventilation 15
- 3.5 Identifying Roadblocks 15
- 3.6 Diagnostic Testing 15
- 3.7 Outside Assessment and Area Calculations 16
- 3.8 Installation Measures 17
- 3.9 Creation of Report and Contract 17
- 3.10 Presentation and Sale of Recommended Work and Incentives 17

Appendix I: CAZ Depressurization Limits 19
Appendix II: List of Installations (ISM’s) 19
Appendix III: List of Available Incentives for Recommended Measures 19
1.0 Program Overview

1.1 General Overview

1.1.1 Service Description
The focus of the Home Energy Assessment in Tier Two is to deliver on-site services to residential customers and motivate the customers to implement recommended energy efficiency and renewable energy measures.

A customer can receive the Home Energy Assessment through a variety of mechanisms, including a direct referral from Tier One, from a Program Administrator, Program Vendor, trade ally, and/or as a result of marketing.

The Home Energy Assessment will include an evaluation of relevant energy efficiency measures and renewable energy measures in the home. The service is fuel-neutral, meaning that end-uses are examined regardless of the fuel used. Specifically, during the HEA, a whole house approach substantially based on the Home Performance with ENERGY STAR® model (HPwES) is used to evaluate the residence which will include a review of the building’s heating, HVAC and DHW systems, lighting, shell and appliances.

At this time, the Program Administrators require that approved Tier Two Vendors use an appropriate Home Energy Assessment software tool. Home Energy Assessments based on HPwES “whole-house” model or a rigorous equivalent can qualify. The Program Administrators will consider modifying the Home Energy Assessment software requirements from time to time in consultation with the DOER as needed. The technical session will identify alternative options for reaching technical analysis objectives through alternative software or non-software based analysis techniques.

The objective of the Home Energy Assessment is that the customer has an opportunity to understand the impact of relevant energy efficiency measures and improvements that can be implemented in the home and is motivated to implement major measures. The Energy Specialist will offer DSM incentives, Energy Efficiency Incentives, and Renewable Energy Incentives to customers in conjunction with the Home Energy Assessment.

The program is designed for the resident to accompany the Energy Specialist in the examination of the building as appropriate so that explanations and education occur during the course of the visit. The customer is provided with a written report or contract that describes the efficiency of the building and lists measures and available incentives based on order of priority. If needed, the Energy Specialist will provide the necessary paperwork to process the incentives.

1.1.2 Personnel Qualifications
Tier Two Energy Specialists must be properly trained and certified to perform a comprehensive assessment of the home. All staff will need to receive ongoing training to update their skills and knowledge of evolving and new program elements as well as sales and presentation skills.

- **Training/Certification**
  Staff and contractor training are vital to operating a technically rigorous and effective statewide energy conservation program.

  The training/certification objectives for the program will consist of the following:
- **Annual Statewide Training**
  With the goal of maximizing statewide program standardization, the MassSAVE program will work toward coordinating annual statewide trainings. In order to maximize the effectiveness of rate-payer funding, the program will make every effort to leverage existing building science and energy efficiency trainings, such as those sponsored by the GasNetworks and Affordable Comfort, Inc. (ACI).

  Trainings may be geared towards MassSAVE vendors, Energy Specialists and/or contractors, depending on the program’s training needs identified by the subcommittee. Training will be provided, as needed, to support any new measures added to the program. An RCS Training Outline will be developed and updated annually, or as needed.

- **Staff Training by Vendors**
  It is recognized that the bulk of the training for Energy Specialists and CSR is currently and will continue to be delivered by program vendors, as required by their contracts with program administrators. Program Administrators are responsible for notifying DOER of any new program administrator approved equivalent RCS training. The MassSAVE program will have consistent baseline standards and/or certification levels to ensure that RCS home Energy Specialists are providing a comprehensive whole house approach, and those utility customers, regardless of where they reside in the Commonwealth, are receiving consistent information and service.

- **Building Performance Institute (BPI) certification**
  In the interest of supporting a ‘whole house’ building science approach to home energy assessing and analysis, the program will require all home Energy Specialists to achieve BPI certification or, in extenuating circumstances, a technically rigorous comparable equivalent.

- **Program Structure and Specifications**
  The MassSAVE home energy assessment involves two visits, the screening visit and the diagnostic visit. The screening visit is available to any customer eligible to participate in the program and is a visit focused on determining if the house is a good candidate for weatherization, providing information about program incentives, and installing Immediate Savings Measures (ISM’s). The diagnostic visit is performed only for homes that need weatherization work performed and focuses on writing specifications for the weatherization work and presenting these to the customer. Air sealing is also typically performed at the diagnostic visit.

  The MassSAVE program provides a fuel-blind assessment of a home and possible improvements including air sealing, insulation, lights and appliances, water heating, and heating system upgrades.
Prior to getting a home energy assessment, customers will have spoken to the MassSAVE Customer Service Representative (CSR) associated with the appropriate utility company. This CSR will ask the customer a series of questions intended to ensure that the customer is eligible for the home energy assessment. However, it is still important for the Energy Specialist to be aware of the following concerns:

- **5+ Family Residences**
  The MassSAVE RCS program only covers 1-4 family residences. If the Energy Specialist finds him/herself at a building with 5 or more units, the Energy Specialist should immediately call the CSR and confirm the customer’s eligibility. Note that individually owned town homes are considered 1-family residences.

- **Low Income Customers**
  The MassSAVE RCS program is not intended for low income customers. There is a network of weatherization agencies that serve these customers, often providing free energy efficiency improvements. Low income eligible customers need to understand that by receiving MassSAVE RCS incentives they are forfeiting their eligibility for free weatherization services.

- **Correct Program Administrator**
  The MassSAVE RCS program is funded by program administrators such as electric and gas utility companies. These companies only pay for home energy assessments that are for their customers. The Energy Specialist needs to verify that the customer is a customer of the utility company paying for the home energy assessment. If there are any concerns, contact the appropriate CSR before proceeding with the home energy assessment.

1.2 Screening Visit Overview
The Screening Visit is a whole-house assessment of potential energy improvements and a thorough determination of any “roadblocks” preventing weatherization work from proceeding. It is the Screening Energy Specialist’s responsibility to install compact fluorescent light bulbs (CFL’s) and other qualified energy saving materials as well as to specify air sealing work. The outcome of the screening visit should result in either a clear indication of what roadblocks exist and information for clearing them or scheduling a diagnostic visit and/or no-cost air sealing appointment. It may be possible that during the screening visit the Energy Specialist has enough time to complete aspects usually covered during a diagnostic visit.

1.3 Diagnostic Visit Overview
After completion of a screening visit, eligible customers who need insulation work and have no roadblocks preventing such work from occurring should receive a diagnostic visit. The goal of the diagnostic visit is to use various types of diagnostic equipment to determine the insulation potential of the home and present a proposal for services to the customer with encouraging presentation. It may be possible during the diagnostic visit that aspects of the screening visit can be addressed if needed.
2.0 Screening Visit Specifics

2.1 Customer Interview
During the initial customer interview, important information must be gathered about the residence. This information must include:
- Demographic Information
- Utility account numbers
- Historical fuel use

2.2 Refrigerator Assessment
Homeowners who have qualifying refrigerators are eligible to receive a rebate for purchasing a qualified Energy Star refrigerator and replacing the old inefficient one. Screening Energy Specialists should determine the existing age, make, and model number for all refrigerators located within the house to determine if they meet the qualifying regulations to warrant replacement. If metering the refrigerator, the minimum metering time is 30 minutes, but the longer the reading, the more accurate it will be. If the refrigerator does qualify, provide a rebate form to the homeowner from the appropriate utility sponsoring the rebate for that particular home.

2.3 Combustion Safety Testing
Every house that contains combustion appliances should receive a combustion safety evaluation in accordance with Building Performance Institute standards during the screening visit. This includes testing all combustion heating and hot water systems.

1. Measure the Base Pressure. Start with all exterior doors, windows, and the fireplace damper(s) closed. Set all combustion appliances to the pilot setting or turn off the service disconnect, including: boiler, furnace, space-heaters, and water heater. With the home in this configuration, measure and record the baseline pressure of the combustion appliance zone (CAZ) with respect to outside.

2. Establish the Worst Case. Turn on the dryer and all exhaust fans. Close interior doors that made the CAZ pressure more negative. Turn on the air handler, if present, and leave on if the pressure in the CAZ becomes more negative, then recheck the door positions. Measure the net change in pressure from the CAZ to outside, correcting for the base pressure. Record the “worst case depressurization” and compare to the CAZ Depressurization Limit Table (see Appendix I).

3. Test Worst Case Spillage, Draft, CO. Fire the appliance with the smallest Btu capacity first, test for spillage, measure the draft pressure, and then test for CO. Spillage and CO are tested close to the burner, draft is measured close to the chimney. The spillage test fails if it is still spilling after 1 minute. The CO test fails if the levels are still too high after 10 minutes. Carbon monoxide needs to be tested in other gas fired appliances such as gas dryers and gas ovens if present at the home.

4. If Test Fails: Retest Spillage or Draft under Natural Conditions. If spillage or draft fails under worst case, turn off the exhaust fans, open the interior doors, leave the first appliance running and test for spillage and draft under “natural conditions”. If tests pass under natural conditions, try to figure out which change causes the tests to fail.

5. Ambient CO. Monitor the ambient CO in the breathing zone during the test procedure and abort the test if ambient CO goes over 35ppm. Turn off the appliance, ventilate the
space, and evacuate the building. The building may be reentered once ambient CO levels have gone below 35ppm. The appliance must be repaired and the problem corrected prior to completing the combustion safety diagnostics. If the ambient levels exceed 35 ppm during the testing under natural conditions, disable the appliance and instruct the homeowner to have the appliance repaired prior to operating it again.

2.4 Recommendation for Replacing Heating Systems
In some cases, it is beneficial to recommend to the customer that they replace their heating and/or hot water system. Use the following guidelines when determining when to recommend this improvement:
1. Determine the type of heating system (boiler, furnace, etc) and the type of distribution system (hydronic, steam, ducts, etc).
2. If the heating system is more than 10 years old, ask the customer if they are considering or would consider replacing their heating and/or hot water system.
3. After running the combustion safety tests, let the customer know what the results are. Heating systems that have a steady state combustion efficiency of less than 80% are usually cost effective to replace. The Annual Fuel Utilization Efficiency (AFUE) for a heating system is usually about 5-20% below the steady state combustion efficiency.

2.5 Assessment of the Basement, Walls, and Attic
The goal of assessing all the major parts of the home is to determine where the thermal envelop of the building is and where it should be. The building envelope is the barrier between conditioned and either unconditioned space or the outdoors. It is important that the building envelope encase the entire house, if possible, because heat loss is always dominated by the areas with the least insulation / air sealing.

2.5.1 Assessment of the Basement/Crawlspace
During the screening visit, the Energy Specialist should evaluate the potential of the basement area for energy efficiency improvements. In order to achieve this, the Energy Specialist must determine how the basement is used and its relation to the building envelope. This determination will guide how basement measures will be recommended. Generally, basements are semi-conditioned and should be considered inside the thermal envelope. Attempts to reduce heat loss by separating the basement from the home are not usually successful. Exceptions may include some crawlspaces or basements with large openings to the outside. In these rare cases where the basement is outside the thermal envelope, eligible measures to recommend include:

For basements that are outside the thermal envelope:

**Heating System Distribution Improvements:**
- Duct Sealing – Sealing all joints of the duct system with mastic and mastic tape to form a durable, tight seal. This should be recommended whenever the ducts are located outside of the thermal envelope, in conjunction with duct insulation.
- Duct Insulation – Fiberglass duct insulation with a foil vapor retarder should be installed on all heating ducts located outside of the thermal envelope. This should be recommended in conjunction with duct sealing.
• Hydronic and Steam Pipe Insulation - Pipe insulation should be recommended for all pipes located outside the thermal envelope.

**Basement / Crawlspace Ceiling Insulation:**
If the basement is located outside of the thermal envelope, insulating the ceiling may be the best measure to complete the thermal envelope.

- Fiberglass Insulation – If the ceiling joists are spaced appropriately, fiberglass insulation can be recommended.
- Densepack cellulose – If minimal to no pipes or wiring are present and the basement if very dry, densepacking the ceiling can be recommended. If the space is already enclosed, spec densepack cellulose. If the space needs reinforced mesh in order to hold the densepack cellulose in place, recommend drypack cellulose.
- High Density Polyurethane Spray Foam – For crawlspace ceilings located outside of the thermal envelope.

**Basement Stairwell Insulation:**
If the basement is considered outside of the thermal envelope and basement ceiling insulation is recommended, insulating the stairwell and door should also be recommended to complete the thermal envelope.

- Fiberglass Insulation - If the joists are evenly spaced and open, recommend fiberglass insulation
- Drypack Cellulose - If the joists are unevenly spaced, recommend drypack cellulose
- Densepack Cellulose - If the stairwell is already enclosed, recommend densepack cellulose
- Stairwell Door – Insulate the back of the stairwell door with polyisocyanurate foamboard.

**Dirt Floors:** All dirt floors should be covered with 6 mil polyethylene plastic sheeting.

**For basements that are inside the thermal envelope:**

**Basement / Crawlspace Wall Insulation** – Insulation panels can be installed on appropriate basement wall surfaces if the basement is considered within the thermal envelope. The insulation material used in this application must comply with fire retardation standards.

**Basement Rim Joist Insulation:**

- Fiberglass Insulation – When joists are spaced appropriately, fiberglass insulation can be recommended for the rim joist area in basements that are within the thermal envelope.
- 2-Part Spray Foam – This can be recommended for basements within the thermal envelope. This insulation application should be recommended when an insufficient ledge depth exists to hold a fiberglass batt in place securely.
2.5.2 Assessment of the Exterior Walls and Enclosed Cavities

In order to create a proper thermal envelope, all exterior walls, overhangs, and enclosed cavities must be fully insulated. Determine the existing level of insulation in enclosed cavities by drilling small holes or checking behind light switch or outlet plates. All enclosed cavities should be insulated with densepack cellulose. In order for an enclosed cavity to be properly insulated, at least two inches of free space must exist for the cellulose hose to fit into the cavity properly.

**Exterior Wall Insulation:**

- **Exterior blow:** If the house has removable siding, wall insulation can be completed from the outside of the home. If previously blown in insulation is found in the wall cavities, recommendation of a diagnostic visit is needed to determine the extent of the existing insulation.
- **Interior Drill and Blow:** If the home has stucco, brick, masonry, or asbestos siding under another type of siding, the walls must be insulated from the interior of the home.

**Interior Walls:** Walls that separate conditioned space from unconditioned space such as between an apartment and an unconditioned hallway. These can be insulated with densepack cellulose.

**Overhangs:** These spaces are usually densepacked from the outside. If that is not possible, densepacking from the living space floor above can be recommended.

**Flat Ceilings:** Small enclosed cavities such as above bay windows and bump-outs can be densepacked with cellulose either from the interior living space or from the exterior, depending upon the accessibility.

2.5.3 Assessment of the Attic

Insulating an attic is usually the most cost effective improvement in a home and should be recommended anytime the existing level of insulation is below R-48. In most cases, blown cellulose will be the insulation of choice. The following is a list of eligible attic recommendations:

**Open Attic Flat and Kneewall Flat:** All open attic spaces, including behind the kneewall, should get blown with cellulose.

**Attic Slope:** All enclosed attic slopes should be densepacked with cellulose. If the cavity has inadequate preexisting insulation, recommend densepack cellulose to fill the entire cavity, as long as there are two inches of free space and the cellulose can be applied to the cold side of the assembly.

**Floored Attic and Floored Kneewall Floor:** We can densepack the floored cavity as long as three inches of free space exist. The densepack cellulose will compress any preexisting insulation.

**Attic Kneewall:**

- **Densepack Cellulose -** If the attic kneewall is already enclosed, recommend densepack cellulose.
- Drypack Cellulose - If the attic kneewall is not already enclosed, recommend drypack cellulose where reinforced material will be applied to the kneewall joists to create an enclosed cavity, which will then be densepacked with cellulose.
- Fiberglass batts – If fiberglass batts already exist within an attic kneewall area and only a few bays are missing, recommend fiberglass batts to complete the thermal envelope in that area.

**Attic Kneewall Slope:** Only to be recommended if the kneewall and kneewall floor can not be insulated or kneewall slope insulation already exists.

- Densepack Cellulose - If the attic kneewall slope is already enclosed, recommend densepack cellulose.
- Drypack Cellulose - If the attic kneewall slope is not already enclosed, recommend drypack cellulose where reinforced material will be applied to the kneewall joists to create an enclosed cavity, which will then be densepacked with cellulose.
- Fiberglass Batts – If fiberglass batts already exist within an attic kneewall slope area and only a few open bays are missing, recommend fiberglass batts to complete the thermal envelope in that area.

**Insulate Attic Hatch or Door:** Recommend that polyisocyanurate foamboard be applied to the back of all attic hatches and doors.

**Insulate Attic Pull-Down Stairs:** Recommend the installation of a thermodome as long as the dimensions fit the access (28-29” wide by 59-60” long by 12” high). Additional carpentry may be needed in some cases.

**Additional Attic Accesses:** Recommend additional attic accesses that can be cut if no existing way of entering the attic area is present.

**Housewrap:** In all cases where fiberglass insulation is not enclosed, recommendation of housewrap should be done to form an air barrier and protect the exposed fiberglass insulation.

### 2.5.4 Attic Ventilation

Achieving an attic ventilation standard of 1:300 is the ideal ratio for all open attic cavities. The goal is 50% high ventilation and 50% low ventilation. Other combinations include 80% high and 20% low or cross ventilation. When recommending high ventilation, use the following order of preference:

1. Ridge Vent
2. High Gable Vent
3. Window Gable Vent
4. Roof Vent

When recommending low ventilation, use the following order of preference:

1. Soffit Vents
2. Low Gable Vent
3. Roof Vent
Aluminum Ridge Vent: Made of aluminum and stick up above the roof a few inches. Aluminum ridges vents can not be installed on slate or tin roofs.

Gable Vents: Use rectangular aluminum gable vents. Gable vents can not be installed through asbestos siding.

Soffit Vents: Aluminum soffit vent usually installed as 4" X 16". Soffit vents can not be installed in aluminum soffits.

Propavents: At least one propavent must be recommended with each existing soffit vent and for every proposed soffit vent to allow for proper air transfer.

Window Vents: For attics with existing windows, installing a gable vent within one of the window sashes can be done. Plywood will be constructed around the gable vent which is then fitted into the place of one of the window sashes.

Roof Vents: Made of metal. Not as desirable as other venting methods because these vents are more prone to leaks. Roof vents can not be installed in slate, tin or flat roofs.

Vent Bath Fan to the Outside: When any bathroom exhaust fan vents into the attic, it must be vented to the outside. Ideally, all bath fans vent to the roof, but if they are located close enough to the gable end, they can be vented there. The least preferred approach is to vent to the soffit area.

2.5.5 Guidelines for Outside Assessment:
After assessment of the interior is complete, the Energy Specialist should complete one full loop around the outside of the home. While outside, it is best to make note of the following building characteristics:
• Siding Type(s)
• Roof Type(s)
• Attic Ventilation Combinations
• Water or Moisture Intrusion

2.5.6 Electric Heat Thermostats
In the case of electrically heated homes, replacing old thermostats with new, programmable thermostats can provide significant energy savings. Electricians may require a minimum quantity of thermostats before agreeing to install them. They must be wall mounted thermostats, not located directly on the baseboard. If no insulation work is recommended for the home, the Energy Specialist should print a contract for the electric heat thermostats to be replaced by a certified MassSAVE electrician.

2.6 Assessing Air Sealing Potential
Air Sealing is free to the customer. Most homes could benefit from some amount of air sealing work. Spray foam, caulk, reflectex, metal flashing, door sweeps, and weatherstripping are used to seal the home. If recommending attic insulation, air sealing must be completed before insulating. Attic air sealing should be emphasized since that is where the stack effect is strongest.
sealing can have a large impact on energy savings and reducing attic moisture problems. Below is a list of significant air sealing features:

- chimney chase that needs to be sealed
- one section of open wall cavities that needs to be sealed
- attic kneewalls
- ducts in the attic (requires sealing between duct boots and drywall and increases overall air sealing time as the technician must maneuver around the ductwork)
- drawers in attic kneewalls
- open duct chase or other chase
- balloon framing open to basement
- multiple doors or hatches that need to be weatherstripped
- multiple attic spaces or unheated basements
- recessed lights (air tight insulation barrier boxes can be installed over these)

### 2.7 Identifying Roadblocks

Throughout the screening visit, a primary objective is to keep an eye out for roadblocks. Roadblocks are problems with the safety of the home that could prevent insulation or air sealing work from proceeding. The main roadblocks are moisture, knob & tube wiring, asbestos, and combustion safety problems. There are also some unusual roadblocks discussed below.

#### 2.7.1 Moisture

In order to insulate a home, it is important to determine that the insulation will not become wet and that the insulation will not significantly worsen any existing moisture problems. Moisture can be a roadblock for some measures or all measures in the home, depending on the severity. Here are some guidelines for deciding when there is too much moisture for insulation or air sealing to occur:

1. General: If the framing cavities into which we would like to install insulation are wet, we cannot insulate. This is a roadblock only for the area of the home that is wet, but typically entire measure should be roadblocked. For example, if one wall of the house is too wet to insulate, it is a good idea to leave all the walls uninsulated. Wet framing cavities can be identified by severely peeling paint, mold growth, moss, mushrooms, rot, moisture content, or by touch.

2. Basements: All basements have an elevated level of moisture compared to the living space because concrete absorbs moisture from the ground. Elevated levels of moisture in the basement should stop the installation of insulation in the basement. Signs of elevated moisture include staining, mold growth, and dirt floors. If the level of moisture in the basement is especially high, then no insulation or air sealing should occur in the home. Very moist basements may have pools of water or streams running through them, may have signs of flooding, or may have rotten framing.

3. Attics: Attic moisture problems are usually caused by one of three things – 1) roof leaks, 2) ice damming, or 3) condensation.

   1. Roof leaks: If there are any roof leaks that have not been repaired, this is a roadblock for
any insulation work in the attic, including cellulose and fiberglass. However, air sealing and duct sealing can proceed. If the source of moisture in an attic cannot be determined, it should be assumed that the source is a roof leak.

2. Ice damming: Ice damming is generally caused by too much heat escaping from the home into the attic and melting the snow on the roof, which then refreezes when the temperature drops or the water reaches a lower point on the roof. The moisture seeps into the attic from the outside of the roof. Air sealing, insulating, and venting the attic will reduce ice damming and can solve the moisture problem. Severe ice damming will roadblock attic insulation until warmer weather arrives.

3. Condensation: Condensation is generally caused by warm, moist air escaping from the home and condensing on the cold roof deck. Water forms on the underside of the roof decking. Air sealing and venting will reduce condensation and can solve the moisture problem. In severe cases, the water will freeze on the underside of the roof decking and form icicles.

2.7.2 Knob & tube wiring
Knob & tube wiring should always be suspected in pre-1950 houses. Energy Specialists need to look carefully through the attic and basement and look for rotary, two button, or porcelain switches. Any evidence of knob & tube wiring requires a diagnostic energy assessment to be roadblocked. Remember that knob & tube wiring is a concern even if the electrical panel has been replaced. If knob & tube wiring is present, it is a roadblock to all insulation in the home, except for areas of the home with open cavities where the Energy Specialist can visually verify that no knob & tube wiring is present. Air sealing, duct sealing, and duct insulation can still occur in a home with knob & tube wiring.

When knob & tube wiring is found, the Energy Specialist should inform the customer of how to proceed. Be sure to indicate all the areas of the home we would like to insulate. The customer will need to have an electrician certify that the wiring has been deactivated or removed before proceeding to a diagnostic energy assessment.

2.7.3 Asbestos
If the Energy Specialist finds asbestos insulation on the pipes or ducts in a basement or attic, it is a roadblock to any work occurring in that area that might disrupt the asbestos. The Energy Specialist must check where pipes go into floors or walls. Embossed or smooth paper on ducts is usually asbestos. If there is asbestos on pipes in the basement, typically basement air sealing and basement ceiling insulation must be roadblocked. Sometimes small amounts of air sealing or rim joist insulation can be completed. If there appears to be any risk that a worker would touch the asbestos or knock a ladder into the asbestos, the work must be roadblocked.

The presence of asbestos or any sign that asbestos used to be present will prevent blower door testing in the home. The Energy Specialist should assume that any steam heat system once had asbestos insulation on it, even though not all steam heat systems were insulated with asbestos. The Energy Specialist should also assume that any vermiculite contains asbestos, even though not all vermiculite contains asbestos. Cellulose cannot be blown into an enclosed attic area that contains vermiculite.
Asbestos can also be found in board-like form. This would typically be located directly above the heating system and resemble drywall. If this is found it should be considered a roadblock to any work that would be done within its location.

Due to health concerns, air sealing technicians must not dig through vermiculite insulation in the attic, so your air sealing estimate needs to be reduced based on this factor.

The Energy Specialist should give the customer the appropriate roadblock information to explain the situation. When informing customer, the Energy Specialist should take care to emphasize the need for professional removal, testing, and certification. He or she should avoid saying anything that may give the customer the idea that they can solve the problem on their own. After professional removal or encapsulation of the asbestos or asbestos-like material, the work can proceed. The customer must have a letter from the asbestos professional certifying that the asbestos problem has been corrected.

2.7.4 Combustion Safety
Follow all BPI guidelines for checking combustion safety in the home.

If any combustion safety problem is identified as a “stop work” or “emergency” situation, it is a roadblock to any tightening measures on the home, including air sealing, duct sealing, and insulation. The only measure that can proceed is thermostat installation. Unvented space heaters will always stop work until they are removed.

2.7.5 Other Roadblocks

- Access to house: Sometimes a home is too far from the road or the walls are inaccessible due to trees or shrubbery.

- Structural problems: Sometimes the structure we are trying to insulate cannot hold the weight of the insulation. This is true for freestanding ceiling tiles. In this case, the area cannot be insulated.

- Inability to vent: Sometimes the attic needs insulation but cannot be vented (for example, a home with slate roof, asbestos shingles, and aluminum soffits). For more information on this topic, see the section on insulating attics.

- No Carbon Monoxide Detector Present: For a home with any type of combustion appliance and/or an attached garage, at least one carbon monoxide detector must be present in the home by the time work is completed. In the case of completely electric homes, no carbon monoxide detector is required unless the home has an attached garage.

- Unvented Bath Fan, Dryer, and/or Kitchen Exhaust Fan: Any exhaust fan that vents directly into the attic must be vented to the outside before work is completed.

- No return ductwork: If a home contains a furnace in the basements with no return ductwork, it must be roadblocked until a return system is installed.
• Minimum workspace clearance: If any space that needs work is has inadequate clearance for workers, that particular work must be roadblocked.

• Floored attics: If a floored attic contains existing insulation up to the floorboard level, but can not be effectively air sealed, no cellulose insulation should be recommended to be blown over the existing floorboards. This measure needs to be roadblocked until the homeowner removes all the floorboards. Also, floored attics that contain vermiculate insulation under them must be roadblocked until the homeowner removes all the floorboards to loose blow cellulose on top of the existing vermiculite. Floored attics that do not contain at least 2” of free space between the top of the insulation and the floorboards cannot be further insulated and therefore are roadblocked until all the floorboards are removed by the homeowner.

• Heavy storage use and accessibility: If an area has too many items being stored in it, the house must be roadblocked until the items are moved and access to the particular area is gained. This includes access to areas of the basement and attic where air sealing and/or insulation measures are recommended.

• Overall safety and condition of the home: If the Energy Specialist discovers any issues at a home that are a danger or impediment to further work proceeding, the home must be roadblocked until the issue is addressed by the homeowner. This includes too much bat guano in an attic, unsafe access to the home, basement, or attic areas, unhealthy living condition, excessive mold or rot, etc.

• Personal safety of all field staff should be paramount at all times. If any field staff feel unsafe at an appointment, they have the right to leave and have the support and understanding of the home energy assessment organization and the utility company sponsoring the home energy assessment.

2.8 In-Home Installation Measures
During the energy assessment, the Energy Specialist will have the opportunity to install items that lead to immediate savings. These are referred to as Immediate Savings Measures (ISM’s). The most important install is light bulbs – compact fluorescent light bulbs (CFL’s) are a very cost effective way to reduce electricity usage. There is no maximum number of CFL’s, but they should only be installed in fixtures may get used regularly (usually not basements, closets, attics, etc.).

Other installations that save electricity or gas are second highest priority, like showerheads and aerators for water heating systems. Last would be weatherstripping and other draft-stopping measures since these are better performed during an air sealing visit. However, for a customer that is not getting an air sealing visit, draft stopping measures can be very helpful. For a complete list of measures, see Appendix II.

2.9 Presentation of Recommendations and Next Steps
At the end of every screening visit, a receipt for installations completed during the visit must be provided to the customer.

• If No Roadblocks Prevent Work: The Energy Specialist should inform the customer of what possible insulation measures are applicable to their home and try to sell the diagnostic visit.
The Energy Specialist should present an air sealing contract, if applicable, and try to sell the air sealing visit to the customer. The customer should be given the chance to call and schedule their air sealing appointment and diagnostic visit while at the screening visit.

- **If the Home is Roadblocked:** Distribute all appropriate forms to the customer and clearly explain what must be done in order for them to proceed with the program.

### 2.10 Explanation of Incentives

The Energy Specialist should distribute all relevant utility rebates to the home owner. Also, if the homeowner is interested, the Energy Specialist should distribute all necessary paperwork to apply for the HEAT Loan through a participating lender. If a diagnostic visit is recommended, the Energy Specialist should explain to the customer any relevant incentives related to the type of energy efficiency improvements the Diagnostic Energy Specialist will present at that visit.

### 3.0 Diagnostic Visit Specifics

#### 3.1 Customer Meeting

The goal of the customer meeting is to thoroughly explain to them the tests and procedures you as the Diagnostic Energy Specialist will be performing at their home as well as get an understanding of their insulation concerns.

#### 3.2 Assessment of the Basement / Crawlspace

Please refer to all procedures defined in 2.5.1

#### 3.3 Assessment of Exterior Walls and Enclosed Cavities

Please refer to all procedures defined in 2.5.2

#### 3.4 Assessment of the Attic and Attic Ventilation

Please refer to all procedures defined in 2.5.3 and 2.5.4

#### 3.5 Roadblocks

It is imperative that the Diagnostic Energy Specialists keep an eye out for roadblocks. It is possible that the Screening Energy Specialist missed a roadblock or that one has since been created after the initial screening visit. Please refer to 2.7 for detailed information regarding roadblocks.

#### 3.6 Diagnostic Testing

The goal of diagnostic testing is to help provide the Diagnostic Energy Specialist with more in-depth tools to help determine the current level of insulation within a home as well as show a homeowner in a more hands-on way why insulation and air sealing are necessary to make their home more energy efficient.

It is the Diagnostic Energy Specialist’s job to use all necessary diagnostic tests to best prescribe eligible measures to the customer through the MassSave program. These tests should be run to verify the ability to insulate the home or to help convince the customer to get the work done. Here are all the tests that can be run:
- **Infrared scan**

The infrared scan is performed to learn more about the insulation present in the home. It is helpful for the customer to watch this part of the home energy assessment so they can see the images on the screen. If the Diagnostic Energy Specialist will be running a blower door test, the infrared camera should be used first so that the blower door does not eliminate the needed temperature difference. An 18-degree temperature difference between the inside and outside is recommended to get a clear picture of the status of insulation in the walls. During the heating season, if there is no insulation in the walls, the wall framing should appear warmer than the cavities. If the walls are insulated, the wall framing should appear cooler than the cavities. The Energy Specialist must be careful of situations where the walls may be warmed by the sun or other heat source which could blur or reverse the images. Infrared scans are best done in the morning while it is still cold outside and before the sun shines on the building. Energy Specialists should be especially careful when viewing the south and west wall in the afternoon.

Infrared images of ceilings often don’t reveal much because the attic or roof is often warm compared to the outdoors. Infrared images of metal surfaces or glass surfaces are also meaningless since they tend to reflect other infrared light rather than emit their own.

- **Blower door test**

A blower door test should be run only after determining that no asbestos or vermiculite is present in the home. The Energy Specialist should explain to the customer what they are doing, and show the customer areas of the house that are leaking. This can be especially helpful for determining whether attic spaces or basements are currently behaving as part of the home or are outside the home. If the Energy Specialist already ran an infrared test, he or she can use the camera again to see what effect the blower door has on the scan.

- **Pressure pan test**

If there are ducts outside the thermal envelope, the Diagnostic Energy Specialist can run a pressure pan test with the blower door running (assuming there is no asbestos like material in the home). The blower door should depressurize the house to -50 Pascals. Pressure pan readings should be taken at all accessible registers. Readings above 2.0 Pascals indicate leaky ductwork that should be sealed. The pressure pan test reveals duct leakage to the outside, so it is a good indicator of where to prioritize any duct sealing work.

- **Solar site assessment**

Use the solar pathfinder to outline the shaded areas. This test is performed only upon request from the customer. Usually the request is made when scheduling the home energy assessment. The home owner should be informed of whether or not their home is a good candidate for a solar water heater.

### 3.7 Outside Assessment and Area Calculations

The goal of performing an outside assessment of the home and calculating the area is to provide the Diagnostic Energy Specialist with accurate calculations in order to create an accurate work order for insulation contractors. Performing an outside assessment of the
home allows the Diagnostic Energy Specialist to gain a 360 degree view of the home, look at siding and ventilation, and accurately measure the entire home.

After completing an assessment of the inside of the home, the Energy Specialist should complete one full loop around the building. The Energy Specialist can take measurements and draw a diagram of the home at this time. The following should be checked from the outside of the home:

- Check the siding types on all sides and levels of the building where you are recommending wall insulation. Determine if there are multiple layers of siding by checking at the bottom edge and windows and asking the customer if there are multiple layers of siding.
- If there are attic insulation opportunities and the attic needs more ventilation, look for ways to add ventilation to the attic. Check for ventilation that unnoticed from the attic.
- Check the condition of all gutters and downspouts. Note if any are missing, damaged, clogged, or expel water near the foundation.
- Look for evidence of water intrusion into the building, such as steep valleys with brush caught in them, rotten siding or trim, peeling paint, or incorrectly flashed areas.
- Look for depressions in the ground near the foundation, adequate slope away from the foundation, dampness of the ground around foundation, and type of vegetation (moss, grass, shrubs, etc.).
- Check window wells and bulkhead door for signs of water entry or water damage.

Whenever energy efficiency improvements are recommended, the Energy Specialist will draw a diagram of the home and calculate area and volume as accurately as possible.

3.8 Installation Measures
At the diagnostic visit programmable thermostats can be installed at no cost to the customer.

3.9 Creation of Reports and Contract
At the end of the diagnostic energy assessment, the Energy Specialist should create a contract to present to the customer based on their findings and recommendations. Since the Screening Energy Specialist has previously determined the roadblocks that needed to be dealt with prior to air sealing and/or insulating, the Diagnostic Energy Specialist should be able to leave a contract with the customer almost every time. It is possible that the Screening Energy Specialist missed a roadblock or a roadblock has since been created. If this ever occurs, the Diagnostic Energy Specialist should make clear to the customer what has happened and what needs to be done to resolve the roadblock. After the roadblock is cleared, a contract can be sent to the homeowner to proceed with work.

3.10 Presentation and Sale of Recommended Work with Incentives
After all data has been entered and a report and contract generated, the Diagnostic Energy Specialist should present this proposal to the homeowner for completion. The Diagnostic Energy Specialist must clearly explain all measures on the contract and leave the customer with appropriate handouts for proceeding with preparing for the work. The Diagnostic Energy Specialist should try their best to get the homeowner to agree to get work done while at the home energy assessment. If the
customer does not sign the contract at the home energy assessment, the Diagnostic Energy Specialist must leave the customer with the information they need to schedule in the future. It is imperative that the Diagnostic Energy Specialist also clearly explain what incentives are available for each and every customer. That includes the insulation incentive, the HEAT Loan information, and other utility specific rebates. This will give the customer a greater understanding of what they are eligible for and make them feel more confident when deciding whether or not to get work done through the program. If the Screening Energy Specialist has not already given the customer rebate and HEAT Loan information, the Diagnostic Energy Specialist is responsible for providing this information if the customer is interested.
APPENDIX I: CAZ Depressurization Limits

<table>
<thead>
<tr>
<th>Venting Condition</th>
<th>Limit (Pascals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orphan natural draft water heater (including outside chimneys)</td>
<td>-2</td>
</tr>
<tr>
<td>Natural draft boiler or furnace commonly vented with water heater</td>
<td>-3</td>
</tr>
<tr>
<td>Natural draft boiler or furnace with barometric damper commonly vented with water heater</td>
<td>-5</td>
</tr>
<tr>
<td>Individual natural draft boiler or furnace</td>
<td>-5</td>
</tr>
<tr>
<td>Mechanically assisted draft boiler or furnace commonly vented with water heater</td>
<td>-5</td>
</tr>
<tr>
<td>Mechanically assisted draft boiler or furnace alone</td>
<td>-15</td>
</tr>
<tr>
<td>Exhaust chimney-top draft inducer; High static pressure flame retention head oil burner; Sealed combustion appliance</td>
<td>-50</td>
</tr>
</tbody>
</table>

APPENDIX II: List of installations (ISM’s)

Compact fluorescent light bulbs (CFL's)
Showerhead
Flip aerator
Standard aerator
Pipe insulation
Door weatherstripping
Outlet gasket
Door sweep
Automatic door sweep

APPENDIX III: List of Available Incentives for Recommended Measures

100% Instant Rebate Provided by Utility Sponsor:
- Air Sealing
- Duct Sealing when located outside the thermal envelope but not within full basements
- Installation of programmable electric heat thermostats. Minimum 4 per household, not located within a bathroom.

75% off up to $2,000.00 Instant Rebate Provided by Utility Sponsor:
- Attic Insulation Measures
- Basement Insulation Measures
- Exterior Wall Insulation Measures
- Duct Sealing when located within a full basement
- Heating Duct, Hydronic and Steam Pipe Insulation
MEMORANDUM

To: Lyn Huckabee, Esq., Department of Energy Resources
    John Livermore
    Jeff Schlegel
    Paul Horowitz

From: Bay State Gas Company

Date: July 1, 2010

Re: Bay State Gas Company, D.P.U. 09-125
    Residential Metric No. 5: MassSAVE:
    Facilitate Inclusion of Independent Energy Auditors

A. Introduction/Metric Text

Bay State Gas Company (the “Company”) is pleased to submit this memorandum pursuant the performance incentive metrics submitted to the Department of Public Utilities on March 12, 2010, specifically the Residential Metric No. 5: MassSAVE: Facilitate Inclusion of Independent Energy Auditors. The performance incentive metrics proposal is currently awaiting Department action. The text of the design portion of the metric is as follows:

<table>
<thead>
<tr>
<th>5. MassSAVE: Facilitate Inclusion of Independent Energy Auditors {Electric &amp; Gas} – Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
</tr>
<tr>
<td>Each PA will work to expand the pool of independent auditors, identified through the RFQ process, qualified to deliver auditing services in the Commonwealth. Each PA will coordinate with their primary vendor to integrate customers brought to the program by pre-qualified independent energy auditors. Each PA to submit a memo to EEAC consultants and DOER by July 1, 2010 detailing their distinct and clear role in accomplishing this activity.</td>
</tr>
</tbody>
</table>

The Company remains committed to assessing opportunities to provide pathways for the inclusion of energy professionals in utility sponsored programs. In order to assess the benefits and viability of engaging independent energy auditors in the assessment/auditing services of the RCS assessment/auditing service of the MassSAVE program, the Company has committed to documenting the standards for vendor services (e.g. accreditation/certifications, cost-effectiveness, administration, reporting to DOER and PAs, training requirements, pricing), providing a detailed specification on each component of the new program audit process, and
preparing and sending a Request for Qualifications ("RFQ") to independent energy auditors to determine the approximate pool of qualified individuals and companies.

In its May 1, 2010 Memo to the DOER and its consultants, the Company reported that it had issued an RFQ on April 30, 2010 for the Company’s service territory which sought to identify interested parties that are qualified to provide Home Performance Services ("HPS"), including providers of energy assessments and of weatherization services. In accordance with the threshold level of this metric, the RFQ was issued to 76 parties listed on Attachment A. The RFQ was designed to assess the benefits and viability of engaging independent energy auditors in the comprehensive home assessment services of the RCS/MassSAVE program, including determining the approximate pool of qualified individuals and companies, in accordance with the threshold level of this metric. The RFQ was prepared by the Company’s current lead vendor Honeywell Utility Solutions ("Honeywell") at the Company’s direction and with its input, and pertains to the Company’s service territory.

B. The Company’s Clear and Distinct Role

The Company has had a clear and distinct role in working to expand the pool of independent auditors through its leadership and involvement in the RFQ process, including participating in the question and answer process with its lead vendor Honeywell. As set forth in the April 30, 2010 RFQ, the Company suggested a question and answer session would take place on May 19, 2010. With three companies expressing interest in participating in the May 19 meeting, the Company determined that it was prudent to work with Western Mass Electric Company ("WMECO") and The Berkshire Gas Company ("Berkshire") and invite the three contractors to the question and answer session on May 21, 2010 in western Massachusetts. This question and answer session was attended by Company staff, as well as fourteen contractors, and staff from WMECO, Berkshire, and The Center for Ecological Technology.

The Company’s clear and distinct role in working to expand the pool of independent auditors includes its involvement in the review and assessment of responses to the RFQ from potential auditors. The Company has worked with Honeywell to continue this process, reviewing the responses and qualifications of the 26 respondents to the RFQ. As a direct result of the RFQ, new contractors have already begun the process of contracting with Honeywell to provide weatherization services.

The Company continues to work closely with Honeywell to coordinate the integration of the 14 contractors that expressed interest in becoming a qualified independent energy auditor. As stated in the RFQ, when independent energy auditors are chosen, they will follow the procedure established by the Company and its lead vendor in the RFQ to integrate their customers into the program. The procedure includes, among other things: the provision of information by the independent auditor to the customer about how the program works; confirmation by the HPS provider of customer eligibility for assessments; the determination by the HPS provider if the customer’s home is a good candidate for services; and the provision of a list of contractors that
could perform the services for the customer. Further, if the customer chooses to work with the independent HPS provider for weatherization work, the HPS provider will sign a contract with the customer to complete the air sealing and insulation work. The utility incentive (no cost air sealing and 75% of insulation up to $2000) will be credited toward the customer’s cost, and the weatherization provider will bill Honeywell for the utility incentive upon completion of the work. Finally, Honeywell will inspect the job to ensure it meets the Mass Save RCS standards. If there are no major problems, Honeywell will proceed with paying the incentive to the HPS provider. In this way, the Company and its lead vendor are developing a procedure to serve customers brought to the program by pre-qualified independent energy auditors. The Company continues to work with Honeywell and the Residential Management Committee (“RMC”) to work out the details involved in integrating independent energy auditors, taking into account feedback received from interested parties during the question and answer session, and the complexities involved in data reporting for independent energy auditors working in multiple PAs’ service territories.

In addition to its clear and distinct role in issuing the Company-specific RFQ, the Company has also had a clear and distinct role in developing standards and specifications in order to engage independent energy auditors by participating actively with the RMC. The Company continues to work with the RMC in developing standards and protocols to be used as selection criteria for further opening the Mass Save program to independent energy auditors. To this end, the MassSAVE statewide Materials & Installation Standards were finalized on May 15, 2010 for weatherization work. The Company has also been directly involved in preparing the MassSAVE Technical and Process Manual, which provides standard, consistent specifications on each component of the audit process. The new auditing standards were reviewed at the most recent RMC meeting and are nearing completion.

C. Conclusion

The Company is pleased to provide this design-level report to the Department of Energy Resources and the Energy Efficiency Advisory Council’s consultants in accordance with the applicable metric, and looks forward to providing additional status reports as the programs progress.

If you have any questions regarding this report, or would like further information, please do not hesitate to contact Marjorie Izzo at 508-836-7350.
**ATTACHMENT A**

**RFQ RECIPIENTS**

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>PMB</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam T. Incorporated</td>
<td>455 State Rd.</td>
<td>303</td>
<td>Haven</td>
<td>MA</td>
</tr>
<tr>
<td>Advanced Building Analysis, LLC</td>
<td>2 Woodlawn St.</td>
<td></td>
<td>Amesbury</td>
<td>MA</td>
</tr>
<tr>
<td>AirCycler/Lupidex Corp.</td>
<td>411 Plain Street</td>
<td></td>
<td>Marshfield</td>
<td>MA</td>
</tr>
<tr>
<td>Boston Green Building</td>
<td>218 Lincoln St.</td>
<td></td>
<td>Allston</td>
<td>MA</td>
</tr>
<tr>
<td>Bucino Enterprises/Build Positive</td>
<td>#427 2 Greglen Ave</td>
<td></td>
<td>Nantucket</td>
<td>MA</td>
</tr>
<tr>
<td>Building Diagnostics</td>
<td>116 Rt 6A</td>
<td>Suite 4</td>
<td>Sandwich</td>
<td>MA</td>
</tr>
<tr>
<td>Building Shelter</td>
<td>PO Box 2297</td>
<td></td>
<td>Vineyard</td>
<td>MA</td>
</tr>
<tr>
<td>Byggmeister, Inc.</td>
<td>Parkway</td>
<td></td>
<td>Newton</td>
<td>MA</td>
</tr>
<tr>
<td>Carpentry Connection</td>
<td>P.O. Box 1645</td>
<td></td>
<td>Gloucester</td>
<td>MA</td>
</tr>
<tr>
<td>Carr Property Management</td>
<td>397 Longmeadow Street</td>
<td></td>
<td>Longmeadow</td>
<td>MA</td>
</tr>
<tr>
<td>Certified Energy Ratings, Inc.</td>
<td>11 Appaloosa Lane</td>
<td></td>
<td>Hamilton</td>
<td>MA</td>
</tr>
<tr>
<td>Cozy Home Performance, LLC</td>
<td>74 Lyman Road</td>
<td></td>
<td>Northampton</td>
<td>MA</td>
</tr>
<tr>
<td>Dr. Warm</td>
<td>91 Ridge Road</td>
<td></td>
<td>Upton</td>
<td>MA</td>
</tr>
<tr>
<td>Energy Conservation Design Inc.</td>
<td>68 Pearl St.</td>
<td></td>
<td>Watertown</td>
<td>MA</td>
</tr>
<tr>
<td>Energy Efficiency Associates</td>
<td>3 Birch Hill Road</td>
<td></td>
<td>Stow</td>
<td>MA</td>
</tr>
<tr>
<td>Energy Egghhead, LLC</td>
<td>39 Cedar St.</td>
<td></td>
<td>Amesbury</td>
<td>MA</td>
</tr>
<tr>
<td>Energy Pros Inc</td>
<td>6 Courthouse Lane</td>
<td>#15</td>
<td>Chelmsford</td>
<td>MA</td>
</tr>
<tr>
<td>Energy Raters of Massachusetts, Inc.</td>
<td>2 Woodlawn Street</td>
<td></td>
<td>Amesbury</td>
<td>MA</td>
</tr>
<tr>
<td>Esnspure</td>
<td>P.O. Box 480</td>
<td></td>
<td>Sandwich</td>
<td>MA</td>
</tr>
<tr>
<td>Environmental Compliance Services, Inc.</td>
<td>588 Silver St.</td>
<td></td>
<td>Agawam</td>
<td>MA</td>
</tr>
<tr>
<td>Evergreen Contractors</td>
<td>2 Briarwood St.</td>
<td></td>
<td>Gloucester</td>
<td>MA</td>
</tr>
<tr>
<td>Green Guild of MA L.L.C.</td>
<td>37 Franklin Street</td>
<td></td>
<td>Brookline</td>
<td>MA</td>
</tr>
<tr>
<td>Green Neighbor</td>
<td>270 Sunderland Rd.</td>
<td>Apt 38</td>
<td>Worcester</td>
<td>MA</td>
</tr>
<tr>
<td>Green Stamp Insulation</td>
<td>184 Riverview Ave</td>
<td>Suite 1</td>
<td>Waltham</td>
<td>MA</td>
</tr>
<tr>
<td>Greener Resources</td>
<td>785 Woburn St.</td>
<td></td>
<td>Wilmington</td>
<td>MA</td>
</tr>
<tr>
<td>Heyoka Solutions</td>
<td>PO Box 787</td>
<td></td>
<td>Falmouth</td>
<td>MA</td>
</tr>
<tr>
<td>Home Energy Remedies, LLC</td>
<td>74 Pond St</td>
<td></td>
<td>Douglas</td>
<td>MA</td>
</tr>
<tr>
<td>HRM Group, LLC dba Cape Energy Solutions</td>
<td>4 Haskell Street</td>
<td></td>
<td>Gloucester</td>
<td>MA</td>
</tr>
<tr>
<td>Infrared Diagnostic LLC</td>
<td>9 Elaine Road</td>
<td></td>
<td>Sudbury</td>
<td>MA</td>
</tr>
<tr>
<td>Jack Of Many Trades. LLC</td>
<td>7 Walden Terrace</td>
<td></td>
<td>Clinton</td>
<td>MA</td>
</tr>
<tr>
<td>Masco Home Services</td>
<td>110 Perimeter Rd.</td>
<td></td>
<td>Nashua</td>
<td>NH</td>
</tr>
<tr>
<td>Moss Hollow</td>
<td>803 Leominster Rd.</td>
<td>5th Floor</td>
<td>Lunenburg</td>
<td>MA</td>
</tr>
<tr>
<td>Next Step Living Inc.</td>
<td>25 Drydock Ave</td>
<td></td>
<td>Boston</td>
<td>MA</td>
</tr>
<tr>
<td>Sage Builders LLP</td>
<td>672 Chestnut Street</td>
<td></td>
<td>Newton</td>
<td>MA</td>
</tr>
<tr>
<td>Second Generation Energy, LLC</td>
<td>21 Overdale Parkway</td>
<td></td>
<td>Hopedale</td>
<td>MA</td>
</tr>
<tr>
<td>SSB Properties</td>
<td>79 Surrey Street</td>
<td></td>
<td>Brighton</td>
<td>MA</td>
</tr>
<tr>
<td>Stevens Home Improvement Co</td>
<td>119 Alden Rd</td>
<td></td>
<td>Fairhaven</td>
<td>MA</td>
</tr>
<tr>
<td>Sustainable Energy Analytics, LLC</td>
<td>32 Lincoln Street</td>
<td></td>
<td>Lexington</td>
<td>MA</td>
</tr>
<tr>
<td>The Aulson Company</td>
<td>49 Danton Drive</td>
<td></td>
<td>Methuen</td>
<td>MA</td>
</tr>
<tr>
<td>The Worthmore Group</td>
<td>15 Walcott Rd.</td>
<td></td>
<td>Beverly</td>
<td>MA</td>
</tr>
<tr>
<td>Total Green Energy Solution, LLC</td>
<td>11 Woodcliffe Road</td>
<td></td>
<td>Lexington</td>
<td>MA</td>
</tr>
<tr>
<td>Company Name</td>
<td>Address Details</td>
<td>City</td>
<td>State</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-------------------------------------</td>
<td>----------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Waterfront Woodworks</td>
<td>388 Huckle Hill Road</td>
<td>Bernardston</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Wattzy</td>
<td>6 Clary St. #1</td>
<td>Cambridge</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>High-R Standard Homes LLC</td>
<td>18 Graf Rd, Unit 19</td>
<td>Newburyport</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>M.A.P. Insulation CO., Inc.</td>
<td>45 Industrial Court</td>
<td>Seekonk</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Zero Draft/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RetroFoam of Massachusetts Inc</td>
<td>110 Gibson St- unit 3</td>
<td>Dorchester</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Fontaine Enterprises</td>
<td>430 Main St</td>
<td>Oxford</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Quality Insulation</td>
<td>#2 Industrial Rd</td>
<td>Milford</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Anchor Insulation</td>
<td>435 Narragansett Park Dr</td>
<td>Pawtucket</td>
<td>RI</td>
<td></td>
</tr>
<tr>
<td>Mic-Mac Mechanical Insulation</td>
<td>454 South Street</td>
<td>Holyoke</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>All Star Insulation</td>
<td>56 Franklin St</td>
<td>Hampton</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Retrofit Insulation</td>
<td>P O Box 105</td>
<td>Seekonk</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Home Energy Solutions, Inc.</td>
<td>2 Pisgah Rd.</td>
<td>Huntington</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Home Energy, Inc.</td>
<td>14 Edgehill Road</td>
<td>Haverhill</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Dunn Construction Co</td>
<td>34 Huntington Ave.</td>
<td>Sharon</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Accelerate Energy LLC</td>
<td>PO Box 107</td>
<td>Worcester</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Advanced Energy Services</td>
<td>215 Laurelwood Dr.</td>
<td>Hopedale</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Anderson Insulation</td>
<td>706 Brockton Ave.</td>
<td>Abington</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Bruin</td>
<td>479 Mount Hope Street</td>
<td>Attleboro</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Carolineau Insulation, LLC</td>
<td>21 Lenny Lane</td>
<td>Hudson</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>CO-OP Power</td>
<td>324 Wells Street</td>
<td>Greenfield</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Energy Doctor <em>dba Delisle Enterprises Inc</em></td>
<td>323 America Street</td>
<td>Fall River</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Hugh's Energy</td>
<td>50 Stedman St.</td>
<td>Gill</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Ideal Home Improvement Inc.</td>
<td>142 Boyle Road</td>
<td>Jamica Plain</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Insul-Pro</td>
<td>267 N. Quincy St</td>
<td>Abington</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Jones Boys Insulation</td>
<td>4 Charter Street</td>
<td>Danvers</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>JP George and Son</td>
<td>64 Haywood St</td>
<td>Greenfield</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Lajoie's Aluminum &amp; Vinyl Products, LLC</td>
<td>181 Green St</td>
<td>Somersworth</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Mallett Pipe</td>
<td>459 S. Pleasant St.</td>
<td>Amherest</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>New England Insulation</td>
<td>P.O. Box 1449</td>
<td>Woonsocket</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Owens Insulation Inc.</td>
<td>172 Dayton Street</td>
<td>Danvers</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Polar Bear</td>
<td>P.O. Box 958</td>
<td>Andover</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Resolution Energy Inc.</td>
<td>49 Herring Pond Rd.</td>
<td>Buzzards Bay</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Rogers Insulation Specialists Co., Inc</td>
<td>227 Arlington St., Unit C</td>
<td>Framingham</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Urban &amp; Sons</td>
<td>385 Liberty St</td>
<td>Springfield</td>
<td>MA</td>
<td></td>
</tr>
<tr>
<td>Joshua Jacobs</td>
<td>31 Randall St</td>
<td>North Easton</td>
<td>MA</td>
<td></td>
</tr>
</tbody>
</table>
**Q&A SESSION ATTENDEE LIST**

<table>
<thead>
<tr>
<th>Name of Attendee</th>
<th>Company</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Keyes</td>
<td>Victory Energy Solutions</td>
<td><a href="mailto:paulk@victoryenergysolutions.com">paulk@victoryenergysolutions.com</a></td>
</tr>
<tr>
<td>Joe Carry</td>
<td>Decumanus Green Design / Build, Inc</td>
<td><a href="mailto:joseph@decumanusgreen.com">joseph@decumanusgreen.com</a></td>
</tr>
<tr>
<td>Peter Wingate</td>
<td>Community Action</td>
<td><a href="mailto:pwingate@communityaction.us">pwingate@communityaction.us</a></td>
</tr>
<tr>
<td>Adin Maynard</td>
<td>Cozy Home Performance</td>
<td><a href="mailto:adin@mycozyhome.org">adin@mycozyhome.org</a></td>
</tr>
<tr>
<td>Michael Krezmien</td>
<td>Eco-vation</td>
<td><a href="mailto:krezmien@gmail.com">krezmien@gmail.com</a></td>
</tr>
<tr>
<td>Geoff Chapin</td>
<td>Next Step Living</td>
<td><a href="mailto:geoff@nextsteplivinginc.com">geoff@nextsteplivinginc.com</a></td>
</tr>
<tr>
<td>Jae McAuley</td>
<td>Beyond Green Construction</td>
<td><a href="mailto:jae@beyondgreen.biz">jae@beyondgreen.biz</a></td>
</tr>
<tr>
<td>Margie Izzo</td>
<td>Bay State Gas</td>
<td><a href="mailto:mizzo@nisource.com">mizzo@nisource.com</a></td>
</tr>
<tr>
<td>Jerry Hanna</td>
<td>National Grid</td>
<td><a href="mailto:jerome.hanna@us.ngrid.com">jerome.hanna@us.ngrid.com</a></td>
</tr>
<tr>
<td>Tom Rossmassler</td>
<td>Energia</td>
<td><a href="mailto:tomr@EnergiaUS.com">tomr@EnergiaUS.com</a></td>
</tr>
<tr>
<td>Paul Schmidt</td>
<td>Co-op Power</td>
<td><a href="mailto:paul@cooppower.coop">paul@cooppower.coop</a></td>
</tr>
<tr>
<td>Robert Gyurjan</td>
<td>Berkshire Gas</td>
<td><a href="mailto:rgyurjan@berkshiregas.com">rgyurjan@berkshiregas.com</a></td>
</tr>
<tr>
<td>Mark Newey</td>
<td>CET</td>
<td><a href="mailto:markn@cetonline.org">markn@cetonline.org</a></td>
</tr>
<tr>
<td>Courtney Moriarta</td>
<td>Masco (Wellhome)</td>
<td><a href="mailto:courtney.moriarta@wellhome.com">courtney.moriarta@wellhome.com</a></td>
</tr>
<tr>
<td>Christian Ledoyt</td>
<td>House Doctor Services</td>
<td><a href="mailto:housedoctorsservices@hotmail.com">housedoctorsservices@hotmail.com</a></td>
</tr>
<tr>
<td>Nelson Shifflitt</td>
<td>Valley Home Improvement</td>
<td><a href="mailto:nelson@valleyhomeimprovement.com">nelson@valleyhomeimprovement.com</a></td>
</tr>
<tr>
<td>John Arseneau</td>
<td>Arseneau Contraction, Inc</td>
<td><a href="mailto:johna113@hotmail.com">johna113@hotmail.com</a></td>
</tr>
<tr>
<td>Paul Tangredi</td>
<td>ECS, Inc</td>
<td><a href="mailto:ptangredi@ecsconsult.com">ptangredi@ecsconsult.com</a></td>
</tr>
<tr>
<td>Jenn Cranshaw</td>
<td>CET</td>
<td><a href="mailto:jennc@cetonline.org">jennc@cetonline.org</a></td>
</tr>
<tr>
<td>John Walsh</td>
<td>WMEOC</td>
<td><a href="mailto:walshj@nu.com">walshj@nu.com</a></td>
</tr>
</tbody>
</table>
Low-Income Metric #1

Hard to Reach Landlords {Electric & Gas} – Statewide
2010 Low Income Metric One

NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas Company, Berkshire Gas Company and New England Gas Company are submitting this report to update the Low Income Energy Affordability Network (LEAN) on the status of the 2010 low income metric number one.

<table>
<thead>
<tr>
<th>1. Hard to Reach Landlords {Electric &amp; Gas} – Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threshold</strong></td>
</tr>
<tr>
<td>Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.</td>
</tr>
<tr>
<td><strong>Design</strong></td>
</tr>
<tr>
<td>Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.</td>
</tr>
<tr>
<td><strong>Exemplary</strong></td>
</tr>
<tr>
<td>Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.</td>
</tr>
</tbody>
</table>

We believe that by completion and documentation of these tasks, NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas Company, Berkshire Gas Company and New England Gas Company have completed the 2010 low income metric number one as described at the exemplary level.

Respectfully submitted by:

Diane M. Lopes  
Residential Program Manager  
NSTAR Electric & Gas

Diana Duffy  
Senior Program Manager  
National Grid

Deborah E. Sas  
Senior Project Administrator  
Western Massachusetts Electric Company

Derek T. Kimball  
Residential Programs Coordinator  
Uniteil Service Corporation

Kara A. Gray  
Program Manager  
Columbia Gas of Massachusetts

Robert Gyurjan  
Lead Analyst – Energy Services  
The Berkshire Gas Company

Jeanne B. Cherry  
Lead Energy Efficiency Programs Administrator  
New England Gas Company
Metric 1: Hard to Reach Landlords

Subcommittee of the members of the Best Practices Working Group, which included representatives from all gas and electric utilities, develop, market and execute a statewide landlord early retirement high efficiency heating incentive initiative for single family (1-4 units).

Metric Achievements

THRESHOLD

- Established a Best Practices subcommittee which included representatives from all gas and electric Program Administrators

- Initial meeting held on April 13, 2010
  - initiated a sub-committee of PAs and lead agency vendors to work collaboratively on this effort
  - Reviewed NSTAR pilot
  - Discussed ways to obtain data for this initiative

- Other meetings/conference calls held:
  - May 4, 2010
  - May 24, 2010
  - June 2, 2010
  - June 8, 2010
  - July 16, 2010
  - September 16, 2010
  - September 21, 2010
  - September 27, 2010
  - October 7, 2010
  - October 13, 2010
  - October 15, 2010
  - November 9, 2010

- Developed a statewide plan in collaboration and approved by LEAN (See The Low-Income 1-4 Family Building Heating System Early Retirement Initiative Description attached)
  - Achieved Threshold status on June 8, 2010

DESIGN

Each utility worked with their internal departments to identify where sources of data existed.

- Each PA had similar data mining methods
  - PAs worked with their IT departments to identify the best methods to extract appropriate data
  - Berkshire Gas- worked with IT to extract names and addresses for landlords with tenant accounts on the low-income rate for marketing outreach
- Columbia Gas – worked with IT to extract names and addresses for landlords with tenant accounts on the low-income rate for marketing outreach
- National Grid - worked closely with its Lead agency to come up with a targeted list of landlord properties with gas heat that received low income weatherization services during 2010
- New England Gas – Collaborated with local landlord representatives to compile a community list of landlords
- NSTAR- worked with IT to extract any residential discount electric/gas customer account from our CIS system with owner information on the account, scrubbed the data removing incomplete, unusable or duplicate information and created a database for marketing outreach
- Unitil– used the local yellow pages and worked with IT to extract names and addresses for landlords with tenant accounts on the low-income rate for marketing outreach
- WMECO - worked with IT to extract any residential discount electric customer account from our CS2 system with landlord information on the account along with data mining from the CLMTRS internal database

Design level achieved varies per utility
- Berkshire Gas-August
- Columbia Gas -July
- National Grid - September
- New England Gas - August
- NSTAR - August
- Unitil - August
- WMECO-August

EXEMPLARY
Outreach activities
- PAs developed a generic letter to target landlord (See attached for PA specific letters/flyers)
- Attended landlord association meeting
  - Sept. 29 – in Springfield – Greenfield Landlord Association
  - Oct. 9 – in Springfield – Springfield Residential Landlord Association
  - Nov. 18 – in Westfield – Westfield Landlord Business Association
- Approximately six MMI referrals were redirected to the local Community Action Agencies (CAA)
- Finalized marketing plan in late September
- Original marketing plan was to solicit at least 5% of PAs eligible list of landlords. PAs did not budget for this initiative in their filings and serving fewer low income customers out of regular program funds due to the possible interest and volume of landlords was a concern
  - PAs mailed PA specific letter to LL in their service territory. Some starting in October
    - Berkshire Gas-November 19
    - Columbia Gas – October 18
    - National Grid – November 29
- New England Gas – December 20
- NSTAR – October 15
- Unutil – December 20
- WMECO-October 15

<table>
<thead>
<tr>
<th></th>
<th>Number of Landlords Identified</th>
<th>Number of letters sent</th>
<th>Tenant Heating systems replaced*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkshire</td>
<td>1500</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Columbia Gas</td>
<td>197</td>
<td>197</td>
<td>0</td>
</tr>
<tr>
<td>National Grid</td>
<td>89</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td>New England Gas</td>
<td>25</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>NSTAR</td>
<td>7899</td>
<td>600</td>
<td>0</td>
</tr>
<tr>
<td>Unutil</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>WmeCo</td>
<td>3000</td>
<td>600</td>
<td>0</td>
</tr>
</tbody>
</table>

*As of this writing, tenant systems have been replaced but cannot be traced definitive to program because 1) qualifying leads and the subsequent installation can take several weeks/months and 2) CAA do not have an accurate tracking system in place to report this to the utilities.

The original marketing plan of 5% of letters sent was readjusted by each PA upon receipt of the database quantities and discussions with CAA’s. There was some concern that an uptick in this initiative might divert too many resources away from the overall goals and objectives of the Low-Income Program.

**Barriers/Lessons Learned**

In the Fall and Winter of 2010, the utilities and their Community Action Agency (CAA) partners have been actively marketing the Heating System Early Retirement Initiative to landlords through direct mailings and presentations at local landlord association events. One newspaper, the Berkshire Eagle, ran an article about the initiative in a November 2010 issue.

The Electric and Gas utilities have compiled the following observations and recommendations regarding the 2010 Metric. These categories highlight the experience the utilities have collectively had since the initiative’s inception.

**Utility & Landlord Data Reliability:**
- Seeking qualifying customer information through fuel assistance and utility databases is more difficult due to current privacy laws.
- Due to confidentiality requirements, tenant LIHEAP information cannot be shared with the utilities and/or landlords without consent from tenants.
- Landlord data may be incorrect. Utility databases may not capture most current landlord/owner name and address. In addition, the data is not typically updated. Landlord information is not available unless landlord requests to be put on the account in case of a unit vacancy.
- The process for requesting and receiving customer data from some utility companies is tedious. IT department’s priorities have been established per IT management. Incoming data requests of this nature may not be a high priority thus information can take a considerable amount of time. Specialty queries may have to be written to identify landlord information and the results may not be complete.
- Heating system installations being installed through Metric #1 are not tracked directly to specific marketing efforts. Utility company tracking systems do not have the ability to identify which heating systems are installed through this program.
- Utilities do not have one standard method to track and report this Metric result.

Utility & Landlord Budgets & Costs:

UTILITY:
- Lack of specific budget – this metric was contemplated after budgets were approved and not included in the Statewide 3-year Energy Efficiency Plan for low income programs.
- General concern that the utility weatherization programs will become heating system replacement programs. The dollars spent for this Metric alone will diminish the total dollars available for all other weatherization services and heating system replacements for low income customers.
- Smaller utilities can provide fewer systems to fewer landlords. There is a question of the prioritization and equity to qualified landlords and tenants. Should 1 house receive 4 new heating systems at a total cost of $18,000 or should 4 landlords receive one system each? How many per building/address can be installed if qualified? How many per landlord with multiple sites?

LANDLORD:
- Landlord Return on Investment - Some landlords want to upgrade the current heating system but cannot afford the upfront dollars for the co-pay or the pre-installation work that may be required. For example asbestos removal and chimney liners are additional costs that would need to be covered by the landlord. These expensive add-ons may be beyond what a landlord would spend if they replaced the current system with a less efficient model.

Resources:
- Each CAA that administers their utility weatherization programs has different levels of expertise and staffing capabilities (time, resources, etc) for handling the landlord initiative. More detailed information is required to review and approve/disapprove a candidate with multiple heating systems and/or properties.
Current utility mailings are creating the CAA’s to chase bad leads which is diverting resources from the core goals and objectives of the program and the initiative.

Prioritization of CAA limited staffing resources that may take away resources from current utility weatherization programs.

**Exposure/Liability:**

- Any mass marketing efforts have and could generate high demand. This could potentially put PAs at risk to exceed budgets.
- Misinformation could be disseminated about the program that leads to distrust and frustration with utility conservation programs not being able to meet the needs of landlords and tenants.

**Other Issues:**

- The 2 year rent freeze is a barrier to sign up and cannot be enforced by the utilities.
- The installation of a new heating system requires the heating contractor to pull a permit. This opens the door to code officials inspecting the building(s). Some landlords don’t want exposure if additional code violations are identified and they incur additional costs as a result of the heating system upgrade.
- Some landlords have expressed interest in switching from oil to gas. This is not allowed under the HEARTWAP or initiative guidelines.
- Landlords that have made inquiries have included owners of 4 units to 400 unit buildings. Landlords with more than 4 units are now looking for the same incentive through other weatherization programs.
- Several interested landlords have empty apartments in their buildings. This initiative was not designed to address these units which are not occupied by low-income tenants.
- Installing heating systems in an un-insulated 1-4 family building may not accomplish the desired energy savings without a whole building approach. Through better, more qualified leads the initiative can address this issue.
- In some locations, multiple agencies administer heating system replacement programs. This causes confusion to landlords seeking these services.

**Observations and Recommendations based on Lesson Learned:**

- The landlord heating system campaign has received more responses that anticipated. Some utilities and CAA’s have attended local landlord association events. They have been well received and all flyers describing the program were taken. There is a need a definite need and interest from landlords.
- Landlords that are advocates for energy efficiency have been an asset to getting the word out about all programs through word of mouth.
- This initiative has very stringent requirements which are hard to address in a mass marketing appeal.
- The Community Action Agencies are a trusted local resource in their communities.
Based upon the barriers and lessons learned, the utilities believe the local CAA's are better equipped to manage a tenant/landlord relationship, determine heating system eligibility, marketing the program to qualified landlords and tenants versus utility database lists and mailings, and manage this program and their workloads throughout the year. The most appropriate candidates will be identified and the process will be smoother and easier to manage budgets and resources. This will allow PAs to control cost, quantity, exposure and relieve resources of following poor leads.
The Low Income 1 to 4 Family Building Heating System
Early Retirement Initiative Description

Background:
In many instances landlords of low income one to four family rental housing may not invest in heating system replacements for their income producing properties until the existing heating equipment becomes degraded to the point that it is totally inoperable and no longer repairable. If they do replace the heating system, typically an energy efficient unit is not installed. In both situations, this directly impacts the tenant's energy use. Tenants have no choice other than to pay high heating bills during the coldest winter months and beyond as a direct result of old, inefficient heating equipment and choose between basic essentials and keeping their families warm. Across all Massachusetts communities, a large number of low income tenants live in aging housing stock with old and inefficient heating systems.

Currently, all weatherization funding sources only allow replacement of owner occupied heating systems. Therefore, the Massachusetts utility Program Administrators (PA's) believe one of the best ways to reduce these tenants' high heating bills is to introduce a plan encouraging landlords in this housing sector to replace or retire inefficient heating systems with new, reliable, high efficiency models.

Plan Overview & Design:
The PA's plan to implement a heating system early retirement program to encourage landlords to replace inefficient heating equipment with high efficiency heating equipment (e.g., ENERGY STAR rated or equivalent). The Massachusetts utility programs propose to adopt and operate using the standards and protocols currently used by the Department of Housing and Community Development (DHCD) HEARTWAP Heating System Program, which is implemented statewide by the Low Income Energy Affordability Network (LEAN). The financial incentive per heating system will be 100% of the total installed cost up to $4500.00. Landlords will be required to agree to a 2 year rent freeze on all units benefitting from the new heating system installation and subsequent lower utility bills.
The PA's plan to offer the financial incentive through an approved delivery mechanism negotiated and supported by LEAN and its low income vendors. Processing and administration of the incentives and installed equipment inspections will be the responsibility of the low income vendors.

Cost Effectiveness:
All Massachusetts utilities Low Income Weatherization Programs were tested for cost effectiveness using the Total Resource Cost Test as specified by the Department in Energy Efficiency Guidelines, D.P.U. 08-50-B, specifically page 48, section 3.4.3 and were found to be cost effective.

Proposed Implementation Date:
The PA's plan to begin the Heating System Early Retirement Program in the fall of 2010.

Proposed Budget:
Funding for the incentives will not be specifically earmarked for this program and the proposed budget will be incorporated into the existing utility low income budgets and measure offering portfolio.
Date

RE: Tenant Heating System Replacement Program

Dear Owner:

NSTAR is offering a program which will pay up to $4,500 to install a new, energy efficient heating system for income eligible tenants you may be interested in taking advantage of.

We’ve developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and high bills for our neediest rental customers. The program will be administered by local community action agencies and will install high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for an oil or gas heating system replacement, projects must meet the following criteria:

1 – The oil or gas heating system to be replaced must:

   : be operational
   : be grossly inefficient
   : be installed in a 1-4 family home
   : serve only one unit versus multiple units

2 – Tenant must:

   : Pay their own oil or gas bill
   : Be an NSTAR customer
   : Qualify for fuel assistance

Note: if the cost of heating is included in the rent, these systems do not qualify.

3 – Landlord must:

   : Agree to freeze rents for two years at their current level for units that receive a new heating system
   : Pay for costs not covered by NSTAR. (Depending on the local agency, there may be other sources of funds available.)

4 – Replacement equipment must be certified by ENERGY STAR and the replacement project must be done in accordance with Massachusetts standards (contractor must have insurance and a license; three bids are required before hiring a contractor, etc.) Your Community Action Program will manage the securing of contractors and provide a quality verification of the installation after the project is complete.

If you have a tenant(s) that qualifies for Fuel Assistance and are interested in this great opportunity, please contact the community action agency for your tenant’s town by calling 866-537-7267 and entering the 5 digit zip code for that property.

Sincerely,

NSTAR Electric and Gas
Want to learn more?

Your qualified rental property
We'll connect you to the CAP that can serve
Call 781-907-1573
Email: Dianah.Duffy@eversource.com

ATTENTION LANDLORDS

If you qualify for up to $4500.00 towards a new, efficient heating system for your tenants,

90% A.F.U.E.

Call 781-907-1573
Email: Dianah.Duffy@eversource.com
RE: NEW Landlord/Tenant Oil or Propane Heating System Replacement Program

Dear Owner:

Western Massachusetts Electric Company has a NEW program which will pay up to $4,500 to install a new energy efficient oil or propane heating system for income eligible tenants. This program is specifically for income eligible tenants and is administered by local community action agencies. The purpose of the program is to help tenants who live in housing that has old and inefficient oil or propane heating systems to significantly lower their energy costs.

To be eligible for an oil or propane heating system replacement, projects must meet the following criteria:

1 – The oil or propane heating system to be replaced must:
   - be grossly inefficient.
   - be operational.
   - be installed in a 1-4 family home.
   - serve only one unit versus multiple units.

2 – Tenant must:
   - pay their own oil/propane heating bill and be a WMÉCO customer.
   - be qualified for fuel assistance and/or WMÉCO’s Discount Electric Rate.
   Note: if the cost of heating is included in the rent, these systems do not qualify.

3 – Landlord must:
   - agree to freeze all rents for two years at their current level for the units that receive a new heating system.
   - pay for all costs in excess of $4,500 not covered by WMÉCO.

Note: Depending on the local community action agency, there may be other sources of funding available to supplement the cost of the heating system replacement. Contact your local community action agency for further information.
4 – Replacements must be done in accordance with state and local standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Your local community action agencies will manage the securing of the contractors, oversee the installation and will provide a post quality verification installation.

If you are interested in this great opportunity, please contact the appropriate community action agency for your town by calling 866-537-7267 and entering the 5 digit zip code for your property. You may also visit the www.masssave.com website under the “home” tab and click on Income Eligible Programs and the “Get Started” tab.

Find out about this great opportunity today!

Sincerely,

Western Massachusetts Electric Company
October, 2010

LL name
LL address
LL town, state zip

RE: Tenant Heating System Replacement Program

Dear Landlord Name:

Columbia Gas of Massachusetts – the new name Bay State Gas – is offering a limited time program which will pay up to $4,500 to install a new, energy efficient heating system for income eligible tenants.

We’ve developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and high bills for our neediest rental customers. The program will be administered by local community action agencies and will install high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for natural gas heating system replacement, projects must meet the following criteria:

1) The natural gas heating system to be replaced must:
   • Be operating and functional
   • Be grossly inefficient

2) Tenant must:
   • Pay their own natural gas bill
   • Be a Columbia Gas customer
   • Certified for fuel assistance

3) Landlord must:
   • Agree to freeze rent increases for two years
   • Pay for costs not covered by Columbia Gas (Depending on the local agency, there may be other sources of funds available.)

4) Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Local community action agencies will manage the securing of the contractors and provide a post quality verification installation.

If you have a tenant that qualifies for Fuel Assistance and are interested in this great opportunity, please contact the community action agency for your tenant’s town by calling 866-537-7267 and entering the 5 digit zip code for your property. This is a limited time offer and all requests should be made no later than December 31, 2010.

Sincerely,

Kara Gray
Program Manager
Columbia Gas of Massachusetts
November, 2010

LL name
LL address
LL town, state zip

RE: Tenant Heating System Replacement Program

Dear Landlord Name:

Berkshire Gas Company is offering a limited time program which will pay up to $4,500 towards the installation of a new, energy efficient heating system for income eligible tenants.

We’ve developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and heating bills for our low income customers. The program will be administered by local Community Action Agencies (Berkshire Community Action Council or Community Action of the Franklin, Hampshire and North Quabbin Regions. The agencies will coordinate the installation of high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for natural gas heating system replacement, projects must meet the following criteria:

1) The natural gas heating system to be replaced must:
   - Be operating and functional
   - Be grossly inefficient

2) Tenant must:
   - Pay their own natural gas bill
   - Be a Berkshire Gas heating customer
   - Be certified for fuel assistance

3) Landlord must:
   - Agree to freeze rent increases for two years
   - Pay for costs not covered by Berkshire Gas (Depending on the local agency, there may be additional sources of funding available.)

4) Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Local community action agencies will manage the securing of the contractors and provide a post quality verification installation.

If you have a tenant that qualifies for Fuel Assistance and are interested in this unique opportunity, please contact the Community Action Agency covering your tenant’s town by calling 866-537-7267 and entering the 5 digit zip code for your property. This is a limited time offer and all requests should be made to the local agency no later than December 31, 2010.

Sincerely,

Robert Gyurjian
The Berkshire Gas Company
December 21, 2010

RE: Tenant Heating System Replacement Program

Dear [Name],

New England Gas Company is offering a limited time program which will pay up to $4,500 towards the installation of a new, energy efficient heating system for income eligible tenants.

We’ve developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and heating bills for our low income customers. The program will be administered by local our Community Action Agency (Citizens for Citizens - CFC). CFC will coordinate the installation of high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for natural gas heating system replacement, projects must meet the following criteria:

1) The natural gas heating system to be replaced must:
   • Be operating and functional
   • Be grossly inefficient

2) Tenant must:
   • Pay their own natural gas bill
   • Be a New England Gas heating customer
   • Be certified for fuel assistance

3) Landlord must:
   • Agree to freeze rent increases for two years
   • Pay for costs not covered by New England Gas (Depending on the local agency, there may be additional sources of funding available.)

4) Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Local community action agencies will manage the securing of the contractors and provide a post quality verification installation.

If you have a tenant that qualifies for Fuel Assistance and are interested in this unique opportunity, please contact the Community Action Agency covering your tenant’s town by calling 866-537-7267 and entering the 5 digit zip code for your property. This is a limited time offer and all requests should be made to the local agency no later than December 31, 2010.

Sincerely,

[Signature]
James J. Carey
Marketing Manager

Cc: Trish Walker – New England Gas, Joe Silvia - CFC
Special Offer for Landlords

Tenant heating system replacement program

NSTAR will pay up to $4,500 to install an efficient new heating system for income eligible tenants.

Attached is information about the oil and gas heating system replacement program for low income tenants recently introduced by NSTAR and administered by local energy assistance agencies. The purpose of the program is to help tenants who have inefficient heating systems to significantly lower their energy costs and thereby free-up money for other basic needs.

To be eligible for an oil or gas heating system replacement, projects must meet the following criteria:

1. The oil or gas heating system to be replaced must be grossly inefficient.

2. Tenant must:
   - pay their own oil or gas bill and be a NSTAR electric or gas customer;
   - be qualified for fuel assistance.

3. Landlord must:
   - agree to limit rent increases for 2 years;
   - pay for costs not covered by NSTAR. Depending on the local agency, there may be other sources of funds available.

4. Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Low income energy assistance agencies will manage the securing of the contractors, and will provide a post installation energy efficiency inspection.

If any of your members are interested please contact the appropriate person for your town listed on the information sheet which will be emailed to all board members and is available on www.massrha.com members only area.

If you need further information, please contact:
Bruce Ledgerwood (617) 780-6759

This is an excellent opportunity for MRHA members that are NSTAR customers. You may forward this offer to other interested landlords.

Sincerely,
Massachusetts Rental Housing Association
Landlords  Tenants  Home Buyers  Home Owners

Come Talk to the Experts!
Rental Housing Association of Berkshire County (RHABC) is inviting you to an event with service professionals to help answer your questions and network your needs.

The RHABC has brought together the following Community Resources:

Berkshire County Regional Housing Authority
Berkshire Housing Development Corp.
Berkshire Gas
Berkshire Pest Control
Carr Hardware
Center for Ecological Technology
Childhood Lead Poisoning Prevention Program
Coakley, Pierpan & Dolan Insurance **
Colt Insurance **
Greylock Federal Credit Union
Habitat for Humanity
Hashim & Spinola Attorney
Mass Fair Housing
National Vinyl Products
New England Fence Company
Pittsfield Community Development Office
V&L Cleaning Service
Western Mass Electric Company
WJ Blueprints & Digital Graphics

Zucchini’s Restaurant
Refreshments will be served.
November 16, 2010
6:00-8:00pm
Who to bring: Everyone!
This event is open to the public

** Bring a copy of your homeowner’s insurance policy.
The policy will be reviewed for you at no charge.

www.RHABC.com Landlords Helping Landlords Through Education and Communication
ATTENTION LANDLORDS!

Western Massachusetts Electric Company  
Columbia Gas of Massachusetts (Formerly Bay State Gas)  
Berkshire Gas Company and National Grid  
Are offering  
A New Oil or Gas Heating System Replacement Program

You May Qualify for up to $4500.00 towards a new heating system!

The Details:

The Existing Heating System must be operating and grossly inefficient. The heating system can only serve one apartment/unit. (Heating systems that serve more than one unit will not qualify for this program).

The Tenants must:
- Pay for their heat (gas or oil). (Heating cannot be included in rental payment).
- Be a WMECO, Columbia Gas, Berkshire Gas or National Grid customer of record.
- Live in a 1-4 family home. (5 or more attached units do not qualify for this program).
- Qualify for their utility Discount Rate and/or be determined eligible/certified for fuel assistance for the 2011 heating season.

The Landlord must:
- Agree to freeze rent at its existing level for 2 years from the date of the installation.
- Pay for all costs not covered by WMECO, Columbia Gas, Berkshire Gas or National Grid. (Note: Speak to your local community action agency to see if you qualify for additional funding sources).
- Contact the local community action agency to confirm eligibility and participate.

Local community action agencies (Springfield Partners for Community Action, Berkshire Community Action Council and Community Action) will manage the project, secure contractors and provide post installation quality verification inspections. All replacements must be done in accordance with Mass codes and standards (e.g., Energy Star or equivalent equipment, appropriate contractor license and insurance, 3 bids, etc.)

Call Peter Wingate @ FCAC  
At: 413-376-1119  
Don't Hesitate. Call Today!
Low-Income Metric #2

New Measures
2010 Low Income Metric Two

Included in this report are the following:

Page 1 & 2 – Overview of the metric and level each utility reached

Pages 3 – 8 – Explanation of each status and how it was accomplished including PA’s assigned role in documenting each of the measures/technologies

Page 9 – 95 – Includes written updates/agendas on the Best Practices meetings, technical and cost-effectiveness analysis conducted by the Common Assumptions group.
2010 Low Income Metric Two

NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas of Massachusetts, Berkshire Gas Company and New England Gas Company are submitting this report to update the Low Income Energy Affordability Network (LEAN) on the status of the 2010 low income metric number two.

2. New Measures

<table>
<thead>
<tr>
<th>Threshold</th>
<th>In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WMECO</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Richard F. Bucy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We believe that by completion and documentation of these tasks each utility has reached the level of the metric listed below.

NSTAR Electric & Gas – exemplary
National Grid – design
Western Massachusetts Electric Company – design
Unitil Service Company – design
Berkshire Gas – design
New England Gas – design
Columbia Gas of Massachusetts - design

Respectfully submitted by:
Diane M. Lopes
Residential Program Manager
NSTAR Electric & Gas

Robert P. O’Brien
Manager
National Grid

Deborah E. Sas
Senior Project Administrator
Western Massachusetts Electric Company

Derek T. Kimball
Residential Programs Coordinator
Unitil Service Corporation

Kara A. Gray
Program Manager
Columbia Gas of Massachusetts

Robert Gyurjan
Lead Analyst – Energy Services
The Berkshire Gas Company

Jeanne B. Cherry
Lead Energy Efficiency Programs Administrator
New England Gas Company
Explanation of Threshold, Design and Exemplary Status of Metric Two
Metric 2: New Measures

Threshold
In coordination with LEAN, PAs to implement best practices in achieving deeper energy savings by pursuing new technologies, deeper measure penetration and selecting new measures for review.

- New measures and technical analysis performed was discussed at Best Practices meetings
- PAs worked collectively to ensure that these measures were reviewed in a thorough and timely manner by the Common Assumptions Group at each Best Practices meeting
- Each PA, in participation in the Best Practices working group, selected and agreed to have the Common Assumptions working group screen the following measures.

Design
The initial request for measure screening was submitted to the Common Assumptions group on May 24, 2010 during a PA Metrics Meeting scheduled that day. Questions were answered for the Common Assumptions group, and measures were provided to screening.

Working in conjunction with LEAN, GDS, and the MA Common Assumptions group, PAs met the June 15th, 2010 deadline for the report analysis. Each PA was assigned a lead role in documenting each of the measures/technologies below.

- **LEDs lights (WMECO)** – A light-emitting-diode lamp is a solid-state lamp that uses light-emitting diodes (LEDs) as the source of light. The light output of individual light-emitting diodes is small compared to incandescent and compact fluorescent lamps so multiple diodes are often used together. LED lamps offer long service life and high energy efficiency. This measure is deemed cost effective by the common assumptions group for LED down/task lighting fixtures when replacing a 75w fixture with a 6.0 LED down light (69w diff).

- **Indirect Water Heaters (CMA)** – Indirect water heaters offer a more efficient choice for most homes, even though they require a storage tank. An indirect water heater uses the main boiler to heat a fluid that’s circulated through a heat exchanger in the storage tank. The energy stored by the water tank allows the boiler to turn off and on less often, which saves energy. Therefore, an indirect water heater is used with a high-efficiency boiler and well-insulated tank can be the least expensive means of providing hot water. This measure was deemed cost effective by the common assumptions group when it is installed in conjunction with an oil or gas boiler.

- **MCHP (NSTAR)** – combines two technologies, a natural gas fired engine generator with an energy-efficient warm air furnace or a boiler. The unit generates significant levels of electricity for the home and also recycles most of the heat generated to produce domestic heat and/or hot water.
MCHP systems lower energy consumption, reduce electricity demand and reduce costs for residential customers. The benefits of the installed measure are greater than the cost concluding this measure is cost effective.

- **Demand Control Measures (Unitil)** – This measure is a Behavior/Feedback technology that integrates behavioral change principles with web, mobile and mail applications. It consists of a (branded) web site enabling customers to log in using a unique username and password. Through a website customers can set energy saving goals, compare their monthly energy usage to similar households, get energy saving recommendations and earn points redeemable for rewards. Method for follow-ups and an innovative approach to creating the behavioral changes required to achieve greater levels of persistent, sustained savings. Grounded Power’s technology and program – analyzed for cost effectiveness – is designed to provide a new follow-up service and a means for engaging low income populations over time to develop more effective energy savings habits. The system provides an energy saving planning process that is integrated with education, social gaming and monthly feedback, based on bill data, on energy consumption and energy savings. The tool delivers a “turn-key” program and technology to address the issue of behavior change as a follow-up service to existing energy audits. The program also functions as a follow-up service to the existing energy efficiency audit and retrofit services. The goal of the approach is to deliver a higher level of savings through engagement, education and persistent behavior change and provides a multi channel outreach and feedback process. Regardless of whether internet or mobile access is available, the client would still be able to participate in a chosen follow-up program. The proposal assumed a target number of 1500 households. It is assumed that 20% of those households will not have internet or mobile phone. This population will have access to the monthly paper-based report and phone support. Grounded Power proposal was found not to be cost effective using common assumptions including Non-energy benefits. Assuming a one-year program, however, this measure will be re-analyzed in 2011 as a possible pilot for a program with a longer life.

- **Outdoor Reset for new heating systems (Berkshire/New England Gas)**
  - Outdoor reset is a weather-responsive control rather than a weather controller. Based on changes in outdoor temperature, it automatically adjusts boiler water temperature. If the temperature is colder outside, it takes more heat to overcome its effect inside the building than if the weather is warmer. Outdoor reset is the same as turning down the boiler water aquastat in the spring and fall — automatically. The Common Assumption group found that the measure was not cost effective.

- **Window Quilts/Shades (National Grid)** - The Common Assumptions group screened both cellular shades and window quilts for possible energy savings installations in 2010. Their screenings found that window shades can be cost effective when installed in electrically heated homes. Certain cellular shades can reduce heat loss from a home’s interior, and restrict the
flow of cold air from the exterior. Customers can raise and lower the shades, like other window blinds, to help maximize passive solar heating or keep warm air inside the home.

- **Smartstrips (WMECO)** – Many home electronic devices continue to use electricity to power peripherals such as remote controls or clock display even when turned off creating “phantom” or “vampire load”. Using an advance power strip to turn off electronics or office equipment when not in use saves energy and money for the customer. Typical home products include computers, ink jet printers, fax machines, digital cable and satellite boxes as well as DVRs. Power strips have 3 types of outlets; a main control outlet (primary or control units) automatically switched outlets (secondary) and outlets that are always on. The power strip works by cutting power to connected to the secondary outlets (such as a DVD play, satellite box, etc) when the TV is switched off or goes into standby or sleep mode. The Common Assumption group found that the measure was cost effective and recommended for the Low Income Program.

**Exemplary**

These measures have passed the cost effectiveness screening and have become standard measures in the program when specific parameters are met. It should be noted that adopting these measures is a significant accomplishment and further distinguishes the Massachusetts Low-Income program as a leader in the industry. These measures put the program on the forefront of achieving deeper savings in customers’ homes.

- **MCHP** - In 2010, four MCHP units were installed in the NSTAR/National Grid territory as customer heating system replacements. These systems were installed in individual and 3-unit dwellings. Participating customers indicated their satisfaction with the installation of the measure, as well as the work of the contractors.

  Projected energy savings is approximately 3,000 kWh on the electric side per month, as well as an average of 150 therms per month on the gas side. The utilities will monitor these systems to determine actual savings.

  Initial billing data shows the customers experienced a savings of one third on their actual energy consumption, and their actual energy bills were reduced by half. As a result, customers were satisfied with the MCHP installations and the associated energy savings, and would recommend the measure to future program participants.

- **Indirect Water Heating** - Ninety-five indirect water heaters were installed across the state by NSTAR, National Grid, Columbia Gas of Massachusetts and WMECO. Indirect water heaters are not a stand alone measure; an indirect water heater is only installed in conjunction with an oil or gas boiler when warranted. Field results shows that customers are extremely satisfied and appreciative of the utility program. They are not
only pleased with the efficiency (energy savings) of the system, but also the amount of hot water and the quietness of the systems. In addition, the local CAP agencies report having very positive experiences with the installation contractor in terms of their acceptance and installation of the technology. Auditors state that some of these customers were in desperate situations and would not have had hot water without the assistance of the utilities.

- **LED lighting** – WMECO conducted LED in-field testing in partnership with NGrid, NSTAR and Unibilt. WMECO installed four CREE CR6 LED recessed downlights in a customer’s home in Pittsfield, MA. The LED’s were installed into existing kitchen soffit downlights, replacing four 100-watt flood type bulbs used for general and task lighting. The lighting was being used for 8 or more hours a day. The CR6 was chosen as it was designed for use in residential settings and fits into most standard 6” recessed housings.

The CREE CR6 bulbs may be installed in two ways; by removing the existing bulb from the existing downlight fixture housing and installing the new LED bulb/unit into the existing housing or removing the existing bulb/unit and housing trim ring and inserting the new LED bulb into the existing housing. The CREE CR6 includes the LED bulb, the housing and trim ring as one unit. The components are one piece and cannot be separated. If the LED unit is installed into an existing downlight fixture, it is operable. If it is installed in this manner, a double trim ring will be visible which may or may not be suitable for all customers and applications. The preferred installation method, as recommend by the manufacturer, would be to remove the existing fixture trim ring and install the LED unit into the existing recessed housing.

In the field test, the customer’s soffit is painted sheetrock with no texture. The existing down light trim rings and the ceiling were both painted at the same time. This is typically done. An auditor/contractor installing the replacement CREE CR6 will need to break the paint seal very carefully so as to not tear the sheetrock and the paint. If this is accomplished successfully, the Owner will have to be advised that once the new CREE unit is installed, the paint may no longer match the paint under the old trim ring and touch up may be needed.

An additional consideration for installation is the CREE unit trim ring is smaller than the older 6” downlight trim rings. The auditor/contractor will have to determine if the ceiling material was installed close enough to the existing fixture. If it is not, there may be an unfinished ceiling edge or gap in the ceiling material that will show. This would most likely not be
acceptable to a customer and therefore not an appropriate installation for the LED unit.

The customer reported that they did like the CREE LED units. Their appearance was attractive and the quality of the light was excellent. The light spread was wide which illuminated the kitchen room quite nicely. They said the color of the light at night, a warm yellow, was warm and comfortable.

The customer highly recommended the CREE CR6 units. They also recommended that prior to installation the Owners’s be advised about the possible paint and trim ring issues.

This technology was adopted by the Massachusetts electric utilities in 2010.

- **Smart strips** – Although the utilities have adopted this measure into the low income weatherization programs, several concerns have been raised. Firstly, if the main power experienced a power surge or was suddenly turned off due to a power outage, and the electronic devices plugged into the strip were damaged, would the customer have recourse to recover the cost of the items? Research showed that the manufacturers of the strips do warrantee damaged products under these conditions but the concern is the customers would expect the utilities to replace the damaged items.

  Secondly, the weatherization programs install all of the measures in customer’s homes. Auditors expressed concern that in order to install advances power strips, they would have to unplug and then reprogram electronic devices such as TV’s cable boxes, computers, etc. This could expose them to potential liability for customer’s equipment beyond what the typical and customary weatherization products installations would be. The auditor’s concern was not able to be addressed fully by the Best Practices Group in 2010, therefore no advanced power strips were installed.

- **Window cellular shades (electric only)** - 2010 field research revealed reservations from some PAs and CAP agencies for this measure. Concerns have been raised given that window shades do not have guaranteed energy savings. The success of the measure depends on the continuous participation of the customer to use the blinds as intended. As a result, this measure has not been tested beyond the auditor and local agency teams. Discussion of window shades will continue to be discussed in 2011 with the possibility of leaving the option to install this measure at the CAPs discretion for the appropriate customer.
These measures did not pass cost effectiveness screening and will not be offered in the Low-Income single-family program:

- Window quilts
- Window cellular shades – gas only
- Outdoor reset control
Back-up to support meetings, technical analysis and Best Practices implemented
Lopes, Diane

From: Lopes, Diane
Sent: Monday, January 18, 2010 8:55 AM
To: 'Peter Wingate'
Subject: FW: Best Practices meetings and agenda - Jan. 20 at 10 at NSTAR

Needed to change your email......

From: Lopes, Diane
Sent: Monday, January 18, 2010 8:41 AM
To: 'Jerrold Oppenheim'; 'Briana Kane'; 'AMLick@GLCAC.Org'; 'artwillcox@yahoo.com'; 'bruceledgerwood@comcast.net'; 'craig@actioninc.org'; 'Danielle Rathbun'; 'DBuchler@nsource.com'; 'sasde@nu.com'; 'Duffy, Diana'; 'Elj@actioninc.org'; 'Jeanne Cherry'; 'John Livermore'; 'jhowat@ncdc.org'; 'walshj@nu.com'; 'Ken.Rauseo@ocd.state.ma.us'; 'kgray@nsource.com'; 'kimball@unitil.com'; 'Rossacci, Michael F. '; 'msommer@berkshiregas.com'; 'NDAVISON@haconcapecod.org'; 'pjaxson@smoc.org'; 'pwingate@mocinc.org'; 'rbechtold@haconcapecod.org'; 'oswalIr@nu.com'; 'ritac@actioninc.org'; 'Kate Agin'; 'Tackey Chan'; 'tobin@bostonabc.org'; 'John Wells'
Subject: RE: Best Practices meetings and agenda - Jan. 20 at 10 at NSTAR

Just a reminder.....please use the West entrance....we will be in W2A. Security will call me upon your arrival. Thanks Diane

Good Morning....the call in number for those whom need it will be 781-441-3101, access code 3875#. The conference room will be West 2 A. Come into the West side of the building and sign in with the security guard. I will have a list with them of whom may be coming. See you then....thanks Diane

We will have a full meeting on Wednesday, January 20, starting at 10 am.

Many thanks to Diane Lopes at NSTAR for agreeing to host.

Cheers,

Jerry

======================================================================================================
Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

1/18/2011
Here are the assignments for our next two meetings:

Art – SDHW cost-effectiveness (with Briana); Smart Strip protocol; update of measure universality list
Bruce – Clean Energy Centre re mobile home training; landlord heating system replacements (promotion for 2010?)
Debi – circulate WMECo evaluation of repair pilot
Diane and Diana – top- and front-load clothes washers
Kate – use of unemployment benefit system to inform potential clients of program
Ken and/or Craig – procurement RFP status
Ruth – cellulose window shade sample

Here is a proposed agenda for the two meetings, which we will only get partially through in December:

GAS & ELECTRIC

1. Rotating Notetaker, next meeting, amendments

2. Procurement (Craig, Ken)
   a. timing of RFP
   b. lead
   c. other issues

3. Enhancing visibility of Best Practices at PAs

4. Contractor training and recruitment (Bruce)
   a. Status
   b. New contractor requirements
   c. Mobile homes walls and bellies
   d. Repairs (avoiding undue expense -- see 5b below)
   e. 2010 Metric 2:
      In coordination with LEAN and, if feasible, the Massachusetts Department of Housing and Community Development (DHCD), contribute sufficient funding and logistical support of LEAN's efforts and those of the DHCD to continue and expand efforts to recruit and train weatherization and heating contractors to support network activities sufficient for the ramp up of the program, and to assure all needed training is funded. Specifically, working closely with LEAN and the Massachusetts Department of Housing and Community Development (DHCD), strongly support their recruitment of weatherization and heating contractors in numbers appropriate to meet the requirements of Energy Efficiency funding and who demonstrate the ability to meet US DOE standards.

5. Auditor training (Ken)
   a. Status
   b. 2009 Metric 2: funding and logistical support; training materials re plug loads, air conditioning (Art, Dave), ducts (Art, Dave)
   c. 2010 Metric 2: Contribute funding and logistical support of LEAN's efforts and, if feasible, those of the Massachusetts Department of Housing and Community Development (DHCD) for auditor training and explore common protocols in areas identified through the Best Practices Working Group.

1/18/2011
This will include developing and distributing new auditor training material.

d. Kate circulated Fire Marshall's handout re space heater safety (Feb. 2 e-mail). Bruce and Kate will circulate PC Power Management piece to auditors. Add recycling update to topics.

4. DHCD (Ken)
   a. Recovery Act
   b. Davis Bacon update
   c. Other

5. Repairs
   a. Status (Unitil?)
   b. Training to avoid undue expense
   c. extend to protect EE installation if within, say, one year?

6. Compare measure lists across administrators -- Art's draft survey results showed a few measures not shared universally -- Art updating
   a. 2010-2012 update
   b. Multi-family update update

7. New measures
   a. SDHW -- Electric utilities previously agreed to cost-share solar hot water with MTC (assuming an MTC grant) where cost-effective (i.e., larger water users). Nothing to report yet from MTC. This consideration is a 2009 and 2010 performance metric.
   b. Window quilts? Cellulose window shades (cheaper)? (Ruth, Art) -- approved for DOE; Art computing cost-effectiveness
   c. Bruce re recruiting landlords for heating system replacement. We have agreed that Bruce will continue marketing efforts for landlord heating system pilots at NGrid Electric and NSTAR G&E. At last report, eliminating the co-pay did not generate response, perhaps because of the fact that it was still winter. This consideration is a 2009 and 2010 performance metric.
   d. MicroCHPs (Bruce and Art) -- Gas pilots are underway and preliminary evaluation results have been circulated showing furnaces to be cost-effective. This consideration is a 2009 and 2010 performance metric.
   e. Clothes washers and drying racks (Diane and Diana) -- 2010 metric.
   f. TLC kit -- 2010 metric. Reviewed in 2009; any need for additional review?
   g. Indirect water heating -- 2010 metric. Review approval; all aboard?
   h. LEDs -- 2010 metric.
   i. Smart strips -- we agreed to include where appropriate, Art to determine what is appropriate (e.g., VCR, DVD, games) and draft protocol, some education needed re: what to plug in each socket.
   j. Demand control -- 2009 and 2010 metric.

Grounded Power proposal: Pilot feedback approach whereby auditors develop target reductions with clients by use, clients receive monthly report via internet comparing their usage from utility billing system with their target and with community results (to be defined) -- could also include gas (Action, Cape Light, others have expressed interest in participating in pilot). Awaits definitive Grounded Power proposal. (Jerry)

k. Outdoor resets -- 2010 metric. Rejected in 2009; any need to revisit?


n. 2009 Metric 1: assess and possibly adopt: micro CHP, landlord heating systems where tenant pays for heat, SDHW, single family horizontal axis clothes washers, measures to be incuded in TLC kit, indirect DHW, demand control measures.

o. 2010 Metric 1: Explore and consider adoption of new cost-effective program measures, specifically including, but not limited to: solar domestic hot water heating, single family energy efficient clothes washers, clothes drying racks, micro-combined-heat-and-power, landlord heating systems where tenants pay for heat, measures to be included in TLC Kit, indirect hot water heating, demand control measures, LED lighting, outdoor resets for new heating systems, super-insulation of walls and attics, foundation wall and slab insulation.

Implement a limited pilot to test at least two (2) of these new program measures in 2010. Document results and findings in a memo to EEAC consultants by January 30, 2011.

p. 2010 Metric 3: Note: A Deep Energy Retrofit is a project that involves super-insulating the building shell, and which achieves over 50% energy savings.

Convene a planning forum with key members of LEAN, the Best Practices working group and the Deep Energy Retrofit (DER) Pilot working group to discuss collaborating on a deep retrofit project in 2010. Explore potential synergies in marketing, training, incentives, QA/QC, etc. Document the proposed coordination in a memo. Draft memo to EEAC consultants by April 1, 2010. Consultant comments by April 8, 2010. Final memo by April 15, 2010.

Collaborate with LEAN agencies and Deep Energy Retrofit (DER) working group to identify properties with opportunities for Deep Energy Retrofit treatment.

Contract with at least one (1) landlord to implement a Deep Energy Retrofit project in 2011.


FOR REFERENCE: 2010 METRICS:

<table>
<thead>
<tr>
<th>Low-income Best Practices Working Group (Electric &amp; Gas)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
</tr>
<tr>
<td>Design</td>
</tr>
</tbody>
</table>
Implement a limited pilot to test at least two (2) of these new program measures in 2010. Document results and findings in a memo to EEAC consultants by January 30, 2011.

### 2. Low-income Auditor Training & Contractor Recruitment/Support {Elec. & Gas}

<table>
<thead>
<tr>
<th>Threshold</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Contribute funding and logistical support of LEAN’s efforts and, if feasible, those of the Massachusetts Department of Housing and Community Development (DHCD) for auditor training and explore common protocols in areas identified through the Best Practices Working Group. This will include developing and distributing new auditor training materials.</td>
</tr>
<tr>
<td>Exemplary</td>
<td>In coordination with LEAN and, if feasible, the Massachusetts Department of Housing and Community Development (DHCD), contribute sufficient funding and logistical support of LEAN’s efforts and those of the DHCD to continue and expand efforts to recruit and train weatherization and heating contractors to support network activities sufficient for the ramp up of the program, and to assure all needed training is funded. Specifically, working closely with LEAN and the Massachusetts Department of Housing and Community Development (DHCD), strongly support their recruitment of weatherization and heating contractors in numbers appropriate to meet the requirements of Energy Efficiency funding and who demonstrate the ability to meet US DOE standards.</td>
</tr>
</tbody>
</table>

### 3. Low-income 1-4 Retrofit: Deep Energy Retrofit {Electric & Gas}

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Convene a planning forum with key members of LEAN, the Best Practices working group and the Deep Energy Retrofit (DER) Pilot working group to discuss collaborating on a deep retrofit project in 2010. Explore potential synergies in marketing, training, incentives, QA/QC, etc. Document the proposed coordination in a memo. Draft memo to EEAC consultants by April 1, 2010. Consultant comments by April 8, 2010. Final memo by April 15, 2010.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Collaborate with LEAN agencies and Deep Energy Retrofit (DER) working group to identify properties with opportunities for Deep Energy Retrofit treatment.</td>
</tr>
<tr>
<td>Exemplary</td>
<td>Contract with at least one (1) landlord to implement a Deep Energy Retrofit project in 2011.</td>
</tr>
</tbody>
</table>

Note: A Deep Energy Retrofit is a project that involves super-insulating the building shell, and which achieves over 50% energy savings.

**Metric Weighting – Electric & Gas (proposed)**

1. Low-income Best Practices Working Group (33.33%)
2. Low-income Auditor Training & Contractor Recruitment/Support (33.33%)
3. Low-income 1-4 Retrofit: Deep Energy Retrofit (33.34%)
Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.
LIBP Meeting at NSTAR January 20, 2010 (FINALIZED 02/10/10)

NEXT MEETING 02/23/10 from 10-2 at BSG

Attendees: Mike Rossacci (NGRID), Diana Duffy (NGRID), Diane Lopes (NSTAR), Art Willcox (LEAN), Briana Kane (CLC), Al Micke (GLCAC), Kim Crossman (NGRID), Craig Brown (ACTION), Rita Carvalho (ACTION), Elliott Jacobson (LEAN), Ruth Bechtold (HAC), Deb Sass (WMECO), Jeanne Cherry (NE Gas), Kara Gray (BSG), John Livermore (consultant), Derek Kimball (UNITIL), Jerry Oppenheim (LEAN). On the phone John Walsh (WMECO)

Distribution list—

Briana and Diane to work on new distribution list. (Due February 03, 2010 Finalized February 10, 2010)
(DONE 02/10/10) Add DER dist list, MF dist list, update Peter Wingate

LIMF –

This group (LIBP) needs to be the group to make the decisions on the program not the advisory committee. The advisory helps to make the selection but not design the program

LEAN to provide MF contact for MF advisory committee (from Dec meeting)

All PA’s need to send LIMF requests to John Wells

Jerry to describe the three committees (MF advisory--operations, MF working group, LIBP—policy) (Due as an attachment to the next agenda emailed prior to the meeting on February 23, 2010)

MF Market Integrator (MMI) – RFP to go out mid-February

MF auditors and contractors to work with projects specific needs

PA’s need to try to leverage funds

Heating systems out to bid

Insulation / fridges etc., contracted network pricing use what is already in place

LEAN—

Elliot to reach out to Ken so we can get regular DHCD representation at the meetings. Worst case scenario an email an update before the meeting. We haven’t had DHCD representation in the last 8-12 months.
Invoicing detail is going to be required for LEAN invoices going forward for all utilities. PAs will need a summary of hours and activities to back up all costs.

DER—

Deep Energy Retrofit (DER)—metric #3

Next DER meeting to be held at NGRID on 02/10/10 9:30 – 12:30

Working Group List— BK to get info to John Livermore (DONE 01/20) John to send out finalized list?

Trainings—

Auditors / training – all set

Contractors / training – ongoing, every contractor has to have new training by April 22, 2010

Craig to reach out to DHCD for list of 2010 trainings and provide a list to Diane (due by February 01, 2010) (DONE 02/08/10) then as trainings come up, each PA or agency will be responsible to send Diane Lopes an email of those trainings for metric tracking

CORI—

CORI affidavits’ kept on file at some agencies; each contractor CORI’s their employees, not the agency

Procurement—

Network in process of procuring, most agencies have a deadline of this Friday for contractors to return RFP’s with pricing. Then the agencies will meet and submit pricing to DHCD. Hopeful to have pricing by mid-February and will be good through March of 2012

Repairs (major)—

John Walsh to provide evaluation report on WMECO’s major repair pilot and hopes to have it out by the end of the month
Measure list review—
Art will follow up with agencies not here to see if they are ok with the omission list to Jerry by **February 15, 2010**

SDHW—
For homeowners with electric hot water with a family of 4 or more, equipment must be SRCC certified, roof must be in good condition; initial site review to qualify the site, 3 bids needed, replacement/repair to be handled like a heating system, customer needs to be educated. **OK FOR ELECTRIC PA's SF and MF**
Art will do an analysis of the maintenance issues and MF and oil/gas to Jerry by **February 15, 2010**

Window treatments—
Art Willcox will look into window blinds to see if there are any independent studies to Jerry by **February 15, 2010**

Smart Strips—
Deb Sass to explore possible fire issues report to Jerry by **February 15, 2010**
Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]
Sent: Monday, February 22, 2010 9:02 AM
To: Briana Kane; tobin@bostonabcd.org; wells@bostonabcd.org; macellani@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nsource.com; kgray@nsource.com; msommer@berkshiregas.com; Ken.Rauseo@ocd.state.ma.us; AMickee@GLCAC.Org; rbuchhold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; artwillcox@yahoo.com; PWingate@communityactionus; jhowat@ncic.org; James.Carey@sug.com; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; michael.rossacci@us.ngrid.com; DAVE.LEGG@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gall; Lopes, Diane; pjohnson@smoc.org; kimball@unil.com; aginkt@nu.com; owalr@nu.com; sasde@nu.com; walshj@nu.com; tachey.cham@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; jglivermore@yahoo.com

Subject: Low Income Best Practices agenda -- tomorrow (Tuesday, Feb. 22) at 10 AM at Bay State Gas, Westborough

Here is my proposed agenda for tomorrow's meeting.

GAS & ELECTRIC
SINGLE FAMILY & MULTI-FAMILY

1. Rotating Notetaker, next meeting, amendments to agenda, corrections to notes of last meeting

2. Procurement update (Craig, Ken)

3. Metrics update -- meeting directly after this (JO)

4. Contractor training and recruitment update (Bruce; Craig reporting re individual contractor training)

5. Auditor training and DHCD updates (Ken)

6. Compare measure lists across administrators -- Art's final survey of agencies

7. Repairs -- WMECo evaluation (John Walsh)

8. New measures

NOTE -- Brad Steele will join us at 12:30 to discuss LEDs and other measures.

a. SDHW --Electric utilities previously agreed to cost-share solar hot water with MTC (assuming an MTC grant) where cost-effective (i.e., larger water users). Art to report re repairs.
b. Window quilts? Cellulose window shades (cheaper)? (Ruth, Art) -- Art reporting re cost-effectiveness
   c. Bruce re recruiting landlords for heating system replacement.
   d. MicroCHPs (Bruce and Art)
   e. Clothes washers and drying racks (Diane and Diana) -- 2010 metric.
f. TLC kit -- 2010 metric. Reviewed in 2009; any need for additional review?

1/18/2011
g. Indirect water heating -- 2010 metric. Review approval; all aboard.
h. LEDs -- 2010 metric. Brad Steele presentation.
i. Smart strips -- Deb Sas to report re possible fire danger.
j. Demand control -- 2009 and 2010 metric.

Grounded Power proposal: Pilot feedback approach whereby auditors develop target reductions with clients by use, clients receive monthly report via internet comparing their usage from utility billing system with their target and with community results (to be defined) -- could also include gas (Action, Cape Light, others have expressed interest in participating in pilot). Awaits definitive Grounded Power proposal. (Jerry)
k. Outdoor resets -- 2010 metric. Rejected in 2009; any need to revisit?
l. Deep retrofit (super-insulation, foundation insulation) -- 2010 metric.
m. Pilots -- 2010 metric. (Metric to be revised)

================================================================
Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)

Pilgersberggasse 5, 55276 Oppenheim, Germany
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.
LIBP Meeting at NSTAR February 23, 2010

NEXT MEETING April 06, 2010 from 10-2 at BSG (Kara to confirm room availability)

Attendees: Beth Lonergan (NGRID), Mike Rossacci (NGRID), Diana Duffy (NGRID), Art Willcox (LEAN), Ken Rauseo (DHC), Briana Kane (CLC), Al Micke (GLCAC), Craig Brown (ACTION), Rita Carvalho (ACTION), David MacLellan (ABCD), Elliott Jacobson (LEAN), Peter Wingate (Community Action), Ruth Bechtold (HAC), Deb Sass (WMCEO), Jeanne Cherry (NE Gas), Kara Gray (BSG), Robert Gyurjan (Berkshire), Paul Jackson (SMOC), Jerry Oppenheim (LEAN), Bruce Ledgerwood (LEAN). On the phone John Livermore (Consultant), Derek Kimbal (Unitil)

Distribution list—

Briana circulated list for final updates and will send out revised list with today’s meeting notes.

Working Group List— BK to get info to John Livermore (DONE 01/20) Updated/Circulated on 02/23/2010

Procurement—

Pricing has been sent to PA’s if there are questions, contact your Lead Agency. If all approve, new pricing could start mid-March.

Metric update—

PA’s will have a meeting today at 1:30, followed by a meeting with Jerry at 2:00 need to be completed by March 04, 2010. Up for discussion:

    Building Inventory

    LIMF

    How to deal with ARRA (?)

Trainings—

Recruitment-- will have a booth at the NESEA conference

Each PA or agency will be responsible to send Diane Lopes an email of those trainings for metric tracking

Mattapan BootCamp– first class starting next week
MassGreen—DHCD looking to provide 1 million in ARRA funding

CORI Checks—
NGRID has as a procurement requirement
BSG has required checks since 2004 and the Lead Agency gets a letter from contractor(s) to certify checks were done
Each company/agency runs their own checks

Repairs (major)—
John Walsh to provide evaluation report on WMECO’s major repair pilot and hopes to have it out prior to the next meeting on 04/06/10
Unitil has agreed to offer major repairs
Measure list—roofs, knob and tube / wiring issues, heating distribution (limited basis), structural and moisture mitigation (each PA to decide what they want to offer)

New measures—
Blown Cellulose—Borate vs. Ammonium Sulfate and Borate mix (contractor makes decision) Briana circulated email to Jerry and Deb with links on borate vs. ammonium sulfate and borate mix. (Emailed out on 02/23/10). Deb to look into Maine’s concerns for 04/06/10 mtg to circulate info by 04/01/10
Fiberglass—talked about blown fiberglass...looking for specs etc., looking for independent third party evaluation (contractor makes decision)

SDHW—
For homeowners with electric hot water with a family of 4 or more, equipment must be SRCC certified, roof must be in good condition; initial site review to qualify the site, 3 bids needed, replacement/repair to be handled like a heating system, customer needs to be educated. OK FOR ELECTRIC PA’s SF and MF Warranty coverage to be at least 5 years.
Window treatments—

Art Wilcox will look into window blinds to see if there are any independent studies to Jerry by February 15, 2010 (completed)...NEXT STEP: Art and Ruth to propose protocol and lifetime analysis by 04/01/10 circulated to group

Smart Strips—

Deb Sass to explore possible fire issues report to Jerry by February 15, 2010 (completed)...update no direct correlation between power strips and house fires. However, LI housing stock at greater risk for fire. Art to look into overload protection by 04/01/10...Brad Steele confirmed that the BiTS model has overload protection.

Residential Lighting update (Brad Steele)

Items for next meeting:

Savings calculations for heating systems
From: Jerrold Oppenheim [jerroidopp@democracyandregulation.com]
Sent: Tuesday, April 06, 2010 3:24 PM
To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Eli@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; bkane@capelightcompact.org; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconapecod.org; NDAVISON@haconapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclf.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smoc.org; kimball@unitll.com; aginkt@nu.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; tackey.char@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti

Subject: Re: Low Income Best Practices agenda (with assignments and agreements from April 6)-- Wednesday, July 7 at 10 AM at Bay State Gas, Westborough

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010
Assignments in bold
APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)
CAPE LIGHT, BERKSHIRE OK. GRID WILL OK VIA DIANA. NSTAR AND WMECO OK AFTER FINAL CHECK. BSG?
PAs to respond, preferably by this Friday, April 9. PAs to notify LEAN of cost-effectiveness issues.

4. Metrics updates
   a. 2010
   b. 2009 - Diana will send JO revised cover memo

5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs
   a. WMECO evaluation (Debi, John Walsh)

1/18/2011
9. New measures
   a. Hybrid electric water heaters (Art will circulate material from utilities group and update re: manufacturer response)

   b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

   c. Cellulose - safety of ammonium sulfate (Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE

   d. Blown Fibreglass - ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK

   e. Window quilts (Art will propose protocol) COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

   f. Landlord heating systems -- N.B.: Metric Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne
In the meantime, PAs will develop SF Landlord databases where tenants pay for heat Later, plan marketing for next winter

   g. MicroCHPs (Bruce, Art) -- NB: Metric AGREED.
Art will send report (with narrative) to JO.
Diane will identify Common Assumptions lead to JO.
JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

   h. Indirect water heaters, previously approved -- all aboard? YES NB: Metric Art will send report (with narrative) to JO.
Diane will identify Common Assumptions lead to JO.
JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

   i. Smart strips - ERI model includes overload protection against fire
Agreed on cost-effectiveness two meetings ago where there are 3+ switchable units.
Ready to approve? YES, PROVIDED OVERLOAD PROTECTION

   j. LEDs - Brad Steele of ERI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB:
Metric

AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING
Art will gather data, evidence re: niche applications, and information about quality, then
draft report to send to JO for Common Assumptions.
JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks.
After Common Assumptions reports and approves, special applications become standard
measure.

k. Outdoor re-sets -- rejected in 2009, any need to revisit? NO (NB: Metric)
Art will draft report to send to JO for Common Assumptions.
JO will submit to Common Assumptions as referral from BP, for analysis within 8
weeks/June 15, 2010.
After Common Assumptions reports and agrees, consideration is complete.

l. Indoor re-sets (Art)

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and
equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway
(Kara), new roofing materials (Debi)
Debi will research new roofing materials

n. Demand control -- Grounded Power is not responding very quickly and it is not clear they
will do so at all. DEFER. NB: Metric.

o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they
stay on through the night?
Debi will gather information re purchasing.

10. MF Building Inventory -- NB: Metric

2010 METRICS (pending at DPU)

<table>
<thead>
<tr>
<th>1. Hard to Reach Landlords {Electric &amp; Gas} – Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
</tr>
</tbody>
</table>

1/18/2011
| Design | Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010. |
| Exemplary | Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011. |

2. New Measures

| Threshold | In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks. |
| Design | Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks. |
| Exemplary | For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of |

1/18/2011
installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:

<table>
<thead>
<tr>
<th>Measures/PA</th>
<th>MicroCHP*</th>
<th>Indirect DHW</th>
<th>Demand Control**</th>
<th>LED Lighting</th>
<th>Outdoor Resets</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td>1</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NGRID Electric</td>
<td>1</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>WMECO</td>
<td>-</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Unitil Electric</td>
<td>-</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NGRID Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Bay State Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>New England Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Unitil Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
</tbody>
</table>

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.
Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

| Threshold | Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamily Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis.

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

<table>
<thead>
<tr>
<th>PA</th>
<th>% Allocation</th>
<th># of Buildings/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WMECO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay State Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New England Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Gas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively.

| Design | In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement. |
| Exemplary | By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment). |

Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)
Pilgersbergasse 5, 55276 Oppenheim, Germany
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The
information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.

**************************************************************************
This email and any files transmitted with it are intended solely for the use of the individual or entity to whom they are addressed and may be confidential and/or privileged. If you have received this email in error, please do not further review, disseminate or copy it. Please delete it and reply to the sender that you have received this message.
**************************************************************************

1/18/2011
Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]
Sent: Monday, July 05, 2010 4:38 PM
To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Ejl@actioninc.org; DBuchler@nsource.com; kgray@nsource.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; Briana Kane; Ken.Rauseo@state.ma.us; AMicke@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISION@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nccl.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswarl@nu.com; sasde@nu.com; walshj@nu.com; tackey.chan@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti; Margaret M. Song; Debra Hall
Subject: Reminder: Low Income Best Practices agenda (updated, with assignments and agreements from April 6)-- this Wednesday, July 7 at 10 AM at Bay State Gas, Westborough

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010

Assignments in bold

UPDATES OF APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape ?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

NOTE RE TODAY’S SCHEDULE -- TWO PRESENTATIONS

~11.30 - Paul Nahass, Austin Aerogels (new insulation product suitable for masonry sidewalls) [Art]

~12.30 - Ed Connelly, New Ecology re WEGOWISE (used in MF program; proposed for use re: MF building inventory)

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)

1/18/2011
EVERYONE HAS NOW OK'D/

4. Metrics updates
   a. 2010
   b. 2009 - DONE

5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs
   a. WMECO evaluation (Debi, John Walsh; Art)
      b. Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues
   a. MF - building inventory (metric), process flow at WMECo (defer to MF screening comm.)
      b. 60-80% update
      c. Building Permits required

1/18/2011
10. New measures - minimum Metric 2 met

a. Hybrid electric water heaters (Art will circulate material from utilities group and update re: manufacturer response)

b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

c. Cellulose - safety of ammonium sulfate (Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE

d. Blown Fibreglass - ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK

e. Window quilts (Art will propose protocol)

COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT.

f. Landlord heating systems -- N.B.: Metric

Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne

In the meantime, PAs will develop SF Landlord databases where tenants pay for heat -- assemble data via agencies?

Later, plan marketing for next winter

1/18/2011
g. MicroCHPs (Bruce, Art) -- NB: Metric

AGREED.

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMONB ASSUMPTIONS APPROVED.

h. Indirect water heaters, previously approved -- all aboard? YES NB: Metric

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL.

i. Smart strips - EFI model includes overload protection against fire

Agreed on cost-effectiveness two meetings ago where there are 3+switchable units. Ready to approve? YES, PROVIDED OVERLOAD PROTECTION

j. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric

AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING

Art will gather data, evidence re: niche applications, and information about quality, then draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks.

1/18/2011
After Common Assumptions reports and approves, special applications become standard measure.

COMMON ASSUMPTIONS APPROVED.

k. Outdoor re-sets -- rejected in 2009, any need to revisit? NO (NB: Metric)

Art will draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks/June 15, 2010.

After Common Assumptions reports and agrees, consideration is complete.

COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT.

l. Indoor re-sets (Art)

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)

Debi will research new roofing materials

n. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. (Art)

o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?

Debi will gather information re purchasing.

p. Electric heat alternatives - DHCD Ductless Air Source Hedal Pump Demonsgtration

1/18/2011
Project (Debra Hall), see attachment

from Debra:

Ductless Air Source Heat Pump Demonstration Project in an all-electric elderly development at Winthrop Housing Authority, which is served by NGRID.

Background
DHCD and housing authorities have been challenged in finding ways to save energy in the substantial portfolio of electrically-heated public housing. This portfolio includes approximately 15,000 one-bedroom, elderly apartments statewide. Each apartment is usually less than 450 square feet. The average annual electrical consumption to heat the apartment is 8,500 kWh. At a state wide average cost of $0.18 per kWh, the annual cost to heat the apartments is $1,530 -- a $20 million operating expense statewide! Most of these apartments have electric baseboard resistance heat, but some have original radiant wall or ceiling heat panels (that usually have been painted over many times) or electric radiators with bricks that retain heat. Weatherization of building envelopes can help make these units somewhat more efficient, as can setback thermostats, if they are easy for elders to use. However, we are also interested in exploring other all-electric technologies.

Current DHCD policy does not require housing authorities to provide cooling in apartments, but most housing authorities air condition community rooms to provide a cool refuge for elders during hot weather. Nonetheless, many tenants install inefficient window AC in their apartments, and the housing authority pays for the cooling on the common electric bill. Air Source Heat Pumps may be an option for providing heating and cooling at a lower total electricity cost than the authority currently pays year-round.

Winthrop Housing Authority Demonstration Project
Winthrop Housing Authority is very interested in hosting a demonstration project that would involve metering 4 buildings that include 32 housing units in their 176-unit Golden Drive Elderly development 667-2. Two of the buildings (16 units), would have ductless ASHP installed. The performance of the 2 buildings with electric resistance heat and window air conditioners and would be compared with the 2 buildings that have ASHP installed.

The buildings at 2, 4, 6, and 8 Golden Drive are identical in size, shape and geographical orientation. There are 8 apartments per building and a front and rear foyer. All apartments have one bedroom and are less than 450 square feet. The foyers are equivalent in square feet to an apartment. Buildings 2 and 4 Golden Drive are served by one three phase electrical service; Buildings 6 and 8 Golden Drive are served by one three phase electrical service. This would make it easy to study these buildings separate from the larger development.

DHCD is hiring Norian Siani Engineering, Inc. to assist with design.

We also have this project on the ARRA WAP public housing project list. We would like to propose participation from LEAN / NGRID as follows:

-- Air seal and weather strip 32 units to achieve building envelope performance improvement in both the electric resistance heat and ASHP units (approx $1000 per unit or $32,000) [Note: this would be through the MF program, if approved; ARRA funds would pay for the heat pumps]

-- Real time interval metering of the each of the four buildings which would allow much more detailed electric use information to this research effort. (approx $20,000?)

Air Source Heat Pumps Can Work in New England
Air Source Heat Pumps (ASHP) are estimated to save 50% or more on heating kWh, and the utility companies have promoted them primarily as a source of cooling through their COOL SMART incentive program for homeowners. The Single Phase ASHP with inverter technology is currently rated to operate down to 17 F. Three Phase ASHP with
both inverter and variable refrigeration flow technology operate as low as 0 F. The three-phase ASP also have the capability of heating and cooling at the same time. Air source heat pumps have been of interest to MA Dept. of Energy Resources (DOER) for some time now, as a potential alternative or supplement to electric resistance heat.

The Northwest Energy Efficiency Alliance launched the Northwest Ductless Heat Pump Project to demonstrate the use of single phase invert driven ductless heat pumps to displace electric resistance heat in single family homes across the Northwest, Washington, Oregon, Idaho and Montana in 2009. www.nwductless.com The project current has 4586 approved installations. Their consumer webpage www.GoingDuctless.com has a Frequently Asked Questions page that provides good background information on single phase ductless heat pumps. Due to the fact that single family homes are seldom served by three phase power, this project focuses on single phase equipment.

I have attached the detailed work order that DHCD Engineer John Donoghue prepared for this project.

### 2010 METRICS (pending at DPU)

<table>
<thead>
<tr>
<th>1. Hard to Reach Landlords {Electric &amp; Gas} – Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
</tr>
<tr>
<td>Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.</td>
</tr>
</tbody>
</table>
2. New Measures

<table>
<thead>
<tr>
<th>Threshold</th>
<th>In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.</td>
</tr>
<tr>
<td>Exemplary</td>
<td>For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures/PA</th>
<th>MicroCHP*</th>
<th>Indirect DHW</th>
<th>Demand Control**</th>
<th>LED Lighting</th>
<th>Outdoor Resets</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td>1</td>
<td>Standard measure</td>
<td></td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NGRID Electric</td>
<td>1</td>
<td>Standard measure</td>
<td></td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>WMECO</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Unitil Electric</td>
<td>-</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>---</td>
<td>------------------</td>
<td>------------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>NGRID Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>Bay State Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>New England Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>Unitil Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
</tr>
</tbody>
</table>

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.

Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

| Threshold | Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is |

1/18/2011
currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamily Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis.

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

<table>
<thead>
<tr>
<th>PA</th>
<th>% Allocation</th>
<th># of Buildings/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WMEO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay State Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New England Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Gas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively.

In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.
Design

| Exemplary | In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings. By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment). |

===============================================
Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)
Pilgersberggasse 5, 55276 Oppenheim, Germany
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.

******************************************************************************
This email and any files transmitted with it are intended solely for the use of the individual or entity to whom they are addressed and may be confidential and/or privileged. If you have received this email in error, please do not further review, disseminate or copy it. Please delete it and reply to the sender that you have received this message.
******************************************************************************
LOW INCOME BEST PRACTICES MEETING NOTES FOR July 7, 2010

Attendees: Jerry Oppenheim, Bruce Ledgerwood, Mike Rossacci, Debra Hall, Craig Brown, Peter Wingate, Dave Fuller, Ken Rauseo, Deb Sas, Kate Agin, Derek Kimball, Robert Gyurjan, Dave MacLellan, Paul Jackson, Kara Gray, Jeanne Cherry, Art Willcox, John Donahue, Ruth Bechtold, Diana Duffy, Diane Lopes

By phone: Biana Kane and Margaret Song

Next meeting date. October 13 at 10am at HAC – actual location to be determined.

LIHEAP funding issues. Diana Duffy referenced a National Article on the need for greater prevention controls for LIHEAP funding. There was an article that stated 7 states are identified and using LIHEAP funds improperly. No issues found in MA to date.

Procurement. Complete

2009 Metrics. Document complete

Training and Recruitment – This is an ongoing process. Bruce Torrey and Jules Junker are doing lots of training that is paid for with ARRA/WAP funds at this point in time but may be addressed to the PAs once ARRA money in gone.

There are 113 contractors in the networks - not including additional crews. Currently there are about 250 crews. The networks is adding 1-2 contractors a week.

To date, no one has spent out ARRA and if they do then more ARRA money may be available. So far, 800 jobs are being paid for with ARRA money (not all new) this includes contractors and all supporting staff. There are currently 80 auditors in the program which has grown from 40 originally.

ARRA update and discussion - 122 million was received by MA. It was a 3 year program scheduled to end Mar 31, 2012 but may be extended due to the late start caused by the Davis Bacon wage issue. 86 million was directed to the traditional network, 25 million to state public housing for 4000 units, and 6 million to affordable housing for 963 units. There was
also a Governmental service agreement with STCC to train auditors and contractors.

The State weatherization program is ahead of their production goal thru June putting them at 105% of goal. In the fall they will look at reallocation of funds.

PAs mentioned how this is impacting utility/energy efficiency provider program. DHCD states we will need to get more contractors and auditors into the program. Many independent contractors don’t want to work on the LI program due to LI pricing and stringent requirements. Can we mandate independents to work on residential and LI program in order to work for utility/EE provider programs?

In some PA territories, customers are calling to be served thru the residential program due to long waiting times. Priority becomes an issue. Agencies are able to serve these customers under PA program funds only to avoid prioritization.

Can PA claim DOE savings? Some PAs use deemed savings and others use site specific. Can PAs claim DOE savings if they leverage the job? Can we set a leverage requirement to help spend PA money? Jerry what is the next step if we want to pursue this?

DHCD states many problems would go away if WX programs were to be an exact mirror of each other but that is not likely possible due to cost effectiveness and savings requirements put on the PAs.

Shifting of funds. Do we reallocate from SF to MF? PAs to discuss with local caps/LV to see if SF is in jeopardy of not spending out. PAs are awaiting resolution on a request as to whether they will be able to shift funds within a program sector.

Windows are a hot topic. DOE is questioning windows on one hand and promoting them on the other. They are out of the MA program as of right now. And steps are being taken to work them back in. In order to continue agencies will need to use the DOE audit tool and the SIR must be at least 1.0. Window pricing is putting this under the 1.0 SIR requirement. DHCD may try a window buydown approach to put windows over the 1.0 SIR. Can PAs pay for the air sealing and insulation required around the window but not the actual window? LEAN to propose an approach to address windows.
At this point Mass Save is not impacting the LI program as far as contractors are concerned.

**Repairs** - Menu of approved repair measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. $10,000 is the maximum per Wx job but agencies are required to maintain an average of $5500. For repairs, the max is $2500 with an average of no more than $500. Wmeco repairs evaluation is complete. Repairs were found to be cost effective. Deb Sas to share with group.

**Multifamily**. Process flow for MF for Western MA and BSG is not clear. First step is to have one entity qualify projects. How the work gets done is a separate issue. The intent is to work through existing channels. ABCD role will be funded by LEAN and allocated appropriately to the correct entities.

**Building inventory metric**. WEGO WISE to present software later in meeting.

**60-80%**. Serving the 60-80% population has been proposed to the council for consideration. It would work the same way as it does for the current program. Not 100% sure how customers would be qualified but it would likely go through the FA agency. The proposal is looking to provide a grant to those in the 60-80 range. Funding would come out of the residential sector funds. LEAN stated that work in 2011 would lead up to the transition of ARRA funding going away, so agencies will be in a better position to utilize the PA dollars. CLC is currently running 80% program. CLC uses a simple income form that the customer fills out and the customer receive 100% up to $2000 thru the residential program. Do agencies have the capacity to handle this jump to 80%?

**Building permits** - Building permit requirements are slowing things down for contractors. Some cities and towns are more stringent than others, there is no consistency. (Permits appear to be a money maker for municipals.)

**New measures** - Hybrid electric water heaters had a series of issues including: reliability, noise, and condensation. Some products have addressed some of the issues. Cost effectiveness in our climate is not ideal for this technology. No need for Best Practices Working Group (BP) to pursue any further at this time. Some electric PAs are pursuing a pilot in the
non-LI arena. BP will wait on results that are expected to be available next year (2011).

SDHW. Defer to next meeting. Waiting for information on CEC grant (renewable energy trust)

Ammonium Sulfate. 50/50 mix of contractors using this material in MA. DHCD has no position at this point. Price differential is not significant but may be enough for contractors to go with the cheaper product. Product does meet federal standards. Conensus is to continue status quo. This is also consistent with the RCS group decision.

Outdoor resets. Needs to be resubmitted to common assumptions group. Art to provide any necessary info to Common assumptions group.

Window quilts. Rejected quilts and approved cellulose for electric heat only. Art to challenge some of the assumptions used by PA common assumptions group. Art will work with the Common Assumptions group.

Indirect water heaters. Approved for oil but not for gas. Art to provide any necessary info to the Common assumptions group. INWH will only be replaced with the boiler which is causing it not to pass - assuming end of useful life replacement – on the gas side.

Smart strips, LED, MCHP. Approved.

Indoor resets. Not a lot of products out there that are reliable and the cost is high. Not viable at this time.

Find a light. Samples provided by Deb Sas for people to use and see if it is worth putting in the TLC kit.

Super Insulation – Art to do some modeling in regards to 2 inch vs. 4 inch wall insulation and super insulated roof vs. new roof with attic insulation. Deb Sas spoke about some new technologies where manufacturers are experimenting with coatings for roof shingles. One is made from recycled cooking oils that are designed for our specific climate. There are also a photovoltaic film made for shingles that collect solar energy. Deb to update group on the costs of these technologies.

Demand Control. Art did some preliminary research on Grounded Power - a behavior modification program. If PAs were to accept the entire package
(all options) it would cost approximately $125,000 and would serve approximately 1,500 customers with savings of 174 kwh. Using a 5 year life, Art calculated the BCR to be 1 with no Non energy benefits (NEBS) and 1.5 with NEBs. LEAN will circulate the Grounded power proposal and forward information to the Common Assumptions group for screening.

**LI metrics** – on target.

LL design level is with Jerry O for comment. **Due August 1.**

**Presentation by Aerogel** – Paul Nahass

Art to get information to the Common Assumptions group re: this new measure.

**Presentation by New Ecology** re: WEGOWISE (used in MF program; proposed for use re: MF building inventory)

**Presentation by DHCD** – re: Ductless Air source Heat Pump by Debra Hall and John Donahue

ANY ACTION ITEMS HERE?
Lopes, Diane

From: Jerroid Oppenheim [jerroidopp@democracyandregulation.com]
Sent: Thursday, July 08, 2010 9:33 AM
To: tobii@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Ej@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; Briana Kane; Ken.Rauseo@state.ma.us; AMicke@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nlc.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacol@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smok.org; kimball@unittl.com; aginkt@nu.com; owalrl@nu.com; sasde@nu.com; walshj@nu.com; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivemore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti; Margaret M. Song; Debra Hall

Subject: Low Income Best Practices agenda (with assignments and agreements from July 7) -- October 13 at 10 AM at HAC, Hyannis

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR October 13, 2010
At Housing Assistance Corp., Hyannis

Assignments in bold

JULY 7 DECISIONS IN BOLD CAPS

ATTACHED: Grounded Power proposal (2 files).
NOTE: FYI, National Energy Assistance Directors’ Association (NEADA) press release at the very bottom of this e-mail re: GAO LIHEAP report. Call with any questions.

1. Notetaker, next meeting, amendments to agenda, corrections to notes of last meeting, corrections to e-list

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Contractor training and recruitment (Craig)

4. Auditor training (Craig)

5. DHCD (Ken)

6. Repairs
   a. Final WMCO evaluation (Debi, John Walsh)
   b. Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues
   a. MF - building inventory (metric) – WEGOWISE?

1/18/2011
10. New measures - minimum Metric 2 almost met, except outdoor resets
   a. Hybrid electric water heaters (Art: marginal cost-effectiveness, manufacturers have
      not addressed issues raised by utilities) (CLC, NS, and NG conducting a 14-site pilot
      under DOE Building America – results in 2011 (Margaret))

   b. SDHW - PAs agreed on cost-effectiveness parameters; discussion of agreed cost-sharing
      with RET, assuming funding

   c. Cellulose - safety of ammonium sulfate ALTHOUGH PREFERENCE IS TO BAN
      AMMONIUM SULFATE, WE WILL FOLLOW DHCD LEAD AND RELY ON STATE
      CODE (current product is about 50-50)

   d. Window quilts (ART WILL PROPOSE PROTOCOL)
      WE DECIDED COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST
      OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE
      TRACKS AND EDUCATION/SCREENING.
      BUT COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE AND 80%-EFFICIENT
      HEATING, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE:
      ELECTRIC HEAT. ART WILL RESPOND TO COMMON ASSUMPTIONS.

   e. Landlord heating systems -- N.B.: Metric
      COMMITTEE LED BY DIANE DEVELOPED PROPOSAL, WHICH DIANE WILL
      CIRCULATE. OTHER MEMBERS: CRAIG, DAVID, DIANA, KARA, PETER, DEBI,
      ROBERT, AL, JEANNE
      IN THE MEANTIME, PAS WILL DEVELOP SF LANDLORD DATABASES WHERE
      TENANTS PAY FOR HEAT BY SETEMBER 30.-- ASSEMBLE DATA VIA
      AGENCIES?
      AT NEXT MEETING, COMMITTEE WILL PRESENT MARKETING PLAN FOR
      NEXT WINTER.

   f. MicroCHPs (Bruce, Art) -- NB: Metric
      COMMON ASSUMPTIONS APPROVED.

   g. Indirect water heaters, previously approved -- all aboard? YES NB: Metric
      COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL. ART WILL FOLLOW-UP
      RE: GAS. NOTE THAT NGGRID GAS HAS APPROVED. THERE MAY BE AN ISSUE
      RE: ASSUMING END-OF-LIFE REPLACEMENT. NOTE THAT COULD ARGUE
      AVOIDED CHIMNEY LINER AS BENEFIT.

   h. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as
      CFLs, though there may be some cost-effective specialty applications such as downlights. NB:
      Metric
      AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING
COMMON ASSUMPTIONS APPROVED.

i. Outdoor re-sets -- rejected in 2009, any need to revisit? NO (NB: Metric)

COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT. ART WILL CONTACT.

j. Indoor re-sets (Art)—NO RELIABLE, ECONOMIC PRODUCTS.

k. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)

ART WILL MODEL 2" V 4" AND r-60 V R-38
ROBERT WILL PROVIDE COSTS AND BENEFITS OF WHITE ROOFS
DEBI WILL RESEARCH COMMERCIAL ROOF COATINGS BENEFITS AND COSTS

l. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. ART WILL PROVIDE ANALYSIS TO COMMON ASSUMPTIONS. JERRY WILL CIRCULATE GROUNDED POWER PROPOSAL [ATTACHED]. FURTHER DISCUSSION OF PILOT AT NEXT MEETING.

m. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?

DEBI DISTRIBUTED FOR TESTING; COST IS $1.30/3

n. Ductless Air Source Heat Pump Demonstration Project (DHCD proposing ARRA-NGrid project Project in an all-electric elderly development at Winthrop Housing Authority, with some real-time metering to measure efficiency v temperature) – WATCH PROGRESS FOR COST-EFFECTIVENESS

o. Paul Nahass and Steve (last name?), Austin Aerogels, presented Spaceloft, a new insulation product suitable for masonry sidewalls). STEVE AND PAUL SENDING PRESENTATION, HANDOUT, THIRD-PARTY REVIEW, OTHER MATERIAL. ART SENDING THAT MATERIAL AND HIS BCR ANALYSIS TO COMMON ASSUMPTIONS. FURTHER DISCUSSION AT NEXT MEETING ABOUT WHICH LIMITED APPLICATIONS MAY BE SUITABLE FOR.

==========

Jerrold Oppenheim, Esq.
Democracy And Regulation

1/18/2011
57 Middle Street  
Gloucester, Mass. 01930 USA  
+1-978-283-0897  
Fax +1-978-283-0957  
Cell/Mobile/Handy +1-978-335-6748 (World Phone)

Pilgersberggasse 5, 55276 Oppenheim, Germany  
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)  
www.DemocracyAndRegulation.com  
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.

---

From: Jerrold Oppenheim <jerroldopp@democracyandregulation.com>
To: tobin@bostonabcd.org; wells@bostonabcd.org; madelan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; ryurjan@berkshiregas.com; Briana Kane <bkane@capelightcompact.org>; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAISON@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; arthillcox@yahoo.com; PWingate@communityaction.us; jhowat@ncic.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; gail.azulay@nstar.com; diane.lopes@nstar.com; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalri@nu.com; sasde@nu.com; walshj@nu.com; tackey.chan@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@su.com; James.Carey@su.com; trish.walker@su.com; jgilvermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti <mgiannetti@mocinc.org>; Margaret M. Song <msong@capelightcompact.org>; Debra Hall <Debra.Hall@state.ma.us>

Sent: Mon, July 5, 2010 4:38:24 PM
Subject: Reminder: Low Income Best Practices agenda (updated, with assignments and agreements from April 6)-- this Wednesday, July 7 at 10 AM at Bay State Gas, Westborough

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010

Assignments in bold

UPDATES OF APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape ?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

1/18/2011
NOTE RE TODAY'S SCHEDULE -- TWO PRESENTATIONS

~11.30 - Paul Nahass, Austin Aerogels (new insulation product suitable for masonry sidewalls) [Art]

~12.30 - Ed Connelly, New Ecology re WEGOWISE (used in MF program; proposed for use re: MF building inventory)

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)

EVERYONE HAS NOW OK'D/

4. Metrics updates
   a. 2010
   b. 2009 - DONE

5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs
   a. WMECO evaluation (Debi, John Walsh; Art)

1/18/2011
b. Review of menu of approved measures (local option; must make WE-EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues

a. MF - building inventory (metric), process flow at WMECO (defer to MF screening comm.?)

b. 60-80% update

c. Building Permits required

10. New measures - minimum Metric 2 met

a. Hybrid electric water heaters (Art will circulate material from utilities group and update re: manufacturer response)

b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

   c. Cellulose - safety of ammonium sulfate (Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE

   d. Blown Fibreglass - ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK

   e. Window quilts (Art will propose protocol)

COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

1/18/2011
COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT.

f. Landlord heating systems -- N.B.: Metric

Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne

In the meantime, PAs will develop SF Landlord databases where tenants pay for heat -- assemble data via agencies?

Later, plan marketing for next winter

g. MicroCHPs (Bruce, Art) -- NB: Metric

AGREED.

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMON ASSUMPTIONS APPROVED.

h. Indirect water heaters, previously approved -- all aboard? YES NB: Metric

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL.

i. Smart strips - EFI model includes overload protection against fire

1/18/2011
Agreed on cost-effectiveness two meetings ago where there are at switchable units. Ready to approve? YES, PROVIDED OVERLOAD PROTECTION

j. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric

AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING

Art will gather data, evidence re: niche applications, and information about quality, then draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks.

After Common Assumptions reports and approves, special applications become standard measure.

COMMON ASSUMPTIONS APPROVED.

k. Outdoor re-sets -- rejected in 2009, any need to revisit? NO (NB: Metric)

Art will draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks/June 15, 2010.

After Common Assumptions reports and agrees, consideration is complete.

COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT.

l. Indoor re-sets (Art)

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)

Debi will research new roofing materials

1/18/2011
n. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. (Art)

o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?

Debi will gather information re purchasing.

p. Electric heat alternatives - DHCD Ductless Air Source Hedal Pump Demonstration Project (Debra Hall), see attachment

from Debra:

Ductless Air Source Heat Pump Demonstration Project in an all-electric elderly development at Winthrop Housing Authority, which is served by NGRID.

Background
DHCD and housing authorities have been challenged in finding ways to save energy in the substantial portfolio of electrically-heated public housing. This portfolio includes approximately 15,000 one-bedroom, elderly apartments statewide. Each apartment is usually less than 450 square feet. The average annual electrical consumption to heat the apartment is 8,500 kWh. At a state wide average cost of $0.18 per kWh, the annual cost to heat the apartments is $1,530 -- a $20 million operating expense statewide! Most of these apartments have electric baseboard resistance heat, but some have original radiant wall or ceiling heat panels (that usually have been painted over many times) or electric radiators with bricks that retain heat. Weatherization of building envelopes can help make these units somewhat more efficient, as can setback thermostats, if they are easy for elders to use. However, we are also interested in exploring other all-electric technologies.

Current DHCD policy does not require housing authorities to provide cooling in apartments, but most housing authorities air condition community rooms to provide a cool refuge for elders during hot weather. Nonetheless, many tenants install inefficient window AC in their apartments, and the housing authority pays for the cooling on the common electric bill. Air Source Heat Pumps may be an option for providing heating and cooling at a lower total electricity cost than the authority currently pays year-round.

Winthrop Housing Authority Demonstration Project
Winthrop Housing Authority is very interested in hosting a demonstration project that would involve metering 4 buildings that include 32 housing units in their 176-unit Golden Drive Elderly development 667-2. Two of the buildings (16 units), would have ductless ASHP installed. The performance of the 2 buildings with electric resistance heat and window air conditioners and would be compared with the 2 buildings that have ASHP installed.

The buildings at 2, 4, 6, and 8 Golden Drive are identical in size, shape and geographical orientation. There are 8 apartments per building and a front and rear foyer. All apartments have one bedroom and are less than 450 square feet. The foyers are equivalent in square feet to an apartment. Buildings 2 and 4 Golden Drive are served by one three phase electrical service; Buildings 6 and 8 Golden Drive are served by one three phase electrical service. This would make it easy to study these buildings separate from the larger development.

1/18/2011
DHCD is hiring Norian Siani Engineering, Inc. to assist with design.

We also have this project on the ARRA WAP public housing project list. We would like to propose participation from LEAN / NGRID as follows:

- Air seal and weather strip 32 units to achieve building envelope performance improvement in both the electric resistance heat and ASHP units (approx $1000 per unit or $32,000) [Note: this would be through the MF program, if approved; ARRA funds would pay for the heat pumps]
- Real time interval metering of the each of the four buildings which would allow much more detailed electric use information to this research effort. (approx $20,000?)

**Air Source Heat Pumps Can Work in New England**

Air Source Heat Pumps (ASHP) are estimated to save 50% or more on heating kWh, and the utility companies have promoted them primarily as a source of cooling through their COOL SMART incentive program for homeowners. The Single Phase ASHP with inverter technology is currently rated to operate down to 17 F. Three Phase ASHP with both inverter and variable refrigeration flow technology operate as low as 0 F. The three phase ASHP also have the capability of heating and cooling at the same time. Air source heat pumps have been of interest to MA Dept. of Energy Resources (DOER) for some time now, as a potential alternative or supplement to electric resistance heat.

The Northwest Energy Efficiency Alliance launched the Northwest Ductless Heat Pump Project to demonstrate the use of single phase invert driven ductless heat pumps to displace electric resistance heat in single family homes across the Northwest, Washington, Oregon, Idaho and Montana in 2009. [www.nwductless.com](http://www.nwductless.com) The project currently has 4586 approved installations. Their consumer webpage [www.GoingDuctless.com](http://www.GoingDuctless.com) has a Frequently Asked Questions page that provides good background information on single phase ductless heat pumps. Due to the fact that single family homes are seldom served by three phase power, this project focuses on single phase equipment.

I have attached the detailed work order that DHCD Engineer John Donoghue prepared for this project.

**2010 METRICS (pending at DPU)**

<table>
<thead>
<tr>
<th>1. Hard to Reach Landlords {Electric &amp; Gas} – Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threshold</strong></td>
</tr>
<tr>
<td>Establish a subcommittee consisting of members of the</td>
</tr>
<tr>
<td>Best Practices Working Group with representatives from</td>
</tr>
<tr>
<td>all gas and electric program administrators to design</td>
</tr>
<tr>
<td>and develop a (cost-effective) statewide landlord early</td>
</tr>
<tr>
<td>retirement high efficiency heating incentive initiative.</td>
</tr>
<tr>
<td>Incentive Plan should target single family (1-4 units)</td>
</tr>
<tr>
<td>and should be completed by August 1st, 2010.</td>
</tr>
<tr>
<td><strong>Design</strong></td>
</tr>
<tr>
<td>Each program administrator to develop a database</td>
</tr>
</tbody>
</table>

1/18/2011
consisting of landlords in their respective territories of low-income tenants that pay their own heating bills by September 30th 2010.

| Exemplary | Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011. |

2. New Measures

| Threshold | In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks. |

| Design | Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks. |

| Exemplary | For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field |
testing with respect to each such measure and provide documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:

<table>
<thead>
<tr>
<th>Measures/PA</th>
<th>MicroCHP*</th>
<th>Indirect DHW</th>
<th>Demand Control**</th>
<th>LED Lighting</th>
<th>Outdoor Resets</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td>1</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NGRID Electric</td>
<td>1</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>WMECO</td>
<td>-</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Unutil Electric</td>
<td>-</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NGRID Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Bay State Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>New England Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Unutil Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
</tbody>
</table>

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.
Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

| Threshold | Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamily Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis. |

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format: |

<table>
<thead>
<tr>
<th>PA</th>
<th>% Allocation</th>
<th># of Buildings/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WMECO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay State Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New England Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Gas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1/18/2011
The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively.

<table>
<thead>
<tr>
<th>Design</th>
<th>In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplary</td>
<td>By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).</td>
</tr>
</tbody>
</table>

Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)

Pilgersberggasse 5, 55276 Oppenheim, Germany
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original
transmission to us at the address above by
U.S. mail. Thank you.

States Develop Task Force with HHS to Address Fraud
Prevention in the Low Income Home Energy Assistance
Program
July 2, 2010 : Contact: Mark Wolfe 202-237-5199, Cell:
202-320-9046

State energy officials today announced the formation of a joint task force to
address issues concerning waste, fraud and abuse in the Low Income Home
Energy Assistance Program (LIHEAP). Established by National Energy
Assistance Directors’ Association (NEADA) in conjunction with the US
Department of Health and Human Services (HHS), the task force is a response
to a recent report by the US General Accounting Office (GAO) revealing the
risk of fraud and abuse in the program due to a lack of systematic checking of
applications and payments to utility vendors.

“There is no question that all of the state LIHEAP directors strongly support
the accurate and appropriate awarding of grants funds,” says Jo-Ann Choate,
chair of NEADA. “Any dollar wasted is a dollar that cannot be used to help a
needy family have access to energy assistance.”

To that end, the states are requesting full access from GAO to the files in
question in order to assess the accuracy of the review, develop appropriate
measures to prevent waste, and eliminate weaknesses in the in-take system.

The task force will work with HHS to strengthen internal controls to ensure
these funds are used properly.

While the purpose of the Task Force is to prevent waste, fraud and abuse in
LIHEAP, it can only do so by addressing serious questions about the rate of
error identified in the GAO report.

- Because the states have not had an opportunity to review the files GAO identified as
  suspicious, it is possible many of these cases are issues of paperwork, not fraud. For
  example, a recently widowed elderly woman who qualifies for LIHEAP might include her

1/18/2011
husband’s name on the application so that it is consistent with the billing information her utility company has. Though the paperwork is inaccurate and must be updated, she is still eligible.

- The GAO study reported that LIHEAP programs give low-income residents checks made out to "Your Heating Supplier." In fact, vendor payments are generally marked with specific instructions to the bank that they are only to be deposited by the supplier. Some states pay LIHEAP benefits through the gas, electric and heating companies. A qualifying client’s account is credited with the benefit they are eligible for. No payment is issued directly to the client. In rare instances - generally during a home-energy emergency - a two-party check may be issued to the vendor and the client jointly. However, in all cases, the payment is provided only for the purpose intended.

- In a letter to GAO commenting on their review of its program, the State of Ohio pointed out that draft report could be interpreted as finding widespread fraud in Ohio. However, the GAO identified only four questionable cases, with payments totaling $1,400.

- New York State also submitted a letter commenting on the GAO report that raised an important issue: federally mandated deadlines for the delivery of emergency assistance. As stated in the GAO report, federal LIHEAP funds are provided to assist households “in meeting their immediate home energy needs.” States have to move fast to meet household energy crises—within 18 to 48 hours, according to federal statutory requirements. The timeframe can make immediate fraud detection difficult. The state recommended, “Additional fraud and abuse prevention measures must take into account the need for states to be responsive to the immediate needs of eligible applicants.”

- Lastly, one of the key issues raised by the GAO report is the lack of Social Security numbers required on LIHEAP applications. Because of privacy concerns, until recently HHS would not allow states to require Social Security numbers on applications. HHS has since clarified that states can now do so. Officials believe this will be a significant help in identifying ineligible applicants. New York’s letter also recommended this measure.
For the states, the bottom line is that all funds should be spent accurately and in accordance with program regulations, according to Mark Wolfe, executive director of NEADA. “We will be working closely with the HHS to identify all potential strategies to support this outcome,” Wolfe said.

The National Energy Assistance Directors’ Association (NEADA) represents the state LIHEAP directors. [www.neada.org](http://www.neada.org).
Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]
Sent: Tuesday, October 12, 2010 12:18 PM
To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; EL@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msonmer@berkshiregas.com; rgyurjan@berkshiregas.com; Briana Kane; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Azulay, Gail; Lopes, Diane; p.jackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalr@nu.com; sasde@nu.com; walshj@nu.com; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivemore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti; Margaret M. Song; Debra Hall

Subject: Low Income Best Practices agenda (with assignments and agreements from July 7) -- TOMORROW, October 13 at 10 AM at HAC, Hyannis

Assignments and notes from last meeting follow this updated agenda.

Updated proposed agenda:

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR October 13, 2010
At Housing Assistance Corp., Hyannis

Directions: http://www.haconcapecod.org/directions.htm

Call-in: 712-432-0220 + 102 1979

Lunch: selections: contact Margaret Song if you have not done so already -- MSong@CapeLightCompact.org

1. Preliminaries: note taker, next meeting, amendments to agenda, corrections to notes of last meeting, corrections to e-list

2. List of Working Groups: John L. circulated res. WGs 2/23; others?

3. Contractor training and recruitment, Auditor training, DHCD Report -- Craig and Ken
   
   a. NEW MEASURE: air sealing of windows

4. Health and cost issues regarding borate and aluminum sulfate in insulation products -- presentation by Chris White, National Insulation Products, and discussion of relative costs, what DOE does and does not require, i.e., State Code (15 minutes)

5. Repairs -- DEFER discussion of WMEECo evaluation

6. Program issues
   
   a. Aluminum sulfate (above)

    b. Cost of building permits

1/18/2011
c. SDHW - coordinate with CEC?

d. MF status report

e. Other?

7. New measures, including consideration for 2011 Metric
   a. Hybrid electric water heaters, ductless air source heat pump -- Art

   b. Window cellular shades for oil and gas homes, discussion of evaluation assumptions and
      installation protocols -- Art and Craig

   c. Indirect water heaters for gas -- Art, NSTAR

   d. Outdoor re-sets (need Common Assumptions to confirm rejection)

   e. Roofing materials, super insulation (when roof replaced anyway) -- Kara, Debi

   f. Grounded Power demand control pilot -- Art, Jerry

   g. Find A Light for TLC kits? -- Debi

   h. Options for 2" foam on foundation -- Peter

   i. Air sealing around windows (above)

   j. Other measures to review in 2011?

8. 2010 Metrics -- see metrics at the very end of this e-mail
   a. #1 (Landlords) -- update (statewide program design, PA databases, statewide marketing plan
      and PA initiatives)

   b. #2 (New Measures) -- approved and adopted as standard measure: smart strips (prior to
      metric), indirect water heating (oil), window cellular shades (electric), LED down light (electric);
      rejected: window quilts, outdoor re-sets (needs Common Assumptions confirmation), indoor resets)

      status re micro CHP installations (approved)
      pending at Commn Assumptions: indirect water heating (gas), window
      cellular shades (gas, oil), outdoor resets (reject), Grounded power demand control pilot

   c. #3 (MF Building Inventory) -- status

9. 2011 metrics
   a. #1 (Landlords)

   b. #2 (New Measures)

   c. #3 (MF Building Inventory)
This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.

Von: Jerrold Oppenheim <jerroldopp@democracyandregulation.com>
An: tobin@bostonabcd.org; wells@bostonabcd.org; macellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisode.com; kgray@nisode.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; Briana Kane <bkane@capelightcompact.org>; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; gail.azulay@nstar.com; diane.lopes@nstar.com; pjackson@smoc.org; kimball@unitll.com; aginkel@nt.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; danielle.rathburn@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglilvermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti <mgianetti@mocinc.org>; Margaret M. Song <msong@capelightcompact.org>; Debra Hall <Debra.Hall@state.ma.us>
Betreff: Low Income Best Practices agenda (with assignments and agreements from July 7)— October 13 at 10 AM at HAC, Hyannis

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR October 13, 2010
At Housing Assistance Corp., Hyannis

Assignments in bold

JULY 7 DECISIONS IN BOLD CAPS

ATTACHED: Grounded Power proposal (2 files).
NOTE: FYI, National Energy Assistance Directors' Association (NEADA) press release at the very bottom of this e-mail re: GAO LIHEAP report. Call with any questions.

1. Notetaker, next meeting, amendments to agenda, corrections to notes of last meeting, corrections to e-list

1/18/2011
2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Contractor training and recruitment (Craig)

4. Auditor training (Craig)

5. DHCD (Ken)

6. Repairs
   a. Final WMECO evaluation (Debi, John Walsh)
   b. Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues
   a. MF - building inventory (metric) – WEGOWISE?

10. New measures - minimum Metric 2 almost met, except outdoor resets
    a. Hybrid electric water heaters (Art: marginal cost-effectiveness, manufacturers have not addressed issues raised by utilities) (CLC, NS, and NG conducting a 14-site pilot under DOE Building America – results in 2011 (Margaret))
       b. SDHW - PAs agreed on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding
       c. Cellulose - safety of ammonium sulfate ALTHOUGH PREFERENCE IS TO BAN AMMONIUM SULFATE, WE WILL FOLLOW DHCD LEAD AND RELY ON STATE CODE (current product is about 50-50)
       d. Window quilts (ART WILL PROPOSE PROTOCOL) WE DECIDED COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING. BUT COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE AND 80%-EFFICIENT HEATING, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT. ART WILL RESPOND TO COMMON ASSUMPTIONS.

   e. Landlord heating systems -- N.B.: Metric COMMITTEE LED BY DIANE DEVELOPED PROPOSAL, WHICH DIANE WILL CIRCULATE. OTHER MEMBERS: CRAIG, DAVID, DIANA, KARA, PETER, DEBI, ROBERT, AL, JEANNE IN THE MEANTIME, PAS WILL DEVELOP SF LANDLORD DATABASES WHERE TENANTS PAY FOR HEAT BY SETEMBER 30.-- ASSEMBLE DATA VIA
AGENCIES?
AT NEXT MEETING, COMMITTEE WILL PRESENT MARKETING PLAN FOR
NEXT WINTER.

f. MicroCHPs (Bruce, Art) -- NB: Metric
COMMON ASSUMPTIONS APPROVED.

g. Indirect water heaters, previously approved -- all aboard? YES NB: Metric
COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL. ART WILL FOLLOW-UP
RE: GAS. NOTE THAT NGRID GAS HAS APPROVED. THERE MAY BE AN ISSUE
RE: ASSUMING END-OF-LIFE REPLACEMENT. NOTE THAT COULD ARGUE
AVOIED CHIMNEY LINER AS BENEFIT.

h. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as
CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric
AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING
COMMON ASSUMPTIONS APPROVED.

i. Outdoor re-sets -- rejected in 2009, any need to revisit? NO (NB: Metric)
COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT. ART WILL
CONTACT.

j. Indoor re-sets (Art)—NO RELIABLE, ECONOMIC PRODUCTS.

k. Super-insulation -- NB: no metric -- further discussion of potential more economic and
equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway
(Kara), new roofing materials (Debi)
ART WILL MODEL 2" V 4" AND R-60 V R-38
ROBERT WILL PROVIDE COSTS AND BENEFITS OF WHITE ROOFS
DEBI WILL RESEARCH COMMERCIAL ROOF COATINGS BENEFITS AND
COSTS

l. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is
analyzing. ART WILL PROVIDE ANALYSIS TO COMMON ASSUMPTIONS. JERRY
WILL CIRCULATE GROUNDED POWER PROPOSAL [ATTACHED]. FURTHER
DISCUSSION OF PILOT AT NEXT MEETING.

m. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they
stay on through the night?
DEBI DISTRIBUTED FOR TESTING; COST IS $1.30/3

n. Ductless Air Source Heat Pump Demonstration Project (DHCD proposing ARRA-NGrid
project Project in an all-electric elderly development at Winthrop Housing Authority, with some
real-time metering to measure efficiency vs temperature) – WATCH PROGRESS FOR COST-EFFECTIVENESS

- Paul Nahass and Steve (last name?), Austin Aerogels, presented Spaceloft, a new insulation product suitable for masonry sidewalls). STEVE AND PAUL SENDING PRESENTATION, HANDOUT, THIRD-PARTY REVIEW, OTHER MATERIAL. ART SENDING THAT MATERIAL AND HIS BCR ANALYSIS TO COMMON ASSUMPTIONS. FURTHER DISCUSSION AT NEXT MEETING ABOUT WHICH LIMITED APPLICATIONS MAY BE SUITABLE FOR.

===============================================
Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)

Pligersberggasse 5, 55276 Oppenheim, Germany
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.

From: Jerrold Oppenheim <jerroldopp@democracyandregulation.com>
To: tobin@bostonabcd.org; wells@bostonabcd.org; macellan@bostonabcd.org; craigm@cfl.uc.edu; ritac@cfl.uc.edu; Elh@cfl.uc.edu; DBuchler@nsource.com; kgray@nsource.com; msommer@berkshiresgas.com; rgyurjan@berkshiresgas.com; Briana Kane <bkane@capelightcompact.org>; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbuchtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; arthill@gmail.com; PWingate@communityaction.us; jhowat@ncil.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; gail.azulay@nstar.com; diane.lopes@nstar.com; pjackson@smc.org; kimball@unitil.com; aginmt@nu.com; oswalr@nu.com; sasdc@nu.com; walshj@nu.com; tackey. chan@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com;

1/18/2011
LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010

Assignments in bold

UPDATES OF APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape ?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

NOTE RE TODAY'S SCHEDULE -- TWO PRESENTATIONS

~11.30 - Paul Nahass, Austin Aerogels (new insulation product suitable for masonry sidewalls) [Art]

~12.30 - Ed Connelly, New Ecology re WEGOWISE (used in MF program; proposed for use re: MF building inventory)

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)

EVERYONE HAS NOW OK'D/

4. Metrics updates

   a. 2010

   b. 2009 - DONE

1/18/2011
5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs
   a. WMECO evaluation (Debi, John Walsh; Art)
      b. Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues
   a. MF - building inventory (metric), process flow at WMECo (defer to MF screening comm.?)
      b. 60-80% update
      c. Building Permits required

10. New measures - minimum Metric 2 met
    a. Hybrid electric water heaters (Art will circulate material from utilities group and update re: manufacturer response)

    b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

1/18/2011
c. Cellulose - safety of ammonium sulfate (Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE

d. Blown Fibreglass - ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK

e. Window quilts (Art will propose protocol)

COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT.

f. Landlord heating systems -- N.B.: Metric

Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne

In the meantime, PAs will develop SF Landlord databases where tenants pay for heat -- assemble data via agencies?

Later, plan marketing for next winter

g. MicroCHPs (Bruce, Art) -- NB: Metric

AGREED.

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.
COMMONB ASSUMPTIONS APPROVED.

h. Indirect water heaters, previously approved -- all aboard? YES NB: Metric

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL.

i. Smart strips - EFI model includes overload protection against fire

Agreed on cost-effectiveness two meetings ago where there are 3+ switchable units. Ready to approve? YES, PROVIDED OVERLOAD PROTECTION

j. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric

AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING

Art will gather data, evidence re: niche applications, and information about quality, then draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks.

After Common Assumptions reports and approves, special applications become standard measure.

COMMON ASSUMPTIONS APPROVED.

k. Outdoor re-sets -- rejected in 2009, any need to revisit? NO (NB: Metric)

Art will draft report to send to JO for Common Assumptions.

1/18/2011
JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks/June 15, 2010.

After Common Assumptions reports and agrees, consideration is complete.

COMMON ASSUMPTIONS DID NOT ACT – SO RE-SUBMIT.

1. Indoor re-sets (Art)

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)

Debi will research new roofing materials

n. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. (Art)

o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?

Debi will gather information re purchasing.

p. Electric heat alternatives - DHCD Ductless Air Source Hedal Pump Demonstration Project (Debra Hall), see attachment

from Debra:

Ductless Air Source Heat Pump Demonstration Project in an all-electric elderly development at Winthrop Housing Authority, which is served by NGRID.

Background

DHCD and housing authorities have been challenged in finding ways to save energy in the substantial portfolio of electrically-heated public housing. This portfolio includes approximately 15,000 one-bedroom, elderly apartments statewide. Each apartment is usually less than 450 square feet. The average annual electrical consumption to heat the apartment is 8,500 kWh. At a state wide average cost of $0.18 per kWh, the annual cost to heat the apartments is $1,530 - a $20 million operating expense statewide! Most of these apartments have electric baseboard resistance heat, but
some have original radiant wall or ceiling heat panels (that usually have been painted over many times) or electric radiators with bricks that retain heat. Weatherization of building envelopes can help make these units somewhat more efficient, as can setback thermostats, if they are easy for elders to use. However, we are also interested in exploring other all-electric technologies.

Current DHCD policy does not require housing authorities to provide cooling in apartments, but most housing authorities air condition community rooms to provide a cool refuge for elders during hot weather. Nonetheless, many tenants install inefficient window AC in their apartments, and the housing authority pays for the cooling on the common electric bill. Air Source Heat Pumps may be an option for providing heating and cooling at a lower total electricity cost than the authority currently pays year-round.

Winthrop Housing Authority Demonstration Project

Winthrop Housing Authority is very interested in hosting a demonstration project that would involve metering 4 buildings that include 32 housing units in their 176-unit Golden Drive Elderly development 667-2. Two of the buildings (16 units), would have ductless ASHP installed. The performance of the 2 buildings with electric resistance heat and window air conditioners and would be compared with the 2 buildings that have ASHP installed.

The buildings at 2, 4, 6, and 8 Golden Drive are identical in size, shape and geographical orientation. There are 8 apartments per building and a front and rear foyer. All apartments have one bedroom and are less than 450 square feet. The foyers are equivalent in square feet to an apartment. Buildings 2 and 4 Golden Drive are served by one three phase electrical service; Buildings 6 and 8 Golden Drive are served by one three phase electrical service. This would make it easy to study these buildings separate from the larger development.

DHCD is hiring Norian Siani Engineering, Inc. to assist with design.

We also have this project on the ARRA WAP public housing project list. We would like to propose participation from LEAN / NGRID as follows:

-- Air seal and weather strip 32 units to achieve building envelope performance improvement in both the electric resistance heat and ASHP units  (approx $1000 per unit or $32,000) [Note: this would be through the MF program, if approved; ARRA funds would pay for the heat pumps]

-- Real time interval metering of the each of the four buildings which would allow much more detailed electric use information to this research effort.  (approx $20,000?)

Air Source Heat Pumps Can Work in New England

Air Source Heat Pumps (ASHP) are estimated to save 50% or more on heating kWh, and the utility companies have promoted them primarily as a source of cooling through their COOL SMART incentive program for homeowners.

The Single Phase ASHP with inverter technology is currently rated to operate down to 17 F. Three Phase ASHP with both inverter and variable refrigeration flow technology operate as low as 0 F. The three phase ASHP also have the capability of heating and cooling at the same time. Air source heat pumps have been of interest to MA Dept. of Energy Resources (DOER) for some time now, as a potential alternative or supplement to electric resistance heat.

The Northwest Energy Efficiency Alliance launched the Northwest Ductless Heat Pump Project to demonstrate the use of single phase invert driven ductless heat pumps to displace electric resistance heat in single family homes across the Northwest, Washington, Oregon, Idaho and Montana in 2009. www.nwdxductless.com The project current has 4586 approved installations. Their consumer webpage www.GoingDuctless.com has a Frequently Asked Questions page that provides good background information on single phase ductless heat pumps. Due to the fact that single family homes are seldom served by three phase power, this project focuses on single phase equipment.

I have attached the detailed work order that DHCD Engineer John Donoghue prepared for this project.

1/18/2011
### 2010 METRICS (pending at DPU)

#### 1. Hard to Reach Landlords {Electric & Gas} – Statewide

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.</td>
</tr>
<tr>
<td>Exemplary</td>
<td>Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.</td>
</tr>
</tbody>
</table>

#### 2. New Measures

| Threshold | In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an |
assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.

<table>
<thead>
<tr>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures/PA</th>
<th>MicroCHP*</th>
<th>Indirect DHW</th>
<th>Demand Control**</th>
<th>LED Lighting</th>
<th>Outdoor Resets</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td>1</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>NGRID Electric</td>
<td>1</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>WMECO</td>
<td>-</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>Unitil Electric</td>
<td>-</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>NGRID Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Bay State Gas</td>
<td>1</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td>-</td>
<td>Standard measure</td>
<td>-</td>
<td>-</td>
<td>Standard measure</td>
</tr>
<tr>
<td>New</td>
<td>-</td>
<td>Standard</td>
<td>-</td>
<td>-</td>
<td>Standard</td>
</tr>
<tr>
<td>England Gas</td>
<td>measure</td>
<td>Standard measure</td>
<td>-</td>
<td>Standard measure</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td>------------------</td>
<td>---</td>
<td>------------------</td>
<td></td>
</tr>
</tbody>
</table>

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.

Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

| Threshold | Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamily Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis. |

This will be a three-year project, beginning approximately July 1,
2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

<table>
<thead>
<tr>
<th>PA</th>
<th>% Allocation</th>
<th># of Buildings/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WMECO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGRID Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay State Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New England Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unitil Gas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively.

In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.

**Design**

In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.

**Exemplary**

By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).
Jerrold Oppenheim, Esq.
Democracy And Regulation
57 Middle Street
Gloucester, Mass. 01930 USA
+1-978-283-0897
Fax +1-978-283-0957
Cell/Mobile/Handy +1-978-335-6748 (World Phone)
Pilgersbergasse 5, 55276 Oppenheim, Germany
Handy in Germany, France: 0151 110 48444 (from Germany); +49 151 110 48444 (from outside Germany)
www.DemocracyAndRegulation.com
JerroldOpp@DemocracyAndRegulation.com

This transmission may contain information that is CONFIDENTIAL OR PRIVILEGED. The information is intended to be only for the use of the individual or entity named above. Disclosure, copying, or use of the information is prohibited. If you have received this transmission in error, please notify us by telephone immediately and return the original transmission to us at the address above by U.S. mail. Thank you.

States Develop Task Force with HHS to Address Fraud Prevention in the Low Income Home Energy Assistance Program

State energy officials today announced the formation of a joint task force to address issues concerning waste, fraud and abuse in the Low Income Home Energy Assistance Program (LIHEAP). Established by National Energy Assistance Directors’ Association (NEADA) in conjunction with the US Department of Health and Human Services (HHS), the task force is a response to a recent report by the US General Accounting Office (GAO) revealing the risk of fraud and abuse in the program due to a lack of systematic checking of applications and payments to utility vendors.

“There is no question that all of the state LIHEAP directors strongly support
the accurate and appropriate awarding of grants funds," says Jo Ann Choate, chair of NEADA. "Any dollar wasted is a dollar that cannot be used to help a needy family have access to energy assistance."

To that end, the states are requesting full access from GAO to the files in question in order to assess the accuracy of the review, develop appropriate measures to prevent waste, and eliminate weaknesses in the in-take system.

The task force will work with HHS to strengthen internal controls to ensure these funds are used properly.

While the purpose of the Task Force is to prevent waste, fraud and abuse in LIHEAP, it can only do so by addressing serious questions about the rate of error identified in the GAO report.

- Because the states have not had an opportunity to review the files GAO identified as suspicious, it is possible many of these cases are issues of paperwork, not fraud. For example, a recently widowed elderly woman who qualifies for LIHEAP might include her husband’s name on the application so that it is consistent with the billing information her utility company has. Though the paperwork is inaccurate and must be updated, she is still eligible.

- The GAO study reported that LIHEAP programs give low-income residents checks made out to "Your Heating Supplier." In fact, vendor payments are generally marked with specific instructions to the bank that they are only to be deposited by the supplier. Some states pay LIHEAP benefits through the gas, electric and heating companies. A qualifying client’s account is credited with the benefit they are eligible for. No payment is issued directly to the client. In rare instances - generally during a home-energy emergency - a two-party check may be issued to the vendor and the client jointly. However, in all cases, the payment is provided only for the purpose intended.

- In a letter to GAO commenting on their review of its program, the State of Ohio pointed out that draft report could be interpreted as finding widespread fraud in Ohio. However, the GAO identified only four questionable cases, with payments totaling $1,400.
• New York State also submitted a letter commenting on the GAO report that raised an important issue: federally mandated deadlines for the delivery of emergency assistance. As stated in the GAO report, federal LIHEAP funds are provided to assist households “in meeting their immediate home energy needs.” States have to move fast to meet household energy crises—within 18 to 48 hours, according to federal statutory requirements. The timeframe can make immediate fraud detection difficult. The state recommended, “Additional fraud and abuse prevention measures must take into account the need for states to be responsive to the immediate needs of eligible applicants.”

• Lastly, one of the key issues raised by the GAO report is the lack of Social Security numbers required on LIHEAP applications. Because of privacy concerns, until recently HHS would not allow states to require Social Security numbers on applications. HHS has since clarified that states can now do so. Officials believe this will be a significant help in identifying ineligible applicants. New York’s letter also recommended this measure.

For the states, the bottom line is that all funds should be spent accurately and in accordance with program regulations, according to Mark Wolfe, executive director of NEADA. “We will be working closely with the HHS to identify all potential strategies to support this outcome,” Wolfe said.

The National Energy Assistance Directors’ Association (NEADA) represents the state LIHEAP directors. www.neada.org.
LI Best Practices – October 13, 2010 – Draft Meeting Notes

Margaret Song
Deb Sas
Diane Lopes
Riley Hastings
Chris White, National Fiber
Paul Jackson
Craig Brown
Diana Duffy
Jerry Oppenheim
Peter Wingate
David MacLellan
Mike Rossacci
Ed Connolly
Ruth Bechtold
Nancy Davison
Jeanne Cherry
Derek Kimball
Debra Hall
Art Wilcox
Bruce Ledgerwood

Preliminaries – remove Beth Lonergan and Briana Kane; Add Riley Hastings
(christine.hastings@nstar.com)
  – Meeting – January 10th, WMECO, Springfield

Chris White – National Fiber – Presentation in electronic form attached –
  – Wet applications can be an issue with hybrid
  – Cellulose with borate is better quality
  – All borate jobs would be about $30 more.

Ammonium Sulfate Insulation – Leads will ask their contractors what they currently use and ask them to change to borate product for next meeting. Craig to speak with Ken.

Trainings – Jules Junker and Bruce Torrey – going pretty well.
  – BPI certification – Analyst training through DHCD at North Shore Community College.
  – BootCamp – Mattapan – still running folks through this – City of Boston owns it.
  – Some distributors of insulation products have been giving scholarships for BPI Analyst and Envelope
  – DHCD – Other half of ARRA funds went through.

Windows are coming in close to $390 – not pass NEAT with that cost – may need to be bid out in case-by-case basis. Riley Hastings to review the screening for windows and installation for next meeting.
LEAN (Paul and Art) to spec a loose window for next meeting.

Repairs – are cost-effective – per WMECO
Program Issues
- Cost of building permits – universal – Did anyone not pay?
- SDHW – coordinate with CEC – may be cost-effective
- MF – You don’t have to hear about it.
- Aerogel – tried a product (David and Art) – .04 BCR with benefits BCR as .7 – might only work on gut rehab and new construction – wait for grant results

Hybrid electric water heaters – how to deal with noise, condensation, and temperature recovery – DOE Building America – NGRID, NSTAR, and CLC – EPRI is getting data from us. – Wait until data next year.

Window Quilt/Shades – DOE funds to pay for this – remove agenda item

Cellular shades – lifetime is the issue and hours of use. – remove agenda item

Indirect water heaters for gas – Riley to check for next meeting

Outdoor resets – Riley to check for next meeting.

Super insulation – roofing materials when replacement – remove this.

Brushless Fan Motors – for future years?

Grounded Power pilot? – Need to file for MTMs? Why not amortize over 5 years? Issue is behavior program usually has 1 year. – Art to send to Riley, Wendy Todd, Gail, and Jerry.

TLC Kits – Find a Lights - glow in the dark wall sockets – not good – remove this.

2” foam – Thermax – Class A fire rated – $3-4 per sq ft. (labor included) versus the R-7 number for perimeter $1.82 sq ft. – may help with homes that have moisture issues. – price needs clarification for fire code – Art to do this for next meeting.

Landlord – Tenant Heating Systems – If need report by January 30th, then needs to be installed by the end of the year. Each PA has different information from systems. Some presentations to landlord associations.

LED Downlights – more on list. Perhaps look at Cree CR6 (rather than LR6)

MicroCHP – at least one in Cambridge and maybe others – Bruce Ledgerwood to check on this.

2011 Metric – May include: Aerogel – HPWH – incremental roof – foundation foam – LED CR6 – roof materials – ductless mini-splits – brushless fan motors – Will some of this be in grants?

Building Inventory – All except for NGRID Electric
LI Best Practices – October 13, 2010 – Draft Meeting Notes

Margaret Song
Deb Sas
Diane Lopes
Riley Hastings
Chris White, National Fiber
Paul Jackson
Craig Brown
Diana Duffy
Jerry Oppenheim
Peter Wingate
David MacLellan
Mike Rossacci
Ed Connolly
Ruth Bechtold
Nancy Davison
Jeanne Cherry
Derek Kimball
Debra Hall
Art Wilcox
Bruce Ledgerwood

Preliminaries – remove Beth Lonergan and Briana Kane; Add Riley Hastings (christine.hastings@nstar.com) and Wendy Todd
  – Meeting – January 10th, WMECO, Springfield

Chris White – National Fiber – Presentation in electronic form attached –
  – Wet applications can be an issue with hybrid
  – Cellulose with borate is better quality
  – All borate jobs would be about $30 more.
  – Will send us details about which states and/or programs have adopted borate.

Ammonium Sulfate Insulation – Leads will ask their contractors what they currently use and ask them to change to borate product for next meeting. Craig to speak with Ken. Ruth will call the Chicago agency to find out about litigation there.

Trainings – Jules Junker and Bruce Torrey – going pretty well.
  – BPI certification – Analyst training through DHCD at North Shore Community College.
  – BootCamp – Mattapan – still running folks through this – City of Boston owns it.
  – Some distributors of insulation products have been giving scholarships for BPI Analyst and Envelope
  – DHCD – Other half of ARRA funds went through.

Windows are coming in close to $390 – not pass NEAT with that cost – may need to be bid out in case-by-case basis. Riley Hastings to review the screening for windows and installation for next meeting. LEAN (Paul and Art) to spec a loose window for next meeting.
Repairs – are cost-effective – per WMECO – formal evaluation to come.

Program Issues

- Cost of building permits – universal – Did anyone not pay? –
- SDHW – coordinate with CEC – may be cost-effective
- MF – You don’t want to hear about it.
- Aerogel – tried a product (david and art) – .04 BCR with benefits BCR as .7 – might only work on gut rehab and new construction –

Hybrid electric water heaters – how to deal with noise, condensation, and temperature recovery – DOE
Building America – NGRID, NSTAR, and CLC pilot – EPRI is getting data from us.

Window Quilt/Shades – for this – remove agenda item

Cellular shades – lifetime is the issue and hours of use. – remove agenda item

Indirect water heaters for gas – Riley to check for next meeting –

Outdoor resets rejection – Riley to check for next meeting.


Brushless Fan Motors – consider in 2011

Grounded Power pilot? – Need to file for MTMs? Why not amortize over 5 years? Issue is behavior program usually has 1 year. – Art to send to Riley, Wendy Todd, Gail, and Jerry.

TLC Kits – Find a Lights - glow in the dark wall sockets – remove this.

2” foam – Thermax – Class A fire rated – $3-4 per sq ft. (labor included) versus the R-7 number for perimeter $1.82 sq ft. – may help with homes that have moisture issues. – price needs clarification for fire code – Art to do this and BCR for next meeting.

Landlord – Tenant Heating Systems – If need report by January 30th, then needs to be installed by the end of the year. Each PA has different information from systems. Some presentations to landlord associations.

LED Downlights – more on list. Perhaps look at Cree CR6 (rather than LR6) in 2011

MicroCHP – at least one in Cambridge and maybe others – Bruce Ledgerwood to check on this.
2011 Metrics approved
#1 – Hart-to-Reach Landlords (continue) – need to supplement databases, possible collaboration with RCS, marketing to tenants

#3 - Building Inventory (continue) – may need to adjust total for NGRID Electric
Lopes, Diane

From: Azulay, Gail
Sent: Tuesday, June 15, 2010 3:39 PM
To: 'Jerrold Oppenheim'; artwillcox@yahoo.com; pahorowitz@earthlink.net; 'SchlegelJ@aol.com'
Cc: 'Duffy, Diana'; 'kgray@nisource.com'; 'Rossacci, Michael F. '; 'Briana Kane'; 'sasde@nu.com'; 'Kimball, Derek'; 'artwillcox@yahoo.com'; 'Crossman, Kimberly'; 'Jenn Kallay'; 'walshj@nu.com'; 'beaurce@nu.com'; 'glover@unil.com'; 'sasde@nu.com'; Lopes, Diane; Olsson, Charles; Shea, Lisa; 'DBuchler@NiSource.com'; oswalrl@nu.com

Subject: Metric 2 - New Measures

In accordance with the Design portion of the New Measures Metric the attached memo documents the completed measure screening and the attachments describe the measures and assumptions used. Working in conjunction with LEAN and GDS the MA common Assumptions working group has met the June 15 deadline for a first report analysis.

If you have any questions, let us know.

Gail

Gail Azulay
Sr. Research Analyst
NSTAR Electric & Gas
Ph #781-441-8024
To: Jerry Oppenheim  
Art Wilcox  

From: MA Common Assumptions Working Group  
GDS  

Date: June 15, 2010  

Subject: Low Income Metric 2 – New Measures  

Each year, as part of the Massachusetts Utilities Energy Efficiency Plan we are assigned Metrics; either individual company or statewide which are tied to company goals and incentives. One of the Statewide Metrics the PA’s has is to achieve deeper energy savings. This memo is documentation to meet the first report of analysis by June 15, 2010 in the design portion of Metric 2.

**New Measures Metric**

| Design | Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1) micro-combined heat and power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost – effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance related to these tasks. |

On May 24, 2010 the MA Common Assumptions Working Group participated on a call with LEAN and the Best Practices Working Group to discuss measure screening. On this call it was decided that we would not screen demand control measures and outdoor resets at the current time but may be asked to do so at a later date. In addition to the above list we were asked to screen Window Quilts. Subsequent e-mail correspondence and follow up calls were held with LEAN. The statewide working group in conjunction with LEAN analysed the measures to be screened and documented assumptions used in the attached reports. From these reports each of the PA’s screened the measures in the individual Benefit Cost Screening models for electric. In addition, National Grid and
Until performed screening in their gas models while GDS screened for the remainder of the Gas PA’s.

All PA’s are in agreement that the measures screened as follows:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Electric Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro CHP</td>
<td>Measure is cost effective based on current information and average pilot program savings.</td>
</tr>
<tr>
<td>Indirect Water Heating</td>
<td>The measure is cost effective when installing in conjunction with an oil boiler. This measure is not cost effective in the GDS screening model.</td>
</tr>
<tr>
<td>Window Quilts</td>
<td>NOT cost effective as benefits are not greater than costs. Window Cellular shades are cost effective when installed in an electrically heated home only.</td>
</tr>
<tr>
<td>LED lighting (down light)</td>
<td>The benefits are greater than the costs so this measure is cost effective. Electric Only.</td>
</tr>
</tbody>
</table>

As mentioned above, documentation associated with this screening is attached. If the PA’s and Lean determine they would like to offer these measures a determination will need to be made where the savings should be claimed electric or gas.
Review of MCHP systems
Kimberly Crossman, National Grid
Gail Azuley, NSTAR

Introduction:

Micro combined heat and power (MCHP) systems are designed to replace an existing warm air furnace. The system uses natural gas to provide heat and electricity to a home.

The systems screened here are the Climate Energy Freewatt systems. Savings and cost information was provided by Art Wilcox based on his analysis of 25 homes that participated in the pilot.

Based on Art’s analysis of the pilot data the average savings per home is 3,854 kWh and 158 therms. These systems were looked at from a retrofit perspective rather than time of replacement.

Approval for Use:
The benefits of the installed measure are greater than the cost using the following assumptions:

- Benefits are assigned dollar value based on current avoided costs.
- Measure lifetime is 15 years.
- Cost of the MCHP system (furnace and MCHP unit) is no more than $12,000 (total cost including installation, extended warranty and lifetime maintenance is $14,113)
- An annual avoided discount on reduced sales (Low Income NEB) of $0.24/therm and 2.728 cents/kWh were used when screening.
- A one time property value benefit is used based on the theory that energy efficiency investments improve the property value of low-income participants homes.

Unit Costs:
The average full cost of installing a system was $14,113:
$5,000 for the furnace
$7,000 for the generator
$1,600 for modifications to accommodate installations
$270 for the extended warranty
$243 for the lifetime maintenance cost for generator

Conclusions and Recommendations:
Measure is cost effective based on current information and average pilot program savings and costs.

---

1 Spreadsheet provided by Art Wilcox called Mchp_CE_5_26_10F3.xls
3 When a participant’s usage is reduced, the discount provided to the participant is also reduced. The benefit to the utility is the value of the participant’s kWh or therms savings multiplied by the per kWh or per therm discount. The difference between the R3 and R4 rate is $0.24/therm and the difference between the R2 and R1 rate is 2.728cents/kWh based on National Grid rates.
4 Value is calculated as annual savings per unit times avg. cost per kWh or therm times $20.70 increase in property value per $ of annual savings. The $20.70 property value increase per $ of annual energy savings is a report result supplied by J. Oppenheim. Avg cost of kWh is $0.1415/kWh and avg cost per therm is $1.27
Review of Indirect Water Heaters
Kimberly Crossman, National Grid
Gail Azuley, NSTAR

Introduction:
Indirect water heaters use a home's heating system to heat water. They’re part of what’s called integrated or combination water and space heating systems.

Indirect water heaters offer a more efficient choice for most homes, even though they require a storage tank. An indirect water heater uses the main boiler to heat a fluid that's circulated through a heat exchanger in the storage tank. The energy stored by the water tank allows the boiler to turn off and on less often, which saves energy. Therefore, an indirect water heater is used with a high-efficiency boiler and well-insulated tank can be the least expensive means of providing hot water.¹

Approval for Use:
The benefits of the installed measure are greater than the cost using the following assumptions for oil water heat:

- Benefits are assigned dollar value based on current avoided costs.²
- Measure lifetime is 20 years.³
- Annual energy savings of 5.44 MMBTU per year.⁴

The measure is not cost effective for gas water heating.

Unit Costs:
The installed cost of a unit is approximately $1,350.⁵

Conclusions and Recommendations:
Measure is cost effective when installing in conjunction with an oil boiler.

¹ http://www.eere.energy.gov/consumer/your_home/water_heating/index.cfm?mytopic=13020
³ Natural Gas Energy Efficiency Potential in Massachusetts: April 22, 2009 GDS Associates
Review of Window Quilts and Cellular Shades  
Kimberly Crossman, National Grid  
Gail Azulay, NSTAR

Introduction:

Window Quilts® and Cellular Shades are insulating window shades. They block air infiltration and temperature penetration.

Approval for Use:

The Window Quilt is NOT approved for use as the benefits are not greater than the costs. The Window Cellular Shade is approved for use only in electrically heated homes.

Unit Costs:

The cost for the Window Quilt Panel Quilt is $14 per sq ft. We assume an average window is 15 sq ft so the cost is $210 per window.\(^1\)

The cost for the Window Cellular Shade is $121. [NEED SOURCE FROM ART]

Conclusions and Recommendations:

These measures are not cost effective.

- Based on the brochure from Window Quilts a single pane window has an R-value of 0.87 and a Window Quilt would increase the R-value to 5.88. A cellular shade would increase the R-value to 4.1 [NEED SOURCE FROM ART]. To calculate therm savings the following formula was used:
  - Area (sq ft) \* (1/Initial R value - 1/Final R value) \*12 \*HDD/100,000 BTU/therm/AFUE
  - The quilt is assumed to be down 12 hours per day
  - AFUE is assumed to be 78%, federal standard for a furnace
  - HDD is assumed to be 6,000
  - A lifetime of 5 years was assumed
- Using the formula and assumptions above a quilt would save 13.5 therms and a cellular shade would save 12.5 therms. This is equivalent to 9.6 and 8.9 gallons of oil or 396 and 366 kWh, respectively.
- An annual avoided discount on reduced sales (Low Income NEB) of $0.24/therm\(^2\) was used when screening for gas heated homes.
- An annual avoided discount on reduced sales (Low Income NEB) of 2.728 cents/kWh\(^3\) was used when screening for electric heated homes.

---


\(^2\) When a participant's usage is reduced, the discount provided to the participant is also reduced. The benefit to the utility is the value of the participant's therms savings multiplied by the per therm discount. The difference between the R3 and R4 rate is $0.24/therm based on National Grid rates

\(^3\) When a participant's usage is reduced, the discount provided to the participant is also reduced. The benefit to the utility is the value of the participant's kWh savings multiplied by the per kWh discount. The difference between the R2 and R1 rate is 2.728cents/kWh based on National Grid rates.
Review of LED Down Light Fixtures
Gail Azulay, NSTAR
Kimberly Crossman, National Grid

**Introduction:**

The fixture is for one specific single bulb down/task lighting fixture. Product ranges from $35 - $120.

**Approval for Use:**

The LED down light fixture is approved for use as the benefits are greater than the costs.

**Unit Costs:**

The cost for the LED down light fixture is $40 material plus $120 labor.

[NEED LABOR SOURCE FROM ART]

**Conclusions and Recommendations:**

This measure is cost effective.

- Replacing a 75w fixture with a 6.0 LED down light (69w diff). To calculate savings the following formula was used:
  - The fixture is assumed to operate 4 hours per day; 365 days per year.
  - 69w/1000 * 1,460 hours of use = 101 kWh savings.
  - A lifetime of 25 years was assumed

- Using the formula and assumptions above an LED down light would save 101 kWh and .069 kW.
- An annual non resource avoided discount on reduced sales (Low Income NEB) of $3.90 was used.
- A one time non resource avoided discount on reduced sales (Low Income NEB) of $4.00 was used.
Review of Boiler Reset Controls (Low Income Gas)
Riley Hastings, NSTAR
Gail Azulay, NSTAR
Wendy Todd, National Grid

Introduction:
This technology works by monitoring the outdoor temperature and adjusting the frequency
with which the boiler responds to the demand. For example, on a relatively mild winter day,
the thermostat won’t call for heat as often, so the boiler will not need to work as hard. The
reset control adjusts the water supply temperature allowing it to drop to lower temperatures
before firing.

Approval for Use:
Outdoor boiler reset controls are NOT approved for use as the costs of the installed gas
measure are greater than the benefits using the following assumptions:

- Benefits are assigned dollar value based on current avoided costs.\(^1\)
- Measure lifetime is 5 years.\(^2\)
- Annual MMBTu savings of 7.9.\(^3\)

Unit Costs:
- The installed cost of a unit is approximately $600.\(^4\)

Non-Energy Benefits:
- Annual Low Income Monetary Savings difference between R4 and R3 rates of
  $0.25/therm or $19.75/participant. When a participant’s usage is reduced, the
discount provided to the participant is also reduced resulting in a benefit to the utility
of the value of the participant’s annual therm savings.

Conclusions and Recommendations:
Boiler reset controls are not cost effective...

- The TRC benefit-cost ratio is 0.97 slightly below 1.
- Using a 5 year measure life instead of a 15-year measure life from the CEEE Report
  because of the remaining life of the boilers in the low income housing on which these
  controls are being installed.
- Using a $600 installed unit cost instead of $500 from the CEEE Report because there
  are often additional costs to install this measure on older heating systems in low
  income housing stock.

---
\(^2\) Based on Art Wilcox’s discussions with the Best Practices committee a measure life of 5 years was determined to be more appropriate than
the measure life of 15 years from the “CEEE Emerging Technologies Report: Advanced Boiler Controls-2006” Report because of the remaining
life of the boilers in the low income housing on which these controls are being installed.
\(^4\) Based on Art Wilcox’s discussions with the Best Practices committee an installed cost of $600 was determined to be more appropriate than
the $500 cost from the “CEEE Emerging Technologies Report: Advanced Boiler Controls-2006” Report because there are often additional costs
to install this measure on older heating systems in low income housing stock.
Low-Income Metric #3

Multi-family Building Inventory
2010 Low Income Metric Three

NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas Company, Berkshire Gas Company and New England Gas Company are submitting this report to update the Low Income Energy Affordability Network (LEAN) on the status of the 2010 low income metric number three.

### 3. Multi-family Building Inventory

| Threshold | Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year effort will provide building square footage and at least a year of energy consumption data with respect to low-income buildings identified by LEAN. This information is now available only on a limited basis with respect to public housing authority buildings and barely at all for other non-profit-owned buildings. This will make it possible to pinpoint maximum achievable efficiency savings, as well as to refine rollout of the Low Income Multifamily Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8300 buildings of low-income multifamily housing in the Commonwealth. Each utility will support the inventory on an allocated basis.

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 350 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

<table>
<thead>
<tr>
<th>PA</th>
<th>% Allocation</th>
<th># of Buildings/Mth</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSTAR Electric</td>
<td>17%</td>
<td>43</td>
</tr>
<tr>
<td>NGRID Electric</td>
<td>23%</td>
<td>59</td>
</tr>
<tr>
<td>WMECO</td>
<td>6%</td>
<td>15</td>
</tr>
<tr>
<td>Unitil Electric</td>
<td>1%</td>
<td>1</td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td>9%</td>
<td>23</td>
</tr>
<tr>
<td>NGRID Gas</td>
<td>25%</td>
<td>63</td>
</tr>
<tr>
<td>Bay State Gas</td>
<td>13%</td>
<td>32</td>
</tr>
<tr>
<td>Berkshire Gas</td>
<td>2%</td>
<td>5</td>
</tr>
<tr>
<td>New England Gas</td>
<td>2%</td>
<td>4</td>
</tr>
<tr>
<td>Unitil Gas</td>
<td>1%</td>
<td>2</td>
</tr>
</tbody>
</table>
In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.

<table>
<thead>
<tr>
<th>Design</th>
<th>In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplary</td>
<td>By December 31, 2010, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to date about energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).</td>
</tr>
</tbody>
</table>

We believe that by completion and documentation of these tasks each utility has reached the level of the metric listed below.

NSTAR Electric & Gas – exemplary
National Grid – exemplary
Western Massachusetts Electric Company – exemplary
Unutil Service Company – did not participate in this metric
Berkshire Gas – did not participate in this metric
New England Gas – did not participate in this metric
Columbia Gas - Threshold

Respectfully submitted by:

Diane M. Lopes  
Residential Program Manager  
NSTAR Electric & Gas

Diane Duffy  
Senior Program Manager  
National Grid

Deborah E. Sas  
Senior Project Administrator  
Western Massachusetts Electric Company

Derek T. Kimball  
Residential Programs Coordinator  
Unutil Service Corporation

Kara A. Gray  
Program Manager  
Columbia Gas of Massachusetts

Robert Gyurjan  
Lead Analyst – Energy Services  
The Berkshire Gas Company

Jeanne B. Cherry  
Lead Energy Efficiency Programs Administrator  
New England Gas Company
Metric 3: Multi-Family Building Inventory

In coordination with LEAN, the PAs will develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects.

Metric Achievements

THRESHOLD
- Contracted with, through LEAN, New Ecology to develop this building inventory metric
- New Ecology selected by LEAN based on memo by Tohn Environmental Strategies
- Developed the scope, design and contracting for the inventory
- Approved the WEGOWise application used in the multi-family program
- Began project in September 2010

DESIGN
In coordination with LEAN, each PA implemented the Inventory in its service territory.

EXEMPLARY

Received status report (attached) of the implementation of the Inventory, together with recommendations going forward from New Ecology by due date of December 31, 2010.

<table>
<thead>
<tr>
<th>PA</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkshire Gas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Columbia Gas</td>
<td>0</td>
<td>0</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>National Grid Electric</td>
<td>59</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>National Grid Gas</td>
<td>63</td>
<td>63</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>New England Gas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NSTAR Electric</td>
<td>43</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>NSTAR Gas</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Unitil Electric</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unitil Gas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>WMECO</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>18</td>
</tr>
</tbody>
</table>
Glossary of Terms

Total sqft
Includes all conditioned and unconditioned common areas, tenant units and basement

Conditioned sqft
Includes all conditioned common areas, tenant units and basements only if basement is finished AND heated

Common area sqft
Includes all conditioned and unconditioned common areas and basement and excludes only tenant unit square footage

Btu/Conditioned sqft
Total annual Btus divided by conditioned square footage

Annual Therms
Total annual therms

Therms/sqft
Total annual therms divided by conditioned square footage

kwh/common area sqft
Total annual kwh divided by common area if building electric meter covers only common areas. Total annual kwh divided by common area if building electric meter covers only common areas. If a building's common area electric meters include significant outdoor lighting this number can be artificially high.

kwh/bldg sqft
Total annual kwh divided by total building square footage if electricity is master metered and covers whole building or if all tenant meters are being tracked as well as common areas
<table>
<thead>
<tr>
<th>Address</th>
<th>Customer ID</th>
<th>Account ID</th>
<th>Service Type</th>
<th>Service Area</th>
<th>Meter Type</th>
<th>Meter Size</th>
<th>Meter Serial Number</th>
<th>Meter Location</th>
<th>Meter Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>123 456</td>
<td>A123456789</td>
<td>876543210</td>
<td>Residential</td>
<td>Boston</td>
<td>1</td>
<td>0.5</td>
<td>123456789</td>
<td>South Boston</td>
<td>Excellent</td>
</tr>
<tr>
<td>789 012</td>
<td>9876543210</td>
<td>210987654</td>
<td>Commercial</td>
<td>Cambridge</td>
<td>2</td>
<td>1.5</td>
<td>210987654</td>
<td>East Cambridge</td>
<td>Good</td>
</tr>
<tr>
<td>345 678</td>
<td>ABCDEF1234</td>
<td>432109876</td>
<td>Industrial</td>
<td>Lowell</td>
<td>3</td>
<td>2.0</td>
<td>345678901</td>
<td>West Lowell</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

*Note: The above table is an example of the data format.*
Columbia Gas of Massachusetts
2010 Energy Efficiency Annual Report
August 15, 2011
Attachment D-2(b)
Page 140 of 173


<table>
<thead>
<tr>
<th>District</th>
<th>Year</th>
<th>Total Gas Usage (Mcf)</th>
<th>Total Energy Use (Mmbtu)</th>
<th>Energy Efficiency Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2010</td>
<td>9117</td>
<td>7092</td>
<td>0.912</td>
</tr>
<tr>
<td>2</td>
<td>2010</td>
<td>10205</td>
<td>7279</td>
<td>1.218</td>
</tr>
<tr>
<td>3</td>
<td>2010</td>
<td>7263</td>
<td>5071</td>
<td>1.053</td>
</tr>
<tr>
<td>4</td>
<td>2010</td>
<td>7278</td>
<td>5086</td>
<td>0.777</td>
</tr>
<tr>
<td>5</td>
<td>2010</td>
<td>14202</td>
<td>10415</td>
<td>0.778</td>
</tr>
<tr>
<td>6</td>
<td>2010</td>
<td>6254</td>
<td>4170</td>
<td>0.819</td>
</tr>
<tr>
<td>7</td>
<td>2010</td>
<td>3385</td>
<td>2449</td>
<td>0.485</td>
</tr>
<tr>
<td>8</td>
<td>2010</td>
<td>3385</td>
<td>2449</td>
<td>0.485</td>
</tr>
<tr>
<td>9</td>
<td>2010</td>
<td>3600</td>
<td>2686</td>
<td>1.511</td>
</tr>
<tr>
<td>10</td>
<td>2010</td>
<td>6777</td>
<td>4806</td>
<td>1.303</td>
</tr>
<tr>
<td>11</td>
<td>2010</td>
<td>8136</td>
<td>5636</td>
<td>1.336</td>
</tr>
<tr>
<td>12</td>
<td>2010</td>
<td>12820</td>
<td>8381</td>
<td>1.363</td>
</tr>
<tr>
<td>13</td>
<td>2010</td>
<td>1036</td>
<td>1036</td>
<td>0.538</td>
</tr>
<tr>
<td>14</td>
<td>2010</td>
<td>3972</td>
<td>2648</td>
<td>0.652</td>
</tr>
<tr>
<td>15</td>
<td>2010</td>
<td>2749</td>
<td>2195</td>
<td>0.817</td>
</tr>
<tr>
<td>16</td>
<td>2010</td>
<td>70978</td>
<td>58000</td>
<td>0.550</td>
</tr>
<tr>
<td>17</td>
<td>2010</td>
<td>41123</td>
<td>16823</td>
<td>0.423</td>
</tr>
<tr>
<td>18</td>
<td>2010</td>
<td>9670</td>
<td>7736</td>
<td>0.781</td>
</tr>
<tr>
<td>19</td>
<td>2010</td>
<td>9272</td>
<td>7272</td>
<td>0.781</td>
</tr>
<tr>
<td>20</td>
<td>2010</td>
<td>10862</td>
<td>7950</td>
<td>1.261</td>
</tr>
<tr>
<td>21</td>
<td>2010</td>
<td>9670</td>
<td>7736</td>
<td>0.781</td>
</tr>
<tr>
<td>22</td>
<td>2010</td>
<td>3980</td>
<td>2980</td>
<td>1.252</td>
</tr>
<tr>
<td>23</td>
<td>2010</td>
<td>6092</td>
<td>5092</td>
<td>1.122</td>
</tr>
<tr>
<td>24</td>
<td>2010</td>
<td>3572</td>
<td>2572</td>
<td>1.302</td>
</tr>
<tr>
<td>25</td>
<td>2010</td>
<td>5077</td>
<td>4077</td>
<td>1.168</td>
</tr>
<tr>
<td>26</td>
<td>2010</td>
<td>5976</td>
<td>4976</td>
<td>1.377</td>
</tr>
<tr>
<td>27</td>
<td>2010</td>
<td>5976</td>
<td>4976</td>
<td>1.377</td>
</tr>
<tr>
<td>28</td>
<td>2010</td>
<td>5508</td>
<td>5508</td>
<td>0.703</td>
</tr>
<tr>
<td>29</td>
<td>2010</td>
<td>5508</td>
<td>5508</td>
<td>0.703</td>
</tr>
<tr>
<td>30</td>
<td>2010</td>
<td>5508</td>
<td>5508</td>
<td>0.703</td>
</tr>
<tr>
<td>31</td>
<td>2010</td>
<td>5508</td>
<td>5508</td>
<td>0.703</td>
</tr>
<tr>
<td>32</td>
<td>2010</td>
<td>2475</td>
<td>2475</td>
<td>0.887</td>
</tr>
<tr>
<td>33</td>
<td>2010</td>
<td>2475</td>
<td>2475</td>
<td>0.887</td>
</tr>
<tr>
<td>34</td>
<td>2010</td>
<td>2475</td>
<td>2475</td>
<td>0.887</td>
</tr>
<tr>
<td>35</td>
<td>2010</td>
<td>2475</td>
<td>2475</td>
<td>0.887</td>
</tr>
<tr>
<td>36</td>
<td>2010</td>
<td>2580</td>
<td>2580</td>
<td>1.103</td>
</tr>
<tr>
<td>37</td>
<td>2010</td>
<td>2552</td>
<td>2552</td>
<td>1.036</td>
</tr>
<tr>
<td>38</td>
<td>2010</td>
<td>3670</td>
<td>3670</td>
<td>1.196</td>
</tr>
<tr>
<td>39</td>
<td>2010</td>
<td>3059</td>
<td>3059</td>
<td>1.196</td>
</tr>
<tr>
<td>40</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>1.114</td>
</tr>
<tr>
<td>41</td>
<td>2010</td>
<td>4500</td>
<td>3500</td>
<td>1.242</td>
</tr>
<tr>
<td>42</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>1.103</td>
</tr>
<tr>
<td>43</td>
<td>2010</td>
<td>4078</td>
<td>3078</td>
<td>1.103</td>
</tr>
<tr>
<td>44</td>
<td>2010</td>
<td>3000</td>
<td>2200</td>
<td>1.074</td>
</tr>
<tr>
<td>45</td>
<td>2010</td>
<td>4572</td>
<td>3672</td>
<td>1.074</td>
</tr>
<tr>
<td>46</td>
<td>2010</td>
<td>10160</td>
<td>9660</td>
<td>0.896</td>
</tr>
<tr>
<td>47</td>
<td>2010</td>
<td>8225</td>
<td>7725</td>
<td>0.907</td>
</tr>
<tr>
<td>48</td>
<td>2010</td>
<td>5840</td>
<td>4840</td>
<td>1.015</td>
</tr>
<tr>
<td>49</td>
<td>2010</td>
<td>4840</td>
<td>3840</td>
<td>1.132</td>
</tr>
<tr>
<td>50</td>
<td>2010</td>
<td>3670</td>
<td>3670</td>
<td>0.936</td>
</tr>
<tr>
<td>51</td>
<td>2010</td>
<td>3159</td>
<td>3159</td>
<td>0.936</td>
</tr>
<tr>
<td>52</td>
<td>2010</td>
<td>3059</td>
<td>3059</td>
<td>0.936</td>
</tr>
<tr>
<td>53</td>
<td>2010</td>
<td>3421</td>
<td>3421</td>
<td>0.936</td>
</tr>
<tr>
<td>54</td>
<td>2010</td>
<td>3839</td>
<td>3839</td>
<td>0.936</td>
</tr>
<tr>
<td>55</td>
<td>2010</td>
<td>3159</td>
<td>3159</td>
<td>0.936</td>
</tr>
<tr>
<td>56</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>57</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>58</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>59</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>60</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>61</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>62</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>63</td>
<td>2010</td>
<td>3978</td>
<td>3078</td>
<td>0.936</td>
</tr>
<tr>
<td>Location</td>
<td>Address</td>
<td>Town</td>
<td>National Grid</td>
<td>Monthly Total kWh</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------</td>
<td>------</td>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>50-52 Andrew St.</td>
<td>50-52 Andrew St.</td>
<td>Lynn</td>
<td>48</td>
<td>32407</td>
</tr>
<tr>
<td>Middlesex St. LP</td>
<td>56 Middlesex St.</td>
<td>Lowell</td>
<td>24</td>
<td>23965</td>
</tr>
<tr>
<td>Turtle Woods</td>
<td>299 Essex St.</td>
<td>Beverly</td>
<td>67</td>
<td>19599</td>
</tr>
<tr>
<td>Turtle Creek</td>
<td>401 Essex St.</td>
<td>Beverly</td>
<td>110</td>
<td>18333</td>
</tr>
<tr>
<td>Saugus Commons</td>
<td>10-12 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>16482</td>
</tr>
<tr>
<td>7 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>8 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>9 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>10 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>11 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>12 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>13 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>14 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>15 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>16 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>17 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>18 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>19 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>20 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>21 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>22 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>23 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>24 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>25 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>26 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>27 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>28 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>29 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>30 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>31 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>32 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>33 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>34 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>35 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>36 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>37 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>38 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>39 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>40 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>41 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>42 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>43 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>44 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>45 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>46 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>47 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>48 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>49 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>50 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>51 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>52 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>53 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>54 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>55 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>56 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>57 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>58 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
<tr>
<td>59 Newhall Ave</td>
<td>Saugus</td>
<td>24</td>
<td>18333</td>
<td>18333</td>
</tr>
</tbody>
</table>

Columbia Gas of Massachusetts
2010 Energy Efficiency Annual Report
August 15, 2011
Attachment D-2(b)
Page 146 of 173
<table>
<thead>
<tr>
<th>Address</th>
<th>City</th>
<th>Status</th>
<th>Month</th>
<th>Amount</th>
<th>Yr</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-22 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$12700</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>11-13 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$12250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>12-14 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$12000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>13-15 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$11750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>14-16 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$11500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>15-17 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$11250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>16-18 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$11000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>17-19 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$10750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>18-20 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$10500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>19-21 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$10250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>20-22 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$10000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>21-23 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$9750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>22-24 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$9500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>23-25 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$9250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>24-26 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$9000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>25-27 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$8750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>26-28 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$8500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>27-29 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$8250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>28-30 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$8000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>29-31 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$7750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>30-32 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$7500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>31-33 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$7250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>32-34 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$7000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>33-35 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$6750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>34-36 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$6500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>35-37 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$6250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>36-38 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$6000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>37-39 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$5750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>38-40 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$5500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>39-41 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$5250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>40-42 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$5000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>41-43 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$4750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>42-44 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$4500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>43-45 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$4250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>44-46 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$4000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>45-47 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$3750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>46-48 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$3500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>47-49 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$3250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>48-50 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$3000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>49-51 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$2750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>50-52 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$2500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>51-53 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$2250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>52-54 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$2000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>53-55 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$1750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>54-56 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$1500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>55-57 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$1250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>56-58 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$1000</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>57-59 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$750</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>58-60 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$500</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>1-3 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$350</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>2-4 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$325</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>3-5 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$300</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>4-6 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$275</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>5-7 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$250</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>6-8 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$225</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>7-9 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$200</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>8-10 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$175</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>9-11 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$150</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>10-12 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$125</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>11-13 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$100</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>12-14 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$75</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>13-15 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$50</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>14-16 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$25</td>
<td>2010</td>
<td>N/A</td>
</tr>
<tr>
<td>15-17 Fieldstone St</td>
<td>Salem</td>
<td>pending</td>
<td>12</td>
<td>$0</td>
<td>2010</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Columbia Gas of Massachusetts
2010 Energy Efficiency Annual Report
August 15, 2011
Attachment D-2(b)
<table>
<thead>
<tr>
<th>E</th>
<th>Address</th>
<th>Location</th>
<th>NGID</th>
<th>Gas Rate</th>
<th>Rate N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>George T. Booth Apartments 16 Haven Lane 10</td>
<td>Worcester</td>
<td>3737</td>
<td>3737</td>
<td>3737</td>
</tr>
<tr>
<td>2</td>
<td>George T. Booth Apartments 16 Haven Lane 11 (community bldg)</td>
<td>Worcester</td>
<td>3737</td>
<td>3737</td>
<td>3737</td>
</tr>
<tr>
<td>3</td>
<td>Lakeside Apartments 2 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>4</td>
<td>Lakeside Apartments 4 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>5</td>
<td>Lakeside Apartments 6 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>6</td>
<td>Lakeside Apartments 8 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>7</td>
<td>Lakeside Apartments 10 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>8</td>
<td>Lakeside Apartments 12 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>9</td>
<td>Lakeside Apartments 14 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>10</td>
<td>Lakeside Apartments 16 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>11</td>
<td>Lakeside Apartments 18 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>12</td>
<td>Lakeside Apartments 20 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>13</td>
<td>Lakeside Apartments 22 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>14</td>
<td>Lakeside Apartments 24 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>15</td>
<td>Lakeside Apartments 26 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>16</td>
<td>Lakeside Apartments 28 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>17</td>
<td>Lakeside Apartments 30 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>18</td>
<td>Lakeside Apartments 32 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>19</td>
<td>Lakeside Apartments 34 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>20</td>
<td>Lakeside Apartments 36 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>21</td>
<td>Lakeside Apartments 38 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>22</td>
<td>Lakeside Apartments 40 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>23</td>
<td>Lakeside Apartments 42 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>24</td>
<td>Lakeside Apartments 44 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>25</td>
<td>Lakeside Apartments 46 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>26</td>
<td>Lakeside Apartments 48 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>27</td>
<td>Lakeside Apartments 50 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>28</td>
<td>Lakeside Apartments 52 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>29</td>
<td>Lakeside Apartments 54 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>30</td>
<td>Lakeside Apartments 56 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>31</td>
<td>Lakeside Apartments 58 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>32</td>
<td>Lakeside Apartments 60 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>33</td>
<td>Lakeside Apartments 62 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>34</td>
<td>Lakeside Apartments 64 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>35</td>
<td>Lakeside Apartments 66 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>36</td>
<td>Lakeside Apartments 68 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>37</td>
<td>Lakeside Apartments 70 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>38</td>
<td>Lakeside Apartments 72 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>39</td>
<td>Lakeside Apartments 74 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>40</td>
<td>Lakeside Apartments 76 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>41</td>
<td>Lakeside Apartments 78 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>42</td>
<td>Lakeside Apartments 80 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>43</td>
<td>Lakeside Apartments 82 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>44</td>
<td>Lakeside Apartments 84 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>45</td>
<td>Lakeside Apartments 86 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>46</td>
<td>Lakeside Apartments 88 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>47</td>
<td>Lakeside Apartments 90 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>48</td>
<td>Lakeside Apartments 92 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>49</td>
<td>Lakeside Apartments 94 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>50</td>
<td>Lakeside Apartments 96 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>51</td>
<td>Lakeside Apartments 98 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>52</td>
<td>Lakeside Apartments 100 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>53</td>
<td>Lakeside Apartments 102 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>54</td>
<td>Lakeside Apartments 104 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>55</td>
<td>Lakeside Apartments 106 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>56</td>
<td>Lakeside Apartments 108 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>57</td>
<td>Lakeside Apartments 110 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>58</td>
<td>Lakeside Apartments 112 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>59</td>
<td>Lakeside Apartments 114 Lakeside</td>
<td>Worcester</td>
<td>6330</td>
<td>6330</td>
<td>6330</td>
</tr>
<tr>
<td>Property</td>
<td>Street Name</td>
<td>Unit</td>
<td>City</td>
<td>Field 7</td>
<td>Field 8</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------</td>
<td>------</td>
<td>--------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>1</td>
<td>Maple Terrace</td>
<td>12a-14d Thelma Ave</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>5000</td>
</tr>
<tr>
<td>2</td>
<td>Oakhurst</td>
<td>65-67-79 Soi Attleboro</td>
<td>Attleboro</td>
<td>0</td>
<td>Ngrid</td>
</tr>
<tr>
<td>3</td>
<td>South Ave</td>
<td>0</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>1260</td>
</tr>
<tr>
<td>4</td>
<td>5, 6, 7, 8 Soi Attleboro</td>
<td>16</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>8400</td>
</tr>
<tr>
<td>5</td>
<td>1, 2, 3 Soi Attleboro</td>
<td>16</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>8400</td>
</tr>
<tr>
<td>6</td>
<td>12 ABCD-14 Attleboro</td>
<td>8</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>4200</td>
</tr>
<tr>
<td>7</td>
<td>5-7 Nickerson Attleboro</td>
<td>8</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>4200</td>
</tr>
<tr>
<td>8</td>
<td>49-63 South Attleboro</td>
<td>8</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>3300</td>
</tr>
<tr>
<td>9</td>
<td>27 - 41 South Attleboro</td>
<td>8</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>4200</td>
</tr>
<tr>
<td>10</td>
<td>15, 17, 23, 2 Attleboro</td>
<td>4</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>4200</td>
</tr>
<tr>
<td>11</td>
<td>3, 3, 9, 7, 11 Attleboro</td>
<td>6</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>4200</td>
</tr>
<tr>
<td>12</td>
<td>568, 572, 574 Attleboro</td>
<td>16</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>8400</td>
</tr>
<tr>
<td>13</td>
<td>582, 584, 586 Attleboro</td>
<td>4</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>1680</td>
</tr>
<tr>
<td>14</td>
<td>1-3 Nickerson Attleboro</td>
<td>8</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>4200</td>
</tr>
<tr>
<td>15</td>
<td>9, 10 South Attleboro</td>
<td>8</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>4200</td>
</tr>
<tr>
<td>16</td>
<td>Brookside</td>
<td>41 North Ave</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>53080</td>
</tr>
<tr>
<td>17</td>
<td>Rivercourt</td>
<td>Rivercourt, Rivercourt</td>
<td>Attleboro</td>
<td>Ngrid</td>
<td>44675</td>
</tr>
<tr>
<td>18</td>
<td>Chestnut Court</td>
<td>E2</td>
<td>Andover</td>
<td>Ngrid</td>
<td>9108.00</td>
</tr>
<tr>
<td>19</td>
<td>Andover</td>
<td>E1</td>
<td>Andover</td>
<td>Ngrid</td>
<td>9108.00</td>
</tr>
<tr>
<td>20</td>
<td>Andover</td>
<td>E3</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4588.00</td>
</tr>
<tr>
<td>21</td>
<td>Andover</td>
<td>E4</td>
<td>Andover</td>
<td>Ngrid</td>
<td>3100.00</td>
</tr>
<tr>
<td>22</td>
<td>Andover</td>
<td>E5</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4588.00</td>
</tr>
<tr>
<td>23</td>
<td>Grandview Terrace</td>
<td>E7</td>
<td>Andover</td>
<td>Ngrid</td>
<td>10000.00</td>
</tr>
<tr>
<td>24</td>
<td>Andover</td>
<td>E6</td>
<td>Andover</td>
<td>Ngrid</td>
<td>10000.00</td>
</tr>
<tr>
<td>25</td>
<td>Frye Circle</td>
<td>255 North Ave</td>
<td>Andover</td>
<td>Ngrid</td>
<td>1508.00</td>
</tr>
<tr>
<td>26</td>
<td>255 North Ave</td>
<td>10</td>
<td>Andover</td>
<td>Ngrid</td>
<td>6912.00</td>
</tr>
<tr>
<td>27</td>
<td>255 North Ave</td>
<td>10</td>
<td>Andover</td>
<td>Ngrid</td>
<td>6912.00</td>
</tr>
<tr>
<td>28</td>
<td>255 North Ave</td>
<td>10</td>
<td>Andover</td>
<td>Ngrid</td>
<td>6912.00</td>
</tr>
<tr>
<td>29</td>
<td>255 North Ave</td>
<td>10</td>
<td>Andover</td>
<td>Ngrid</td>
<td>6912.00</td>
</tr>
<tr>
<td>30</td>
<td>255 North Ave</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4608.00</td>
</tr>
<tr>
<td>31</td>
<td>255 North Ave</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4608.00</td>
</tr>
<tr>
<td>32</td>
<td>255 North Ave</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4608.00</td>
</tr>
<tr>
<td>33</td>
<td>255 North Ave</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4608.00</td>
</tr>
<tr>
<td>34</td>
<td>256 North Ave</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4608.00</td>
</tr>
<tr>
<td>35</td>
<td>256 North Ave</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4608.00</td>
</tr>
<tr>
<td>36</td>
<td>256 North Ave</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4608.00</td>
</tr>
<tr>
<td>37</td>
<td>Community Rd</td>
<td>5</td>
<td>Andover</td>
<td>Ngrid</td>
<td>7000.00</td>
</tr>
<tr>
<td>38</td>
<td>Main St</td>
<td>10</td>
<td>Andover</td>
<td>Ngrid</td>
<td>6912.00</td>
</tr>
<tr>
<td>39</td>
<td>Stowe Court</td>
<td>100 Morton St</td>
<td>Andover</td>
<td>Ngrid</td>
<td>35625.00</td>
</tr>
<tr>
<td>40</td>
<td>100 Morton St</td>
<td>1</td>
<td>Andover</td>
<td>Ngrid</td>
<td>12000.00</td>
</tr>
<tr>
<td>41</td>
<td>Kennedy Drive</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>42</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>43</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>44</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>45</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>46</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>47</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>48</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>49</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>50</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>51</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>52</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>53</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>54</td>
<td>Kennedy Dr - Brockton</td>
<td>8</td>
<td>Andover</td>
<td>Ngrid</td>
<td>4324</td>
</tr>
<tr>
<td>55</td>
<td>Aylor Court</td>
<td>125 Aylor St</td>
<td>Brockton</td>
<td>Ngrid</td>
<td>18900.00</td>
</tr>
<tr>
<td>56</td>
<td>Aylor Court</td>
<td>125 Aylor St</td>
<td>Brockton</td>
<td>Ngrid</td>
<td>18900.00</td>
</tr>
<tr>
<td>57</td>
<td>Rainbow Terrace</td>
<td>669 North Rd</td>
<td>Brockton</td>
<td>Ngrid</td>
<td>11904.00</td>
</tr>
<tr>
<td>58</td>
<td>Rainbow Terrace</td>
<td>669 North Rd</td>
<td>Brockton</td>
<td>Ngrid</td>
<td>11904.00</td>
</tr>
<tr>
<td>59</td>
<td>Rainbow Terrace</td>
<td>669 North Rd</td>
<td>Brockton</td>
<td>Ngrid</td>
<td>11904.00</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>City</td>
<td>Total H2</td>
<td>Conditioned H2</td>
<td>Common Area H2</td>
</tr>
<tr>
<td>---</td>
<td>----------------</td>
<td>----------</td>
<td>----------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>1</td>
<td>East Gate</td>
<td>Springfield</td>
<td>10</td>
<td>15130</td>
<td>10402</td>
</tr>
<tr>
<td>2</td>
<td>55 Bay Meadow</td>
<td>Springfield</td>
<td>20</td>
<td>21043</td>
<td>14467</td>
</tr>
<tr>
<td>3</td>
<td>5 Bay Meadow</td>
<td>Springfield</td>
<td>16</td>
<td>22796</td>
<td>15672</td>
</tr>
<tr>
<td>4</td>
<td>42 Bay Meadow</td>
<td>Springfield</td>
<td>14</td>
<td>17536</td>
<td>12056</td>
</tr>
<tr>
<td>5</td>
<td>6-18 Bay Meadow</td>
<td>Springfield</td>
<td>12</td>
<td>18086</td>
<td>12434</td>
</tr>
<tr>
<td>6</td>
<td>20 Bay Meadow</td>
<td>Springfield</td>
<td>14</td>
<td>17536</td>
<td>12056</td>
</tr>
<tr>
<td>7</td>
<td>60 Bay Meadow</td>
<td>Springfield</td>
<td>12</td>
<td>22144</td>
<td>15224</td>
</tr>
<tr>
<td>8</td>
<td>1306 Bay Meadow</td>
<td>Springfield</td>
<td>14</td>
<td>21593</td>
<td>14845</td>
</tr>
<tr>
<td>9</td>
<td>56 Bay Meadow</td>
<td>Springfield</td>
<td>8</td>
<td>9645</td>
<td>6631</td>
</tr>
<tr>
<td>10</td>
<td>1266 Bay St.</td>
<td>Springfield</td>
<td>10</td>
<td>14029</td>
<td>9645</td>
</tr>
<tr>
<td>11</td>
<td>82 Bay Meadow</td>
<td>Springfield</td>
<td>9</td>
<td>12826</td>
<td>8818</td>
</tr>
<tr>
<td>12</td>
<td>1292 Bay St.</td>
<td>Springfield</td>
<td>9</td>
<td>16006</td>
<td>11004</td>
</tr>
<tr>
<td>13</td>
<td>Better Homes Tapley</td>
<td>Springfield</td>
<td>30</td>
<td>49056</td>
<td>35202</td>
</tr>
<tr>
<td>14</td>
<td>Center City Housing</td>
<td>Springfield</td>
<td>8</td>
<td>8700</td>
<td>7000</td>
</tr>
<tr>
<td>15</td>
<td>22-24 Winthrop</td>
<td>Springfield</td>
<td>16</td>
<td>19907</td>
<td>15869</td>
</tr>
<tr>
<td>Address</td>
<td>Size (sq ft)</td>
<td>EFY</td>
<td>Energy Savings (KWH)</td>
<td>Weatherization Cost</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------</td>
<td>---------</td>
<td>----------------------</td>
<td>---------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Chesterfield Hotel</td>
<td>10600</td>
<td>6999</td>
<td>3884</td>
<td>2.52</td>
<td>N/A</td>
</tr>
<tr>
<td>20 St James</td>
<td>11504</td>
<td>9228</td>
<td>2976</td>
<td>5.25</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah Heights</td>
<td>1804</td>
<td>1647</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-1</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-2</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-3</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-4</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-5</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-6</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-7</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Wahconah St 335-8</td>
<td>4100</td>
<td>3943</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Community Room</td>
<td>1734</td>
<td>1577</td>
<td>106</td>
<td>3.02</td>
<td>N/A</td>
</tr>
<tr>
<td>Francis Plaza</td>
<td>5014</td>
<td>5014</td>
<td>106</td>
<td>8.80</td>
<td>N/A</td>
</tr>
<tr>
<td>#</td>
<td>Location</td>
<td>Electric Usage</td>
<td>Gas Usage</td>
<td>Conditioned or Unconditioned Gas Use</td>
<td>Gas SIU</td>
</tr>
<tr>
<td>----</td>
<td>------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>--------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>1</td>
<td>Francis Plaza</td>
<td>8 WMECO</td>
<td>4100</td>
<td>4100</td>
<td>8.60</td>
</tr>
<tr>
<td>2</td>
<td>Francis Ave - 2</td>
<td>8 WMECO</td>
<td>4100</td>
<td>4100</td>
<td>8.60</td>
</tr>
<tr>
<td>3</td>
<td>Francis Ave - 4</td>
<td>8 WMECO</td>
<td>5014</td>
<td>5014</td>
<td>8.60</td>
</tr>
<tr>
<td>4</td>
<td>Francis Ave - 5</td>
<td>8 WMECO</td>
<td>5014</td>
<td>5014</td>
<td>8.60</td>
</tr>
<tr>
<td>5</td>
<td>Francis Ave - 6</td>
<td>8 WMECO</td>
<td>1394</td>
<td>1394</td>
<td>8.60</td>
</tr>
<tr>
<td>6</td>
<td>Rose Manor</td>
<td>12 WMECO</td>
<td>7872</td>
<td>7872</td>
<td>14.39</td>
</tr>
<tr>
<td>7</td>
<td>Elberon Ave - 1</td>
<td>9 WMECO</td>
<td>7200</td>
<td>7200</td>
<td>14.39</td>
</tr>
<tr>
<td>8</td>
<td>Elberon Ave - 10</td>
<td>4 WMECO</td>
<td>1800</td>
<td>1800</td>
<td>14.39</td>
</tr>
<tr>
<td>9</td>
<td>Elberon Ave - 12</td>
<td>8 WMECO</td>
<td>5320</td>
<td>5320</td>
<td>14.39</td>
</tr>
<tr>
<td>10</td>
<td>Elberon Ave - 13</td>
<td>8 WMECO</td>
<td>4368</td>
<td>4368</td>
<td>14.39</td>
</tr>
<tr>
<td>11</td>
<td>Elberon Ave - 14</td>
<td>8 WMECO</td>
<td>4208</td>
<td>4208</td>
<td>14.39</td>
</tr>
<tr>
<td>12</td>
<td>Elberon Ave - 15</td>
<td>8 WMECO</td>
<td>5238</td>
<td>5238</td>
<td>14.39</td>
</tr>
<tr>
<td>13</td>
<td>Elberon Ave - 16</td>
<td>8 WMECO</td>
<td>3780</td>
<td>3780</td>
<td>14.39</td>
</tr>
<tr>
<td>14</td>
<td>Elberon Ave - 17</td>
<td>8 WMECO</td>
<td>7872</td>
<td>7872</td>
<td>14.39</td>
</tr>
<tr>
<td>15</td>
<td>Elberon Ave - 2</td>
<td>12 WMECO</td>
<td>7872</td>
<td>7872</td>
<td>14.39</td>
</tr>
<tr>
<td>#</td>
<td>Project Name</td>
<td>City</td>
<td>Address</td>
<td>EE Co.</td>
<td>Total Kwh</td>
</tr>
<tr>
<td>----</td>
<td>------------------</td>
<td>------------</td>
<td>-------------</td>
<td>-------</td>
<td>----------</td>
</tr>
<tr>
<td>1</td>
<td>Rose Manor</td>
<td>Pittsfield</td>
<td>Elberon Ave</td>
<td>WMCO</td>
<td>7872</td>
</tr>
<tr>
<td>2</td>
<td>Elberon Ave</td>
<td>Pittsfield</td>
<td>Elberon Ave</td>
<td>WMCO</td>
<td>7872</td>
</tr>
<tr>
<td>3</td>
<td>Elberon Ave</td>
<td>Pittsfield</td>
<td>Elberon Ave</td>
<td>WMCO</td>
<td>7872</td>
</tr>
<tr>
<td>4</td>
<td>Elberon Ave</td>
<td>Pittsfield</td>
<td>Elberon Ave</td>
<td>WMCO</td>
<td>7872</td>
</tr>
<tr>
<td>5</td>
<td>Elberon Ave</td>
<td>Pittsfield</td>
<td>Elberon Ave</td>
<td>WMCO</td>
<td>7872</td>
</tr>
<tr>
<td>6</td>
<td>Elberon Ave</td>
<td>Pittsfield</td>
<td>Elberon Ave</td>
<td>WMCO</td>
<td>7872</td>
</tr>
<tr>
<td>7</td>
<td>Elberon Ave</td>
<td>Pittsfield</td>
<td>Elberon Ave</td>
<td>WMCO</td>
<td>7872</td>
</tr>
<tr>
<td>8</td>
<td>Providence Court</td>
<td>Pittsfield</td>
<td>Providence</td>
<td>WMCO</td>
<td>88500</td>
</tr>
<tr>
<td>9</td>
<td>Providence Court</td>
<td>Pittsfield</td>
<td>Providence</td>
<td>WMCO</td>
<td>9000</td>
</tr>
<tr>
<td>10</td>
<td>Chestnut Court</td>
<td>Amherst</td>
<td>Chestnut C</td>
<td>WMCO</td>
<td>3680</td>
</tr>
<tr>
<td>11</td>
<td>Chestnut C</td>
<td>Amherst</td>
<td>Chestnut C</td>
<td>WMCO</td>
<td>3905</td>
</tr>
<tr>
<td>12</td>
<td>Chestnut C</td>
<td>Amherst</td>
<td>Chestnut C</td>
<td>WMCO</td>
<td>3905</td>
</tr>
<tr>
<td>13</td>
<td>Chestnut C</td>
<td>Amherst</td>
<td>Chestnut C</td>
<td>WMCO</td>
<td>1730</td>
</tr>
<tr>
<td>14</td>
<td>Chestnut C</td>
<td>Amherst</td>
<td>Chestnut C</td>
<td>WMCO</td>
<td>1730</td>
</tr>
<tr>
<td>15</td>
<td>Ann Whalen</td>
<td>Amherst</td>
<td>33 Kellogg</td>
<td>WMCO</td>
<td>69175</td>
</tr>
<tr>
<td>16</td>
<td>Jean Bider (Congregate)</td>
<td>Amherst</td>
<td>9 Chestnut S</td>
<td>WMCO</td>
<td>14742</td>
</tr>
<tr>
<td>#</td>
<td>Patient Name</td>
<td>Address</td>
<td>City</td>
<td># Units</td>
<td>Total Sf</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>---------</td>
<td>------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>1</td>
<td>Eastgate</td>
<td>100 Baymeadow Rd.</td>
<td>Springfield</td>
<td>1</td>
<td>3598</td>
</tr>
<tr>
<td>2</td>
<td>3306 Bay Street</td>
<td>Springfield</td>
<td>14</td>
<td>21393</td>
<td>14845</td>
</tr>
<tr>
<td>3</td>
<td>1292 Bay Street</td>
<td>Springfield</td>
<td>9</td>
<td>16006</td>
<td>11004</td>
</tr>
<tr>
<td>4</td>
<td>5 Bay Meadow</td>
<td>Springfield</td>
<td>16</td>
<td>22796</td>
<td>15672</td>
</tr>
<tr>
<td>5</td>
<td>2666 Bay St</td>
<td>Springfield</td>
<td>10</td>
<td>14029</td>
<td>9645</td>
</tr>
<tr>
<td>6</td>
<td>6-16 Bay Meadow Rd</td>
<td>Springfield</td>
<td>12</td>
<td>18096</td>
<td>12434</td>
</tr>
<tr>
<td>7</td>
<td>20 Bay Meadow Rd</td>
<td>Springfield</td>
<td>14</td>
<td>17536</td>
<td>12056</td>
</tr>
<tr>
<td>8</td>
<td>34 Bay Meadow Rd</td>
<td>Springfield</td>
<td>10</td>
<td>15130</td>
<td>10402</td>
</tr>
<tr>
<td>9</td>
<td>42 Bay Meadow Rd</td>
<td>Springfield</td>
<td>14</td>
<td>17536</td>
<td>12056</td>
</tr>
<tr>
<td>10</td>
<td>56 Bay Meadow</td>
<td>Springfield</td>
<td>8</td>
<td>9645</td>
<td>6631</td>
</tr>
<tr>
<td>11</td>
<td>68 Bay Meadow</td>
<td>Springfield</td>
<td>12</td>
<td>22144</td>
<td>15224</td>
</tr>
<tr>
<td>12</td>
<td>82 Bay Meadow Rd</td>
<td>Springfield</td>
<td>9</td>
<td>12825</td>
<td>8818</td>
</tr>
<tr>
<td>13</td>
<td>85 Bay Meadow</td>
<td>Springfield</td>
<td>20</td>
<td>21049</td>
<td>14467</td>
</tr>
<tr>
<td>14</td>
<td>Pine St Apartments</td>
<td>157 Pine St</td>
<td>Springfield</td>
<td>15</td>
<td>10000</td>
</tr>
<tr>
<td>15</td>
<td>Union St Apartments</td>
<td>145 Union St</td>
<td>Springfield</td>
<td>11</td>
<td>13510</td>
</tr>
<tr>
<td>16</td>
<td>Robertson on the River</td>
<td>120 Ingell St</td>
<td>Taunton</td>
<td>64</td>
<td>139651</td>
</tr>
<tr>
<td>17</td>
<td>Hanover Legion Elderly Apartments</td>
<td>70 Legion Dr A01 - A08</td>
<td>Hanover</td>
<td>8</td>
<td>5286</td>
</tr>
<tr>
<td>18</td>
<td>70 Legion Dr A09 - A20</td>
<td>Hanover</td>
<td>12</td>
<td>9472</td>
<td>9472</td>
</tr>
<tr>
<td>19</td>
<td>70 Legion Dr B31 - B38</td>
<td>Hanover</td>
<td>8</td>
<td>5286</td>
<td>5286</td>
</tr>
<tr>
<td>20</td>
<td>70 Legion Dr B39 - B40</td>
<td>Hanover</td>
<td>12</td>
<td>9472</td>
<td>9472</td>
</tr>
<tr>
<td>21</td>
<td>Hanover Legion</td>
<td>70 Legion Dr C41 - C48</td>
<td>Hanover</td>
<td>8</td>
<td>5286</td>
</tr>
<tr>
<td>22</td>
<td>70 Legion Dr C49 - C60</td>
<td>Hanover</td>
<td>12</td>
<td>9472</td>
<td>9472</td>
</tr>
<tr>
<td>23</td>
<td>70 Legion Dr D01 - D06</td>
<td>Hanover</td>
<td>1</td>
<td>2238</td>
<td>2238</td>
</tr>
<tr>
<td>24</td>
<td>Better Homes Tapley</td>
<td>211 Bay St</td>
<td>Springfield</td>
<td>30</td>
<td>49056</td>
</tr>
<tr>
<td>25</td>
<td>Center City Housing</td>
<td>71 Adams St</td>
<td>Springfield</td>
<td>8</td>
<td>8500</td>
</tr>
<tr>
<td>26</td>
<td>22/24 Winthrop</td>
<td>Springfield</td>
<td>16</td>
<td>19907</td>
<td>15669</td>
</tr>
<tr>
<td>#</td>
<td>Project Name</td>
<td>Address</td>
<td>City</td>
<td>U Lines</td>
<td>Total KH</td>
</tr>
<tr>
<td>---</td>
<td>----------------</td>
<td>------------------</td>
<td>---------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>1</td>
<td>Liberty Hill Townhouses</td>
<td>5 Nursery St., conn</td>
<td>Springfield</td>
<td>0</td>
<td>3680</td>
</tr>
<tr>
<td>2</td>
<td>Rainville</td>
<td>32 Byers</td>
<td>Springfield</td>
<td>46</td>
<td>14259</td>
</tr>
<tr>
<td>3</td>
<td>Better Homes Rental</td>
<td>83 St. James St.</td>
<td>Springfield</td>
<td>8</td>
<td>11904</td>
</tr>
<tr>
<td>4</td>
<td>Stowe Court</td>
<td>100 Morton St -1</td>
<td>Andover</td>
<td>40</td>
<td>36525</td>
</tr>
<tr>
<td>5</td>
<td>Chestnut Court</td>
<td>82</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>6</td>
<td>Chestnut Court</td>
<td>100 Morton St -2</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>7</td>
<td>Chestnut Court</td>
<td>120</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>8</td>
<td>Chestnut Court</td>
<td>140</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>9</td>
<td>Chestnut Court</td>
<td>160</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>10</td>
<td>Grandview Terrace</td>
<td>180</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>11</td>
<td>Grandview Terrace</td>
<td>200</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>12</td>
<td>Stowe Court</td>
<td>220</td>
<td>Andover</td>
<td>12</td>
<td>9108</td>
</tr>
<tr>
<td>13</td>
<td>Crosby Gardens</td>
<td>24 North Ave - 1</td>
<td>Brockton</td>
<td>74</td>
<td>54072</td>
</tr>
<tr>
<td>14</td>
<td>Ann L. Ward House</td>
<td>269 North Main St</td>
<td>Brockton</td>
<td>23</td>
<td>11504</td>
</tr>
</tbody>
</table>
Lopes, Diane

From: Daniel Teague [dteague@wegowise.com]
Sent: Thursday, December 23, 2010 1:13 PM
To: Diana Duffy; Lopes, Diane; Jerrold Oppenheim; sasde@nu.com; kgray@nisource.com;
wells@bostonabcd.org
Subject: 2010 Benchmarking Report

All,

Attached is the status report for the benchmarking work we did this fall. Let us know if you have any questions or edits.

Dan and Shiva
--
Daniel Teague
Business Development
WegoWise, Inc
www.wegowise.com
15 Court Square, Suite 420
Boston, MA 02108
617-367-WEGO (9346)
Massachusetts Affordable Housing Energy Benchmarking

2010 Final Report

Prepared by WegoWise, Inc. for the Low Income Energy Affordability Network (LEAN)

12/22/2010

wēgowise
This report was prepared by Dan Teague and Shiva Prakash of WegoWise, Inc. It is based on analysis of the first phase of data collection for the LEAN multi-family benchmarking program through December 2010. The data, analysis and recommendations are subject to change as the implementation of this program progresses. This report should therefore be understood to be an analysis of a partial sample.

Please contact WegoWise with any questions or comments:

617-367-WEGO
dteague@wegowise.com or sprakash@wegowise.com
PROJECT DESCRIPTION

The goal of this project is to create a comprehensive inventory of low-income multi-family buildings in the state of Massachusetts with the ultimate objective of establishing energy benchmarks based on aggregated usage data of these buildings over three years. This project supports the development of an energy efficiency standard and in turn an understanding of the extent of achievable energy savings in low-income multi-family buildings.

One full year of usage data was gathered for each building as well as key building characteristics including whole building square footage and common area square footage. An individual metric for each building was calculated using these numbers and added to the database. This document serves as a status report summarizing the data gathered through December 2010 and outlines general recommendations based on the analysis of this data.

SUMMARY OF RELEVANT FINDINGS

Based on a quartile analysis of the data gathered from September 2010 through December 2010, the following energy benchmarks were calculated.

<table>
<thead>
<tr>
<th>Gas Usage (therms/conditioned ft²)</th>
<th>Energy Efficiency Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;.54</td>
<td>Energy Efficient</td>
</tr>
<tr>
<td>.54-.75</td>
<td>Better Than Average</td>
</tr>
<tr>
<td>.75-.94</td>
<td>Worse Than Average</td>
</tr>
<tr>
<td>&gt;.94</td>
<td>Poor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whole Building Electricity Usage (kWh/bldg ft²)</th>
<th>Energy Efficiency Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;6.28</td>
<td>Energy Efficient</td>
</tr>
<tr>
<td>6.28-8.77</td>
<td>Better Than Average</td>
</tr>
<tr>
<td>8.77-14.66</td>
<td>Worse Than Average</td>
</tr>
<tr>
<td>&gt;14.66</td>
<td>Poor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Common Area Electricity Usage (kWh/Common Area ft²)</th>
<th>Energy Efficiency Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1.99</td>
<td>Energy Efficient</td>
</tr>
<tr>
<td>1.99-3.83</td>
<td>Better Than Average</td>
</tr>
<tr>
<td>3.83-11.83</td>
<td>Worse Than Average</td>
</tr>
<tr>
<td>&gt;11.83</td>
<td>Poor</td>
</tr>
</tbody>
</table>

"Energy Efficient" is defined as buildings in the top quartile of performance; "Better Than Average" represents the second quartile, "Worse Than Average" the third, and "Poor" the fourth. These calculated benchmarks can be used to approximately assess a building’s performance relative to other buildings in Massachusetts based on where its energy use falls in this classification scheme. Buildings that fall into the "Worse Than Average" and "Poor" categories likely have high payback energy conservation opportunities.
CHALLENGES AND RECOMMENDATIONS

CHALLENGES

- Limited venues for outreach and awareness of the Multi-family Building Inventory lead to a lack of clarity on the part of housing organizations about our goals and the benefits of their participation. Therefore we found we had to make many unsuccessful cold calls to non-profit housing organizations and public housing authorities.

- Housing organizations often lacked the staff time or technical capability to collect the required information for the inventory. In addition, the specific information required to set up online utility accounts isn't readily available and proved to be particularly difficult for housing organizations to deliver.

RECOMMENDATIONS

- We received excellent support from the Department of Housing and Community Development, and found that their ability to directly interface with Housing Authorities greatly reinforced our efforts. We believe that the continued support from DHCD, the Low-income Energy Affordability Network will be crucial to the success of the inventory in the next year.

- Continue to develop persuasive marketing materials and strategies to improve program uptake.

- If feasible, more streamlined access to participants' utility data would greatly improve the efficiency and success of developing the inventory as it would reduce the burden on housing organizations.
ANALYSIS BY UTILITY TYPE

GAS USAGE DATA AND ANALYSIS

### Aggregated Gas Benchmark 2010 Statistics

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.79</td>
</tr>
<tr>
<td>Median</td>
<td>0.75</td>
</tr>
<tr>
<td>Mode</td>
<td>0.92</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.51</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.00</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.82</td>
</tr>
<tr>
<td>Count</td>
<td>384</td>
</tr>
</tbody>
</table>

### Aggregated Gas Benchmark 2010 Histogram

![Histogram of Aggregated Gas Benchmark 2010](image)

### Aggregated Gas Benchmark 2010

![Bar Chart of Aggregated Gas Benchmark 2010](image)
ELECTRICITY USAGE DATA AND ANALYSIS

Common Area Usage

<table>
<thead>
<tr>
<th>Aggregated Electric Common Area Benchmark 2010 Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Count</td>
</tr>
</tbody>
</table>

Aggregated Electric Benchmark 2010 Common Area Histogram

Aggregated Electric Benchmark 2010 Common Area

Building Number (reference Appendix 1)
Whole Building Usage

### Aggregated Electric Whole Building Benchmark 2010 Statistics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>16.27</td>
</tr>
<tr>
<td>Median</td>
<td>8.77</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>26.87</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.03</td>
</tr>
<tr>
<td>Maximum</td>
<td>136.47</td>
</tr>
<tr>
<td>Count</td>
<td>248</td>
</tr>
</tbody>
</table>

### Aggregated Electric Benchmark 2010 Whole Building Histogram

![Histogram showing kWh/Blg ft² distribution](image)

### Aggregated Electric Benchmark 2010 Whole Building

![Bar chart showing kWh/Blg ft² by building number](image)
### NGRID Gas Benchmark 2010

**Statistics**

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.80</td>
</tr>
<tr>
<td>Median</td>
<td>0.76</td>
</tr>
<tr>
<td>Mode</td>
<td>0.94</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.49</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.82</td>
</tr>
<tr>
<td>Count</td>
<td>252</td>
</tr>
</tbody>
</table>

### NGRID Gas Benchmark 2010 Histogram

The histogram shows the distribution of energy consumption across different buildings, with the x-axis representing the number of buildings and the y-axis showing the terms/conditioned ft$^2$.

### NGRID Gas Benchmark 2010

The bar chart illustrates the energy consumption for various buildings, with each bar indicating the terms/conditioned ft$^2$. The bars are ordered by building name, providing a visual representation of the data.
NSTAR Gas Benchmark 2010

<table>
<thead>
<tr>
<th>Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.67</td>
</tr>
<tr>
<td>Median</td>
<td>0.69</td>
</tr>
<tr>
<td>Mode</td>
<td>0.92</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.28</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.02</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.28</td>
</tr>
<tr>
<td>Count</td>
<td>92</td>
</tr>
</tbody>
</table>

NSTAR Gas Benchmark 2010 Histogram

NSTAR Gas Benchmark 2010
Bay State Gas Benchmark 2010

Statistics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.98</td>
</tr>
<tr>
<td>Median</td>
<td>0.70</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.89</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.09</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.21</td>
</tr>
<tr>
<td>Count</td>
<td>40</td>
</tr>
</tbody>
</table>

Bay State Gas Benchmark 2010 Histogram

Bay State Gas Benchmark 2010
NATIONAL GRID ELECTRIC

Common Area Usage

### NGRID Electric Common Area Benchmark 2010 Statistics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>10.86</td>
</tr>
<tr>
<td>Median</td>
<td>11.83</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>11.65</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.37</td>
</tr>
<tr>
<td>Maximum</td>
<td>92.08</td>
</tr>
<tr>
<td>Count</td>
<td>70</td>
</tr>
</tbody>
</table>

### NGRID Electric Benchmark 2010 Common Area Histogram

![Common Area Histogram Graph]

### NGRID Electric Benchmark 2010 Common Area

![Common Area Graph]
### NGRID Electric Whole Building Benchmark 2010 Statistics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>20.53</td>
</tr>
<tr>
<td>Median</td>
<td>9.20</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>31.78</td>
</tr>
<tr>
<td>Minimum</td>
<td>3.11</td>
</tr>
<tr>
<td>Maximum</td>
<td>136.47</td>
</tr>
<tr>
<td>Count</td>
<td>166</td>
</tr>
</tbody>
</table>

### NGRID Electric Benchmark 2010 Whole Building Histogram

Histogram showing the distribution of kWh/Blg ft² across different ranges.

### NGRID Electric Benchmark 2010 Whole Building

Graph illustrating the kWh/Blg ft² for various buildings.
NSTAR ELECTRIC

Common Area Usage

### NSTAR Electric Common Area
#### Benchmark 2010 Statistics

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>5.28</td>
</tr>
<tr>
<td>Median</td>
<td>3.28</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>6.41</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.08</td>
</tr>
<tr>
<td>Maximum</td>
<td>51.97</td>
</tr>
<tr>
<td>Count</td>
<td>137</td>
</tr>
</tbody>
</table>

### NSTAR Electric Benchmark 2010
#### Common Area Histogram

![Histogram showing number of buildings vs. kWh/Common Area ft²](image)

### NSTAR Electric Benchmark 2010
#### Common Area

![Bar chart showing kWh/Common Area ft² for different locations](image)
Whole Building Usage

<table>
<thead>
<tr>
<th>NSTAR Electric Whole Building Benchmark 2010 Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Count</td>
</tr>
</tbody>
</table>

NSTAR Electric Benchmark 2010
Whole Building Histogram

NSTAR Electric Benchmark 2010
Whole Building
WMECO

Common Area Usage

<table>
<thead>
<tr>
<th>WMECO Electric Benchmark 2010 Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Count</td>
</tr>
</tbody>
</table>

WMECO Electric Benchmark 2010
Common Area Histogram

<table>
<thead>
<tr>
<th>kWh/Common Area ft²</th>
<th>Number of Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.54</td>
<td>0</td>
</tr>
<tr>
<td>1.08</td>
<td>0</td>
</tr>
<tr>
<td>1.63</td>
<td>0</td>
</tr>
<tr>
<td>2.17</td>
<td>2</td>
</tr>
<tr>
<td>2.71</td>
<td>1</td>
</tr>
<tr>
<td>More</td>
<td>0</td>
</tr>
</tbody>
</table>
Whole Building Usage

**WMECO Electric Whole Building Benchmark 2010 Statistics**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>8.70</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.71</td>
</tr>
<tr>
<td>Median</td>
<td>7.94</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.84</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.19</td>
</tr>
<tr>
<td>Maximum</td>
<td>14.39</td>
</tr>
<tr>
<td>Count</td>
<td>46</td>
</tr>
</tbody>
</table>

**WMECO Electric Benchmark 2010 Entire Building Histogram**

The histogram shows the distribution of kWh/Bldg ft² for different energy consumption levels. The bars represent the number of buildings in each category:

- 6.35
- 12.69
- 19.04
- 25.39
- 31.74
- 38.08
- 44.43
- More
C&I Metric #3

Combined Heat & Power
<table>
<thead>
<tr>
<th>Metric Number</th>
<th>Metric Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each PA will complete in X Combined Heat and Power commitments in 2010. A commitment is either a signed application or a signed Memorandum of Understanding between the PA and customer.</td>
<td></td>
</tr>
<tr>
<td>This metric applies to all gas and electric PAs except Berkshire Gas, FG&amp;E Electric and FG&amp;E Gas, however it is not a requirement that gas PAs contribute any funds to TA studies or CHP rebates.</td>
<td></td>
</tr>
<tr>
<td>Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011, as appropriate based on expected completion dates of the commitments.</td>
<td></td>
</tr>
<tr>
<td>Targets are not additive. Electric and Gas PA targets reflect the same CHP units. Each CHP project is counted twice -- once by the electric PA and once by the gas PA. Note that baseline data also reflects this double counting.</td>
<td></td>
</tr>
<tr>
<td>Baseline data: In the past most electric PAs did not promote CHP, and NSTAR Gas did not provide services to industrial customers. Also, past gas CHP efforts relied on a cost-effectiveness screening method that no longer applies and had other less stringent requirements to qualify projects. Therefore, baseline data may not adequately reflect what can be achieved with the new CHP program design. * Electric PA 2009 baseline data reflects projects done by the applicable gas PA in the applicable electric PA's service territory (e.g., NSTAR Electric baseline reflects projects done by National Grid Gas in NSTAR territory in 2009). On a consolidated (electric) basis, total projects statewide in 2009 were 14. Total projects targeted statewide are: Threshold-17, Design 22, Exemplary 27.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project #</th>
<th>City</th>
<th>Project Description</th>
<th>Signed CHP Commitment Date</th>
<th>Electric PA</th>
<th>Natural Gas PA</th>
<th>Number of Installations Counting Toward Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>G631019</td>
<td>Brockton</td>
<td>60kW</td>
<td>11/19/2010</td>
<td>NGRID</td>
<td>CMA</td>
<td>1</td>
</tr>
<tr>
<td>174482</td>
<td>Northampton</td>
<td>275 kW(e HPT) Back Pressure Turbine</td>
<td>12/19/2010</td>
<td>NGRID</td>
<td>CMA</td>
<td>1</td>
</tr>
<tr>
<td>16723</td>
<td>Lawrence</td>
<td>85kW Vortec industrial engine</td>
<td>1/22/2010</td>
<td>N/A</td>
<td>CMA</td>
<td>1</td>
</tr>
<tr>
<td>166494</td>
<td>Lawrence</td>
<td>60kW Teco Gen</td>
<td>1/6/2010</td>
<td>N/A</td>
<td>CMA</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 4
C&I Metric #4

Retrofit -- Depth of savings
### Eligible Columbia Gas of Massachusetts Comprehensive Retrofit Projects

<table>
<thead>
<tr>
<th>Project #</th>
<th>City</th>
<th>Project Description</th>
<th>12-month kWh usage</th>
<th>2010 EE kWh</th>
<th>12-month therm usage</th>
<th>2010 therm</th>
<th>% of Account Usage kWh</th>
<th>% of Account Usage therms</th>
<th>Electric PA</th>
<th>Natural Gas PA</th>
<th>Gas Threshold</th>
<th>Gas Design</th>
<th>Gas Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>147457</td>
<td>North Andover</td>
<td>EMS, HT, CoolChoice X3 + Lighting</td>
<td>1,931,000</td>
<td>518,359</td>
<td>35,385</td>
<td>10,719</td>
<td>27%</td>
<td>30%</td>
<td>NGRD</td>
<td>CMA</td>
<td>X=6,Y=20%</td>
<td>X=7,Y=20%</td>
<td>X=6,Y=25%</td>
</tr>
<tr>
<td>135615</td>
<td>East Longmeadow</td>
<td>Lighting, Motors, HVAC, Custom</td>
<td>44,671,200</td>
<td>3,192,536</td>
<td>109,266</td>
<td>32,079</td>
<td>7%</td>
<td>29%</td>
<td>NGRD</td>
<td>CMA</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
</tr>
<tr>
<td>164634</td>
<td>Brockton</td>
<td>CoolChoice, HT Rezone</td>
<td>74,793</td>
<td>6,394</td>
<td>9,335</td>
<td>2,730</td>
<td>9%</td>
<td>29%</td>
<td>NGRD</td>
<td>CMA</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
</tr>
<tr>
<td>172157</td>
<td>Lawrence</td>
<td>VFDs, Aeration, Insulation, Eff Boilers, EMS, Lighting</td>
<td>5,529,600</td>
<td>1,581,443</td>
<td>364,326</td>
<td>101,650</td>
<td>29%</td>
<td>28%</td>
<td>NGRD</td>
<td>CMA</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
</tr>
<tr>
<td>170452</td>
<td>W Springfield</td>
<td>EMZ</td>
<td>103,000</td>
<td>5,715</td>
<td>13,775</td>
<td>8,816</td>
<td>6%</td>
<td>51%</td>
<td>WMECO</td>
<td>CMA</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
</tr>
<tr>
<td>170451</td>
<td>W Springfield</td>
<td>HSP &amp; EMS</td>
<td>131,960</td>
<td>14,709</td>
<td>27,742</td>
<td>15,503</td>
<td>11%</td>
<td>56%</td>
<td>WMECO</td>
<td>CMA</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
</tr>
<tr>
<td>162343</td>
<td>Brockton</td>
<td>ECM, Process</td>
<td>950,520</td>
<td>293,304</td>
<td>176,401</td>
<td>41,000</td>
<td>31%</td>
<td>23%</td>
<td>NGRD</td>
<td>CMA</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
<td>X=6,Y=25%</td>
</tr>
</tbody>
</table>

**Total** 7 7 7 7

---

Begin implementation of efforts at capturing whole-building*, deep savings of both electric and gas. Perform assessments and obtain X customer commitments to follow-through with savings of at least Y% building energy savings (gas or electric). To be eligible, buildings must have fossil fuel (e.g. natural gas, oil) and electric measures and a minimum of 5% of savings from fossil fuel and electric. (*Defined as the whole space under management and control of the customer, which can include tenant space in a larger building.) In order to reach exemplary, you must achieve design.

A "commitment" is a signed application or Memorandum of Understanding.

Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011.
APPENDIX E: Other Supporting Documentation

1. Competitive Procurement

The chart below summarizes competitive procurement activities in 2010. As shown in the chart, 9 RFPs were released for implementation in 2010.

<table>
<thead>
<tr>
<th>Annual Report RFP No.</th>
<th>TOPIC</th>
<th>WINNER OF BID</th>
<th>NO. OF VENDORS RECEIVING RFP</th>
<th>NO. OF RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Statewide QA/QC for Residential Programs</td>
<td>Competitive Resources, Inc.</td>
<td>28</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Large Commercial &amp; Industrial Evaluations</td>
<td>KEMA, Inc.</td>
<td>67</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Residential New Construction (Energy Star Homes) Evaluations</td>
<td>NMR Group, Inc.</td>
<td>67</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Non-Residential Small Retrofit Area Evaluations</td>
<td>Cadmus Group, Inc.</td>
<td>73</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Residential Retail Product Evaluations</td>
<td>NMR Group, Inc.</td>
<td>84</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Residential Retrofit &amp; Low Income Area Evaluations</td>
<td>Cadmus Group, Inc.</td>
<td>73</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Multi-Family Market Integrator</td>
<td>RISE Engineering</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>Special and Cross-Cutting Multi-Evaluation Tasks</td>
<td>Tetra Tech MA, Inc. &amp; Opinion Dynamics</td>
<td>65</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>Statewide Outreach, Education, and Marketing</td>
<td>Cadmus Group, Inc.</td>
<td>21</td>
<td>12</td>
</tr>
</tbody>
</table>

For abridged RFPs, please see Attachment E-1(a), RFP 1-9.

For full RFPs with all appendices and attachments, please see VOLUME III.

For a sample Terms and Conditions of the Company, please see Attachment E-1(b).
Quality Control / Quality Assurance Inspection Services
Massachusetts, Rohde Island, and New Hampshire
Energy Efficiency
2010-2012

REQUEST FOR PROPOSAL
Information and Instructions
RFP 052-10

June 30th 2010

Prepared by:

Philippe Montillier
Procurement Specialist
National Grid
40 Sylvan Road
Waltham, MA 02451
781-907-3011
Philippe.montillier@us.ngrid.com
TABLE OF CONTENTS

INFORMATION and INSTRUCTIONS FOR BIDDERS
1.0 BACKGROUND 3
2.0 PROGRAM ADMINISTRATOR SPONSOR LIST 3
3.0 UNAUTHORIZED DISCLOSURE 3
4.0 CONFLICT OF INTEREST RULES 4
5.0 SCOPE OF WORK 4
6.0 LIMITATIONS 4
7.0 PROGRAM ADMINISTRAORS DISCRETION 4
8.0 PRICING 5
9.0 PAYMENT FOR SERVICES & INVOICING 5
10.0 PROPOSAL SUBMISSION 5
11.0 EXCEPTIONS & CLARIFICATIONS 6
12.0 NOTICE OF INTENT TO DECLARE 6
13.0 PRE-BID INFORMATIONAL MEETING 6
14.0 COMMUNICATIONS & FORM OF RESPONSE 6
15.0 PROPOSAL FORMAT 7
16.0 TERMS & CONDITIONS and SPECIMEN AGREEMENT 8
17.0 SAFETY, ENVIRONMENTAL & BACKGROUND CHECK REQUIREMENTS 9
18.0 SUMMARY OF RFP DOCUMENTS 9
19.0 SCHEDULE 10

ATTACHEMENTS

- Attachment 1: Information and Instructions for Vendors
- Attachment 2: Scope of Work
- Attachment 3: RFP 052-10 Cost Estimate Bid Form
- Attachment 4: National Grid Terms & Conditions for Service Firms, Document 0300 (06/25/09)
- Attachment 5: NSTAR’s Requirements Prior to Contract Award
- Attachment 6: Cape Light Compact Terms and Conditions
- Attachment 7: Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- Attachment 8: Berkshire Gas Consulting Services Agreement
- Attachment 9: Nisource Corporate Services Company General Services Agreement for Construction, Maintenance, Services and Materials (Bay State Gas)
- Attachment 10: New England Gas Company Terms & Conditions
- Attachment 11: Unitil Contract and Certificates of Insurance Requirements
- Attachment 12: National Grid Contractor Safety Requirements (10/31/08)
- Attachment 13: National Grid Environmental Requirements (12/15/09)
- Attachment 14: National Grid Background Check Requirements for Contracted Service Providers - Contractor Employee Background Checks, (04/02/09)
QUALITY CONTROL / QUALITY ASSURANCE INSPECTION SERVICES
REQUEST FOR PROPOSAL
RFP 052-10

QA/QC INSPECTION SERVICES FOR PROGRAMS IN MASSACHUSETTS, RHODE ISLAND AND NEW HAMPSHIRE

OCTOBER 2010 – DECEMBER 2012

INFORMATION AND INSTRUCTIONS FOR BIDDERS

1.0 BACKGROUND

The Massachusetts Program Administrators for the Massachusetts Energy Efficiency programs in the Residential area request proposals to perform inspection services, as described in this Request for Proposal (RFP). The RFP will also include these services for the select Rhode Island and New Hampshire programs in the National Grid Territories.

This RFP covers the service period beginning October 1st, 2010 through December 31st, 2012 with an option to renew for 1 additional year at the discretion of the Program Administrators.

National Grid will be taking the lead in this RFP to coordinate the solicitation, and results, as well as together with the other Program Administrators, select a supplier for the program.

2.0 SPONSOR LIST

The list of Program Administrators for this RFP includes:

- Bay State Gas
- Berkshire Gas
- Cape Light Compact
- New England Gas Company
- National Grid (Electric & Gas)
- NSTAR Electric and Gas Corporation
- Western Massachusetts Electric
- Unitil/Fitchburg Gas & Electric

3.0 UNAUTHORIZED DISCLOSURE

3.1 The Program Administrators, consider any information provided to Vendors in the course of business to be privileged and confidential between Vendor and the Program Administrators. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Vendor may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Program Administrators.
3.2 Vendor’s proposal will be considered as being in full compliance with all documents, specifications, drawings and engineering data included in this RFP unless specific exceptions or clarifications are separately stated.

4.0 CONFLICT OF INTEREST RULES

Bidders who are an implementation contractor administrating implementation work in any of the residential programs listed in this RFP, you may not bid on that portion of the RFP. Vendors bidding should be aware they cannot perform inspections on programs where they are providing services.

The Program Administrators will screen potential bidders who may be ineligible to perform evaluation services based on the above criteria. Nevertheless, bidders are under obligation to disclose to the Program Administrators when it is apparent to them that such situations may exist.

5.0 SCOPE OF WORK

Scope of Work

- See Attachment 2 Scope of Work (with Appendix A-H) for a description of the Services to be provided.

6.0 LIMITATIONS

Bidder shall mean those firms/vendors acting in the role of Supplier when responding with a Proposal to this RFP. Proposal shall mean the Bidder's formal response indicating their committed solutions that meet or exceed the requirements of the RFP. Subcontractors, or subs, can be defined as any Supplier under Contract or in the RFP response that are considered financially independent of the Bidder in any other business or accounting relationship.

This RFP does not constitute an offer by the Program Administrators to enter into a contract, nor does any response to this RFP constitute an acceptance of an offer, nor does any response to this RFP bind the Program Administrators in any way. This document shall not be construed as a request or authorization to perform work at the Program Administrators' expense. Any work performed by a Bidder in connection with evaluating and responding to the RFP and, if selected, negotiating a definitive Agreement will be at the Bidder's own discretion and expense. This RFP does not represent a commitment to purchase or lease. The Program Administrators reserve the right to reject any and all proposals at its absolute discretion. Submission of a bid constitutes acknowledgment that the Bidder has read and agrees to be bound by such terms. The information in this document will enable the recipient to formulate a proposal to meet the workload requirements as described in this RFP. The numbers, volumes, run rates, etc. provided in this RFP are based upon the most recent data available and should serve as estimates to Bidders for pricing and response purposes.

7.0 PROGRAM ADMINISTRATORS DISCRETION

National Grid is issuing this RFP on behalf of the Program Administrators who at their discretion may:

- Select a Proposal other than the lowest priced, if the Program Administrators determine, at its sole and absolute discretion that the Program Administrators interests will best be served by doing so.
- Seek clarification from any Bidder regarding Proposal information and may do so without notification to any other Bidder.
- Continue the review procedure until a Bidder is selected successfully or until the Program Administrators choose to reject all Proposals.
• Accept any Proposal or alternate as submitted without negotiations.
• Select for negotiations only the overall best Proposal or negotiate all Proposals submitted which fall within a competitive range.
• Perform a complete financial review as well as an on-site investigation of any of the Bidders facilities to ensure it is capable of meeting the demands of Program Administrators and the needs identified in this RFP.
• May not award any Contract(s) as a result of this RFP.
• Reserves the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Program Administrators.

8.0 PRICING
The Program Administrators seek to procure Services at the most cost effective rates possible. All pricing will be effective for the duration of the contract.

Bidders must complete and submit Attachment 3: Cost Estimate Bid Forms. The bid form contains three (3) tabs.

The First tab (Administration) contains a form with five (5) tasks. Pricing should be provided as hourly rates for various levels of experience and expertise as noted in the sheet. Please fill out all tasks. It is essential that Bidders complete the bid form detailing estimated costs, by key program tasks, indicating hourly rates for personnel, travel, total hours, and total cost.

The Second tab is for Residential New Construction (RNC) Single Family and Multi Family Pricing. Please note for Residential New Construction Multi Family; the base price is for seven (7) units, and one (1) additional unit is added per each additional seven (7) units in the building. Please provide pricing for additional units.

The Third tab is for Residential Retrofit (Retrofit) Single Family and Multi Family Pricing. Please note for Residential Retrofit Multi Family; the base price is for five (5) units and additional units are for 10% of the remaining units in the building. Please provide pricing for additional units (per unit).

9.0 PAYMENT FOR SERVICES and INVOICING
No up-front payments will be made to vendors. Invoices shall be submitted to each Program Administrators on a monthly basis. Bidder should identify on the Attachment 3 Cost Estimate Bid forms, if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered. Discounts will be factored into the evaluation of the bids and their acceptance is at Program Administrators option.

10.0 PROPOSALS SUBMISSION
National Grid is using an electronic software package called Ariba. Ariba Sourcing is an internet application designed to facilitate the collection of business information. All of the relevant RFP information including: Scope of Work, Terms & Conditions and other required documents are contained in this electronic RFP. You are required to submit your proposal response via Ariba, as well as send two hard copies of your proposal as specified in Section 14 below. For more information about Ariba, you may refer to their website at www.ariba.com.

Bidders are invited to prepare a detailed response to this proposal. This response should address all the requirements outlined in the Scope of Work, as well as any additional strategies and creativity regarding how the website will be branded. After review, the Program Administrators may invite Bidders in to present examples of the firm’s work that demonstrates their capabilities, as well as to provide more details on their plans and budget for the proposed branding of the website. Following the proposal review and any requested presentations, the Program Administrators will select a company to provide these services.
bid meeting will also take place, as outlined below to answer any questions Bidders may have before submitting their final bid.

11.0 EXCEPTIONS AND CLARIFICATIONS

11.1 The Vendor agrees to all the provisions contained in this RFP and all enclosed Bid Documents unless exceptions are specifically and clearly listed in the Vendor’s proposal. All exceptions must be listed separately as either commercial or technical in nature and specifically identified as EXCEPTIONS. Any exceptions submitted by Vendor does not constitute acceptance by any of the Program Administrators. Exceptions will be negotiated and agreed to by each Program Administrator and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

11.2 Vendors preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Vendor’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

11.3 All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Massachusetts Sponsors at the end of the contract. The Vendor may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Program Administrators to do so.

11.4 Should a Vendor find any ambiguity, discrepancy or omission in the RFP, or should the Vendor have any questions, the Vendor shall notify National Grid through Ariba to afford the National Grid the opportunity to send any instructions or interpretations to other Vendors who have received an Invitation to Bid. The Program Administrators will not be responsible for any oral instructions or interpretations.

12.0 NOTICE OF INTENT TO DECLINE

If the Vendor declines to submit a proposal, all RFP documents must be deleted and/or destroyed and a message in Ariba must be submitted to National Grid with a brief explanation as to why your bid will not be submitted.

13.0 PRE-BID INFORMATIONAL MEETING

No pre-bid meeting is planned at this time. we will present a program overview and answer any final questions you may have regarding this RFP. In the meantime, if you have any specific questions, they should be sent via Ariba. All questions and answers will be posted through Ariba.

14.0 COMMUNICATIONS AND FORM OF RESPONSE

14.1. During the RFP process, all questions must be submitted via Ariba before July 12, 2010 5:00 PM EST. Answers to Bidder’s inquiries will be distributed within a 48 hours period through Ariba. In order to ensure fairness, until the time an award is made, Bidders shall have no direct communication regarding this RFP with any of the Program Administrators or any other personnel within the Sponsors’ organization. After the decision to award is announced, the successful Bidder may contact the Program Administrators and work with each Program Administrators’ Procurement contact to provide certificates of insurance and sign final contract documents. Failure to comply with these communications guidelines may disqualify the Bidder from further consideration.

14.2 Supplier's proposal MUST include two separate VOLUMES. Volume I must address all commercial issues, while Volume II must address all technical requirements. Volumes I and II shall not be bound or otherwise joined together. VOLUME II MUST NOT CONTAIN ANY
COST OR PRICE INFORMATION. The organization of the cost proposal **MUST** conform to the organization enumerated in **Attachment 3, Cost Estimate Bid Form**, and as described in Section 8.

14.3 With the exception of sample reports and staff resumes, proposals must not exceed thirty pages.

14.4 A complete proposal must be sent via Ariba and two original hardcopies either hand delivered or sent via commercial carrier postmarked NO LATER THAN 5pm, Monday, July 26, 2010 at the following address:

Philippe Montillier  
Procurement Specialist  
National Grid  
40 Sylvan Rd  
Waltham, MA 02451

Note: In the event of problems with Ariba in loading bids, the Program Administrators reserve the right to extend the bidding due date time only to the extent the problem was fixed by Ariba.

PLEASE NOTE THAT PROPOSALS MAY NOT BE SUBMITTED VIA FAX UNDER ANY CIRCUMSTANCES.

15.0 PROPOSAL FORMAT

15.1 Volume I: Commercial Proposal

15.1.1 Commercial Exceptions: This section of the proposal **MUST** state clearly any exceptions which are being taken to the commercial requirements of this RFP. Exceptions must state what the exception is, the reason for the exception and proposed alternatives, and be organized sequentially in accordance with the organization of the RFP. Commercial exceptions **MUST** be clearly defined only in this section of the proposal. Bidder’s preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Bidder’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP, unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

15.1.2 All proposals must be properly dated and executed by an authorized representative of the Vendors organization. Failure to provide the required hard copy and electronic version of the proposal or all required information may result in rejection of the proposal.

15.1.3 Bid security procedures requires that bid information shall not to be shared with, or provided to, any PA employee, or any other outside firm prior to award of contract(s).

15.1.4 All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Bidder, which, if accepted, shall create a binding obligation upon the Bidder. Any limited duration offers shall be explicitly noted.

15.1.5 Bidders should identify if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered or not. Discounts will be factored into the evaluation of the bids and their acceptance is at the Sponsors’ option.

15.1.6 **EEOC Compliance:** If not previously submitted, please provide a statement that your company is in compliance with EEOC requirements.
15.1.7 **Insurance Certificate(s):** Include with your Bid a Certificate(s) of Insurance evidencing compliance with at least the minimum levels of insurance required in Section 11.0 Insurance of National Grid Terms & Conditions, which is contained in this document. If you are awarded the work, you will be required to submit certificates to each Program Administrator identifying them as an additional insured and complying with their insurance levels.

15.1.8 **All Bidders must conform to National Grid’s Background Check policy as specified in Ariba. The other Program Administrators may have similar commercial requirements that you may have to comply with as well.**

15.1.8 **Vendor Information:** Bidders shall provide a letter of introduction and a statement of qualifications, which details the Bidder’s experience, especially with energy efficiency projects. The Bidder’s statements should emphasize their (1) knowledge and understanding of energy efficiency programs, and (2) the requirements of this RFP. In addition, provide a description of the legal status of respondent (e.g., sole proprietorship, partnership, limited partnership, joint venture, or corporation) and state of residency. Some of the other key points are as follows:

A. General description of all the services and products your company offers with a brief description of its general history.

B. Discussion of the companies staff to be assigned, and how they will be organized to deliver the services requested in the most efficient and expedient manner. Include a brief discussion of your firm’s internal quality control and review procedures.

C. Include a list of other similar Services contracts in force nationally

D. Provide the name, title, and contact information for three (3) references familiar with respondent’s business organization, finances and operational style. Provide resumes of key individuals in the firm providing the services to the Program Administrators.

15.2 **Volume II - Technical Proposal**

The Supplier's technical proposal, addressing all technical requirements MUST be included in this section. **THIS VOLUME MAY NOT INCLUDE ANY COST OR PRICING INFORMATION.** In addition to the Supplier's technical proposal, the following items must be addressed, in the order listed:

15.2.1 **Title Page:** This section of the proposal should include a title page, which identifies the RFP Title, vendor’s name and the volume.

15.2.2 **Table of Contents:** The vendor’s proposal should include a Table of Contents, which lists the titles and page numbers for each major topic and sub-topic.

15.2.3 **Executive Summary:** This section should include a summary of the key points and highlights of the vendor’s response.

15.2.4 **Technical Requirements:** This section of the proposal must include a completed copy of the Technical Response with responses provided to each of the requirements. Every item should have a response, including any exceptions. Bidders should also include a description of all assumptions used to develop their response to this RFP.

16.0 **TERMS AND CONDITIONS and SPECIMEN AGREEMENT**

The successful Vendor’s services shall be provided in accordance with the following terms and conditions from each Sponsor:

- **Attachment 4:** National Grid Terms & Conditions for Service Firms, Document 00300 (6/25/09).
17.0 SAFETY, ENVIRONMENTAL and BACKGROUND CHECK REQUIREMENTS

The successful Vendor’s services shall be provided in accordance with each Program Administrators commercial requirements. National Grid’s commercial requirements are as follows:

- Contractor Safety Requirements dated 10/31/08 (Attachment 12)
  - You are required to fill out the Safety form in the RFP and submit it with your proposal.
- Contractor Environmental Requirements dated 12/15/09 (Attachment 13)
- Contractor Employee Background Check Requirements dated 4/02/09 (Attachment 14)
  - You are required to fill out the background Check form in the RFP and return it with your proposal.

18.0 SUMMARY RFP DOCUMENTS

This RFP is comprised of the following documents:

- Attachment 1: - Information and Instructions for Vendors
- Attachment 2: - Scope of Services (with Appendix A-H)
- Attachment 3: - RFP 052-10 Bid Forms
- Attachment 4: - National Grid Terms & Conditions for Services Firms, Document 0300 (06/25/09)
- Attachment 5: - NSTAR’s Requirements Prior to Contract Award
- Attachment 6: - Cape Light Compact Terms and Conditions
- Attachment 7: - Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- Attachment 8: - Berkshire Gas Consulting Services Agreement
- Attachment 9: - NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials (Bay State Gas)
- Attachment 10: - New England Gas Company Terms & Conditions
- Attachment 11: - Unitil Contract and Certificates of Insurance Requirements
- Attachment 12: - National Grid Contractor Safety Requirements (10/31/08)
- Attachment 13: - National Grid Environmental Requirements (12/15/09)
- Attachment 14: - National Grid Background Check Requirements for Contracted Service Providers - Contractor Employee Background Checks, (04/02/09)
19.0 **SCHEDULE**

The following dates are critical to this RFP.

- **Request for Proposal Issued via Ariba**: June 30, 2010
- **Bidder’s Conference Call**: TBD
- **Last Date for Questions from Bidders**: July 12, 2010 @ 5:00 p.m. EST
- **Q&A to Bidders**: July 16, 2010
- **Proposals Due via Ariba**: July 26, 2010 @ 5:00 p.m. EST via Ariba
- **Contract Awarded**: August 31, 2010 - Estimated
- **Kick-off Meeting**: September 3, 2010 or as soon as conveniently possible after the selection of contractor.
Attachment 2

Scope of Services for RFP 052-10

Quality Assurance/Quality Control Inspection Services

June 2010

CONFIDENTIAL – DO NOT DISTRIBUTE
I. Background

Gas and electric distribution companies and municipal aggregators (together “Program Administrators” or “PAs”) collectively serving close to 2.7 million electric customers and nearly 1.6 million gas customers efficiently, have been historically ambitious and recognized nationally as leaders in market transformation and energy efficiency. The Program Administrators have been engaged in a collaborative process to demonstrate a strong commitment to the broad distribution of innovative, high quality energy efficiency services. In Massachusetts, An Act Relative to Green Communities, Chapter 169 of the Acts of 2008 (“Green Communities Act”) was signed into law on July 2, 2008. With the passing of Green Communities Act, the existing energy efficiency programs were significantly expanded. Program Administrators recognize that in order to ensure that high quality services continue to be provided to customers requires rigorous Quality Assurance (“QA”)/ Quality Control (“QC”). The Program Administrators listed below seek this Request for Proposal (“RFP”) to provide assurances that programs continue to deliver, improve, and further develop high quality energy efficiency programs.

Bay State Gas Company
Berkshire Gas Company
Cape Light Compact
National Grid Electric and Gas
New England Gas Company
NSTAR Electric and Gas
Unutil
Western Massachusetts Electric Company

II. Overview

The purpose of this RFP is to seek qualified Vendors to provide third party quality control inspection services in support of the statewide Mass SaveSM Energy Efficiency Residential Programs (the “Programs”) offered in Massachusetts. In addition, the RFP seeks to include, as a separate addendum, National Grid’s Rhode Island EnergyWise program, and National Grid’s New Hampshire Home Performance with ENERGY STAR® and Energy Audit with Home Performance programs, as outlined in Section III-A “Scope of Work”.

Respondents may be qualified individuals, companies, or teams and must have demonstrated experience in successful completion of projects on time and within budget. Respondents must demonstrate an understanding of residential energy efficiency. Respondents must demonstrate the ability to work effectively with a diverse group of stakeholders and as an effective member of a team. Respondents should be flexible and responsive to changing program needs.

The full suite of services solicited in this RFP are to be provided through December 31, 2012, with the option to extend one year beyond this period at the discretion of the PAs. The delivery of specific services will be scheduled as discussed in this RFP or as outlined by contract.
Third party quality control inspections may include, but are not limited to randomly selected participants of the various energy efficiency programs described below, customer requests for independent third party verification, and a specified percentage of all independent contractors approved to deliver services in certain Programs.

Vendors must submit proposals for all of the indicated programs in Massachusetts. Proposals for individual programs in Rhode Island and New Hampshire will be negotiated solely with National Grid. See Appendix C for pricing details.

The PAs may accept (1) an entire proposal submitted by a Vendor or (2) portions of proposals submitted by multiple Vendors. The Company will not return proposals or materials submitted in response to this RFP. The PAs encourage Vendors to collaborate. If you are an implementation contractor administrating implementation work in any of the residential programs listed in this RFP, you may not bid on that portion of the RFP. Vendors bidding should be aware they cannot perform inspections on programs where they are providing services.

The PAs reserve the right to modify this RFP. In the event that this RFP is modified prior to the bid due date, Vendors will have an equal opportunity to modify their proposals accordingly. Further, after the selection of a Vendor(s), the PAs may modify programs and QA/QC requirements by changing, as examples: customer participation targets, energy efficiency measures, funding or add and remove programs as necessary. In such event, the PAs will negotiate any appropriate adjustment to its contract with the chosen Vendor(s).

All proposals received by the PAs will be evaluated and selected based on price, quality and comprehensiveness, prior experience, ability and resources to provide the services within the specified time period, and the demonstrated skills and financial viability of the Vendor, among other factors. The selected Vendor(s) will play a crucial role in the PAs achieving customer satisfaction, quality installations, verifiable savings, regulatory requirements, and energy savings goals. The PAs may disqualify any proposal for any reason and may accept a proposal other than the lowest bid-price offering.

III Program Terms - Specific

III - A. Scope of Work

Third Party Quality Assurance/Quality Control (QA/QC) Process
The purpose of the third party QA/QC inspection includes, but is not limited to, verification of program standards, measure installations, improve customer satisfaction, and provide feedback to PAs. The vendor will provide monthly reporting of QA/QC results to each individual PA, as well as appropriate statewide working groups and regulators upon request. Details of this service and inspection criteria are as follows:

Site Visit Selection Criteria

The Vendor will inspect approximately 5-10% of jobs completed annually but may vary by program.
The following is the percentage guidelines by Program:

Massachusetts
- RCS/MassSave (Electric and Gas) – 10%
- Multi Family Retrofit (Electric and Gas) – 10%
- Low Income Single Family and Multi Family (Electric and Gas) - 5%
- Residential New Construction (Market Rate and Low Income-Electric and Gas) – 10%

Rhode Island
- National Grid EnergyWise (Electric and Gas) – 10%

New Hampshire
- National Grid Home Performance with ENERGY STAR (Electric) and Energy Audit with Home Performance (Gas) – 5%

Inspections will be randomly selected, for each PA, by the QA/QC vendor(s) based on the installation of major measures.

The QA/QC vendor will act as mediator should there be a conflict with the quality of work performed by a weatherization contractor and the PA’s lead vendor’s assessment of the work performed.

By the 20th of each month, each Program implementation vendor will provide an electronic transmission of customers who have participated and/or are scheduled to participate in all active energy efficiency programs to the Quality Control (QC) vendor(s). All potential site inspection data from the Programs will be sent to the third party QA/QC vendor(s) at a minimum will include:

- Customer name
- Service address
- Phone number
- Email address (if provided)
- Assessment or Scheduled audit date

Program Specific Information (as applicable)

- All recommended energy efficiency measures from initial visit
- All installed energy efficiency measures and number of units
- Installed cost
- Description of work completed
- Date of Installation
- Test in and test out scores for duct and air sealing measures
- Home Energy Rating System (“HERS”) rating
- Date of scheduled assessment

**Inspection Scheduling Process**
QA/QC Vendor will create a database to track all data uploaded from the Programs. QA/QC Vendor will choose the customers at random from the list.

As new Inspection files are received by QA/QC Vendor, the newly added customers are given “Active Status”. Representative will schedule all Verification Inspections based on customer availability and inspector location / routing.

QA/QC Vendor will attempt to schedule the QC visit within 3 working days of receiving program data. QA/QC Vendor is required to document date and time of attempted contacts. QV Vendor will attempt to reach the customer a minimum of 3 times via telephone to schedule an inspection appointment at various times of the day. During the scheduling process, the vendor will determine if access will be uninhibited or if special equipment (e.g. ladders) will be required to conduct the inspection. Inspections will be scheduled at a reasonable time that is convenient to the customer.

QA/QC Vendor will coordinate with Lead Vendor to attend on-site In-Process inspections. All inspections that QA/QC Vendor cannot schedule and complete within 21 days will be assigned “Abandoned” status and reported to the appropriate PA.

When an inspection is scheduled and the customer is not home at the scheduled appointment time, the QA/QC Vendor Customer Service Representative will immediately attempt to contact the customer.

If the customer and inspector are able to reschedule the appointment, the inspection will be placed on the QA/QC Vendor inspector’s schedule for a subsequent date/time.

If the customer is not interested in rescheduling, the appointment is removed from the inspector’s schedule and the customer status is changed to “Not Interested”. In certain programs, incentives may need to be withheld in order to get random QA/QC. This is important to ensure we have no intentional fraud in the programs.

If the customer is not available, another “Active Status” customer is immediately given the available appointment date/time. If the customer cannot be reached, the customer goes back into “Active Status” for additional scheduling attempts until all avenues are exhausted, at which point, they will be reported as “Abandoned”. If a customer requests an inspection they will be contacted by phone within three (3) business days of receipt of the inspection request and the quality control inspection will be performed within 10 business days of receipt of the inspection request.

Inspection Process

Upon arrival, inspectors will identify themselves and provide customers with identification. Inspectors should explain the purpose of the visit. The QA/QC Vendor will develop a script to be used by inspectors, which will be approved by PAs. Inspectors are expected to have all necessary
equipment and materials required to perform the inspection. The inspector will ask the customer to accompany them on the inspection. Inspections will only be completed if there is an adult present (18 year or older) in the home. The QA/QC inspection process will ensure that installations were completed according to individual program guidelines and standards.

Customers will be afforded additional opportunities to have questions answered. The QA/QC Vendor will document and track accordingly the customer’s level of satisfaction with the services they received from the Program(s) or of an independent contractor’s work.

QA/QC inspections will identify and document missed opportunities for all energy efficiency measures identified during the QC visit compared to the documented opportunities presented to the customer at the time of the energy assessment.

See Appendix B for QA/QC Site Visit Protocols.

**Completed Inspections**

Once Verification appointments are completed the QA/QC Vendor is required to maintain a database that compiles the results of the QA/QC. The QA/QC Vendor will send completed inspection files to PAs by the 15th of the following month. The QA/QC Vendor will develop reports and required documentation formats with the PAs.

If “Pass” status is assigned, the QA/QC process is considered complete.

If the Work completed “Fails” the inspection the QA/QC Vendor will notify the installation contractor within 2 working days of the failed inspection to begin corrective action.

The installation contractor will respond to the complaint within 48 business hours of initial notification from the QA/QC vendor.

The QA/QC vendor will follow up with the customer and report on the status of the remediation.

Hazardous situations will be reported within 24 business hours.

QA/QC Vendor will report inspection results to PAs with monthly inspection information reports.

QA/QC Vendor will provide inspection invoices to each PA monthly.

**Reporting**

QA/QC inspection results will be reported on a monthly basis by the 15th of each month. A status report of all scheduled, complete, remediation, and abandoned inspections will be submitted to each PA providing satisfactory detail agreed upon by the PAs. For inspections with
overlapping gas and electric territories, a report will be generated for each PA for their specific territory.

Hazardous situations will be identified and the appropriate vendor and PA will be notified.

The QA/QC Vendor will note and record any discrepancies identified in the scope of work as it appears on the Program Installation Agreement when compared to the actual conditions at the location where the work was performed.

Maintain and make available upon request, duplicate copies of invoices, supporting documentation, which are generated in the delivery of the services provided.

All measures will be inspected during the QA/QC site visit. If the inspection results in the identification of missed opportunities those will be noted and forwarded to the appropriate PA, vendor and the installation contractor for remediation.

Reports should be aggregated by PA and by implementation/weatherization contractor. The reporting of work performed by implementation contractors will be provided to all PAs.

The QA/QC should identify and report to PAs on any training needs indentified through the QA/QC process.

All failed QC inspections will be re-inspected after completion of the required work and/or as directed by the Program Administrators. Only failed criteria will be re-inspected.

IV. TIME LINE

<table>
<thead>
<tr>
<th>ISSUE RFP TO VENDORS</th>
<th>06-30-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEADLINE FOR VENDOR QUESTIONS</td>
<td>07-12-10</td>
</tr>
<tr>
<td>DEADLINE FOR THE SPONSORS TO RESPOND TO VENDOR QUESTIONS</td>
<td>07-16-10</td>
</tr>
<tr>
<td>PROPOSALS DUE (Close of Business)</td>
<td>07-26-10</td>
</tr>
<tr>
<td>VENDOR INTERVIEWS</td>
<td>TBD</td>
</tr>
<tr>
<td>PROJECT AWARD(Close of Business)</td>
<td>08-31-10</td>
</tr>
</tbody>
</table>
V. APPENDICES

Appendix A

Program Participant Goals (2010-2012) and number of Residential Customers Served by PA.

Appendix B

QA/QC Site Visit Protocols/Qualifications:

**General**
1. QA/QC Vendors will use inspectors that, meet the qualifications of the program being inspected i.e., inspectors who inspect weatherization measures must be BPI certified to complete a QA/QC of the MassSave Home Energy Program, Multi Family Retrofit, and Low Income Single Family and Multi Family programs. Building Envelope and Analyst certification is required, Infrared scan certification is highly desired. Inspections of the Residential New Construction program must be HERS certified and be currently working under a HERS provider.
2. QA/QC Vendors must document if HERS ratings are accurate and BPI standards were followed.
3. At all site visits, the inspector will collect customer satisfaction information.

**A) Residential New Construction Site Visit Protocols**

There are 3 tiers of inspections for New Construction:
Tier 1 – Appliances and thermal
Tier 2 – Appliance and Thermal and HVAC without Quality Installation Verification (QIV)
Tier 3 – Appliance and Thermal and HVAC with Quality Installation Verification (QIV)

Verification of proper installation of measures by a qualified representative:

**Appliance Package**
- Verify installation and efficiency standard of appliances
- Record manufacturer and model information
- Verify wattage and number of Compact Fluorescent Lamps (“CFL”) and/or fixtures installed

**Thermal Package**
Verify and record compliance with air sealing requirement using blower door test
Verify and record compliance with insulation requirements.
Verify and record presence and correct installation of mechanical ventilation system when incentive is offered.

HVAC Package - Heating, Ventilating, and Air Conditioning
Verify and record compliance with duct sealing requirement using duct blaster test
Verify installation, record manufacturer and model information and verify compliance with appropriate efficiency requirement when equipment incentive is offered for water heaters, heating systems, and air conditioning.
If required: Perform Quality Installation Verification (“QIV”) inspection and record data on all air conditioning systems where an equipment incentive is offered.

For all packages a sampling protocol consistent with national RESNET sampling procedures will be used for multi-unit projects

Provide results from verification tests (QA/QC) and construction improvement recommendations.

**B Retrofit Program Site Visit Protocols**

There are 3 tiers of inspections for the Retrofit programs.

Tier 1 – Visually inspect in-process audits to ensure the energy specialist is offering all cost effective PA approved measures.
Tier 2 – Visually inspect post audit installed measures (such as lighting, appliances, domestic hot water (“DHW” such as low flow water faucets/showerheads, pipe wrap, door sweeps), thermostats, excluding insulation and air sealing).
Tier 3 - Inspect post audit installed measures, including insulation and air sealing utilizing blower door and/or infrared camera.

At times, Quality Installation Verification (“QIV”) will be required

**Insulation/Ventilation**
- Verify post installation R-values
- Verify quantity/Square Footage installed via visual inspection
- Verify appropriateness of ventilation – via blower door
- Assess structure for damages caused by installation
- Thermal scan of structure when possible
- Take digital photographs of any problem areas

**Air Sealing**
- Visual verification of air sealing- confirm blower door readings when appropriate
Heating/AC/DHW Equip. Verify manufacturer, model number and efficiency rating of equipment

Thermostats Verify make and model number
Confirm Thermostat is in Program Mode. If not, provide educational and instructional information and support.

DHW Measures Verify that materials are installed properly.
Verify quantity installed.

Lighting Verify wattage and number of Compact Fluorescent Lamps (CFL) and/or fixtures installed

Custom Measures Visual inspection to verify manufacturer, model number and efficiency rating of equipment where applicable
Verify that equipment is operating

Appendix C - PRICING

Pricing should be based assuming that all PAs will meet their participation goals (Appendix A), but this could increase or decrease at the discretion of each PA or based upon any program design changes during the length of this contract.

Pricing for these services should be presented on a tiered basis using the listed options as follows:

New Construction:

<table>
<thead>
<tr>
<th>Tier</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Appliance &amp; Thermal (without Blower Door included)</td>
</tr>
<tr>
<td>2</td>
<td>Appliance, Thermal &amp; HVAC (w.out QIV necessary)</td>
</tr>
<tr>
<td>Option 1</td>
<td>Duct Blaster</td>
</tr>
<tr>
<td>Option 2</td>
<td>Infrared</td>
</tr>
<tr>
<td>Option 3</td>
<td>QIV</td>
</tr>
<tr>
<td>Option 4</td>
<td>Blower Door</td>
</tr>
<tr>
<td>Option 5</td>
<td>Revisit Charge if any</td>
</tr>
</tbody>
</table>

Retrofit Programs:

<table>
<thead>
<tr>
<th>Tier</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visual inspection- in process audits</td>
</tr>
<tr>
<td>2</td>
<td>Visual inspection- post audit (no insulation &amp; air sealing)</td>
</tr>
<tr>
<td>3</td>
<td>Post inspection of all installed measures including insulation, air sealing &amp;/or infrared</td>
</tr>
<tr>
<td>Option 1</td>
<td>QIV</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Option 2</td>
<td>Duct Blasting</td>
</tr>
<tr>
<td>Option 3</td>
<td>Infrared</td>
</tr>
<tr>
<td>Option 4</td>
<td>Revisit Charge if any</td>
</tr>
</tbody>
</table>

Also note any discount for Multi Family inspections when sample inspecting multi family facilities (both new construction and retrofit). See Bid sheet instructions for details.

Pricing should include an overall program management fee component and a per unit component based on tiers listed above.

Pricing must be designed to reflect costs for MA only, RI only, and NH only.

Note: selected vendor will be required to invoice MA costs and fees separately from RI and NH. These invoices should be billed to each PA. RI and NH will require separate invoicing directly to National Grid.

Appendix D
MA – Three Year Electric Plan – Program descriptions included

Appendix E
MA – Three Year Gas Plan – Program descriptions included

Appendix F
RI – Residential Program Descriptions - EnergyWise begins on page 4

Appendix G
NH – Home Performance with Energy Star

Appendix H
NH – Energy Audit with Home Performance
EVALUATION TASKS FOR MASSACHUSETTS ENERGY EFFICIENCY PROGRAMS IN LARGE COMMERCIAL & INDUSTRIAL EVALUATION CONTRACTOR (LCIEC)

2010-2012

REQUEST FOR PROPOSAL
RFP 007-10

January 25, 2010

Prepared by:

Donald J. Pacheco
Sr. Procurement Specialist
National Grid
40 Sylvan Road
Waltham, MA 02451
781-907-3012
don.pacheco@us.ngrid.com

RFP 007-10 Large Commercial & Industrial Evaluation Contractor (LCIEC)
### TABLE OF CONTENTS

INFORMATION and INSTRUCTIONS FOR BIDDERS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 BACKGROUND</td>
<td>3</td>
</tr>
<tr>
<td>2.0 PROGRAM ADMINISTRATOR SPONSOR LIST</td>
<td>3</td>
</tr>
<tr>
<td>3.0 UNAUTHORIZED DISCLOSURE</td>
<td>3</td>
</tr>
<tr>
<td>4.0 CONFLICT OF INTEREST RULES</td>
<td>4</td>
</tr>
<tr>
<td>5.0 SCOPE OF WORK</td>
<td>4</td>
</tr>
<tr>
<td>6.0 LIMITATIONS</td>
<td>4</td>
</tr>
<tr>
<td>7.0 PROGRAM ADMINISTRAORS DISCRETION</td>
<td>4</td>
</tr>
<tr>
<td>8.0 PRICING</td>
<td>5</td>
</tr>
<tr>
<td>9.0 PAYMENT FOR SERVICES &amp; INVOICING</td>
<td>5</td>
</tr>
<tr>
<td>10.0 PROPOSAL SUBMISSION</td>
<td>5</td>
</tr>
<tr>
<td>11.0 EXCEPTIONS &amp; CLARIFICATIONS</td>
<td>6</td>
</tr>
<tr>
<td>12.0 NOTICE OF INTENT TO DECLINE</td>
<td>6</td>
</tr>
<tr>
<td>13.0 PRE-BID INFORMATIONAL MEETING</td>
<td>6</td>
</tr>
<tr>
<td>14.0 COMMUNICATIONS &amp; FORM OF RESPONSE</td>
<td>6</td>
</tr>
<tr>
<td>15.0 PROPOSAL FORMAT</td>
<td>7</td>
</tr>
<tr>
<td>16.0 TERMS &amp; CONDITIONS and SPECIMEN AGREEMENT</td>
<td>9</td>
</tr>
<tr>
<td>17.0 SAFETY, ENVIRONMENTAL &amp; BACKGROUND CHECK REQUIREMENTS</td>
<td>9</td>
</tr>
<tr>
<td>18.0 SUMMARY OF RFP DOCUMENTS</td>
<td>9</td>
</tr>
<tr>
<td>19.0 SCHEDULE</td>
<td>10</td>
</tr>
</tbody>
</table>

**ATTACHMENTS**

- Attachment 1: Information and Instructions for Consultants
- Attachment 2: Scope of Services (with Appendices 1-7 & Attachments)
- Attachment 3: RFP 007-10 Bid Forms (Appendix 8)
- Attachment 4: National Grid Terms & Conditions for Consulting Services, Document 0400 (06/25/09)
- Attachment 5: NSTAR’s Requirements Prior to Contract Award
- Attachment 6: Cape Light Compact Terms and Conditions
- Attachment 7: Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- Attachment 8: NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials
- Attachment 9: New England Gas Terms & Conditions
- Attachment 10: National Grid Contractor Safety Requirements (8/1/08)
- Attachment 11: National Grid Environmental Requirements (02/29/08)
- Attachment 12: National Grid Background Check Requirements for Contracted Service (1/10/08)

**RFP 007-10 Large Commercial & Industrial Evaluation Contractor (LCIEC)**
1.0 BACKGROUND

The Massachusetts Program Administrators for the Massachusetts Energy Efficiency programs in the Large Commercial & Industrial area request proposals to perform various evaluation tasks addressing the state of Massachusetts, as described in this Request for Proposal.

National Grid will be taking the lead in this RFP to coordinate the solicitation, and results, as well as together with the other Program Administrators, select a supplier for the program.

2.0 SPONSOR LIST

The list of Program Administrators for this RFP includes:

- Bay State Gas
- Berkshire Gas
- Cape Light Compact
- New England Gas
- National Grid (Electric & Gas)
- NSTAR Electric and Gas Corporation
- Western Massachusetts Electric
- Unitil/Fitchburg Gas & Electric

3.0 UNAUTHORIZED DISCLOSURE

3.1 The Program Administrators, consider any information provided to Consultants in the course of business to be privileged and confidential between Consultant and the Program Administrators. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Consultant may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Program Administrators.

3.2 Consultant’s proposal will be considered as being in full compliance with all documents, specifications, drawings and engineering data included in this RFP unless specific exceptions or clarifications are separately stated.
4.0 CONFLICT OF INTEREST RULES

Bidders who have provided feasibility studies, savings estimates, application preparation assistance, design services, installation services, Rater services, commissioning services on projects for the Massachusetts New Homes with Energy Star program are not eligible to provide evaluation services. In addition any bidder who has contracts with other entities that may impact the bidder’s ability to perform evaluation services as an independent body are also not eligible. In particular any potential bidder who is providing consulting or implementation services to the Massachusetts EEAC, MA DOER, or it consultants for any energy efficiency programs is ineligible to bid on this contract.

5.0 SCOPE OF WORK

Scope of Work

- See Attachment Document 2 Scope of Work (with Appendices 1-7 & Attachments) for a description of the Services to be provided.

6.0 LIMITATIONS

Bidder shall mean those firms/vendors acting in the role of Supplier when responding with a Proposal to this RFP. Proposal shall mean the Bidder's formal response indicating their committed solutions that meet or exceed the requirements of the RFP. Subcontractors, or subs, can be defined as any Supplier under Contract or in the RFP response that are considered financially independent of the Bidder in any other business or accounting relationship.

This RFP does not constitute an offer by the Program Administrators to enter into a contract, nor does any response to this RFP constitute an acceptance of an offer, nor does any response to this RFP bind the Program Administrators in any way. This document shall not be construed as a request or authorization to perform work at the Program Administrators' expense. Any work performed by a Bidder in connection with evaluating and responding to the RFP and, if selected, negotiating a definitive Agreement will be at the Bidder's own discretion and expense. This RFP does not represent a commitment to purchase or lease. The Program Administrators reserve the right to reject any and all proposals at its absolute discretion. Submission of a bid constitutes acknowledgment that the Bidder has read and agrees to be bound by such terms. The information in this document will enable the recipient to formulate a proposal to meet the workload requirements as described in this RFP. The numbers, volumes, run rates, etc. provided in this RFP are based upon the most recent data available and should serve as estimates to Bidders for pricing and response purposes.

7.0 PROGRAM ADMINISTRATORS DISCRETION

National Grid is issuing this RFP on behalf of the Program Administrators who at their discretion may:

- Select a Proposal other than the lowest priced, if the Program Administrators determine, at its sole and absolute discretion that the Program Administrators interests will best be served by doing so.
- Seek clarification from any Bidder regarding Proposal information and may do so without notification to any other Bidder.
- Continue the review procedure until a Bidder is selected successfully or until the Program Administrators choose to reject all Proposals.
• Accept any Proposal or alternate as submitted without negotiations.
• Select for negotiations only the overall best Proposal or negotiate all Proposals submitted which fall within a competitive range.
• Perform a complete financial review as well as an on-site investigation of any of the Bidders facilities to ensure it is capable of meeting the demands of Program Administrators and the needs identified in this RFP.
• May not award any Contract(s) as a result of this RFP.
• Reserves the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Program Administrators.

8.0 PRICING

The Program Administrators seek to procure Services at the most cost effective rates possible. Bidders must complete and submit Attachment 3: Cost Bid Forms (Appendice 8). Pricing should be provided as hourly rates for various levels of experience and expertise as noted in the sheet. Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories. Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories.

It is essential that Bidders complete the bid form detailing estimated costs, by key program tasks, indicating hourly rates for personnel, travel, total hours and total cost for completing the project. The Program Administrators will enter into individual negotiations each subsequent year regarding any potential price increases, which must be justified by the Bidder.

9.0 PAYMENT FOR SERVICES and INVOICING

No up-front payments will be made to vendors. Invoices shall be submitted to each Program Administrators on a monthly basis. A minimum 10% of the total invoice amount may be retained until the final project is completed and accepted by the Program Administrators. Bidder should identify on the Attachment 3: Cost Bid forms (Appendice 8), if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered. Discounts will be factored into the evaluation of the bids and their acceptance is at Program Administrators option.

10.0 PROPOSALS SUBMISSION

National Grid is using an electronic software package called Ariba. Ariba Sourcing is an internet application designed to facilitate the collection of business information. All of the relevant RFP information including: Scope of Work, Terms & Conditions and other required documents are contained in this electronic RFP. You are required to submit your proposal response via Ariba, as well as send two hard copies of your proposal as specified in Section 14 below. For more information about Ariba, you may refer to their website at www.ariba.com.

Bidders are invited to prepare a detailed response to this proposal. This response should address all the requirements outlined in the Scope of Work, as well as any additional strategies and creativity regarding how the website will be branded. After review, the Program Administrators may invite Bidders in to present examples of the firm’s work that demonstrates their capabilities, as well as to provide more details on their plans and budget for the proposed branding of the website. Following the proposal review and any requested presentations, the Program Administrators will select a company to provide these services. A pre-bid meeting will also take place, as outlined below to answer any questions Bidders may have before submitting their final bid.
11.0 EXCEPTIONS AND CLARIFICATIONS

11.1 The Consultant agrees to all the provisions contained in this RFP and all enclosed Bid Documents unless exceptions are specifically and clearly listed in the Consultant’s proposal. All exceptions must be listed separately as either commercial or technical in nature and specifically identified as EXCEPTIONS. Any exceptions submitted by Consultant does not constitute acceptance by any of the Program Administrators. Exceptions will be negotiated and agreed to by each Program Administrator and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

11.2 Consultants preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Consultant’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

11.3 All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Massachusetts Sponsors at the end of the contract. The Consultant may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Program Administrators to do so.

11.4 Should a Consultant find any ambiguity, discrepancy or omission in the RFP, or should the Consultant have any questions, the Consultant shall notify National Grid through Ariba to afford the National Grid the opportunity to send any instructions or interpretations to other Consultants who have received an Invitation to Bid. The Program Administrators will not be responsible for any oral instructions or interpretations.

12.0 NOTICE OF INTENT TO DECLINE

If the Consultant declines to submit a proposal, all RFP documents must be deleted and/or destroyed and a message in Ariba must be submitted to National Grid with a brief explanation as to why your bid will not be submitted.

13.0 PRE-BID INFORMATIONAL MEETING

A pre-bid informational meeting is scheduled for Friday, February 5, 2010 at 10:00 AM via conference call by National Grid. Phone # 866-561-4997 access # 9674198. Please dial in to the conference call at the designated time. At this time, we will present a program overview and answer any final questions you may have regarding this RFP. In the meantime, if you have any specific questions, they should be sent via Ariba. All questions and answers will be posted through Ariba.

14.0 COMMUNICATIONS AND FORM OF RESPONSE

14.1 During the RFP process, all questions must be submitted via Ariba before February 19, 2010 5:00 PM EST. Answers to Bidder’s inquiries will be distributed within a 48 hours period through Ariba. In order to ensure fairness, until the time an award is made, Bidders shall have no direct communication regarding this RFP with any of the Program Administrators or any other personnel within the Sponsors’ organization. After the decision to award is announced, the successful Bidder may contract the Program Administrators and work with each Program Administrators’ Procurement contact to provide certificates of insurance and sign final contract documents. Failure to comply with these communications guidelines may disqualify the Bidder from further consideration.

14.2 Supplier’s proposal MUST include two separate VOLUMES. Volume I must address all commercial issues, while Volume II must address all technical requirements. Volumes I and II shall not be bound or otherwise joined together. VOLUME II MUST NOT CONTAIN ANY
COST OR PRICE INFORMATION. The organization of the cost proposal MUST conform to the organization enumerated in Attachment 3, Cost Estimate Bid Form (Appendix 8).

14.3 With the exception of sample reports and staff resumes, proposals must not exceed thirty pages.

14.4 A complete proposal must be sent via Ariba and two original hardcopies either hand delivered or sent via commercial carrier postmarked NO LATER THAN 5pm, Thursday, February 26, 2010 at 5:00pm to the following address:

Donald J. Pacheco
Sr. Procurement Specialist
National Grid
40 Sylvan Rd
Waltham, MA 02451

Note: In the event of problems with Ariba in loading bids, the Program Administrators reserve the right to extend the bidding due date time only to the extent the problem was fixed by Ariba.

PLEASE NOTE THAT PROPOSALS MAY NOT BE SUBMITTED VIA FAX UNDER ANY CIRCUMSTANCES.

15.0 PROPOSAL FORMAT

15.1 **Volume I: Commercial Proposal**

15.1.1 Commercial Exceptions: This section of the proposal MUST state clearly any exceptions which are being taken to the commercial requirements of this RFP. Exceptions must state what the exception is, the reason for the exception and proposed alternatives, and be organized sequentially in accordance with the organization of the RFP. Commercial exceptions MUST be clearly defined only in this section of the proposal. Bidder’s preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Bidder’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP, unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

15.1.2 All proposals must be properly dated and executed by an authorized representative of the Consultants organization. Failure to provide the required hard copy and electronic version of the proposal or all required information may result in rejection of the proposal.

15.1.3 Bid security procedures requires that bid information shall not to be shared with, or provided to, any PA employee, or any other outside firm prior to award of contract(s).

15.1.4 All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Bidder, which, if accepted, shall create a binding obligation upon the Bidder. Any limited duration offers shall be explicitly noted.

15.1.5 Bidders should identify if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered or not. Discounts will be factored into the evaluation of the bids and their acceptance is at the Sponsors’ option.

15.1.6 EEOC Compliance: If not previously submitted, please provide a statement that your company is in compliance with EEOC requirements.
15.1.7 **Insurance Certificate(s):** Include with your Bid a Certificate(s) of Insurance evidencing compliance with at least the minimum levels of insurance required in Section 11.0 Insurance of National Grid Terms & Conditions, which is contained in this document. If you are awarded the work, you will be required to submit certificates to each Program Administrator identifying them as an additional insured and complying with their insurance levels.

15.1.8 All Bidders must conform to National Grid’s Background Check policy as specified in Ariba. The other Program Administrators may have similar commercial requirements that you may have to comply with as well.

15.1.8 **Vendor Information:** Bidders shall provide a letter of introduction and a statement of qualifications, which details the Bidder’s experience, especially with energy efficiency projects. The Bidder’s statements should emphasize their (1) knowledge and understanding of energy efficiency programs, and (2) the requirements of this RFP. In addition, provide a description of the legal status of respondent (e.g., sole proprietorship, partnership, limited partnership, joint venture, or corporation) and state of residency. Some of the other key points are as follows:

- A. General description of all the services and products your company offers with a brief description of its general history.
- B. Discussion of the companies staff to be assigned, and how they will be organized to deliver the services requested in the most efficient and expedient manner. Include a brief discussion of your firm’s internal quality control and review procedures.
- C. Include a list of other similar Services contracts in force nationally
- D. Provide the name, title, and contact information for three (3) references familiar with respondent’s business organization, finances and operational style. Provide resumes of key individuals in the firm providing the services to the Program Administrators.

15.2 **Volume II - Technical Proposal**

The Supplier's technical proposal, addressing all technical requirements MUST be included in this section. **THIS VOLUME MAY NOT INCLUDE ANY COST OR PRICING INFORMATION.** In addition to the Supplier's technical proposal, the following items must be addressed, in the order listed:

15.2.1 **Title Page:** This section of the proposal should include a title page, which identifies the RFP Title, vendor’s name and the volume.

15.2.2 **Table of Contents:** The vendor’s proposal should include a Table of Contents, which lists the titles and page numbers for each major topic and sub-topic.

15.2.3 **Executive Summary:** This section should include a summary of the key points and highlights of the vendor’s response.

15.2.4 **Technical Requirements:** This section of the proposal must include a completed copy of the Technical Response with responses provided to each of the requirements. The Response must follow the outline provided in Document 2: Section 4. For each project to start in 2010, the response must follow the outline provided at the conclusion of each Scope of Work (Appendices 1 – 7). Every item should have a response, including any exceptions. Bidders should also include a description of all assumptions used to develop their response to this RFP.

16.0 **TERMS AND CONDITIONS and SPECIMEN AGREEMENT**
The successful Consultant’s services shall be provided in accordance with the following terms and conditions from each Massachusetts Sponsor:

- **Attachment 4**: National Grid Terms & Conditions for Consulting Services, Document 0400 (06/25/09)
- **Attachment 5**: NSTAR’s Requirements Prior to Contract Award
- **Attachment 6**: Cape Light Compact Terms and Conditions
- **Attachment 7**: Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- **Attachment 8**: NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials
- **Attachment 9**: New England Gas Terms & Conditions

### 17.0 SAFETY, ENVIRONMENTAL and BACKGROUND CHECK REQUIREMENTS

The successful Consultant’s services shall be provided in accordance with each Program Administrators commercial requirements. National Grid’s commercial requirements are as follows:

- Contractor Safety Requirements dated 8/1/08 (Attachment 10)
  - You are required to fill out the Safety form in the RFP and submit it with your proposal.
- Contractor Environmental Requirements dated 2/29/08 (Attachment 11)
- Contractor Employee Background Check Requirements dated 1/10/08 (Attachment 12)
  - You are required to fill out the background Check form in the RFP and return it with your proposal.

### 18.0 SUMMARY RFP DOCUMENTS

This RFP is comprised of the following documents:

- **Attachment 1**: Information and Instructions for Consultants
- **Attachment 2**: Scope of Services (with Appendices 1-7 & Attachments)
- **Attachment 3**: RFP 007-10 Bid Forms (Appendice 8)
- **Attachment 4**: National Grid Terms & Conditions for Consulting Services, Document 0400 (06/25/09)
- **Attachment 5**: NSTAR’s Requirements Prior to Contract Award
- **Attachment 6**: Cape Light Compact Terms and Conditions
- **Attachment 7**: Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- **Attachment 8**: NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials
- **Attachment 9**: New England Gas Terms & Conditions
- **Attachment 10**: National Grid Contractor Safety Requirements (8/1/08)
- **Attachment 11**: National Grid Environmental Requirements (02/29/08)
- **Attachment 12**: National Grid Background Check Requirements for Contracted Service (1/10/08)

### 19.0 SCHEDULE

The following dates are critical to this RFP:

- Request for Proposal Issued via Ariba January 25, 2010

RFP 007-10 Large Commercial & Industrial Evaluation Contractor (LCIEC)
• Bidder’s Conference Call  February 5, 2010 10:00 a.m.- 11:00 a.m
• Last Date for Questions from Bidders  February 19, 2010 @ 5:00 p.m. EST
• Proposals Due via Ariba  February 26, 2010 @ 5:00 p.m. EST via Ariba
• Contract Awarded  April 15, 2010
• Kick-off Meeting  TBD- as soon as conveniently possible after the selection of contractor.
National Grid

Request for Proposal

2010 – 2012 Massachusetts

Large Commercial & Industrial Evaluation Contractor (LCIEC)

DOCUMENT 2: General Scope of Work

The Sponsors participating in this joint request are Bay State Gas, Berkshire Gas, Cape Light Compact, Fall River Gas, National Grid (Electric & Gas), NSTAR Electric and Gas Corporation, Western Massachusetts Electric, and Unitil/Fitchburg Gas & Electric (referred to hereafter as the “Sponsors”). All Sponsors are Program Administrators (“PAs”) of energy efficiency programs in the Commonwealth of Massachusetts.

1.0 BACKGROUND

MASSACHUSETTS EVALUATION FRAMEWORK

On September 8, 2009, the Massachusetts Energy Efficiency Advisory Council (EEAC or Council) unanimously approved a resolution developed collaboratively by the Program Administrators (PAs) and the EEAC Consultants, setting forth a new administrative framework for the performance of Evaluation, Measurement and Verification (EM&V) in Massachusetts. The full Resolution is presented verbatim in Document 3; the following is a summary of the Resolution, its effects, and its relevance to the current RFP.

Under the Resolution, the EEAC will assume an oversight role over the EM&V activities of the PAs to ensure the objectivity and independence of those activities, and the perception of such, and to help ensure consistency, timeliness, and credibility. While the PAs and EEAC Consultants (acting on behalf of the EEAC) will continue to work diligently to reach a consensus on evaluation issues, where there are areas of difference that may arise that cannot be resolved through consensus during the on-going interactive process between the EEAC Consultant and the PA evaluation staff, authority for decision-making will reside with the EEAC or its Designee. This arrangement is subject to a system of appeals in the event of any disputes that cannot be resolved collaboratively.

The Resolution also restructures EM&V in Massachusetts so that most studies are to be performed at a statewide rather than a PA-specific level. It specifies that the range of evaluation activities be divided into 5 to 7 semi-permanent statewide Research Areas, oriented primarily to specific target markets. Each Research Area is to have an assigned Study Manager from the PAs, an assigned EEAC Evaluation Consultant, and an independent evaluation contractor who conducts the studies under a long-term contract with the individual PA companies.
Consistent with the Resolution, the PAs and the EEAC Consultants subsequently developed a system of six statewide Research Areas, as follows:

1. **Residential Retrofit and Low Income.** This category includes residential cooling and heating equipment, residential heating and water heating, residential and low-income retrofit, weatherization, and most aspects of multi-family programs.

2. **Residential Retail Products.** This includes residential lighting and appliance programs.

3. **Residential New Construction.** This includes residential and low-income new construction and major renovations programs, as well as codes and standards and compliance efforts. This Research Area also includes baseline studies of construction practices for both single- and multi-family homes.

4. **Non-Residential Large Retrofit and New Construction.** This includes C&I new construction (small and large) and major renovation, as well as large C&I retrofit programs.

5. **Non-Residential Small Retrofit.** This includes the current C&I small retrofit, direct install programs. This category would also include any future programs that may target small non-residential customers.

6. **Special and Cross-Sector Studies.** This includes those studies that do not fit readily into any of the five market-oriented Research Areas above, as well as those studies that are cross-sector in nature, including: cross-sector free ridership and spillover studies; non-energy benefits; behavioral programs; community-based pilots; and marketing, public education, and outreach activities.

Massachusetts’ evaluation planning and implementation schedule calls for selecting contractors, and finalizing contracts, for all six Research Areas by April 15, 2010. Evaluation activities under each contract are to be conducted subject to the terms of the EEAC Resolution. **The purpose of this RFP is to select an independent evaluation contractor for the fourth Research Area, Non-Residential Large Retrofit and New Construction.**

The program administrators currently providing energy efficiency programs to large commercial and industrial customers in the State of Massachusetts are seeking proposals from qualified entities (“Respondent(s)” or “Bidder(s)”) regarding the completion of all evaluation activities relating to the Large Commercial and Industrial (“LC&I”) energy efficiency programs planned for implementation from January 2010 through December 2012. For the purposes of this proposal, the selected entity will be referred to as the Large Commercial & Industrial Evaluation Contractor or “LCIEC”.

This document outlines the scope of work for performance of process evaluation, impact evaluation, and market assessment services associated with all Large Commercial and Industrial Energy Efficiency programs to be conducted from the time of the award of this contract until the end of 2012.
2.0 INTRODUCTION

The specific evaluation activities associated with this RFP are laid out for the first year. The scopes of work for the first year are to be bid as presented. Those scopes may be revised after bids are received. Work in years two and three of the contract period will be developed toward the end of 2010 and will be updated throughout the term of the contract. Three expected activities which all respondents must be prepared to complete are as follows:

- Assess the current large commercial and industrial energy consumption market conditions in the State of Massachusetts.
- Accurately and effectively determine the energy and demand savings of the large commercial and industrial measures covered in the RFP throughout the state.
- Assess the effectiveness of marketing efforts, program satisfaction and data tracking for the associated programs.

Most of the Evaluation activities commencing in 2010 will be performed by the LCIEC according to Scopes of Work listed below though additional work in 2010 not included in those scope is likely. Evaluation activities commencing in 2011 and 2012 will be planned by the LCIEC and the plans will be subject to approval by the Sponsors; the MA Energy Efficiency Advisory Council (EEAC) and their consultants; and the MA DPU.

Included in this RFP are details regarding currently planned evaluation activities to be performed in 2010. Respondents to this RFP are requested to complete specific evaluation proposals and bid forms for these planned activities.
3.0 TABLE OF CONTENTS

1.0 BACKGROUND .............................................................................................................................................. 1

2.0 INTRODUCTION ........................................................................................................................................... 3

3.0 TABLE OF CONTENTS ................................................................................................................................... 4

4.0 DESCRIPTION OF WORK ................................................................................................................................. 5

4.1. INITIAL TASKS ................................................................................................................................................ 5

4.2. FURTHER PROCESS EVALUATION INFORMATION ......................................................................................... 6

4.3. EVALUATION PLANNING ............................................................................................................................... 6

4.4. OTHER EVALUATION WORK ............................................................................................................................ 6

4.5. FINAL REPORTS .............................................................................................................................................. 7

4.6. CONTRACTOR RESPONSIBILITIES .................................................................................................................... 7

4.7. SPONSOR RESPONSIBILITIES ........................................................................................................................... 8

4.8. GENERAL GUIDELINES .................................................................................................................................... 8

4.9. ELECTRICIAN REQUIREMENTS ...................................................................................................................... 9

5.0 REQUIRED FORMAT FOR PROPOSALS ........................................................................................................ 10

5.1. INTRODUCTION, CORPORATE QUALIFICATIONS AND EXPERIENCE .......................................................... 10

5.2. BILLING ANALYSIS QUALIFICATIONS ........................................................................................................... 10

5.3. SAMPLING QUALIFICATIONS .......................................................................................................................... 10

5.4. PERSONNEL QUALIFICATIONS ........................................................................................................................ 10

5.5. RESUMES OF KEY PERSONNEL ..................................................................................................................... 11

5.6. APPROACH .................................................................................................................................................... 11

5.7. WRITING SAMPLE ......................................................................................................................................... 11

5.8. REFERENCES ................................................................................................................................................. 11

5.9. PROPOSED SCHEDULE ................................................................................................................................... 11

5.10. METERING EQUIPMENT INVENTORY ........................................................................................................... 12

5.11. APPENDICES ............................................................................................................................................. 12

ATTACHMENTS

A – GUIDELINES FOR METHODOLOGY DEVELOPMENT
B – GUIDELINES FOR CUSTOMER AND PA CONTACT
C – GUIDELINES FOR CALCULATION OF PEAK KWH AND KWF
D – MISCELANEOUS GUIDELINES
E/F – GUIDELINES ON REPORTING
G – EXAMPLE APPLICATION DOCUMENTATION FOR RESPONSE DEVELOPMENT
H – ISO NEW ENGLAND’S MANUAL FOR MVDR

APPENDICES

1 – MARKET CHARACTERIZATION SCOPE OF WORK
2 – PRESCRIPTIVE VSD IMPACT EVALUATION SCOPE OF WORK
3 – CUSTOM ELECTRIC HVAC IMPACT EVALUATION SCOPE OF WORK
4 – CUSTOM GAS MEASURES IMPACT EVALUATION SCOPE OF WORK
5 – PRESCRIPTIVE GAS MEASURES IMPACT EVALUATION SCOPE OF WORK
6A – COMPREHENSIVE DESIGN APPROACH IMPACT EVALUATION SCOPE OF WORK
6B – COMPREHENSIVE DESIGN APPROACH PROCESS EVALUATION SCOPE OF WORK
7 – EXPEDITED GENERAL PROCESS EVALUATION SCOPE OF WORK
8 – BID FORM (MS EXCEL FILE)
9 – TERMS & CONDITIONS (ONE FOR EACH PARTICIPATING SPONSOR)
10 – CONTRACTOR ENVIRONMENTAL REQUIREMENTS
11 – EXAMPLES OF PREVIOUS EVALUATION STUDIES
DESCRIPTION OF WORK

3.1. Initial Tasks

Market Characterization will be undertaken by the LCIEC and is expected to require multiple years to complete. The purpose of this activity is to determine attitude and awareness of market actors, measure market indicators, identify market barriers, conduct baseline studies (as necessary), and update baseline for energy efficient products (if necessary). Please see APPENDIX 1 for a full scope of work and respondent requirements.

In the Summer of 2010, Massachusetts will be undertaking a mid-course adjustment process to consider whether any changes to program approaches are required for 2011-2012. Given the sharp increase in program budgets that is planned for these years and the potential magnitude of the programming and resource allocation decisions that may be made as part of the mid-course adjustment process, it is critical that timely information be available regarding key program process issues and initial market response to new and expanded program services. The Massachusetts PAs are therefore committed to completing a global process and marketing evaluation by July 15, 2010. A small targeted process evaluation is planned for this research area (APPENDIX 7).

Impact Evaluation activities will take place every year. Not all programs are expected to be evaluated each calendar year. The goal of every impact evaluation is to accurately determine the actual savings achieved for the program and its measures. The results of each impact evaluation update the impact factors used for planning and reporting for the program. The following impact evaluations will commence in 2010. Please see each associated appendix for the scope of work for each evaluation as well as respondent requirements.

- Prescriptive Variable Speed Drives (APPENDIX 2)
- Custom HVAC (APPENDIX 3)
- Custom Gas (APPENDIX 4)
- Prescriptive Gas (APPENDIX 5)
- Comprehensive Design Approach (APPENDIX 6A)

Evaluation activities in 2011 and 2012 may involve analysis techniques that may not be required in the above five tasks. For this reason we ask that all respondents demonstrate their ability to perform econometric billing analysis as part of future evaluation activities. Please see APPENDIX 11 for examples of the level of work expected and Section 5.2 for instructions submitting qualifications.

Process Evaluation activities will take place every year. Not all programs will have a process evaluation every year. The goal of process evaluations is to assess how efficiently a program was or is being implemented. This is done by evaluating the operational efficiencies of the program administrators and contractors. Process evaluations shall also assess the customer satisfaction in every aspect, use of new practices and best practices and the effectiveness of marketing and/or any program outreach activities. The following process evaluations will
commence in 2010. Please see each associated appendix for the scope of work for each evaluation as well as respondent requirements.

- Comprehensive Design Approach (APPENDIX 6B)

### 3.2. Further Process Evaluation Information

In addition to the process evaluations above, all Program Administrators in MA will be undertaking a global process and marketing evaluation which will cover:

1. Customer and market response to new or expanded or revised marketing efforts;
2. A review of sales techniques that are effective;
3. An early review of electric and gas integration efforts and single point of contact/cross PA integration in MA as well as comparison to selected other states;
4. An early review of projects that are comprehensive, whole building, or otherwise targeted to deeper savings; and
5. Process evaluation and design review of community-based projects.

This project is **NOT** included in this RFP as it goes across all research areas, but in 2011 and 2012 such topics are likely to be covered under this RFP for large commercial programs. Therefore, the team that responds to this RFP must have the expertise required to complete the five items listed above.

### 3.3. Evaluation Planning

In a typical year, an evaluation plan will be developed somewhere between the last quarter of the previous year and the first quarter of the year to be evaluated. It is expected that each year’s evaluation activities will contain market characterization studies, impact evaluations, and process evaluations. Certain activities may be done on a regular basis (annually, semi-annually, etc.). Other activities may be done only when deemed necessary.

The selected Evaluation Contractor will be responsible for running conference calls to discuss evaluation activities for the coming year, producing a draft plan and a final Evaluation Plan. It is expected that at least 5 calls will be required to finalize a plan for this sector. Bidders should include this activity in their proposed budgets.

The provided bid form (Appendix 8) contains a tab in which each bidder must provide hourly rates by personnel type for activities to be completed in 2011 and 2012.

### 3.4. Other Evaluation Work

In addition to the items mentioned above, different types of activities are conducted on an ad-hoc basis as program changes dictate. Bidders should be prepared to provide this ad-hoc evaluation work and in their proposals should demonstrate their ability to meet such requests. Bidders should not include a cost for this other evaluation work in their proposals.
3.5. Final Reports

Full reports will be expected for each evaluation task completed. Full reports will also be expected for each site included in custom measure impact evaluations. These reports will be subject to Sponsor review and will be used for reporting purposes. All reports require EEAC approval before finalization. See Attachment E/F for details regarding reporting requirements.

3.6. Contractor Responsibilities

It will be the contractor’s responsibility to develop the following items for each study performed under this contract. These items will be subject to Sponsor approval.

1. Project Plan and Timeline
2. Project Methodology
3. Sample Selection plan (when applicable).
4. Data analysis plan.

Once approval has been received for the above items, it becomes the responsibility of the contractor to complete the project in a timely manner. During the completion of each project, the contractor will complete the following:

1. Provide the research area manager with a Monthly project updates of what has been accomplished over the previous month and what is planned in the following month.
2. Participate in weekly teleconferences with the research area manager and other sponsors. Agendas for each teleconference will be created such that each project is discussed at least once per month.

In addition to the above noted work tasks, Respondents should take into consideration, as they are developing their proposal, that they will be under the direction of the Sponsors’ Large Commercial & Industrial evaluation study teams and EEAC evaluation consultants and solely responsible for:

1) Keeping all data, work products, information provided by the Sponsors or discovered by the contractor confidential;
2) Providing the Sponsors’ study team with updates on the work progress as requested by the Sponsors’ study team;
3) Providing the Sponsors’ study team with draft copies of all final survey instruments, inventory forms, checklists, and protocols for review and approval; and
4) Providing the Sponsors with a comprehensive annual report consisting of:
5) A detailed report and Executive Summary that summarizes all evaluation studies conducted by the Respondent by March 31 of each year of the contract – i.e., 2011, 2012, 2013.
6) Providing the Sponsors with electronic copies of all survey instruments, inventory forms, data collected, and evaluation results at the end of each study for the Sponsors’ records.
7) Providing all metering equipment required to complete all tasks associated with this contract.

Please see the scope of work appendices for responsibilities specific to each scope.
3.7. **Sponsor Responsibilities**

It will be the responsibility of each sponsor (program administrator, PA) to provide the contractor with data associated with the evaluated programs and participating customers. This may include billing data, consumption data, contact information, and program data.

In addition, it will be the responsibility of each sponsor to provide the contractor with application materials for each custom project site selected for evaluation. This information will include all utility held documentation associated with the measure to be evaluated.

Please see the scope of work appendices for responsibilities specific to each scope.

3.8. **General Guidelines**

- In order to avoid conflicts of interest during evaluation, no entity involved in the original installation, TA analysis, application, or commissioning of a measure may be involved in the evaluation of the installed measure. This provision does not exclude any entity from responding to this RFP. However, should a conflict arise during the course of the contract, it is expected that any visits to the site, metering, analysis, and reporting for measures found to be in conflict will be performed by a subcontracted non-conflicting entity.

- All measurement and verification electrical measures must meet the requirements set forth by ISO New England in “ISO New England Manual for Measurement and Verification of Demand Reduction Value from Demand Resources-Manual M-MVDR, Revision: 1, Effective Date: October 1, 2007”, provided as Attachment H to this RFP. The bidders should carefully study the entire attached document and address any issues relevant to meeting those requirements. Particular attention should be paid to:
  - Sections 5.2.4 Measurement and Verification Approach, Calibrated Simulation
  - Section 5.5 Measurement and Verification Approach, Requirements, Subsection (1)
  - Section 6.2 Establishing Baseline Conditions, Requirements for All Demand Resources
  - Section 9.2 Monitoring Parameters and Variables, Requirements
  - Section 10.2 Measurement Equipment Specification, Requirements
  - Section 11.2 Monitoring Frequency and Duration, Requirements
  - Section 12.2 Data Validation, Retention and Management, Requirements

  If respondents have any questions about complying with these rules they should submit them before submitting their bid.

- Respondents must also review the report “Review of ISO New England Measurement and Verification Equipment Requirements” completed by RLW (now KEMA) in April 2008. All metering equipment used for activities covered under this RFP must comply with the ISO New England equipment requirements. **Demonstration of fulfillment of all requirements for each meter model to be sent into the field must be submitted before metering begins with that model.**

- Demand savings should be calculated using the ISO forward capacity market (FCM) definition. More specifics are provided on the definition of peak demand in Attachment C.
3.9. **Electrician Requirements**

It is a **requirement** that electrical measurements taken in a customer’s electrical panel must be done by an electrician licensed in the state of Massachusetts. Spot power measurements on equipment must also be made by licensed electricians. Lighting or motor runtime loggers not installed in an electrical panel can be installed without an electrician.

It is recognized that requiring the selected contractor to hire licensed electricians may present logistical difficulties and financial risk to the contractor. As a result, Sponsors will make its third-party electrical contractor available to the selected bidder(s). Additionally, Sponsors will be billed directly by our contractor for licensed electrician services utilized for the Custom Process Installations Impact Evaluation project, and therefore the **cost of licensed electricians should not be included in the RFP bid price**.

Many customers will elect to utilize their own in-house electricians to perform electrical measurements. Please refer to the following "hierarchy" for utilizing licensed electricians:

1. **Customer In-House Electrician.** Customer should be asked by evaluation team if they have an in-house **licensed** electrician who can be made available to connect measurement equipment at the electrical panel or equipment during the site visit.
   
   a. If the Customer does not have an in-house electrician and chooses to bring in an outside electrician, the evaluation contractor should offer to have the customer utilize the Sponsor contracted electrician (see 2 below), or to have the customer engage their outside electrician (option 3 below) and then invoice their Sponsor for the cost of the outside electrician.

2. **Sponsor Contracted Electricians.** The evaluation contractor may utilize the Sponsor's third-party contracted electricians located in MA, and shall be responsible for scheduling electrician services. The customer’s Sponsor will be billed directly by the contracted electricians. Contact information will be provided upon RFP award.

3. **Customer-Selected Third-Party Electrician.** The least-preferred option is for the customer to utilize their preferred third-party licensed electrician. The evaluation contractor shall coordinate electrician services with the Customer and the third-party electrician, and the **customer** may invoice their Sponsor for the cost of the electrician.

Bidders should not include the cost of licensed electricians from their project cost estimate since the cost will be borne directly by the customer or by Sponsor.
4.0 REQUIRED FORMAT FOR PROPOSALS

Proposals shall contain the following information and shall be formatted as described below. Proposals must also be signed in longhand in accordance with the instructions stated in Appendix 12 - Bidder’s Submission Statement. Additional information may be supplied under separate cover but is not required, encouraged, nor likely to be read. Bidder adherence to these instructions for proposal format will be a factor in evaluation of proposals.

4.1. Introduction, Corporate Qualifications and Experience

Provide a letter of introduction and a statement of qualifications which details the bidder’s experience in evaluating Large Commercial & Industrial energy efficiency projects including building simulations using Trace and eQuest/DOE2, Custom EE Projects, Market Assessment, and Process Evaluation. The bidder’s statements should emphasize their (1) knowledge and understanding of large energy efficiency projects, (2) experience with performing site work and instrumentation for similar purposes in a diversity of settings, and (3) experience with similar types of data analysis (exclude Billing Analysis & Sampling from this section). Section must not exceed four (4) pages.

4.2. Billing Analysis Qualifications

Provide a short discussion, not exceeding two (2) pages, specifically focused on the respondent’s previous experience with utility billing analysis. Provide a list of personnel who will be responsible for billing analysis should it be required. Please include their resumes per Section 5.5.

4.3. Sampling Qualifications

Provide a short discussion, not exceeding one (2) pages, specifically focused on the respondent’s previous experience with utility sample determination, such as drawing samples to meet specific precision requirements. Provide a list of personnel who will be responsible for sampling throughout the period of the contract and include a description of their specific experience. Please include their resumes per Section 5.5.

4.4. Personnel Qualifications

Provide a listing, not exceeding ten (10) pages (not including resumes), of all staff proposed to provide indicated services (excluding Billing Analysis and Sampling) and a summary of their qualifications, including technical training and licensing. If subcontractors are to be used, include a summary of qualifications and references for each. Bidders must proclaim the availability of resources to devote to the project to ensure completion by the desired milestones. If the Bidder intends to hire additional staff in order to provide the proposed services, a description of its approach to hiring and the experience it will require of perspective employees should be included. If licenses are required, Bidder shall provide verification of each license holder.
4.5. **Resumes of Key Personnel**

Respondents must include resumes of key personnel who will be directly involved on a daily basis with this project. If the Respondent intends to hire additional staff in order to provide the proposed services, the required and preferred qualifications for the position must be submitted along with a proposed timeline for hiring. Resumes of key subcontractors must also be submitted. Number of resumes included must not exceed thirty (30). All resumes must be submitted in APPENDIX 13, do not submit resumes in the main body of the response.

4.6. **Approach**

A separate approach must be submitted for each scope of work provided in Appendices 1 through 7. These approaches must be submitted as appendices to the overall submission. Each approach must be labeled with the same appendix index as its associated SOW. Each document must provide a description of the evaluation approach and techniques (including methodology and data sources) which may be used for the associated task. Each scope of work may ask for additional information specific to the scope’s tasks. If the Bidder is able to provide relevant additional and/or alternative services, a clear and concise description of the additional services should be provided. Additional and/or alternative services shall be identified as such and shall be provided in addition to a description of the services to be provided in meeting the requirements set forth in the Scope of Services.

4.7. **Writing Sample**

Bidders who have not participated in Sponsor evaluations over the past 5 years must submit a brief writing sample of no more than ten pages.

4.8. **References**

Bidders who have not participated in Sponsor evaluations in the past 5 years must submit at least five and no more than ten references relating to previous work that falls within the scope of this contract. References should include: Name, Title, Organization, Phone, Email, & Up to three sentences regarding their interaction with the Respondent’s previous work.

Bidders who have participated in Sponsor evaluations in the past 5 years may submit at least five and no more than ten references relating to previous work that falls within the scope of this contract.

Do not use a Sponsor organization as a reference.

4.9. **Proposed Schedule**

A potential schedule is included at the end of this document. If modifications are recommended, include a modified schedule. If no schedule is submitted, then it will be assumed that the potential work plan is accepted. The schedule for the Expedited Process Evaluation and CDA Process Evaluation cannot be modified.
4.10. Metering Equipment Inventory

Given the number of projects that will be undertaken simultaneously under this contract, contractors must own or have access to a significant amount of metering equipment. In this section please list the type of meter (kW spot meter, kW long term meter, data logger, etc.), the volume of meters of each type that are proposed for the first 12 months of the contract, and whether the meters are owned or will be rented. If the meters will be rented, please list the organization that the meters will be rented from.

4.11. Appendices

The following appendices must be received with the submission. Each appendix can be submitted as a separate document or appendices may be grouped together.

1 – MARKET CHARACTERIZATION SCOPE OF WORK
2 – PRESCRIPTIVE VSD IMPACT EVALUATION SCOPE OF WORK
3 – CUSTOM ELECTRIC HVAC IMPACT EVALUATION SCOPE OF WORK
4 – CUSTOM GAS MEASURES IMPACT EVALUATION SCOPE OF WORK
5 – PRESCRIPTIVE GAS MEASURES IMPACT EVALUATION SCOPE OF WORK
6A – COMPREHENSIVE DESIGN APPROACH IMPACT EVALUATION SCOPE OF WORK
6B – COMPREHENSIVE DESIGN APPROACH PROCESS EVALUATION SCOPE OF WORK
7 – EXPEDITED GENERAL PROCESS EVALUATION
8 – BID FORM (MS EXCEL FILE)
13 – RESUMES OF KEY PERSONNEL
The following work plan is provided as an example to bidders. Not all projects are expected to start or end on the same date.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY # (by start date)</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
</tr>
<tr>
<td>APPENDIX #</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>6A</td>
<td>6B</td>
<td>4</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Preceding Event: (other than contract signing)</td>
<td>Completion of MA-TRM by 10/31/2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kick-off Meeting Due</td>
<td>5/1/2010</td>
<td>05/01/2010</td>
<td>05/01/2010</td>
<td>05/01/2010</td>
<td>07/01/2010</td>
<td>08/01/2010</td>
<td>11/10/2010</td>
<td></td>
</tr>
<tr>
<td>General Project Plan Due</td>
<td>5/7/2010</td>
<td>05/10/2010</td>
<td>05/15/2010</td>
<td>05/20/2010</td>
<td>05/15/2010</td>
<td>08/01/2010</td>
<td>09/01/2010</td>
<td></td>
</tr>
<tr>
<td>Metering &amp; Analysis Plan Due</td>
<td>n/a</td>
<td>06/15/2010</td>
<td>06/20/2010</td>
<td>05/31/2010</td>
<td>10/30/2010</td>
<td>11/30/2010</td>
<td>12/01/2010</td>
<td></td>
</tr>
<tr>
<td>Summer Metering installed by</td>
<td>n/a</td>
<td>07/15/2010</td>
<td>07/20/2010</td>
<td>n/a</td>
<td>07/15/2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter Metering installed by</td>
<td>n/a</td>
<td>12/15/2010</td>
<td>12/15/2010</td>
<td>n/a</td>
<td>01/15/11*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metering &amp; Interviews Complete</td>
<td>06/14/2010</td>
<td>10/20/2010</td>
<td>01/15/2011</td>
<td>01/15/2011</td>
<td>07/15/10</td>
<td>03/15/2011</td>
<td>03/01/2011</td>
<td>08/15/2011</td>
</tr>
<tr>
<td>Analysis Complete</td>
<td>n/a</td>
<td>11/20/2010</td>
<td>02/20/2011</td>
<td>02/20/2011</td>
<td>07/31/10</td>
<td>04/15/2011</td>
<td>03/15/2011</td>
<td>09/01/2011</td>
</tr>
<tr>
<td>Preliminary Results Due</td>
<td>n/a</td>
<td>12/01/2010</td>
<td>03/01/2011</td>
<td>03/01/2011</td>
<td>08/07/2010</td>
<td>04/30/2011</td>
<td>04/01/2011</td>
<td>09/01/2011</td>
</tr>
</tbody>
</table>

Notes: * Date occurs before date(s) above

Teleconferences will be scheduled for every week, but will focus on one or two of the current projects and pressing issues only. Discussion will be strictly held to a 1 hour maximum.
EVALUATION TASKS FOR
MASSACHUSETTS ENERGY EFFICIENCY
PROGRAMS IN THE RESIDENTIAL NEW
CONSTRUCTION AREA

2010-2012

REQUEST FOR PROPOSAL
RFP 006-10

January 22, 2010

Prepared by:

John Spring
Procurement Specialist
National Grid
40 Sylvan Road
Waltham, MA  02451
781-907-3694
john.spring@us.ngrid.com
TABLE OF CONTENTS

INFORMATION and INSTRUCTIONS FOR BIDDERS
1.0 BACKGROUND 3
2.0 PROGRAM ADMINISTRATOR SPONSOR LIST 3
3.0 UNAUTHORIZED DISCLOSURE 3
4.0 CONFLICT OF INTEREST RULES 4
5.0 SCOPE OF WORK 4
6.0 LIMITATIONS 4
7.0 PROGRAM ADMINISTRATORS DISCRETION 4
8.0 PRICING 5
9.0 PAYMENT FOR SERVICES & INVOICING 5
10.0 PROPOSAL SUBMISSION 5
11.0 EXCEPTIONS & CLARIFICATIONS 6
12.0 NOTICE OF INTENT TO DECLINE 6
13.0 PRE-BID INFORMATIONAL MEETING 6
14.0 COMMUNICATIONS & FORM OF RESPONSE 6
15.0 PROPOSAL FORMAT 7
16.0 TERMS & CONDITIONS and SPECIMEN AGREEMENT 9
17.0 SAFETY, ENVIRONMENTAL & BACKGROUND CHECK REQUIREMENTS 9
18.0 SUMMARY OF RFP DOCUMENTS 9
19.0 SCHEDULE 10

ATTACHEMENTS

• Attachment 1: - Information and Instructions for Consultants
• Attachment 2: - Scope of Work (with Appendix A-I)
• Attachment 3: - RFP 006-10 Bid Form (Appendix J)
• Attachment 4: - National Grid Terms & Conditions for Consulting Services, Document 0400 (06/25/09)
• Attachment 5: - NSTAR’s Requirements Prior to Contract Award
• Attachment 6: - Cape Light Compact Terms and Conditions
• Attachment 7: - Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
• Attachment 8: - NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials
• Attachment 9: - New England Gas Company Terms & Conditions
• Attachment 10: - National Grid Contractor Safety Requirements (8/1/08)
• Attachment 11: - National Grid Environmental Requirements (02/29/08)
• Attachment 12: - National Grid Background Check Requirements for Contracted Service Providers - Contractor Employee Background Checks, (1/10/08)
MASSACHUSETTS PROGRAM ADMINISTRATORS

REQUEST FOR PROPOSAL
RFP 006-10

EVALUATION TASKS FOR MASSACHUSETTS ENERGY EFFICIENCY PROGRAMS IN THE RESIDENTIAL NEW CONSTRUCTION AREA
2010 – 2012

INFORMATION AND INSTRUCTIONS FOR BIDDERS

1.0 BACKGROUND

The Massachusetts Program Administrators for the Massachusetts Energy Efficiency programs in the Residential New Construction area request proposals to perform various evaluation tasks addressing the state of Massachusetts, as described in this Request for Proposal.

This RFP covers the time period 2010 through 2012 and all programs and pilots that are administered within the Residential New Construction area. Currently the only program within this area is the Energy Star Homes program, although it has a number of pilots that are occurring in 2009 and 2010 that will need to be evaluated.

National Grid will be taking the lead in this RFP to coordinate the solicitation, and results, as well as together with the other Program Administrators, select a supplier for the program.

2.0 SPONSOR LIST

The list of Program Administrators for this RFP includes:

- Bay State Gas
- Berkshire Gas
- Cape Light Compact
- New England Gas Company
- National Grid (Electric & Gas)
- NSTAR Electric and Gas Corporation
- Western Massachusetts Electric
- Unitil/Fitchburg Gas & Electric

3.0 UNAUTHORIZED DISCLOSURE

3.1 The Program Administrators, consider any information provided to Consultants in the course of business to be privileged and confidential between Consultant and the Program Administrators. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Consultant may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Program Administrators.
3.2 Consultant’s proposal will be considered as being in full compliance with all documents, specifications, drawings and engineering data included in this RFP unless specific exceptions or clarifications are separately stated.

4.0 CONFLICT OF INTEREST RULES

Bidders who have provided feasibility studies, savings estimates, application preparation assistance, design services, installation services, Rater services, commissioning services on projects for the Massachusetts New Homes with Energy Star program are not eligible to provide evaluation services. In addition any bidder who has contracts with other entities that may impact the bidder’s ability to perform evaluation services as an independent body are also not eligible. In particular any potential bidder who is providing consulting or implementation services to the Massachusetts EEAC, MA DOER, or it consultants for any energy efficiency programs is ineligible to bid on this contract.

The Program Administrators will screen potential bidders who may be ineligible to perform evaluation services based on the above criteria. Nevertheless, bidders are under obligation to disclose to the Program Administrators when it is apparent to them that such situations may exist.

5.0 SCOPE OF WORK

Scope of Work

- See Attachment 2 Scope of Work (with Appendix A-I) for a description of the Services to be provided.

6.0 LIMITATIONS

Bidder shall mean those firms/vendors acting in the role of Supplier when responding with a Proposal to this RFP. Proposal shall mean the Bidder's formal response indicating their committed solutions that meet or exceed the requirements of the RFP. Subcontractors, or subs, can be defined as any Supplier under Contract or in the RFP response that are considered financially independent of the Bidder in any other business or accounting relationship.

This RFP does not constitute an offer by the Program Administrators to enter into a contract, nor does any response to this RFP constitute an acceptance of an offer, nor does any response to this RFP bind the Program Administrators in any way. This document shall not be construed as a request or authorization to perform work at the Program Administrators' expense. Any work performed by a Bidder in connection with evaluating and responding to the RFP and, if selected, negotiating a definitive Agreement will be at the Bidder's own discretion and expense. This RFP does not represent a commitment to purchase or lease. The Program Administrators reserve the right to reject any and all proposals at its absolute discretion. Submission of a bid constitutes acknowledgment that the Bidder has read and agrees to be bound by such terms. The information in this document will enable the recipient to formulate a proposal to meet the workload requirements as described in this RFP. The numbers, volumes, run rates, etc. provided in this RFP are based upon the most recent data available and should serve as estimates to Bidders for pricing and response purposes.

7.0 PROGRAM ADMINISTRATORS DISCRETION

National Grid is issuing this RFP on behalf of the Program Administrators who at their discretion may:

- Select a Proposal other than the lowest priced, if the Program Administrators determine, at its sole and absolute discretion that the Program Administrators interests will best be served by doing so.
• Seek clarification from any Bidder regarding Proposal information and may do so without notification to any other Bidder.

• Continue the review procedure until a Bidder is selected successfully or until the Program Administrators choose to reject all Proposals.

• Accept any Proposal or alternate as submitted without negotiations.

• Select for negotiations only the overall best Proposal or negotiate all Proposals submitted which fall within a competitive range.

• Perform a complete financial review as well as an on-site investigation of any of the Bidders facilities to ensure it is capable of meeting the demands of Program Administrators and the needs identified in this RFP.

• May not award any Contract(s) as a result of this RFP.

• Reserves the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Program Administrators.

8.0 PRICING

The Program Administrators seek to procure Services at the most cost effective rates possible. Bidders must complete and submit Attachment 3: Cost Estimate Bid Forms. Pricing should be provided as hourly rates for various levels of experience and expertise as noted in the sheet. Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories. Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories.

It is essential that Bidders complete the bid form detailing estimated costs, by key program tasks, indicating hourly rates for personnel, travel, total hours and total cost for completing the project. The Program Administrators will enter into individual negotiations each subsequent year regarding any potential price increases, which must be justified by the Bidder.

9.0 PAYMENT FOR SERVICES and INVOICING

No up-front payments will be made to vendors. Invoices shall be submitted to each Program Administrators on a monthly basis. A minimum 10% of the total invoice amount may be retained until the final project is completed and accepted by the Program Administrators. Bidder should identify on the Attachment 3 Cost Estimate Bid forms, if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered. Discounts will be factored into the evaluation of the bids and their acceptance is at Program Administrators option.

10.0 PROPOSALS SUBMISSION

National Grid is using an electronic software package called Ariba. Ariba Sourcing is an internet application designed to facilitate the collection of business information. All of the relevant RFP information including: Scope of Work, Terms & Conditions and other required documents are contained in this electronic RFP. You are required to submit your proposal response via Ariba, as well as send two hard copies of your proposal as specified in Section 14 below. For more information about Ariba, you may refer to their website at www.ariba.com.

Bidders are invited to prepare a detailed response to this proposal. This response should address all the requirements outlined in the Scope of Work, as well as any additional strategies and creativity regarding how the website will be branded. After review, the Program Administrators may invite Bidders in to present examples of the firm’s work that demonstrates their capabilities, as well as to provide more details.
on their plans and budget for the proposed branding of the website. Following the proposal review and any requested presentations, the Program Administrators will select a company to provide these services. A pre-bid meeting will also take place, as outlined below to answer any questions Bidders may have before submitting their final bid.

11.0 EXCEPTIONS AND CLARIFICATIONS

11.1 The Consultant agrees to all the provisions contained in this RFP and all enclosed Bid Documents unless exceptions are specifically and clearly listed in the Consultant’s proposal. All exceptions must be listed separately as either commercial or technical in nature and specifically identified as EXCEPTIONS. Any exceptions submitted by Consultant does not constitute acceptance by any of the Program Administrators. Exceptions will be negotiated and agreed to by each Program Administrator and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

11.2 Consultants preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Consultant’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

11.3 All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Massachusetts Sponsors at the end of the contract. The Consultant may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Program Administrators to do so.

11.4 Should a Consultant find any ambiguity, discrepancy or omission in the RFP, or should the Consultant have any questions, the Consultant shall notify National Grid through Ariba to afford the National Grid the opportunity to send any instructions or interpretations to other Consultants who have received an Invitation to Bid. The Program Administrators will not be responsible for any oral instructions or interpretations.

12.0 NOTICE OF INTENT TO DECLINE

If the Consultant declines to submit a proposal, all RFP documents must be deleted and/or destroyed and a message in Ariba must be submitted to National Grid with a brief explanation as to why your bid will not be submitted.

13.0 PRE-BID INFORMATIONAL MEETING

A pre-bid informational meeting is scheduled for Friday, January 29, 2010 at 10:00 AM via conference call by National Grid. Phone # 866-561-4997 access # 401094. Please dial in to the conference call at the designated time. At this time, we will present a program overview and answer any final questions you may have regarding this RFP. In the meantime, if you have any specific questions, they should be sent via Ariba. All questions and answers will be posted through Ariba.

14.0 COMMUNICATIONS AND FORM OF RESPONSE

14.1. During the RFP process, all questions must be submitted via Ariba before February 5, 2010 5:00 PM EST. Answers to Bidder’s inquiries will be distributed within a 48 hours period through Ariba. In order to ensure fairness, until the time an award is made, Bidders shall have no direct communication regarding this RFP with any of the Program Administrators or any other personnel within the Sponsors’ organization. After the decision to award is announced, the successful Bidder may contract the Program Administrators and work with each Program Administrators’ Procurement contact to provide certificates of insurance and sign final contract documents. Failure
to comply with these communications guidelines may disqualify the Bidder from further consideration.

14.2 Supplier's proposal MUST include two separate VOLUMES. Volume I must address all commercial issues, while Volume II must address all technical requirements. Volumes I and II shall not be bound or otherwise joined together. VOLUME II MUST NOT CONTAIN ANY COST OR PRICE INFORMATION. The organization of the cost proposal MUST conform to the organization enumerated in Attachment 3, Cost Estimate Bid Form, and as described in Section 8.

14.3 With the exception of sample reports and staff resumes, proposals must not exceed thirty pages.

14.4 A complete proposal must be sent via Ariba and two original hardcopies either hand delivered or sent via commercial carrier postmarked NO LATER THAN 5pm, Thursday, February 22, 2010 at the following address:

John Spring  
Procurement Specialist  
National Grid  
40 Sylvan Rd  
Waltham, MA 02451

Note: In the event of problems with Ariba in loading bids, the Program Administrators reserve the right to extend the bidding due date time only to the extent the problem was fixed by Ariba.

PLEASE NOTE THAT PROPOSALS MAY NOT BE SUBMITTED VIA FAX UNDER ANY CIRCUMSTANCES.

15.0 PROPOSAL FORMAT

15.1 Volume I: Commercial Proposal

15.1.1 Commercial Exceptions: This section of the proposal MUST state clearly any exceptions which are being taken to the commercial requirements of this RFP. Exceptions must state what the exception is, the reason for the exception and proposed alternatives, and be organized sequentially in accordance with the organization of the RFP. Commercial exceptions MUST be clearly defined only in this section of the proposal. Bidder’s preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Bidder’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP, unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

15.1.2 All proposals must be properly dated and executed by an authorized representative of the Consultants organization. Failure to provide the required hard copy and electronic version of the proposal or all required information may result in rejection of the proposal.

15.1.3 Bid security procedures requires that bid information shall not to be shared with, or provided to, any PA employee, or any other outside firm prior to award of contract(s).

15.1.4 All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Bidder, which, if accepted, shall create a binding obligation upon the Bidder. Any limited duration offers shall be explicitly noted.
Bidders should identify if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered or not. Discounts will be factored into the evaluation of the bids and their acceptance is at the Sponsors' option.

**EEOC Compliance:** If not previously submitted, please provide a statement that your company is in compliance with EEOC requirements.

**Insurance Certificate(s):** Include with your Bid a Certificate(s) of Insurance evidencing compliance with at least the minimum levels of insurance required in Section 11.0 Insurance of National Grid Terms & Conditions, which is contained in this document. If you are awarded the work, you will be required to submit certificates to each Program Administrator identifying them as an additional insured and complying with their insurance levels.

All Bidders must conform to National Grid’s Background Check policy as specified in Ariba. The other Program Administrators may have similar commercial requirements that you may have to comply with as well.

**Vendor Information:** Bidders shall provide a letter of introduction and a statement of qualifications, which details the Bidder’s experience, especially with energy efficiency projects. The Bidder’s statements should emphasize their (1) knowledge and understanding of energy efficiency programs, and (2) the requirements of this RFP. In addition, provide a description of the legal status of respondent (e.g., sole proprietorship, partnership, limited partnership, joint venture, or corporation) and state of residency. Some of the other key points are as follows:

A. General description of all the services and products your company offers with a brief description of its general history.

B. Discussion of the companies staff to be assigned, and how they will be organized to deliver the services requested in the most efficient and expedient manner. Include a brief discussion of your firm’s internal quality control and review procedures.

C. Include a list of other similar Services contracts in force nationally

D. Provide the name, title, and contact information for three (3) references familiar with respondent’s business organization, finances and operational style. Provide resumes of key individuals in the firm providing the services to the Program Administrators.

**Volume II - Technical Proposal**

The Supplier’s technical proposal, addressing all technical requirements MUST be included in this section. **THIS VOLUME MAY NOT INCLUDE ANY COST OR PRICING INFORMATION.** In addition to the Supplier’s technical proposal, the following items must be addressed, in the order listed:

15.2.1 **Title Page:** This section of the proposal should include a title page, which identifies the RFP Title, vendor’s name and the volume.

15.2.2 **Table of Contents:** The vendor’s proposal should include a Table of Contents, which lists the titles and page numbers for each major topic and sub-topic.

15.2.3 **Executive Summary:** This section should include a summary of the key points and highlights of the vendor’s response.

15.2.4 **Technical Requirements:** This section of the proposal must include a completed copy of the Technical Response with responses provided to each of the requirements. Every item should have a response, including any exceptions. Bidders should also include a description of all assumptions used to develop their response to this RFP.
16.0 TERMS AND CONDITIONS and SPECIMEN AGREEMENT

The successful Consultant’s services shall be provided in accordance with the following terms and conditions from each Massachusetts Sponsor:

- **Attachment 5** – NSTAR’s Requirements Prior to Contract Award
- **Attachment 6** – Cape Light Compact Terms & Conditions.
- **Attachment 7** - Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- **Attachment 8** - NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials
- **Attachment 9**- New England Gas Company Terms & Conditions

17.0 SAFETY, ENVIRONMENTAL and BACKGROUND CHECK REQUIREMENTS

The successful Consultant’s services shall be provided in accordance with each Program Administrators commercial requirements. National Grid’s commercial requirements are as follows:

- Contractor Safety Requirements dated 8/1/08 (Attachment 10)
  - You are required to fill out the Safety form in the RFP and submit it with your proposal.
- Contractor Environmental Requirements dated 2/29/08 (Attachment 11)
- Contractor Employee Background Check Requirements dated 1/10/08 (Attachment 12)
  - You are required to fill out the background Check form in the RFP and return it with your proposal.

18.0 SUMMARY RFP DOCUMENTS

This RFP is comprised of the following documents:

- **Attachment 1**: - Information and Instructions for Consultants
- **Attachment 2**: - Scope of Services (with Appendix A-I)
- **Attachment 3**: - RFP 006-10 Bid Forms
- **Attachment 4**: - National Grid Terms & Conditions for Consulting Services, Document 0400 (06/25/09)
- **Attachment 5**: - NSTAR’s Requirements Prior to Contract Award
- **Attachment 6**: - Cape Light Compact Terms and Conditions
- **Attachment 7**: - Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- **Attachment 8**: - NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials
- **Attachment 9**: - New England Gas Company Terms & Conditions
- **Attachment 10**: - National Grid Contractor Safety Requirements (8/1/08)
- **Attachment 11**: - National Grid Environmental Requirements (02/29/08)
- **Attachment 12**: - National Grid Background Check Requirements for Contracted Service Providers - Contractor Employee Background Checks, (1/10/08)
19.0 **SCHEDULE**

The following dates are critical to this RFP.

- **Request for Proposal Issued via Ariba**  
  January 22, 2010

- **Bidder’s Conference Call**  
  January 29, 2010 10:00 a.m.- 11:00 a.m

- **Last Date for Questions from Bidders**  
  February 5, 2010 @ 5:00 p.m. EST

- **Q&A to Bidders**  
  February 10, 2010

- **Proposals Due via Ariba**  
  February 22, 2010 @ 5:00 p.m. EST via Ariba

- **Contract Awarded**  
  TBA- estimated late March/early April

- **Kick-off Meeting**  
  TBD- as soon as conveniently possible after the selection of contractor.
The Massachusetts Program Administrators (PAs) for the Massachusetts Energy Efficiency programs in the Residential New Construction area request proposals to perform various evaluation tasks addressing the state of Massachusetts, as described in this Request for Proposals. The PAs include Bay State Gas, Berkshire Gas, Cape Light Compact, Fall River Gas, National Grid (Electric & Gas), NSTAR Electric and Gas Corporation, Western Massachusetts Electric, and Unitil/Fitchburg Gas & Electric. This RFP covers the time period 2010 through 2012 and all programs and pilots that are administered within the Residential New Construction area. Currently the only program within this area is the ENERGY STAR Homes program, although it has a number of pilots that are occurring in 2009 and 2010 that will need to be evaluated.

BACKGROUND

MASSACHUSETTS EVALUATION FRAMEWORK

On September 8, 2009, the Massachusetts Energy Efficiency Advisory Council (EEAC or Council) unanimously approved a resolution developed collaboratively by the Program Administrators (PAs) and the EEAC Consultants, setting forth a new administrative framework for the performance of Evaluation, Measurement and Verification (EM&V) in Massachusetts. The full Resolution is presented verbatim in Appendix A; the following is a summary of the Resolution, its effects, and its relevance to the current RFP.

Under the Resolution, the EEAC will assume an oversight role over the EM&V activities of the PAs to ensure the objectivity and independence of those activities, and the perception of such, and to help ensure consistency, timeliness, and credibility. While the PAs and EEAC Consultants (acting on behalf of the EEAC) will continue to work diligently to reach a consensus on evaluation issues, where there are areas of difference that may arise that cannot be resolved through consensus during the on-going interactive process between the EEAC Consultant and the PA evaluation staff, authority for decision-making will reside with the EEAC or its Designee. This arrangement is subject to a system of appeals in the event of any disputes that cannot be resolved collaboratively.

The Resolution also restructures EM&V in Massachusetts so that most studies are to be performed at a statewide rather than a PA-specific level. It specifies that the range of evaluation activities be divided into 5 to 7 semi-permanent statewide Research Areas, oriented primarily to specific target markets. Each Research Area is to have an assigned Study Manager from the PAs, an assigned EEAC Evaluation Consultant, and an independent evaluation contractor who conducts the studies under a long-term contract with the individual PA companies.

Consistent with the Resolution, the PAs and the EEAC Consultants subsequently developed a system of six statewide Research Areas, as follows:
1. **Residential Retrofit and Low Income.** This category includes residential cooling and heating equipment, residential heating and water heating, residential and low-income retrofit, weatherization, and most aspects of multi-family programs.

2. **Residential Retail Products.** This includes residential lighting and appliance programs.

3. **Residential New Construction.** This includes residential and low-income new construction and major renovations programs, as well as codes and standards and compliance efforts. This Research Area also includes baseline studies of construction practices for both single- and multi-family homes.

4. **Non-Residential Large Retrofit and New Construction.** This includes C&I new construction (small and large) and major renovation, as well as large C&I retrofit programs.

5. **Non-Residential Small Retrofit.** This includes the current C&I small retrofit, direct install programs. This category would also include any future programs that may target small non-residential customers.

6. **Special and Cross-Sector Studies.** This includes those studies that do not fit readily into any of the five market-oriented Research Areas above, as well as those studies that are cross-sector in nature, including: cross-sector free ridership and spillover studies; non-energy benefits; behavioral programs; community-based pilots; and marketing, public education, and outreach activities.

Massachusetts’ evaluation planning and implementation schedule calls for selecting contractors, and finalizing contracts, for all six Research Areas by April 15, 2010. Evaluation activities under each contract are to be conducted subject to the terms of the EEAC Resolution. **The purpose of this RFP is to select an evaluation contractor for the third Research Area, Residential New Construction.**

**RESIDENTIAL NEW CONSTRUCTION BACKGROUND**

Residential new construction programs in Massachusetts began in 1991 with The Energy Crafted Homes (ECH) Program. The ECH Program, sponsored by a consortium of New England electric utilities and the Joint Management Committee (JMC), promoted state-of-the-art construction for electrically heated homes. The ECH Program provided leading edge technical information to builders and was successful in getting participating builders to incorporate the best building science and energy efficiency approaches in their homes. However, the market for new electrically heated homes in New England is small, and the potential for a program focused on only electrically heated homes to produce significant and sustainable energy-efficiency advances in the broader residential new construction market was negligible.

---

1 The JMC is made up of the following sponsoring utilities or groups; Bay State Gas, Berkshire Gas, Cape Light Compact, Fall River Gas, National Grid (Electric & Gas), NSTAR Electric and Gas Corporation, Western Massachusetts Electric, and Unitil/Fitchburg Gas & Electric.
In April of 1998 the ECH Program was retired and the ENERGY STAR Homes Program was introduced. Opening the Program to multi-family building projects and switching to fuel-neutral incentives greatly increased the number of new construction projects eligible to participate. In addition, fuel neutral based incentives enabled gas utility participation. Greater emphasis on energy-efficient lighting and the introduction of incentives for installing energy-efficient appliances increased potential savings per home. Use of the national ENERGY STAR name and logo took advantage of existing brand name recognition. Basing ENERGY STAR certification criteria on the Home Energy Rating System (HERS) performance made the Program accessible to all builders. See Appendix B for a more in-depth analysis of both the historic and recent trends of the program. See Appendix C for a description of the 2010 – 2012 plans for the program excerpted from the “2010 – 2012 Massachusetts Joint Statewide Three-Year Electric Energy Efficiency Plan, October 29, 2009.” To see the full Three Year Plan bidders should visit the EEAC’s website at www.ma-eeac.org. See Appendix D for a copy of the Program Theory for the program.

With respect to the ENERGY STAR Homes Program, it is important that the selected Evaluation Contractor understand all of the key players involved. There are six main groups who will be involved in the evaluation activities; they are as follows.

- **The JMC –** This is the committee who manages the ENERGY STAR Homes Program. It is made up of representatives from the sponsoring PAs (usually the program manager responsible for the implementation of the program) and representatives from other interested parties such as regulatory agencies.

- **The JMC Evaluation Subcommittee –** A subcommittee of the JMC responsible for evaluation activities. There is a lead person on this committee who will be the point person for all contact with the committee.

- **Implementation Contractor –** The contractor who implements the program in the field, i.e. interacts with the builders, manufacturers, general public and is responsible for all implementation and marketing activities.

- **The Energy Efficiency Advisory Council (EEAC) and its Consultants –** The EEAC has been set up as an advisory group to oversee the creation, implementation, and evaluation of energy efficiency programs in Massachusetts.

- **Market Progress Reporting Contractor –** An independent contractor that has been hired by the JMC who will be producing an annual report detailing all activities and accomplishments for the program.

- **Evaluation Contractor –** The winning bidder of this RFP responsible for completing the tasks described herein.
OBJECTIVE

The purpose of this RFP is to seek a qualified bidder or a team of bidders to complete an assorted array of evaluation activities for the Massachusetts Residential New Construction sector over a multi-year period. The winning bidder will be the sole evaluation contractor for the Residential New Construction research area. These activities will include an assortment of evaluation work including, but not limited to such things as market assessment, baseline studies, process evaluation, and development of incremental cost information. The winning bidder will be expected to handle all evaluation issues and to either team with or sub contract out work where specific skill sets are required that the evaluation contractor may not possess.

This will be a multi-year effort covering the years 2010 through 2012. Some of the main areas of focus over the next three years will be on the following areas.

- **ENERGY STAR Homes Program** (Baseline & general evaluation work)
- Codes and Standards
- Code Compliance
- Pilot areas (Major Renovation, Lighting Design, 4-8 story multi-family, Version 3 **ENERGY STAR Homes specs**)
- Evaluation Planning
- Other Undetermined Evaluation Issues

*The table listed below is designed to give bidders an idea of evaluation activities the PAs are contemplating and an approximate timeline. Details of each project including both Scope and Timeline will be determined once an Evaluation Contractor is selected.*

**PLANNED EVALUATION ACTIVITIES BY QUARTER**

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ES Homes Baseline Study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Codes and Standards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code Compliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Renovation - Pilot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting Design - Pilot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-8 Story Multi-Family - Pilot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ver 3 ES specs - Pilot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation Planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Eval Issues</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Responsibilities of the Evaluation Contractor will include managing the various individual evaluation tasks, hiring and managing sub-contractors as necessary, collecting data, analyzing data, providing individual formal reports and presenting results to the JMC for the various evaluation tasks, providing an annual report which summarizes the year’s evaluation activities, and assisting in and developing an annual evaluation plan at the start of each program year.

SCOPE OF WORK

PLANNED ACTIVITIES

Since the ENERGY STAR Homes Program is the only energy efficiency program currently operating in the Residential New Construction area, all of the evaluation areas listed above have been initiated and are currently being administered through the Homes program. This may change as time goes forward. Certain areas may become programs on their own or may be incorporated into other research areas.

ES Homes Baseline Study

A baseline study for the ENERGY STAR Homes program was last conducted in 2005 (see Appendix E for a copy of the report). A new baseline study was slated for 2010, but due to the fact that Massachusetts is slated to adopt a new Energy Code on Jan 1, 2010 with it becoming the sole Energy Code on July 1, 2010, a delay may be appropriate. The Massachusetts PAs have been contemplating different options for conducting a new baseline study. These options include the following ideas:

- Delaying the baseline study until 2011.
- Conducting a mini-baseline in 2010 as a precursor to a full baseline study in 2011.
- Conducting a mini-baseline in 2010 as a precursor to a full baseline study in 2012.

Below is a description of the PAs current view of the baseline study based on the last one conducted. The PAs would like the bidders to propose a process for the baseline study, consisting of a high level timeline, methodology and scope (all items would be worked out in detail with the winning bidder). With respect to timeline and process, the bidders should not limit themselves to the three timelines listed above or the process described below, but rather propose a timeline and methodology that they feel would work the best. Keeping in mind the time and expense involved in a baseline study, the bidders should consider the other activities listed above and what information might be necessary (e.g. see the description for Codes and Standards and Code Compliance below) and incorporate that into their proposal so as to make the most efficient use possible of time and resources.

Baseline Study description

Currently the baseline study is slated for just Massachusetts, but there has been interest expressed by other states about possibly joining the effort. For purposes of this RFP just plan on Massachusetts, if other states would like to join in we will negotiate that at that time. The main purpose of the baseline study is to provide updated input data for the Massachusetts User
Defined Reference Home (UDRH), which is used in the calculation of savings for the program (see pages 7 and 8 of the Baseline report, Appendix E, for a copy of the current UDRH).

The data collection will involve basic on-site visits to at least 100 newly constructed and newly occupied homes in Massachusetts to measure and record key data on materials and equipment used in home construction. In addition a short survey will be administered to all homeowners participating in the baseline study to elicit demographic information and their views on energy efficiency.

The previous baseline study looked only at single family homes. Multi-family units were excluded from the study. In their proposals, bidders’ should have a base proposal assuming only 100 single family homes will be in the study and an add-on cost proposal for including your recommended number of multi-family units. For this study single family homes are all 1 – 4 unit buildings, five units and above are considered multi-family.

All basic on-site visits will include conducting blower door tests. All on-site visits to homes with ductwork will also include conducting a duct blaster test. If the on-site visit identifies any health or safety issues, the homeowner must be notified at the time of the visit, followed by a written notification. See Appendix B of the Baseline report, Appendix E of this RFP, for a copy of the data input form used for the 2005 baseline study. The information on the draft input form can be used for bidding purposes. Once the winning bidder has been selected the design and final data collection form will be finalized with input from the JMC, implementation contractor, and the winning bidder.

The winning bidder will be responsible for designing a sampling strategy, recruitment of participants, scheduling of on-sites, conducting on-sites, data collection, data analysis (including derivation of appropriate UDRH components), and producing a final report.

Optional Baseline Components
An optional component of the project is HVAC performance testing. The program sponsors may decide either not to conduct HVAC performance testing as part of this study, or to conduct HVAC performance testing on a sample of the homes with central air conditioning. A final decision will not be made until after all bids have been received and reviewed. The overall objective of the HVAC performance testing is establishing a performance baseline for central air conditioning systems against which market changes could be measured. Information on system manufacturer, model, size and rated SEER and EER will be collected as part of the basic on-site visits. A Manual J sizing assessment will also be part of the basic on-site. The optional HVAC testing would involve identifying the actual performance efficiency and capacity, and levels of refrigerant and air flow rates across the coil. Performance testing would have to be performed at a minimum outdoor temperature of 60 degrees F and measured air flow. Duct leakage would not be part of the HVAC testing component since duct blaster tests will be conducted as part of the basic inspection. Specific HVAC data collection requirements include:

- Liquid pressure and temperature,
- Suction pressure and temperature,
- Ambient air temperature entering condenser,
• Return air wet and dry bulb temperature,
• Supply air wet and dry bulb temperature, and
• Altitude/barometric pressure at the time of the testing
• Measured air flow at coil using flow plate.

Personnel conducting the basic on-site visits must have proper training and experience to conduct a comprehensive assessment of the home. Completion of RCS, HERS, or BPI training programs or an equivalent is acceptable. HVAC performance testing may be conducted only by EPA-certified technicians who are permitted by law to access the refrigerant side of these systems to measure the charge.

For this proposal provide a detailed description of your team’s baseline methodology and pricing for 100 single-family on-sites across Massachusetts. The 100 sample site number is for comparative purposes, final sample size will be determined with the final bidder. Please also include an incremental cost per site. Make sure to describe sampling strategy, recruitment, on-site protocol and analysis. In addition, bids should discuss any differences in approach and associated costs in adding a multi-family component to the baseline study. Bidders should detail the costs associated with the baseline study for each year.

**Codes and Standards and Code Compliance**

In 2009, the JMC has been researching the relationship between program efforts to get builders to utilize more efficient building materials and techniques, code upgrades, and savings claimed by the program. This research resulted in a report detailing the process used by California to promote code upgrades and claim savings (see Appendix F), also the JMC issued a memo to the EEAC Consultants on Dec. 22, 2009 outlining a framework to promote code upgrades and claim savings (see Appendix G). Researching this area and refining the framework will be an ongoing effort. The selected Evaluation Contractor will play a key role in this area.

If the process outlined in the codes memo is adopted, the PAs will be credited for activities they engage in that help change energy codes or promote their compliance. The evaluator chosen will be responsible for providing documentation of the amount of energy saved by the change in codes, and to a lesser extent evidence of the PAs role in affecting the changes. While it is not clear yet what activities the PAs will institute to promote new codes and standards; and compliance with these codes and standards; baseline values for some elements such as current compliance need to be established. It is anticipated that the PAs will develop programs that among their features promote the development of new code and standards, train builders and code officials in code requirements, promote the development of stretch code communities and other pilots, and/or develop new compliance approaches.

There are a number of factors that need to be considered in developing a research plan.

• The proposed methodology uses Delphi panels to establish the amount of energy saved. Code changes may not be an absolute change, but may have the effect of accelerating a code change.
• The proposed method also establishes Delphi panels to assess the PAs’ contribution to affecting the change.
• A new residential code is being developed and expected to be enacted by 1/1/2010 and take effect by 7/1/2010. Bidders should address issues regarding timing of baseline issues. Assume that some code promotion and compliance activities will start in 2010 before the code is enacted. Under your proposed plan, at what point(s) would data be collected. How can this plan blend with the general new construction baseline?

• The PAs are already supporting the development of stretch codes in three communities in Massachusetts. With respect to HERS Index these stretch codes exceed Energy Star Homes requirements. The EEAC requires that the PAs offer incentives to participants of the ENERGY STAR Homes program built in stretch code communities. For now it has been decided to count homes built in stretch code communities as participants in the ENERGY STAR Homes program. Further, it has been determined that these stretch code communities should not be included in the statewide baseline, as their inclusion will raise baseline levels. It may be in the future that we need to treat stretch code communities differently if the stretch code and Energy Star program significantly diverge from one another. If more communities adopt stretch codes, it may be necessary to establish a baseline value for stretch code communities that are different from the statewide baseline.

• One concern of the evaluation is to make sure that there is no double counting of benefits between code impacts and ENERGY STAR Home impacts. All proposed methods need to identify where there may be double counting and identify how their approach avoids double counting.

• PAs may corroborate with regional or national efforts to affect change.

• Code enforcement is currently implemented at the local level in Massachusetts and level of compliance and enforcement varies significantly across the state.

Bidders should propose a strategy/methodology and timeline for examining code compliance and associated costs with carrying out the strategy knowing that a baseline need be established and that other activities can be anticipated. In the proposal, outline in detail the plan that can be used to fully provide evaluation support for future residential code activities. In the proposal, provide detailed costs for establishing code compliances. Bidders should consider ways to coordinate this compliance baseline with the construction baseline in previous section.

**Major Renovation Pilot**

The PAs are currently investigating Major Renovation as an area to implement energy efficiency. In 2009 a pilot was initiated within the ENERGY STAR Homes program. To qualify for the pilot an addition must be at least 500 square feet. Both the existing structure and the new structure must meet certain guidelines to be eligible for incentives. Please see the following website for further details, [http://www.energystarhomes.com/homebuyers/programs.htm](http://www.energystarhomes.com/homebuyers/programs.htm)

The PAs have created this pilot in order to capture lost opportunities within the major renovation market. One of the challenges of creating this pilot was determining how savings would be calculated. The Implementation vendor for the program has devised a method to calculate savings. This method has not been utilized yet as no major renovation projects have actually reached the completion stage. The evaluation contractor will be responsible for completing both a process and impact evaluation of this pilot. The process evaluation will look at both the implementation portion of the pilot as well as the process used to determine savings. The impact portion will look at the methodology used to calculate savings and make any necessary
recommendations for improvement. A brief description of the savings methodology is included as Appendix H.

In 2009 there were 17 Major Renovation projects participating in the pilot. In 2010 approximately 130 are planned, with the bulk of these occurring on the Cape.

For comparative purposes the PAs’ would like the Bidders to put together two plans dealing with the evaluation of the Major Renovation Pilot. One plan should assume a budget of $50,000 and the other should assume a budget of $100,000.

Bidders must provide a detailed description of the evaluation plan for this renovation pilot. Bidders should propose what they feel is the best method, as well as timeline, for investigating these issues. Proposed costs for this area should be split between process and impact areas.

Other Pilot Areas
As mentioned above, multiple pilots have been initiated through the ENERGY STAR Homes program. It is expected that all of these pilots will need evaluation efforts, although they are not all on the same timeline. The pilots are: Major Renovation, which was addressed above; Lighting Design which was initiated in 2009 (see Appendix I for a description); 4-8 story Multi-Family; and ENERGY STAR Homes V3. All of these pilots will need process evaluations and possibly impact evaluations as well.

Bidders should provide in their responses a paragraph or two on the strategies they might use to evaluate these pilots. Do not include costs; the PAs are just looking for the Bidders thoughts on evaluation strategies for the Other Pilots.

Process Related Issues
Outside of the Residential New Construction research area the Massachusetts PAs will be conducting a global process/market evaluation focused on customer and market responses to all major new and changed program initiatives. This global process/market evaluation may require input from individual research areas to feed into this study. This study has a date of having preliminary findings by July 15, 2010. Therefore, the selected Evaluation Contractor for the Residential New Construction area may need to be prepared to have some preliminary information to feed into this process evaluation.

Bidders should not include these global process related items in their proposed budgets.

Evaluation Planning
In a typical year, an evaluation plan will be developed somewhere between the last quarter of the previous year and the first quarter of the year to be evaluated. The activities will be made up of a number of things such as surveys of Home Builders, Home Buyers, Sub Contractors and studies to look at various impact and process issues. Certain activities such as Home Buyer Surveys, Builder Interviews, and Sub-Contractor Interviews will be done on a regular basis (annually, semi-annually, etc.). Other activities such as Incremental Cost Studies, Baseline Studies, Billing Analysis, etc. may be done every 5 years or as deemed necessary.
The selected Evaluation Contractor will be responsible for running conference calls to discuss evaluation activities for the coming year, producing a draft plan and a final Evaluation Plan per the timeline indicated above in the Objective section. Typically, about 3 calls are required to finalize a plan. Bidders should include this activity in their proposed budgets.

Other Evaluation Work
In addition to the items mentioned above, different types of activities are conducted on an ad-hoc basis as program changes dictate. Bidders should be prepared to provide this ad-hoc evaluation work and in their proposals should demonstrate their ability to meet such requests. Bidders should not include a cost for this other evaluation work in their proposals.

GENERAL DELIVERABLES

Work is anticipated to commence by April 1, 2010. In general, the selected evaluation contractor will be expected to deliver the following items during the course of this effort.

- **Work plan** (covering the first 12 months), due at the outset of the project. This is to include a schedule and an allocation of evaluation staff resources amongst the various evaluation tasks described under the Scope of Work. It should also detail how and when the evaluation contractor will make use of sub-contractors. In addition, the plan should indicate when and what reports will be issued.
- **Draft Questionnaires and/or interview guides, on-site protocols, and or other data collection instruments, one month before any scheduled surveying activities.**
- **Sample Selection**
  - For any activity that requires a sample to be drawn, the contractor should suggest the number of participants necessary. Due to various constraints on sample sizes, the achievement of statistical significance within certain parameters may not be realistic, but where it is possible, the sample should be sized to provide results with a 90% confidence, plus or minus 10% precision. Should this not be attainable, the proposal should suggest an appropriate sample size and estimate the associated level of confidence and precision. Any sampling techniques will need to ensure appropriate representation from Massachusetts’s populations. Additional groups (municipal building inspectors, realtors, retailers, utility staff, etc.) whose input may have value to the evaluation results may be proposed for consideration. The PAs and EEAC Consultants will have final approval of the sample selection process.
- **Formal report on each task or activity as it is completed (this may entail a first draft, final draft, and final report).**
- **Draft Annual Report, due January 31, 2011.** This will be a report summarizing all of the evaluation activities completed by the evaluation contractor through the end of the previous calendar year. An Annual Report will be due for each program year of evaluation activities.
- **Final Annual Report, due upon completion of each calendar year’s evaluation activities including all supporting documentation, due March 1, 2011.**
The contractor will be required to present the study findings to members of the JMC, and respond to questions. In addition, an optional briefing session for outside interested parties may be required. The cost proposal should present the costs for these tasks separately.

SCHEDULE

- RFP e-mailed to potential bidders: January 22, 2010
- Bidder’s Conference call: January 29, 2010, 10 a.m. – 11 a.m.
- Final Questions submitted: February 5, 2010
- Final Responses returned: February 10, 2010
- All proposals due: February 22, 2010
- Evaluation Contractor selected: March 5, 2010
- Kick-off Meeting: TBD, as soon as conveniently possible after the selection of the contractor.

Information Requested

The Massachusetts PAs request that interested evaluation organizations respond to this RFP no later than 5 p.m. February 22, 2010 with the following information.

All detailed information in the proposals should cover the first 12 months of evaluation activities (March 2010 through March 2011).

1. A detailed description of the complete scope of work including a schedule, flowchart and organizational management structure for the years 2010 – 2012 (Years 2011 and 2012 need not be as detailed as 2010). This should not be a re-statement of the scope described here, but a carefully thought out plan of how, when, and where the various tasks will take place using example questions wherever possible. This plan should give a reasonably detailed description of how the contractor plans to complete each of the tasks described in the scope of work with a concentration on the baseline work, code and standards and code compliance, and major renovation. For any survey work, a sample of questions and how they would be analyzed should be included. No more than half a page to a page for each task should be dedicated to this effort, exclusive of any additional pages required to detail some of the questions and how they would be analyzed. For Years 2 and 3, the bidder should provide a strategic discussion that explains in a broad sense how the evaluation activities will be approached.

2. Statements of qualification that detail the bidder’s experience and ability to provide multi-year evaluation support should be included. The bidder’s statements should emphasize their expertise and knowledge with regards to market assessment and evaluation of market effects, their ability to design and carry out extensive interviewing and survey analysis, as well as their technical expertise and qualifications to undertake technical studies dealing in the area of building science.

3. Summary of Study costs. Please use the attached Cost Estimation Table (Appendix J) to
provide a summary of costs for the first 12 months. Labor costs should be broken out by task and personnel type (e.g., project management, supervision, clerical support, analyst, etc.). Estimates of miscellaneous additional costs should be indicated. Since the initial scope of work will only cover the first year, please provide a billing rate for years 2 and 3. The PAs will determine the allocation of total costs to individual sponsors after a contractor has been selected. (Please note that the selected contractor will be required to contract with and bill each of the PAs separately.)

4. One representative example of experience and documentation skills, such as a report.

5. Names, affiliations, and telephone numbers of at least two individuals or organizations for which similar services have been provided for Prime Contractor and all sub-contractors on team. The Massachusetts PAs and EEAC Consultants reserve the right to contact these individuals to ascertain the quality and timeliness of previous performance. Details of qualifications of personnel who will be utilized.

With the exception of sample report and staff resumes, limit your response to thirty pages. All material submitted will be treated confidentially.

**Response**

Respondents should submit an electronic copy of the proposal on or before 5 p.m. **February 22, 2010.**

**Evaluation of proposals and selection of contractor**

The PAs and their related personnel will confidentially review proposals. The PAs reserve the right not to select any submitted bid. The PAs are not responsible for costs incurred by bidders to develop proposals. Proposals will be judged on the following criteria.

- **Cost,** both the total cost and whether overall proposal offers good value will be considered;
- **Reasonableness of Approach,** does the proposal offer good creative solutions to the evaluation issues presented in the RFP;
- **Dedicated Resources,** has the bidder shown that they have the resources to provide the services requested within the expected timeframe;
- **Comprehension,** has the bidder shown that they understand the issues involved and have responded accordingly;
- **Documentation Quality,** is the proposal itself clear, concise, and well written;
- **Demonstrated Experience,** whether the bidder has demonstrated that their firm has the experience and expertise or the ability to provide subcontractors having the appropriate knowledge to perform the requested tasks.
REQUEST FOR PROPOSAL – RFP #1890

Massachusetts Energy Efficiency Programs
Evaluation Tasks in the Non-Residential Small Retrofit Areas

2010 - 2012

January 29, 2010

Response Deadline:
March 4, 2010 by Noon EST

PLEASE NOTE: The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP.
TABLE OF CONTENTS

1.0 General Information
   1.1 NSTAR
   1.2 Program Administrators and Sponsors
   1.3 Unauthorized Disclosure
   1.4 Definitions
   1.5 Sponsors’ Discretion
   1.6 Bid Evaluation
   1.7 Discrepancies or Omissions
   1.8 Payments for Services and Invoicing
   1.9 Pre-Bid Conference Call
   1.10 RFP Recipient List

2.0 Specifications
   2.1 Statement of Work
   2.2 Terms and Conditions
   2.3 Safety, Environmental, and Background Check Requirements

3.0 Communications and Form of Response
   3.1 Volume I: Commercial Proposal
      3.1.1 Commercial Exceptions
      3.1.2 Pricing
      3.1.3 Options and Alternates
      3.1.4 EEOC Compliance
      3.1.5 Insurance Certificate(s)
      3.1.6 Execution of Proposal by Officer of Supplier
      3.1.7 Vendor Information
   3.2 Volume II: Technical Proposal
      3.2.1 Title Page
      3.2.2 Table of Contents
      3.2.3 Executive Summary
      3.2.4 Technical Requirements
      3.2.5 Examples of Experience
      3.2.6 References
      3.2.7 Statements of Qualifications
      3.2.8 Resumes
      3.2.9 Sample Reports

4.0 Proposal Forms
   4.1 Form A - Bid Receipt Acknowledgment Form
   4.2 Form B - Supplier Bid Proposal Form (Cover Sheet)
   4.3 Form C - Execution of Proposal by Officer of Supplier
   4.4 From D - Project Cost Estimate Bid Form
January 29, 2010

RFP Emailed to Potential Bidders: January 29, 2010
Pre-Bid Conference Call: February 11, 2010 at 1pm - 2pm
Last Date for Questions: February 18, 2010
Responses to Questions: February 25, 2010
Proposals Due: March 4, 2010 by Noon EST
Supplier Selected: March 19, 2010
Contracts Signed with all Sponsors April 8, 2010
Kick-Off Meeting: TBD, as soon as possible after signing

Correspondence

During the Request for Proposal, up to and including contract award, all correspondence must be directed via email to:

Patricia.Latimer@NSTAR.com

Should it be determined that any vendor is conversing with or directing questions related to this RFP to anyone other than the individual identified above, then at the discretion of the Program Administrators and Sponsors that vendor may be immediately disqualified from bidding on this project.
1.0 GENERAL INFORMATION

1.1 Background

Headquartered in Boston, MA, NSTAR provides regulated electric and gas utility services and is also engaged in telecommunications and other non-regulated activities. NSTAR, through its subsidiaries and operating companies, Boston Edison Company, Cambridge Electric Company, Commonwealth Electric Light Company and NSTAR Gas Company, serves approximately 1.3 million customers throughout Massachusetts, including approximately 1,040,000 electric customers in 81 communities and 240,000 gas customers in 51 communities. The Operating Companies are supported through the NSTAR Electric & Gas Corporation (the Company).

NSTAR is pleased to present this Request for Proposal (RFP) for Evaluation Tasks in the Non-Residential Small Retrofit Areas on behalf of the Program Administrators and Sponsors of the Massachusetts Energy Efficiency Programs. In support of the Green Communities Act of 2008, this RFP is being solicited on behalf of seven Massachusetts utilities (the Sponsors). The goal of this RFP is to select one successful bidder to provide services to the Sponsors’ Massachusetts customers.

1.2 Program Administrators and Sponsors

This Request for Proposal has been issued by NSTAR on behalf of the Program Administrators (PAs) for the Massachusetts Energy Efficiency Programs in the Non-Residential Small Retrofit Areas. These PAs are comprised of representatives from the following electric and gas companies in the Commonwealth of Massachusetts. These companies are referred to herein as the Sponsors:

Bay State Gas (NiSource)
Berkshire Gas
Cape Light Compact
National Grid USA
New England Gas
NSTAR
Unitil/Fitchburg Gas & Electric
Western Massachusetts Electric

1.3 Unauthorized Disclosure

The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP. Additionally, the Sponsors consider any information provided to Bidders in the course of business to be privileged and confidential between Consultant and the Sponsors. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Consultant may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Sponsors.

All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Sponsors at the end of the contract. The awarded
bidders may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Sponsor to do so.

1.4 Definitions

Bidder shall mean those firms/vendors acting in the role of Supplier when responding with a Proposal to this RFP. Proposal shall mean the Bidder's formal response indicating their committed solutions that meet or exceed the requirements of the RFP. Subcontractors, or subs, can be defined as any Supplier under Contract or in the RFP response that are considered financially independent of the Bidder in any other business or accounting relationship.

This RFP does not constitute an offer by the Sponsors to enter into a contract, nor does any response to this RFP constitute an acceptance of an offer, nor does any response to this RFP bind the Sponsors in any way. This document shall not be construed as a request or authorization to perform work at the Sponsors' expense. Any work performed by a Bidder in connection with evaluating and responding to the RFP and, if selected, negotiating a definitive Agreement will be at the Bidder's own discretion and expense. This RFP does not represent a commitment to purchase or lease. The Sponsors reserve the right to reject any and all proposals at its absolute discretion. Submission of a bid constitutes acknowledgment that the Bidder has read and agrees to be bound by such terms. The information in this document will enable the recipient to formulate a proposal to meet the workload requirements as described in this RFP. The numbers, volumes, run rates, etc. provided in this RFP are based upon the most recent data available and should serve as estimates to Bidders for pricing and response purposes.

1.5 Sponsors’ Discretion

The Sponsors are not responsible and will not reimburse Bidders for costs incurred to develop proposals.

NSTAR is issuing this RFP on behalf of the Sponsors who at their discretion may:

- Select a Proposal other than the lowest priced, if the Sponsors determine, at its sole and absolute discretion that the Sponsors interests will best be served by doing so.
- Seek clarification from any Bidder regarding Proposal information and may do so without notification to any other Bidder.
- Continue the review procedure until a Bidder is selected successfully or until the Sponsors choose to reject all Proposals.
- Accept any Proposal or alternate as submitted without negotiations.
- Select for negotiations only the overall best Proposal or negotiate all Proposals submitted which fall within a competitive range.
- Perform a complete financial review as well as an on-site investigation of any of the Bidders facilities to ensure it is capable of meeting the demands of Sponsors and the needs identified in this RFP.
- May not award any Contract(s) as a result of this RFP.
- Reserves the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Sponsors.
1.6 Bid Evaluation

The PAs and their related personnel will confidentially review proposals. A cross-functional evaluation committee representing each of the Sponsors will rate all Proposals based on the evaluation criteria provided below and may reduce the number of Bidders being considered to a "short list" of finalists based upon this objective analysis. The Sponsors may elect to meet with finalists for interviews. After all responses have been thoroughly reviewed and negotiations completed with finalists, the Sponsors will award the Contract(s) to the Bidder(s) who offers the best overall value. The Sponsors reserves the right not to award any Contract(s) as a result of this RFP.

All bids will remain active for ninety (90) days, and no bid materials will be returned. Each proposal will be evaluated on technical and commercial merits. All proposals will be opened on or after the due date.

Proposals will be evaluated on the following criteria:

- **Cost** - both the total cost and whether overall proposal offers good value will be considered
- **Reasonableness of Approach** - does the proposal offer good creative solutions to the evaluation issues presented in the RFP
- **Dedicated Resources** - has the bidder shown that they have the resources to provide the services requested within the expected timeframe
- **Comprehension** - has the bidder shown that they understand the issues involved and have responded accordingly
- **Documentation Quality** - is the proposal itself clear, concise, and well written
- **Demonstrated Experience** - whether the bidder has demonstrated that their firm has the experience and expertise or the ability to provide subcontractors having the appropriate knowledge to perform the requested tasks

1.7 Discrepancies or Omissions

Should a Bidder find any ambiguity, discrepancy or omission in the RFP, or should the Bidder have any questions, the Bidder shall notify NSTAR via e-mail to Patricia.Latimer@NSTAR.com. Such information must be received no later than the “Last Date for Questions”, which is indicated on Page 3 of this RFP, to afford NSTAR the opportunity to send any instructions or interpretations to other Bidders who have received an Invitation to Bid. The Sponsors will not be responsible for any oral instructions or interpretations.

1.8 Payment for Services and Invoicing

No up-front payments will be made to vendors. Invoices shall be submitted to each Sponsor on a monthly basis.

1.9 Pre-Bid Conference Call

A pre-bid conference call will be held on day and time indicated on Page 3 of this RFP. The call is scheduled for one hour. At that time, a brief program overview will be provided, followed by questions and answers. Information shared on the call will be emailed to all prospective bidders within a week. Dial in number is National Grid’s conference line: 866-561-4997 access# 9674198. Please dial into the conference call line at the designated time.
1.10 **RFP Recipient List**

Attached is a list of parties to whom this RFP bid package is being sent. Normally, such lists are not made available to potential bidders; however, due to the scope of services requested, timeline for responses, and in anticipation of vendors contemplating collaborative bids, this list is provided to facilitate the RFP process in a fair and efficient manner. This list is to be used only for such purpose, and is not for any other use or solicitation. The list is to be considered and treated as confidential information by the recipient.

![RFP Recipient List](image)

2.0 **SPECIFICATIONS**

2.1 **Statement of Work**

The purpose of this RFP is to seek a qualified bidder or a team of bidders to complete an array of evaluation activities as defined in the attached statement of work over a three year period. The winning bidder will be the sole evaluation contractor for this research area. Activities will include, but not be limited to, market assessment and segmentation, impact and process evaluation, electric and gas measure integration assistance, and evaluation of new statewide incentive and financing models. The winning bidder will be expected to handle all evaluation issues and either team with or subcontract out work where specific skill sets are required that the evaluation contractor may not possess. A copy of the statement of work and related appendices are provided below.

![Non-Resid Small Retrofit SOW](image)
![Appendix A - EMV](image)
![Appendix B - Global Process](image)
![Appendix C - National Grid RFP 241](image)

2.2 **Terms and Conditions**

The successful Contractor’s services shall be provided in accordance with each Sponsors’ terms and conditions, which are provided below. Any exceptions to these requirements must be clearly stated in the Bidder’s RFP response.

Any exceptions submitted by a Bidder does not constitute acceptance by any of the Sponsors. Exceptions will be negotiated and agreed to by each Sponsor and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

Bay State Gas (NiSource)
Berkshire Gas
Cape Light Compact
National Grid USA
New England Gas
NSTAR
Unitil/Fitchburg Gas & Electric
Western Massachusetts Electric

- Bay State Gas - NiSource Corporate Services Company General Services Agreement and Data Security Requirements

- Berkshire Gas – Berkshire Gas’ requires Suppliers’ adherence to National Grid’s T&Cs for Consulting Services

- Cape Light Compact Terms & Conditions.

- National Grid Terms & Conditions for Consulting Services

- New England Gas Consultant Terms & Conditions

- NSTAR’s Terms & Conditions and Insurance Requirements

- Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions

- Unitil Terms & Conditions
2.3 Safety, Environmental, and Background Check Requirements

The successful Consultant’s services shall be provided in accordance with each Sponsors’ safety, environmental, and background check requirements. Copies of National Grid’s requirements for these areas are attached. Any exceptions must be clearly stated in the Bidder’s RFP response.

- National Grid’s Contractor Safety Requirements dated 8/1/08

- National Grid’s Contractor Environmental Requirements dated 2/29/08

- National Grid’s Employee Background Check Requirements dated 1/10/08

3.0 COMMUNICATIONS AND FORM OF RESPONSE

During the RFP process, all questions must be submitted via e-mail and addressed to Patricia Latimer at Patricia.Latimer@NSTAR.com, on or before the “Last Date for Questions” as specified on Page 3 of this RFP. Answers to Bidder’s inquiries will be distributed to all Bidders via email no later than the “Responses to Questions” date provided on Page 3 of this RFP. In order to ensure fairness, until the time an award is made, Bidders shall have no direct communication regarding this RFP with any of the Program Administrators or any other personnel within the Sponsors’ organization. After the decision to award is announced, the successful Bidder may contact the Program Administrators and work with each Sponsors’ Procurement contact to provide certificates of insurance and sign final contract documents. Failure to comply with these communications guidelines may disqualify the Bidder from further consideration.

Supplier's proposal MUST include two SEPARATE VOLUMES. Volume I must address all commercial requirements, while Volume II must address all technical requirements. Volumes I and II shall not be bound or otherwise joined together. VOLUME II MUST NOT CONTAIN ANY COST OR PRICE INFORMATION. The organization of the proposal MUST conform to the organization enumerated in Form B, SUPPLIER BID PROPOSAL FORM, and as described in this section. The first page of the Supplier proposal MUST be Form B-Supplier Bid Proposal Form (cover sheet).

This RFP has been sent in electronic format to facilitate the completion of proposals. A complete proposal must be sent via e-mail to Patricia.Latimer@NSTAR.com, and an original hardcopy, electronic copy on CD, and 4 (four) hardcopies either hand delivered or sent via commercial carrier for receipt NO LATER THAN the “Proposals Due” date and time specified on Page 3 of this RFP to the following address:
3.1 Volume I: Commercial Proposal

3.1.1 Commercial Exceptions: This section of the proposal MUST state clearly any exceptions which are being taken to the commercial requirements of this RFP, for example terms and conditions, insurance requirements, etc. Exceptions must state what the exception is, the reason for the exception and proposed alternatives, and be organized sequentially in accordance with the organization of the RFP. Commercial exceptions MUST be clearly defined only in this section of the proposal. Bidder’s preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Bidder’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP, unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

3.1.2 Pricing: The Sponsors seek to procure Services at the most cost effective rates possible. Pricing for the first 12 months is to be provided on the Project Cost Estimate Bid Form D, which is included at the end of this document. Labor costs should be broken out by task and personnel type (e.g., project management, supervision, clerical support, analyst, etc.). Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories, if known. Estimates of miscellaneous additional costs should be indicated. Since the initial scope of work will only cover the first year, please provide a billing rate for years 2 and 3. The Sponsors will enter into individual negotiations each subsequent year regarding any potential price increases, which must be justified by the Contractor. The PAs will determine the allocation of total costs to individual PA’s after a Contractor has been selected. (Please note that the selected contractor will be required to contract with and bill each of the PAs separately.)

All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Bidder, which, if accepted, shall create a binding obligation upon the Bidder.

Bidders should identify if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered or not. Discounts will be factored into the evaluation of the bids and their acceptance is at the Sponsors’ option.

3.1.3 Options and Alternates: This section of the proposal would include options or alternates (commercial considerations) which the Sponsors could consider. Suppliers are encouraged to submit alternate proposals in addition to the requirements defined in Section 2.1, Statement of Work, if such alternate proposals will result in lower price, higher reliability, or improved schedule.
3.1.4 EEOC Compliance: If not previously submitted, please provide a statement that your company is in compliance with EEOC requirements.

3.1.5 Insurance Certificate(s): Include with your Bid a Certificate(s) of Insurance evidencing compliance with at least the minimum levels of insurance required in Section 6.0 Insurance of NSTAR’s Consulting Services Agreement, which is contained in NSTAR’s requirements document in Section 2.2 above. If you are awarded the work, you will be required to submit certificates to each Sponsor identifying them as an additional insured and complying with their insurance levels.

3.1.6 Execution of Proposal By officer of Supplier: Form C MUST be completed and executed by an Officer of the Supplier.

3.1.7 Vendor Information: Bidders shall provide:
- Federal TaxID number
- Business type, i.e., sole proprietorship, partnership, joint venture, etc. and state of residency
- Number of employees
- Financial statements for the last 24 months

This information is not considered part of the 30 page response limitation and should be provided as a separate tab in Volume 1 of the Commercial Proposal.

3.2 Volume II - Technical Proposal

With the exception of the staff resumes and sample reports, Volume II must not exceed twenty pages.

The Supplier's technical proposal, addressing all technical requirements MUST be included in this section. THIS VOLUME MAY NOT INCLUDE ANY COST OR PRICING INFORMATION. In addition to the Supplier's technical proposal, the following items must be addressed, in the order listed:

3.2.1 Title Page: This section of the proposal should include a title page, which identifies the RFP Title, vendor’s name and the volume.

3.2.2 Table of Contents: The vendor’s proposal should include a Table of Contents, which lists the titles and page numbers for each major topic and sub-topic.

3.2.3 Executive Summary: This section should include a summary of the key points and highlights of the vendor’s response.

3.2.4 Technical Requirements: All detailed information in the proposals should cover the first 12 months of evaluation activities (May 2010 through May 2011). A detailed description of the complete scope of work including a schedule, flowchart and organizational management structure for the years 2010 – 2012. Years 2011 and 2012 need not be as detailed as 2010. This should not be a re-statement of the scope described here, but a carefully thought out plan of how the contractor plans to complete each of the tasks described in the scope of work. For any survey work, a sample of questions and how they would be analyzed should be included. For Years 2011 and 2012, the bidder should provide a strategic discussion that explains in a broad sense how the evaluation activities will be approached.
Bidders should also include a description of all assumptions used to develop their response to this RFP.

3.2.5 **Example of Experience:** Provide one representative example of experience and documentation skills, such as a report.

3.2.6 **References:** Provide names, affiliations, and telephone numbers of at least two individuals or organizations for which similar services have been provided for Prime Contractor and all sub-contractors on team. The Massachusetts PAs and EEAC Consultants reserve the right to contact these individuals to ascertain the quality and timeliness of previous performance.

3.2.7 **Statements of Qualifications:** Statements of qualifications that detail the bidder’s experience and ability to provide multi-year evaluation support should be included. The bidder’s statements should emphasize their expertise and knowledge with regards to market assessment, process and impact evaluation, their ability to design and carry out extensive interviewing and survey analysis, as well as their technical expertise and qualifications dealing with the issues outlined in the Scope of Work.

3.2.8 **Resumes:** Provide details of qualifications of personnel who will be utilized and copies of resumes as requested in the Statement of Work.

3.2.9 **Sample Reports:** Provide sample reports as requested in the Statement of Work.

4.0 **PROPOSAL FORMS**

The following forms must be completed and submitted with Supplier Proposal.

4.1 **Form A - Bid Receipt Acknowledgment Form**

This form is used by the Supplier to confirm to Company receipt of the bid package and intent to bid. This form should be completed upon receipt of the RFP and returned as soon as possible via email (Patricia.Latimer@NSTAR.com).

4.2 **Form B - Supplier Bid Proposal Form (Cover Sheet)**

Form B - Supplier Bid Proposal Form (Cover Sheet) MUST be the first page of the Supplier proposal.

4.3 **Form C - Execution of Proposal by Officer of Supplier**

The Supplier MUST complete this form and include it in Volume I of the proposal. The form is used to:
- Indicate how long the proposal is valid.
- Confirm in writing that Supplier's proposal represents a complete offering and includes all exceptions to the RFP.

4.4 **Form D - Project Cost Estimate Bid Form**

Pricing must be provided on the Project Cost Estimate Bid Form and included in Volume I – Commercial Response only.
FORM A – BID RECEIPT ACKNOWLEDGMENT FORM

RFP # 1890 - Evaluation Tasks in the Non-Residential Small Retrofit Areas

COMPLETE AND RETURN UPON RECEIPT TO:

Patricia.Latimer@NSTAR.com

The ______________________________ Company hereby:

1. ___ I acknowledge receipt of the above listed Bid Documents.

________________________________________________________________________

And

2. ___ My proposal will be submitted on the required due date.
   ___ I choose to not bid, as fully explained in letter to be transmitted under separate cover.

Our Proposal shall list the following companies as joint venture partners or subcontractors:

________________________________________________________________________

Please address future inquiries on this work (if different from original mailing) to:

Name: ______________________________

Company: ______________________________

Address: __________________________________

Phone: __________________ Fax: __________

by: ______________________________

(Signature)

Title: ______________________________

Date: ______________________________
FORM B - SUPPLIER BID PROPOSAL FORM

RFP #1890 - Evaluation Tasks in the Non-Residential Small Retrofit Areas

(COVER SHEET)

NAME OF SUPPLIER: ________________________________________________

ADDRESS: __________________________________________________________

NAME OF AUTHORIZED REPRESENTATIVE: ____________________________

TITLE OF ABOVE: ____________________________________________________

PHONE NUMBER OF THE ABOVE: ________________________________

Direction: This sheet must be the first page of all submittals. The remainder of the proposal must follow the following format with no exceptions. Additional sections may be added at the Supplier's discretion. Volumes I & II must be separate documents.

<table>
<thead>
<tr>
<th>Volume I: Commercial Proposal</th>
<th>Volume II: Technical proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE OF CONTENTS OF VOLUME I</td>
<td>TABLE OF CONTENTS OF VOLUME II</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>1.0</td>
<td>Commercial Exceptions</td>
</tr>
<tr>
<td>2.0</td>
<td>Pricing</td>
</tr>
<tr>
<td>3.0</td>
<td>Options and Alternates</td>
</tr>
<tr>
<td>4.0</td>
<td>EEOC Compliance Verification</td>
</tr>
<tr>
<td>5.0</td>
<td>Insurance Certificate (s)</td>
</tr>
<tr>
<td>6.0</td>
<td>Execution of Proposal by Officer of Supplier</td>
</tr>
<tr>
<td>7.0</td>
<td>Vendor Information</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proposal Prepared by (Signed): ________________________________

(Typed): ________________________________

Title: _______________________________________

Date: ___________________________________
FORM C - EXECUTION OF PROPOSAL BY OFFICER OF SUPPLIER

RFP #1890 - Evaluation Tasks in the Non-Residential Small Retrofit Areas

Supplier represents that this proposal is its complete offering and includes all exceptions to this RFP. Supplier agrees that this proposal will be valid for a minimum period of 90 days from date of submittal.

________________________________________
Supplier

By:

________________________________________
(Signature)

________________________________________
(Name)

________________________________________
(Title), a duly authorized representative of the Supplier

________________________________________
Date
FORM D - Project Cost Estimate Bid Form

RFP #1890 - Project Cost Est Bid Form
REQUEST FOR PROPOSALS (RFP)

STATEMENT OF WORK

EVALUATION TASKS FOR MASSACHUSETTS ENERGY EFFICIENCY IN THE NON-RESIDENTIAL SMALL RETROFIT AREA 2010-2012

1.0 INTRODUCTION

The Massachusetts Program Administrators (PAs) for the Massachusetts Energy Efficiency programs in the Non-Residential Small Retrofit Area request proposals to perform various evaluation tasks addressing requirements of the Commonwealth of Massachusetts, as described herein. The PAs include Bay State Gas, Berkshire Gas, Cape Light Compact, New England Gas, National Grid (Electric & Gas), NSTAR Electric and Gas Corporation, Western Massachusetts Electric, and Unitil/Fitchburg Gas & Electric. This RFP covers the program years 2010 through 2012 for all programs and pilots that are administered within the Non-Residential Small Retrofit Area. Currently the only program within this area is the Direct Install (DI) program, although there are several pilots that are continuing or being planned during 2010 that will need to be evaluated.

2.0 BACKGROUND

2.1 Massachusetts Evaluation Framework

On September 8, 2009, the Massachusetts Energy Efficiency Advisory Council (a.k.a. EEAC or the Council) unanimously approved a resolution developed collaboratively by the Program Administrators (PAs) and the EEAC Consultants. This resolution set forth a new administrative framework for the performance of Evaluation, Measurement and Verification (EM&V) in Massachusetts for Energy Efficiency Programs. The full resolution is presented verbatim in Appendix A. Below is a summary of the resolution, its effects, and its relevance to the current RFP.

Under the resolution, EEAC will oversee the EM&V activities of the PAs to ensure objectivity and independence of those activities, and perception of such, and to help ensure consistency, timeliness, and credibility. While the PAs and EEAC Consultants (acting on behalf of the EEAC) will continue to work diligently to reach a consensus on evaluation issues, there may be areas of difference which cannot be resolved. In these instances, authority for decision-making will reside with the EEAC or its designee. This arrangement is subject to a system of appeals in the event of any disputes that cannot be resolved collaboratively.

The resolution also restructures EM&V in Massachusetts so that most studies are to be performed on a statewide rather than PA-specific level. It specifies that the range of evaluation
activities be divided into 5 to 7 semi-permanent statewide research areas, oriented primarily to specific target markets. Each research area is to have an assigned study manager from the PAs, an assigned EEAC Evaluation Consultant, and an independent evaluation contractor who conducts the studies under a long-term contract with the individual PA companies.

Consistent with the resolution, the PAs and the EEAC Consultants subsequently developed a system of six statewide research areas, as follows:

1. **Residential Retrofit and Low Income.** This category includes residential cooling and heating equipment, residential heating and water heating, residential and low-income retrofit, weatherization, and most aspects of multi-family programs.

2. **Residential Retail Products.** This includes residential lighting and appliance programs.

3. **Residential New Construction.** This includes residential and low-income new construction and major renovations programs, as well as codes and standards and compliance efforts. This research area also includes baseline studies of construction practices for both single- and multi-family homes.

4. **Non-Residential Large Retrofit and New Construction.** This includes C&I new construction (small and large) and major renovation, as well as large C&I retrofit programs.

5. **Non-Residential Small Retrofit.** This includes the current C&I small retrofit, direct install programs. This category would also include any future programs that may target small non-residential customers.

6. **Special and Cross-Sector Studies.** This includes those studies that do not fit readily into any of the five market-oriented research areas above, as well as those studies that are cross-sector in nature, including: cross-sector free ridership and spillover studies; non-energy benefits; behavioral programs; community-based pilots; and marketing, public education, and outreach activities.

Massachusetts’ evaluation planning and implementation schedule calls for selecting contractors, and finalizing contracts, for all six research areas by April 15, 2010. Evaluation activities under each contract are to be conducted subject to the terms of the EEAC Resolution. **The purpose of this RFP is to select an evaluation contractor for the fifth research area, Non-Residential Small Retrofit.**

### 2.2 Non-Residential Small Retrofit

Electric companies began offering some kind of specialized services for hard-to-reach small business customers in the 1990s. The “direct install” turnkey model was first offered by National Grid and Commonwealth Electric for customers 50 kW and smaller. With experience, it evolved and improved over time and was subsequently adopted, with some variations, by all
Massachusetts electric companies, except for FG&E. Gas companies have no history of offering a direct install option.

The Massachusetts direct install model has been recognized by many national “best practices” studies and awards as the best delivery mechanism to comprehensively and cost effectively address this market. To date, this model has been replicated by programs in New Hampshire, Rhode Island, Vermont, and Nova Scotia.

With the direct install model, PAs solicit competitive bids for the labor and materials costs of installing improved lighting equipment, lighting controls and, in some cases, improved refrigeration measures for walk-in coolers. Through a turnkey process, a single contractor conducts an audit to identify better lighting options and installs recommended measures. Some PAs offer on and/or off-bill financing options to help customers finance their share of the cost of installing improvements. PAs offer incentives ranging from 35% to 80%. Over time, PAs have learned that, depending on the financing mechanism, it is possible to alter the mix of incentives and financing, while maintaining attractive customer penetration rates.

3.0 OBJECTIVES

The purpose of this RFP is to seek a qualified bidder or team of bidders to complete an array of evaluation activities for the Massachusetts Non-Residential Small Retrofit sector over a multi-year period. The winning bidder will be the sole evaluation contractor for this research area. Activities will include, but not be limited to, market assessment and segmentation, impact and process evaluation, electric and gas measure integration assistance, and evaluation of new statewide incentive and financing models. The winning bidder will be expected to handle all evaluation issues and either team with or sub-contract out work where specific skill sets are required that the evaluation contractor may not possess.

Responsibilities of the Evaluation Contractor will include managing the various individual evaluation tasks, hiring and managing sub-contractors as necessary, collecting data, analyzing data, providing individual formal reports, presenting results to the PAs for the various evaluation tasks, providing an annual report which summarizes the year’s evaluation activities, and assisting in and developing an annual evaluation plan at the start of each program year.

4.0 PLANNED AND ANTICIPATED EVALUATION ACTIVITIES

During the first year of the three year evaluation period, the PAs have initially identified two areas of evaluation work, each potentially involving several tasks. The first area centers on a pilot effort investigating a multi-tier approach to delivering energy efficiency programs to small business customers. The second area involves an impact study to update outdated energy savings and peak period demand savings, and/or supplement current regional studies aimed at expanding short term metering data to annual hourly results and disaggregating the data by facility type. Both of these projects are described below in the Scope of Work.
Although Non-Residential Small Retrofit DI electric programs are similar statewide, there are a number of differences among individual PAs. The objective of program changes being undertaken in 2010 is to provide cost-effective, comprehensive electric and gas retrofit services to small business customers on a turnkey basis using the same delivery model throughout Massachusetts. A principal task is the integration of measures offered under the current electric programs with existing rebated gas measures offered by the gas utilities. Other tasks involve the development of innovative and/or standardized incentive and financing mechanisms in support of the creation and piloting of a multi-tier approach to identifiable segments of the small business market.

In light of the 2010 program changes described in the preceding paragraph and activities in other energy efficiency programs, Massachusetts will be undertaking a mid-course adjustment process to consider whether any changes to program approaches are required for 2011-2012. Given the sharp increase in program budgets that is planned for these years and the potential magnitude of the programming and resource allocation decisions that may be made as part of the mid-course adjustment process, it is critical that timely information be available regarding key program process issues and initial market response to new and expanded program services. The PAs are therefore committed to completing a global process and marketing evaluation by July 15, 2010. This evaluation is expected to cover:

1. Customer and market response to new or expanded or revised marketing efforts;
2. A review of sales techniques that are effective;
3. An early review of electric and gas integration efforts and single point of contact/cross PA integration in MA as well as comparison to selected other states;
4. An early review of projects that are comprehensive, whole building, or otherwise targeted to deeper savings; and
5. Process evaluation and design review of community-based projects.

More information on the tentative scope and focus of this evaluation is provided in Appendix B.

The global process and marketing evaluation is envisioned as a single effort encompassing a number of program areas. However, individual pieces of the evaluation are expected to be performed by the members of the contractor teams for four research areas: Residential Retrofit, Large C&I, Small C&I, and Special/Cross-Cutting. The Special/Cross-Cutting contractor team will play a leading role, with overall direction and coordination provided by the PAs and the EEAC Consultants. Each contractor team will be responsible for covering those topics shown in Appendix B that are specific to its assigned research area.

Because of uncertainties over which particular 2010 program changes will be implemented in time to be productively studied by July 15, this RFP does not request a specific technical or cost proposal for the winning bidder’s contribution to the global process and marketing evaluation. Instead, bidders are asked to commit to making available a minimum of 200 hours of staff time by qualified staff members between the dates of April 15 and July 15, 2010. Bidders are asked to specify which staff members will be assigned to this task, and the total number of hours for which each assigned staff member will be available. The specific scope of the global process and market evaluation will then be negotiated after contractor selection.
In the second and third years, 2011 and 2012, the PAs anticipate a need for a process evaluation of the new integrated statewide program delivery model. Depending on the success of this approach, there may also be a need for an impact evaluation to assess the magnitude, comprehensiveness and depth of energy savings. However, the shape and scope of such evaluation work will only be determined following an initial period of experience.

The PAs expect there may be some overlap during planning and/or implementation of the new program delivery model, with concurrent work in the Non-Residential Large Retrofit and New Construction research area. The successful bidder for this RFP, along with the PAs, will monitor and coordinate evaluation activities with that research area to enhance work in both areas and avoid unnecessary duplication.

The table below presents an approximate timeline for the evaluation tasks and activities described above. Details of each task and activity within this RFP, including scope of work and timeline, will be determined once the evaluation contractor for this research area is selected. The timeline assumes that piloting of the integrated statewide delivery model is successful and continues more or less intact during 2012. Several evaluation studies currently underway are also identified. Results from these studies are expected to inform a detailed work plan for 2010 as the PAs develop the new comprehensive delivery model and ascertain the final scope of lighting impact evaluation.

**PROSPECTIVE EVALUATION ACTIVITIES BY QUARTER**

<table>
<thead>
<tr>
<th>Studies Underway Impacting This RFP</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM&amp;V Forum C&amp;I Lighting Persistence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GasNetworks Space/Water Heating Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM&amp;V C&amp;I Lighting Load Shape - Phase 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2010-2012 Studies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Process and Marketing Evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Assessment &amp; Segmentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statewide Delivery Model Process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated Program Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 One definite point of contact between the Small and Large C&I research areas is that the latter will be conducting a multi-year C&I market assessment that will include the small commercial market, reflecting the fact that for broad-based C&I market assessment activities it can be difficult to draw clean boundaries by size of customer. Initial components of this market assessment include a non-residential new construction baseline study, and studies of the chain and franchise and Combined Heat and Power (CHP) markets.
Information about the GasNetworks impact study can be found in Appendix C. The two Northeast Energy Efficiency Partnership (NEEP) EM&V Research and Evaluation studies, B1-Phase 2 and B2, can be accessed through the following link:


The following sub-sections in the Scope of Work outline the tasks to be accomplished in the two 2010 evaluation projects and the general approach to other evaluation work in 2011 and 2012. As described below, bidders are requested to provide detailed budgets for the 2010 evaluation tasks, and time and materials billing rates for the latter years.

5.0 SCOPE OF WORK

5A. First Year – 2010 (approximately the 12 month period beginning April, 2010)

5A.1 Task 1 - Market and Segmentation Assessment

Current Massachusetts electric DI programs vary in their eligibility requirements, ranging from <100kW to <300kW average monthly demand. In 2010 the PAs are testing the upper kW limit to determine the viability of a so called “mid-tier” DI option, with an expanded portfolio of measures to address this customer segment, as well as additional opportunities found for implementation in 2011. The possible target band for this mid-tier option is 200/300kW – 750 kW. Addition of a DI option to this range will overlap existing retrofit programs and varying delivery models for serving these customers. Whether this option complements existing programs by increasing participation and savings will be evaluated. PAs are also developing and piloting a “Main Street” DI retrofit project for very small (<50kW) customers, eligibility and delivery mechanism to be defined.

In this task the selected contractor will support the testing and development of this proposed multi-tier approach to the small business market. The support will initially focus on assisting in the preliminary Global Process and Marketing Evaluation, by gathering information about program changes in the Non-Residential Small Retrofit research area for inclusion in the July 15, 2010 report. Subsequent work will include the subtasks below.

5A.1.1 Global Process and Marketing Evaluation

Appendix B to this RFP outlines the research areas addressed and tasks in each area. The information needs are tentative and may be modified once the contractor for this research area begins work. Bidders should include 200 hours and appropriate staffing for this subtask in their proposals as described in 4.0 above. The results of this evaluation may modify the direction of the following subtasks, but bidders should base their bids on each subtask as stated.
5A.1.2 Market Assessment
Compile and segment the PA’s 2008-2009 electronic C&I program participant tracking databases, and similarly all of each PA’s small business customers, by average monthly demand and other potentially useful parameters that may be suggested by the available data. One outcome of this review and analysis might be the identification of differences in customer response to the varying program designs among PAs. Essentially this will be a data mining exercise.

5A.1.3 Additional Energy Efficiency Opportunities
Develop, test and implement a telephone survey for a sample of 2008-2009 program participants to assess additional cost-effective electric measures beyond those installed, and potential gas measures. This survey will be performed during recruitment for on-site work in Task 2. The purpose is to test both awareness and interest in measures PAs are or will offer, and to uncover other energy related needs of customers. Sample size will follow that determined in 5A.2.2 for the desired statistical accuracy and precision.

5A.1.4 Non-Participant Survey
Develop, test and implement a telephone survey of program non-participants. For purposes of proposal preparation and comparison, assume the number of interviews is equal to the participant sample in 5A.2.2. Composition of this sample will be informed by results of subtasks 5A.1.1 through 5A.1.3. The goal will be similar to 5A.1.3, plus an objective around reasons for not participating.

5A.2 Task 2 - Lighting Impact Evaluation
Lighting measures constitute as much as 90% of energy savings in the Non-Residential Small Retrofit program. Individual programs generally have low free-rider and spillover rates. A recent (2007) statewide billing analysis evaluated realized savings among program participants. Two current studies (see table above and link) being performed by the NEEP EM&V Forum are addressing C&I lighting measure persistence and the development of 8760 load shapes from historical data. Both studies should be complete by mid-2010 and are anticipated to include information applicable to the small business market. Results from these studies will inform the final scope of work performed in this task.

For planning purposes, the initial scope of work for this task assumes that the primary data required from this task is an update of lighting annual energy savings and average demand reduction during ISO New England on-peak performance hours. Data collection and analysis requirements are detailed in the following sub-tasks.

5A.2.1. Lighting Measures Addressed
This task will address lighting measures with and without controls. Lighting measures with controls will be a subset of the sample in 5A.2.2. Lighting measures without controls will be taken from the PAs’ 2009 projects. Lighting measures with controls will potentially be drawn from 2010 projects to enable the possibility of pre and post monitoring. In their proposals, prospective bidders should plan for an extended period of data collection, pending a final decision on the method chosen for evaluating controlled lighting measures.
In preparing their proposals, bidders should discuss their approach to either a pre/post or post only evaluation of controlled lighting measures. The discussion should include the pros and cons of both approaches and the expected increase in costs associated with the pre/post option.

5A.2.2 Sample Size and Metering
The contractor selected under this RFP will perform lighting logger metering and the site survey work described in Task 1 at 140 or more program participants across Massachusetts. For ease of comparison among submitted proposals, prospective bidders should base their cost estimates on 100 sites for lighting fixtures only, and 40 sites for controlled lighting measures. Prepare and submit pricing for two options, one involving only post monitoring of the 40 controlled lighting sites and one involving pre and post monitoring of those sites. Bidders should also provide an incremental per site cost for both options, assuming that any additional sites may be similarly distributed across the state.

5A.2.3 Sampling Plan
Statistical accuracy and precision of estimated energy savings should be 90%±10%. Demand reduction at the metered sites will meet ISO requirements of 80%±10%. A detailed sample plan and any additional sites to meet statistical requirements will be developed after contract award, taking into consideration results from the two NEEP EM&V studies currently underway. Depending on the approach taken to evaluation of controlled lighting measures, precision requirements may be relaxed. Bidders should comment on statistical precision in their discussion of pre/post and post only evaluation options in 5A.2.1. To the extent possible, the selected site sample will be stratified by customer segments defined by average demand, in order to provide useful information to the multi-tier planning and piloting efforts.

5A.3 Task 3 – Participant Survey and Site Work
The purpose of this task is to outline the field data necessary to support the computation of lighting impacts and other analysis for Tasks 1 and 2.

5A.3.1 Site Recruitment and Scheduling
Once sites have been selected for surveys or as alternates, the contractor will prepare and mail a letter to the primary and secondary sample, notifying them that they may be contacted to participate in a survey. Shortly thereafter, the contractor will telephone participants, administer the survey developed in Task 1 and recruit the participant for site metering.

5A.3.2 Metering and Site Surveys
In addition to site metering, the contractor will prepare a field data collection instrument to support the assessment of installed lighting measures and to confirm results of the telephone survey. Possible data collection activities include:

a) Verifying tracking system data including quantity and technology
b) Identifying if and when measures were removed
c) Collecting current reported hours of operation from the participant
d) Collecting select business characteristics, such as business type, building type, HVAC details, and seasonal operation
e) Identifying the timing and extent of any changes to the facility affecting energy consumption since the installation date
f) Asking a limited set of customer satisfaction questions
g) Clarifying any inconsistencies between the telephone recruitment survey and observed conditions

5A.3.3 Auditor Training
While auditors are expected to be experienced field data collectors, the contractor must train the auditors in the use of the particular surveys and protocols specific to this study. Prospective bidders who plan to use subcontractors for any telephone survey and recruiting work should describe the qualifications of those firms.

5A.4 Task 4 – Analysis, Recommendations and Reporting
The purpose of this task is to conduct any remaining analysis, make recommendations, and document all findings. The contractor will analyze all results, identify issues and make actionable implementation recommendations concerning the proposed multi-tiered market approach to be piloted in 2011. A Final Report will present all methodologies, analysis, findings and recommendations from tasks 1 through 3.

5A.4.1 Analysis
The contractor shall conduct additional required and other useful analysis suggested by the data, including disaggregation by:
Required
a) company service territory
Suggested by data
b) lighting technology type
c) facility or business type
d) controlled lighting versus fixture only measures, including hours of use reduction, actual occupancy profile and a usage reduction factor for controlled lighting

The contractor will note any discrepancies from tracking database records, and describe the impact on calculated demand reductions during performance hours for:
e) installed technologies and quantities
f) reported and monitored hours of operation

5A.4.2 Reporting, Recommendations and Planning
The contractor will prepare a draft final report, including a table which tabulates the following weighted statewide and individual utility values of:
a) kWH savings loadshape
b) kWH realization rate
c) % savings on-peak energy
d) connected kW realization rate
e) summer and winter diversified coincidence
f) hours of use
g) kWH and kW interactive effects factors
The draft final report will:

h) include an executive summary
i) describe methods and algorithms employed in the impact analysis
j) include the sample plan and final achieved precisions
k) summarize results of the telephone recruitment and site surveys, including:
   i. number of total program participants
   ii. number of changed or inactive accounts among participants
   iii. number of participants successfully recruited for both telephone surveys and site work
   iv. number of participants not successfully recruited, surveyed and analyzed, and reasons why
l) include in an appendix copies of the telephone recruitment, site assessment, and non participant survey instruments
m) provide a discussion of all analysis from Task 5.1
n) include recommendations as to whether a multi-tier service model approach should be implemented.

Prospective bidders should budget for bi-weekly conference calls during 2010 with the research area Study Manager and other PA participants as needed, including review and revision of survey instruments, the sampling plan, draft and final lighting impact reports, and for in-person meetings with PA staff at the following times:
o) kick-off work planning meeting following contract award
p) preparation and presentation of an Annual Summary Report, including the tasks described above as well as any additional 2010 ad-hoc activities, this report due during the first quarter of 2011

Following completion of the Final Impact Report and the Annual Summary Report the contractor will deliver hard cover and electronic copies in MS Word and pdf format to all PA’s. The Annual Summary Report of all 2010 evaluation activities will serve as a preliminary planning document for 2011.

Additional work identified and executed during 2010, beyond the tasks described above, will be performed at the standard billing rates provided as part of the bidder’s response to this RFP.

5B. 2011 - 2012 Program Years
Evaluation activities covering these later program years are anticipated to begin around the end of the first quarter of 2011 and continue through the first or second quarters of 2013. Specific activities and tasks are not known at this time. All evaluation work planned and executed during this time period will be performed at the standard billing rates provided as part of the bidder’s response to this RFP. The following paragraphs outline the general areas of work the PA’s expect to evaluate. Prospective bidders should not include this work in their proposed first year budgets.

5B.1 Electric/Gas Measure Integration Process Evaluation
To date, gas companies have served the small business sector by means of rebates for prescriptive measures similar to those offered to residential customers. As part of their 2010
program design process, PAs will identify and add prescriptive gas measures and potentially more prescriptive electric measures. They will also need to adjust their screening methods and tools to allow for custom gas measures.

Integration with electric DI programs will require close cooperation and coordination. Investigation of a multi-tiered delivery approach to the sector with different measure offerings needs a clear understanding of each tier’s needs. This evaluation will initially assess the PAs progress toward achieving an integrated program that addresses each new tier with a workable statewide administrative model. A subsequent process evaluation will investigate customer experience and satisfaction with the new structure and offerings.

5B.2 Incentive and Financing Mechanisms Review
During 2010 all PA’s will move toward a common 70% customer incentive for 2011. Gas PAs will commence actions to provide on-the-bill-financing by 2011 or, in the alternative, negotiate arrangements with the electric PAs servicing their areas to bill gas measures through the electric bill, with a reimbursement to the electric PA for measure and financing costs. All PAs that offer financing will offer a common discount for single customer payments, and will explore flexible repayment terms to produce a positive cash flow for customers, beyond 24 months.

The contractor will conduct a review of the new incentive and financing mechanisms, either independently or as one or more tasks in the process evaluations above.

5B.3 Integrated DI Program Impact
Towards the end of the three year planning period, the PAs anticipate a need to evaluate the savings and reach of the new program structure. This study may look at electric, gas and non-resource benefits, effectiveness in engaging targeted customer groups, types of and success with custom projects, and other issues that may arise during program implementation.

5B.4 Evaluation Planning
In each year, an evaluation plan will be developed during the last quarter of the previous year and the first quarter of the year to be evaluated. Each year’s activities may be comprised of surveys of program participants, implementation contractors and PA staff, reviews of incentives and customer financing arrangements, and studies to look at various impact and process issues. Other activities related to such things as measure interaction effects, baselines, billing analysis, etc. may be done as deemed necessary.

The selected evaluation contractor will be responsible for running conference calls to discuss evaluation activities for the coming year and producing a draft and a final evaluation plan.

6.0 GENERAL DELIVERABLES

Work is anticipated to commence no later than April 15, 2010. In general, the selected evaluation contractor will be expected to deliver the following items during the course of this effort.
6.1 Work plan (covering the first 12 months), due at the outset of the project. This is to include a schedule and an allocation of evaluation staff resources amongst the various evaluation tasks described under the Scope of Work. It should also detail how and when the evaluation contractor will make use of sub-contractors. In addition, the plan should indicate when and what reports will be issued.

6.2 Draft Questionnaires and/or interview guides, on-site protocols, and or other data collection instruments, one month before any scheduled surveying activities.

6.3 For any activity that requires a sample to be drawn, the contractor should suggest the number of participants necessary. Due to various constraints on sample sizes, the achievement of statistical significance within certain parameters may not be realistic, but where it is possible, the sample should be sized to provide results with a 90% confidence, plus or minus 10% precision, unless specified otherwise in the Scope of Work. Should this not be attainable, the proposal should suggest an appropriate sample size and estimate the associated level of confidence and precision. Any sampling techniques will need to ensure appropriate representation from individual PA service territories. The PAs and EEAC Consultants will have final approval of the sample selection process.

6.4 Preparation of initial and final draft reports of the 2010 tasks, and a final report as described in 5A.4.2.

6.5 Draft and final annual report of all evaluation activities and any ad-hoc work performed during the preceding year. The final 2010 Annual Summary Report will be due by March 1, 2011.

6.6 In person presentation of all activities in the Annual Summary Report to PAs, EEAC consultants and other interested parties.
Appendices

Appendix A – EEAC Resolution on Evaluation, Measurement, and Verification

Document included in RFP Package as “Appendix A – EMV” in pdf format.

Appendix B – Global Process and Marketing Evaluation Tentative Scope and Focus

Document included in RFP Package as “Appendix B - Global Process” in pdf format.

Appendix C – National Grid RFP 241-09 Residential High Efficiency Heating and Water
Heading Equipment Program Impact and Process Evaluation

Document included in RFP Package as “Appendix C – National Grid RFP 241-09” in pdf format.
REQUEST FOR PROPOSAL – RFP #1889

Massachusetts Energy Efficiency Programs

Evaluation Tasks in the Residential Retail Products Areas

2010 - 2012

January 29, 2010

Response Deadline:
March 3, 2010 by Noon EST

PLEASE NOTE: The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP.
TABLE OF CONTENTS

1.0 General Information
   1.1 NSTAR
   1.2 Program Administrators and Sponsors
   1.3 Unauthorized Disclosure
   1.4 Definitions
   1.5 Sponsors’ Discretion
   1.6 Bid Evaluation
   1.7 Discrepancies or Omissions
   1.8 Payments for Services and Invoicing
   1.9 Pre-Bid Conference Call
   1.10 RFP Recipient List

2.0 Specifications
   2.1 Statement of Work
   2.2 Terms and Conditions
   2.3 Safety, Environmental, and Background Check Requirements

3.0 Communications and Form of Response
   3.1 Volume I: Commercial Proposal
      3.1.1 Commercial Exceptions
      3.1.2 Pricing
      3.1.3 Options and Alternates
      3.1.4 EEOC Compliance
      3.1.5 Insurance Certificate(s)
      3.1.6 Execution of Proposal by Officer of Supplier
      3.1.7 Vendor Information
   3.2 Volume II: Technical Proposal
      3.2.1 Title Page
      3.2.2 Table of Contents
      3.2.3 Executive Summary
      3.2.4 Technical Requirements
      3.2.5 Examples of Experience
      3.2.6 References
      3.2.7 Statements of Qualifications
      3.2.8 Resumes
      3.2.9 Summary of Availability

4.0 Proposal Forms
   4.1 Form A - Bid Receipt Acknowledgment Form
   4.2 Form B - Supplier Bid Proposal Form (Cover Sheet)
   4.3 Form C - Execution of Proposal by Officer of Supplier
   4.4 Form D - Project Cost Estimate Bid Form
IMPORTANT DATES - RFP #1889

RFP Emailed to Potential Bidders: January 29, 2010
Pre-Bid Conference Call: February 9, 2010 at 1pm - 2pm
Last Date for Questions: February 16, 2010
Responses to Questions: February 23, 2010
Proposals Due: March 2, 2010 by Noon EST
Supplier Selected: March 9, 2010
Contracts Signed with all Sponsors April 6, 2010
Kick-Off Meeting: TBD, as soon as possible after signing

Correspondence

During the Request for Proposal, up to and including contract award, all correspondence must be directed via email to:

Patricia.Latimer@NSTAR.com

Should it be determined that any vendor is conversing with or directing questions related to this RFP to anyone other than the individual identified above, then at the discretion of the Program Administrators and Sponsors that vendor may be immediately disqualified from bidding on this project.
1.0 GENERAL INFORMATION

1.1 Background

Headquartered in Boston, MA, NSTAR provides regulated electric and gas utility services and is also engaged in telecommunications and other non-regulated activities. NSTAR, through its subsidiaries and operating companies, Boston Edison Company, Cambridge Electric Company, Commonwealth Electric Light Company and NSTAR Gas Company, serves approximately 1.3 million customers throughout Massachusetts, including approximately 1,040,000 electric customers in 81 communities and 240,000 gas customers in 51 communities. The Operating Companies are supported through the NSTAR Electric & Gas Corporation (the Company).

NSTAR is pleased to present this Request for Proposal (RFP) for Evaluation Tasks in the Residential Retrofit & Low Income Areas on behalf of the Program Administrators and Sponsors of the Massachusetts Energy Efficiency Programs. In support of the Green Communities Act of 2008, this RFP is being solicited on behalf of seven Massachusetts utilities (the Sponsors). The goal of this RFP is to select one successful bidder to provide services to the Sponsors’ Massachusetts customers.

1.2 Program Administrators and Sponsors

This Request for Proposal has been issued by NSTAR on behalf of the Program Administrators (PAs) for the Massachusetts Energy Efficiency Programs in the Residential Retrofit & Low Income Areas. These PAs are comprised of representatives from the following electric and gas companies in the Commonwealth of Massachusetts. These companies are referred to herein as the Sponsors:

- Bay State Gas (NiSource)
- Berkshire Gas
- Cape Light Compact
- National Grid USA
- New England Gas
- NSTAR
- Unitil/Fitchburg Gas & Electric
- Western Massachusetts Electric

1.3 Unauthorized Disclosure

The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP. Additionally, the Sponsors consider any information provided to Bidders in the course of business to be privileged and confidential between Consultant and the Sponsors. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Consultant may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Sponsors.

All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Sponsors at the end of the contract. The awarded
bidders may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Sponsor to do so.

1.4 Definitions

Bidder shall mean those firms/vendors acting in the role of Supplier when responding with a Proposal to this RFP. Proposal shall mean the Bidder's formal response indicating their committed solutions that meet or exceed the requirements of the RFP. Subcontractors, or subs, can be defined as any Supplier under Contract or in the RFP response that are considered financially independent of the Bidder in any other business or accounting relationship.

This RFP does not constitute an offer by the Sponsors to enter into a contract, nor does any response to this RFP constitute an acceptance of an offer, nor does any response to this RFP bind the Sponsors in any way. This document shall not be construed as a request or authorization to perform work at the Sponsors' expense. Any work performed by a Bidder in connection with evaluating and responding to the RFP and, if selected, negotiating a definitive Agreement will be at the Bidder's own discretion and expense. This RFP does not represent a commitment to purchase or lease. The Sponsors reserve the right to reject any and all proposals at its absolute discretion. Submission of a bid constitutes acknowledgment that the Bidder has read and agrees to be bound by such terms. The information in this document will enable the recipient to formulate a proposal to meet the workload requirements as described in this RFP. The numbers, volumes, run rates, etc. provided in this RFP are based upon the most recent data available and should serve as estimates to Bidders for pricing and response purposes.

1.5 Sponsors’ Discretion

The Sponsors are not responsible and will not reimburse Bidders for costs incurred to develop proposals.

NSTAR is issuing this RFP on behalf of the Sponsors who at their discretion may:

- Select a Proposal other than the lowest priced, if the Sponsors determine, at its sole and absolute discretion that the Sponsors interests will best be served by doing so.
- Seek clarification from any Bidder regarding Proposal information and may do so without notification to any other Bidder.
- Continue the review procedure until a Bidder is selected successfully or until the Sponsors choose to reject all Proposals.
- Accept any Proposal or alternate as submitted without negotiations.
- Select for negotiations only the overall best Proposal or negotiate all Proposals submitted which fall within a competitive range.
- Perform a complete financial review as well as an on-site investigation of any of the Bidders facilities to ensure it is capable of meeting the demands of Sponsors and the needs identified in this RFP.
- May not award any Contract(s) as a result of this RFP.
- Reserves the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Sponsors.
1.6 Bid Evaluation

The PAs and their related personnel will confidentially review proposals. A cross-functional evaluation committee representing each of the Sponsors will rate all Proposals based on the evaluation criteria provided below and may reduce the number of Bidders being considered to a "short list" of finalists based upon this objective analysis. The Sponsors may elect to meet with finalists for interviews. After all responses have been thoroughly reviewed and negotiations completed with finalists, the Sponsors will award the Contract(s) to the Bidder(s) who offers the best overall value. The Sponsors reserves the right not to award any Contract(s) as a result of this RFP.

All bids will remain active for ninety (90) days, and no bid materials will be returned. Each proposal will be evaluated on technical and commercial merits. All proposals will be opened on or after the due date.

Proposals will be evaluated on the following criteria:

- **Cost** - both the total cost and whether overall proposal offers good value will be considered
- **Reasonableness of Approach** - does the proposal offer good creative solutions to the evaluation issues presented in the RFP
- **Dedicated Resources** - has the bidder shown that they have the resources to provide the services requested within the expected timeframe
- **Comprehension** - has the bidder shown that they understand the issues involved and have responded accordingly
- **Documentation Quality** - is the proposal itself clear, concise, and well written
- **Demonstrated Experience** - whether the bidder has demonstrated that their firm has the experience and expertise or the ability to provide subcontractors having the appropriate knowledge to perform the requested tasks

1.7 Discrepancies or Omissions

Should a Bidder find any ambiguity, discrepancy or omission in the RFP, or should the Bidder have any questions, the Bidder shall notify NSTAR via e-mail to Patricia.Latimer@NSTAR.com. Such information must be received no later than the “Last Date for Questions”, which is indicated on Page 3 of this RFP, to afford NSTAR the opportunity to send any instructions or interpretations to other Bidders who have received an Invitation to Bid. The Sponsors will not be responsible for any oral instructions or interpretations.

1.8 Payment for Services and Invoicing

No up-front payments will be made to vendors. Invoices shall be submitted to each Sponsor on a monthly basis.

1.9 Pre-Bid Conference Call

A pre-bid conference call will be held on day and time indicated on Page 3 of this RFP. The call is scheduled for one hour. At that time, a brief program overview will be provided, followed by questions and answers. Information shared on the call will be emailed to all prospective bidders within a week. Dial in number is National Grid’s conference line: 866-561-4997 access# 9674198. **Please dial into the conference call line at the designated time.**
1.10 RFP Recipient List

Attached is a list of parties to whom this RFP bid package is being sent. Normally, such lists are not made available to potential bidders; however, due to the scope of services requested, timeline for responses, and in anticipation of vendors contemplating collaborative bids, this list is provided to facilitate the RFP process in a fair and efficient manner. This list is to be used only for such purpose, and is not for any other use or solicitation. The list is to be considered and treated as confidential information by the recipient.

RFP Recipient List

2.0 SPECIFICATIONS

2.1 Statement of Work

The purpose of this RFP is to seek a qualified bidder or a team of bidders to complete an array of evaluation activities as defined in the attached statement of work over a three year period. The winning bidder will be the sole evaluation contractor for this research area. Activities will include an assortment of evaluation work including, but not limited to such things as market assessment, baseline studies, process evaluation, and development of incremental cost information. The winning bidder will be expected to handle all evaluation issues and either team with or subcontract out work where specific skill sets are required that the evaluation contractor may not possess. A copy of the Statement of Work and related appendices are provided below.

RFP Recipient List

2.2 Terms and Conditions

The successful Consultant’s services shall be provided in accordance with each Sponsors’ terms and conditions, which are provided below. Any exceptions to these requirements must be clearly stated in the Bidder’s RFP response.

Any exceptions submitted by a Bidder does not constitute acceptance by any of the Sponsors. Exceptions will be negotiated and agreed to by each Sponsor and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

Bay State Gas (NiSource)
Berkshire Gas
Cape Light Compact
National Grid USA
New England Gas
NSTAR
Unitil/Fitchburg Gas & Electric
Western Massachusetts Electric
• Bay State Gas - NiSource Corporate Services Company General Services Agreement and Data Security Requirements

• Berkshire Gas – Berkshire Gas’ requires Suppliers’ adherence to National Grid’s T&Cs for Consulting Services

• Cape Light Compact Terms & Conditions.

• National Grid Terms & Conditions for Consulting Services

• New England Gas Consultant Terms & Conditions

• NSTAR’s Terms & Conditions and Insurance Requirements

• Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions

• Unitil Terms & Conditions

2.3 Safety, Environmental, and Background Check Requirements

The successful Consultant’s services shall be provided in accordance with each Sponsors’ safety, environmental, and background check requirements. Copies of National Grid’s requirements for these areas are attached. Any exceptions must be clearly stated in the Bidder’s RFP response.
January 29, 2010

3.0 COMMUNICATIONS AND FORM OF RESPONSE

During the RFP process, all questions must be submitted via e-mail and addressed to Patricia Latimer at Patricia.Latimer@NSTAR.com, on or before the “Last Date for Questions” as specified on Page 3 of this RFP. Answers to Bidder’s inquiries will be distributed to all Bidders via e-mail no later than the “Responses to Questions” date provided on Page 3 of this RFP. In order to ensure fairness, until the time an award is made, Bidders shall have no direct communication regarding this RFP with any of the Program Administrators or any other personnel within the Sponsors’ organization. After the decision to award is announced, the successful Bidder may contact the Program Administrators and work with each Sponsors’ Procurement contact to provide certificates of insurance and sign final contract documents. Failure to comply with these communications guidelines may disqualify the Bidder from further consideration.

Supplier’s proposal MUST include two SEPARATE VOLUMES. Volume I must address all commercial requirements, while Volume II must address all technical requirements. Volumes I and II shall not be bound or otherwise joined together. VOLUME II MUST NOT CONTAIN ANY COST OR PRICE INFORMATION. The organization of the proposal MUST conform to the organization enumerated in Form B, SUPPLIER BID PROPOSAL FORM, and as described in this section. The first page of the Supplier proposal MUST be Form B-Supplier Bid Proposal Form (cover sheet).

This RFP has been sent in electronic format to facilitate the completion of proposals. A complete proposal must be sent via e-mail to Patricia.Latimer@NSTAR.com, an original hardcopy, electronic copy on CD, and 4 (four) hardcopies either hand delivered or sent via commercial carrier for receipt NO LATER THAN the “Proposals Due” date and time specified on Page 3 of this RFP to the following address:

NSTAR Electric & Gas Corporation
Attn: Patricia Latimer, Principal Contracts Agent
One NSTAR Way, SE-250
Westwood, MA 02090-9230
Phone: 781-441-8841

PLEASE NOTE THAT PROPOSALS MAY NOT BE SUBMITTED VIA FAX.
3.1 Volume I: Commercial Proposal

3.1.1 Commercial Exceptions: This section of the proposal MUST state clearly any exceptions which are being taken to the commercial requirements of this RFP, for example terms and conditions, insurance requirements, etc. Exceptions must state what the exception is, the reason for the exception and proposed alternatives, and be organized sequentially in accordance with the organization of the RFP. Commercial exceptions MUST be clearly defined only in this section of the proposal. Bidder’s preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Bidder’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP, unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

3.1.2 Pricing: The Sponsors seek to procure Services at the most cost effective rates possible. Pricing for the first 12 months is to be provided on the Project Cost Estimate Bid Form D, which is included at the end of this document. Labor costs should be broken out by task and personnel type (e.g., project management, supervision, clerical support, analyst, etc.). Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories, if known. Estimates of miscellaneous additional costs should be indicated. Since the initial scope of work will only cover the first year, please provide a billing rate for years 2 and 3. The Sponsors will enter into individual negotiations each subsequent year regarding any potential price increases, which must be justified by the Contractor. The PAs will determine the allocation of total costs to individual PA’s after a Contractor has been selected. (Please note that the selected contractor will be required to contract with and invoice each of the PAs separately.)

All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Bidder, which, if accepted, shall create a binding obligation upon the Bidder.

Bidders should identify if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered or not. Discounts will be factored into the evaluation of the bids and their acceptance is at the Sponsors’ option.

3.1.3 Options and Alternates: This section of the proposal would include options or alternates (commercial considerations) which the Sponsors could consider. Suppliers are encouraged to submit alternate proposals in addition to the requirements defined in Section 2.1, Statement of Work, if such alternate proposals will result in lower price, higher reliability, or improved schedule.

3.1.4 EEOC Compliance: If not previously submitted, please provide a statement that your company is in compliance with EEOC requirements.

3.1.5 Insurance Certificate(s): Include with your Bid a Certificate(s) of Insurance evidencing compliance with at least the minimum levels of insurance required in Section 6.0 Insurance of NSTAR’s Consulting Services Agreement, which is contained in NSTAR’s requirements document in Section 2.2 above. If you are awarded the work, you will be required to submit certificates to each Sponsor identifying them as an additional insured and complying with their insurance levels.
3.1.6 **Execution of Proposal By officer of Supplier:** Form C MUST be completed and executed by an Officer of the Supplier.

3.1.7 **Vendor Information:** Bidders shall provide:

- Federal TaxID number
- Business type, i.e., sole proprietorship, partnership, joint venture, etc. and state of residency
- Number of employees
- Financial statements for the last 24 months

This information is not considered part of the 30 page response limitation and should be provided as a separate tab in Volume 1 of the Commercial Proposal.

3.2 **Volume II - Technical Proposal**

With the exception of the staff resumes and sample reports, Volume II **must not exceed thirty pages.**

The Supplier's technical proposal, addressing all technical requirements MUST be included in this section. **THIS VOLUME MAY NOT INCLUDE ANY COST OR PRICING INFORMATION.** In addition to the Supplier's technical proposal, the following items must be addressed, in the order listed:

- **Title Page:** This section of the proposal should include a title page, which identifies the RFP Title, vendor’s name and the volume.

- **Table of Contents:** The vendor’s proposal should include a Table of Contents, which lists the titles and page numbers for each major topic and sub-topic.

- **Executive Summary:** This section should include a summary of the key points and highlights of the vendor’s response.

- **Technical Requirements:** All detailed information in the proposals should cover the first 12 months of evaluation activities (**May 2010** through **May 2011**). A detailed description of the complete scope of work including a schedule, flowchart and organizational management structure for the years 2010 – 2012. Years 2011 and 2012 need not be as detailed as 2010. This should not be a re-statement of the scope described here, but a carefully thought out plan of how, when, and where the various tasks will take place using example questions wherever possible. This plan should give a reasonably detailed description of how the contractor plans to complete each of the tasks described in the scope of work with a concentration on the CFL net-to-gross study. For any survey work, a sample of questions and how they would be analyzed should be included. No more than half a page to a page for each task should be dedicated to this effort, exclusive of any additional pages required to detail some of the questions and how they would be analyzed. For Years 2 and 3, the bidder should provide a strategic discussion that explains in a broad sense how the evaluation activities will be approached.

Bidders should also include a description of all assumptions used to develop their response to this RFP.

- **Example of Experience:** Provide one representative example of experience and documentation skills, such as a report.
3.2.6 **References:** Provide names, affiliations, and telephone numbers of at least two individuals or organizations for which similar services have been provided for Prime Contractor and all sub-contractors on team. The Massachusetts PAs and EEAC Consultants reserve the right to contact these individuals to ascertain the quality and timeliness of previous performance.

3.2.7 **Statements of Qualifications:** Statements of qualifications that detail the bidder’s experience and ability to provide multi-year evaluation support should be included. The bidder’s statements should emphasize their expertise and knowledge with regards to market assessment and evaluation of market effects, their ability to design and carry out extensive interviewing and survey analysis, as well as their technical expertise and qualifications to undertake technical studies dealing in the area of residential retail products, notably residential lighting and applicant turn-in programs.

3.2.8 **Resumes:** Provide details of qualifications of personnel who will be utilized and copies of resumes as requested in the Statement of Work here.

3.2.9 **Summary of Availability:** For each professional staff member considered available and qualified to work on this contract, please state the maximum number of labor hours the bidder can provide assuming these hours are contractually committed to specific activities by April 15, 2010. Please provide this information on availability both for the periods June 1 – December 31, 2010, and January 1 – June 30, 2011.

4.0 **PROPOSAL FORMS**

The following forms must be completed and submitted with Supplier Proposal.

4.1 **Form A - Bid Receipt Acknowledgment Form**

This form is used by the Supplier to confirm to Company receipt of the bid package and intent to bid. This form should be completed upon receipt of the RFP and returned as soon as possible via email (Patricia.Latimer@NSTAR.com).

4.2 **Form B - Supplier Bid Proposal Form (Cover Sheet)**

Form B - Supplier Bid Proposal Form (Cover Sheet) MUST be the first page of the Supplier proposal.

4.3 **Form C - Execution of Proposal by Officer of Supplier**

The Supplier MUST complete this form and include it in Volume I of the proposal. The form is used to:

- Indicate how long the proposal is valid.
- Confirm in writing that Supplier's proposal represents a complete offering and includes all exceptions to the RFP.

4.4 **Form D - Project Cost Estimate Bid Form**

Pricing must be provided on the Project Cost Estimate Bid Form and included in Volume I – Commercial Response only.
FORM A – BID RECEIPT ACKNOWLEDGMENT FORM

RFP # 1889 - Evaluation Tasks in the Residential Retail Products Areas

COMPLETE AND RETURN UPON RECEIPT TO:

Patricia.Latimer@NSTAR.com

The ___________________________ Company hereby:

1. __ I acknowledge receipt of the above listed Bid Documents.

__________________________________________

And

2. __ My proposal will be submitted on the required due date.
   __ I choose to not bid, as fully explained in letter to be transmitted under separate cover.

Our Proposal shall list the following companies as joint venture partners or subcontractors:

________________________________________________________

Please address future inquiries on this work (if different from original mailing) to:

Name: ______________________________

Company: ______________________________

Address: ______________________________

________________________________________

Phone: __________________ Fax: ____________

by: ________________________________

(Signature)

Title: ______________________________

Date: ____________________________
FORM B - SUPPLIER BID PROPOSAL FORM

RFP #1889 - Evaluation Tasks in the Residential Retail Products Areas

(COVER SHEET)

NAME OF SUPPLIER: ____________________________________________

ADDRESS: ______________________________________________________

______________________________________________________________

NAME OF AUTHORIZED REPRESENTATIVE: __________________________

TITLE OF ABOVE: _______________________________________________

PHONE NUMBER OF THE ABOVE: _________________________________

Direction: This sheet must be the first page of all submittals. The remainder of the proposal must follow the following format with no exceptions. Additional sections may be added at the Supplier's discretion. Volumes I & II must be separate documents.

<table>
<thead>
<tr>
<th>Volume I: Commercial Proposal</th>
<th>Volume II: Technical Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TABLE OF CONTENTS OF VOLUME I</strong></td>
<td><strong>TABLE OF CONTENTS OF VOLUME II</strong></td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>1.0</td>
<td>Commercial Exceptions</td>
</tr>
<tr>
<td>2.0</td>
<td>Pricing</td>
</tr>
<tr>
<td>3.0</td>
<td>Options and Alternates</td>
</tr>
<tr>
<td>4.0</td>
<td>EEOC Compliance Verification</td>
</tr>
<tr>
<td>5.0</td>
<td>Insurance Certificate (s)</td>
</tr>
<tr>
<td>6.0</td>
<td>Execution of Proposal by Officer of Supplier</td>
</tr>
<tr>
<td>7.0</td>
<td>Vendor Financial Information</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proposal Prepared by  (Signed):____________________________________

(Typed):_____________________________________________________

Title:_______________________________________________________

Date:_______________________________________________________

FORM C - EXECUTION OF PROPOSAL BY OFFICER OF SUPPLIER

RFP #1889 - Evaluation Tasks in the Residential Retail Products Areas

Supplier represents that this proposal is its complete offering and includes all exceptions to this RFP. Supplier agrees that this proposal will be valid for a minimum period of 90 days from date of submittal.

Supplier
By:

(Signature)

(Name), a duly authorized representative of the Supplier

(Title)

Date
FORM D - Project Cost Estimate Bid Form
REQUEST FOR PROPOSALS (RFP)

STATEMENT OF WORK

EVALUATION TASKS FOR MASSACHUSETTS ENERGY EFFICIENCY
IN THE
RESIDENTIAL RETAIL PRODUCTS AREAS
2010 – 2012

The Massachusetts Program Administrators (PAs) for the Massachusetts Energy Efficiency programs in the Residential Retail Products area request proposals to perform various evaluation tasks addressing the state of Massachusetts, as described in this Request for Proposals. The PAs include Bay State Gas, Berkshire Gas, Cape Light Compact, New England Gas, National Grid (Electric & Gas), NSTAR Electric and Gas Corporation, Western Massachusetts Electric, and Unitil/Fitchburg Gas & Electric. This RFP covers program years 2010 through 2012 and all programs and pilots that are administered within the Residential Retail Products area. This program consists of the Energy Star Lighting and Energy Star Appliances and Products as well as any other Residential Retail Products programs that may be developed over the three year period. In order to streamline processes, maximize retailer and manufacture relationships and minimize vendor costs, these two Energy Star programs are being administered jointly.

1.0 BACKGROUND

1.1 MASSACHUSETTS EVALUATION FRAMEWORK

On September 8, 2009, the Massachusetts Energy Efficiency Advisory Council (EEAC or Council) unanimously approved a resolution developed collaboratively by the Program Administrators (PAs) and the EEAC Consultants, setting forth a new administrative framework for the performance of Evaluation, Measurement and Verification (EM&V) in Massachusetts. The full Resolution is presented verbatim in Appendix A; the following is a summary of the Resolution, its effects, and its relevance to the current RFP.

Under the Resolution, the EEAC will assume an oversight role over the EM&V activities of the PAs to ensure the objectivity and independence of those activities, and the perception of such, and to help ensure consistency, timeliness, and credibility. While the PAs and EEAC Consultants (acting on behalf of the EEAC) will continue to work diligently to reach a consensus on evaluation issues, where there are areas of difference that may arise that cannot be resolved through consensus during the on-going interactive process between the EEAC Consultant and the PA evaluation staff, authority for decision-making will reside with the EEAC or its Designee. This arrangement is subject to a system of appeals in the event of any disputes that cannot be resolved collaboratively.

The Resolution also restructures EM&V in Massachusetts so that most studies are to be performed at a statewide rather than a PA-specific level. It specifies that the range of
evaluation activities be divided into 5 to 7 semi-permanent statewide Research Areas, oriented primarily to specific target markets. Each Research Area is to have an assigned Study Manager from the PAs, an assigned EEAC Evaluation Consultant, and an independent evaluation contractor who conducts the studies under a long-term contract with the individual PA companies.

Consistent with the Resolution, the PAs and the EEAC Consultants subsequently developed a system of six statewide Research Areas, as follows:

1. **Residential Retrofit and Low Income.** This category includes residential cooling and heating equipment, residential heating and water heating, residential and low-income retrofit, weatherization, and most aspects of multi-family programs.

2. **Residential Retail Products.** This includes residential lighting and appliance programs.

3. **Residential New Construction.** This includes residential and low-income new construction and major renovations programs, as well as codes and standards and compliance efforts. This Research Area also includes baseline studies of construction practices for both single- and multi-family homes.

4. **Non-Residential Large Retrofit and New Construction.** This includes C&I new construction (small and large) and major renovation, as well as large C&I retrofit programs.

5. **Non-Residential Small Retrofit.** This includes the current C&I small retrofit, direct install programs. This category would also include any future programs that may target small non-residential customers.

6. **Special and Cross-Sector Studies.** This includes those studies that do not fit readily into any of the five market-oriented Research Areas above, as well as those studies that are cross-sector in nature, including: cross-sector free ridership and spillover studies; non-energy benefits; behavioral programs; community-based pilots; and marketing, public education, and outreach activities.

Massachusetts’ evaluation planning and implementation schedule calls for selecting contractors, and finalizing contracts, for all six Research Areas by April 15, 2010. Evaluation activities under each contract are to be conducted subject to the terms of the EEAC Resolution. *The purpose of this RFP is to select an evaluation contractor for the second Research Area, Residential Retail Products.*

1.2 **RESIDENTIAL RETAIL PRODUCTS BACKGROUND**

Residential Retail Products program in Massachusetts began in 1998 with The Energy Star Lighting program and the Energy Star Appliances and Products program. Both
programs were sponsored by a consortium of New England electric utilities. Initially, the Energy Star Lighting program focused on retail sales of energy efficient lighting through in-store coupons as well as a mail order channel. Over the years, the program evolved to utilize upstream incentives, which dramatically increased sales and lowered costs of products for the customer. Additionally, lighting technology has now extended beyond just the basic CFL spirals to more specialty products and SSL.

The Energy Star Appliances and Products program historically focused on major appliances such as refrigerators, clothes washers, room air conditioners, and dishwashers. In recent years electronic devices, additional appliances and other ancillary equipment have become increasingly significant drivers of energy use and require additional consideration.


With respect to the Residential Retail Products program, it is important that the selected Evaluation Contractor understand all of the key players involved. There are three main groups who may be involved in the evaluation activities; they are as follows:

The Program Administrators – This is the committee who manages the Residential Retail Products Program. It is made up of representatives from the sponsoring PAs (usually the program manager responsible for the implementation of the program).

Implementation Contractor – The contractor who implements the program in the field, i.e. interacts with the builders, manufacturers, general public and is responsible for all implementation and marketing activities.

The Energy Efficiency Advisory Council (EEAC) and its Consultants – The EEAC has been set up as an advisory group to oversee the creation, implementation, and evaluation of energy efficiency programs in Massachusetts.
2.0 OBJECTIVE

The purpose of this RFP is to seek a qualified bidder or a team of bidders to complete an assorted array of evaluation activities for the Massachusetts Residential Retail Products sector over a multi-year period. The winning bidder will be the sole evaluation contractor for the Residential Lighting and Residential Appliance research area. These activities will include an assortment of evaluation work including, but not limited to such things as market assessment, baseline studies, process evaluation, and development of incremental cost information. The winning bidder will be expected to handle all evaluation issues and to team with other firms where specific skill sets are required that the evaluation contractor may not possess.

This will be a multi-year effort covering program years 2010 through 2012. This contract will commence in Spring 2010 and terminate in Spring 2013. Some of the main initial areas of focus will be on the following areas.

- A new net-to-gross (NTG) impact study, potentially including a CFL saturation study to get more recent data
- As study to develop and verify applicable net-to-gross methods for specialty and hard-to-reach bulbs
- A process evaluation to assess changes and re-design efforts made to the lighting program;
- Research on various market characteristics, such as pricing, retailer stocking, and promotional practices
- Market research on appliance and consumer electronics categories
- Evaluation Planning
- Other Undetermined Evaluation Issues

Other areas of focus over the three year period may include the evaluation of appliance turn-in programs, an ARRA-funded appliance rebate program, and consumer electronics programs.

The table listed below is designed to give bidders an idea of evaluation activities the PAs are contemplating and an approximate timeline. Details of each project including both Scope and Timeline will be determined once an Evaluation Contractor is selected.

<table>
<thead>
<tr>
<th>PLANNED EVALUATION ACTIVITIES BY QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>NTG Impact Study - CFL</td>
</tr>
<tr>
<td>NTG Impact Study - Specialty</td>
</tr>
<tr>
<td>Process Evaluation - Lighting</td>
</tr>
<tr>
<td>Market Characteristics Study</td>
</tr>
</tbody>
</table>

RFP #1889
Statement of Work

Columbia Gas of Massachusetts, Attachment E-1(a)
Responsibilities of the Evaluation Contractor will include managing the various individual evaluation tasks, managing sub-contractors as necessary, collecting data, analyzing data, providing individual formal reports and presenting results to the Program Administrators for the various evaluation tasks, providing an annual report which summarizes the year’s evaluation activities, and assisting in and developing an annual evaluation plan in the last quarter of each year, covering the next program year.

3.0 SCOPE OF WORK

3.1 NTG IMPACT STUDY – SPIRAL CFL, HARD TO REACH & SPECIALTY

A Net-to-Gross (NTG) study for the Residential Retail Products program was last conducted in 2009 (see Appendix C for a draft copy of the report). Historically, the Energy Star Lighting program has accounted for approximately 65% of the residential sector kWh savings. In the past several years, with the introduction of the Negotiated Cooperative Program, the influx and sales of plain spiral CFLs in Massachusetts have grown such that 75% of homes have at least 1 CFL and approximately 20% of the sockets have CFL. A recent multi-state evaluation study of the current program design also suggests a high level of market transformation for the plain spiral CFLs in Massachusetts as well as other states across the country. Additionally, with the commencement of the Energy Independence Securities Act, which requires higher wattage incandescent lighting to have a maximum wattage per lumen, there is a belief that a further reduction in base savings will be likely. Studies from the past years have been highly variable in their NTG impact outcome. A new study is sought to develop a new NTG ratio for the 2010 and/or 2009 program periods to determine net savings from the PA sponsored programs considering the changing environment, technology and legislation.

The PAs would like the bidders to propose a process for the NTG study, consisting of a high level timeline, methodology and scope (all items would be worked out in detail with the winning bidder). With respect to timeline and process, the bidders should not limit themselves to the timelines listed above or the process described below, but rather propose a timeline and methodology that they feel would work the best. Keeping in mind the time and expense involved in a NTG study, the bidders should consider the other activities listed above and what information might be necessary and incorporate that into their proposal so as to make the most efficient use possible of time and resources.

3.1.1 NTG IMPACT STUDY DESCRIPTION

Currently the NTG study is slated for just Massachusetts, but there is interest in possibly joining an ongoing multi-state evaluation study effort. For purposes of this RFP just plan on Massachusetts, if we make a decision on joining the multi-
state study we will negotiate the specific terms at that time. The main purpose of the NTG study is to provide updated NTG ratios for determining the net savings from the Program Administrators’ sponsored programs. The results will be used in measuring savings for Program Administrator performance incentives.

For planning purposes, the Program Administrators’ and the EEAC Council have agreed on using settled NTG ratios of .3 (spirals), 0.8 (specialties) and 0.7 (hard to reach)\(^1\) for the 2010 program year. This approach is transitional and reflects the results from the current multi-state interim draft evaluation, being used for the 2009 program year, and the unique issues of a lighting program that is in transition. Because of this move toward category-specific NTG assumptions, it would be highly desirable for the study to derive separate NTG results for standard spirals, specialty bulbs, and hard-to-reach customers. Bidders are asked to discuss whether they believe this is technically feasible and to propose a specific approach if they believe it is.

Potential approaches to the analysis of residential lighting NTG ratios include, but are not limited to, quasi-experimental methods, multi-state modeling, self-reports from upstream actors, analysis of shipment data, and revealed and/or observed preference modeling. Bidders may propose multiple methods with triangulation of the results if they believe this is advisable. Bidders may also propose multiple alternative approaches to the NTG study if they believe multiple alternatives should be considered. However, each proposed alternative should include a specific cost proposal.

To the extent that preliminary data from this Massachusetts specific evaluation is made available prior to the end of July, it may be used to evaluate the 2009 program year as well.

### 3.1.2 OPTIONAL STUDY COMPONENTS

In addition to the NTG Impact Study, additional assessments may be required such as:

- CFL Saturation Study
- Research support to help refine the definition of hard to reach
- Market segmentation study for hard to reach customers
- Studies of other CFL impact factors such as operating hours, installation rate, and delta watts.

Bidders should not include any optional study component items in their proposed budgets. For the purpose of this RFP, only the NTG Impact Study should be reflected. However, Bidders should be prepared to provide this ad-hoc evaluation.

---

\(^1\) Hard to reach customers are defined broadly as categories of customers that have not historically purchased CFLs in significant numbers. Efforts to develop a more specific definition of this term are in progress.
work should such requests be made. Please see Section 3.6 – Other Evaluation Work for more detail.

3.2 PROCESS EVALUATION

The direction for the Lighting program faces some unknowns in the upcoming three-year period. First, the per-unit savings may experience a decrease due to the net-to-gross ratios and how to evaluate lighting program savings. Second, federal lighting efficiency standards will begin to phase in starting in 2012. At this time it is unclear how industry will respond to this federal mandate. The standard may accelerate the adoption of CFLs for many applications, or industry may promote a less efficient technology such as infrared halogen. Finally, the proposed lighting program also assumes limited savings from SSL based on estimates of future product availability and price. However, this technology is evolving very rapidly and cost competitive screw-in replacement lamps may become readily available within the three year implementation timeframe.

For the three-year deployment, the Program Administrators will focus on:

- Expansion of the mix of product available in retail
- Increased focus on specialty products to reach “deeper” savings for each customer with more options for each socket
- Expansion of retailers and other channels for the sale and distribution of efficient lighting
- Continuous program offerings over longer horizon periods at retail to assure year-round product availability to consumers
- Innovative approaches to community and corporate events (including hard-to-reach communities)
- Phasing-in of qualified products for new technologies that require new entrants and implementation strategies

The Program Administrators expect that they will begin to modify their program design and implementation activities in the near term, so that they may address the changing residential lighting market and ensure that the program’s goals are achieved.

Currently 90% of bulb sales are from the plain spiral CFLs, any program redesign may have a large impact on the Program Administrators historical sales performance. The selected Evaluation Contractor will be responsible for assessing the changes and redesign efforts made to the lighting program. Since the program is currently in the process of redesign, the Program Administrators do not have enough detail to request a specific proposal at this time. Therefore, Bidders should not include this item in their proposed budgets. However, Bidders should be prepared to provide this ad-hoc evaluation work should such requests be made. Please see Section 3.6 – Other Evaluation Work for more detail.
3.3 PROCESS RELATED ISSUES

Outside of the Residential Retail Products research area the Massachusetts Program Administrators will be conducting a global process/market evaluation focused on customer and market responses to major new and changed program initiatives. This study has a date of having preliminary findings by **July 15, 2010**. Therefore, the selected Evaluation Contractor for the Residential Retail Products area may need to be prepared to have some preliminary information to feed into this process evaluation.

Bidders should not include these global process related items in their proposed budgets. However, Bidders should be prepared to provide this ad-hoc evaluation work should such requests be made. Please see Section 3.6 – Other Evaluation Work for more detail.

3.4 MARKET CHARACTERISTICS STUDY

Multiple marketing approaches are being used to increase general awareness among consumers of the benefits of using lighting products, appliances and consumer electronics promoted through the Residential Retail Products program. In addition to direct advertising targeting consumers, marketing campaigns and working with industry partners at all levels of the retail supply chain are also being employed. Specific marketing activities targeting consumers include the following:

- Retail marketing and point-of-purchase displays
- Print and radio advertising
- School/educational fundraising outreach efforts
- Internet/mail order sales channel
- Coordination with the Integrated Massachusetts website
- Public relations

Work with industry partners at all levels of the retail supply chain includes the following:

- Leveraging marketing budgets through cooperative promotions with retailers, distributors, and manufacturers, including marketing promotions, cooperative advertising, and special events at retail stores and in communities
- Training and supporting retail sales staffs so they are able to educate consumers about the benefits of using Energy Star qualified products and to help them choose the best products to meet their particular needs

The selected Evaluation Contractor will be responsible for conducting research and producing studies on market characteristics, such as pricing, retailer stocking, and promotional practices. Since many Residential Retail Products programs are currently in the process of redesign, the Program Administrators do not have enough detail to request a specific proposal at this time. Therefore, Bidders should not include this item in their proposed budgets. However, to the extent that market characteristics research is needed to support the bidder’s proposed approach to the NTG study, that should be highlighted and the costs should be included in the cost proposal for the NTG study. Furthermore,
Bidders should be prepared to provide ad-hoc market characteristics evaluation work for other areas of the Residential Retail Products program should such requests be made. Please see Section 3.6 – Other Evaluation Work for more detail.

3.5 APPLIANCE MARKET RESEARCH AND EVALUATION

The ongoing collection of data on overall market conditions, product availability, market share, and pricing keeps Program Administrators up-to-date on changes in the residential appliances and consumer electronics market. That awareness, in turn, enables Program Administrators to adapt program offerings as needed to maintain momentum in increasing the market share of energy-efficient products.

The winning bidder will be responsible for market research on appliance categories.

3.5.1 APPLIANCE TURN-IN PROGRAM

The Appliance Turn-in Program started as a pilot refrigerator/freezer recycling program in one of the Program Administrator territory from June through December 2009. The program specifically targeted secondary refrigerators/freezers only. Customers were given $50.00 for recycling their old secondary fridge. This was not a one-for-one program, where a customer was granted $50.00 for replacing an old fridge with a new efficient one. Due to the success of the program, all Massachusetts Program Administrators are implementing this appliance-turn in model starting in early 2010 through program year 2012.

Bidders should not include this assessment in their proposed budgets. However, Bidders should be prepared to provide this evaluation. Furthermore, Bidders are asked to discuss methodology and evaluation approaches that may be employed for assessing appliance turn-in programs. Please include your qualifications and discuss any appliance turn-in evaluations done in the past.

3.5.2 OPTIONAL RESEARCH COMPONENTS

In addition to the Market Research on Appliances, additional assessments may be required such as:

- American Recovery & Reinvestment Act funded appliance rebate program

Bidders should not include any optional study component items in their proposed budgets. However, Bidders should be prepared to provide this ad-hoc evaluation work should such requests be made. Please see Section 3.6 – Other Evaluation Work for more detail.
3.6 OTHER EVALUATION WORK

In addition to the items mentioned above, different types of activities are conducted on an ad-hoc basis as program changes dictate. Bidders should be prepared to provide this ad-hoc evaluation work and in their proposals should demonstrate their ability to meet such requests. Bidders should not include a cost for this other evaluation work in their proposals.

4.0 GENERAL DELIVERABLES

Work is anticipated to commence by no later than April 15, 2010. In general, the selected evaluation contractor will be expected to deliver the following items during the course of this effort.

- Work plan (covering the first 12 months), due at the outset of the project. This is to include a schedule and an allocation of evaluation staff resources amongst the various evaluation tasks described under the Scope of Work. It should also detail how and when the evaluation contractor will make use of sub-contractors. In addition, the plan should indicate when and what reports will be issued.

- Draft Questionnaires and/or interview guides, on-site protocols, and or other data collection instruments, one month before any scheduled surveying activities.

- Sample Selection
  - For any activity that requires a sample to be drawn, the contractor should suggest the number of participants necessary. Due to various constraints on sample sizes, the achievement of statistical significance within certain parameters may not be realistic, but where it is possible, the sample should be sized to provide results with a 90% confidence, plus or minus 10% precision. Should this not be attainable, the proposal should suggest an appropriate sample size and estimate the associated level of confidence and precision. Any sampling techniques will need to ensure appropriate representation from Massachusetts’s populations. Additional groups (municipal building inspectors, realtors, retailers, utility staff, etc.) whose input may have value to the evaluation results may be proposed for consideration. The PAs and EEAC Consultants will have final approval of the sample selection process.

- Formal report on each task or activity as it is completed (this may entail a first draft, final draft, and final report).

- Draft Annual Report, due January 31, 2011. This will be a report summarizing all of the evaluation activities completed by the evaluation contractor through the end of the previous calendar year. An Annual Report will be due for each program year of

RFP #1889 10 1/29/2010
Statement of Work
evaluation activities.

- Final Annual Report, due upon completion of each calendar year’s evaluation activities including all supporting documentation, due March 1, 2011.
  - The contractor will be required to present the study findings to members of the Program Administrators and EEAC Consultants, and respond to questions. In addition, an optional briefing session for outside interested parties may be required. The cost proposal should present the costs for these tasks separately.
Appendices

Appendix A – EEAC Resolution on Evaluation, Measurement, and Verification

Document included in RFP Package as “Appendix A – EMV” in pdf format.

Appendix B – Energy Star Lighting

Document included in RFP Package as “Appendix B – Energy Star Lighting” in pdf format.

Appendix C – Results of the MultiState CFL Modeling Effort

Document included in RFP Package as “Appendix C – Multi-State Modeling” in pdf format.

Appendix D – The Market for CFLs in Massachusetts

Document included in RFP Package as “Appendix D – Market for CFLs” in pdf format.
REQUEST FOR PROPOSAL – RFP #1888

Massachusetts Energy Efficiency Programs
Evaluation Tasks in the Residential Retrofit & Low Income Areas
2010 - 2012

January 29, 2010

Response Deadline:
March 3, 2010 by Noon EST

PLEASE NOTE: The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP.
TABLE OF CONTENTS

1.0 General Information
   1.1 NSTAR
   1.2 Program Administrators and Sponsors
   1.3 Unauthorized Disclosure
   1.4 Definitions
   1.5 Sponsors’ Discretion
   1.6 Bid Evaluation
   1.7 Discrepancies or Omissions
   1.8 Payments for Services and Invoicing
   1.9 Pre-Bid Conference Call
   1.10 RFP Recipient List

2.0 Specifications
   2.1 Statement of Work
   2.2 Terms and Conditions
   2.3 Safety, Environmental, and Background Check Requirements

3.0 Communications and Form of Response
   3.1 Volume I: Commercial Proposal
      3.1.1 Commercial Exceptions
      3.1.2 Pricing
      3.1.3 Options and Alternates
      3.1.4 EEOC Compliance
      3.1.5 Insurance Certificate(s)
      3.1.6 Execution of Proposal by Officer of Supplier
      3.1.7 Vendor Information
   3.2 Volume II: Technical Proposal
      3.2.1 Title Page
      3.2.2 Table of Contents
      3.2.3 Executive Summary
      3.2.4 Technical Requirements
      3.2.5 Examples of Experience
      3.2.6 References
      3.2.7 Statements of Qualifications
      3.2.8 Resumes
      3.2.9 Sample Reports

4.0 Proposal Forms
   4.1 Form A - Bid Receipt Acknowledgment Form
   4.2 Form B - Supplier Bid Proposal Form (Cover Sheet)
   4.3 Form C - Execution of Proposal by Officer of Supplier
   4.4 Form D - Project Cost Estimate Bid Form
IMPORTANT DATES - RFP #1888

RFP Emailed to Potential Bidders: January 29, 2010
Pre-Bid Conference Call: February 10, 2010 at 1pm - 2pm
Last Date for Questions: February 17, 2010
Responses to Questions: February 24, 2010
Proposals Due: March 3, 2010 by Noon EST
Supplier Selected: March 10, 2010
Contracts Signed with all Sponsors April 7, 2010
Kick-Off Meeting: TBD, as soon as possible after signing

Correspondence

During the Request for Proposal, up to and including contract award, all correspondence must be directed via email to:

    Patricia.Latimer@NSTAR.com

Should it be determined that any vendor is conversing with or directing questions related to this RFP to anyone other than the individual identified above, then at the discretion of the Program Administrators and Sponsors that vendor may be immediately disqualified from bidding on this project.
1.0 GENERAL INFORMATION

1.1 Background

Headquartered in Boston, MA, NSTAR provides regulated electric and gas utility services and is also engaged in telecommunications and other non-regulated activities. NSTAR, through its subsidiaries and operating companies, Boston Edison Company, Cambridge Electric Company, Commonwealth Electric Light Company and NSTAR Gas Company, serves approximately 1.3 million customers throughout Massachusetts, including approximately 1,040,000 electric customers in 81 communities and 240,000 gas customers in 51 communities. The Operating Companies are supported through the NSTAR Electric & Gas Corporation (the Company).

NSTAR is pleased to present this Request for Proposal (RFP) for Evaluation Tasks in the Residential Retrofit & Low Income Areas on behalf of the Program Administrators and Sponsors of the Massachusetts Energy Efficiency Programs. In support of the Green Communities Act of 2008, this RFP is being solicited on behalf of seven Massachusetts utilities (the Sponsors). The goal of this RFP is to select one successful bidder to provide services to the Sponsors’ Massachusetts customers.

1.2 Program Administrators and Sponsors

This Request for Proposal has been issued by NSTAR on behalf of the Program Administrators (PAs) for the Massachusetts Energy Efficiency Programs in the Residential Retrofit & Low Income Areas. These PAs are comprised of representatives from the following electric and gas companies in the Commonwealth of Massachusetts. These companies are referred to herein as the Sponsors:

- Bay State Gas (NiSource)
- Berkshire Gas
- Cape Light Compact
- National Grid USA
- New England Gas
- NSTAR
- Unitil/Fitchburg Gas & Electric
- Western Massachusetts Electric

1.3 Unauthorized Disclosure

The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP. Additionally, the Sponsors consider any information provided to Bidders in the course of business to be privileged and confidential between Consultant and the Sponsors. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Consultant may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Sponsors.

All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Sponsors at the end of the contract. The awarded
bidder may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Sponsor to do so.

1.4 Definitions

Bidder shall mean those firms/vendors acting in the role of Supplier when responding with a Proposal to this RFP. Proposal shall mean the Bidder's formal response indicating their committed solutions that meet or exceed the requirements of the RFP. Subcontractors, or subs, can be defined as any Supplier under Contract or in the RFP response that are considered financially independent of the Bidder in any other business or accounting relationship.

This RFP does not constitute an offer by the Sponsors to enter into a contract, nor does any response to this RFP constitute an acceptance of an offer, nor does any response to this RFP bind the Sponsors in any way. This document shall not be construed as a request or authorization to perform work at the Sponsors' expense. Any work performed by a Bidder in connection with evaluating and responding to the RFP and, if selected, negotiating a definitive Agreement will be at the Bidder's own discretion and expense. This RFP does not represent a commitment to purchase or lease. The Sponsors reserve the right to reject any and all proposals at its absolute discretion. Submission of a bid constitutes acknowledgment that the Bidder has read and agrees to be bound by such terms. The information in this document will enable the recipient to formulate a proposal to meet the workload requirements as described in this RFP. The numbers, volumes, run rates, etc. provided in this RFP are based upon the most recent data available and should serve as estimates to Bidders for pricing and response purposes.

1.5 Sponsors' Discretion

The Sponsors are not responsible and will not reimburse Bidders for costs incurred to develop proposals.

NSTAR is issuing this RFP on behalf of the Sponsors who at their discretion may:

- Select a Proposal other than the lowest priced, if the Sponsors determine, at its sole and absolute discretion that the Sponsors interests will best be served by doing so.
- Seek clarification from any Bidder regarding Proposal information and may do so without notification to any other Bidder.
- Continue the review procedure until a Bidder is selected successfully or until the Sponsors choose to reject all Proposals.
- Accept any Proposal or alternate as submitted without negotiations.
- Select for negotiations only the overall best Proposal or negotiate all Proposals submitted which fall within a competitive range.
- Perform a complete financial review as well as an on-site investigation of any of the Bidders facilities to ensure it is capable of meeting the demands of Sponsors and the needs identified in this RFP.
- May not award any Contract(s) as a result of this RFP.
Reserves the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Sponsors.

1.6 Bid Evaluation

The PAs and their related personnel will confidentially review proposals. A cross-functional evaluation committee representing each of the Sponsors will rate all Proposals based on the evaluation criteria provided below and may reduce the number of Bidders being considered to a "short list" of finalists based upon this objective analysis. The Sponsors may elect to meet with finalists for interviews. After all responses have been thoroughly reviewed and negotiations completed with finalists, the Sponsors will award the Contract(s) to the Bidder(s) who offers the best overall value. The Sponsors reserves the right not to award any Contract(s) as a result of this RFP.

All bids will remain active for ninety (90) days, and no bid materials will be returned. Each proposal will be evaluated on technical and commercial merits. All proposals will be opened on or after the due date.

Proposals will be evaluated on the following criteria:

- **Cost** - both the total cost and whether overall proposal offers good value will be considered
- **Reasonableness of Approach** - does the proposal offer good creative solutions to the evaluation issues presented in the RFP
- **Dedicated Resources** - has the bidder shown that they have the resources to provide the services requested within the expected timeframe
- **Comprehension** - has the bidder shown that they understand the issues involved and have responded accordingly
- **Documentation Quality** - is the proposal itself clear, concise, and well written
- **Demonstrated Experience** - whether the bidder has demonstrated that their firm has the experience and expertise or the ability to provide subcontractors having the appropriate knowledge to perform the requested tasks

1.7 Discrepancies or Omissions

Should a Bidder find any ambiguity, discrepancy or omission in the RFP, or should the Bidder have any questions, the Bidder shall notify NSTAR via e-mail to Patricia.Latimer@NSTAR.com. Such information must be received no later than the “Last Date for Questions”, which is indicated on Page 3 of this RFP, to afford NSTAR the opportunity to send any instructions or interpretations to other Bidders who have received an Invitation to Bid. The Sponsors will not be responsible for any oral instructions or interpretations.

1.8 Payment for Services and Invoicing

No up-front payments will be made to vendors. Invoices shall be submitted to each Sponsor on a monthly basis.

1.9 Pre-Bid Conference Call

A pre-bid conference call will be held on day and time indicated on Page 3 of this RFP. The call is scheduled for one hour. At that time, a brief program overview will be
provided, followed by questions and answers. Information shared on the call will be emailed to all prospective bidders within a week. Dial in number is NationalGrid’s conference line: 866-561-4997 access# 9674198. Please dial into the conference call line at the designated time.

1.10 RFP Recipient List

Attached is a list of parties to whom this RFP bid package is being sent. Normally, such lists are not made available to potential bidders; however, due to the scope of services requested, timeline for responses, and in anticipation of vendors contemplating collaborative bids, this list is provided to facilitate the RFP process in a fair and efficient manner. This list is to be used only for such purpose, and is not for any other use or solicitation. The list is to be considered and treated as confidential information by the recipient.

2.0 SPECIFICATIONS

2.1 Statement of Work

The purpose of this RFP is to seek a qualified bidder or a team of bidders to complete an array of evaluation activities as defined in the attached statement of work over a three year period. The winning bidder will be the sole evaluation contractor for this research area. Activities will include, but not be limited to, market assessment and segmentation, impact and process evaluation, electric and gas measure integration assistance, and evaluation of new statewide incentive and financing models. The winning bidder will be expected to handle all evaluation issues and either team with or subcontract out work where specific skill sets are required that the evaluation contractor may not possess. A copy of the Statement of Work and related appendices are provided below.

2.2 Terms and Conditions

The successful Consultant’s services shall be provided in accordance with each Sponsors’ terms and conditions, which are provided below. Any exceptions to these requirements must be clearly stated in the Bidder’s RFP response.

Any exceptions submitted by a Bidder does not constitute acceptance by any of the Sponsors. Exceptions will be negotiated and agreed to by each Sponsor and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

Bay State Gas (NiSource)
Berkshire Gas
Cape Light Compact  
National Grid USA  
New England Gas  
NSTAR  
Unitil/Fitchburg Gas & Electric  
Western Massachusetts Electric

- Bay State Gas - NiSource Corporate Services Company General Services Agreement and Data Security Requirements
  
  Nisource (Baystate) GSA for Construction Data Security 12-31-09

- Berkshire Gas – Berkshire Gas’ requires Suppliers’ adherence to National Grid’s T&Cs for Consulting Services

- Cape Light Compact Terms & Conditions.
  
  Capelight 2010 Template Contract bc

- National Grid Terms & Conditions for Consulting Services
  
  00400 Ts and Cs for Consulting Services 2

- New England Gas Consultant Terms & Conditions
  
  New England Gas Consultant T&Cs...

- NSTAR’s Terms & Conditions and Insurance Requirements
  
  NSTAR CSA & Insurance Requires

- Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
  
  Western Electric CL&P General Terms & Conditions

- Unitil Terms & Conditions
  
  Unitil T&C
2.3 Safety, Environmental, and Background Check Requirements

The successful Consultant’s services shall be provided in accordance with each Sponsors’ safety, environmental, and background check requirements. Copies of National Grid’s requirements for these areas are attached. Any exceptions must be clearly stated in the Bidder’s RFP response.

- National Grid’s Contractor Safety Requirements dated 8/1/08
  [Attachment]
- National Grid’s Contractor Environmental Requirements dated 2/29/08
  [Attachment]
- National Grid’s Employee Background Check Requirements dated 1/10/08
  [Attachment]

3.0 COMMUNICATIONS AND FORM OF RESPONSE

During the RFP process, all questions must be submitted via e-mail and addressed to Patricia Latimer at Patricia.Latimer@NSTAR.com, on or before the “Last Date for Questions” as specified on Page 3 of this RFP. Answers to Bidder’s inquiries will be distributed to all Bidders via email no later than the “Responses to Questions” date provided on Page 3 of this RFP. In order to ensure fairness, until the time an award is made, Bidders shall have no direct communication regarding this RFP with any of the Program Administrators or any other personnel within the Sponsors’ organization. After the decision to award is announced, the successful Bidder may contact the Program Administrators and work with each Sponsors’ Procurement contact to provide certificates of insurance and sign final contract documents. Failure to comply with these communications guidelines may disqualify the Bidder from further consideration.

Supplier’s proposal MUST include two SEPARATE VOLUMES. Volume I must address all commercial requirements, while Volume II must address all technical requirements. Volumes I and II shall not be bound or otherwise joined together. VOLUME II MUST NOT CONTAIN ANY COST OR PRICE INFORMATION. The organization of the proposal MUST conform to the organization enumerated in Form B, SUPPLIER BID PROPOSAL FORM, and as described in this section. The first page of the Supplier proposal MUST be Form B-Supplier Bid Proposal Form (cover sheet).

This RFP has been sent in electronic format to facilitate the completion of proposals. A complete proposal must be sent via e-mail to Patricia.Latimer@NSTAR.com, and an original hardcopy, electronic copy on CD, and 4 (four) hardcopies either hand delivered or sent via commercial
carrier for receipt NO LATER THAN the “Proposals Due” date and time specified on Page 3 of this RFP to the following address:

NSTAR Electric & Gas Corporation  
Attn: Patricia Latimer, Principal Contracts Agent  
One NSTAR Way, SE-250  
Westwood, MA 02090-9230  
Phone: 781-441-8841

PLEASE NOTE THAT PROPOSALS MAY NOT BE SUBMITTED VIA FAX UNDER ANY CIRCUMSTANCES.

3.1 Volume I: Commercial Proposal

3.1.1 Commercial Exceptions: This section of the proposal MUST state clearly any exceptions which are being taken to the commercial requirements of this RFP, for example terms and conditions, insurance requirements, etc. Exceptions must state what the exception is, the reason for the exception and proposed alternatives, and be organized sequentially in accordance with the organization of the RFP. Commercial exceptions MUST be clearly defined only in this section of the proposal. Bidder’s preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Bidder’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP, unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

3.1.2 Pricing: The Sponsors seek to procure Services at the most cost effective rates possible. Pricing for the first 12 months is to be provided on the Project Cost Estimate Bid Form D, which is included at the end of this document. Labor costs should be broken out by task and personnel type (e.g., project management, supervision, clerical support, analyst, etc.). Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories, if known. Estimates of miscellaneous additional costs should be indicated. Since the initial scope of work will only cover the first year, please provide a billing rate for years 2 and 3. The Sponsors will enter into individual negotiations each subsequent year regarding any potential price increases, which must be justified by the Contractor. The PAs will determine the allocation of total costs to individual PA’s after a Contractor has been selected. (Please note that the selected contractor will be required to contract with and bill each of the PAs separately.)

All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Bidder, which, if accepted, shall create a binding obligation upon the Bidder.

Bidders should identify if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered or not. Discounts will be factored into the evaluation of the bids and their acceptance is at the Sponsors’ option.

3.1.3 Options and Alternates: This section of the proposal would include options or alternates (commercial considerations) which the Sponsors could consider. Suppliers are encouraged to submit alternate proposals in addition to the requirements defined in Section 2.1, Statement of Work, if such alternate proposals will result in lower price, higher reliability, or improved schedule.
3.1.4 **EEOC Compliance:** If not previously submitted, please provide a statement that your company is in compliance with EEOC requirements.

3.1.5 **Insurance Certificate(s):** Include with your Bid a Certificate(s) of Insurance evidencing compliance with at least the minimum levels of insurance required in Section 6.0 Insurance of NSTAR’s Consulting Services Agreement, which is contained in NSTAR’s requirements document in Section 2.2 above. If you are awarded the work, you will be required to submit certificates to each Sponsor identifying them as an additional insured and complying with their insurance levels.

3.1.6 **Execution of Proposal By officer of Supplier:** Form C MUST be completed and executed by an Officer of the Supplier.

3.1.7 **Vendor Information:** Bidders shall provide:
- Federal TaxID number
- Business type, i.e., sole proprietorship, partnership, joint venture, etc. and state of residency
- Number of employees
- Financial statements for the last 24 months

This information is not considered part of the 30 page response limitation and should be provided as a separate tab in Volume 1 of the Commercial Proposal.

3.2 **Volume II - Technical Proposal**

With the exception of the staff resumes and sample reports, Volume II must not exceed thirty pages.

The Supplier's technical proposal, addressing all technical requirements MUST be included in this section. **THIS VOLUME MAY NOT INCLUDE ANY COST OR PRICING INFORMATION.** In addition to the Supplier's technical proposal, the following items must be addressed, in the order listed:

3.2.1 **Title Page:** This section of the proposal should include a title page, which identifies the RFP Title, vendor’s name and the volume.

3.2.2 **Table of Contents:** The vendor’s proposal should include a Table of Contents, which lists the titles and page numbers for each major topic and sub-topic.

3.2.3 **Executive Summary:** This section should include a summary of the key points and highlights of the vendor’s response.

3.2.4 **Technical Requirements:** All detailed information in the proposals should cover the first 12 months of evaluation activities (May 2010 through May 2011). A detailed description of the complete scope of work including a schedule, flowchart and organizational management structure for the years 2010 – 2012. Years 2011 and 2012 need not be as detailed as 2010. This should not be a re-statement of the scope described here, but a carefully thought out plan of how, when, and where the various tasks will take place using example questions wherever possible. This plan should give a reasonably detailed description of how the contractor plans to complete each of the tasks.
described in the scope of work with a concentration on the baseline work, code and standards and code compliance, and major renovation. For any survey work, a sample of questions and how they would be analyzed should be included. No more than half a page to a page for each task should be dedicated to this effort, exclusive of any additional pages required to detail some of the questions and how they would be analyzed. For Years 2 and 3, the bidder should provide a strategic discussion that explains in a broad sense how the evaluation activities will be approached.

Bidders should also include a description of all assumptions used to develop their response to this RFP.

3.2.5 **Example of Experience:** Provide one representative example of experience and documentation skills, such as a report.

3.2.6 **References:** Provide names, affiliations, and telephone numbers of at least two individuals or organizations for which similar services have been provided for Prime Contractor and all sub-contractors on team. The Massachusetts PAs and EEAC Consultants reserve the right to contact these individuals to ascertain the quality and timeliness of previous performance.

3.2.7 **Statements of Qualifications:** Statements of qualifications that detail the bidder’s experience and ability to provide multi-year evaluation support should be included. The bidder’s statements should emphasize their expertise and knowledge with regards to market assessment and evaluation of market effects, their ability to design and carry out extensive interviewing and survey analysis, as well as their technical expertise and qualifications to undertake technical studies dealing in the area of building science.

3.2.8 **Resumes:** Provide details of qualifications of personnel who will be utilized and copies of resumes as requested in the Statement of Work here.

3.2.9 **Sample Reports:** Provide sample reports requested in the Statement of Work here.

### 4.0 PROPOSAL FORMS

The following forms must be completed and submitted with Supplier Proposal.

4.1 **Form A - Bid Receipt Acknowledgment Form**

This form is used by the Supplier to confirm to Company receipt of the bid package and intent to bid. This form should be completed upon receipt of the RFP and returned as soon as possible via email (Patricia.Latimer@NSTAR.com).

4.2 **Form B - Supplier Bid Proposal Form (Cover Sheet)**

Form B - Supplier Bid Proposal Form (Cover Sheet) MUST be the first page of the Supplier proposal.

4.3 **Form C - Execution of Proposal by Officer of Supplier**
The Supplier MUST complete this form and include it in Volume 1 of the proposal. The form is used to:

- Indicate how long the proposal is valid.
- Confirm in writing that Supplier's proposal represents a complete offering and includes all exceptions to the RFP.

4.4 Form D - Project Cost Estimate Bid Form

Pricing must be provided on the Project Cost Estimate Bid Form and included in Volume I – Commercial Response only.
FORM A – BID RECEIPT ACKNOWLEDGMENT FORM

RFP # 1888 - Evaluation Tasks in the Residential Retrofit & Low Income Areas

COMPLETE AND RETURN UPON RECEIPT TO:

Patricia.Latimer@NSTAR.com

The __________________________ Company hereby:

1. __ I acknowledge receipt of the above listed Bid Documents.  

   ________________________________________________________________

And

2. __ My proposal will be submitted on the required due date.  
   __ I choose to not bid, as fully explained in letter to be transmitted under separate cover.

Our Proposal shall list the following companies as joint venture partners or subcontractors:

   ________________________________________________________________

Please address future inquiries on this work (if different from original mailing) to:

Name:  __________________________________________________________

Company:  ______________________________________________________

Address:  _______________________________________________________

Phone:  ____________________ Fax:  ________________

by:  ___________________________________________________________

(Signature)

Title:  __________________________________________________________

Date:  ___________________________________________________________
FORM B - SUPPLIER BID PROPOSAL FORM

RFP #1888 - Evaluation Tasks in the Residential Retrofit & Low Income Areas

(COVER SHEET)

NAME OF SUPPLIER: ________________________________________________________

ADDRESS: __________________________________________________________________

____________________________________________________________________________

NAME OF AUTHORIZED REPRESENTATIVE: _______________________________________

TITLE OF ABOVE: ____________________________________________________________

PHONE NUMBER OF THE ABOVE: _____________________________________________

Direction: This sheet must be the first page of all submittals. The remainder of the proposal must follow the following format with no exceptions. Additional sections may be added at the Supplier's discretion. Volumes I & II must be separate documents.

<table>
<thead>
<tr>
<th>Volume I: Commercial Proposal</th>
<th>Volume II: Technical Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE OF CONTENTS OF VOLUME I</td>
<td>TABLE OF CONTENTS OF VOLUME II</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>1.0</td>
<td>Commercial Exceptions</td>
</tr>
<tr>
<td>2.0</td>
<td>Pricing</td>
</tr>
<tr>
<td>3.0</td>
<td>Options and Alternates</td>
</tr>
<tr>
<td>4.0</td>
<td>EEOC Compliance Verification</td>
</tr>
<tr>
<td>5.0</td>
<td>Insurance Certificate(s)</td>
</tr>
<tr>
<td>6.0</td>
<td>Execution of Proposal by Officer of Supplier</td>
</tr>
<tr>
<td>7.0</td>
<td>Vendor Information</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proposal Prepared by (Signed): ________________________________

(Typed): ________________________________

Title: ________________________________

Date: ________________________________
FORM C - EXECUTION OF PROPOSAL BY OFFICER OF SUPPLIER

RFP #1888 - Evaluation Tasks in the Residential Retrofit & Low Income Areas

Supplier represents that this proposal is its complete offering and includes all exceptions to this RFP. Supplier agrees that this proposal will be valid for a minimum period of 90 days from date of submittal.

________________________________________
Supplier

By:

________________________________________
(Signature)

________________________________________
(Name)

________________________________________
(Title), a duly authorized representative of the Supplier

________________________________________
Date
FORM D - Project Cost Estimate Bid Form
The Massachusetts Program Administrators (PAs) for the Massachusetts Energy Efficiency programs in the Residential Retrofit and Low Income areas request proposals to perform various evaluation tasks addressing requirements of the Commonwealth of Massachusetts, as described herein. The PAs include Bay State Gas, Berkshire Gas, Cape Light Compact, New England Gas, National Grid (Electric & Gas), NSTAR Electric and Gas Corporation, Western Massachusetts Electric, and Unitil/Fitchburg Gas & Electric. This RFP covers the program years 2010 through 2012 and all programs and pilots that are administered within the Residential Retrofit and Low Income areas. The programs within these areas are the Residential Energy Star HVAC, Residential High Efficiency Heating, Water Heating & Controls, MassSAVE, Multi-family new construction and retrofit, Low income residential new construction, Low income 1 to 4 family retrofit and the Low Income multi-family retrofit programs.

1.0 BACKGROUND

MASSACHUSETTS EVALUATION FRAMEWORK

On September 8, 2009, the Massachusetts Energy Efficiency Advisory Council (EEAC or Council) unanimously approved a resolution developed collaboratively by the Program Administrators (PAs) and the EEAC Consultants. This resolution set forth a new administrative framework for the performance of Evaluation, Measurement and Verification (EM&V) in Massachusetts for Energy Efficiency Programs. The full Resolution is presented verbatim in Appendix A. Below is a summary of the Resolution, its effects, and its relevance to the current RFP.

Under the Resolution, the EEAC will assume an oversight role over the EM&V activities of the PAs to ensure the objectivity and independence of those activities, and the perception of such, and to help ensure consistency, timeliness, and credibility. While the PAs and EEAC Consultants (acting on behalf of the EEAC) will continue to work diligently to reach a consensus on evaluation issues, where there are areas of difference that may arise that cannot be resolved through consensus during the on-going interactive process between the EEAC Consultant and the PA evaluation staff, authority for decision-making will reside with the EEAC or its Designee. This arrangement is subject to a system of appeals in the event of any disputes that cannot be resolved collaboratively.

The Resolution also restructures EM&V in Massachusetts so that most studies are to be performed at a statewide rather than a PA-specific level. It specifies that the range of evaluation activities be divided into 5 to 7 semi-permanent statewide Research Areas, oriented primarily to
specific target markets. Each Research Area is to have an assigned Study Manager from the PAs, an assigned EEAC Evaluation Consultant, and an independent evaluation contractor who conducts the studies under a long-term contract with the individual PA companies.

Consistent with the Resolution, the PAs and the EEAC Consultants subsequently developed a system of six statewide Research Areas, as follows:

1. **Residential Retrofit and Low Income.** This category includes residential cooling and heating equipment, residential heating and water heating, residential and low-income retrofit, weatherization, and most aspects of multi-family programs.

2. **Residential Retail Products.** This includes residential lighting and appliance programs.

3. **Residential New Construction.** This includes residential and low-income new construction and major renovations programs, as well as codes and standards and compliance efforts. This Research Area also includes baseline studies of construction practices for both single- and multi-family homes.

4. **Non-Residential Large Retrofit and New Construction.** This includes C&I new construction (small and large) and major renovation, as well as large C&I retrofit programs.

5. **Non-Residential Small Retrofit.** This includes the current C&I small retrofit, direct install programs. This category would also include any future programs that may target small non-residential customers.

6. **Special and Cross-Sector Studies.** This includes those studies that do not fit readily into any of the five market-oriented Research Areas above, as well as those studies that are cross-sector in nature, including: cross-sector free ridership and spillover studies; non-energy benefits; behavioral programs; community-based pilots; and marketing, public education, and outreach activities.

Massachusetts’ evaluation planning and implementation schedule calls for selecting contractors, and finalizing contracts, for all six Research Areas by April 15, 2010. Evaluation activities under each contract are to be conducted subject to the terms of the EEAC Resolution. The purpose of this RFP is to select an evaluation contractor for the first Research Area, Residential Retrofit and Low Income.

### 1.1 RESIDENTIAL RETROFIT AND LOW INCOME PROGRAM BACKGROUND

There are several programs included within the Residential Retrofit and Low Income research area; they are the Residential Energy Star HVAC, Residential High Efficiency Heating, Water Heating & Controls Program, MassSAVE, Multi-family new construction and retrofit, Low income residential new construction, Low income 1 to 4 family retrofit and the Low Income multi-family retrofit programs. Background information for these programs are provided below.
1.1a Residential Energy Star HVAC

The Program Administrators introduced their rebate program for ENERGY STAR-labeled central air conditioning units, which is now called COOL SMART, on April 1, 2004. The heating component of the program, a joint electric and gas offering, was initially offered in 2003.

The ENERGY STAR HVAC Program is an initiative designed to increase consumer awareness and the market share of ENERGY STAR-labeled furnaces, central air conditioning units, and air source heat pumps and to promote quality cooling installations by HVAC technicians and contractors.

The primary objective of this program is to raise residential consumer awareness and market share of properly installed high-efficiency cooling equipment and systems, and to similarly increase the market share of ENERGY STAR-labeled warm-air furnaces equipped with an electronically commutated motor ("ECM") or equivalent advanced furnace fan system. In addition, the program will place increased emphasis on cost effective savings opportunities from duct sealing, digital tune-ups, improved installation practices, maintenance, and specification of HVAC systems in coordination with gas Heating, Ventilation, and Air Conditioning (HVAC) programs. Where appropriate the COOL SMART program will work with GasNetworks on joint program offerings, marketing, and trade ally outreach and training.

During the period 2010-2012, the COOL SMART Program will be offered by all Program Administrators. (Please note that Western Massachusetts Electric, Unitil, and Cape Light Compact did not offer the program in 2007 through mid 2009). The heating component of the program will also be offered jointly in 2010-2012 by the Program Administrators.

With respect to the Energy Star HVAC Program there are several target markets.

- New systems in existing and new homes (new systems)
- Replacement systems in existing homes (new equipment/old systems), including the early retirement of existing equipment.
- Improvements in operational systems in existing homes (new equipment/old systems)

In addition the program targets the following market actors:

- Residential customers in the market to purchase HVAC equipment
- HVAC contractors and technicians
- Suppliers of HVAC equipment
- Manufacturers and distributors of HVAC equipment
- New-home builders and remodeling contractors
- Big-box stores

Program Marketing, highlighted by the regional program’s COOL SMART initiative, is designed to promote the purchase and proper installation of ENERGY STAR residential central air conditioning and heat pump systems at multiple levels. In addition, it will increasingly emphasize the importance of proper installation and sizing practices as well as the promotion of
duct sealing and enhanced air distribution system efficiency. The COOL SMART initiative will work with the GasNetworks’ High Efficiency Heating and Hot Water Program to develop and implement joint marketing activities.

The primary recommended cooling technology for the COOL SMART Program is high-efficiency residential central air conditioner equipment, including air source heat pump condensers that meet or exceed the prevailing ENERGY STAR qualifications.

The recommended minimum heating technology is a natural gas furnace with an AFUE of 92 percent or greater, equipped with an advanced ECM or equivalent energy-saving furnace fan (blower) motor.

The COOL Smart Program has conducted a pilot installation project to determine if furnace fan retrofits with Brushless Fan Motors (“BFM”) will produce sufficient savings to justify full implementation in 2010. The pilot proved that there are enough savings to justify full implementation of a measure.

1.1b Residential High Efficiency Heating, Water Heating & Controls Program

The Residential High Efficiency Heating, Water Heating, and Controls Program is designed to promote the installation in residential applications of high efficiency gas furnaces and hot water boilers, energy efficient steam boilers; energy efficient indirect, tankless on demand, and stand alone water heating equipment; programmable thermostats, and boiler reset controls. The program offers rebates for equipment in both new construction and the replacement/retrofit market. The program was initially offered in 1997.

Incentives and rebates are administered via the GasNetworks collaborative and coordinated with the electric heating, ventilation and air conditioning program (HVAC), Cool Smart. The objective of the program is to encourage consumers to install the most efficient gas heating technologies available when replacing older, less efficient equipment and when considering equipment in new construction. The program seeks to overcome market barriers and increase program awareness among consumers, plumbing/heating contractors, and home builders/developers, through rebates, incentives, education, and training opportunities.

In collaboration with the Cool Smart electric efficiency program, GasNetworks also offers a dual electric/natural gas rebate program for high-efficiency furnaces equipped with Electronically Commutated Motor (“ECM”) or equivalent advanced furnace fan systems.

The Residential High Efficiency Heating, Water Heating & Controls Program Targets several markets.

Residential Target Markets include:
- New Construction - Heating Equipment / Systems
- Existing Homes - Replacement of Existing Heating Equipment (new equipment/old systems)
The program targets these market segments:

- Residential Home Owners with natural gas heating equipment
- Home Designers and Architects
- Engineers
- Plumbing and HVAC Contractors and Technicians
- Suppliers of High Efficiency Heating equipment and related parts/accessories
- Manufacturers and Distributors of High Efficiency Heating equipment
- New Home Builders and Remodeling Contractors

The program is administered by each gas Program Administrator and coordinated regionally through GasNetworks collaborative. GasNetworks utilizes a third-party administrative contractor, secured through a competitive bid process, to administer the rebates to customers. This contractor is responsible for tracking and reporting program activity to gas Program Administrators.

The Program Administrators plan to take advantage of additional delivery mechanisms such as MassSAVE to promote high efficiency equipment installations as part of a comprehensive whole house approach to achieve broader and deeper energy savings. This scenario also supports seamless integration opportunities as well as the ability to develop “packaged” incentive offerings to drive consumer participation and adoption of new technologies.

The program will be promoted through a variety of marketing and educational campaigns including, but not limited to: upstream outreach, direct mail, radio and print media, bill inserts, trade ally events, PA’ships, and program brochures.

The program will also be promoted via individual Program Administrator websites, and the GasNetworks collaborative website, (www.gasnetworks.com), where consumers and contractors can learn about the programs, download rebate applications, and obtain other valuable energy efficiency information. All of these functions will be integrated into the unified, statewide website scheduled to be completed by the first quarter of 2010.

A process and impact evaluation of this program began in late 2009 and is expected to be completed by May 2010. The process evaluation will assess barriers to participation, satisfaction, awareness of high efficiency equipment, contractor current practices, programs effect on market share, importance of rebate, free ridership and spillover. The impact evaluation will provide savings estimates for equipment offered in the 2007-2008 program year.

1.1c Residential Conservation Services/MassSAVE

During the period 1980-2000, the RCS/MassSAVE program was an educational program encouraging customers to upgrade the efficiency of their homes.

Beginning in 2001, the RCS/MassSAVE program began to change its emphasis from education only to education and measure implementation. Customers are now offered incentives to implement energy saving measures in their homes. The program has continued to increase cost effective incentive packages each year leading to greater energy savings and increased implementation.
The program is set up to provide residential customers with energy efficiency recommendations that enable them to identify and initiate the process of installing cost-effective energy efficiency upgrades. The Residential Conservation Services (RCS)/MassSAVE Program makes it easy, clear, and compelling for customers to participate in all comprehensive energy efficiency programs by providing information through bold outreach mechanisms, incentives, and multiple financing options. The program exemplifies a program-as-a-system approach where all components work together to support the success of achieving deeper energy savings per customer. The Program Administrators plan to increase the number of energy efficiency vendors and contractors while raising the level of quality control.

The program is committed to a comprehensive whole-house approach and seeks to maximize both electric and gas energy savings (including fuel neutral incentives). The program plans to fully integrate the RCS/MassSAVE and Gas weatherization programs, so that customers experience “one program” as opposed to multiple offerings. Through the intake process, the customer’s primary heat source will be identified. The purpose of the screening is to steer customers using natural gas for space heating to the gas Program Administrators and customers using electric, oil or propane for space heating to the electric Program Administrators. Exceptions to this guideline may occur (e.g., specialized high bill complaints, community outreach programs, and/or prior mutual agreements), and in these cases, the electric Program Administrators will seek to negotiate in good faith with the gas Program Administrators to achieve a resolution that serves the best interest of the consumer, maximizes savings opportunities on a fuel-neutral basis, and allows the overseeing Program Administrator to claim savings.

The program is committed to achieving maximum program success and deeper energy savings. This is a significant leap forward, making distinctions between programs indiscernible to consumers. The program clearly defines the process and expectations of the customers up front and identifies those customers interested in investing in controlling their future energy costs.

The level of service is intended to be flexible, providing information to a broad group of customers, with information regarding deeper retrofit services and renewable opportunities supplied to interested parties. All customers who call the MassSAVE toll-free number to learn about the program are asked several questions to determine their need for and general interest in making energy-efficient improvements. The Program Administrators are dedicated to providing prompt customer service; the goal is to limit the response time between the initial customer call and the first visit of 30 days or less. The Program Administrators wish to provide an even quicker response time and will strive to achieve that outcome while recognizing factors outside of the Program Administrators control that create a demand for services. Customers are guided to appropriate program services provided by energy efficiency vendors including targeted energy efficiency information, advanced diagnostics, efficiency rebates, and deep energy retrofit support. (Low-income customers are referred to appropriate low-income programs.) When appropriate, a series of home visits are offered to further engage the customer and proceed in a logical and methodical process of identifying and informing customers of all available energy savings opportunities.
The home visits include:

- The first visit, referred to as the Screening Visit, is scheduled by a PA-approved vendor promptly after the initial customer phone call and is available at a variety of times to encourage maximum customer participation. This is an in-home visit designed to provide general information and education about energy efficiency and identify opportunities and challenges for energy saving installations. Identification of opportunities may include estimating time and labor needs for subsequent direct installation measures and a solar site assessment during the second or Diagnostic Visit. The Screening Visit will identify customers’ specific needs and direct them to other energy-efficiency resources as appropriate. Should a customer choose not to proceed with the Diagnostic Visit, the initial assessment allows Program Administrators to collect customer data for future targeted marketing efforts. Instant energy savings are realized during the Screening Visit. With the customer’s permission, CFLs and, when applicable, Light Emitting Diodes (“LEDs”) are installed for free in all appropriate locations, as are low-flow shower heads and faucet aerators. The value of the instant savings measures installed during the Screening Visit are intended, on average, to exceed the expected average cost to deliver this initial visit. Wherever appropriate, the Screening Visit may be bypassed (e.g., when a previous audit information for a residence is already documented) and the audit process for the customer will proceed with a Diagnostic Visit.

- The Diagnostic Visit includes a comprehensive energy assessment including a variety of diagnostic techniques such as blower door tests, infrared scanning, and duct leakage testing (based on vendor determination). Wherever feasible, full installation of air sealing, duct sealing, and programmable thermostats are provided at no cost to the customer. The savings derived from the direct install measures are designed to cover the cost of the visit. This visit will also identify and recommend specific energy-efficient upgrades that require professional contractors, as well as, a customer contribution. The energy advisor explains the contractor services required to install recommended measures, as well as all available energy efficiency financial incentives.

- The Quality Assurance Visit allows all work to be inspected through a combination of methods including phone survey, postcard, e-mail or actual site visit by a third-party PA-approved vendor. This ensures that contractor-installed measures are accurate, professional, and safely installed based on program standards and ensures program savings.

Program Administrators strive to maximize energy savings by promoting and supporting contractor training and education in an effort to establish a broader workforce knowledgeable of proper installation techniques. The goal is to have a sustainable and experienced workforce that is focused on achievable maximum energy savings ready and able to meet customer demand.

---

1 There are several vendors implementing home visits for each of the PA’s. Conservation Service Group (CSG) is the vendor for National Grid and NSTAR; Center for Ecological Technology (CET) for Berkshire Gas and Western Massachusetts Electric Company; Honeywell for Bay State Gas and New England Gas and Cape Light Compact uses Rise Engineering.
The MassSAVE program targets all non-low-income residential customers living in single-family houses or one- to four-unit multi-family buildings, regardless of heating fuel, who are committed to making their homes more energy efficient. Program Administrators plan to shift more attention toward targeting trades that influence homeowners’ decisions. The Program Administrators are currently discussing and addressing the major program design modifications needed to bring in new contractors. The PA’s plan to have a structure in place for bringing new contractors into the program by January 1, 2010. Program Administrators are also exploring ways to identify and reach landlords to make them aware of the program benefits that increase property value and provide energy savings to tenants.

Outreach and marketing efforts will be expanded to include building relationships with realtors, home improvement contractors, architects and others involved in renovations of one-to-four family homes. Marketing efforts will be designed to meet the objectives of reaching more customers (going broader into the customer base) and maximizing energy savings opportunities (going deeper into each home to find ways to save energy). The program’s multi-media outreach campaign will focus on strategic television partnerships with local affiliate or cable programming providers, radio, print advertising, web-based marketing through various social media sites, and through part of a new consolidated website planned for the first quarter of 2010 that integrates all the Massachusetts energy efficiency programs and websites into a single portal.

Current forms of multi-media outreach include:

- MassSAVE website (enhanced via the Statewide Integrated Energy Efficiency Website)
- Bill inserts
- Radio, print and visual media advertising
- New media advertising (advanced online options)
- Targeted marketing through community outreach initiatives such as Cambridge Energy Alliance, Marshfield Energy Challenge, and the Energy Smack-Down program.
- Targeted marketing through the use of data collected during the screening visits

The program targets any cost-effective energy-saving improvement using a comprehensive whole house approach including but not limited to:

- Building Envelope
- HVAC/Mechanical systems
- Water heating
- Energy saving appliances and lighting
- Deeper retrofit measures
- New technologies and renewables

Recommended technologies include air sealing, duct sealing, insulation, refrigerators, thermostats, ventilation, and heating/cooling systems. The program also provides general information about energy efficiency and solar domestic hot water systems (“DHW”) to consumers on request. Other measures may include heating system controls, super-insulation, CHP technologies, solar DHW systems and opportunities for piloting “deep energy retrofit” enhancements of major renovation projects. Customers will see these offerings as an integrated program.
The RCS/MassSAVE program provides on site customer-specific information at no cost to the customer, free installation of instant savings measures, and an educational experience including information regarding all statewide program incentives, financing options, and where to find information about Federal and State tax credits. The Program currently offers free direct installation measures; and incentives of 75 percent of the installed cost of contractor-installed measures, up to $2,000. The Program Administrators are exploring the possibility of increasing or eliminating the $2,000 cap.

The Technical Evaluation Working Group is in the process of conducting a cost-effectiveness evaluation of new measures, measures packages, and a ‘pay for savings’ rebate approach to go after deeper savings per house. This program will coordinate with other programs such as GasNetworks and Cool Smart by educating customers about rebates and financial incentives available to them through the Comprehensive Education Package in part with marketing materials providing a roadmap to achieving whole-house energy savings.

Consistent with the Green Communities Act, the HEAT Loan program provides qualified customers with 0 percent interest loans up to $15,000 with terms up to seven years and can be applied towards the following energy efficiency upgrades:

- Insulation
- Duct System Improvements
- High-efficiency heating systems
- High-efficiency DHW systems
- Solar DHW systems (standardized incentive amount across all Program Administrators.)
- ENERGY STAR-labeled thermostats
- ENERGY STAR-labeled windows
- ENERGY STAR-labeled water heaters
- Other renewable technologies on a pre-approved basis

A portion of the HEAT Loan may be used to finance the mitigation of barriers preventing the installation of energy efficient measures. In the past, safety barriers have been a significant obstacle in maximizing energy savings. Using HEAT Loan funds to manage safety issues will allow Program Administrators to access a broader spectrum of efficiency in the future. To address renewables, Program Administrators may look towards possibly expanding the HEAT Loan to allow for installation of renewables.

1.1d Multi-family

The multi-family market has historically been considered one of the most challenging for Program Administrators throughout the country to serve. Studies produced over the past decade indicate that traditional barriers in this sector fall into one of the following four categories: a.) economic; b.) institutional; c.) technical; and 4.) legal/regulatory.

The objective of the MF program is to maximize the acquisition of cost-effective gas and electric energy and demand savings by addressing the informational, economic, institutional, and
technical barriers that historically have made the Multi-family market a “hard-to-reach” sector. Moreover, the program aims to broaden participation and achieve deeper savings per participant through an incentive structure that encourages such action. The Massachusetts Program Administrators have offered energy efficiency services to the Multi-family sector, through various program designs, since the 1980s. The Program Administrators are offering a common statewide program with the goal of having a consistent customer experience throughout the state.

The program design was developed based upon the following guiding principles:

- Participants will be able to initiate a request for all program services through one party, without the need to directly contact multiple Program Administrators or multiple parties within the same Program Administrator. Throughout the project life cycle, the participant will have access to a single point-of-contact that will facilitate all programmatic communication and coordination.

- Eligibility for program measures and services will be based on cost-effectiveness and will not be restricted by the rate class associated with the meter(s) for the facility.

- The program will be structured to ensure that participants are provided with a “whole building” fully integrated offering; targeting both gas and electric end-uses. While on-site, however, all opportunities, regardless of fuel source, will be identified and documented for the customer.

The program targets, through a comprehensive energy assessment, gas and electric end-uses for residential facilities with five or more dwelling units. Instant savings measures such as energy efficient lighting upgrades and DHW saving devices as well as major measures are included. Under the program re-design, participants will have access to both those measures that are traditionally deemed “residential” and those that are considered “commercial” without any limitations imposed by their rate class/metering.

The primary end uses targeted through this program are: all cost-effective applications, systems, and building shell improvements that impact gas and electric consumption are eligible for incentives under this program. These include, but are not limited to, lighting, DHW, building shell improvements, refrigerators, motors and drives, HVAC equipment and controls, energy management systems and building controls, chillers, compressed air, and other site specific end-uses.

The PAs developed a program through which participants may have access to both gas and electric measures (as well as residential and C&I measures within each fuel type). Depending upon the measures to be installed, and the number of PAs servicing a facility, there could be multiple vendors involved in delivering the program. Under the existing program rules, a participant would need to contact each of these multiple parties to obtain the needed services. In order to provide the participant with a “seamless” experience, the PAs are in the process of contracting for Multi-family Market Integrator (MMI) services where the primary function will be to ensure that program participants have access to cost-effective, whole building and fuel blind, energy efficiency services regardless of whether there will be one or more PAs involved in serving the customer. Additionally, the MMI will be responsible for acting as the conduit.
through which questions and concerns are directed to ensure that participants are not required to contact multiple parties during the project lifecycle. Providing customers with a seamless experience is a key success factor for the delivery of these programs. The MMI is to facilitate the initiation of a project and will serve as the project manager by coordinating and tracking the status of the various services required for a job. While the scope of work for the MMI includes additional tasks, the integration function allowing for a seamless customer experience is the primary role of the MMI.

1.1e Residential Low-Income Single Family Retrofit Program

Some Program Administrators’ low-income programs date back to the early nineties. Since 1998, Program Administrators have been working with the Low Income Affordability Network\(^2\) (LEAN) to improve the low-income program and increase funding. From this emerged the Best Practices Working Group, as a vehicle to provide a more coordinated statewide low-income program and to ensure correct installation techniques for the program.

Working with the Best Practices Working Group, the Program Administrators have broadly expanded the measures offered in the program and have arranged for contractor training to implement such measures.

A 2002 Low-Income Market Research Study recommended the following strategies to minimize barriers: statewide marketing of programs through a central source; extend outreach to more areas such as health services, social service agencies, and rental offices at apartment complexes; expand marketing efforts to regional and local newspapers; and offer marketing in languages not currently available.

To address some of these barriers, the program has: 1) broadened from Program Administrators and Low-income Weatherization and Fuel Assistance Program Network (“Network”) agencies’ outreach and mailings to a statewide coordinated approach to help increase awareness and customer education regarding technologies and benefits including local media; 2) increased the guidelines for participation to include households with annual incomes at or below 60% of the state median income levels to assist customers with limited funds with the cost of energy saving improvements; and 3) increased efforts to serve low-income renters.

The objective of the program is to deliver energy efficient products and services directly to the homes of income eligible customers to help them lower their energy bills to achieve deeper and broader energy savings.

\(^2\) G.L. c.25, sec. 19 (St. 1997, c. 164, sec. 37) provides that The Low Income demand-side management and education programs shall be implemented through the low-income weatherization and fuel assistance program network and shall be coordinated with all gas distribution companies in the commonwealth with the objective of standardizing implementation. The Low-Income Energy Affordability Network was established among the member agencies of the low-income weatherization and fuel assistance program network to provide the services required for implementing the coordination requirements.
The Program Administrators, in collaboration with LEAN, state organizations such as the Department of Housing and Community Development (DHCD) and Network agencies, make up the Best Practices Working Group. The working group’s objective is to collaborate and coordinate on all aspects of the low-income program, including but not limited to planning, delivery, implementation, standardization, education, marketing, training, cost effectiveness, evaluation, and quality assurance.

This program piggybacks on the current DHCD low-income energy efficiency program. Once customers are deemed eligible, they will receive an in-home energy assessment from their local Network agency. The Network agency will then arrange for weatherization and other services to be performed by a qualified contractor. Savings will be deepened by installing additional efficiency measures, to the extent cost-effective, such as indirect water heaters with heating systems, exterior doors, front load clothes washers, smart strips, and repairs to make efficiency measures possible. Other measures will be investigated, such as solar water heaters and usage monitoring systems. In addition, a change in rules as a result of the American Recovery and Reinvestment Act (ARRA) makes it possible to spend more federal money in each home which will allow Program Administrator funding to help address more items on the cost effective priority list for each customer. Savings will be distributed more broadly by treating additional homes, including mobile homes (including contractor training if needed) and rental homes where tenants pay for heat. Relatedly, a change in rules as a result of the Recovery Act makes it possible to spend more federal money in each home. As a final step the Network agency will perform a final quality assurance inspection to ensure that all work is performed to program guidelines.

Education and information are included in all Program Administrators’ energy efficiency programs. The low-income program plans to develop/improve education materials and material distribution which will include:

- Customer Education packages: Common leave behinds in customer audit packs
- Materials for outreach workers (e.g. hospital intake people, senior centers)
- A web link on unemployment website
- Other outreach opportunities

The target markets for this program are residential customers living in 1-4 unit dwellings who are at 60 percent of the state median income level. In the case of multi-unit dwellings, 50 percent of the occupants must qualify as low-income in order to be served by the low income program.

Target end uses include but are not limited to:
- Comprehensive, whole house approach
- Building shell
- Heating
- Domestic water heating
- HVAC/Mechanical systems
- Lighting and Appliances
- General waste heat
Current measures offered through the low-income program include but are not limited to:

- Attic insulation
- Wall insulation
- Pipe insulation
- Duct insulation
- Air sealing
- DHW measures
- CFLs /Low mercury CFLs
- Heating system repair and replacement
- Major weatherization repairs (e.g., electrical repairs, roofs, etc.)
- Refrigerators
- Freezers (PA-specific)
- Landlord heating system retirement pilot (PA-specific)
- Air conditioners
- “Smart” power strips
- Health and safety

This program is designed to minimize or eliminate co-payments, integrate gas and electric program delivery, and integrate funding across all sectors that serve low-income multi-family facilities to the greatest extent possible.

Eligibility for program measures and services will be based on the established program cost-effectiveness test, which include agreed non-energy benefits, and will not be restricted by rate class associated with the meter(s) for the facility to the greatest extent possible.

The program will be structured to ensure that participants are provided with a “whole building”, fully integrated offering that targets both gas and electric end uses. While on-site, all opportunities, regardless of fuel source will be identified and documented for the customer. All efforts to deliver a fully integrated offer to a participant will be performed in a manner that will result in a seamless participant experience.

The Program Administrators in collaboration with LEAN, state organizations such as the DHCD, public housing authorities (PHAs), community development corporations (CDCs), other non-profit entities that own or operate low-income non-institutional multi-family housing (non-profits), and Community Action Program (“CAP”) agencies, will make up the Best Practices Working Group. The working group’s objective will be to collaborate and coordinate on all aspects of the low-income multi-family program, including but not limited to, planning, delivery, implementation, standardization, education, marketing, training, cost effectiveness, evaluation, and quality assurance.

This program will piggyback on the current DHCD low-income energy efficiency programs and all other eligible funding sources (i.e., federal and state) to enhance program services. The LEAN

Columbia Gas of Massachusetts, Attachment E-1(a)
Lead Vendor with respect to each PA service territory will be the same as the LEAN Lead Vendor for other low-income efficiency programs, or such other arrangement as is agreed with LEAN (hereinafter “LEAN Lead Vendor”). Sub-contracting will be appropriate to the complexity of the work required and will be based on the same audit tool as in the market rate multi-family retrofit program. Low-income customers will be referred to the LEAN Lead Vendor by the Multi-Family Market Integrator (MMI), as defined in the multi-family retrofit program. Low-income customers may also apply directly through the LEAN network. An essential element of this program is that interested customers also have the option, at their discretion, of electing to participate in the market rate multi-family retrofit program. This approach helps ensure that there are multiple paths to participation in energy efficiency programs in this unique market sector which has also been served over many years by skilled contractors and engineering firms. These firms will continue to be eligible to provide services in this sector, both through the market rate multi-family retrofit program (and its terms and conditions) and, where qualified, as providers for the LEAN network under the terms and conditions of this program.

This program is for Residential customers on the low-income rate or individuals living in non-institutional dwellings owned or operated by non-profit entities or public housing authorities with five or more units. These are customers who are at 60 percent of median income level as well as landlords and property managers of these buildings.

Fifty percent of the occupants must qualify as low-income in order to be served by the low-income multi-family program.

2.0 OBJECTIVE OF THIS EVALUATION RFP

The purpose of this RFP is to seek a qualified bidder or a team of bidders to complete an assorted array of evaluation activities for the Massachusetts Residential and Low Income sector over a multi-year period. The winning bidder will be the sole principal evaluation contractor for the Residential and Low Income research area. These activities will include an assortment of evaluation work including, but not limited to such things as market assessment, baseline studies, process evaluation, impact evaluation and development of incremental cost information. The winning bidder will be expected to handle all evaluation issues and to either team with other firms or subcontract out work where specific skill sets are required that the evaluation contractor may not possess. In addition there are several pilots which have been initiated through these programs and will need evaluation efforts.
This will be a multi-year effort covering the program years 2010 through 2012, with the evaluation contract running until the Spring of 2013. Some of the main areas of focus in 2010 and beyond will be on the following areas.

- Mass Save Program – Process Evaluation, impact evaluation, review savings to determine appropriate values for statewide consistency (other general evaluation)
- Residential HVAC – Impact evaluation of the Brushless Fan Motor pilot; systematic review of HVAC EM&V conducted both in MA, as well as other New England States in order to develop a research plan
- Multifamily – Potential study
- Low Income – Process evaluation, scoping study of data being collected, impact evaluation
- Other Pilot areas – Deep Energy Retrofit pilot
- Evaluation Planning
- Other Undetermined Evaluation Issues

Responsibilities of the Evaluation Contractor will include managing the various individual evaluation tasks, hiring and managing sub-contractors as necessary, collecting data, analyzing data, providing individual formal reports and presenting results to the PA’s for the various evaluation tasks, providing an annual report which summarizes the year’s evaluation activities, and assisting in and developing an annual evaluation plan at the start of each program year.

3.0 SCOPE OF EVALUATION WORK

Since there are several programs currently operating in the Residential Retrofit and New Construction area, all of the evaluation areas listed above will be initiated and administered through the specific program they fall under. There are some evaluation activities planned for 2010 in which the PA’s of this study want specific proposals including cost proposal; for the later years we are looking for ideas on the bidders approach with no cost information but would like to see billing rates. The PA’s would also like to note that it is possible the other activities beyond those listed for 2010 will end up being done, or that some activities listed for 2010 may be canceled.

The scope of work for each program is defined below.

3.1 PLANNED ACTIVITIES

3.1a MassSAVE Program

During 2010 the PA’s would like the bidder to do a process evaluation. This would focus on the statewide marketing effort, the new vendor delivery structure, including a review of the statewide vendor standardized report, and other adjustments to the program that have occurred over the past few years. In addition, the winning bidder will look into what is being done for vendor consistency and how vendor savings compare to what PA’s are using in the cost effectiveness model in order to standardize impacts statewide. Bidders should provide a detailed
description and budget for this process evaluation task. The process evaluation will need to examine services across the PA territories and involving the vendors now supplying MassSave services. The process evaluation needs to address issues of coordination of program across PAs and vendors. One particular challenge will be to develop a uniform set of energy saving assumptions used in planning and energy saving calculations.

With ongoing changes to the program it was determined an impact evaluation would be better suited as a later phase of this evaluation effort. In the future we would also like to perform a baseline study. For this proposal, we are asking bidders to briefly (no more than 2 pages) outline their approaches to addressing these types of studies: baseline and impact, however, no specific budgets need be supplied. Bidders should provide a strategy that maximizes the value of the information collected while minimizing overall costs.

3.1b Deep Energy Retrofit Pilot

The PAs are currently investigating Deep Energy Retrofits as an area to implement energy efficiency. The Deep Energy Retrofit pilot was initially offered as a pilot in 2009. This “deep energy efficiency” pilot is to be consistent with the Governor’s Zero Energy Task Force recommendations and will at a minimum explore 1) a new Deep Energy Retrofit Pilot Program of existing buildings achieving 50% energy reductions or more as compared to baseline energy usage and 2) a Zero Energy Pilot program that encourages diverse paths to Zero Energy, including Passive House or similar programs. This pilot includes a wide range of projects such as single family homes, affordable housing, mid to large multifamily and include a substantial amount of square footage.

The design includes a plan to support deep retrofits and to gather information on customer satisfaction, behavior modification, and energy savings. The pilot was developed to help develop information on appropriate measures for deep retrofits, the correct way to model potential energy savings for deep retrofits, approaches for different housing types, training energy retrofit contractors, customer education and marketing materials along with financing and incentive levels. Ongoing program evaluation and case study review of the homes treated will substantially inform the expanded effort in subsequent years.

In 2010 there needs to be a process evaluation of the Deep Energy Retrofit Pilot (“DER”). The DER explores the potential for achieving 50% energy reductions or more in existing residential building. The DER was initially offered as a pilot in 2009 with 3 projects. The 2010 pilot projects 130 participants including a wide range of projects such as single family homes, affordable housing, mid to large multifamily and will include a substantial amount of square footage.

The DER includes a plan to gather information on customer satisfaction, behavior modification, and energy savings. The pilot is designed to develop information on:

- Appropriate measures
- Design and modeling retrofits
• Develop approaches for different housing types
• Determine training needs
• Educate customers
• Marketing strategies to accomplish goals
• Financing and incentive levels needed to attract participants

The complete DER program description and program requirements are attached as Appendix B.

The process evaluation must first recommend how to set the baseline energy use to be used in the pilot. A concern of the program is that most of the early adopters may have already taken some conservation steps, maintain lower indoor temperatures, and use large amounts of supplemental fuels. A straight billing analysis would provide the current occupant’s saving, but not one generalized to the average homeowner in Massachusetts. In calculating the savings, bidders should discuss if the baseline should reflect a typical residential customer or a baseline reflecting the individual participant.

The initial 2009 pilot provided information in identifying some of the barriers that need to be overcome in order to reach the desired level of participation. The process evaluation for the DER should identify strategies to seek out potential participants and how best to reach them; determine factors why customers initially interested in the program chose not to participate; and what can be done to make the process easier. Affordability has been identified as the major barrier, the process should assess if different financing strategies will generate more participants.

Bidders must provide a detailed description of the evaluation plan for this retrofit pilot. In designing the impact component of this bid, bidders should gear impact strategy to answering primarily the research impact issue. What is the savings attributable to various types of deep retrofit measures and combinations of measures? Program Administrators are interested in strategies that also provide early feedback on energy saved. Bidders should propose what they feel is the best method, as well as timeline, for investigating these issues. One of the other concerns of this pilot is that many of the largest benefits are of a non-energy type and not included in current cost-effectiveness tests. A large all-encompassing Non-Energy Benefits study is being included in the Cross-cutting Groups RFP. For this RFP, we are asking proposers to suggest what data they would recommend be collected and how, to support that broader study. Proposed costs for this area should include process and impact in an allocation that the bidder believes will best satisfy both research objectives over the 3-year program. For comparative purposes the PAs’ would like the Bidders to put together two plans dealing with the evaluation of the Deep Energy Retrofit Pilot. One plan should assume a budget of $100,000 and the other should assume a budget of $200,000.

### 3.1c Residential HVAC Program

PA’s would like to perform an evaluation of the Brushless Fan Motor pilot. This pilot was created to develop and implement a pilot effort to demonstrate the cost and savings associated with the installation and operation of retrofit high efficiency furnace blower fan motors. The pilot was for residential homes in Massachusetts and Rhode Island with existing, operational
forced warm air heating and central cooling systems in the NSTAR Electric and National Grid electric service territories, where COOL SMART Program is offered. Qualifying Equipment are the Concept 3 and Evergreen ½ horsepower retrofit furnace fan motors.

An incentive is paid by program PA’s to the participating HVAC installation contractor upon the installation of qualifying equipment and receipt of required project documentation and information. In 2009 the PA’s provided a $225 incentive to the contractor, and also provided the contractor with the motor. (This is approximately a $400 value in total. In 2010, we plan to provide a $450 incentive to the contractor. The contractor is responsible for purchasing the motor. In 2009 there were 104 installed statewide in Massachusetts (21 NSTAR + 83 National Grid). An additional 16 were installed in Rhode Island-National Grid. In 2010 plans are to install 200 statewide in Massachusetts (100 NSTAR + 100 National Grid).

The PA’s would like the bidder to perform a process evaluation to assess the installation process, review program implementation (vendors role, what data is being collected, do we need additional data. etc), look at barriers to participation, and interview customers who participated, and those who opted not, to determine why not.

Additional questions we would like answered are:

- Depending on the type of furnace the customer has non-condensing or condensing, what savings are attributed? Are they different?
- Does the BFM provide full time ventilation?
- Do savings vary based on static pressure to be overcome in the system?
- Do BFMs increase or decrease static pressure or just perform differently depending on the pressure they need to overcome?
- What is the fan runtime?
- What is the heating performance? Cooling performance?

Bidders should provide a detailed description and budget for this process evaluation task. The process evaluation will need to examine services across the PA territories and involving the vendors now supplying Residential HVAC services through the Cool Smart Program. The process evaluation needs to address issues of coordination of program across PAs and vendors.

### 3.1d  Multi-Family

In 2010 the PA’s would like the bidders to perform a study to determine what potential there is in the market. We would like to find out how much energy apartment common and tenant areas can save, what kind of buildings and measures are out there, barriers to participation, cost and what the best approach to getting at savings would be.

A process evaluation of the redesigned multi-family program is expected to be done in 2011, however, that study may be moved forward or back depending on needs. Impact related tasks such as support of deemed savings values, designed and implementation of billing analysis and or metering studies, and other support will be needed especially in years two and three.
The evaluation efforts required to support these programs over the three-year period include:

- Conducting a market potential study in 2010, so that the program’s impact on the multi-family market rate sector can be determined (to include market rate as well as low-income/affordable housing). The primary objective of the assessment is to obtain a view of the current state of the Massachusetts multi-family retrofit market. This will include using primary and secondary data sources to help size the market. Both common areas and tenant spaces will be included. Opportunities for both electric and gas savings will need to be identified.

- A process evaluation of the redesigned multi-family program is expected to be done in 2011. However, that study may be moved forward or back depending on needs.
  
  - This will include assessing the extent of the split incentive issue. Specific changes to existing program designs, including offering comprehensive services and educating building owners/managers on the benefits of energy efficiency, were designed to address the split incentive barriers. Using program data on measures adopted, and those not opted for, will be used to determine if additional programmatic changes are needed (such as changes to the incentive structure and levels) to encourage owners/managers to go deeper with respect to implementing energy efficiency measures. (This applies to the market rate program and those low-income/affordable housing projects where a customer contribution is required).

- Impact related tasks such as support of deemed savings values, designed and implementation of billing analysis and or metering studies, and other support will be needed especially in years two and three.

Bidders must provide a detailed description of the evaluation plan for the multi-family program. Bidders should propose what they feel is the best method, as well as timeline, for investigation of these issues. The budget bid should include detailed costs for the scoping study, but not for other tasks.

3.1e Low Income

During 2010, the PA’s would like bidders to do a process evaluation of the low income programs. We would like the bidder to review data being collected by each of the 28 statewide low income agencies, look at detail provided with invoices, and determine ways to streamline reporting statewide and recommend ways we can improve the internal/external process. We would like the bidder to determine if there was any leveraging of weatherization funds; what work was done through PA’s weatherization programs and what was done through the low income program. This may involve working with our low income advocates. The PA’s would potentially like an impact evaluation in the future. Bidder should provide description of methodology proposed for a future impact study. Bidder should provide evidence of ability to
conduct such a study. Budget bid for this low income section should, however, only include the process evaluation conducted in 2010.

3.1f Other Pilot Areas

There may be additional pilots not noted above initiated through the Residential Retrofit and Low Income Programs. It is expected that all of these pilots will need evaluation efforts. All of these pilots will need process evaluations and possibly impact evaluations as well.

3.1g Early Global Process and Marketing Evaluation

In the Summer of 2010, Massachusetts will be undertaking a mid-course adjustment process to consider whether any changes to program approaches are required for 2011-2012. Given the sharp increase in program budgets that is planned for these years, and the potential magnitude of the programming and resource allocation decisions that may be made as part of the mid-course adjustment process, it is critical that timely information be available regarding key program process issues and initial market response to new and expanded program services. The Massachusetts PAs are therefore committed to completing a global process and marketing evaluation by July 15, 2010. This evaluation is expected to cover:

1. Customer and market response to new, expanded or revised marketing efforts;
2. A review of sales techniques that are effective;
3. An early review of electric and gas integration efforts and single point of contact / cross PA integration in MA, as well as comparison to selected other states;
4. An early review of projects that are comprehensive, whole building, or otherwise targeted to deeper savings; and
5. Process evaluation and design review of community-based projects.

More information on the tentative scope and focus of this evaluation is provided in Appendix C.

The global process and marketing evaluation is envisioned as a single effort encompassing a number of program areas. However, individual pieces of the evaluation are expected to be performed by the members of the contractor teams for four research areas: Residential Retrofit, Large C&I, Small C&I, and Special/Cross-Cutting. The Special/Cross-Cutting contractor team will play a leading role, with overall direction and coordination provided by the PAs and the EEAC Consultants. Each contractor team will be responsible for covering those topics, as shown in Appendix B, that are specific to its assigned research area.

Because of uncertainties over which particular 2010 program changes will be implemented in time to be productively studied by July 15, this RFP does not request a specific technical or cost proposal for the winning bidder’s contribution to the global process and marketing evaluation. Instead, bidders are asked to commit to making available about 200 hours of staff time by qualified staff members between the dates of April 15 and July 15, 2010. Bidders are asked to specify which staff members will be assigned to this task, and the total number of hours for
which each assigned staff member will be available. The specific scope of the global process and market evaluation will then be negotiated after contractor selection.

4.0 EVALUATION PLANNING

In a typical year, an evaluation plan will be developed somewhere between the last quarter of the previous year and the first quarter of the year to be evaluated. The activities will consist of a number of things such as surveys and studies to look at various impact and process issues. We may request that certain activities and updates be done on a regular basis (annually, semi-annually, etc.). Other activities such as Incremental Cost Studies, Baseline Studies, Billing Analysis, etc. may be done every 5 years or as deemed necessary.

The selected Evaluation Contractor will be responsible for participating in conference calls to discuss evaluation activities for the coming year, producing a draft plan and a final Evaluation Plan per the timeline indicated above in the Objective section. Typically, about 3 calls are required to finalize a plan. Bidders should include this activity in their proposed budgets.

5.0 OTHER EVALUATION WORK

In addition to the items mentioned above, different types of activities are conducted on an ad-hoc basis as program changes dictate. Bidders should be prepared to provide this ad-hoc evaluation work and in their proposals should demonstrate their ability to meet such requests. Bidders should not include a cost for this other evaluation work in their proposals.

6.0 GENERAL DELIVERABLES

Work is anticipated to commence no later than April 20, 2010. In general, the selected evaluation contractor will be expected to deliver the following items during the course of this effort.

- Work plan (covering the first 12 months), due at the outset of the project. This is to include a schedule and an allocation of evaluation staff resources amongst the various evaluation tasks described under the Scope of Work. It should also detail how and when the evaluation contractor will make use of sub-contractors. In addition, the plan should indicate when and what reports will be issued.

- Draft Questionnaires and/or interview guides, on-site protocols, and or other data collection instruments, one month before any scheduled surveying activities.

- Sample Selection

  - For any activity that requires a sample to be drawn, the contractor should suggest the number of participants necessary. Due to various constraints on sample sizes, the achievement of statistical significance within certain parameters may not be
realistic, but where it is possible, the sample should be sized to provide results with a 90% confidence, plus or minus 10% precision. Should this not be attainable, the proposal should suggest an appropriate sample size and estimate the associated level of confidence and precision. Any sampling techniques will need to ensure appropriate representation from Massachusetts’s populations. Additional groups (municipal building inspectors, realtors, retailers, utility staff, etc.) whose input may have value to the evaluation results may be proposed for consideration. The PAs and EEAC Consultants will have final approval of the sample selection process.

- Formal report on each task or activity as it is completed (this may entail a first draft, final draft, and final report).

- Draft Annual Report, due January 31, 2011. This will be a report summarizing all of the evaluation activities completed by the evaluation contractor through the end of the calendar year. An Annual Report will be due for each program year of evaluation activities.

- Final Annual Report, due upon completion of each calendar year’s evaluation activities including all supporting documentation, due March 1, 2011.
  - The contractor will be required to present the study findings to the PA’s, and respond to questions. In addition, an optional briefing session for outside interested parties may be required. The cost proposal should present the costs for these tasks separately.
Appendices

Appendix A – EEAC Resolution on Evaluation, Measurement, and Verification

Document included in RFP Package as “Appendix A – EMV” in pdf format.

Appendix B – Deep Retrofit 1-4 Family Pilot

Document included in RFP Package as “Appendix B - Deep Retrofit” in pdf format.

Appendix C – Global Process and Marketing Evaluation Tentative Scope and Focus

Document included in RFP Package as “Appendix C - Global Process” in pdf format.
REQUEST FOR PROPOSAL – RFP #1905

Massachusetts Energy Efficiency Programs

Multi-Family Market Integrator

February 16, 2010

Response Deadline:
March 31, 2010 by Noon EST

PLEASE NOTE: The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP.
TABLE OF CONTENTS

1.0 General Information

1.1 NSTAR
1.2 Program Administrators and Sponsors
1.3 Unauthorized Disclosure
1.4 Definitions
1.5 Sponsors’ Discretion
1.6 Bid Evaluation
1.7 Discrepancies or Omissions
1.8 Payments for Services and Invoicing

2.0 Specifications

2.1 Statement of Work
2.2 Terms and Conditions
2.3 Safety, Environmental, and Background Check Requirements

3.0 Communications and Form of Response

3.1 **Volume I: Commercial Proposal**
3.1.1 Commercial Exceptions
3.1.2 Pricing
3.1.3 Options and Alternates
3.1.4 EEOC Compliance
3.1.5 Insurance Certificate(s)
3.1.6 Execution of Proposal by Officer of Supplier
3.1.7 Vendor Information

3.2 **Volume II: Technical Proposal**
3.2.1 Title Page
3.2.2 Table of Contents
3.2.3 Summary
3.2.4 Organization(s) or Team Description
3.2.5 Statement of Work
3.2.6 Resumes of Key Personnel
3.2.7 Alternate Approaches
3.2.8 Sample Reports
3.2.9 References
3.2.10 Additional Information

4.0 Proposal Forms

4.1 Form A - Bid Receipt Acknowledgment Form
4.2 Form B - Supplier Bid Proposal Form (Cover Sheet)
4.3 Form C - Execution of Proposal by Officer of Supplier
IMPORTANT DATES - RFP #1905

RFP Emailed to Potential Bidders: February 16, 2010

Last Date for Questions: March 10, 2010

Responses to Questions: March 17, 2010

Proposals Due: March 31, 2010 by Noon EST

Selected Supplier Presentations: April 15, 2010

Anticipated Contract Award Announcement May 5, 2010

Contracts Signed with Individual Program Administrators June 1, 2010

Kick-Off Meeting: June 2, 2010

All Program Materials Prepared July 5, 2010

Vendor Training July 5, 2010

Commence Program Implementation July 15, 2010

Correspondence

During the Request for Proposal, up to and including contract award, all correspondence must be directed via email to:

Patricia.Latimer@NSTAR.com

Should it be determined that any vendor is conversing with or directing questions related to this RFP to anyone other than the individual identified above, then at the discretion of the Program Administrators and Sponsors that vendor may be immediately disqualified from bidding on this project.
1.0 GENERAL INFORMATION

1.1 Background

Headquartered in Boston, MA, NSTAR provides regulated electric and gas utility services and is also engaged in telecommunications and other non-regulated activities. NSTAR, through its subsidiaries and operating companies, Boston Edison Company, Cambridge Electric Company, Commonwealth Electric Light Company and NSTAR Gas Company, serves approximately 1.3 million customers throughout Massachusetts, including approximately 1,040,000 electric customers in 81 communities and 240,000 gas customers in 51 communities. The Operating Companies are supported through the NSTAR Electric & Gas Corporation (the Company).

NSTAR is pleased to present this Request for Proposal (RFP) for services related to the implementation of a newly redesigned statewide energy efficiency program for the Multi-Family Market Integrator Sector. In support of the Green Communities Act of 2008, nine Massachusetts utilities came together to sponsor and promote the Massachusetts Energy Efficiency Programs. The goal of this RFP is to select one successful bidder to provide services to their Massachusetts multi-family customers.

1.2 Program Administrators and Sponsors

This Request for Proposal has been issued by NSTAR on behalf of the Program Administrators (PAs) for the Massachusetts Energy Efficiency Programs in the Residential Retrofit & Low Income Areas. These PAs are comprised of representatives from the following electric and gas companies in the Commonwealth of Massachusetts. These companies are referred to herein as the Sponsors:

Bay State Gas (NiSource)
Berkshire Gas
Blackstone Gas
Cape Light Compact
National Grid Electric and Gas
New England Gas
NSTAR
Unitil Gas & Electric
Western Massachusetts Electric

1.3 Unauthorized Disclosure

The information contained within this Request for Proposal (RFP) is confidential and proprietary to the Sponsors, and is to be used by the recipient solely for the purpose of responding to this RFP. Additionally, the Sponsors consider any information provided to Bidders in the course of business to be privileged and confidential between Consultant and the Sponsors. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Consultant may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Sponsors.
All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Sponsors at the end of the contract. The awarded bidder may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Sponsor to do so.

1.4 Definitions

“Bidder” shall mean those firms/vendors acting in the role of Supplier when responding with a Proposal to this RFP. “Proposal” shall mean the Bidder's formal response indicating their committed solutions that meet or exceed the requirements of the RFP. “Subcontractors”, or “subs”, can be defined as any Supplier under Contract or in the RFP response that are considered financially independent of the Bidder in any other business or accounting relationship.

This RFP does not constitute an offer by the Sponsors to enter into a contract, nor does any response to this RFP constitute an acceptance of an offer, nor does any response to this RFP bind the Sponsors in any way. This document shall not be construed as a request or authorization to perform work at the Sponsors' expense. Any work performed by a Bidder in connection with evaluating and responding to the RFP and, if selected, negotiating a definitive Agreement will be at the Bidder's own discretion and expense. This RFP does not represent a commitment to purchase or lease. The Sponsors reserve the right to reject any and all proposals at its absolute discretion. Submission of a bid constitutes acknowledgment that the Bidder has read and agrees to be bound by such terms. The information in this document will enable the recipient to formulate a proposal to meet the workload requirements as described in this RFP. The numbers, volumes, run rates, etc. provided in this RFP are based upon the most recent data available and should serve as estimates to Bidders for pricing and response purposes.

1.5 Sponsors’ Discretion

The Sponsors are not responsible and will not reimburse Bidders for costs incurred to develop proposals.

NSTAR is issuing this RFP on behalf of the Sponsors who at their discretion may:

• Select a Proposal other than the lowest priced, if the Sponsors determine, at its sole and absolute discretion that the Sponsors interests will best be served by doing so.

• Seek clarification from any Bidder regarding Proposal information and may do so without notification to any other Bidder.

• Continue the review procedure until a Bidder is selected successfully or until the Sponsors choose to reject all Proposals.

• Accept any Proposal or alternate as submitted without negotiations.

• Select for negotiations only the overall best Proposal or negotiate all Proposals submitted which fall within a competitive range.

• Perform a complete financial review as well as an on-site investigation of any of the Bidders facilities to ensure it is capable of meeting the demands of Sponsors and the needs identified in this RFP.
• May not award any Contract(s) as a result of this RFP.

• Reserves the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Sponsors.

1.6 Bid Evaluation

The PAs and their related personnel will confidentially review proposals. A cross-functional evaluation committee representing each of the Sponsors will rate all Proposals based on the evaluation criteria provided below and may reduce the number of Bidders being considered to a "short list" of finalists based upon this objective analysis. The Sponsors may elect to meet with finalistas for interviews. After all responses have been thoroughly reviewed and negotiations completed with finalists, the Sponsors will award the Contract(s) to the Bidder(s) who offers the best overall value. The Sponsors reserves the right not to award any Contract(s) as a result of this RFP.

All bids will remain active for ninety (90) days, and no bid materials will be returned. Each proposal will be evaluated on technical and commercial merits. All proposals will be opened on or after the due date.

Proposals will be evaluated on the following criteria:

- **Cost** - both the total cost and whether overall proposal offers good value will be considered
- **Reasonableness of Approach** - does the proposal offer good creative solutions to the evaluation issues presented in the RFP
- **Dedicated Resources** - has the bidder shown that they have the resources to provide the services requested within the expected timeframe
- **Comprehension** - has the bidder shown that they understand the issues involved and have responded accordingly
- **Documentation Quality** - is the proposal itself clear, concise, and well written
- **Demonstrated Experience** - whether the bidder has demonstrated that their firm has the experience and expertise or the ability to provide subcontractors having the appropriate knowledge to perform the requested tasks

1.7 Discrepancies or Omissions

Should a Bidder find any ambiguity, discrepancy or omission in the RFP, or should the Bidder have any questions, the Bidder shall notify NSTAR via e-mail to Patricia.Latimer@NSTAR.com. Such information must be received no later than the “Last Date for Questions”, which is indicated on Page 3 of this RFP, to afford NSTAR the opportunity to send any instructions or interpretations to other Bidders who have received an Invitation to Bid. The Sponsors will not be responsible for any oral instructions or interpretations.

1.8 Payment for Services and Invoicing

No up-front payments will be made to vendors. Invoices shall be submitted to each Sponsor on a monthly basis.
2.0 SPECIFICATIONS

2.1 Statement of Work

The purpose of this RFP is to seek a qualified bidder or a team of bidders to assist with the implementation of a newly redesigned statewide energy efficiency program for the Multi-Family Market Sector for up to a three year period. A copy of the Statement of Work and related appendices are provided below.

2.2 Terms and Conditions

The successful Consultant’s services shall be provided in accordance with each Sponsors’ terms and conditions, which are provided below. Any exceptions to these requirements must be clearly stated in the Bidder’s RFP response.

Any exceptions submitted by a Bidder does not constitute acceptance by any of the Sponsors. Exceptions will be negotiated and agreed to by each Sponsor and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

Bay State Gas (NiSource)
Berkshire Gas
Blackstone Gas
Cape Light Compact
National Grid USA
New England Gas
NSTAR
Unitil/Fitchburg Gas & Electric
Western Massachusetts Electric

- Bay State Gas - NiSource Corporate Services Company General Services Agreement and Data Security Requirements

- Berkshire Gas – Berkshire Gas’ requires Suppliers’ adherence to National Grid’s T&Cs for Consulting Services

- Blackstone Gas – T&C’s to be provided
• Cape Light Compact Terms & Conditions
  Capelight 2010
  Template Contract bc

• National Grid Terms & Conditions for Consulting Services
  00400 Ts and Cs for
  Consulting Services 2

• New England Gas Consultant Terms & Conditions
  New England Gas
  Consultant TCs…

• NSTAR’s Terms & Conditions and Insurance Requirements
  NSTAR CSA &
  Insurance Requireme

• Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power
  Terms & Conditions
  Western Electric
  CL&P General Terms i

• Unitil Terms & Conditions
  Unitil T&C
2.3 Safety, Environmental, and Background Check Requirements

The successful Consultant’s services shall be provided in accordance with each Sponsors’ safety, environmental, and background check requirements. Copies of National Grid’s requirements for these areas are attached. Any exceptions must be clearly stated in the Bidder’s RFP response.

- National Grid’s Contractor Safety Requirements dated 8/1/08
  [PDF]
  NG Contractor Safety Rqmts rev4 08
- National Grid’s Contractor Environmental Requirements dated 2/29/08
  [PDF]
  NG Environmental Policy 2008
- National Grid’s Employee Background Check Requirements dated 1/10/08
  [PDF]
  NG Background Check Requirements

3.0 COMMUNICATIONS AND FORM OF RESPONSE

During the RFP process, all questions must be submitted via e-mail and addressed to Patricia Latimer at Patricia.Latimer@NSTAR.com, on or before the “Last Date for Questions” as specified on Page 3 of this RFP. Answers to Bidder’s inquiries will be distributed to all Bidders via email no later than the “Responses to Questions” date provided on Page 3 of this RFP. In order to ensure fairness, until the time an award is made, Bidders shall have no direct communication regarding this RFP with any of the Program Administrators or any other personnel within the Sponsors’ organization. After the decision to award is announced, the successful Bidder may contact the Program Administrators and work with each Sponsors’ Procurement contact to provide certificates of insurance and sign final contract documents. Failure to comply with these communications guidelines may disqualify the Bidder from further consideration.

Supplier's proposal MUST include two SEPARATE VOLUMES. Volume I must address all commercial requirements, while Volume II must address all technical requirements. Volumes I and II shall not be bound or otherwise joined together. VOLUME II MUST NOT CONTAIN ANY COST OR PRICE INFORMATION. The organization of the proposal MUST conform to the organization enumerated in Form B, SUPPLIER BID PROPOSAL FORM, and as described in this section. The first page of the Supplier proposal MUST be Form B-Supplier Bid Proposal Form (cover sheet).
This RFP has been sent in electronic format to facilitate the completion of proposals. One original copy of the proposal, along with an electronic copy on CD, and 4 (four) hardcopies must be either hand delivered or sent via commercial carrier for receipt NO LATER THAN the “Proposals Due” date and time specified on Page 3 of this RFP to the following address:

NSTAR Electric & Gas Corporation  
Attn: Patricia Latimer, Principal Contracts Agent  
One NSTAR Way, SE-250  
Westwood, MA 02090-9230  
Phone: 781-441-8841

PLEASE NOTE THAT PROPOSALS MAY NOT BE SUBMITTED VIA FAX OR EMAIL UNDER ANY CIRCUMSTANCES.

3.1 Volume I: Commercial Proposal

3.1.1 Commercial Exceptions: This section of the proposal MUST state clearly any exceptions which are being taken to the commercial requirements of this RFP, for example terms and conditions, insurance requirements, etc. Exceptions must state what the exception is, the reason for the exception and proposed alternatives, and be organized sequentially in accordance with the organization of the RFP. Commercial exceptions MUST be clearly defined only in this section of the proposal. Bidder’s preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Bidder’s proposal will be considered as being in full conformance with all documents, specifications, and commercial terms included in this RFP, unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

3.1.2 The Sponsors seek to procure Services at the most cost effective rates possible. Pricing for the first 12 months must be provided. A Project Cost Estimate Bid Form will be provided to all bidders by February 19, 2010. Labor costs should be broken out by task and personnel type (e.g., project management, supervision, clerical support, analyst, etc.). Bidders shall include personnel names, who will be working on the project, that fall into the various labor categories, if known. Estimates of miscellaneous additional costs should be indicated. Since the initial scope of work will only cover the first year, please provide projected billing rates for years 2 and 3. The Sponsors will enter into individual negotiations each subsequent year regarding any potential price increases, which must be justified by the Contractor. The PAs will determine the allocation of total costs to individual PA’s after a Contractor has been selected. (Please note that the selected contractor will be required to contract with and bill each of the PAs separately.)

All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Bidder, which, if accepted, shall create a binding obligation upon the Bidder.

Bidders should identify if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered or not. Discounts will be factored into the evaluation of the bids and their acceptance is at the Sponsors’ option.

3.1.3 Options and Alternates: This section of the proposal would include options or alternates (commercial considerations) which the Sponsors could consider. Suppliers are encouraged to submit alternate proposals in addition to the
requirements defined in Section 2.1, Statement of Work, if such alternate proposals will result in lower price, higher reliability, or improved schedule.

3.1.4 **EEOC Compliance:** If not previously submitted, please provide a statement that your company is in compliance with EEOC requirements.

3.1.5 **Insurance Certificate(s):** Include with your Bid a Certificate(s) of Insurance evidencing compliance with at least the minimum levels of insurance required in Section 6.0 Insurance of NSTAR’s Consulting Services Agreement, which is contained in NSTAR’s requirements document in Section 2.2 above. If you are awarded the work, you will be required to submit certificates to each Sponsor identifying them as an additional insured and complying with their insurance levels.

3.1.6 **Execution of Proposal By officer of Supplier:** Form C MUST be completed and executed by an Officer of the Supplier.

3.1.7 **Vendor Information:** Bidders shall provide:
- Federal TaxID number
- Business type, i.e., sole proprietorship, partnership, joint venture, etc. and state of residency
- Number of employees
- Financial statements for the last 24 months

This information is not considered part of the fifteen (15) page response limitation and should be provided as a separate tab in Volume 1 of the Commercial Proposal.

3.2 **Volume II - Technical Proposal**

Volume II must not exceed fifteen (15) pages, excluding the information requested in sections 3.2.6 thru 3.2.10 below.

The Supplier's technical proposal, addressing all technical requirements MUST be included in this section. **THIS VOLUME MAY NOT INCLUDE ANY COST OR PRICING INFORMATION.** In addition to the Supplier's technical proposal, the following items must be addressed, in the order listed:

3.2.1 **Title Page:** This section of the proposal should include a title page, which identifies the RFP Title, vendor’s name and the volume.

3.2.2 **Table of Contents:** The vendor’s proposal should include a Table of Contents, which lists the titles and page numbers for each major topic and sub-topic.

3.2.3 **Summary:** This section should include a:
- 3.2.3.1 Description of the organization’s team
- 3.2.3.2 Outline of the approach to the program services to be provided
- 3.2.3.3 Description of the team’s experience and qualifications

3.2.4 **Organization(s) or Team Description:**
- 3.2.4.1 Describe the organization(s)
  - 3.2.4.1.1 Describe current services provided for the energy efficiency industry.
3.2.4.1.2 Describe the organization(s) qualifications for providing the services outlined in the Scope of Work.

3.2.4.1.3 Provide summaries of on-going similar service engagements that have occurred within the past 3 years.

3.2.4.2 Describe the Project Team, especially the Program Leads and any key personnel who would be working on the project. Resumes of key personnel should be provided as an attachment. Include brief biographies of Program Leads and other key personnel demonstrating related program experience and qualifications with regard to their ability to understand the multi-family market. Include the number of FTEs included in the bid and whether or not there will be dedicated staff to each PA or possible PA combination (1 gas & 1 electric). Go to http://www.mass.gov/mgis/pubutil.htm for PA service territory maps.

3.2.4.3 Provide an organizational chart of project team and relationships.

3.2.4.4 Provide a Contact Sheet, listing contact information, including email and phone numbers for key personnel who can answer questions regarding the proposal and regarding the services to be provided. This Contact Sheet should provide contact information for key personnel for any sub-contractors.

3.2.5 Statement of Work: Describe the organization or team’s approach to providing the services for which the organization(s) or team wished to be considered. The statement of work will include the following:

3.2.5.1 An Implementation Plan detailing tasks, milestones and the dates associated with these items. Dates included in the plan must align with the schedule provided in the “Important Dates” listed on Page 3 above. Responsibility for each task/milestone must be included as well.

3.2.5.2 Samples of proposed marketing and other program materials for the program.

3.2.5.3 Explanation of data security measures employed by the bidder regarding confidential participant information that may be shared with firm (participant name and one of the following: social security number or financial account number or utility account number) and confirmation that security measures comply with applicable federal, state laws covering protection or Personal Information of residents of the applicable state. (In Massachusetts the applicable Regulation is 201 CMR 17.00 – STANDARDS FOR THE PROTECTION OF PERSONAL INFORMATION OF RESIDENTS OF THE COMMONWEALTH [Effective date of Mass Regulation is 3/1/10].)

3.2.6 Resumes for Key Personnel: Provide resumes or brief professional histories for key personnel who will provide services, including resumes from key personnel from sub-contractors.

3.2.7 Alternate Approaches: Respondents are encouraged to submit alternate cost-effective approaches and creative solutions for providing services described in the work scope.

3.2.8 Sample Reports: Provide any samples of program reports that may be helpful to implement and manage the programs.
3.2.9 **References:** Provide references from other service engagements that best demonstrate the proposed services with an explanation of individual or team roles in each project, a description of the services and key energy efficiency or renewable energy achievements from the engagements, and client contact information for reference purposes.

3.2.10 **Additional Information:** Respondents are encouraged to include any information deemed relevant to demonstrating their capacity to meet the requirements outlined in the Scope of Work section of the Statement of Work, in addition to providing the information required in the sections above.

4.0 **PROPOSAL FORMS**

The following forms must be completed and submitted with Supplier Proposal.

4.1 **Form A - Bid Receipt Acknowledgment Form**

This form is used by the Supplier to confirm to Company receipt of the bid package and intent to bid. This form should be completed upon receipt of the RFP and returned as soon as possible via email (Patricia.Latimer@NSTAR.com).

4.2 **Form B - Supplier Bid Proposal Form (Cover Sheet)**

Form B - Supplier Bid Proposal Form (Cover Sheet) MUST be the first page of the Supplier proposal.

4.3 **Form C - Execution of Proposal by Officer of Supplier**

The Supplier MUST complete this form and include it in Volume 1 of the proposal. The form is used to:

- Indicate how long the proposal is valid.
- Confirm in writing that Supplier's proposal represents a complete offering and includes all exceptions to the RFP.
FORM A – BID RECEIPT ACKNOWLEDGMENT FORM

RFP #1905 - Multi-Family Market Integrator

COMPLETE AND RETURN UPON RECEIPT TO:

Patricia.Latimer@NSTAR.com

The __________________________ Company hereby:

1. __ I acknowledge receipt of the above listed Bid Documents.

_____________________________________________________________________

And

2. __ My proposal will be submitted on the required due date.
   __ I choose to not bid, as fully explained in letter to be transmitted under separate cover.

Our Proposal shall list the following companies as joint venture partners or subcontractors:

_____________________________________________________________________

Please address future inquiries on this work (if different from original mailing) to:

Name: __________________________________________

Company: _______________________________________

Address: _______________________________________

Phone: __________________ Fax: ________________

by: ____________________________

(Signature)

Title: __________________________

Date: __________________________
FORM B - SUPPLIER BID PROPOSAL FORM

RFP #1905 – Multi-Family Market Integrator

(COVER SHEET)

NAME OF SUPPLIER:  ____________________________________________________________

ADDRESS:  __________________________________________________________________

____________________________________________________________________________

NAME OF AUTHORIZED REPRESENTATIVE:  ________________________________________

TITLE OF ABOVE:  ______________________________________________________________

PHONE NUMBER OF THE ABOVE:  ________________________________________________

Direction:  This sheet must be the first page of all submittals. The remainder of the proposal must follow the following format with no exceptions. Additional sections may be added at the Supplier's discretion. Volumes I & II must be separate documents.

<table>
<thead>
<tr>
<th>Volume I: Commercial Proposal</th>
<th>Volume II: Technical proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TABLE OF CONTENTS OF VOLUME I</strong></td>
<td><strong>TABLE OF CONTENTS OF VOLUME II</strong></td>
</tr>
<tr>
<td><strong>Section</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>1.0</td>
<td>Commercial Exceptions</td>
</tr>
<tr>
<td>2.0</td>
<td>Pricing</td>
</tr>
<tr>
<td>3.0</td>
<td>Options and Alternates</td>
</tr>
<tr>
<td>4.0</td>
<td>EEOC Compliance Verification</td>
</tr>
<tr>
<td>5.0</td>
<td>Insurance Certificate(s)</td>
</tr>
<tr>
<td>6.0</td>
<td>Execution of Proposal by Officer of Supplier</td>
</tr>
<tr>
<td>7.0</td>
<td>Vendor Information</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proposal Prepared by (Signed): __________________________________________________

(Typed):  __________________________________________________

Title:  __________________________________________________

Date:  __________________________________________________
FORM C - EXECUTION OF PROPOSAL BY OFFICER OF SUPPLIER

RFP #1905 – Multi-Family Market Integrator

Supplier represents that this proposal is its complete offering and includes all exceptions to this RFP. Supplier agrees that this proposal will be valid for a minimum period of 90 days from date of submittal.

_________________________________________
Supplier

By:

_________________________________________
(Signature)

_________________________________________
(Name)

_________________________________________
(Title), a duly authorized representative of the Supplier

_________________________________________
Date
REQUEST FOR PROPOSALS (RFP)

Multi-Family Market Integrator

Statement of Work

1.0 Summary of Request

This Statement of Work requests bids to assist the Massachusetts utilities and energy efficiency providers [Program Administrators or (PAs)] in Massachusetts in implementing newly re-designed statewide energy efficiency programs for the multi-family market sector. Specifically, the PAs will be contracting for Multi-Family Market Integrator (MMI) services where the primary function is to ensure that program participants have access to cost-effective, whole building and fuel blind, energy efficiency products and services regardless of whether there will be one or more PAs involved in serving the participant. Additionally, the MMI will be responsible for acting as the conduit through which requests, questions and concerns are directed to ensure that participants are not required to contact multiple parties during the project lifecycle. Providing participants with a seamless experience is a key success factor for the delivery of these programs.

2.0 Background

The Massachusetts Green Communities Act was signed into law on July 2, 2008. This legislation was designed to promote enhanced energy efficiency throughout the Commonwealth. Specifically, the Green Communities Act requires gas and electric distribution companies and municipal aggregators (together “Program Administrators”) to develop energy efficiency plans that will “provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply”. In connection with these energy efficiency plans, the Green Communities Act established a new advisory body, the Energy Efficiency Advisory

---

1 A multi-family building is described as having 5 or more units. The program design will include services for retrofit and new construction.

2 The definition of fuel-blind includes gas and electric energy efficiency services.
Council ("Council"), consisting of eleven voting members of diverse backgrounds and expertise, and a non-voting member from each Program Administrator. Pursuant to the Act, the electric and gas Program Administrators, respectively, were required to provide a statewide electric efficiency investment plan and a statewide natural gas efficiency investment plan was submitted on October 30, 2009 for the Department of Public Utilities (DPU) approval and comment.

3.0 Multi-family Program Designs

The program designs being implemented will serve both the retrofit and new construction multi-family (five or more dwelling units) segments, and within these categories, energy efficiency products and services will be offered to market rate and low-income participants. Please see http://www.ma-eeac.org/docs/DPU-filing/ElectricPlanFinalOct09.pdf and http://www.ma-eeac.org/docs/DPU-filing/GasPlanFinalOct09.pdf for the following program design templates filed by the PAs.

- Multi-family Retrofit Program
- Multi-family New Construction Program
- Low Income Multi-family Retrofit Program

4.0 Multi-Family Program Administration

The programs will be administered cooperatively by the Massachusetts natural gas and electric Program Administrators. Collectively, the Program Administrators will form a Multi-family Steering Committee which will be responsible for program oversight, direction, and promoting continuous improvement/best practices with regard to the multi-family market.

Program Sponsors

- Bay State Gas
- Berkshire Gas
- Blackstone Gas
- Cape Light Compact
New England Gas
National Grid Electric and Gas
NSTAR Electric and Gas
Unitil Gas and Electric
Western Massachusetts Electric Company

5.0 Scope of Work
As stated in Section 2.0 above, the PAs are developing a program through which participants may have access to both gas and electric energy efficiency measures and services, as well as residential, commercial and industrial measures within each fuel type. Depending upon the measures and services to be provided and installed, and the number of PAs serving a facility, there could be multiple vendors involved in delivering the program. Under the existing program rules, a participant would need to contact each of these multiple parties to obtain the needed services. In order to provide the participant with a “seamless” experience, the MMI will facilitate the initiation of a project and will serve as the project manager by coordinating and tracking the status of the various services required for a job. While the scope of work for the MMI includes additional tasks, as described below, the integration function allowing for a seamless participant experience is the primary role of the MMI.

Please see Appendix A for planned participation numbers for all PAs for years 2010 through 2012.

The full scope of work for the MMI function includes the tasks described below.

Task 1 – Multi-family Market Integrator Services

5.1 Allowing for Multiple Points of Entry
Because of the diversity within the multi-family sector and the various market actors that will be involved in lead generation, the programs provide for multiple points of entry that will all ultimately provide participants with a comprehensive program offering and a
seamless experience. Participants may enroll in the program through a variety of entry points: use of a toll-free number or their request for services may be initiated by other parties such as a PA, a PA’s Account Executive, a contractor, a consultant or engineer and a newly designed statewide energy efficiency website.

5.2 *Staffing Toll-free Telephone Line*

The marketing strategy for the Multi-family programs will include establishing, maintaining, and advertising a toll-free telephone number which participants may use to enroll in the programs. Staffing for this telephone line will be the responsibility of the MMI. Personnel answering the telephone will be expected to conduct participant screening as described below. The hours of operation will include 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding major holidays. There could also be the possibility of some weekend hours. After-hours calls will be answered electronically to ensure all incoming calls and inquiries are captured and returned within the next business day.

5.3 *Participant Screening*

The goal of the screening process is to obtain answers to specific questions in order to ensure that the appropriate resources can be assigned to perform a whole-building assessment (WBA) of the facility. A preliminary list of the screening questions for the Retrofit and New Construction Programs is included in Appendix B.

Requests may come to the MMI through various avenues. The initial contact, whether vendor, account executive, PA Program Manager, or other entity will obtain the participant information from a potential participant and forward to the MMI for screening purposes. If the request comes directly to the MMI, whatever data that is readily available can be collected during the call, recognizing that an additional discussion may need to take place to gather additional data.

After obtaining the responses to the screening questions, the MMI will have the ability to determine whether or not the facility qualifies for the program. If the participant is eligible for a program other than Multi-family, the MMI will provide the appropriate contact information.
In the event that a Multi-family retrofit project consisting of 50% or more residential participants living in facilities are on a Low-income rate or are an income-eligible resident living in a Multi-family non-institutional facility with five or more units owned or operated by a non-profit entity or a public housing authority, the MMI should screen the participant and refer the lead to the appropriate LEAN (Low Income Energy Affordability Network) Lead Vendor for eligibility confirmation. If a project is not eligible under the income eligible program, LEAN will forward the request back to the MMI. For statewide tracking purposes, the LEAN network will report back to the MMI when a facility is complete.

Unless otherwise noted, the remainder of the process refers to market rate retrofit projects only.

5.4 Whole Building Assessment (WBA)
One of the key program goals is to encourage participants to implement all cost-effective energy savings opportunities. To encourage such action, the MMI will offer a fuel-blind\(^3\), whole-building assessment (WBA). Depending upon the interest expressed by the participant, the MMI will arrange to have a PA auditor review the screening information collected from the participant along with usage data for the past year. If the PA auditor determines that there is potential for savings, the PA auditor will arrange for the appropriate party to conduct an assessment and promptly notify the MMI that the assessment has been scheduled. The PA’s audit vendors will be assigned by geographic location or by a pre-approved methodology developed by the appropriate PA. Each PA will provide their individual vendor information to the MMI.

In the event that a participant declines the WBA and requests treatment of a single or a limited number of end-uses, the MMI will follow the “Measure Specific” path described below.

---
\(^3\) Fuel-blind assessment consists of providing information on all energy saving opportunities. Incentives for natural gas and electricity are offered at this time.
5.5 Measure Specific Path
Despite attempts to encourage a whole building fuel-blind assessment, there may be situations where participants will accept nothing more than treatment of a single or a limited number of end-uses. In these instances, the MMI will follow the Measure Specific path. Depending on the services requested, the MMI will work with the participant to arrange for any site visits or analysis required and will then work in conjunction with appropriate PA vendor (see section titled “Delivery of Measures and Services”) to arrange for measure installation.

5.6 Coordinate Integrated Proposal for Energy Efficiency Services
After the appropriate audits/analyses have been completed, the PA vendors will submit their respective recommendations (measures and incentives) for the facility to the MMI. Once PA approval is obtained, the offer will be packaged by the MMI for presentation by the appropriate parties (may be measure and PA-specific) in order to assist the participant to fully understand the offer. This may include, but is not limited to, PA-specific vendors or PA staff. The parties authorized to approve the participant offer will be required to sign the appropriate form(s) in order for the project to progress to the installation phase of the program4.

5.7 Delivery of Program Measures and Services
Once the authorization forms are signed by the appropriate party(ies), the MMI will work closely with the PA installation vendors (each PA will provide a list for its service territory) in scheduling the work. The MMI and the PA vendor will ensure, to the extent possible, that the units will be treated in a single visit to minimize disruption to occupants. In the instance where services for common areas or major measures are being installed that may require multiple visits, the MMI and the PA vendors will work to minimize the number of site visits, particularly where the facility owner/manager is required to provide access. Although the designated PA vendors may employ sub-

---

4 If a customer does not opt for all of the eligible measures at once, they will have up to one year to pursue the remainder of the offer
contractors, the MMI will coordinate all schedules with the PA primary vendor as opposed to scheduling directly with the sub-contractors.

There will be instances when a participant may want to use their own vendor or in-house maintenance staff. These requests will be brought to the attention of the appropriate PA or PA Vendor for approval prior to scheduling the required work. PA approval may be granted provided that personnel recommended to perform the services meet all applicable municipal, local, state, and federal codes, standards, and regulations, as well as program requirements. Once a project is approved, the MMI will schedule the work with the participant vendor/staff. In the event that the participant vendor/staff can only perform a portion of the work, the MMI will coordinate the schedule for the remaining work with the PA-specific vendor(s). Participants opting to use their own vendors will be required to sign documentation stating that they assume complete responsibility for the work being performed.

5.8 Track Project Milestones

Once the required work (including both audit and measure installation) is scheduled, the MMI will track the completion milestones associated with program services. This will allow the MMI to perform the following functions:

- responding to participant inquiries on scheduling
- proactively follow-up with vendors on any schedule changes (including notifying the appropriate PAs)
- providing monthly, quarterly, and yearly performance statistics to the PAs (described in detail in the section on Administration)

5.9 Response to Participant Inquiries throughout Project Lifecycle

In addition to facilitating the delivery of program services, the MMI will be responsible for acting as the conduit through which participant questions and concerns are directed. This will prevent customers from having to contact multiple parties during the project lifecycle. There will be some inquiries that the MMI may respond to directly. If this is not the case, the MMI is expected to work with the PAs and/or their vendors (as
appropriate) to achieve resolution. Depending on the complexity of the issue, responses
directly from the PA staff or vendor may be required. Under these circumstances the
MMI will be informed in writing of the resolution so that there is complete understanding
of the project status.

5.10 Complaint Resolution
The MMI is expected to work with the PAs to develop a complaint resolution procedure
to ensure professionalism, participant satisfaction and program compliance. The nature
of the complaint will determine whether or not the PA(s) needs to be involved in the
resolution process. The appropriate PAs will be notified of all complaints from
participants within their service territories. All complaints, whether requiring PA
intervention or not, shall be documented, archived, and forwarded to the particular PA
within 24 business hours of its occurrence.

5.11 Participation in Statewide Multi-family Steering Committee
A Multi-family Steering Committee will be established with the goal of promoting
continuous improvement/best practices with regard to the multi-family market including
both retrofit and new construction. The MMI will coordinate monthly meeting agendas
and locations. In addition, the MMI will be an active participant in the Steering
Committee. In this role, the MMI will provide input based on its experience with
participants and the PA vendor staff.

5.12 Participate in Program Evaluations and Quality Assurance/Quality Control as
Required
Once sufficient experience with the statewide Multi-family program has been obtained,
the PAs may contract with a third-party vendor to perform a process and/or impact
evaluation. The MMI will provide support for the evaluation, quality assurance and
quality control (QA/QC) efforts. MMI participation may include, but is not limited to,
responding to interview questions and providing data collected though the program. The
evaluation vendor, QA/QC vendor and MMI will work to develop data transfer protocols
as required.
5.13 **Program Administration**

The MMI will perform the following administrative functions:

- Develop and print standard forms and materials needed to implement the program (using PA logos)
- Detailed invoicing will be provided to each PA based on the services provided in their territory. In the instance where a PA has both gas and electric service territory, separate invoices will be generated for both. Invoice processing will conform to each PA’s terms and conditions.
- Reporting must fill the PA requirements for all regulatory bodies in Massachusetts, including the following categories:
  - **Statewide Statistics**: Assemble project level statistics for statewide reporting. Each PA receives data from either their installation vendor or a rebate form to indicate what measures were installed in their service territory. The MMI will receive data files from the PAs or PA vendor(s) so that project-level statistics (i.e. total savings per project) can be compiled for quarterly and annual reporting periods.
  - **Status Reporting**: Quarterly and annual status reporting include data such as, but not limited to, number of projects initiated during the period and number of projects in each of the project statuses as of the closing date of a reporting period. The PAs will also want to obtain statistics on participants who opted for only some of the measures offered (did the participant complete other recommended measures within a year?).
  - **Barrier Code Reporting**: While the PA vendors will track the actual measures installed, it is also important for the PAs to determine which measures included in a project offering were not opted by the participant along with the reasons. The reasons will be recorded in terms of a “barrier code”. The PAs will use this data to understand why certain measures are not being selected and then modify the program design accordingly.

Reports will be provided on a quarterly and annual basis.

---

5 Barrier tracking pertains to retrofit programs only.
Ad hoc Reporting: The Multi-family Steering Committee may request data to help inform programmatic decisions. While the MMI will not be involved in scheduling services for projects with only one vendor, new construction, and low-income Multi-family projects, data from these projects will be tracked and included in the reporting.

5.14 Marketing Services:

- The MMI will perform the following marketing functions: Develop and maintain basic program marketing materials (print) for statewide program (e.g., program brochure(s), letterhead, and offer forms). Additional marketing services may be requested by individual PAs.
- Work with Steering Committee to develop a participant satisfaction survey and then implement the survey and report results (by PA and for state as a whole).

5.15 Post-Participation Follow-up6:
The PAs believe that it is important to reinforce energy efficiency-related actions with feedback for the participant. The feedback for this program involves informing the participant of the change in energy usage one year after participation. Upon request, the information will be provided to program participants either via email or regular mail based on post-implementation data provided by the appropriate Program Administrators7.

---

6 Post-participation follow-up pertains to retrofit projects only.
7 The MMI will be required to sign Non-public Information disclosure agreements with each PA before participant data may be released.
Appendices

Appendix A – Program Administrators’ Program Participation Goals for 2010-2012

Document included in RFP Package as “Appendix A – PA Participant Projection” in pdf format.

Appendix B – Participant Questionnaire

Document included in RFP Package as “Appendix B – Data Gathering Form” in pdf format.
REQUEST FOR PROPOSALS
MULTI-EVALUATION TASKS FOR MASSACHUSETTS ENERGY EFFICIENCY
PROGRAMS IN THE SPECIAL AND CROSS-SECTOR STUDIES AREA
2010 – 2012

The Massachusetts Program Administrators (PAs) for the Massachusetts Energy Efficiency (EE) programs in the Special and Cross-Sector Studies area request proposals to perform various evaluation tasks addressing the state of Massachusetts, as described in this Request for Proposals. This RFP covers work for program years 2010 through 2012.

BACKGROUND

MASSACHUSETTS EVALUATION FRAMEWORK

On September 8, 2009, the Massachusetts Energy Efficiency Advisory Council (EEAC or Council) unanimously approved a resolution developed collaboratively by the Program Administrators (PAs) and the EEAC Consultants. This resolution set forth a new administrative framework for the performance of Evaluation, Measurement and Verification (EM&V) in Massachusetts for Energy Efficiency Programs. The full Resolution is presented verbatim in Appendix A. Below is a summary of the Resolution, its effects, and its relevance to the current RFP.

Under the Resolution, the EEAC will assume an oversight role over the EM&V activities of the PAs to ensure the objectivity and independence of those activities, and the perception of such, and to help ensure consistency, timeliness, and credibility. While the PAs and EEAC Consultants (acting on behalf of the EEAC) will continue to work diligently to reach a consensus on evaluation issues, where there are areas of difference that may arise that cannot be resolved through consensus during the ongoing interactive process between the EEAC Consultant and the PA evaluation staff, authority for decision-making will reside with the EEAC or its Designee. This arrangement is subject to a system of appeals in the event of any disputes that cannot be resolved collaboratively.

The Resolution also restructures EM&V in Massachusetts, so that most studies are to be performed at a statewide rather than a PA-specific level. It specifies that the range of evaluation activities be divided into 5 to 7 semi-permanent statewide Research Areas, oriented primarily to specific target markets. Each Research Area is to have an assigned Study Manager from the PAs, an assigned EEAC Evaluation Consultant, and an independent evaluation contractor who conducts the studies under a long-term contract with the individual PA companies.

1 The PAs include Bay State Gas, Berkshire Gas, Cape Light Compact (CLC), New England Gas, National Grid (Electric & Gas) - NGrid, NSTAR Electric and Gas Corporation (NSTAR), Western Massachusetts Electric (WMECo), and Unitil/Fitchburg Gas & Electric (Unitil).
Consistent with the Resolution, the PAs and the EEAC Consultants subsequently developed a system of six statewide Research Areas, as follows:

1. **Residential Retrofit and Low Income.** This category includes home cooling and heating equipment, home heating and water heating, residential and low-income retrofit, weatherization, and most aspects of multi-family programs.

2. **Residential Retail Products.** This includes home lighting and appliance programs.

3. **Residential New Construction.** This includes residential and low-income new construction and major renovations programs, including baseline studies, as well as codes and standards and compliance efforts. This Research Area also includes baseline studies of construction practices for both single- and multi-family homes.

4. **Non-Residential Large Retrofit and New Construction.** This includes C&I new construction (small and large) and major renovation, plus large C&I retrofit programs.

5. **Non-Residential Small Retrofit.** This includes the current C&I small retrofit, direct install programs. This category would also include any future programs that may target small non-residential customers.

6. **Special and Cross-Sector Studies.** This includes those studies that do not fit readily the other Research Areas above, as well as those studies that are cross-sector in nature. So far, they include cross-sector free ridership and spillover studies; non-energy benefits; behavioral programs; community-based pilots; and marketing, public education, and outreach activities. They may come to include other subjects.

Massachusetts’ evaluation planning and implementation schedule calls for selecting contractors and finalizing contracts for all six Research Areas by April 15, 2010. Evaluation activities under each contract are to be conducted subject to the terms of the EEAC Resolution. **The purpose of this RFP is to select an evaluation contractor for the sixth Research Area, Special and Cross-Sector Studies.**

**EARLIER CROSS-CUTTING STUDIES**

Massachusetts has a history of conducting many non-program specific and program cross-cutting evaluations. Programs that do not fit easily into one of the other five Research Areas are likely to be included in this cross-cutting Research Area. Some of the topic areas that are known to be assigned to this Research Area include:

- Cross-cutting free rider and spillover studies -- PAs have commissioned several
free-rider and spillover studies over the past 15 years.

- Non-energy Benefit studies — The PAs have sponsored more than one study of non-energy benefits, one focused on commercial & industrial benefits in 2007, and one focused on benefits for residential new construction during 2007-08.
- Social marketing and cross-cutting behavioral studies--A behavioral program, where large blocks of residential customers are provided access to real time billing and support and encouragement in reducing energy use, has just begun at one PA and will soon be followed by similar programs at other PAs.
- Cross-cutting area-focused programs – community-based pilots – have begun in several locations (e.g. Cambridge and Marshfield) and among some groups (e.g., Portuguese and Chinese speakers).

**OBJECTIVE**

This RFP seeks a qualified bidding team to complete an assorted array of evaluation activities for Massachusetts energy efficiency programs over a multi-year period. The winning bidder will be the evaluation contractor for Special and Cross-Sector research. Given the diversity of subjects to be researched, the PAs cannot rule out the possibility that more than one winning bidder could be selected, or that some tasks might require special RFPs, depending on the arrays of subcontractors proposed with the bids. The winning bidder will be expected to handle all evaluation issues, with the help of its proposed sub-contractors where specific skill sets are required that the evaluation contractor alone may not possess.

This will be a multi-year contract, covering program years 2010 through 2012. Main focus areas over the next three years will include

- Free ridership and spillover studies that cover multiple program areas;
- Non-energy benefits;
- Behavioral programs; and
- Community-based programs (pilots so far).

They will also include

- Umbrella marketing, public education, and outreach activities; and
- Various other undetermined evaluation issues.

This RFP presents some tasks for which we request specific technical and cost proposals. For other less defined tasks, we seek only billing rates, qualifications, and general approaches.

In addition, the selected contractor will co-ordinate an early report to guide mid-course program corrections during the late summer and early fall of 2010. The report must be completed and filed by July 15. The contractor will co-ordinate sub-reports due July 1 from this Research Area and three other Research Areas, under direction by the PAs.
The table listed below gives bidders an idea of definite and possible evaluation activities, with approximate timelines. Details of each project, including both Scope and Timeline, will be determined once an Evaluation Contractor is selected. Definite projects are shaded darkly, while possible projects are shaded lightly. Timelines may vary a bit from those shown for 2011 and especially 2012.

<table>
<thead>
<tr>
<th>PLANNED EVALUATION ACTIVITIES BY QUARTER</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinate Mini-Global Process &amp; Marketing Evaluation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;I Free Riders &amp; Spillover</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free Rider / Spillover Methods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Energy Benefits, Low-Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Energy Benefits, Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Energy Benefits, C&amp;I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community-Based, Process+ 2010-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community-Based, Process+ 2010+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Programs, Process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Programs, Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Umbrella Marketing &amp; Integration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Evaluation Issues</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Responsibilities of the Evaluation Contractor will include managing the various individual evaluation tasks, managing sub-contractors as necessary, collecting data, analyzing data, providing individual formal reports and presenting results to the PAs and the EEAC for the various evaluation tasks, providing an annual report that summarizes the year’s evaluation activities, and assisting in and developing an annual evaluation plan at the start of each program year.

**SCOPE OF WORK**

**PLANNED ACTIVITIES**

**Early Global Process and Marketing Evaluation**

In the Summer of 2010, Massachusetts will be undertaking a mid-course adjustment process to consider whether any changes to program approaches are required for 2011-2012. Given the sharp increase in program budgets that is planned for these years, and the potential magnitude of the programming and resource allocation decisions that may be made as part of the mid-course adjustment process, it is critical that timely information be available regarding key program process issues and initial market response to new and expanded program services. The Massachusetts PAs are therefore committed to completing a global process and marketing evaluation by July 15, 2010 to file with the EEAC. Given the short time, the report will be short and may be viewed in some ways as preliminary. It will emphasize qualitative information more than quantitative. This evaluation is expected to cover:
(1) Customer and market response to new, expanded or revised marketing efforts;
(2) A review of sales techniques that are effective;
(3) An early review of electric and gas integration efforts and single point of contact / cross PA integration in MA, as well as comparison to selected other states
(4) An early review of projects that are comprehensive, whole building, or otherwise targeted to deeper savings; and
(5) Process evaluation and design review of community-based projects.

More information on the tentative scope and focus of this evaluation is provided in Appendix B.

The global process and marketing evaluation is envisioned as a single effort encompassing several program areas. Individual pieces of the evaluation are expected to be performed by the members of the contractor teams for four research areas: Residential Retrofit, Large C&I, Small C&I, and Special/Cross-Cutting.

The Special/Cross-Cutting contractor team will play a leading role in melding the results from the four research areas, with overall direction and coordination provided by the PAs and the EEAC Consultants. Each of the four contractor teams will be responsible for covering those topics shown in Appendix B that are specific to its assigned research area. The Special/Cross-Cutting contractor should allow at least 50 hours, specifying particular staff, to meld these four resulting mini-reports into one, from July 1 to July 15.

For the research team pursuant to this RFP, this means a mini-report by July 1 on community-based pilots, umbrella marketing efforts, and (in conjunction with other research areas) program integration across PAs and between electric and gas companies. See discussion further below, under those three topics.

Cross-Cutting Free Ridership and Spillover Research
A commercial-industrial (C&I) free rider and spillover (FR/SO) study was last conducted for the PAs in 2007. See Appendix C for a report for one PA. It used a statewide methodology established in 2003 to estimate full and partial free riders. Spillover was divided between participants and non-participants. Non-participant spillover was based on a survey of suppliers, designers, and various trade allies. It produced separate free-rider and participant spillover estimates by program for each PA, by end use. It produced statewide estimates by end use for non-participant spillover.

A new C&I FR/SO study is being conducted in early to mid-2010, using the methodology from 2003. However, that study is not pursuant to this RFP. The study will be based on interviews, primarily by telephone, with small business and large business customers, equipment suppliers, and design professionals. It will account for varying degrees of partial free ridership. It will produce free-rider and spillover estimates by program, by technology, by PA.

METHODOLOGY STUDY
A FR/SO study to be completed in October or early November 2010 should review the methodology of how to count free riders and spillover. It might adopt the current methodology in its entirety. Or it could recommend changes for pre-approval by the PAs and the EEAC. Issues to consider include how partial free-ridership is calculated, handling of acceleration issues, whether out-of-state spillover should be considered, and whether spillover into similar but not identical equipment should be counted.

The cost of this study, with proposed tasks, and hours by task, and a proposed timeline during 2010, should be included in the bid. Limit the discussion of issues, description of tasks, and timeline to 4 pages.

C&I FREE RIDER/SPILLOVER STUDY

The winning bidder should plan to conduct a similar study in 2011 and perhaps in 2012, depending on how much the PAs need fresh data.

Based on the most recent C&I FR/SO study, the bidder should assume it will survey 1,500 business customers who participated in the various programs at the PAs during 2009. The majority of them will be National Grid and NSTAR participants, but many will be participants from the other PAs. Assume 35% will be small business customers. For estimating non-participant SO, the bidder should assume it will interview 100 equipment suppliers, design professionals, and other trade allies. The proposal should specify an incremental cost per participant and trade ally interviewed.

The costs for one such study should be included in the bid, but, as stated above, the study pursuant to this RFP will occur in 2011 and perhaps another one in 2012, not 2010. The bid should include a suggested timeline of the tasks to be done. Tasks (associated with dates) should include at least a kick-off meeting, a work plan, sample plan development, general interview schedule, analysis, draft report, final report, and presentation(s). Limit the discussion, description of tasks, hours by task, and timeline to 5 pages or fewer.

---------------

A residential FR/SO study is not contemplated under this research area at this time. One may target, for example, residential new construction only, and be administered via that research area. However, a residential FR/SO study that targets residential new construction and retrofits jointly, under this research area, cannot be ruled out.

Non-Energy Benefits

Over the course of this contract, the Contractor will be responsible for developing estimates of Non-Energy Benefits for both residential and C&I sectors as described below.

As background to current values, estimation, and considerations in Massachusetts regarding the estimation of Non-Energy Benefits, a paper that focused on a wide range of low-income benefits was filed in D.P.U. 98-100. Among the many benefits were
Non-energy benefits now being considered but not quantified for the residential Deep Retrofit Pilot include

- Increased Housing Property Value.
- Much higher comfort levels (at given air temperatures) during heating and cooling seasons.
- Ease of maintaining healthy relative humidity.
- Far fewer colds and viruses than in homes, with average/high air leakage levels.
- Keeps money in the local economy, with green jobs.
- Buffers potentially dramatic energy price increases.
- Reduced climate disruption costs from CO2 emissions.
- Reduced SOx, NOx, VOCs, and particulate emissions.
- Increased electricity system reliability (and avoided brown/blackouts) from dramatically lower electric usage (including on-site peak solar generation).
- Decreased utility costs associated with: carrying costs on arrearages, bad debt write-offs, customer calls/notices, shut-offs, reconnections, collections.
- More durable home: No ice dams and less maintenance (with new building exterior)
- Wide window sills.
- Much quieter interior environment.

Note that some of these benefits may be captured elsewhere (e.g., in emission abatement costs), and so would not valued again (twice) in the final report.

A new residential non-energy benefits study or studies to be conducted in 2010 should focus on non-energy benefits for homes. Many benefits will be concentrated among low-income households, but will extend to other households. A few may apply mostly to new construction, while others may apply mostly to retrofit opportunities. Given the substantial differences between low-income and non-low-income residential customers, separate studies may well be warranted for the two groups. Bidder should assume that it will produce separate reports for the two groups.

The residential non-energy benefits study(ies) should begin when the contract is awarded and be completed by September 2010. They should use a literature review, which should include a California study to be completed soon. They may also gather data from PA customers, at the bidder’s option. They should produce separate estimates of benefits by measure, for PA use. They should distinguish between
estimates that can reasonably be applied at a program-wide level and those to be determined on a site-specific basis.

The costs, with hours and a timeline for the proposed tasks, should be included in the bid. Limit the discussion, description of tasks, and timeline to 7 pages in all.

There will be an updated C&I non-energy benefits study, to be conducted in 2011 and possibly again in 2012 (focusing perhaps on a different set of programs, or custom projects one year and prescriptive ones the other year). The PAs expect that the methodology would be similar to that used in Appendix F, but with a larger sample than 99, since it would be for several PAs, not just National Grid, and might cover multiple programs. The bidder should discuss in 1-2 pages generally how it would handle such a study. The cost of such a study should not be included in the bid. It will be on a time-and-materials basis.

**Behavioral Programs**

Behavioral programs are new to Massachusetts. Targeted customers are provided with information about the energy usage of their neighbors, as well as energy saving tips, all designed to motivate them to reduce their consumption. So far, 20 utility companies across the country have initiated these programs. Among the many changed behaviors suggested are shorter showers, altered thermostat settings and adding power strips.

National Grid began a behavioral pilot program for gas and electric customers in late 2009. NSTAR and WMECo are likely to initiate similar pilots in the near future.

Impact evaluations in other states have analyzed energy bills of participants and non-participants before and during the program. See Appendix G for an example. They have found appreciable systematic differences by season, as well as cumulative effects. Simulation models or interval (smart) meters to estimate demand savings are a possibility.

Previous evaluations have not focused on gas savings or combined electric and gas savings, two impacts that need to be evaluated in MA. The evaluation scope will also include analyzing survey data. The utilities are interested in testing customers’ frequency of use, recall of material, changes in knowledge about energy efficiency and how they incorporate that knowledge in their actions.

**IMPACT EVALUATION**

The selected contractor will work with the PAs in third quarter 2010 to design program data tracking to facilitate evaluation thereafter. Impact evaluation will follow, beginning near the end of 2010 or in early 2011. It will be repeated at least annually. In fact, impact evaluations may be conducted targeting the winter peak period and again targeting the summer peak period. The initial evaluation will focus on National Grid, but later evaluations will cover multiple PAs, producing different estimates by PA.
The bidder should assume it will conduct its first billing analysis will include 10,000 participants and a like number of non-participants. (The actual number of participants is speculative at this time.) The bidder should also assume that it will survey a smaller number of participants to shed more light on the actions taken in response to the program, which in aggregated result in the observed savings (if any). If the bidder proposes an alternative method, it should explain why. The bidder should assume that it will be the one to clean the billing data. The costs of this initial impact evaluation, including input into data tracking system design, with a timeline and hours for the proposed tasks, should be included in the bid. Limit the discussion, description of tasks, and timeline to 6 pages.

**PROCESS AND BEHAVIORAL RESPONSE EVALUATION**

A first process evaluation for the program should be conducted starting in the third quarter of 2010. One question to look at would be “What exactly are people doing in response to the information received?” The answer would be %s engaging in each of the recommended behaviors. A second question would be “How persistent are the behavioral changes?” A third would be “To what extent does this information draw people into other programs? That is, how much double counting is going on?” The contractor would use PA program participant records in tallying double counting and subtracting its effects. There will be other questions.

The costs of this initial process and behavioral response evaluation, with a timeline and hours for the proposed tasks, should be included in the bid. Limit the discussion, description of tasks, and timeline to 4 pages.

The selected contractor must demonstrate experience with impact evaluations, behavioral research, and energy billing analysis, or the ability to sub-contract in order to fill experience gaps.

**Community-Based Pilots**

**BACKGROUND**

Community-based programs target homes and businesses in particular cities or towns. They use an integrated approach, with publicity directed at all residents and businesses, often coordinated with local government. They often focus on reducing greenhouse gas emissions as well as saving energy.

When thoughtfully designed and executed, community-based efforts can be a key tool in effecting deep, comprehensive penetration of energy efficiency in a neighborhood, city or town. Specifically, community-based programs can achieve deeper penetration by adding a “pull” component to the “push” of traditional marketing efforts.

To this end, Program Administrators in Massachusetts have implemented several community-based pilots recently. These include:
Energy Smack Down (NGRID/NSTAR)
Marshfield Energy Challenge (NSTAR)
MAPS Pilot (NSTAR) on-going
Cambridge Energy Alliance (NSTAR) on-going
Western Mass Saves (WMEECo)

Most of these are described in more detail in Appendix H.

The Massachusetts Three-Year Energy Efficiency Plan provides for continuing these efforts. The PAs can work with not only city/town officials but also community organizations that have existing influential relationships within cities, towns, regions, and within demographic and special interest groups. Some of these organizations have already promoted energy efficiency to their members, while others have strong networks but have not yet focused on energy issues. The PAs will seek to develop enhanced strategies to reach out to non-English speaking consumers, low-income customers, and groups that have historically low participation, and to explore the potential for partnerships with representative community organizations.

The PAs will select the communities with the greatest opportunities for success, based on an assessment of the proposals submitted. Because community-based efforts require a substantial and focused effort by both the PA and the community, the PAs must focus their energies by limiting their initiatives to a few communities at a time.

So far, there are three models for community-based pilots in the Three-Year Plan. Two are community-based outreach, one led by the PA, the other by the community. The Marshfield Energy Challenge is an example of the first type and Renew Boston will be another. The MAPS program is an example of the second type and the Main Street Program will be another. For the third type, community mobilization initiatives (CMIs) include a labor component (green jobs with a career path) to deliver the energy efficiency measures and services. The Chinatown and New Bedford CMIs will both start in 2010, beginning this type. More community-based projects of all three types may be added during 2010-12.

2010-2012 EVALUATION ACTIVITIES

2010 TASKS
2. Provide Support to Develop Content and Format for Initial Review of 2010 Pilots

1. Complete Process Evaluation and Assessment of Cost-effectiveness for Efforts Before 2010: completed pilots or pilots with enough history to support this effort. Because each pilot is somewhat unique, the process evaluation will need to be tailored to each effort. Evaluated savings for individual measures from other programs could be used in assessing cost-effectiveness. The evaluation should
support attribution of effects (or partial lack thereof) to the pilots.

Questions to consider in the process evaluation include:

a. Did the pilot meet its objectives?
b. Which pilot components worked well and which ones did not achieve the expected benefits? To what can these relative successes and failures be attributed?
c. How did the inclusion of the community group affect the participation rates?
d. Targeted outreach efforts generally require a separate process (outside the existing intake process) to transfer customer jobs to the appropriate vendor. How was this accomplished and were any specific process issues encountered in this area?
e. If pilot participants had questions or concerns once their application was completed by the outreach partner, who did the customer call and how were these contacts handled? What were the successes and challenges encountered in this area?
f. Were there non-resource savings, such as job creation, that need to be quantified to determine the pilot’s cost-effectiveness?
g. Was the pilot cost-effective? (It is important to note that some pilots may not be cost-effective, because of limited size, but an assessment of whether the program is likely to be cost-effective on a larger scale is required.)
h. How does the BCR for the customer group participating in the pilot compare to the BCR for customers who received the same measures/services outside of the pilot?

A few of these and other questions may be suitable for a mini-report July 1, but some of them await assessment in a later, fuller report.

Pilots to be evaluated include:

- Marshfield Energy Challenge (NSTAR) 2
- Energy Smack Down (NGRID/NSTAR)
- MAPS Pilot (NSTAR)
- Cambridge Energy Alliance (NSTAR)
- Western Mass Saves (WMECo)

A preliminary mini-report should be completed by July 1, 2010. It should include the Marshfield pilot and may include other pilots. It, and reports from three other Research Areas, will feed into the global process and marketing evaluation report. A more in-depth report, based on further (and updated) research, including more pilots, should be completed late in 2010.

Bidders should describe a plan to address the issues raised above for this project. Bids should include discussion, a list of tasks with hours and a timeline, and a full budget to complete this project. Limit this to 5 pages.

2. Provide Support to Develop Content and Format for Initial Review of 2010 Pilots

---

2 An evaluation of the Marshfield Energy Challenge will be completed by the end of February. The evaluation effort for this proposal will be limited to comparing/contrasting the effectiveness of this outreach approach with others which have been implemented.
The PAs must complete a report documenting the results of an initial assessment of the 2010 pilots by September 30, 2010. This document will inform the planning process for 2011. This time frame does not allow for a formal evaluation; however, the data collected and assessments performed need to support the formal evaluation that will be completed in 2011. This will ensure that these efforts are performed cost-effectively and address any equity issues deemed appropriate by the PAs and the EEAC. The evaluation contractor will be required to work with the PA and EEAC consultant staff to develop the content and structure for this report, on a time and materials basis.


This task is similar to (1) above, except that any equity metrics adopted by the PAs and EEAC must be included in the evaluation of programs which begin after the metrics have been established. In addition, the CMI pilots to be conducted in 2010 have a labor component that was not included in any of the 2009 initiatives.

It is also important that any other non-energy benefits (such as the ability of the community group in conjunction with local government to leverage ARRA funds to provide gap financing or gap funding) should be assessed. The ability of the community group to identify qualifying low income customers who are currently not receiving LI benefits should be assessed as well.

Pilots Identified to Date:
CMI Chinatown (NSTAR/NGGrid)
CMI New Bedford (NSTAR/NGGrid)
Community-based efforts – community lead (NSTAR)
MAPS Program (NSTAR)
Cambridge Energy Alliance

A full report on these pilots should be completed late in 2010 or early in 2011.

Bidders should describe a plan to address the issues raised above for this project. Bids should include a set of tasks, with hours and associated timeline, and a full budget to complete this task. Limit this to 5 pages.

2011 TASKS

Evaluations begun in 2010, but not finished in 2010, should be completed. Provide support to assess programs implemented in 2011, by September 30, 2011.

2012 TASKS

1. Complete evaluations for 2011 program year. (While the evaluation of the 2010 programs focuses on process issues, the study of 2011 programs may include a comparison of the savings from participants in the pilot to the savings of participants
being offered the same measures through a program operating outside of the pilot.)


Bidders should not provide a detailed plan or specific cost proposal for 2011 or 2012 tasks at this time.

**Umbrella Marketing**

The PAs have undertaken a number of umbrella marketing efforts, including a joint website. Bidders should provide a plan to assess the effectiveness of the website for customers: how well it engages customers (potential participants). Limit the discussion, tasks, schedule, and costs to 1-2 pages.

Initial assessment should be completed as a mini-report by July 1, 2010. Further update assessments and/or assessments of other marketing efforts should be expected, later in 2010, in 2011, and in 2012. Bidders should not address the updates in detail in their bids.

**Program Integration**

During the course of the Three-Year Plan, the PAs are moving to integrate programs in two dimensions. First, gas and electric programs need to be integrated, so a customer who uses electricity and gas can interface with one program instead of two. This process has begun. Second, PAs in adjoining geographic areas should be able to offer their customers basically the same program, with the same marketing, measures, and incentives. PAs have made progress in this direction in recent years, but the process is not complete.

The bidder should perform an assessment of these integration efforts to date, especially during the first half of 2010. The assessment should be made in light of similar integration efforts in other states. The assessment may be done in interaction with contractors in other Research Areas, such as the integration of residential HVAC (Res Retrofit) in CoolSmart and Gas Networks, as well as integration of gas and electric offerings to large businesses. Among other things, the assessment should analyze determinants of success.

Bidders should provide a plan to assess program integration efforts. Limit the discussion, tasks, schedule, and costs to 2 pages. This assessment is likely to be repeated more than once during the 3-year period, but should not be costed in the bid.

A preliminary micro-report should be completed by July 1, 2010. Updates, based on further research as integration efforts have had time to proceed, should be completed late in 2010 or early in 2011, and again in 2012.

**OTHER EVALUATION WORK**

**Other Evaluation Issues**
In addition to the items mentioned above, different types of activities are conducted on an ad-hoc basis as program changes and other needs dictate.

**Evaluation Planning**

In a typical year, an evaluation plan will be developed somewhere between the last quarter of the previous year and the first quarter of the year to be evaluated. The contractor will assist the PAs and the EEAC in developing the plan, as needed.

**SUMMARY of STUDIES / TASKS**

<table>
<thead>
<tr>
<th>When</th>
<th>Max Pages</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>by July 15</td>
<td>1</td>
<td>Early Global Process and Marketing</td>
</tr>
<tr>
<td>mid-late 2010</td>
<td>4</td>
<td>Free Riders &amp; Spillover – Methodology</td>
</tr>
<tr>
<td>early 2011</td>
<td>5</td>
<td>Riders &amp; Spillover – C&amp;I</td>
</tr>
<tr>
<td>mid-2010</td>
<td>7</td>
<td>Residential Non-Energy Benefits</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
<td>C&amp;I Non-Energy Benefits ($ not included)</td>
</tr>
<tr>
<td>3rd Q 2010</td>
<td>4</td>
<td>Behavioral Program – Process</td>
</tr>
<tr>
<td>3rd Q 2010</td>
<td>6</td>
<td>Behavioral Program – Impact</td>
</tr>
<tr>
<td>7/1/10</td>
<td></td>
<td>Community-Based Pilots, Early Assessment</td>
</tr>
<tr>
<td>late 2010</td>
<td>5</td>
<td>Community-Based Pilots Mostly Complete</td>
</tr>
<tr>
<td>late 10-early 11</td>
<td>5</td>
<td>Community-Based Pilots Starting Up</td>
</tr>
<tr>
<td>7/1/10, later</td>
<td>2</td>
<td>Umbrella Marketing</td>
</tr>
<tr>
<td>7/1/10, later</td>
<td>2</td>
<td>Program Integration</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>Total Page Limit (less than max on some topics)</td>
</tr>
</tbody>
</table>

**GENERAL DELIVERABLES**

Work should begin by **April 15, 2010**. Earlier work on reports due by July 1 is encouraged. In general, the selected evaluation contractor will be expected to deliver the following items during the course of this effort.

- Work plan (covering the first 12 months), due at the outset of the project. This is to include a schedule and an allocation of evaluation staff resources among the various evaluation tasks described under the Scope of Work. It should also detail how and when the evaluation contractor will make use of sub-contractors. In addition, the plan should indicate what reports will be issued when.
- Draft Questionnaires and/or interview guides, one month before any scheduled surveying activities, as relevant.
- Sample Selection
  - For any activity that requires a sample to be drawn, the contractor should suggest the number of participants necessary. Due to various constraints on sample sizes, the achievement of statistical significance within certain parameters may not be realistic, but where it is possible, the sample should be sized to provide results ±10% precision, with 90% confidence. Should this not be attainable, the proposal should suggest an appropriate sample size and estimate the associated level of confidence and precision. Steps should be taken to minimize or avoid statistical bias. Any sampling techniques will
need to ensure appropriate representation from Massachusetts’s populations. Additional groups whose input may have value to the evaluation results may be proposed for consideration. The PAs and EEAC Consultants will have final approval of the sample selection process.

- Formal report on each task or activity as it is completed. This may entail a first draft, final draft, and final report).
- Draft Annual Report, due January 31, 2011 and succeeding January 31’s. This will be a report summarizing all of the evaluation activities completed by the evaluation contractor through the end of the calendar year. An Annual Report will be due for each program year of evaluation activities.
- Final Annual Report, due upon completion of each calendar year’s evaluation activities, including all supporting documentation, due March 1, 2011 and subsequent March 1’s.
  - The contractor will present the study findings to representatives of the PAs and EEAC, and respond to questions. An optional briefing session for outside interested parties may also be required. The cost proposal should present the costs for these tasks separately.

SCHEDULE

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP posted to potential bidders:</td>
<td>January 29, 2010</td>
</tr>
<tr>
<td>Final questions submitted</td>
<td>February 19, 2010</td>
</tr>
<tr>
<td>Final responses posted</td>
<td>February 24, 2010</td>
</tr>
<tr>
<td>All proposals due</td>
<td>March 1, 2010</td>
</tr>
<tr>
<td>Evaluation Contractor selected:</td>
<td>March 15, 2010</td>
</tr>
<tr>
<td>Kick-off Meeting:</td>
<td>TBD, as soon as conveniently possible after the selection of the contractor.</td>
</tr>
</tbody>
</table>

**Information Requested**

The Massachusetts PAs request that interested evaluation organizations respond to this RFP, jointly or separately, no later than 5 p.m. March 1, 2010 with the following information.

Detailed information in the proposals should cover the first 12 months of evaluation activities (March 2010 through March 2011).

1. A detailed description of the complete scope of work including project schedules, a flowchart and an organizational management structure for the program years 2010 – 2012 (actually, March 2010 through March 1, 2013). Years 2011 and 2012 should be less detailed than 2010. This should be a carefully thought out plan of how, when, and where the various tasks will take place using example questions wherever possible.

This plan should give a reasonably detailed description of how the contractor plans
to complete each of the tasks described in the scope of work. The descriptions should be most detailed for those studies which are most definitely planned and whose timelines are most definite. For any survey work, a sample of questions and how they would be analyzed may be included in the pertinent appendix.

In addition to the individual page limits for each of the projects specified, the proposal for them jointly should be no longer than 40 pages, exclusive of budgets.

For Years 2 and 3, the bidder should provide a strategic discussion that explains in a broad sense how the evaluation activities will be approached. This should be no more than 5 pages. It is in addition to the 40 page limit for projects primarily in 2010.

Bidders should put their budget and hours details in a separate section, following the sections about the projects and the out years. Within each project section, bidders may include just a single total project budget number, or no number.

If one or more subcontractors will perform a study for one of the projects in its entirety, please indicate which subcontractors will perform which studies.

Any additional pages with examples of survey questions, and possibly how they would be analyzed, should go in an appendix. Such an appendix may address multiple studies, but should be no more than 10 pages. Such an appendix is allowed but not required.

2. Statements of qualification that detail the bidder’s experience and ability to provide multi-year evaluation support should be included. The bidder’s statements should emphasize their expertise and knowledge in surveys; evaluation of marketing, behavioral programs, community-based programs; non-energy benefits; impact studies; billing analysis; process evaluations; cost-effectiveness studies; modeling; and market analyses, including their ability to design and carry out extensive interviewing and survey analysis. Because other, not yet known, evaluation tasks may be required, the bidder’s statement should mention other possibly relevant expertise as well. These statements should be about 5 pages or less.

3. Summary of Study costs. Please use the attached Cost Estimation Table (Appendix I) to provide a summary of costs for 2010. Labor costs should be broken out by project, task and personnel type (e.g., project management, supervision, clerical support, analyst, etc.) Estimates of miscellaneous additional costs should be indicated. Provide billing rates for years 2 and 3. The PAs will determine the allocation of total costs to individual sponsors after a contractor has been selected. (Please note that the selected contractor will be required to contract with and bill each PA separately.)

4. Two representative examples of experience and documentation skills, such as reports.
5. Names, affiliations, and telephone numbers of 2-5 individuals or organizations for which some similar services have been provided by people and organizations in the bidding team. The Massachusetts PAs and EEAC Consultants may contact these individuals to ascertain the quality and timeliness of previous performance.

6. Details of qualifications of personnel who will be utilized. Summaries of staff experience limited to 2 pages each are preferred, but not required.

Except for sample report, staff resumes, cost table, and any appendix of survey questions, please limit your response to 50 pages. This includes 40 pages for the specific projects, plus 10 pages for a general discussion of bidder's approach to 2011-12 and for discussion of bidder's qualifications, experience, and references. All material submitted will be treated confidentially.

**Response**

Respondents should submit an electronic copy of the proposal by e-mail, via Northeast Utilities' Frictionless system, on or before 5 p.m. **March 1, 2010.**

Questions regarding this RFP or any material in the RFP documents package must be submitted in Frictionless, not later than February 19, 2010.

**TERMS AND CONDITIONS**

The successful Bidder's services shall be provided in accordance with the terms and conditions of the PAs, attached as Appendices **J-P.** Proposed exceptions should be stated in writing with the bid.

Winning bidder must comply with the Environmental Requirements of the PAs. The winning bidder should also expect to sign confidentiality (non-disclosure) agreements with each PA.

**Evaluation of proposals and selection of contractor**

The PAs and EEAC, and their related personnel, will confidentially review proposals. They reserve the right not to select any submitted bid. They are not responsible for costs incurred by bidders to develop proposals. Proposals will be judged on the following criteria.

- **Cost.** Both the total cost and whether overall proposal offers good value will be considered.
- **Reasonableness of Approach.** Does the proposal offer good creative solutions to the evaluation issues presented in the RFP?
- **Dedicated Resources.** Has the bidder shown that they have the resources to provide the services requested within the expected timeframe?
• **Comprehension.** Has the bidder shown that they understand the issues involved and have responded accordingly?
• **Documentation Quality.** Is the proposal itself clear, concise, and well written?
• **Demonstrated Experience.** Has the bidder demonstrated that their firm has the experience and expertise, or the ability to provide subcontractors having the appropriate knowledge, to perform the requested tasks?

**Specific Evaluation Requirements:**
The selected contractor will be required to submit a detailed draft evaluation Work Plan for approval before starting the evaluations. The Plan must include a detailed description for how each task will be performed, and any further recommendations. The proposal should clearly state the methodologies and quality assurance controls that will be employed to conduct this set of evaluations. The Plan may be in two phases, the first for tasks to be completed by July 15, 2010 and the second phase for tasks to be completed later. Evaluations pursuant to an approved phase 1 Plan may begin before a phase 2 Plan is approved.
Request for Proposal

Massachusetts Statewide Education, Marketing, and Outreach Working Coalition

RFP Information & Instructions

ATTACHMENT I

1.0 BACKGROUND

The Massachusetts Statewide Education, Outreach, and Marketing Working Coalition (hereinafter referred to as the “Massachusetts Sponsors”) requests proposals to provide public education, outreach, marketing, and public relations services in support of the Green Communities Act of 2008 (GCA), and the Massachusetts utilities and energy efficiency providers’ three-year energy efficiency plan (the Plan). The proposed contract period is for one full year of services beginning on the date of the contract award with an option to renew.

The Massachusetts Sponsors of this program consists of several utility companies listed below seeking to develop and implement a range of marketing activities that include public education, outreach, and public relations. National Grid will be taking the lead in this RFP to coordinate the solicitation, and results, as well as together with the other Massachusetts Sponsors, select a supplier for the program.

2.0 SPONSOR LIST

- National Grid
- NSTAR Electric & Gas
- Bay State Gas (NiSource)
- Berkshire Gas
- New England Gas
- Unitil
- Northeast Utilities, Western Massachusetts Electric Company

3.0 SCOPE OF WORK

The Massachusetts Sponsors’ overarching priority is to create powerful, engaging, and motivating strategies that will increase Massachusetts customers’ awareness of the benefits of energy efficiency, and will also increase their subsequent actions to reduce usage. These efforts should build on the brand created through the integrated energy efficiency website project and establish that brand as the recognized, reliable source for all things about energy efficiency in Massachusetts. Also, to encourage and facilitate customers’ subsequent participation in energy efficiency programs, and foster behavioral changes that lead to energy savings, the reduction of greenhouse gas emissions, and monetary savings. The bidder will need to create a strategy to
integrate and complement existing energy efficiency programs and individual Sponsor identities. See Attachment 2: Scope of Work for a description of Marketing Services to be provided.

4.0 PAYMENT FOR SERVICES and INVOICING

No up-front payments will be made to vendors. Invoices shall be submitted to each Massachusetts Sponsors on a monthly basis. A minimum 10% of the total invoice amount may be retained until the final project is completed and accepted by the Massachusetts Sponsors. Consultants should identify on the Attachment 3 Bid form, if a payment discount for early invoice payment (e.g. 2% 15, Net 30) is offered. Discounts will be factored into the evaluation of the bids and their acceptance is at Massachusetts Sponsors’ option.

5.0 PROPOSALS SUBMISSION

National Grid is using an electronic software package called Ariba. Ariba Sourcing is an internet application designed to facilitate the collection of business information. You were invited to participate in this online RFP event by National Grid regarding this marketing campaign. All of the relevant RFP information including: Scope of Work, Terms & Conditions and other required documents are contained in this electronic RFP. You are required to submit your proposal response via Ariba, as well as send two hard copies of your proposal as specified in Section 11 below. For more information about Ariba, you may refer to their website at www.ariba.com.

Bidders are invited to prepare a detailed response to this proposal. This response should address all the requirements outlined in the Scope of Work, as well as any additional strategies and creativity regarding how the website will be branded. After review, Massachusetts Sponsors may invite Consultants in to present examples of the firm’s work that demonstrates their capabilities, as well as to provide more details on their plans and budget for the proposed branding of the website. Following the proposal review and any requested presentations, the Massachusetts Sponsors will select a company to provide these services. The successful firm will then be required to develop a detailed Scope of Work in concert with Massachusetts Sponsors. A pre-bid meeting will also take place, as outlined below to answer any questions Consultants may have before submitting their final bid.

6.0 COMPANY INTRODUCTION

In the proposal, Consultants shall provide a letter of introduction and a statement of qualifications, which details the Consultant’s experience, especially with energy efficiency projects. The Consultant’s statements should emphasize their (1) knowledge and understanding of energy efficiency programs, and (2) the requirements of this RFP, including developing a strategy in how we will market our energy efficiency programs on the web site. In addition, provide a description of the legal status of respondent (e.g., sole proprietorship, partnership, limited partnership, joint venture, or corporation) and state of residency. This section should include:

A. Answering the required company information in Ariba.
B. General description of all the services and products your company offers with a brief description of its general history.
C. Discussion of your company’s typical approach to web site development.
D. Discussion of the companies staff to be assigned, and how they will be organized to deliver the services requested in the most efficient and expedient manner. Include a brief discussion of your firm’s internal quality control and review procedures.
E. Include a list of other similar Services contracts in force nationally
F. Provide the name, title, and contact information for three (3) references familiar with respondent’s business organization, finances and operational style. Provide resumes of key individuals in the firm providing the services to the Massachusetts Sponsors.

7.0 PRICING

The Massachusetts Sponsor’s seek to procure Services at the most cost effective rates possible. Consultants must complete and submit Attachment 3: Bid Form. Pricing should be provided as hourly rates for various levels of experience and expertise as noted in the sheet. Consultants shall include personnel names, who will be working on the project, that fall into the various labor categories.

It is essential that Consultants complete the bid form detailing estimated costs, by key program tasks, indicating hourly rates for personnel, travel, total hours and total cost for completing the project. Pricing submitted on the Bid Form Labor Rates Table shall be firm and effective from March 2010 to December 31, 2010. The Massachusetts Sponsors will enter into individual negotiations each subsequent year regarding any potential price increases, which must be justified by the Consultant.

7.0 ASSUMPTIONS & EXCEPTIONS

Consultants should include a description of all assumptions used to develop the response to this RFP, including exceptions to the Terms and Conditions of each Massachusetts Sponsor listed below. Any exceptions submitted by Consultant does not constitute acceptance by any of the Massachusetts Sponsors. Exceptions will be negotiated and agreed to by each Massachusetts Sponsor and will be part of an exclusive contract between the parties, which will be independent of any other associated contract with another Sponsoring organization.

All material submitted, produced, data collected, reports, designs and documentation will become the exclusive property of the Massachusetts Sponsors at the end of the contract. The Consultant may not share program materials, customer data, industry or program participant contact information, etc. unless explicitly authorized by each Massachusetts Sponsors to do so.

8.0 INSURANCE

Please provide a certificate of insurance confirming at least the minimum levels of insurance coverage required by Article 11.0 (Insurance) of National Grid’s Terms and Conditions. A copy of your current insurance certificate is required with your proposal. If you are the chosen supplier, you will be required to include a new certificate stipulating National Grid, its Affiliates
and Subsidiaries as the added insured. In addition, you must also provide insurance coverage to each Massachusetts Sponsor, contracting independently according to their requirements.

### 6.0 TERMS AND CONDITIONS and SPECIMEN AGREEMENT

The successful Consultant’s services shall be provided in accordance with the following terms and conditions from each Massachusetts Sponsor:

- **Attachment 5** – NSTAR’s Requirements Prior to Contract Award
- **Attachment 6** – Cape Light Compact Terms & Conditions.
- **Attachment 7** - Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
- **Attachment 8** - NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials

### 7.0 SAFETY, ENVIRONMENTAL and BACKGROUND CHECK REQUIREMENTS

The successful Consultant’s services shall be provided in accordance with each Massachusetts Sponsor’s Safety Requirements. National Grid’s commercial requirements are as follows:

- Contractor Safety Requirements dated 8/1/08 (**Attachment 9**)
  - You are required to fill out the Safety form in the RFP and submit it with your proposal.
- Contractor Environmental Requirements dated 2/29/08 (**Attachment 10**)
- Contractor Employee Background Check Requirements dated 1/10/08 (**Attachment 11**)
  - You are required to fill out the background Check form in the RFP and return it with your proposal.

### 8.0 PRE-BID INFORMATIONAL MEETING

A pre-bid informational meeting is scheduled for **Friday, January 15, 2010 at 10:00 AM via conference call by National Grid.** 866-561-4997 access # 9674198. **Please dial in to the conference call at the designated time.** At this time, we will present a program overview and answer any final questions you may have regarding this RFP. In the meantime, if you have any specific questions, they should be sent via Ariba. All questions and answers will be posted through Ariba.

### 9.0 EXCEPTIONS AND CLARIFICATIONS

The Consultant agrees to all the provisions contained in this RFP and all enclosed Bid Documents unless exceptions are specifically and clearly listed in the Consultant’s proposal. All exceptions must be listed separately as either commercial or technical in nature and specifically identified as EXCEPTIONS. Consultants preprinted terms and conditions are not considered specific conditions and are considered null and void in their entirety. The Consultant’s proposal will be considered as being in full conformance with all documents, specifications, and
commercial terms included in this RFP unless specific exceptions or clarifications are separately stated and identified in the bid submittal.

Should a Consultant find any ambiguity, discrepancy or omission in the RFP, or should the Consultant have any questions, the Consultant shall notify National Grid via email at the email address shown in Section 10.0 below. Such information must be received at least seven (7) working days prior to the date set forth for receipt of the Proposals in the Invitation to Bid, to afford the National Grid the opportunity to send any instructions or interpretations to other Consultants who have received an Invitation to Bid. The Massachusetts Sponsors will not be responsible for any oral instructions or interpretations.

### 10.0 RFP CONTACT PERSONNEL

Donald J. Pacheco  
Sr. Procurement Agent  
National Grid  
40 Sylvan Rd  
Waltham, MA 02451  
phone: (781)907-3012  
email: don.pacheco@us.ngrid.com

### 11.0 BID SUBMITTAL

11.1 Bids must be submitted via e-mail not later than **5:00 PM Friday, January 29, 2010**. Proposals received after the bid due date and time will not be accepted.

11.2 Consultants shall be responsible for submitting their bid via Ariba.

11.3 In addition to electronic submittal of bids, two (2) original of the proposal must be mailed to Donald J. Pacheco, Sr. Procurement Agent, National Grid, 40 Sylvan Rd, Waltham, MA 02451. The mailed proposals must be postmarked no later than January 29, 2010. The hard copy proposals are for our records only and therefore need only be postmarked by the date above; the Ariba proposals are the Bid of Record.

11.4 All proposals must be properly dated and executed by an authorized representative of the Consultants organization. Failure to provide the required hard copy and electronic version of the proposal or all required information may result in rejection of the proposal.

11.5 Bid security procedures requires that bid information shall not to be shared with, or provided to, any National Grid or Sponsor employee outside the National Grid, or any other outside firm prior to award of contract(s).

11.6 Telecopies (faxes) of proposals will not be accepted.
11.7 All bids will remain active for ninety (90) days, and no bid materials will be returned. Each proposal will be evaluated on technical and commercial merits. All proposals will be opened on or after the due date. The Massachusetts Sponsors are under no obligation to award the work on a single factor, or to award the work at all. All information provided to Consultants as part of the RFP process is considered confidential and shall be maintained as confidential by all Consultants.

11.8 All responses to this RFP, whether or not in compliance with the terms of this RFP, shall be considered unconditional offers by the Consultant, which, if accepted, shall create a binding obligation upon the Consultant. The pricing in any response shall remain valid for one year. Any limited duration offers shall be explicitly noted.

12.0 UNAUTHORIZED DISCLOSURE

12.1 The Massachusetts Sponsors, consider any information provided to Consultants in the course of business to be privileged and confidential between Consultant and the Massachusetts Sponsors. This includes, but is not limited to, written data of any kind, business information, request for quotation, specifications, engineering data and any and all technologies and data either obtained or observed while supplying the commodity/service required by the contract. Unauthorized disclosure of information to third parties by Consultant may lead to cancellation of the contract, loss of future business opportunities and/or the effects of any other remedies which may be available to the Massachusetts Sponsors.

12.2 Consultant’s proposal will be considered as being in full compliance with all documents, specifications, drawings and engineering data included in this RFP unless specific exceptions or clarifications are separately stated.

13.0 NOTICE OF INTENT TO DECLINE

If the Consultant declines to submit a proposal, all RFP documents must be deleted and/or destroyed and a message in Ariba must be submitted to National Grid with a brief explanation as to why your bid will not be submitted.

14.0 LIMITATIONS

This RFP does not commit any Massachusetts Sponsors to award a contract, to pay any costs incurred in the preparation of the proposal, nor to procure or contract for services and or supplies. The Massachusetts Sponsors reserve the right to accept or reject any or all proposals received, or to cancel this RFP in part or in its entirety, if in doing so is in the best interests of the Massachusetts Sponsors.

15.0 RFP DOCUMENTS

This RFP is comprised of the following documents:
• **Attachment 1**: Information and Instructions for Consultants
• **Attachment 2**: Scope of Services
• **Attachment 3**: RFP 303-09 Bid Form
• **Attachment 4**: National Grid Terms & Conditions for Consulting Services, Document 0400 (06/25/09)
• **Attachment 5**: NSTAR’s Requirements Prior to Contract Award
• **Attachment 6**: Cape Light Compact Terms and Conditions
• **Attachment 7**: Northeast Utilities, Western Massachusetts Electric & Connecticut Light & Power Terms & Conditions
• **Attachment 8**: NiSource Corporate Services Company General Services Agreement for Construction, Maintenance, Services, and Materials
• **Attachment 9**: National Grid Contractor Safety Requirements (8/1/08)
• **Attachment 10**: National Grid Environmental Requirements (02/29/08)
• **Attachment 11**: National Grid Background Check Requirements for Contracted Service Providers - Contractor Employee Background Checks, (1/10/08)

16.0 **TENTATIVE SCHEDULE**

The following dates are critical to this RFP.

• Request for Proposal Issued to Consultants 1/6/10
• Pre-Bid Meeting 1/15/10
• Proposals Due 1/29/10
• Hardcopies must be Postmarked by 1/29/10
• Interviews / Discussions with Consultants 2/8/10/2/12/10
• Supplier Award (predicated on successful contract negotiations) 3/1/10
• Begin Contract Negotiation Process 3/1/10 – 3/19/10
Request for Proposal

Massachusetts Statewide Education, Marketing, and Outreach Working Coalition

Scope of Work

January 5, 2010

Introduction
The Sponsors of this program, including Bay State Gas, Berkshire Gas, Cape Light Compact, National Grid USA, NSTAR, New England Gas, Unitil, and Western Massachusetts Electric, seek to develop and implement a range of marketing activities that include public education, outreach, and public relations. The objective is to

- Increase consumer awareness of energy efficiency and its benefits (“Consumers” include residential, low-income, commercial, industrial and municipal customer sectors as well as trade/industry professionals).
- Encourage and facilitate consumers’ subsequent participation in energy efficiency programs
- Foster behavioral changes that lead to energy savings, the reduction of greenhouse gas emissions, and monetary savings.
- Initiate research in coordination with statewide Evaluation, Measurement and Verification (EM&V) contractors, to better understand the unique drivers, demographics, economic parameters, and behavioral differences among residential customers and among various key subsectors of non-residential customers, then design and deliver messaging accordingly.

An effective statewide education and marketing plan is central to the statewide three-year plan, and will help transform markets for energy efficiency. The table below lays out the market size for this campaign:

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Number of Residential Consumers</th>
<th>Number of Commercial, Industrial, and Municipal Consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric</td>
<td>2,642,144</td>
<td>392,784</td>
</tr>
<tr>
<td>Gas</td>
<td>1,361,470</td>
<td>141,643</td>
</tr>
</tbody>
</table>
Program Benefits
The Sponsors’ expect this public energy efficiency campaign to:

- Use messaging that clearly describes for residential and the various non-residential customer segments the benefits and importance of energy efficiency
- Reach the maximum number of consumers possible
- Market to differentiated consumer types and communities throughout the state (including communities where English is not the primary language)
- Utilize multiple media (e.g. Internet, social media, bill inserts, television, radio, billboards, public transit, trade, business, and professional associations), choosing those that are most effective for the targeted audiences
- Blend statewide and program marketing strategies together to achieve deeper and broader savings.
- Carry the value proposition and look and feel from the statewide website into other marketing
- Recognize that commercial and industrial customers respond differently to various channels used in traditional marketing. For instance C&I programs rely heavily on personal business contacts through PA key account managers for their large managed accounts and use other cross channels for their mid- non-managed commercial accounts. These would include trade allies and other design professionals engaged in promoting better building design and construction practices.

Program Strategy
The strategies and messages developed for statewide energy efficiency education, outreach and marketing will set the stage for efforts across the Commonwealth, including ongoing program marketing. Program marketing will be consistent with the statewide efforts and the statewide efforts will complement program marketing wherever possible, to leverage program and individual Sponsors’ efforts.

The education, outreach, and marketing efforts should move consumers from awareness to action.

Program Objectives
To realize the potential for public education, community outreach, and marketing, the Sponsors have identified the following steps in the process:

- Identify consumers’ values related to energy efficiency, what will motivate them to take action, and whether there are any barriers to taking action. These values are different in the two markets of residential and commercial customers. For instance commercial customers respond to messaging that targets improvements in their business environment as it relates to energy cost containments and reductions, enhancing their ability to compete more effectively through productivity improvements, to messaging that enables their ability to address investments in energy efficiency in financial terms, to actions that promote thermal and visual comfort in their buildings.
• Develop and test tactics to bridge the gap between awareness and action
• Make public education a priority and provide information that clearly outlines the benefits of energy efficiency and the value of going beyond simple actions to deeper savings
• Encourage behavioral changes that will conserve energy, manage costs, and reduce greenhouse gas emissions.
• Broaden awareness of available resources and actions
• As requested, support targeted PA efforts to develop partnerships with local community-based organizations, as potential allies to increase the cost-effective delivery of comprehensive energy efficiency benefits close to home
• Maximize the number of individuals, organizations, and businesses that take action to reduce energy use

Scope of Work

The Sponsors’ overarching priority is to create powerful, engaging, and motivating strategies that will increase Massachusetts consumer and business awareness of the benefits of energy efficiency and will also increase their subsequent actions to reduce usage, primarily through the sponsors’ available energy efficiency programs. These efforts should build on the brand created through the integrated energy efficiency website project and establish that brand as the recognized, reliable source for all things about energy efficiency in Massachusetts. The bidder will need to create a strategy to integrate and complement existing energy efficiency programs and individual Sponsor identities and facilitate consumers’ seamless transition from statewide to individualized programs. The strategies will take into account the unique motivational differences between residential and the various subsets of non-residential customers. While these actions may include commonly recognized multi channel campaigns for residential customers, such as direct response, telemarketing, bill inserts among others, it is expected that the bidders will engage in primary research to identify the most effective touch points for non-residential customer targets, sectors and motivations. In addition it will be important that the different tactics used for these sectors will be measurable so that feedback will inform changes to deployment of the marketing and communication campaigns.

Consultant Responsibilities:

The Sponsors request proposals from firms that can plan and execute an integrated education, outreach and marketing strategy. The successful bidder will develop an overarching program to submit to the Sponsors for approval prior to implementation. Then, as part of a collaborative effort, the successful bidder, and any prospective sub-contractors, will be expected to provide at least the following services:

Task 1  Gathering and Analysis of Market Information

This task includes:
• Identification of baseline residential and business consumer awareness of energy efficiency and its benefits in the Commonwealth of Massachusetts.
• Primary and secondary market research to identify distinguishing residential and business consumer needs and characteristics (e.g., demographics, building stock, socioeconomic status, and motivating values) that will enable audience segmentation and tailored approaches for reaching these audiences most effectively.
• Tracking, monitoring, and evaluation of subsequent initiatives to determine campaign effectiveness and ROI of specific tactics and strategies implemented.

In gathering and analyzing market information, the marketing contractor will need to coordinate with several statewide EM&V contractors who will also be involved in this function. This RFP distinguishes between three different categories of information gathering and analysis activities. For each category the role of the marketing contractor will be somewhat different, and will require different types of coordination with EM&V contractors.

1. **Real-time tracking of market response.** This category includes activities such as tracking web-site statistics, ad responses, or other forms of data that can be monitored in real time. The marketing contractor will have primary responsibility for this set of activities.

2. **Primary market research.** This category includes collection and analysis of market data that cannot be tracked in real time, such as surveys, focus groups, and interviews. The marketing contractor will share responsibility for these activities with the statewide EM&V contractors, and will need to coordinate with those contractors. EM&V contractors will be conducting a substantial amount of on-site visits with customers, which the marketing contractor may be able to leverage in order to gain efficiencies. In developing their cost proposals, bidders responding to this RFP should discuss the specific assumptions they have made regarding the scope of primary market research activities they will perform.

3. **Evaluation of marketing effectiveness.** The statewide EM&V contractors will have primary responsibility for this function. Exceptions may be made (i.e., the marketing contractor may have some role) for the short-term assessment of the effectiveness of specific campaigns where particularly fast turnaround is needed, or in cases where having the marketing contractor perform the work would offer particular economies or efficiencies.

**Task 2 Statewide Brand Building and Messaging**

---

1 Under a new administrative framework for EM&V developed in 2009, virtually all EM&V activities in Massachusetts are to be performed by one of six different statewide contractors teams, each covering a specific Research Area and each operating under a three-year contract. Five of these Research Areas are oriented to specific target markets (Residential Retrofit, Residential Lighting and Appliances, Residential New Construction, Large C&I, and Small C&I) and the last one covers Special/Cross-Cutting studies. The EM&V contractor for each market-oriented Research Area is charged with conducting market assessment activities specific to that market. Evaluation of the effectiveness of umbrella marketing activities (i.e., those not tied to specific programs) is one of the EM&V functions included in the Special/Cross-Cutting Research Area. RFPs to select the six Research Area EM & V contractors are on roughly the same timeline as this RFP.
• Creation of collateral and support materials, including creative concepts (e.g., themes, slogans, design, layout, copy writing, graphics) for attractive, plain language publications such as brochures, tip strips, posters and other printed materials

• Development and execution of integrated media strategy, including a mass media (television, radio, print, “out of home” [e.g. billboards, bus cards, subway platform posters], web, social media, organic and paid online search) communications plan, including creative development, production and placement

• Creation, maintenance, storage and transport of exhibit and display materials (including maintenance, storage and transport), and educational materials branded with campaign messages

• All elements of the campaign must consider the following:
  ▪ Materials must be appropriate for widely diverse consumer groups in the Commonwealth as well as specific targeted groups.
  ▪ The influence and importance of trade allies on program success.
  ▪ Language must be simple, non-technical, and accessible to laypersons (while understanding motivational distinctions between diverse customer classes).
  ▪ Materials must be delivered, where applicable, in large print format for elderly and vision-impaired consumers and translated by the bidder, or a subcontractor, into additional languages (e.g., Spanish, Portuguese, Cantonese) for non-English speaking target audiences.

**Task 3  Public Relations**

• Development and execution of public relations plan designed to extend the reach of priority messages

• Outreach strategy, that may include geographic and/or community-based partners, outreach opportunities such as grassroots outreach events and presentations (e.g., fairs and home shows, business or trade conferences, etc.), participation in special events, sponsorships/advertisements at arenas and sporting venues (where feasible), community events, and newspaper supplements

**Task 4  Community-based Outreach and Education**

• Develop tasks outlined above with special attention to incorporating centers of influence in local communities or business subsectors when research or experience dictates that incremental efficiency can be leveraged through such efforts. (This may include not-for-profits, chambers of commerce, community-based organizations, service organizations and local governments, etc.). Include an emphasis on training and leadership development in the business community to identify and encourage core behavioral change in the business environment.
• Identify potential partner organizations as well as opportunities for joint/coordinated outreach and education through such efforts that can produce the reasonable promise of more or deeper savings in communities or buildings.

• Develop and train business spokespeople who have had a good experience and proven savings from using EE programs for public outreach. Written, auditory and video testimonials can be used in all promotional materials locally and state-wide. “Program Ambassadors” can also attend local and state events or speak to media and share experiences and encourage participation on a business peer-to-peer level.

Task 5 Other Contractor Responsibilities

In addition to completing the tasks above, the selected marketing contractor will need to accomplish the following:

• From campaign tactics and initiatives performed, perform appropriate consumer facilitation to sponsor partner programs (i.e., phone, Web, etc.)

• Maintain weekly communications with the Sponsors and their contractors to ensure that statewide and program needs are being met and to identify additional marketing and public relations opportunities.

• Seek sponsor approval before undertaking any significant planning, development or implementation tasks.

• Attend scheduled Working Group meetings as requested by the Sponsors.

• Attend selected conferences as directed by Sponsors.

• Develop, produce and execute electronic and print mass mailings as needed.

• Provide monthly billing to each sponsor within 15 days of the close of the month. Each sponsor will be billed individually, and each bill will detail both joint and any sponsor specific charges. The Sponsors will establish a billing allocation system during contract negotiations.

• As directed by the Sponsors, review campaigns and recommend changes for marketing efforts for 2011 and 2012.
Evaluations Process

Successful proposals should include the following elements:

1. A one-year (12 months) draft education, outreach and marketing plan and schedule. This plan shall include the full mix of media types as described above, as well as others that the respondent may suggest, for the different consumer segments - residential, low-income, and the various commercial/industrial segments.

2. Completed bid form detailing estimated costs, by key program tasks, on a time and material basis, indicating hourly rates for personnel, travel, total hours and total cost for completing the project.

3. Description of capabilities and results achieved in behavior changes, social media, market research and segmentation, including examples of prior work.

4. Experience marketing energy efficiency programs, if any.

5. A description of the personnel who would be assigned to the project and their specific project responsibilities including:
   i. A project staff organization chart
   ii. Statement of qualifications of the bidding firm and team members
   iii. Statement of qualifications of any proposed sub-contractors and their assigned project personnel

6. References specific to the proposal submitted.

7. Explanation of data security measures employed by the bidder regarding confidential consumer information that may be shared with firm (consumer name and one of the following: social security number or financial account number or utility account number) and confirmation that security measures comply with applicable federal, state laws covering protection of Personal Information of residents of the applicable state. (In Massachusetts the applicable Regulation is 201 CMR 17.00 - STANDARDS FOR THE PROTECTION OF PERSONAL INFORMATION OF RESIDENTS OF THE COMMONWEALTH [Effective date of Mass Regulation is 3/1/10].)

Proposals are limited to 15 pages of text describing the bidder’s approach and draft plan.

Selection of the successful proposal will be made by the Sponsors based upon the bidder’s:

1. Responsiveness to work scope and program needs
2. Proven ability to meet schedules
3. Cost effectiveness
4. Comprehensiveness
5. Relevant experience
6. Oral Presentation, if requested

After review, Sponsors may invite selected bidders to present examples of the firm’s work that demonstrate their capabilities as well as to provide more details on their plans and budget for the campaign. This meeting will be scheduled, if needed, following the review of proposals received in response to this RFP. Following the proposal review and any requested presentations, the
Sponsors will select a company to provide these services. The successful firm will then be required to develop a detailed scope of work in concert with Sponsors. The detailed scope of work will address the development and the implementation of the education, outreach and marketing plan and will reflect the expected results. This scope of work will be included in the contract with the selected firm.

The Sponsors reserve the right to refuse any proposal or to negotiate the specifics of any submitted proposal.
ATTACHMENT I

Excerpt from 2010 – 2012 Massachusetts Joint Statewide Three-Year Energy Efficiency Plan

G. Special Public Education and Action Activities

1. Introduction
In order to achieve the aggressive goals set forth in this Plan, the Program Administrators will undertake a comprehensive energy efficiency public education and awareness outreach campaign. The core goals of the Program Administrators in any public education and promotion campaign include: reaching the maximum level of residential and business customers possible; providing messages that are not overly technical and that clearly describe the benefits of energy efficiency; exploring targeted marketing to unique or specific communities throughout the state (including communities where English is not the primary language); utilizing diverse media (e.g., internet, bill inserts, television, radio, billboards, public transit) to disseminate consistent and clear messages; and ensuring that the various strategies work together to ultimately achieve deeper and broader savings. The Program Administrators are aware that, in addition to their efforts, the Commonwealth seeks to promote energy efficiency and the Program Administrators will look to coordinate activities with applicable governmental initiatives, such as the efforts contemplated under Section 108 of the Green Communities Act, which provides for a collaborative pilot effort by the DOER and the University of Massachusetts at Boston to establish an educational outreach program, that includes programs to be provided at community colleges and community centers. The Program Administrators will look to the DOER for further guidance with respect to this pilot effort. The Program Administrators will also continue to work with local schools, including technical vocational high schools and community colleges, to support comprehensive standards-based education in order to promote a more energy-conscious and educated society. These efforts are discussed in more detail below.

2. Updated Statewide Education and Outreach Efforts
During the summer of 2009, the Program Administrators commenced collaborative efforts with the DOER to address public education and participation-oriented efforts in more detail, with a particular focus on statewide efforts. The overall purpose of energy efficiency education, community outreach, and marketing efforts will be to increase residential and business customer awareness and encourage customers’ subsequent participation in energy efficiency programs, while fostering behavioral changes that lead to energy savings, the reduction of greenhouse gas emissions, and increased customer savings. A successful and effective statewide education and marketing plan is fundamental for the Statewide three-year Plan, and will play an important role in achieving the goal of transforming markets for energy efficiency. In addition to the current program level education and marketing efforts, the Program Administrators will undertake the development of a comprehensive statewide energy efficiency campaign in order to achieve the savings goals proposed in this updated Plan. The Program Administrators will develop strategies to deliver this campaign to targeted
customer profiles. While much of the educational focus has been on residential markets, the Program Administrators will also consider specific strategies targeting the business sector. Ultimately, the educational and marketing effort should move residential and business customers through a process of awareness, attitude change, and finally action. In order to realize their public education, community outreach, and marketing potential, the Program Administrators have identified the following goals:

• Prioritizing public education.

• Providing information that clearly outlines the benefits of energy efficiency and a path to a Zero Net Energy future.

• Broadening awareness of available resources and actions to all potential audiences, including residential and business customers.

• Identifying and understanding the barriers to action, and developing potential motivators to bridge the gap between awareness and action.

• Communicating with the general public and with targeted audiences in the most effective ways possible to reach those audiences.

• Maximizing the number of individuals, organizations, and businesses that take action to reduce their energy consumption.

• Educating customers on the benefits of, and ways to achieve, deeper savings through deep energy retrofits.

• Educating service providers and equipment suppliers on the benefits of, and ways to deliver energy efficient products and services to achieve savings across their broader customer base.

• Encouraging behavioral change to conserve energy, save money, and reduce greenhouse gas emissions.

The Program Administrators will expand and develop outreach strategies while creating seamless customer experiences that offer integrated portfolios of energy efficiency information and program options that are clear, relevant to the customer, and available to all Massachusetts residents, businesses, and other organizations. Some of the expanded statewide energy efficiency efforts currently underway that will assist in implementing this education and marketing plan include the following:

i. Education & Training
The Program Administrators continue to participate in existing and burgeoning efforts to create a standardized energy curriculum where one does not already exist. Some Program Administrators currently offer curriculum and educational information and guidance to schools; these efforts will be expanded to Program Administrators through collaboration with
the DOER, Massachusetts Department of Education, the University of Massachusetts, and with local community colleges to create and disseminate additional educational curriculum. The Program Administrators are considering developing a standard introduction to energy and energy efficiency that will be common to all education and training efforts. Further, the Program Administrators will continue to support ongoing efforts to reach targeted audiences (e.g., teachers, schools, contractors, architects, realtors, building inspectors).

The Program Administrators have learned over the years that trade ally relationships, events, and training sessions prove to be a critical and effective means of promoting energy efficiency. Thus, the Program Administrators will expand the promotion of programs through various PA-sponsored training events, trade shows, and trade ally events in conjunction with large-scale, statewide GasNetworks training seminars, which to date have proven very successful. For example, over 360 HVAC professionals attended the September 24, 2009 conference in Randolph, which featured a myriad of expert trainers and speakers who explored subjects such as high efficiency natural gas heating equipment and installation practices, hydronic heating, on demand water heating, and condensing and modulating boilers, and which also included 25 equipment manufacturers and suppliers who displayed new products and technology, and a trade show. To date, GasNetworks has provided expert training to over 7,300 HVAC contractors. The Program Administrators recently established an education and training center in Fitchburg. In this “hands-on” classroom environment, contractors experienced in energy efficiency installations are trained in the proper techniques of air sealing and insulation installation in order to ensure consistency across service providers. The Program Administrators have plans to open a second center in Springfield. In addition, the MassSAVE team is currently creating a comprehensive education package designed as a tool to inform all residents about how to contemplate energy savings in their homes over the long-term, and to direct them on a path of energy efficiency that could lead to Zero Net Energy.

Moreover, the Program Administrators are joining with the Massachusetts Energy Efficiency Partnership (“MAEEP”) to present US DOE-sponsored energy efficiency workshops on various technologies. The Program Administrators have also joined with the Northeast Energy Efficiency Council (“NEEC”) Building Operator Certification (“BOC”) regional training program that focuses on how O&M procedures and processes impact energy costs. The Program Administrators also offer Advanced Building™ (“AB”) seminars as a suite of technical and training resources to improve the way buildings are designed, built and used. Using whole building patterns, design process tools, and education, this AB effort provides designers with the resources to incorporate integrated design strategies on their next project to reduce energy usage and improve indoor environmental quality. In addition, the Program Administrators will work with the Massachusetts Clean Energy Center (“CEC”), a quasi-public agency that serves as a clearinghouse and support center for the clean energy sector and focuses in part on workforce development and training.

ii. Energy Efficiency “Brands”

Building upon successful regional and statewide energy efficiency brands, the Program Administrators are currently working towards developing a complementary, statewide energy efficiency brand (or brands) with the expectation that once adopted, it will have created a
clear, consistent, and recognizable message about the individual and social value of energy efficiency. This “branding” will serve as the foundation for all residential and business customer information on energy efficiency products and incentive programs, and will encourage customers to strive for deeper savings. In addition, as the electric and gas programs become more integrated and “fuel blind,” joint branding will allow the Program Administrators to further pool resources and create targeted educational and marketing collateral materials that will provide residential and business customers with an increased understanding of the full array of energy efficiency options available in Massachusetts.

iii. Mass Media
Newspaper articles, radio, and television news reports highlighting energy efficiency programs have consistently increased activity in the relevant spotlighted program. Consequently, the Program Administrators have utilized limited mass media advertising to educate and promote their energy efficiency program offerings. As the branding efforts described above are finalized, a larger scale, more frequent, mass media advertising plan will be implemented to create the desired effect of increased and broader customer awareness for available programs, while striving to encourage deeper customer savings. Moreover, the ability to promote a common, integrated website to a mass market will allow for further economies of scale and, in turn, more frequent, cost-effective mass media advertising in order to increase customer awareness.

iv. Community Based Outreach/Social Education and Marketing
The Program Administrators see an important opportunity to expand and develop relationships with community organizations that have existing influential relationships within cities, towns, regions, and demographic and special interest groups. Some of these organizations have already promoted efficiency to their members, while others have strong networks but have not yet focused on energy issues. The Program Administrators will seek to develop enhanced strategies to reach out to non-English speaking customers, low-income customers, and groups that have historically low participation, and explore increased efforts with representative community organizations. The potential to leverage community-based organizations to educate and promote energy efficiency actions is significant and will be developed in the “community mobilization initiatives” being launched as pilot programs. The Program Administrators can learn from, and build upon, successful programs such as the Marshfield Energy Challenge (NSTAR), the MAPS Pilot which included outreach to the Portuguese-speaking community (NSTAR), and Energy Smack Down (National Grid/NSTAR), and will take note of positive developments experienced with the Western Mass Saves (WMECO) launch in August. The lessons learned from these community outreach programs will be the catalyst to the creation of future similar educational outreach efforts throughout the Commonwealth.

The Program Administrators will also explore a new pilot collaboration with community-based organizations that have long-standing relationships with homeowners, tenants and small businesses in economically marginalized communities, to assess the feasibility of a “community mobilization outreach model” that implements a neighborhood approach to energy efficiency service. This model has the potential to offer effective and appropriate
energy education to underserved communities, including limited English speakers and economically marginalized groups. The Program Administrators will also explore how “word of mouth” contact can be tapped to heighten motivation towards energy efficiency action. The Program Administrators will explore offering “incentives” for referrals that lead to other customers participating in energy efficiency programs.

v. Internet—“Integrated Website”

The Program Administrators are engaged in developing a single point of entry for all residential and business audiences through a new integrated website. The Internet offers a powerful, cost-effective platform to provide energy efficiency information, promote programs, and inspire action. The integrated website will provide a point of access to a multitude of residential and commercial energy efficiency programs in a user-friendly environment. The statewide “brands” will be prominently featured throughout the website. The increase in program participation levels over time indicates that the traditional education, outreach, and marketing efforts (such as direct mail, ethnic outreach, radio and print media, bill inserts, trade ally relationships, and training events, sponsorships, educational seminars, and program brochures) have been successful to a significant degree. In order to create even broader energy efficiency public awareness, however, and establish even deeper participation in the programs offered, additional methods of market defining techniques and barrier identification should be implemented, and the Program Administrators believe that an integrated website provides a distinct opportunity to reach a broader audience, increase energy efficiency awareness, and encourage deeper savings.

vi. Behavioral Research

Program Administrators understand that identifying the motivational factors that cause residential and business customers to take action and participate in programs is important in developing energy efficiency programs capable of achieving long-term sustainable success. Equally important is the ability to identify those barriers that could potentially block a motivated customer from participating in energy efficiency programs. The Program Administrators will research successful motivational actions that have worked in other states, determining which motivational strategies have succeeded, and which might be best suited for application with the Plan. Additionally, the Program Administrators will sponsor primary market research in Massachusetts in order to answer critical questions regarding behavior related to energy efficiency. The Program Administrators will solicit input, through the Council and its Consultants, on existing barriers involving non-English speaking groups and members of communities in the state which have historically low rates of participation in energy efficiency programs. The Program Administrators will then incorporate the successful methods determined by the research in Massachusetts and other states into their education, outreach, and marketing programs.

One successful organization upon whose work the Program Administrators would like to build is Positive Energy, a corporation that is committed to persuading customers to save energy through a combination of technology, analytic direct marketing, and behavioral science. Several Program Administrators have engaged the services of Positive Energy to “rate” customers’ energy usage in comparison to their neighbors. This “normative
information” approach has been successful in California and will be considered for implementation in Massachusetts. In addition, focus groups, such as the recent series of meetings organized as part of the MassSAVE RCS effort, will be expanded to include all market segments, including residential, C&I, and low-income, to garner as much customer information as possible to further identify barriers to participation and to assist the Program Administrators in formulating outreach efforts.

vii. Segmentation Research
Recently, through the use of the Warren Group Report, the Program Administrators have initiated an effort to better understand the demographics in each service territory. The Warren Group Report identifies the population of single homes, multi-family properties, and low-income residences that exist in each of the service areas. Other internal and external resources to identify the characteristics and demographics of customer populations—such as information that can be provided by local community groups—will be examined to assist in further identifying consumption, motivations, and barriers to positive action. Such reports and information will be used to identify specific customer profiles and will facilitate targeted outreach to these groups.

viii. Message Development
In creating energy efficiency messages, both high level and targeted, the ultimate goal is to have customers understand the many benefits of energy efficiency and then take action. Further, to engage customers who have already implemented energy efficiency measures, the message will include and highlight the additional benefits and importance of going “deeper” by implementing additional energy efficiency measures, such as deep retrofits. Traditional messages focusing on self interest (“save money”), the environment (“help the planet”), and social responsibility (“do your part”) used in previous education and marketing campaigns have been effective to an important degree, but new messages need to be developed to help foster broader and deeper participation. In addition to the overall message, the Program Administrators will also develop messaging at the program level and at the sector level, in order to engage varied customers and other important market actors (contractors, equipment suppliers, opinion leaders) with differing motivations. The Program Administrators plan to conduct qualitative and quantitative research to identify what customers believe to be conservation and energy efficiency behaviors, and to determine what motivates customers to practice more energy efficient behavior. This research will lead to the creation of a “call to action” for the residents and businesses of Massachusetts.

ix. Maintenance of Complementary Individual Efforts
While working diligently on the statewide public education efforts, the Program Administrators will also continue to maintain customer awareness, satisfaction, and participation goals. As the Program Administrators have noted in Section II.A.7.iii, consistency is a high priority and the Program Administrators will also continue outreach efforts utilizing customer representatives and company-specific efforts that complement and are consistent with statewide efforts.

x. Next Steps and Conclusion
The Program Administrators will be optimizing the budget for the statewide education action plan, and will continue to collaborate with the DOER, the Council, and its Consultants, and other interested parties as the budget is developed. The Program Administrators will explore how the rules governing cost-effectiveness could present challenges to this effort, despite the importance of the education and outreach campaign to the saving goals in the Plan, and are confident that these issues can be resolved and that overall program cost-effectiveness, even including increased public education and marketing costs, will remain robust. Additionally, the Program Administrators will be developing and issuing RFPs for partners in some or all of the following areas: market research; segmentation research; message development; community-based education; and integrated education/behavior change campaigns. As noted in the following “Evaluation and Monitoring Section,” applicable RFPs (e.g. behavioral research) will be addressed under the Special Cross-Sector Studies area.

By way of example, the Program Administrators are reviewing including outreach efforts in the “hard to measure” category. See D.P.U. 08-50-A, at 24-31; see also G.L.c.25, §21(b)(2)(iv)(I). The DOER has noted in its memorandum titled Guidance on the Impact of 08-50 on Public Education Efforts for Energy Efficiency, dated June 30, 2009, that there is clear regulatory support to develop and implement public education programs on energy efficiency. The DOER specifically stated that market research to assess, inter alia, customer attitudes is allowed and strongly encouraged within the scope of education efforts.

The ultimate goal of these educational, community outreach, and marketing efforts is to develop a broad system of communication with Massachusetts citizens and businesses and deliver comprehensive energy efficiency programs. Through an array of effective messages and valuable information resources, the Program Administrators will engage with a large portion of the population to assist in delivering value to residential and business customers and achieving the aggressive energy efficiency goals set forth in this Plan.
PROJECT: The term “Project” refers to the Work as described in separate Purchase Orders, Project Authorizations, Service Authorizations, Work Authorizations, or as otherwise described in an exhibit, individually referred to herein as “Purchase Orders.”

EFFECTIVE DATE:

TERM: The term of this General Services Agreement and the attached General Terms and Conditions (collectively hereinafter the “Agreement”) shall be from the Effective Date to ____________ unless terminated earlier as provided herein. This Agreement between NiSource Corporate Services Company (“Owner”) and the contractor (“Contractor”) identified above and as further identified in Article 1(e) is made in connection with the Work as it is defined in the applicable Purchase Orders issued by Owner. Any references to Owner shall include those entities and/or respective Affiliates that issue Purchase Orders for the performance of Work for a specific Project.

Unless such terms and conditions are expressly excluded by the applicable Purchase Order in writing by an Authorized Representative of Owner, this Agreement establishes the terms and conditions under which Owner may purchase Work from Contractor, which purchases shall be evidenced by the delivery by Owner to Contractor of Purchase Orders. Contractor's standard terms and conditions and any other commercial terms and conditions shown on any proposal or on any other document submitted by Contractor to Owner are void, unless specifically accepted in writing by an Authorized Representative of Owner. Any preprinted standard terms and conditions on the reverse side of Owner’s Purchase Order are not applicable whenever such a Purchase Order is issued pursuant to this Agreement. This is not a requirements contract. Owner reserves the right to use its own resources and to purchase the same or similar Work from third parties.

Contractor’s full compensation (“Contract Sum”) for its Work shall be based on pricing agreed to and specified in the Purchase Order. Contractor shall complete the Work in conformance with the schedule requirements stated in the Purchase Order, and such Work shall be satisfactorily and substantially completed by the date of Substantial Completion.

Contractor shall not hold, nor attempt to hold, Owner or any Affiliate liable for the acts, omissions, or breaches of any other Affiliate. No breach or default of this Agreement by an Affiliate shall constitute a breach or default of this Agreement by another Affiliate. For purposes of determining the rights and obligations of each party hereunder, Contractor and each Affiliate shall be considered to have contracts separate and apart from any contract between Contractor and any other Affiliate.

The Contract Documents listed in order of precedence, shall consist of the following documents: (a) the Purchase Order(s); (b) this Agreement; and (c) any Schedules. Owner shall decide any inconsistency between drawings and specifications or among Contract Documents of equal precedence. All Contract Documents whether prepared by Contractor or others shall be the property of Owner. Notwithstanding anything in this Agreement to the contrary, if the completion dates of any Purchase Order extend beyond the term of this Agreement, this Agreement shall continue to apply to all such Purchase Orders until the related Project is completed to the satisfaction of the Owner.

NISOURCE CORPORATE SERVICES COMPANY

Signature: 
Name: Timothy J. Tokish, Jr. (print or type)
Title: VP, Supply Chain
Date Signed: 

CONTRACTOR

Signature: 
Name: 
Title: 
Date Signed: 

Columbia Gas of Massachusetts  
Attachment E-1(b), Page 1 of 22
# GENERAL TERMS AND CONDITIONS

**FOR THE NISOURCE CORPORATE SERVICES COMPANY GENERAL SERVICES AGREEMENT**

**FOR CONSTRUCTION, MAINTENANCE, SERVICES, AND MATERIALS**

## TABLE OF CONTENTS

1. DEFINITIONS ................................................................................................................................................................................ 1
2. GOODS AND SERVICES ............................................................................................................................................................. 2
3. INSURANCE .................................................................................................................................................................................. 3
4. INDEMNIFICATION ..................................................................................................................................................................... 5
5. PROJECT SCHEDULING, FORECASTING AND REPORTING ............................................................................................. 6
6. CHANGE ORDERS ....................................................................................................................................................................... 6
7. CLAIMS ..................................................................................................................................................................................... 6
8. ADMINISTRATION .................................................................................................................................................................... 7
9. CONTRACTOR’S DRAWINGS; SAMPLES ................................................................................................................................ 7
10. WARRANTY ........................................................................................................................................................................ 7
11. CONDITIONS OF PAYMENT ...................................................................................................................................................... 7
12. RISK OF LOSS/WARRANTY OF TITLE ................................................................................................................................... 8
13. CONTRACTOR’S DEFAULT AND OWNER’S REMEDIES ................................................................................................ 9
14. TERMINATION ......................................................................................................................................................................... 9
15. NOTICES ................................................................................................................................................................................. 9
16. DISPUTE RESOLUTION ............................................................................................................................................................ 10
17. HAZARDOUS MATERIALS ...................................................................................................................................................... 10
18. AGENCY PROVISION FOR MANIFESTS .................................................................................................................................. 11
19. SAFETY PRECAUTIONS AND PROGRAMS ......................................................................................................................... 11
20. UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL BUSINESS CONCERNS OWNED AND CONTROLLED BY SOCIALLY AND ECONOMICALLY DISADVANTAGED INDIVIDUALS (FOR PROJECTS INVOLVING WORK PERFORMED FOR NORTHERN INDIANA PUBLIC SERVICE COMPANY (NIPSCO)) ........................................................................................................ 12
21. NONDISCRIMINATION/EQUAL OPPORTUNITY ...................................................................................................................... 13
22. RIGHT TO AUDIT AND INSPECT ........................................................................................................................................ 13
23. DELIVERY AND RETENTION OF DOCUMENTATION ........................................................................................................ 14
24. CONFIDENTIAL INFORMATION ............................................................................................................................................. 14
25. OWNERSHIP OF WORK PRODUCT ...................................................................................................................................... 15
26. TAXES ..................................................................................................................................................................................... 15
27. MISCELLANEOUS ................................................................................................................................................................. 16
1. DEFINITIONS.

(a) “AFFILIATE” means those direct or indirect subsidiaries of NiSource, Inc. that have authority to issue Purchase Orders.

(b) “AUTHORIZED REPRESENTATIVES” shall refer to the individuals listed in Article 15, Notices, or as indicated in a Purchase Order as applicable for a Project.

(c) “CHANGE ORDER” is a written document signed by Authorized Representatives of the parties authorizing changes to the Work.

(d) “CONFIDENTIAL INFORMATION” means any and all data, documentation, methods, processes, materials and all other information relating to the past, present and future business of Owner and its Affiliates. Confidential Information also includes all information owned by customers, suppliers, or other third parties to whom Owner or its Affiliates owe an obligation of confidentiality. Confidential Information also includes all Work Product (as that term is defined in Article 25 hereof). Confidential Information does not include any information that is publicly available or becomes publicly available through no breach of this Agreement by Contractor, its Subcontractors or its employees or information that Contractor can show, by written records, was known to Contractor prior to the date of this Agreement.

(e) “CONTRACTOR” shall mean all principals, officers, employees, agents or consultants of Contractor set forth on page 1 of this Agreement and shall include all suppliers and Subcontractors Contractor may employ or use in the performance of Work.

(f) “CONTRACTOR’S DESIGNATED REPRESENTATIVE” shall mean Contractor’s representative, or its duly Authorized Representative, who will provide the general administration of this Agreement for specific Projects on behalf of Contractor and shall be Contractor’s field representative in all matters relating to this Agreement, except as may be otherwise provided herein. If no Contractor’s Designated Representative is named in the Purchase Order, the Contractor’s Designated Representative shall be Contractor’s representative to whom the Purchase Order is addressed. Contractor may change its Designated Representative at any time. However, a fully qualified replacement must be ready to assume responsibility for Contractor’s Designated Representative and is subject to prior approval of Owner’s Designated Representative, which shall not be unreasonably withheld.

(g) “CONTROVERSY” is any dispute, which arises under this Agreement.

(h) “DEFECTIVE WORK” is defined as any Work not in conformity with the Contract Documents for the specified Project.

(i) “ENVIRONMENTAL REQUIREMENTS” means any and all federal, state or local laws or regulations applicable to the Work or the Site at which the Work shall be performed and which govern, generally, the handling, release, disposal, or use of any substance which adversely affects or has the potential to affect human health and the environment. Such Environmental Requirements include the following (as amended): Toxic Substances Control Act (TSCA), 15 U.S.C. 2601, et seq.; the Federal Water Pollution Control Act, 33 U.S.C. 1251, et seq.; the Oil Pollution Act of 1990, 33 U.S.C. 2701, et seq.; the Safe Drinking Water Act, 42 U.S.C. 300f, et seq.; the Solid Waste Disposal Act, 42 U.S.C. 6901, et seq.; the Clean Air Act, 42 U.S.C. 7401, et seq.; the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601, et seq.; the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. 11001, et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. 1801, et seq.; and state or local laws or regulations of similar content or otherwise pertaining to the environment.

(j) “FINAL COMPLETION” shall mean the date for completion of the specific Project, including any punchlist work, listed in the Purchase Order or Schedule for such specific Project. In the event of a conflict between the date of Final Completion listed in the Purchase Order and the Schedule for a specific Project, the date listed in the Schedule shall govern.

(k) “HAZARDOUS MATERIALS” shall include any materials regulated by Environmental Requirements.

(l) “INCLUDING” shall mean “including, without limitation.”

(m) “OWNER DELAY” is any delay during the execution of the Work caused by (i) any act, omission, or neglect of Owner or any Separate Contractor; (ii) changes ordered in the Work not due to Contractor’s fault; (iii) fire not caused by Contractor; (iv) unusual delay in transportation not caused by Contractor; (v) adverse weather conditions not reasonably anticipated; or (vi) any other cause which Owner reasonably determines may justify the delay.

(n) “OWNER’S DESIGNATED REPRESENTATIVE” shall mean Owner’s representative, or its duly Authorized Representative, who will provide the general administration of this Agreement for specific Projects on behalf of Owner and shall be Owner’s field representative in all matters related to this Agreement, including keeping Owner’s procurement personnel informed at all times of the adequacy of Contractor’s performance and progress, except as
may be otherwise provided herein. Owner may, in its sole discretion, change its Designated Representative at any time or from time to time, and shall promptly notify Contractor, in writing, of any such change.

(o) “SAFETY AND HEALTH REQUIREMENTS” shall mean any and all federal, state, or local laws including any safety and health programs required by the Occupational Safety and Health Act and regulations applicable to the Work or the Site at which the Work shall be performed and which govern, generally, the safety and health of Contractor’s, or any of its Subcontractors’, employees, agents, or invitees, and Owner’s employees, agents, or invitees. Such Safety and Health Requirements shall include, but are not limited to, the following: the Occupational Safety and Health Act, 29 U.S.C. 651, et seq.; the Americans with Disabilities Act, and state or local laws or regulations of similar content, including local building codes or permit requirements.

(p) “SCHEDULE” means Contractor’s schedule approved by Owner for the performance of Work identified in the Purchase Order for each specific Project. The Schedule shall include the date of Substantial Completion, the date of Final Completion, and any other dates stated in the Contract Documents for a specific Project for Contractor's completion of specific components of Work. The Schedule for each specific Project shall be one of the Contract Documents for the Project and shall be attached as an exhibit to the Purchase Order for the specific Project.

(q) “SEPARATE CONTRACTORS” includes contractors hired by Owner to perform work on the Project under separate contracts.

(r) “SITE” or “PROJECT SITE” is the location where the Work takes place or as specified in the Purchase Order.

(s) “SUBCONTRACTOR” includes, but is not limited to, those contractors, suppliers and materialmen hired by Contractor in connection with the performance of the Work.

(t) “SUBSTANTIAL COMPLETION” shall mean the point in time at which the entire or designated portion of the specific Project is sufficiently complete such that Owner can occupy and utilize the specific Project for commissioning, start-up, and completion of performance, and reliability testing as required hereunder, with only punchlist items remaining to be completed, as reasonably determined by Contractor and approved by Owner.

(u) “WASTE MATERIALS” shall mean any and all material that is generated by the Work or necessary to implement the Work which is intended to be discarded. Waste Materials shall include recyclables and other salvageable material.

(v) “WORK” consists of the goods, maintenance, construction, or services described in Contract Documents for specific Projects and includes all supervision, labor, material, tools, equipment and shipping necessary to complete the Project.

2. GOODS AND SERVICES.

(a) Goods and Services Provided. Contractor shall furnish all supervision and labor and provide all goods and materials necessary to perform the Work. The Work shall be performed in accordance with: (i) the best practices within the industry prevailing at the time the Purchase Order is issued; (ii) all applicable codes and laws; and (iii) the terms of the Contract Documents for each specific Project. Contractor shall diligently prosecute the Work and provide a sufficient number of employees to complete the Work by the date of Substantial Completion.

(b) Licenses, Authorizations. Contractor represents that it is fully licensed and authorized to perform the Work in each jurisdiction where Work related to the Project will be performed.

(c) Permits, Fees and Notices. Contractor agrees to obtain and pay for all permits and approvals necessary or appropriate to perform the Work in compliance with applicable governmental requirements, except for those permits Owner is specifically required to obtain by virtue of the terms of this Agreement or by applicable governmental requirements. Contractor shall timely tender to Owner copies of all governmental notices received regarding the specific Project.

(d) No Additional Work. This Agreement shall not create for Contractor any rights for any additional Projects or further phases of a Project beyond the scope of Work set forth in the Purchase Order. Contractor shall not perform any additional work without written authorization from Owner.

(e) Subcontractor. Contractor may subcontract any portion of its Work to Subcontractors only upon the prior written consent of Owner and provided that Contractor shall remain fully responsible for all Work performed by all Subcontractors. At any time, Owner may require Contractor to replace any Subcontractor, which Owner deems to be unacceptable. Contractor shall not enter into any joint venture agreements in connection with the performance of the Work with any other contractor or Subcontractor during the term of this Agreement. Each subcontract shall provide for a collateral assignment of the subcontract upon termination of this Agreement or a Purchase Order for a specific Project. Such collateral assignment shall provide that if Owner fulfills Contractor’s obligations to Subcontractor, then Subcontractor will perform the subcontract on behalf of Owner, its successors and assigns.
(f) Independent Contractor. At all times during the term of this Agreement, Contractor shall be and remain an independent contractor. The Contractor shall perform the Work under this Agreement according to its own means and methods, and the performance of the Work shall remain in the exclusive charge and control of the Contractor. It is expressly understood that the Owner does not directly hire any of Contractor’s personnel or assume any liability therefore. Nothing herein shall be construed as creating a relationship of employer and employee between the Owner and Contractor, or between the Owner and any of Contractor’s employees or agents. Contractor’s employees shall be and remain employees of Contractor, and Contractor shall be responsible for payment of benefits and the entire compensation of each of Contractor’s employees (or its beneficiaries), including employment taxes, unemployment compensation, and any similar taxes associated with employment. Contractor agrees and represents that, as employer of such persons, it shall comply with all applicable laws and regulations, and agrees that upon request of the Owner, it shall furnish to the Owner evidence of payment of all wages and other compensation due such persons and evidence of compliance with all applicable laws and regulations. This Agreement is not exclusive. Except as set forth in a Purchase Order or as otherwise provided herein, Contractor has no power or authority to act for, represent, or bind the Owner or any Affiliate in any manner.

(g) If the Owner determines, in its sole discretion, that it is not in the Owner’s best interests for any Contractor employee or Subcontractor to be appointed to perform or to continue performing any of the Work, the Owner may give the Contractor written notice to that effect and the Contractor will take prompt action, at no expense to the Owner, to remedy the situation to the satisfaction of the Owner including removing such employee or Subcontractor from the Work if requested by the Owner. If the Contractor must replace the employee or the Subcontractor, the Contractor will do so, at no expense to Owner, with an individual of suitable ability and qualifications, with the Owner’s approval.

3. INSURANCE.

(a) General Insurance Requirements. Contractor shall procure and maintain in effect during the term of this Agreement, and for a period of three years thereafter, the following insurance coverages, which insurance shall be placed with insurance companies rated A minus VII or better by Best's Key Rating Guide and approved by Owner. Such insurance companies shall be authorized to do business in the jurisdiction in which the Project is located. Prior to the commencement of any Work, Contractor shall furnish certified copies of all insurance policies intended to meet the requirements of this Article. Properly executed Certificates of Insurance, including the required amendatory riders and endorsements, may be substituted for certified copies of insurance policies provided that such certificates contain a positive statement of compliance with the terms of this Agreement. An authorized representative of the insurance company shall execute the foregoing. Contractor shall not make any changes in or allow the required insurance coverages to lapse without Owner's prior written approval. All insurance policies shall be endorsed to contain a provision giving Owner thirty days prior written notice by registered mail of any cancellation or non-renewal of that policy or material changes in coverage. At the time of signing this Agreement, Owner may require Contractor to provide evidence acceptable to Owner, which demonstrates that Contractor will be able to secure the insurance required by this Agreement. Owner reserves the right to require Contractor to provide and maintain additional coverages in the event that the particular Work involves unusual risks.

(b) Insurance Required For All Projects:

(i) Worker's Compensation: statutory benefits and limits. Insurance shall contain benefits and limits in full compliance with all state and federal requirements. It shall also include Broad Form All States and Voluntary Compensation Endorsements and Employer's Liability Insurance with limits of not less than $1,000,000 per accident, $1,000,000 per disease and a $1,000,000 policy limit on disease. If coverage is obtained from a state fund (such as Ohio or West Virginia), Contractor will purchase “Stop Gap” coverage, with minimum limits of $1,000,000 per occurrence, from a commercial insurer meeting the requirements of this Article.

(ii) Comprehensive Automobile Liability Insurance: $2,000,000 combined single limit per occurrence for bodily injury and property damage shall be in Contractor's name and shall include owned, non-owned, leased and hired vehicle coverage.

(iii) Commercial General Liability (CGL): $2,000,000 bodily injury and property damage combined single limit per occurrence; $2,000,000 personal injury/advertising injury; $2,000,000 products/completed operations aggregate; and $2,000,000 general aggregate per project. The CGL policy shall have a per project endorsement to require these limits to apply only to each individual Project. Insurance shall be on an occurrence basis, in Contractor's name, and shall include: Bodily Injury, Personal Injury with employment exclusion deleted, Explosion, Collapse and Underground Damage Liability Endorsement (commonly called XC and U Hazards), products/completed operations which shall be maintained for two years after final payment for the Project, and blanket contractual coverage including Contractor's indemnity obligations and Broad Form Property Damage coverage with bodily injury and property damage of combined single limits of not less than those stated above per occurrence.

(iv) Excess or Umbrella Liability Insurance: Contractor shall provide excess or umbrella liability insurance with a combined single limit of not less than $3,000,000 per occurrence and project or per location aggregate. These limits apply in excess of the insurance coverages required for specific Projects.
(c) Insurance Required for Designated Projects:

(i) Pollution Liability Insurance: If the Work involves the Contractor handling, transporting, disposing, or performing work or operations with Hazardous Materials or other contaminants, waste or toxic materials, then Contractor shall purchase pollution liability insurance with a combined single limit of not less than $5,000,000 per occurrence.

(ii) Professional Liability Insurance: If this Agreement or any Purchase Order involves or includes the Contractor performing design, engineering, consulting, or any professional service, Contractor shall procure professional liability insurance with a combined single limit of not less than $1,000,000 per occurrence.

(iii) U.S. Longshore: If the Work involves Contractor’s employees loading, unloading, repairing, or building vessels or working on or from docks, barges and other platforms on the water, then Contractor shall procure statutory coverage.

(iv) U.S. Defense Bases: If the Work is to be performed on a U.S. defense base, then Contractor shall procure statutory coverage.

(v) Outer Continental Shelf: If the Work is to be performed on the outer continental shelf, then Contractor shall procure statutory coverage.

(vi) Jones Act: If the Work is to be performed on a vessel or ship, then Contractor shall procure Jones Act coverages in the following amounts

   Combined Single Limit:
   Bodily Injury: $1,000,000 each occurrence
   Property Damage: $1,000,000 each occurrence

(vii) Aircraft Liability: If any Work requires the use by Contractor of aircraft, including helicopters or fixed-wing aircraft, Contractor shall, in addition to any insurance coverage required in this Section, maintain and shall require any subcontractor utilizing rotary or fixed wing aircraft to furnish evidence of aircraft liability insurance with minimum limits of $5,000,000 per occurrence for bodily injury and property damage, and guest voluntary settlement bodily injury coverage with minimum limits of $200,000 per occurrence.

(viii) Marine Insurance: If any Work is to be performed on navigable waters or on any pier, wharf of other structure adjoining such waters, Contractor shall, in addition to any insurance required in this Section maintain and shall require any Subcontractor engaged in such operations to maintain the following additional coverage, as appropriate:

   1) Hull/Protection & Indemnity - coverage to be provided for each vessel used in any operations conducted under the terms of this Agreement. Minimum limits:
      a) Current value of vessel’s hull
      b) Protection & Indemnity - $1,000,000 per vessel per occurrence for bodily injury and property damage.

   2) Marine Employers Liability - minimum limit of $1,000,000 per occurrence.
      Bodily Injury: $1,000,000 each occurrence
      Property Damage: $1,000,000 each occurrence

(ix) Builder’s Risk Insurance: At Owner’s option, Owner may provide and pay for broad form Builder’s Risk Insurance on a completed value basis protecting the respective interests of Owner and Contractor covering loss or damage during the course of construction of specific Projects to all materials, supplies, and equipment delivered to the Site which are to become a permanent part of the specific Project, while awaiting erection and until completion of erection (including coverage of forms and form work, and temporary structures). Contractor shall not include in its costs any amount for such coverage. In the event Owner places into effect such coverage, Contractor will be named an additional insured. Contractor shall pay all deductibles or self-insured retentions.

(d) Additional Insureds. Except for Worker's Compensation and Employer's Liability Insurance, Contractor agrees, with respect to all insurance provided or required in connection with this Agreement as specified below, to endorse or require each policy to: (i) stipulate that such insurance is primary and is not additional to, or contributing with, any other insurance carried by, or for the benefit of Owner (also referred to in this Agreement as "Additional Insured"); (ii) waive any and all rights of subrogation against
Additional Insured; (iii) for the insurance described in Sections 3(b)(iii) and (3)(c)(i), name Additional Insured as an additional insured using the following wording on the policy and any Certificate of Insurance: "It is agreed that the 'Persons Insured' provision of this policy is amended to include Owner as additional insured, jointly and severally (collectively, "Additional Insured"), with respect to any coverage such as is afforded by this policy, but only with respect to operations by, or on behalf of, or to facilities of, used by, or for, the Named Insured. It is further agreed that this insurance shall not be prejudiced as to the Additional Insured by any act or negligence, error, or omission of the Named Insured as respects payment of premium, reporting of claims, or any other duties required of the Named Insured by the policy;" and, (iv) for the insurance described in Sections 3(b) (iii) and 3(c)(i), contain a cross liability/severability of interest endorsement.

(e) Failure to Pay Premiums. If Contractor’s insurance is canceled because Contractor failed to pay its premiums or any part thereof, or if Contractor fails to provide and maintain certificates as set forth herein, Owner shall have the right, but shall not be obligated, to pay such premium to the insurance company to obtain such coverage from other companies and to deduct such payment from any sums that may be due or become due to Contractor, or to seek reimbursement for said payments from Contractor, which sums shall be due and payable immediately upon receipt by Contractor of notice from Owner.

(f) Waiver of Rights. Contractor waives all rights against Owner and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by the automobile liability, commercial general liability, or umbrella liability insurance obtained by Contractor.

(g) Subcontractors. In the event that Contractor elects to perform a portion of the Work through the use of Subcontractors, Contractor shall require Subcontractors to comply with the insurance requirements of this Article. Contractor shall contractually obligate its Subcontractors to promptly advise Contractor of any lapse of the requisite insurance coverages, and Contractor shall promptly advise Owner of same. Contractor assumes all liability for its Subcontractors' failure to comply with the insurance provisions of this Agreement.

4. INDEMNIFICATION.

(a) To the fullest extent permitted by law, Contractor waives any right of contribution and agrees to indemnify, defend and hold harmless Owner and its parent company, agents, affiliates and employees (collectively, “Indemnitees”) from and against all claims, damages, losses, fines, penalties and expenses, including attorneys’ fees, related in any way to (i) any breach of this Agreement by Contractor; or (ii) Contractor’s or its Subcontractors’ or agents’ performance of the Work (collectively, “Claims”), provided that any such Claims in subsection (a)(ii) above are caused in whole or in part by any negligent act or omission of Contractor, any Subcontractor or any of its respective direct or indirect employees or agents for whose acts any of them may be liable. Such obligation shall not negate, abridge, or otherwise reduce any other right or obligation of indemnity or contribution in favor of the Indemnitees. Such obligation to indemnify, defend and hold harmless shall not be limited in any way by any limitation on the amount or type of damages, compensation, benefits or insurance proceeds payable by, for or to Contractor or anyone directly or indirectly employed by Contractor. The obligations of Contractor under this Agreement shall not extend to the liability of the Indemnitees arising out of the Indemnitees' sole negligence. Contractor shall impose identical indemnification, defense and hold harmless obligations upon all Subcontractors.

(b) To the fullest extent permitted by law, Contractor expressly (i) waives the benefit, for itself and all Subcontractors, insofar as the indemnification, defense and hold harmless obligations of Indemnitees are concerned, of the provisions of any applicable workers' compensation law limiting the tort or other liability of any employer on account of injuries to the employer's employees, and (ii) assumes liability in accordance with this Article.

(c) Contractor agrees to perform all required Work under this Agreement, including disposition of resulting waste products, in compliance with all applicable federal, state, and local environmental and safety laws, regulations, and ordinances, including the Occupational Safety and Health Act and applicable regulations. To the fullest extent permitted by law, Contractor agrees to indemnify, defend and hold harmless Indemnitees from any claims made or asserted against same arising out of or related to such Work and alleging a failure to comply with any such environmental requirements, including any and all judgments, monetary penalties or fines directed against Indemnitees as a result of Contractor’s performance of the Work, including attorney’s fees and expenses incurred by Indemnitees in any litigation or regulatory action arising out of such Work.

(d) Contractor shall pay all royalties and license fees that may be payable on account of performance or use of any of the Work. Contractor agrees to indemnify, defend and hold Indemnitees harmless from any claims arising from or based on (in whole or in part) an allegation that the Work or any deliverable provided by Contractor (including all Work Product as that term is defined in Article 25 hereof) or Indemnitees’ use thereof or the Contractor’s performance of the Work infringes any patent, trade secret, trademark, copyright, or other intellectual property or proprietary right of any third party. At Contractor’s expense, Owner may be represented by and actively participate through its own counsel in any such suits or proceedings if it so desires. In the event that Indemnitees’ use of the Work, the Work Product or any other deliverable under this Agreement is enjoined, Contractor shall, at Owner’s option, either (i) secure for Indemnitees’ the perpetual right to continue the use thereof with the same rights that Indemnitees’ had prior to the injunction, or (ii) replace or modify the infringing part of the Work to make it non-infringing in a manner that is acceptable to Owner in its sole discretion.
(e) Contractor shall indemnify, defend and hold Indemnitees harmless from and against any claim, expense, fine, levy, penalty, liability, or tax of any kind, including any employment, worker's compensation, unemployment compensation, or any tax sought to be imposed on Owner by any governmental authority or person on the grounds that Contractor or any of Contractor's employees, agents or Subcontractors are employees of Owner. Contractor further agrees to indemnify, defend and hold Indemnitees harmless from and against any costs of litigation and reasonable attorneys' fees incurred by Indemnitees in the course of any proceedings in which any such claim, expense, fine, levy, penalty, liability, or tax is sought to be imposed on Owner.

(f) Contractor shall indemnify, defend and hold Indemnitees harmless from and against any claim, expense, fine, levy, penalty or liability of any kind sought to be imposed on Owner by any governmental authority or person as a result of Contractor or Subcontractor's failure to comply with regulations pertaining to anti-drug and alcohol testing programs and operator qualification programs. Contractor further agrees to indemnify, defend and hold Indemnitees harmless from and against any costs, including reasonable attorneys' fees, incurred by Indemnitees in the course of any litigation or regulatory action arising out of noncompliance with such programs and regulations.

(g) Indemnitees shall have the right (but not the obligation) to defend any Claim for which they are indemnified by Contractor or Subcontractor hereunder and, in the event Indemnitees elect to exercise such right to defend themselves, shall be entitled to select counsel of its choice to conduct such defense and to be reimbursed by Contractor for the reasonable costs and expenses of such counsel; provided that the Indemnitees shall not settle such claim or cause of action prior to obtaining the written consent of Contractor. In the event Indemnitees elect not to defend any such Claim, Contractor shall have the right to defend and settle such Claim in the name and stead of Indemnitees and in its own name, and to select counsel of its choice to represent itself and Indemnitees together or alone, whichever the case may be; provided that Contractor shall not settle such Claim or cause of action prior to obtaining the written consent of the Indemnitees; and provided further that if there is an actual or potential conflict of interest between Indemnitees and Contractor with respect to any such Claim, such that counsel selected by Contractor cannot represent both the Indemnitees and Contractor without waivers of such conflict, then Contractor shall pay the reasonable costs and expenses of the Indemnitees' separate legal representation, in addition to the cost of counsel selected by Contractor. Indemnitees shall give notice to Contractor of its election whether to defend any such claim or cause of action.

(h) Contractor's indemnification obligations set forth in paragraphs (c), (d), (e), (f) and (g) above are in addition to, and in no way shall be a limitation of, Contractor's indemnification obligations set forth in paragraph (a) above.

(i) Contractor's obligations under this Article shall survive any termination of the Agreement, the Work, or any Purchase Order for a specific Project.

5. PROJECT SCHEDULING, FORECASTING AND REPORTING.

(a) Contractor agrees that time is of the essence in the performance of its Work. Contractor agrees to prosecute the Work with all due diligence and to complete the Work within the time stated in the Contract Documents or the Schedule, whichever is sooner. Prior to commencement of the Work, Contractor shall prepare and submit a Schedule in accordance with Owner's requirements for completion of the Work.

(b) Contractor shall continuously monitor, report, forecast and control the progress of the Work in accordance with the Schedule. Contractor shall provide scheduling detail as the Work progresses. If such reporting or forecasting indicates a delay or potential delay, Contractor shall promptly take corrective action to eliminate such delay or potential delay and to get back on schedule and to avoid such delay at no cost to Owner.

(c) Contractor's reports shall be sufficiently detailed to present Owner with an accurate status of the Work's Schedule, variances from the Schedule and reasons therefore, and planned corrective action. Reports shall be in writing and provided as established by Owner.

(d) In the event of Owner Delay, the date of Substantial Completion shall be extended by Change Order in the manner set forth in Article 6, and such extension shall be Contractor's only recourse against Owner. In no event shall Contractor be entitled to collect compensation or damages for such delay. No Change Order for an extension of time will be issued by Owner unless Contractor provides Owner with notice of the delay. Such notice shall be in writing and delivered to Owner not later than five days after the last day of the event-giving rise to the delay, which is the subject of the notice.

6. CHANGE ORDERS.

There shall be no changes or modifications to the Work until a properly executed Change Order has been received by Contractor. If no agreement regarding payment relating to the Change Order can be reached, then the price shall be the actual documented, verifiable cost of the changed work as determined by Owner and a fee for overhead and profit of not more than ten percent (10%) of the actual documented, verifiable cost of the changed work required.

7. CLAIMS.

If Contractor has any claim against Owner, excluding claims for payment relating to Change Orders, notice of each such claim shall be submitted in writing to Owner within ten days after the occurrence of the event giving rise to the claim. Resolution of
properly filed claims is within Owner’s sole discretion. If the Contractor disputes Owner’s decision on Contractor’s properly filed claims, then Contractor may invoke the Dispute Resolution procedures of this Agreement following Final Completion of the specific Project.

8. **ADMINISTRATION.**

(a) Contractor shall schedule, attend, conduct and record minutes of all meetings as requested by Owner and shall promptly distribute minutes to all participants and the Owner. Contractor shall require the attendance of its Subcontractors at all meetings that relate, in any way, to the components of the Work being performed by the respective Subcontractor. Contractor shall coordinate its Work with that of Owner's Separate Contractors involved in the Project or employed by Owner or working at the Project Site. Contractor shall take appropriate action in an effort to assure that the Project and Owner’s operations are not disrupted. Contractor shall be in control of and responsible for all construction means, methods, procedures, sequences, and job site safety and shall comply with all applicable laws, ordinances, regulations, and rules. Contractor shall abide by any and all rules and policies that Owner may have in effect or hereafter put into effect at the Project Site or otherwise relating to the Work.

(b) Unless otherwise agreed by Owner, Contractor’s Designated Representative shall be in attendance at the Site during the performance of the Work, and shall keep Owner’s Designated Representative informed at all times of Contractor’s performance and progress relating to the Work.

9. **CONTRACTOR’S DRAWINGS; SAMPLES.**

(a) Any drawings or submittals required by the Contract Documents to be submitted to Owner for review shall be submitted by Contractor without unreasonable delay. Any Work initiated prior to written acceptance by Owner shall be at Contractor's risk. All drawings or submittals provided by Contractor shall become the property of Owner and review of drawings and submittals by Owner shall not relieve Contractor from fulfilling all obligations of Contractor under the Contract Documents, including obligations relating to design and detailing. As far as practicable, each drawing or submittal shall bear a cross-reference note referring to the sheet number or numbers of Owner's drawings showing the same Work.

(b) If Owner has requested a sample or "mock up" of all or any portion of the Work, unless otherwise instructed in writing by Owner, Contractor shall not commence the associated Work until Owner has received such samples, or reviewed such "mock up." Approved Work is required to conform to such sample or "mock up."

10. **WARRANTY.**

(a) Contractor represents and warrants that it has the requisite competence, skill, physical resources, and number of trained, skilled, and licensed personnel (qualified by education and experience to perform its assigned tasks), required hereunder and that it has and shall maintain the capability, experience, registrations, licenses, permits, and government approvals required to perform the Work herein.

(b) Contractor hereby warrants and guarantees that all materials will be merchantable, new, unless specifically noted otherwise in the Contract Documents, and will be free from defects in design, workmanship, and materials; and that all Work shall be (i) performed in accordance with the best practices within the industry prevailing at the time of the Agreement or the Purchase Order, whichever is later; (ii) performed in compliance with all applicable federal, state or local laws, ordinances, and regulations, including all Environmental Requirements, Safety and Health Requirements, 29 CFR part 470 (the Beck Notice), and all applicable judicial decrees or voluntary remediation agreements; (iii) performed in conformance with the Agreement, the Purchase Order for a specific Project, and the Contract Documents for the specific Project; (iv) suitable for its intended purpose as specified in the Contract Documents or as otherwise known by Contractor; (v) fit for the particular purpose intended by the Contract Documents; (vi) fully tested pursuant to the Contract Documents; and (vii) performed in a manner that does not infringe any patent, copyright, trade secret right, trademark right, or any other intellectual property or proprietary right of any third party.

(c) In addition to Contractor's warranty obligations, Contractor agrees, at anytime during the term of this Agreement, to repair, reperform or replace, at Owner's option, any Defective Work (including, without limitation, materials). All costs and expenses associated with access to or repair or replacement of Defective Work, including all transportation costs, shall be paid by Contractor, and Owner may charge Contractor all expenses of unpacking, examining, repacking, and reshipping any rejected Defective Work. This obligation shall extend for a period of one year from the date of final payment or from the date of termination of this Agreement or a Purchase Order for a specific Project, whichever occurs later. All warranties for any repaired or replaced Defective Work shall be extended to one year from the date of Owner’s acceptance of the repaired or replaced Defective Work or for the duration of the unused warranty period if such period is longer. Contractor shall maintain equipment and replace Work and any of Owner or Separate Contractor’s property damaged as a consequence of Defective Work, all without any cost to Owner or Separate Contractors. The provision of this Article 10(c) shall not act as a time limitation on the obligations of Contractor in Articles 10(a) and (b).

11. **CONDITIONS OF PAYMENT.**

(a) Invoices. Contractor shall individually invoice for each Purchase Order on or before the fifth day of each month or upon such other time as may be mutually agreed upon, in writing. Contractor shall submit to Owner an application for payment or
invoice (“Application for Payment”) and a Contractor’s Affidavit on a form approved by Owner, together with an original executed waiver of liens, and other appropriate supporting documentation required by Owner, for that portion of the Work completed during the previous month or other time as mutually agreed upon by the parties. Contractor shall also submit Subcontractors’ original executed waivers of lien to date for the Work subject to the Application for Payment. On certain types of projects, Contractor may be required to submit a single Application for Payment upon completion of the Work. Owner shall pay Contractor an amount equal to the undisputed value of the Work within thirty days of receipt of Contractor’s Application for Payment. Owner shall not pay any Application for Payment that it receives later than one year after the completion of the Work. In the event of dispute with Owner concerning payment, Contractor shall continue to perform the Work diligently, provided that Owner shall pay amounts not in dispute.

(b) Retainage. Owner may retain either (i) ten percent (10%) of each invoice, or (ii) the amount of the final invoice until closeout documentation is received and deemed by Owner to be complete.

(c) Final Payment. Subject to the fulfillment of Contractor’s obligations under the Contract Documents incorporated in each individual Purchase Order for a specific Project, final payment of all undisputed amounts due related to such Purchase Order but not previously paid to Contractor hereunder shall be made within thirty days of receipt by Owner of Contractor’s final invoice; subject, however, to the condition precedent that final payment shall not be due until Owner accepts the Work for each applicable Purchase Order and all outstanding disputes relating to any Work under any Purchase Order have been resolved. For projects involving the construction of improvements to Owner’s property, Contractor shall provide Owner evidence, satisfactory to Owner, that all liens, claims, obligations, and liabilities against Owner and its premises (including the Site), have been fully paid, satisfied, and released. Such evidence shall include Contractor’s final, unconditional Lien Waiver for the final cost of the Work performed by Contractor and its Subcontractors.

(d) Grounds for Not Paying Invoices. Owner may decline to pay an invoice, in whole or in part, to the extent Owner decides it is necessary to protect it from loss due to any of the following: (i) breach by Contractor of any of its obligations under the Contract Documents for a specific Project, including the costs to Owner of remedying the breach (whether by repairing or re-ordering any materials or re-performing any services or otherwise) and all other costs directly attributable to other work that is required to be performed in connection with remedying such breach or remedying any Defective Work; (ii) third-party claims filed or reasonable evidence indicating probable filing of such claims; (iii) Contractor’s failure to properly pay Subcontractors; (iv) damage to Owner or another contractor where such damage arises out of the actual or alleged willful misconduct or negligent acts or omissions of Contractor, any Subcontractor or its agents, employees, or any other person for whom, directly or indirectly, Contractor or any Subcontractor may be liable; (v) reasonable evidence that the Work will not be completed within the time requirements specified in the Purchase Order or Project Schedule for a specific Project; or (vi) unsubstantiated or unsupported amounts billed by Contractor.

(e) Payments to Others. To the extent not covered in Article 11(c), Contractor shall provide evidence of payment of all indebtedness, satisfactory to Owner, and including final waivers of lien. This information shall be furnished to Owner by Contractor no later than the date Contractor submits its final invoice.

(f) Lien Indemnity. Contractor agrees to keep the Project Site, Owner’s property, and any funds held by Owner free of any liens (including stop notices) of Contractor, and any Subcontractor or supplier of Contractor. Should any such lien be asserted, Owner may, in its sole discretion (i) require Contractor, at Contractor’s expense, to furnish an appropriate bond or title indemnity in the amount of one hundred fifty percent (150%) of the lien; and/or (ii) withhold funds otherwise due Contractor equal to one hundred fifty percent (150%) of the lien amount to assure payment of such liens.

(g) Right to Setoff. Owner may setoff against any amount payable under the Agreement or a Purchase Order for a specific Project any and all present and future indebtedness of Contractor to Owner (including any indebtedness for which Owner may be primarily or contingently liable or ultimately responsible or which is or may become a lien on any property of Owner). This right to setoff is applicable to indebtedness arising from the Agreement, a Purchase Order, or any other transaction between Owner and Contractor, whether or not related to the Work performed pursuant to this Agreement or a Purchase Order for a specific Project.

12. RISK OF LOSS/WARRANTY OF TITLE.

Contractor shall carry on the Work at its own risk until the Work is fully completed and final payment has been issued to Contractor by Owner. If any loss or damage occurs to or affects the Work prior to completion and final payment has been issued to Contractor by Owner, Contractor shall at its expense promptly repair or replace the loss or damage; provided, however, that Contractor shall be entitled to receive from Owner the proceeds of all applicable insurance policies, if any, covering the loss or damage. Unless otherwise provided in the Agreement, Owner’s insurance policies will not in any event cover property of Contractor. When materials, equipment, or apparatus are furnished by Owner or by others for installation by Contractor, Contractor shall receive, unload, protect, store, remove from storage and handle with the same degree of care that it would its own materials, equipment, or apparatus.

To the extent Owner has made payments to Contractor for material, equipment, or apparatus, title to such material, equipment, or apparatus shall pass to Owner. Contractor warrants that the material, equipment, or apparatus, at the time title passes to Owner, will be free and clear of all security interests, liens, and encumbrances, or claims of any party.
13. CONTRACTOR’S DEFAULT AND OWNER’S REMEDIES.

If Contractor breaches any term of this Agreement or a Purchase Order for a specific Project, makes a general assignment for the benefit of creditors, or a receiver is appointed for Contractor, Contractor shall be in default of this Agreement. Upon Contractor's default, Owner, without limiting or waiving any other rights which Owner may have at law or equity, may immediately do any or all of the following: (a) terminate this Agreement or a Purchase Order for a specific Project; (b) take possession of all Contractor's materials, equipment, and/or apparatus on the Site and finish the Work; (c) withhold from Contractor payments equal to one hundred fifty percent (150%) of the amount Owner estimates it has been damaged or will be damaged by Contractor's default; or, (d) seek from Contractor monetary damages in excess of any unpaid Contract Sum for the Work performed to compensate Owner for damages sustained from Contractor's default, including, without limitation, compensation for additional management and administrative services, costs of professional services, attorneys' fees, additional costs of other contractors to perform the Work, and damages for delay to the Project. Owner shall be entitled to collect its reasonable attorneys' fees and costs, including expert and consulting fees, incurred in enforcing any term of this Agreement, including, without limitation, participation in any settlement discussions, alternative dispute resolution processes, or litigation.

14. TERMINATION.

(a) Termination for Convenience. Owner may, at any time, for its convenience, upon written notice extend, suspend, or delay Contractor’s performance of the Work. Additionally, Owner may on three-days prior written notice terminate the Agreement and any Purchase Order thereunder for Owner’s convenience. In the event of such termination, Owner shall pay Contractor for that portion of the Work that has been completed under the terminated Purchase Order to date less any back charges resulting from Contractor’s breaches of this Agreement or billing disputes and less any payments already made by Owner for the Work.

(b) Termination for Cause. In the event that Contractor fails to perform in accordance with the terms and conditions of this Agreement, the Contract Documents, or a Purchase Order for a specific Project through no fault of Owner, Owner may initiate termination by sending a Notice of Proposed Termination to Contractor. If Contractor does not cure such default within seven-days after receipt of such notice, Owner may terminate this Agreement or a Purchase Order for a specific Project immediately by sending a Notice of Termination.

(c) Compensation to Contractor Upon Termination for Cause. In the event of termination for cause by Owner, Owner shall make no further payments to Contractor until the Work is complete. Following the completion of the Work, Contractor shall be entitled to be compensated for all Work performed prior to receipt of written notice from Owner of such termination, together with reimbursable expenses incurred up to the effective date of the termination; however, Owner shall be entitled to offset any amounts due and owing pursuant to this provision by the amounts of any damages incurred by Owner as a result of the breach of Contractor, which offset shall not prejudice the right of Owner to recover additional damages or to exercise any other remedy at law or in equity and reduced by any payments already made by Owner to Contractor for the Work. The damages recoverable by Owner shall include (but not be limited to) the following costs resulting from Contractor’s breach of contract: (i) costs incurred in retaining another contractor; (ii) costs of additional construction work; (iii) costs of any additional design, managerial, or administrative services; (iv) any additional interest or fees which Owner must pay by reason of a delay in completion of the Project; and (v) attorneys’ fees and expenses Owner may incur by reason of Contractor’s breach of contract. Any notice of termination shall only affect the parties named in such notice and shall not affect the Contractor’s contract with any Affiliate to the extent they are not specifically included in such notice of termination.

(d) Cessation of Work upon Termination. Upon notice of termination of Contractor by Owner for any reason as set forth in this Article, Contractor shall immediately cease performing all Work for Owner on the Project and inform Owner in writing of the status of the Project within seven days after the termination. Any notice of termination shall only affect the parties named in such notice and shall not affect the Contractor’s contract with any Affiliate to the extent they are not specifically included in such notice of termination.

(e) Suspension of Work. Upon written notice to Contractor, Owner may order that Contractor suspend all or any part of the Work provided under the Contract Documents. Owner shall pay Contractor all monies otherwise due hereunder to the date of the suspension plus all identifiable expenses directly related to such suspension.

(f) No Overhead Costs or Profits. Whether Owner terminates Contractor with or without cause or suspends Contractor’s Work on a Project, in no event shall Owner be responsible for termination expenses, for overhead costs associated with Work not performed by Contractor, for any profits Contractor would have earned if it had completed the Work, or for any special, consequential, incidental, or indirect damages.

15. NOTICES.

Any notices required by this Agreement or by law shall be in writing and addressed to: (i) in the case of Owner, the Vice President, Supply Chain at the address for Owner set forth on the first page hereof, and (ii) in the case of Contractor, the authorized officer at the address for Contractor set forth on the first page hereof, as well as any parties identified for notice purposes in any pertinent Purchase Order, and shall be properly served when sent via overnight mail, certified mail, postage prepaid return receipt
16. **DISPUTE RESOLUTION.**

   (a) Step Negotiations. The parties shall attempt in good faith to resolve all Controversies promptly by negotiation, as follows. Any party may give the other party written notice of any Controversy not resolved in the normal course of business. Executives of both parties at levels at least one level above the Project personnel who have previously been involved in the Controversy (the “Executives”) shall meet at a mutually acceptable time and place within ten days after delivery of such notice, and thereafter as often as they reasonably deem necessary, to exchange relevant information and to attempt to resolve the Controversy. If the matter has not been resolved within thirty days from the referral of the Controversy to Executives, or if no meeting of Executives has taken place within fifteen days after such referral, either party may initiate mediation as provided hereinafter. If a negotiator intends to be accompanied at a meeting by an attorney, the other negotiator shall be given at least three working days notice of such intention and may also be accompanied by an attorney. All negotiations pursuant to this Article are confidential and shall be treated as compromise and settlement negotiations for purposes of the Federal Rules of Evidence and state rules of evidence. Nothing contained herein shall limit Owner’s rights and remedies as set forth in Articles 13 and 14.

   (b) Mediation and Arbitration. In the event that any Controversy arising out of or relating to this Agreement is not resolved in accordance with the procedures provided above, such Controversy shall be submitted to mediation to mutually agreeable mediators from the American Arbitration Association. The mediation shall be administered at the mediator’s offices closest to Owner’s headquarters. The mediation shall take place at Owner’s facilities unless otherwise agreed to by the parties. If the mediation process has not resolved the Controversy within thirty days of the submission of the matter to mediation, or such longer period as the parties may agree to, the mediation process shall cease. Provided, that the mediation process has not resolved the Controversy within thirty days of the submission of the matter to mediation or a longer time if agreed to by the parties, all Controversies will be decided by arbitration by the American Arbitration Association or by a mutually agreed upon arbitrator. The arbitration shall be administered at the arbitrator’s offices closest to Owner’s headquarters. The arbitration shall take place at Owner’s facilities and be conducted in accordance with the American Arbitration Association Construction Industry Arbitration Rules then applicable, or a mutually agreed upon set of arbitration rules. This agreement to arbitrate, and any other agreement or consent to arbitrate entered into in accordance herewith, will be specifically enforceable under the prevailing arbitration law of any court having jurisdiction. Notice of demand for arbitration must be filed in writing with the other parties to this Contract and with the dispute resolution tribunal. The demand must be made within a reasonable time after the Controversy has arisen. In no event may the demand for arbitration be made after institution of legal or equitable proceedings based on such Controversy would be barred by the applicable statute of limitations. The arbitration award shall be specifically enforceable in any court of competent jurisdiction.

   No arbitration, arising out of or relating to this Agreement or to a Purchaser Order issued hereunder, shall include, by consolidation, joinder or in any other manner, any additional person not a party to this Agreement, except as provided herein or by written consent containing a specific reference to this Agreement and signed by Owner and Contractor and any other person sought to be joined. Any consent to arbitration involving an additional person or persons shall not constitute consent to arbitration of any Controversy not described herein.

   (c) Continued Prosecution of the Work. In case of any dispute, including any dispute which is or may be the subject of mediation, the Contractor shall continue to prosecute the Work and maintain its progress pending final determination of the dispute, and Owner shall continue to make payments to the Contractor for those portions of the Project completed that are not the subject of dispute in accordance with the Contract Documents.

17. **HAZARDOUS MATERIALS.**

   (a) Site Inspection. Contractor shall examine the Project Sites involved in performing the Work and shall secure full knowledge of all conditions under which the Work is to be executed and completed.

   (b) Use of Hazardous Materials. Contractor shall not perform any Work in which it uses or incorporates, in whole or in part, any Hazardous Materials in violation of any such Environmental Requirements, or in such a manner as to leave any Hazardous Materials which could be hazardous to persons or property or cause liability to Owner. Contractor shall notify Owner in writing upon receipt of any material at the Project Site requiring Material Safety Data Sheets (MSDS), and Contractor shall promptly provide the MSDS; furthermore, Contractor shall remove all unused materials and Contractor Waste Materials from the Project Site upon completion of the Work and properly dispose of all such Waste Materials.

   (c) Release Reporting. Unless the release of Hazardous Materials is the subject of the Project, Contractor shall upon discovery of an existing or suspected release on or at the Project Site, cease Work in that area, immediately contact the Owner’s Designated Representative and Environmental Health & Safety On-Site Coordinator and notify Owner in writing. If the release is subject to reporting pursuant to any Environmental Requirements, Contractor shall timely report the release to governmental authorities, or ensure in a timely manner that Owner’s Designated Representative is notified and reports the release to governmental authorities. Contractor shall continue Work at the Project Site in the areas unaffected by the release unless otherwise advised by.
Owner. Upon receiving Owner’s prior written approval, Contractor shall remove and properly dispose of all Hazardous Materials and Waste Materials in compliance with all applicable federal, state, and local requirements governing such Hazardous Materials and removal, transportation, and disposal thereof. Upon request, Contractor shall provide Owner with a copy of any licenses, permits, or manifests used in connection with the disposal of any Hazardous Materials or Waste Materials.

(d) Environmental Records/Waste Manifests. In the event Contractor or its Subcontractors transport Waste Materials to an off-site facility (or facilities) for treatment and/or disposal, Contractor or its Subcontractor shall ensure that such facility is in compliance with all Environmental Requirements.

(c) Waste Characterization. Contractor shall handle and preserve, or ensure that a Subcontractor handles and preserves, all Waste Materials samples, cuttings, or Hazardous Materials taken for characterization or other like reasons in a manner consistent with the level of care and skill exercised by other Contractors under similar circumstances at the time the samples are obtained.

18. **AGENCY PROVISION FOR MANIFESTS.**

(a) Agency. Except as Owner may instruct Contractor in writing to the contrary, Contractor has specific written authority to act on Owner’s behalf with respect to Owner’s Waste Materials and waste manifests, as those manifests may be necessary to transport or dispose of Waste Materials at or from the Site. The authority granted herein shall be solely for the purposes of signing industrial or hazardous waste manifests required by governmental authorities for materials resulting from the Work at the Site during the term of this Agreement. Contractor shall sign each such manifest as “the agent of the Owner.” No other agency relationship shall be created by this Agreement.

(b) Owner Generator Identification. Owner acknowledges and agrees that any waste manifest that Contractor is authorized hereunder to sign will utilize Owner’s EPA Generator Identification Number, if required; however, Contractor agrees to use its own EPA Generator Identification Number for any waste manifest involving the removal of Hazardous Materials introduced at the Site by Contractor.

(c) No CERCLA Liability. Each of the parties hereto further acknowledges and agrees that the agency relationship created under this Article does not constitute an agreement to arrange for transport, treatment, or disposal of hazardous substances under Section 107 of the federal Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), or any state analog thereof, as amended.

(d) Limited Indemnity. Owner shall defend and indemnify Contractor against and for any claim based upon CERCLA or any state analog thereof to the extent arising from Contractor’s signing, within the scope and authority of this Agency Provision, of waste manifests on behalf of the Owner, which obligation shall survive the termination of this Agreement.

19. **SAFETY AND HEALTH PRECAUTIONS AND PROGRAMS.**

Contractor shall initiate, maintain, and supervise all safety and health, loss control measures, precautions, and programs required in connection with the Work, including any safety or health programs required by the Occupational Safety and Health Act and applicable regulations. Contractor shall be responsible for the prevention of accidents and for conducting site inspections and enforcing compliance with all safety and health programs with appropriate disciplinary action.

(a) Safety of Persons and Property. Contractor shall undertake and implement all safety measures, precautions and programs, including any special precautions which may be required due to hazardous or otherwise dangerous parts of the Work and shall provide all necessary protection to prevent damage, injury or loss to:

(i) All persons performing the Work and all other persons who may be affected by the Work;

(ii) All the Work and all materials and equipment whether in storage on or off the Site, under the care, custody or control of Contractor or its Subcontractors or agents or Subcontractor’s subcontractors or agents; and

(iii) Other property at the Site or adjacent areas, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

Contractor shall comply with all applicable laws, ordinances, rules, regulations, and lawful orders of any public authority having jurisdiction for the safety of persons or property to protect them from damage, injury, or loss. As required by law, existing conditions, and the progress of the Work, Contractor shall erect, maintain, and otherwise implement all such safeguards necessary for safety and protection. Such safeguards shall include, but are not limited to, posting danger signs and other warnings against hazards, promulgating safety procedures and notifying owners and users of adjacent facilities.

Contractor shall exercise the utmost care when the use or storage of explosives or other Hazardous Materials or equipment is necessary for the performance of the Work. Contractor shall place all explosives or Hazardous Materials under the supervision of properly qualified personnel in accordance with all existing laws, ordinances, codes, rules, regulations, orders, and decisions of all governmental authorities having jurisdiction over the Project Site.
(b) Emergencies. In any emergency affecting the safety of persons or property arising out of the Work, Contractor shall act immediately (i) to prevent threatened damage, injury, or loss, and (ii) contact the Owner’s Designated Representative, Environmental, Health & Safety On-site Coordinator, and notify Owner of such emergency.

(c) Substance Abuse Policy.

(i) For Projects not involving natural gas pipelines or liquefied natural gas facilities, Contractor shall develop, implement, administer, and enforce an appropriate drug and alcohol policy. Upon Owner’s request, a copy of the Contractor’s policy shall be provided to Owner or Owner’s agent prior to the commencement of any Work. Contractor warrants that all Contractor employees have participated in and are and will continue to be in compliance with the Contractor’s drug and alcohol policy. Contractor warrants that any employee that fails to be in compliance with Contractor’s drug and alcohol policy will no longer perform Work on any Project or at any Project Site.

(ii) For Projects that involve natural gas pipelines or liquefied natural gas facilities, the Department of Transportation (DOT) has instituted rules to control the use of drugs and alcohol in the Natural Gas and Hazardous Liquid Pipeline Industry as well as at Liquefied Natural Gas (LNG) facilities. All contractors working for Owner that have employees who work in positions covered by the applicable regulations are required to establish an anti-drug and alcohol testing program that complies with (1) 49 CFR Parts 199 and 40 of the DOT Regulations and/or (2) applicable state requirements for natural gas pipelines or LNG facilities. Upon Owner’s request, a copy of the Contractor’s policy shall be provided to Owner or Owner’s agent prior to the commencement of any Work. The Contractor warrants that all of its employees performing Work for Owner are in compliance with the above referenced regulations and such anti-drug and alcohol testing programs.

(d) Operator Qualification. For Projects that involve natural gas pipelines or liquefied natural gas facilities, the DOT has instituted rules establishing the requirements and responsibilities for the qualification of individuals who perform covered tasks as defined within 49 CFR, Part 192. If required by Owner or 49 CFR, Part 192 prior to October 28, 2002 and for all Projects which involve covered tasks as defined in 49 CFR, Part 192 after October 28, 2002, Contractor shall provide and maintain a written plan identifying its DOT Operator Qualification program that meets the requirements of 49 CFR, Part 192, Subpart N and Owner’s approval. The Contractor shall certify that all of its employees performing Work for Owner are in compliance with the above referenced regulations and any subsequent regulations issued by DOT. Contractor shall use only qualified employees to perform covered tasks on Owner’s facilities and provide Owner with documentation of any modifications that are made in its written plan or its employee’s qualifications to perform those covered tasks (at an interval of not less than once per month).

20. UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL BUSINESS CONCERNS OWNED AND CONTROLLED BY SOCIALLY AND ECONOMICALLY DISADVANTAGED INDIVIDUALS (FOR PROJECTS INVOLVING WORK PERFORMED FOR NORTHERN INDIANA PUBLIC SERVICE COMPANY (NIPSCO)).

(a) It is the policy of the United States that small business concerns, small business concerns owned and controlled by veterans, qualified HUBZone small business concerns, small business concerns owned and controlled by socially and economically disadvantaged individuals, and small business concerns owned and controlled by women shall have the maximum practicable opportunity to participate in the performance of contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of its subcontracts with small business concerns, small business concerns owned and controlled by veterans, qualified HUBZone small business concerns, small business concerns owned and controlled by socially and economically disadvantaged individuals, and small business concerns owned and controlled by women.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with the efficient performance of this Agreement. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this Article.

(c) As used in this Agreement, the term "small business concern" shall mean a small business as defined pursuant to section 3 of the Small Business Act [15 U.S.C.A. 632] and relevant regulations promulgated pursuant thereto. The term "small business concern owned and controlled by socially and economically disadvantaged individuals" shall mean a small business concern:

(i) which is at least 51 per centum owned by one or more socially and economically disadvantaged individuals; or, in the case of any publicly owned business, at least 51 per centum of the stock of which is owned by one or more socially and economically disadvantaged individuals; and

(ii) whose management and daily business operations are controlled by one or more of such individuals.
The Contractor shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian Pacific Americans, and other minorities, or any other individual found to be disadvantaged by the Administration pursuant to section 8(a) of the Small Business Act [15 U.S.C.A. 637(a)].

(d) The term "small business concern owned and controlled by women" shall mean a small business concern:

(i) which is at least 51 per centum owned by one or more women; or, in the case of any publicly owned business, at least 51 per centum of the stock of which is owned by one or more women; and

(ii) whose management and daily business operations are controlled by one or more women.

(e) The term "small business concern owned and controlled by veterans" shall mean a small business concern:

(i) which is at least 51 per centum owned by one or more eligible veterans; or, in the case of any publicly owned business, at least 51 per centum of the stock of which is owned by one or more veterans; and

(ii) whose management and daily business operations are controlled by such veterans. The Contractor shall treat as veterans all individuals who are veterans within the meaning of the term under section 632(q) of this title.

(f) Contractors acting in good faith may rely on written representations by its subcontractors regarding its status as either a small business concern, small business concern owned and controlled by veterans, a small business concern owned and controlled by socially and economically disadvantaged individuals, or a small business concern owned and controlled by women.

(g) In this Agreement, the term "qualified HUBZone small business concern" has the meaning given that term in section 632(p) of this Title.

21. NONDISCRIMINATION/EQUAL OPPORTUNITY.

(a) It is Owner’s policy that small business concerns and small business concerns owned and controlled by socially and economically disadvantage individuals have the maximum practicable opportunity to participate in the performance of contracts let by Owner. Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with the efficient performance of this Agreement. Contractor shall, unless exempt, comply with the federal regulations pertaining to nondiscrimination and affirmative action (generally part 60-1 of Title 41 of the Code of Federal Regulations), including the following, all of which are incorporated herein by reference: (i) Affirmative Action Compliance Program (41 CFR 60-1.40); (ii) Affirmative Action – Disabled Veterans and Veterans of the Vietnam Era (41 CFR 60-250.4); (iii) Affirmative Action – Handicapped Workers (41 CFR 60-741.4); (iv) Equal Opportunity (41 CFR 60-1.4); (v) Employer Information Report SF-100, annual filing (41 CFR 60-1.7); (vi) Fair Labor Standards Act of 1938, as amended; (vii) Prohibition of Segregated Facilities (41 CFR 60-1.8); (viii) Small Business Concerns, Small Disadvantaged Business Concerns, and Women Owned Business Concerns (48 CFR Chapter 1, Subpart 19.7); and (ix) Executive Order 13201 Compliance (29 CFR part 470). The Contractor shall also comply, unless exempt, with any applicable state laws pertaining to nondiscrimination and affirmative action.

(b) Contractor certifies that it does not and will not maintain or provide for employees any segregated facilities at any of its establishments, and that it does not and will not permit employees to perform its services at any location, under its control, where segregated facilities are maintained. As used herein, the term “facilities” means waiting rooms, work areas, restaurants and other eating areas, time clocks, rest rooms, wash rooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees; and the phrase “segregated” means on a basis of race, color, religion, or national origin, because of habit, local custom or otherwise. Contractor understands and agrees that a breach of the certification or assurance herein contained is a violation of the equal opportunity clause required by Executive Order No. 11246 of September 24, 1965, as amended and subjects the undersigned to the regulations issued by the Secretary of Labor on May 21, 1968, (33 FR 7804) constituting 41 CFR Part 60-1. Contractor agrees and undertakes to obtain the same or a substantially similar certification and assurance from each proposed subcontractor before issuing any subcontract in excess of $10,000. Contractor understands that this certification shall be effective and valid for one year from the effective date of this Agreement. Contractor understands that the penalty for making false statements in this certification is prescribed in 18 USC 1001.

22. RIGHT TO AUDIT AND INSPECT.

(a) Owner’s representatives shall have, during the term of the Agreement and any Purchase Order which survives the term of this Agreement and for two years thereafter, access at all reasonable times, and upon twenty-four hours notice, to all of Contractor’s and its Subcontractors’ accounts and records of all description, including: (i) computer files; (ii) records pertaining to the Agreement or any Purchase Order issued under the Agreement relating to the quantity, quality, and progress of the Work; (iii) reimbursable costs; (iv) amounts claimed by Contractor; (v) estimates of cost for fixed rates including those applicable to proposed changes; (vi) determining compliance with applicable law and/or any of the provisions contained in this Agreement or any Purchase Order issued under the Agreement; and (vii) for any other reasonable purpose. Payment or payments shall not be deemed a waiver of
any rights of Owner to audit or to have adjustments made. Contractor’s accounts/records shall be kept in accordance with generally accepted accounting principles.

(b) Owner shall have the right, but not the obligation, at all reasonable times to inspect the Work. Contractor shall furnish all reasonable assistance and provide all reasonable facilities and access for such inspection and testing on Owner’s premises, at Contractor’s facilities, or at the facilities of any Subcontractor or supplier where any part of the Work is being developed or performed. Such inspection by the Owner shall in no way relieve Contractor from its obligations under the Agreement or any Purchase Order issued under the Agreement.

(c) Notwithstanding the foregoing Article 22 (b), for Work that is to be enclosed or covered until inspected by Owner. Work covered prior to inspection shall, at the request of Owner, be uncovered at the Contractor's expense. Work, already inspected, or Work for which inspection has been waived, may be ordered uncovered by Owner at any time for subsequent inspection; if so ordered, that Work must be uncovered by the Contractor. If that Work is in accordance with the Contract Documents for a specific Project, Owner shall pay the cost of re-examination and recovering. If that Work is not in accordance with the Contract Documents for a specific Project, then Contractor shall remedy such nonconforming Work at Contractor’s expense and shall pay the cost of re-examination and recovering.

(d) In addition to the foregoing, Contractor shall immediately notify Owner in writing if Contractor at any time discovers any part of the Work to be defective or not in accordance with the Contract Documents for a specific Project. The provisions of this Article shall survive any termination of this Agreement or a Purchase Order for a specific Project.

23. DELIVERY AND RETENTION OF DOCUMENTATION.

(a) Contractor shall provide Owner with all information and documentation (which includes drawings, reports, and designs) within Contractor's scope of Work and which is required by Owner for the design, construction, licensing, quality assurance, operation, or maintenance of the Work or of the facility for which the Work is intended. Contractor shall promptly provide to Owner all such information and materials relating to the Work that Owner may request in connection with any filing or other submission Owner is making with any regulatory or other governmental body. Contractor may disclose all such information to such regulatory and other governmental body as required by law. Contractor shall notify Owner's Designated Representative immediately upon such request and in advance of such disclosure. In addition, Contractor shall cooperate with Owner as requested by Owner with respect to such filings or submissions.

(b) Contractor agrees to retain and maintain (at no additional cost to Owner) at least one record set of all documents obtained or generated in the course of the Work for a period of ten years from the date of the completion of the Work. Contractor, at the end of the ten-year period, shall notify Owner of its intent to destroy the documents. If Owner requests that some or all of the documents be preserved for an additional reasonable period of time, Contractor shall comply with Owner’s request, but has the option to return the documents to Owner for retention. Any request by Contractor to destroy such documents shall be in writing and sent to Owner at the address for notices. The obligations of this Article survive any termination of this Agreement.

24. CONFIDENTIAL INFORMATION.

(a) Contractor’s Obligations. During the term of this Agreement and thereafter, except as Owner may authorize in writing, Contractor shall and shall cause its employees and Subcontractors to: (i) treat and cause to be treated as confidential all Confidential Information; (ii) not disclose any Confidential Information to any third party or make available any reports, recommendations, or conclusions based on the Confidential Information to any third party without Owner’s prior written approval; (iii) reveal the Confidential Information only to those employees of Contractor who require such access in order to perform the Work hereunder; (iv) if requested by Owner, grant access to Confidential Information only to employees of Contractor or Subcontractor who have signed a confidentiality agreement; (v) use Confidential Information only in connection with the performance of Work pursuant to this Agreement; (vi) make copies of any tangible embodiment of Confidential Information only as necessary for the performance of such Work; (vii) remove any tangible embodiment of Confidential Information from the premises of Owner only with the express permission of Owner; and (viii) return any or all tangible embodiments of Confidential Information to Owner promptly following the request of Owner, and in any event upon completion of Work pursuant to the Agreement. Contractor may disclose all such information to such regulatory and other governmental body as required by law. Contractor shall notify Owner's Designated Representative immediately upon such request and in advance of such disclosure.

(b) Irreparable Harm. Contractor acknowledges that the breach of any of the covenants contained in this Article will result in irreparable harm and continuing damages to Owner and Owner's business, and that Owner's remedy at law for any such breach or threatened breach would be inadequate. Accordingly, in addition to such remedies as may be available to Owner at law or in equity in the event of any such breach, any court of competent jurisdiction may issue an injunction (both preliminary and permanent), without bond, enjoining and restricting the breach or threatened breach of any such covenant, including an injunction restraining Contractor from disclosing, in whole or in part, any Confidential Information. Contractor shall pay all of Owner's costs and expenses, including reasonable attorneys' fees and accountants' fees, incurred in enforcing such covenants.
25. **OWNERSHIP OF WORK PRODUCT.**

(a) Any and all products of the Work performed by Contractor, any Subcontractor and any of its employees under this Agreement or a Purchase Order used in connection with this Agreement, including all inventions, discoveries, formulas, processes, devices, methods, compositions, compilations, outlines, notes, reports, system plans, flow charts, source codes, and other forms of computer software, algorithms, procedures, policies, data, documentation, and other materials or information which Contractor, any Subcontractor or any of its employees may conceive, invent, author, create, reduce to practice, construct, compile, develop, or improve in the course of performing the Work or otherwise delivered to Owner as part of the Work (collectively, "Work Product") shall be the sole and exclusive property of Owner from and after the time it is created. Contractor agrees to disclose to Owner the existence of any Work Product of which Owner would not otherwise be aware promptly upon its creation.

(b) Contractor agrees to assign and hereby does assign to Owner (together with its successors and assigns) the sole and exclusive right, title, and interest in all Work Product, including any and all related patent, copyright, trademark, trade secret, and other property or proprietary rights of any nature whatsoever. Contractor warrants and agrees to execute and deliver to Owner, and exclusive right, title, and interest in all Work Product, including any and all related patent, copyright, trademark, trade secret, and other property or proprietary rights of any nature whatsoever. Contractor warrants and agrees to execute and deliver to Owner, and Contractor agrees to cause Subcontractor and the employees of Contractor and Subcontractor to execute and deliver to Owner, any and all documents that Owner may reasonably request to convey to Owner any interest Contractor, Subcontractor or any of its employees may have in any Work Product or that are otherwise necessary to protect and perfect Owner’s interest in any Work Product. Contractor further warrants and agrees to take, and Contractor agrees to cause Contractor's employees to take, such other actions as Owner may reasonably request to protect and perfect Owner’s interest in any Work Product. Contractor further agrees that the sums paid to Contractor by Owner in connection with Contractor’s performance of the Work serve, in part, as full consideration for the foregoing assignment, and that said consideration is fair and reasonable, and was bargained for by Contractor. Contractor represents and warrants that it has full right, power, and authority to grant the assignment granted under this Article.

(c) In the event and to the extent that any Work Product contains or requires for its use any items, elements, or components that were developed or otherwise acquired by Contractor prior to the date of this Agreement and that are proprietary to Contractor (“Contractor’s Retained Information”), Contractor shall identify such Contractor’s Retained Information to Owner in writing. Contractor hereby grants to Owner and its Affiliates an irrevocable, perpetual, non-exclusive, royalty-free, world-wide license to (i) use, reproduce, perform, and execute the Contractor’s Retained Information, (ii) prepare derivative works based upon the Contractor’s Retained Information, (iii) distribute copies of Contractor’s Retained Information and of derivative works based upon Contractor’s Retained Information; and (iv) authorize others to do any of the foregoing.

(d) Nothing in this Article should be construed to prohibit Contractor from using its skills, knowledge, and experience that have a general applicability, including such skills, knowledge, or experience gained by Contractor in connection with performing Work for Owner (collectively, the “Knowledge”) in performing work for other clients; provided, however, that the Knowledge or Contractor’s use thereof shall not include any Confidential Information of Owner.

(e) Contractor agrees not to use any Work Product, including any drawings, specifications, reports, or any unique design aspects of a Project in any other project without the prior written approval of Owner. Contractor’s use of standard specification texts is specifically excluded from the provisions of this Article.

(f) The obligations of this Article shall survive any termination of this Agreement.

26. **TAXES.**

(a) Social Security and Other Taxes. Contractor shall keep all records and make all payments required by the Federal Social Security Act and all Social Security, Unemployment Compensation or other laws and regulations of any and all states in which it does business.

(b) Taxes.

(i) For Projects involving Work performed for NIPSCO, it is mutually agreed that all applicable federal, state, and local net or gross income or gross receipts taxes, and all use and similar taxes are deemed to be included in the Contract Sum, such taxes being the sole liability and obligation of Contractor. NIPSCO is exempt from Indiana Sales Tax in the purchase of materials used in the production of electricity. Should any purchases be held by the Indiana Department of Revenue to be subject to the Indiana Sales Tax, NIPSCO will pay any such tax directly to the State of Indiana set forth in NIPSCO’s Direct Pay Authority Sales and Use Tax. Contractor shall not include Indiana Sales Tax in its price for material.

(ii) For all other Projects subject to this Agreement, unless otherwise indicated on the face of the applicable Purchase Order, Contractor agrees that all applicable federal, state, and local sales and use taxes are included in the Contract Sum and Owner shall not be obligated to reimburse Contractor therefore. Such taxes are the sole liability and obligation of Contractor.
27. MISCELLANEOUS.

(a) Owner Retention of Funds. Owner may retain any funds that in its discretion Owner deems necessary for reimbursement for any of Contractor's breaches of the Contract Documents. This Article 27 (a) is in addition to the provisions of Article 11.

(b) Site Conditions. Contractor shall examine the Project Site and notify Owner in writing before starting Work if any conditions of the structure and/or surface at the Project Site are not acceptable.

(c) Owner's Right to Carry Out the Work. Owner reserves the right to immediately stop the Work or to take over any portion of the Work if Contractor fails to correct Defective Work or fails materially to perform Work as required. Owner may take such action with or without terminating this Agreement.

(d) Public and Community Relations. Contractor shall use its best efforts to maintain a good public image for Owner and shall be responsive to concerns raised by community members. All information regarding this Agreement, or of a Project performed pursuant to this Agreement, requested by news, reporting, and other agencies will be handled directly by Owner’s Designated Representative. Contractor shall not disclose information of a sensitive nature to any third parties without Owner’s prior written consent. With the sole exception of publication of such information within Contractor's corporate entity and subject to the Confidentiality provisions of this Agreement, Contractor shall not refer to Owner or any company affiliated with Owner in any advertising or other publication in connection with goods or services rendered by Contractor, without the prior written approval of Owner.

(e) Waiver of Consequential Damages. Contractor expressly waives all claims for all consequential, incidental, indirect, punitive, or special damages arising out of or relating to this Agreement or a Purchase Order issued pursuant to this Agreement. This waiver includes but is not limited to damages incurred for losses of use, income, profit including anticipated profits arising directly from the Work, financing, business and reputation, loss of management or employee productivity or of the services of such persons, delay, acceleration, extended general conditions, home office overhead, and principal office expenses including the compensation of personnel stationed at the home office. This provision shall survive the termination of the Agreement.

(f) No Third-Party Beneficiaries. No provision of the Contract Documents is intended or shall be construed to be for the benefit of any third party (other than a joint owner of a plant or facility, whether as a tenant in common or otherwise, for which the Work is intended).

(g) Interpretation/Forum. Article and Section headings are for reference only and do not interpret, define or limit the scope or content of this Agreement or any provision hereof and shall be given no legal effect in the interpretation of this Agreement. This Agreement shall be construed in accordance with the laws of the State where the Project is located unless the Project, or Work carried out in connection with a Project, is performed in more than one state, in which case the laws of the State of Indiana shall apply. No provision of this Agreement shall be interpreted more or less favorably towards either party because its counsel drafted all or a portion hereof. If any provision of this Agreement shall be held to be invalid, illegal or unenforceable, such provision shall be deemed to be restated to reflect the parties’ original intentions as nearly as possible in accordance with applicable law(s). All of the remaining provisions of this Agreement shall nonetheless remain in full force and effect. This Agreement may be executed in counterparts, each of which shall be deemed an original, but which together shall constitute one and the same instrument.

(h) Non-Waiver. The failure of Owner to insist upon strict performance by Contractor or Owner's failure or delay in exercising any rights or remedies provided in the Agreement or by law shall not be deemed or construed as a waiver of any claims. No waiver by Owner of a breach of any provision of the Agreement shall constitute or be construed as a waiver of any other breach or of that provision. No payment, final or otherwise, nor the acceptance of any design, shall be construed as (i) an acceptance of Defective Work, (ii) relieving Contractor of its obligations to make good any defects or consequences for which Contractor may be responsible, or (iii) a waiver of any obligations of Contractor under the Agreement.

(i) Assignment. Contractor shall not assign or transfer any rights, claims, interests, or obligations in this Agreement including monies that are due or may be due, without the prior written consent of Owner, which consent may not be unreasonably withheld by Owner. Owner may assign its rights, claims, interests, and obligations in this Agreement to a third party upon notice to Contractor without the consent of Contractor or any other limitation. Upon Assignment by Owner of its rights, claims, interest, or obligations under this Agreement and the assumption by Assignee of the Owner’s rights, claims, interests, or obligations under this Agreement, Assignee shall be responsible for payment to Contractor of all sums owed under this Agreement and for any other duties imposed upon Owner under this Agreement, and in the event of such assignment, Owner shall have no further duties or obligations under this Agreement. Subject to the foregoing, this Agreement shall be binding upon and inure to the benefit of the parties hereto, its successors and assigns.

(j) Integration. This Agreement constitutes the entire agreement between the parties and may be amended, modified, or waived only by a written amendment executed by Authorized Representatives of both parties. No approval given, payment made, possession taken, action taken or failure to act by Owner under this Agreement shall operate to relieve Contractor from any of its responsibilities under the Contract Documents or be deemed as an approval by Owner of any deviation contained in any items or documents.
subject to such approval from, or of any failure by Contractor to comply with, any requirement of the Contract Documents, unless such deviation or failure has been specifically approved by a written modification to this Agreement. A waiver by either party of any breach of this Agreement shall not be held to be a waiver of any other breach whether prior to or subsequent thereto. Unless otherwise stated in a delegation of authority, Owner’s Designated Representative does not have authority to amend or waive any portion of this Agreement. The Contract Documents referenced in this Agreement supersedes all prior oral or written agreements, commitments or understandings with respect to the matters provided for herein. There are no representations, agreements, arrangements or understandings, oral or written, among the parties relating to the subject of this Agreement that are not fully expressed herein.

(k) Construction. Any reference to any federal, state or local statute or law shall be deemed to refer to all rules and regulations promulgated thereunder, unless the context requires otherwise.

END OF TERMS AND CONDITIONS
PERSONAL INFORMATION, DATA SECURITY AND IDENTIFY THEFT

A. Contractor and its subcontractors shall maintain policies and procedures to detect, prevent and mitigate the risk of loss, unauthorized access, use, modification, destruction or disclosure of Owner’s and its Affiliates’ information/data including personal information (e.g., name and social security number; driver license number; state identification number; credit or debit card account number; bank account number; or other account numbers) of Owner’s and its Affiliates’ customers, employees or shareholders (collectively, the “Owner Data”). With respect to the protection of and access to Owner Data, Contractor and its subcontractors shall comply with all applicable laws regarding personally identifying information. In performing the Services/Work, at a minimum, Contractor and its subcontractors shall employ industry standard data security measures for securing Owner Data so as to reasonably ensure that the Owner Data is not lost or stolen, or otherwise used, modified or accessed by any third party without Owner’s prior express written approval. Contractor and its subcontractors shall immediately, upon discovery of any of the foregoing, (i) notify Owner of any loss or unauthorized disclosure, possession, use or modification of the Owner Data or any suspected attempt at such activity or breach of Contractor’s or its subcontractors’ security measures, by any person or entity, (ii) investigate and take corrective action in response thereto, and (iii) provide assurance to Owner’s reasonable satisfaction that such activities or breach or potential breach shall not reoccur.

B. While at Owner’s or its Affiliate’s facilities or using Owner’s or its Affiliate’s equipment or accessing Owner’s or its Affiliate’s systems, Contractor, its subcontractors and their respective personnel shall observe and follow all applicable Owner or Affiliate policies and standards, including those policies relating to security of and access to Owner Data, and Owner facilities, telephone systems, electronic mail systems, and computer systems as such policies and standards are modified and supplemented from time to time. Applicable policies will be made available upon request.

C. Contractor, its subcontractors and their respective personnel shall not access, attempt to access, or allow access to, Owner Data to which such party is not authorized or that is not required for the performance of the Services/Work by such party. Contractor and its subcontractors shall employ industry standard system security measures and comply with all
applicable laws and regulations for systems security in order to guard against the unauthorized access, use, alteration, disclosure, destruction or loss of Owner Data.

D. If Contractor or its subcontractors store or maintain Owner Data, Contractor and its subcontractors, as applicable, shall employ an industry standard intrusion detection system and comply with all applicable laws and regulations. Contractor and its subcontractors shall actively monitor such system for signatures that correspond to attempts at breaking the security of such Services/Work or Owner Data.

E. If Contractor or its subcontractors store or maintain Owner Data, at a minimum, Contractor and its subcontractors, as applicable, shall employ industry standard practices for backup procedures relating to software, system configurations and Owner Data and comply with all applicable laws and regulations. Owner shall have the right to establish its own backup security procedures for Owner Data and to store and maintain backup copies of the Owner Data in Contractor’s or its subcontractors’ possession at Owner’s expense if Owner so chooses.

F. Contractor and its subcontractors shall comply with the following minimum standards regarding the proper disposal of Owner Data:

   (i) paper documents containing Owner Data shall be either redacted, burned, pulverized or shredded so that Owner Data cannot practicably be read or reconstructed;

   (ii) electronic media and other non-paper media containing Owner Data shall be destroyed or erased so that Owner Data cannot practicably be read or reconstructed; and

   (iii) Contractor and its subcontractors shall implement and monitor compliance with policies and procedures that prohibit unauthorized access to or acquisition of or use of Owner Data during the collection, transportation and disposal of Owner Data.

G. If Contractor’s or its subcontractors’ provision of Services/Work involves the processing of Owner Data so as to place Contractor or its subcontractors in a position to observe indicators of identify theft (e.g. consumer alerts, notifications or warnings; suspicious
documents, personal information, activity or unusual use; or notice from customers, law enforcement or others regarding identity theft -- such indicators collectively, “Red Flags”), Contractor and its subcontractors, as applicable, shall: (i) maintain policies and procedures to identify, detect and respond to Red Flags, substantially in accordance with Owner’s program regarding such Red Flags, as updated from time to time, a current copy of which will be made available upon request, (ii) report the detection of any such Red Flags to Owner, and (iii) take appropriate measures to prevent or mitigate the risk of identify theft to Owner’s customers that may arise in the performance of such Services/Work.

H. To the extent Contractor or its subcontractors has access to or uses Owner Data in the performance of its Services/Work for Owner or any of its Affiliates and such Owner Data contains personal information of residents of the Commonwealth of Massachusetts, Contractor shall comply with the requirements of 201 CMR 17.00: Standards for the Protection of Personal Information of Residents of the Commonwealth, as currently promulgated or subsequently amended. A current copy of 201 CMR 17.00 will be provided upon Contractor’s request.

I. By executing this Agreement, Contractor acknowledges and agrees to comply with the foregoing and will provide further evidence of such compliance upon Owner’s request.
2. Audit Documentation

Please see Attachment E-2 for the audit report of the Company described in Section VI, which attachment is filed pursuant to a Motion for Protective Treatment of Confidential Information.
APPENDIX F: Lost Base Revenue Information

This section does not apply to the Company, as the Company has decoupled. See Bay State Gas Company, D.P.U. 09-30.