MA EEAC

Consultant Team

MEMORANDUM

To	Energy Efficiency Advisory Council
From	Eric Belliveau and EEAC Consultants
Date	October 10, 2011
Subject	EEAC Consultant Review of PAs' Proposed MTMs (Updated)

Below is the EEAC consultant report of our review of the proposed 2012 mid-term modifications (MTMs) that the PAs distributed last Thursday. On Friday we sent you a preliminary review. This memo incorporates and expands on that earlier information. Included are highlights of the PAs' proposed savings for 2012 and how the proposed savings compare to the savings goals for 2012 and the Three-Year Plan period; observations and recommendations on the proposed modifications and notifications related to the residential, low income, and commercial and industrial programs; and comments on the 2012 EM&V plan, performance incentive mechanism and performance metrics, and TRM.

It should again be noted that these MTMs are not final. National Grid has indicated that it intends to increase its savings goals, other PAs may also change their savings, and further refinements in the TRM will necessitate updates to the data tables. In our data analyses of the PAs' proposals we have observed several inconsistencies and errors which have been pointed out to the PAs.. These too will need to be addressed prior to the production of the final data tables.

PA-Proposed 2012 MTM Energy Savings Compared to the Savings Goals

We have focused our initial analysis on the PA-proposed MTM savings levels for the Three-Year Plan period and 2012, and compared the PA-proposed savings to the EEAC's adopted savings goals. Below is a brief summary of our findings to date, followed by six summary charts - three for electric and three for gas - at the end of this memo.

In its prior actions, the EEAC has provided some flexibility regarding annual savings goals and has accepted some PA-proposed revisions to annual savings levels, including in the 2011 MTM process. At the same time, the EEAC has stated its position in its Resolutions that the PAs are expected to achieve the overall Three-Year Plan savings goals over the three-year period. For example, the EEAC resolution on the 2011 MTM Memorandum of Agreement, stated:

> "We expect the PAs to achieve all the goals of the original Three Year Plans, including savings and benefits… PAs (should) make every effort to achieve all the goals of the Three-Year Plans. The EEAC is committed to achieving the savings and benefits of the Three Year Plans; therefore, any shortfall in savings or benefits in any program year should be made up during the remaining time in the three-year period."

(EEAC Resolution, 2011 MTM Memorandum of Agreement, April 2011.)

For electric, the PAs propose Three-Year Plan period MTM savings that are 98% of the EEAC-adopted savings goals. The PA-proposed MTM savings for 2012 are 3.4% lower than the 2012 filed goal. If the PAs were to increase the PA-proposed total electric savings by 2% (53,639 MWh), the EE programs would meet the original EEAC Three-Year Plan goal (2010-2012) and exceed the 2012 annual goal slightly (by a little over 1%).

Proposing achievement of the Three-Year Plan electric savings goals through the 2012 MTMs would be a very positive accomplishment and would demonstrate the PAs' commitment to the electric three-year savings goals. It appears that doing so is within reach, as the savings could be achieved through slight increases in proposed savings across five PAs and within 5-7 programs, where savings could be increased incrementally to reach the EEAC-adopted electric savings goal.

For gas, the PA-proposed MTM savings over the Three-Year Plan period and for 2012 are somewhat lower. The gas savings are 5.9% lower than the EEAC-adopted gas savings goal and 8.5% lower than the PA-proposed filed gas goal. The PA-proposed MTM savings for 2012 are 9.9% lower than the 2012 filed goal. The PAs would need to increase the proposed MTM savings by 3.28 million therms in order to meet the EEAC Three-Year Plan goal (5.9% increase), and doing so would result in the PAs exceeding the 2012 savings goal.

Both the electric and gas PAs are proposing to spend less than the approved levels. While we appreciate delivering savings in the most expeditious manner, there are thus funds available within the authorized budgets to complete additional projects and/or to acquire additional savings.

Initial indications are that the benefits (the dollar value of the TRC benefits) will be proportionally lower than the electric and gas savings in the MTMs. We are analyzing the benefits data from the cost-effectiveness screening tools, and hope to be able to complete our initial analysis of benefits prior to the EEAC meeting on tomorrow.

One outstanding task from the 2011 MTM Memorandum of Agreement, section 2.2.3, is an examination of possible continuing differences in key indicators across the PAs (e.g., program savings per measure, program cost/savings, program savings/participant). We recognize that the common inputs from the EM&V, Net-to-Gross, and TRM work will likely reduce such differences. We expect the PAs will examine the current data and address any remaining differences before the filings are submitted to the DPU.

> "Regarding the development of the 2012 MTMs, the Program Administrators agree to continue to seek to further enhance common program planning, using consistent assumptions, methods, and data, to support enhanced statewide planning and delivery of programs to customers, and to meet, at the appropriate time in the 2012 MTM development process, to examine and address differences that are known from prior filings (including but not limited to the 2011 MTMs) or observed as the 2012 MTMs are developed. This approach is expected to enhance the 2012 MTM process and facilitate review of assumptions and data, and reduce issues relating to 2012 MTMs." (2011 MTM Memorandum of Agreement, April 2011, section 2.2.3)

Summary charts follow the text portion of this memo.

Program-Level Observations

Specific highlights of program MTMs are presented below. Please also see two files attached to the cover email with this memo, showing in table form the PAs' proposed MTMs and notifications.

A. Residential Electric

Summary

- Residential: Overall, PAs are proposing to increase 2012 annual goal by 3.9%, with a 3-year increase of 0.9%. This exceeds the sector target.
- Low Income: Overall, PAs are proposing to reduce 2012 annual goal by 11.1%, with a 3-yr reduction of 0.4%. This comes close to meeting targets.

Lighting Program

- While the PAs have increased their 2012 Lighting Program savings above both their 2012 annual and their Three-Year Plan 2012 goal, the consultants believe that additional Lighting Program savings are achievable in 2012. In the 2011 MTMs the PAs proposed to rebate on average 1.64 lighting products per PA household. In their current 2012 MTMs this average increases to 1.95 units/HH. While this is increased effort is a positive move, not all PAs are achieving similar levels of program activity. If this were the case, then substantial additional savings could be obtained. We understand that there are demographic differences among PAs, but still believes that higher savings levels for some PAs are achievable.

Home Energy Services Program

- Projected 2012 savings are down 6% in 2012, compared to goal, with 3-year savings at essentially 100% of goal.

B. Residential Gas

Summary—see full matrix in attached file—" RES&LI 2012 MTM Matrix toEEAC 10-7-11"

- Residential: Overall, PAs are proposing to reduce 2012 annual goal by 13.4%, with a 3-yr reduction of 11.6%. This falls short of meeting targets.
- Low Income: Overall, PAs are proposing to reduce 2012 annual goal by 5.9%, with a 3-yr reduction of 0.9%. This comes close to meeting targets.

Residential Heating & Water Heating

- Observation: For 2012, all of the PAs have filed a reduction in savings due to evaluation results showing lower savings per unit, and most of the PAs have filed a budget increase due to strong demand for program services.

Home Energy Services Program

- Observation: Projected 2012 savings are up 12.9% in 2012, compared to goal, with 3-year savings at 99.3% of goal.

Note: In conversations with staff at National Grid, they expressed a willingness to consider increasing their 3-year savings goals for the lighting and HEHE programs.

C. Commercial & Industrial Electric

Summary – See full matrix in attached file—"CI 2012 MTM Matrix to EEAC 10-7-11"

- Overall, PAs are proposing to reduce 2012 annual goal by 5.4%, with a 3-yr reduction of 2.8%. This comes close to meeting targets.
- The shortfall for C&I total is approximately 43,000 MWh. With $54 million in available budget compared to original goals, this translates into $1,256/first-year-MWh, far higher than typical PA spending. We believe that even if all the gap were made up with the Small C&I DI program it would likely cost less than half of this per MWh, and should be easily ramped up by asking vendors to expand production.

New Construction

- Maintaining 2012 goals for NSTAR. Grid proposing large increase (73.4%). CLC proposing very large reduction (75%), WMECO moderate reduction (9%), and FGE a significant reduction (25%). Overall, the new construction program proposal is to increase 3-year goals by 11.4%. It is not clear why EM&V findings impact the electric savings goals.

Large Retrofit

- NSTAR maintaining approximate 2012 goals. Grid reducing goal by 14.4%. CLC proposing a large increase (92%), stating program is working well. Yet WMECO and FG&E both proposing significant reductions (22% and 20%, respectively). Overall 3-year shortfall in savings is 5.3%. It is not clear why WMECO and FG&E find much less opportunity than do the other PAs, while CLC proposes a very large increase. Again, it is not clear by EM&V findings should impact the electric savings goal.

Small C&I DI

- NSTAR maintaining goal. Other PAs proposing reductions: Grid: 33%, CLC 99%, WMECO 27%, and FG&E 13%. Berkshire is planning an increase where WMECO is proposing a decrease.. It is not clear what, given this program targets time discretionary savings and is driven by turnkey vendor delivery, the barriers are to expanding this effort.

D. Commercial & Industrial Gas

Summary

- Overall, PAs are proposing to reduce 2012 annual goal by 6.1%, with a 3-yr reduction of 3.7%. This falls short of meeting targets.
- The shortfall for C&I total is approximately 720 thousand therms. With $8 million in available budget compared to original goals, this translates into $11/first-year-Therm. We believe even if all of the gap were made up with the Small C&I DI program it would still come in well below this cost per therm, and should be easily ramped up by asking vendors to expand production.

New Construction

- NSTAR is proposing to increase 2012 goals in this market 109.4%. Grid is proposing to reduce goal by 16%. Columbia proposes to decrease 2012 goals by 10%. Other PAs propose reductions, with both NEG and FG&E reducing goals by about 50% and 22% respectively (Berkshire has a small 5.7% reduction). Overall, PAs propose a 5.1% increase in 3-year goals. It is not yet clear if this is explainable by differences in territory and poorer economy in those regions with reductions. Given the integrated nature of electric and gas projects, we do not have an explanation why overlapping gas and electric utilities would see the potential so differently. WMECO 9% reduction versus Berkshire with 49% reduction. National Grid expects to meet gas goals, while serving the Cape, while CLC proposes to reduce its goal by 75%.

Large Retrofit

- Projected 2012 savings are reduced 8.9% in 2012, compared to goal, with 3-year savings short of goal by 6.7%. NEG and Columbia propose increases of 11% and 9.4% respectively. All other PAs propose reductions; Grid 13%, NSTAR 4.3%, Berkshire 8%, FG&E 54.8% .

Small C&I DI

- Projected 2012 savings are reduced 33.8% in 2012, compared to goal, with 3-year savings short of goal by 19.3%. This reflects a significant shortfall in original goals. All PAs proposing reductions most notably, NEG 71%, Grid 41%, except Berkshire which is planning a 245% increase in 2012 goals The barriers to ramping up are not immediately obvious. Again, it is not obvious where Grid gas territory overlaps considerably with NSTAR electric territory, why National Grid is proposing a 41% decrease in the gas DI goal for 2012 when NSTAR plans to meet its electric DI goal in 2012.

2012 Evaluation, Measurement, and Verification (EM&V) Plan

We have worked with the PAs on multiple iterations of the EM&V plan, and generally support the submitted document. We provide the following observations as background for the Council:

- The plan is at least as much a status report as it is a plan, with the great majority of the listed studies being either already in progress or, in a few cases, recently completed. Further, of the subset of studies listed that are not already in progress, most are due to begin imminently, with little discussion of work to begin in 2012.
- We believe this near-term focus is largely due to recent losses and turnover in EM&V staff at the PAs. The PAs have lost as many as six experienced evaluators in recent months (a significant percent of their total capacity) due to force reductions and other

factors, at a time when there are a large number of studies in progress, leaving them little time for longer-term planning.

- Given these resource constraints, we do not believe it would be productive to push for more of a longer-term EM&V planning effort at this point in time. Instead, we believe what is most important is to complete the in-progress studies in a timely and high-quality manner and launch the additional work that is needed in the near-term, while keeping in mind that the listed studies do not represent the totality of what will need to be accomplished by the end of 2012. The plan contains wording that acknowledges this latter fact.
- It may be necessary to add some near-term EM&V work (for late 2011 and early 2012) to support the legislatively-required assessment of energy efficiency potential for the next Three-Year Plan and/or the development of the next Three-Year Plan (initial draft due to the EEAC in April 2012). However, because the approach to both of these is under development, it would be premature to put them in the 2012 EM&V plan (though there may be more clarity later in October, before the MTMs are filed with the DPU).

Performance Incentives

A. PI Mechanism

We have reviewed the performance incentive mechanism (the structure of the calculations) and note that it appropriately reflects the model used in previous filings. We have identified several anomalies with some of the data, and expect them to be addressed in next iterations of the model's application, when any changes in savings or costs are also incorporated into the MTMs.

B. Performance Metrics

Residential: We continue to work with the PAs to refine the 2012 Residential metrics in order to put forth the most appropriate and effective metrics package for Council and DPU review.
Low Income: The draft 2012 Low Income metrics have been completed, with input from LEAN, the PAs, and the consultants.
C&I: We have reviewed the metrics file and made edits. We believe we are in general agreement on these.
Cross Sector: Discussions with the PAs need to be held on these metrics. The versions included in the draft MTMs are identical to those included in the 2011 MTMs.

Technical Reference Manual, PY2012 Plan Version

The TRM provides savings assumptions that help to inform the savings targets for the PY2012 Plan, and will be used to track PY2012 savings. The PAs provided draft updates to TRM sections starting at the end of August, and following an interactive process with the PAs we received revised draft sections October 4-5. While our review is not yet complete, the majority of priority comments have been addressed to our satisfaction. We have not yet received responses to all of our comments, and expect to complete our discussions with the PAs in time for a final version before the October 28 filings with the DPU. Highlights of our review include:

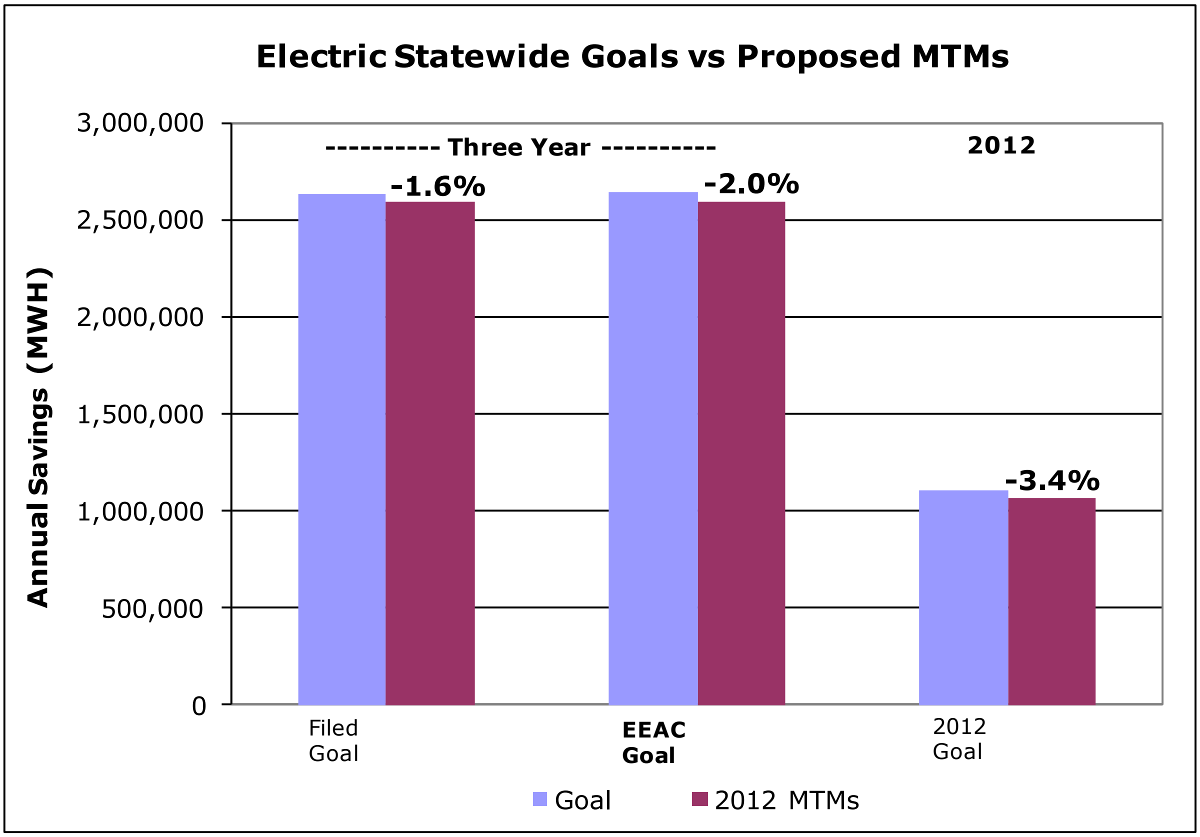
- Revisions to net-to-gross ratios, which have a large impact on claimed savings. These have largely been revised based on recent evaluation studies. For some measures the PAs have agreed to values that will lower claimed savings, reflecting market conditions.

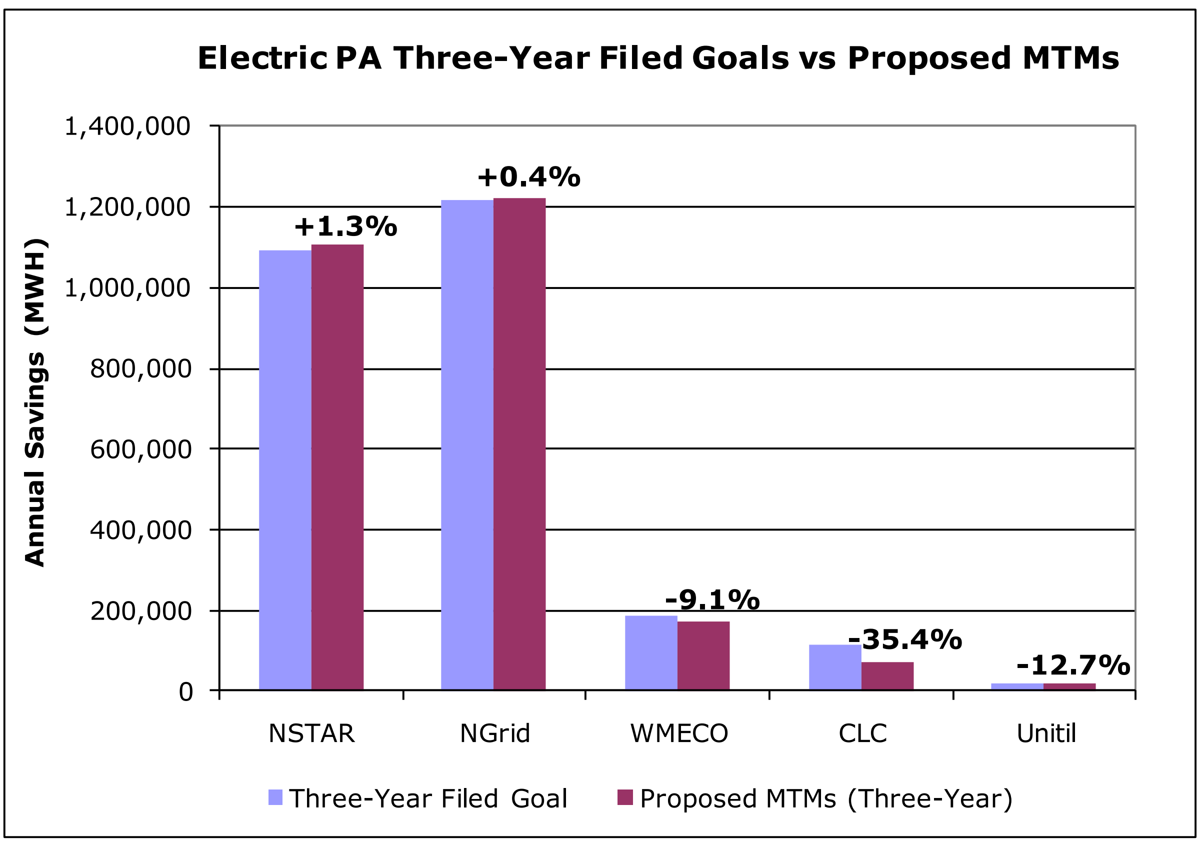
- The impact of Federal lighting standards that go into effect incrementally from 2012 through 2020. These new standards produce complex, changing baselines against which savings are claimed. The PAs have adjusted some savings assumptions accordingly.

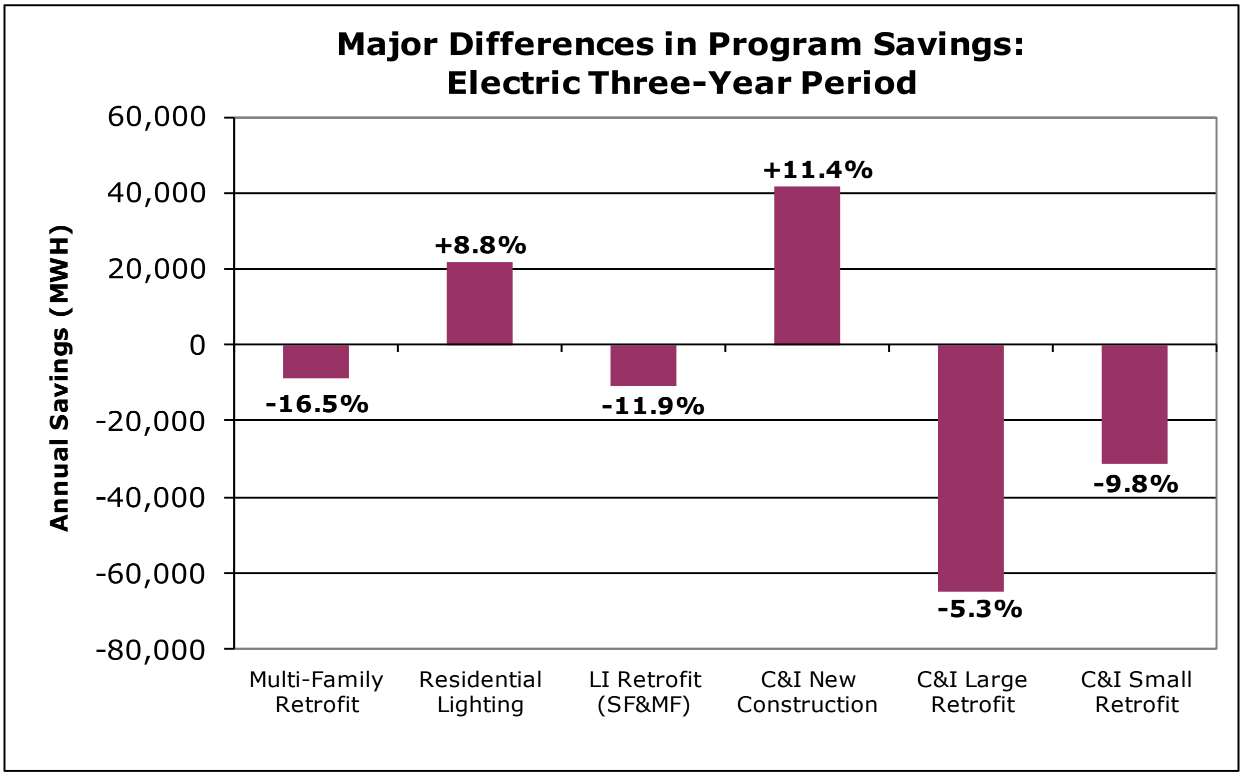
Some specific outstanding "priority 1" issues that we expect to be resolved in the filed 2012 TRM Plan version are listed below.

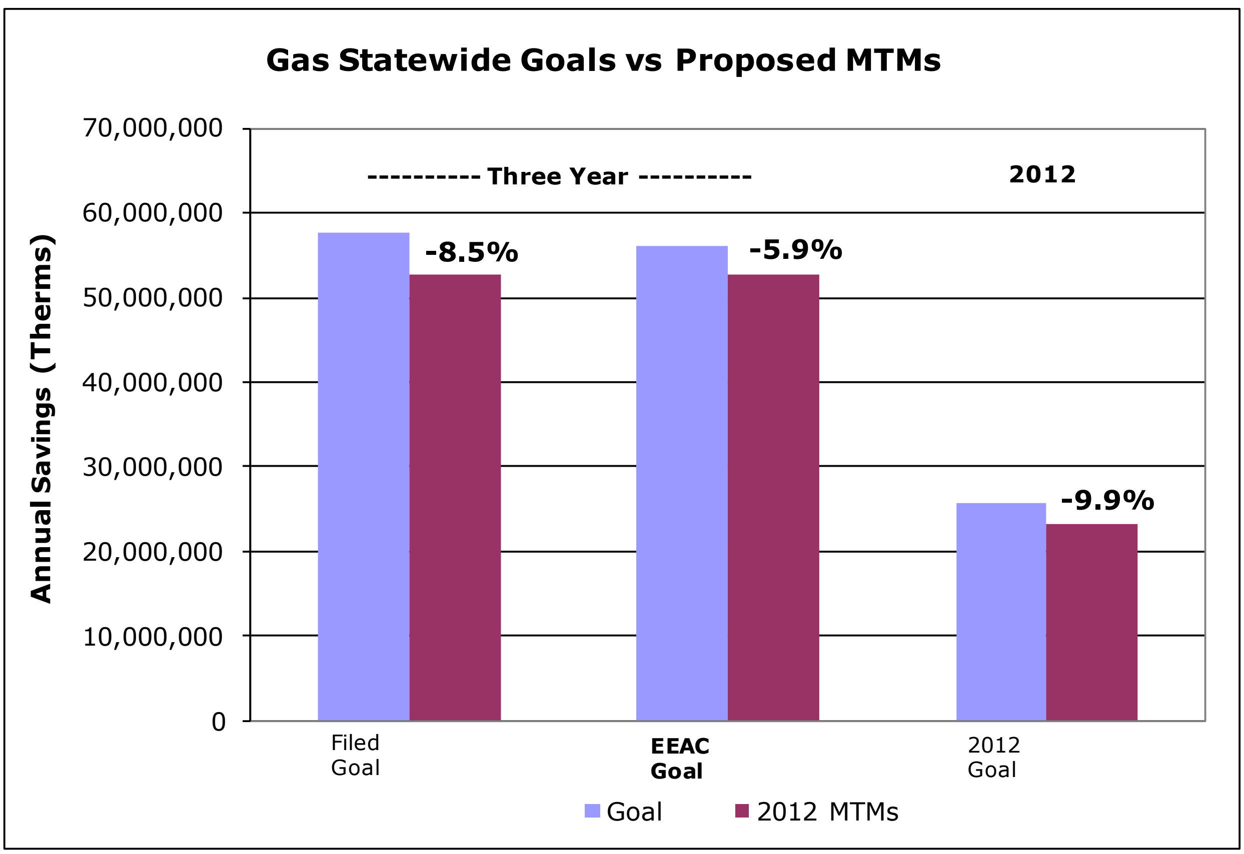
- Lighting systems efficient and baseline wattage tables are not provided.
- Baseline wattages for New Construction lighting are not identified.
- The effect of EISA and other pending federal standards for lighting measures.
- Programmable Thermostats for C&I are included as a gas measure, though we believe there is insufficient evidence of savings.
- Some HVAC measure baselines don't reflect federal manufacturing standards.
- We have not yet received a final draft of the non-electric impacts table, but based on a review of a preliminary draft we are not expecting any significant issues.

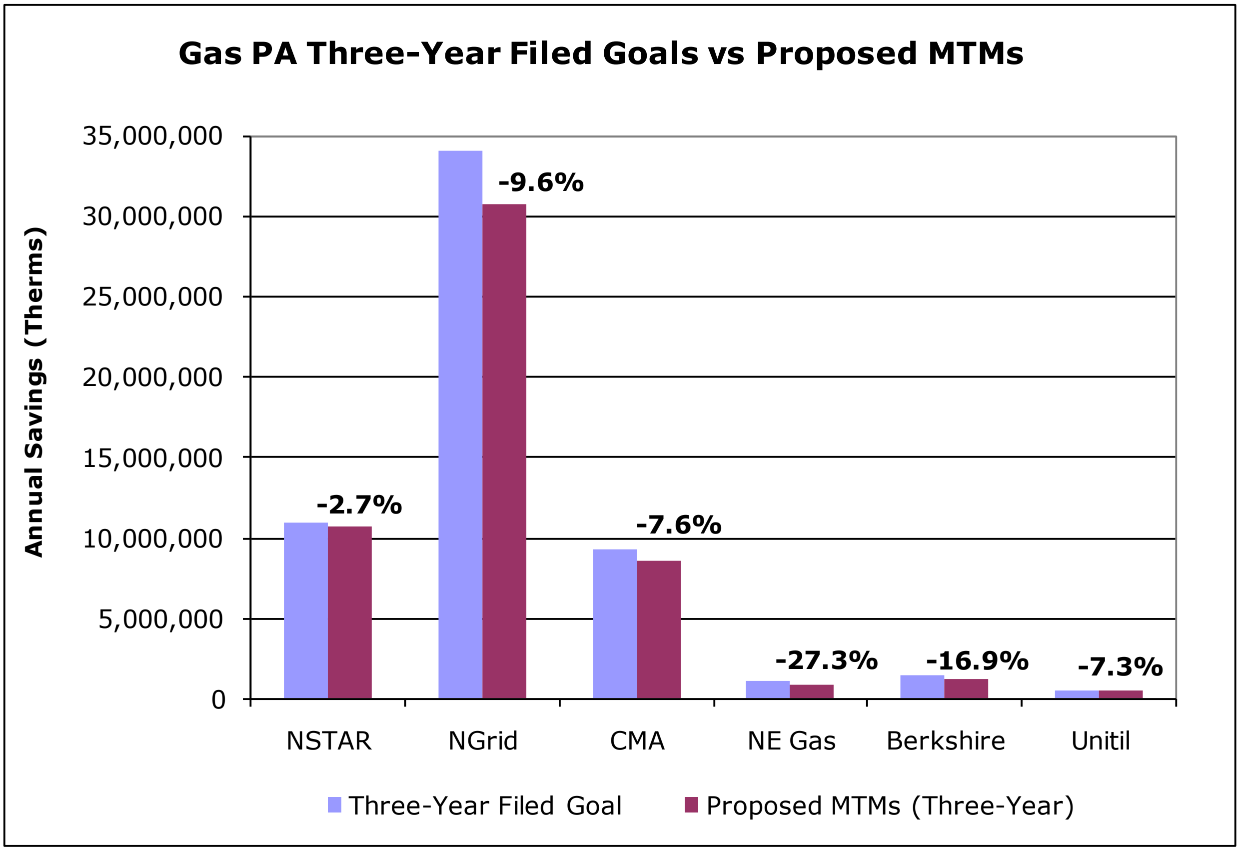
Please see savings charts on following pages

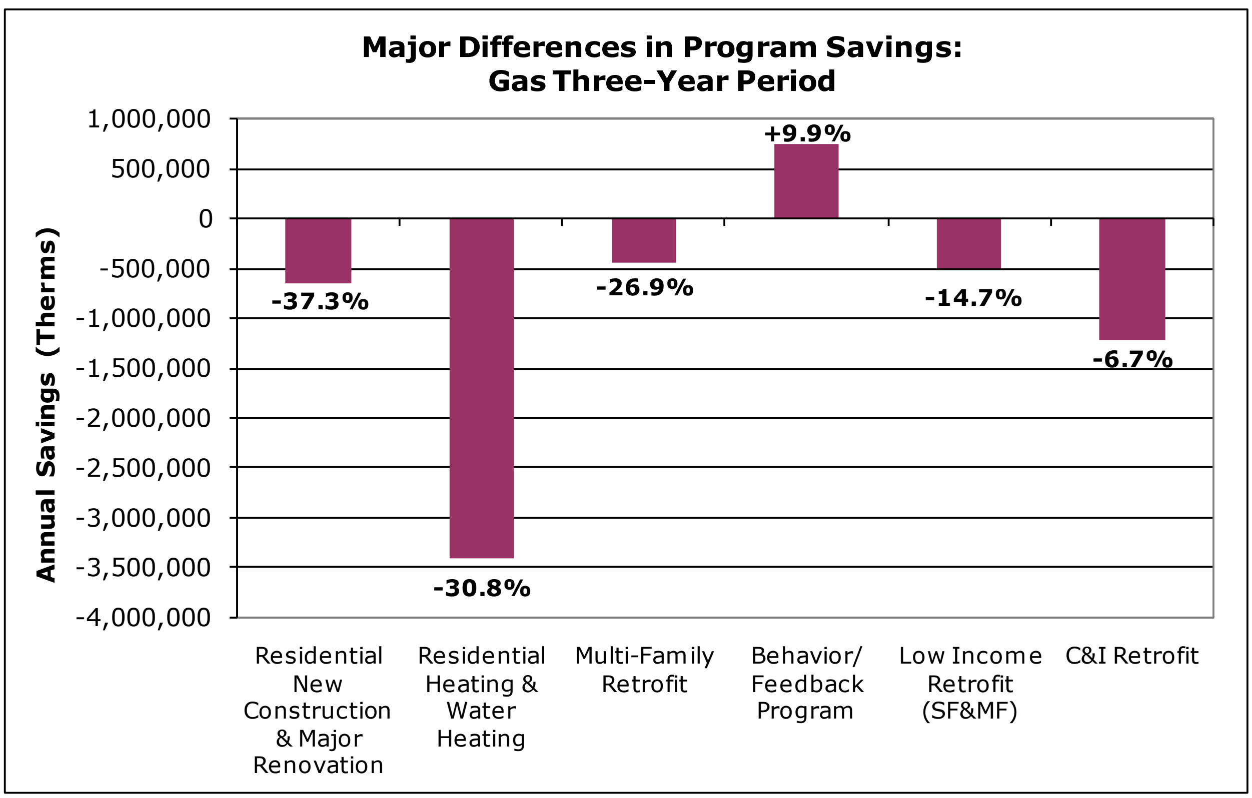

Electric Statewide Goals vs Proposed MTMs
Annual Savings (MWH)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
---------- Three Year ----------
2012
-1.6%
-2.0%
-3.4%
Filed Goal
EEAC Goal
2012 Goal
Goal
2012 MTMs


Electric PA Three-Year Filed Goals vs Proposed MTMs
Annual Savings (MWH)
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
+1.3%
+0.4%
-9.1%
-35.4%
-12.7%
NSTAR
NGrid
WMECO
CLC
Unitil
Three-Year Filed Goal
Proposed MTMs (Three-Year)


Major Differences in Program Savings:
Electric Three-Year Period
Annual Savings (MWH)
60,000
40,000
20,000
0
-20,000
-40,000
-60,000
-80,000
-16.5%
+8.8%
-11.9%
+11.4%
-5.3%
-9.8%
Multi-Family Retrofit
Residential Lighting
LI Retrofit (SF&MF)
C&I New Construction
C&I Large Retrofit
C&I Small Retrofit


Gas Statewide Goals vs Proposed MTMs
Annual Savings (Therms)
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
0
---------- Three Year ----------
2012
-8.5%
-5.9%
-9.9%
Filed Goal
EEAC Goal
2012 Goal
Goal
2012 MTMs


Gas PA Three-Year Filed Goals vs Proposed MTMs
Annual Savings (Therms)
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
-2.7%
-9.6%
-7.6%
-27.3%
-16.9%
-7.3%
NSTAR
NGrid
CMA
NE Gas
Berkshire
Unitil
Three-Year Filed Goal
Proposed MTMs (Three-Year)


Major Differences in Program Savings:
Gas Three-Year Period
Annual Savings (Therms)
1,000,000
500,000
0
-500,000
-1,000,000
-1,500,000
-2,000,000
-2,500,000
-3,000,000
-3,500,000
-4,000,000
-37.3%
-30.8%
-26.9%
+9.9%
-14.7%
-6.7%
Residential New Construction & Major Renovation
Residential Heating & Water Heating
Multi-Family Retrofit
Behavior/ Feedback Program
Low Income Retrofit (SF&MF)
C&I Retrofit