



Memorandum

To EEAC
From Eric Belliveau and the EEAC Consultant Team
Date 7 June 2012
Subject Monthly Report – May 2012

The Consultant Team is pleased to provide this monthly update to the Council on our recent activities.

Highlights from the Advisory Groups

Planning & Analysis Advisory Group

- Reviewed the PA-proposed Initial Draft Three-Year Plan for 2013-2015 (dated April 30th) in early May. Conducted analysis and drafted comments for review by the Council. Analyzed PA-proposed savings and costs across the PAs and identified best practices and best-performing PAs (based on draft Plan data) by sector. Prepared comments and a report for the Council's consideration at the May 8th EEAC meeting.
- Met with the PAs to discuss and consider the key components of the next Three-Year Plans, including savings and benefit goals, key program enhancements and strategies to support the Council's priorities, program costs, bill impacts, and performance incentives. Compared savings and cost estimates with the PAs and analyzed initial savings and cost estimates from the PAs.
- Continued discussions of planning and analysis activities and reviewed drafts of documents for the development of the next Three-Year Plans, including for the development of savings and benefits goals, and for the estimation of future program costs.
- Reviewed and analyzed past performance and actual costs per unit savings for electric and gas programs, as represented in the 2011 preliminary year-end estimates, related to the achievement of the 2011 year-end savings and benefits goals and other Council priorities. Reviewed 2010 performance through review and analysis of the 2010 Annual Reports, and reviewed the recent performance goals in the 2012 Mid-Term Modifications (MTMs). Developed estimates of future electric and gas EE program costs and cost ranges, based on historical costs.
- Assisted in the development of comments and analyses regarding the DPU EE Guidelines NOI on net savings for the consideration of the Council and individual Councilors, as directed. Further analyzed the net savings topic including options for addressing the issues.
- Analyzed the target and earned performance incentives in 2010 and 2011, considered potential revisions to performance incentives and metrics for 2013-2015, and began work on a briefing package on performance incentives to be presented to the Council at a future meeting.



- Reviewed the DPU NOI Phase II order, dated May 25th, regarding the DPU's straw proposal on the regulatory review and approval of performance reports, performance incentives, energy efficiency surcharges, and mid-term modifications. Developed a summary table comparing the provisions in the DPU straw proposal to current procedures and practices, for review by the Executive Committee and the Council in June.
- Attended and participated in the Appreciative Inquiry event on May 15-16. Discussed the insights with councilors.
- Participated in the DPU 08-50 bill impacts working group session on May 14.
- Reviewed and commented on the 2012 Q1 quarterly reports. Reviewed the 2012 dashboard monthly reports from the PAs and prepared the monthly dashboard trend reports.
- Provided data, technical assistance, and support for the development of the Annual Report to the Legislature.

C&I Advisory Group

- Continued engagement with PAs on plans and savings attribution methods. PAs distributed a new draft plan to DOER in May. EM&V PA working group continued to meet to resolve EM&V issues. PAs are considering whether moving to a 3-yr framework for assessing savings and providing credit is acceptable and consistent with current regulatory rules.
- Reviewed and commented on PAs April 30 3-Year Plan filing. Submitted comments to EEAC.
- Developed 6-page follow-up memo to PAs with ideas and suggestions to advance Council Priorities, increase gas savings, and ultimately meet the proposed goals of the next 3 years. These ideas and suggestions were to be used by the PAs in developing their revised 3-Year Plan program descriptions by June 1.
- Reviewed the several draft evaluation reports important for the 3-year Plan and provided comments to evaluation contractors on results and potential changes for final draft. Evaluations included Large C&I Process Evaluation, HVAC Market Characterization, C&I Custom Lighting, C&I Custom Gas, etc.
- Participated in discussions with Residential Multifamily Working Group to develop changes/enhancements to Multifamily delivery models in next 3 Year Plan. The Consultant Team focus is to provide a seamless and coordinated Multifamily initiative that is seamless to the customer and delivers comprehensive savings.
- Participated in scoping discussions with KEMA and PAs on forthcoming market research study to increase the use of comprehensive and whole system approaches to gain more comprehensive (deeper) savings.
- Participated in PA discussions on evolving the role of MTAC to be proactive instead of only reactive.
- Continued discussions with Healthcare w/o Harm regarding feedback from AI Summit and potential next steps with PAs.
- Discussed and communicated potential concerns with National Grid's PEI Green Grocer initiative with PAs and Council.
- Continued discussions with PAs and NBI on support/sponsorship/role of MassSave with NBI's ALG resource and their Deep Retrofit pilot.



Residential Advisory Group

The Residential Advisory Group covered key program areas by engaging with several working groups and on several topics.

- **General:** Engaged the PAs on high level Residential Sector issues at the bi-weekly Residential Management Committee (RMC) meeting, with a primary focus on Three-year planning. Presented the RMC with recommended program enhancements, and outlined a vision of where the Massachusetts residential and low income programs could be in three years. Reviewed all pertinent EM&V study results to help inform program designs for Three-year plan. Communicated with the DOER Residential Team, at their weekly calls, about residential sector issues. Had preliminary discussions on EE-Renewables integration. Participated in weekly EEAC Consulting Team calls and bi-weekly RES Consulting Team coordination calls.
- **Home Energy Services:** Participated in the HES working group meeting and delivered a Three-year vision slide presentation, outlining recommended program enhancements. Reviewed and monitored progress of the Contractor Best Practices group.
- **Multifamily:** Participated in the Multifamily Retrofit working group meeting and delivered a Three-year vision slide presentation, outlining recommended program enhancements.
- **Products:** Initiated dialog with PAs' planning and evaluation staff on key Three-year Plan lighting planning assumptions, including continued discussion of LED lifetime. Developed draft detailed "bottom-up" analysis of three-year lighting savings opportunity. Continued to participate in discussions with PAs, NEEP and D&R (market lift contractor) on implementation of a market lift pilot for lighting. Reviewed and commented on NMR proposed consumer electronics survey questions. Initiated dialog with national lighting experts on dimming capabilities of LEDs and whether and how any such limitations should affect PA promotion of LEDs.
- **HVAC:** Drafted revised HVAC integration memo. Participated in call with HEHE sponsors to identify and discuss Three-year Plan savings opportunities. Continued discussion with Cool Smart sponsors on current 2012 and proposed Three-year Plan ductless split incentive levels. Reviewed and commented on PAs' draft upstream HVAC memo. Participated in NEEP HPWH stakeholders call.
- **Residential New Construction:** Finalized, circulated and discussed the "Duct and Envelope Tightness Verifier" white paper to increase awareness of the PAs and others of the need for home performance testing in the next version of the energy code. Participated in several JMC calls to discuss new RNC program designs, prescriptive approaches, and the Three-year plan. Reviewed and commented on RNC baseline study and the technical implications to the "user-defined reference home" (UDRH) for calculating savings.
- **Low Income Retrofit & Multifamily:** Participated in the Low Income Best Practices working group meeting and the Low Income multifamily working group meeting.

Evaluation, Measurement & Verification Advisory Group

Large C&I Gas, Gross Savings. A near-final report on an impact evaluation of custom measures and a draft report on an impact evaluation of prescriptive measures suggest that it remains somewhat challenging for the PAs to accurately forecast savings in this area. The custom impact evaluation is yielding somewhat disappointing results (current RR: 65%). The prescriptive impact evaluation yields good overall results (current RR: 104%); however, for three of four measure categories studied the realization rates are sub-par, with the overall realization rate being saved by the fourth and largest measure category. The results of both of these studies will be applied both retrospectively to 2011 final results, and



prospectively to 2013 forecasted results. Based on these results and those from previous C&I gas impact evaluations, there may need to be an immediate third set, as there is little indication as of yet of the results stabilizing.

- **Large C&I Gas, Net-to-Gross Ratio.** A new draft net-to-gross study focusing on LCI gas participants indicates that the NTGR fell somewhat, from an overall statewide level of 90% in 2010 to 79% in 2011. In the case of custom measures, this decline in the NTGR will compound with the shortfall in gross savings to further reduce savings from custom gas measures going forward. This result will be applied both retrospectively and prospectively.
- **Large C&I, Electric.** A completed evaluation of custom lighting measures indicates that engineering estimates are accurately forecasting gross savings (RR: 98%). The EM&V contractors report that an impact evaluation of prescriptive lighting that is not quite complete is tending to lead to the same general conclusion. However, completed impact evaluations of custom process measures (RR: 76%) and compressed air (RR: 85%) suggest that the same may not be true for custom measures. All of these studies will be applied prospectively. All except the prescriptive lighting study will also be applied retrospectively.
- **CHP.** A completed performance evaluation of CHP projects finished in 2010 yields good overall results (RR: 90-100%, depending on the specific savings measure). However, there were differences depending on whether the initial savings estimates were developed by the PA or a third party, with the latter showing significantly lower realization rates.
- **Small C&I.** A near-complete impact evaluation of non-control lighting measures indicates that, as with Large C&I, engineering estimates are reliably forecasting savings for this measure category (RR: 102%). However, a draft impact evaluation of lighting control measures deploying both pre- and post-metering suggests that the same is not true for control measures (tentative RR: 43%). Non-control lighting makes up the bulk of savings for this program, but the contribution of lighting control measures is non-trivial and increasing. The lighting control measures study finds savings to be highly variable across applications, and provides some recommendations for enhancing and more accurately forecasting savings results.

We note that, while this study focused only on Small C&I, we believe it may also raise questions regarding the true savings resulting from lighting controls in Large C&I. While lighting controls measures are included in the Large C&I lighting studies described above, the Large C&I studies typically did not include pre-post metering. We note that the Small C&I controls study encountered significant challenges and took a long time to complete.

The non-controls study will be applied both retrospectively and prospectively, while the lighting controls study will be applied only prospectively.

- **Behavioral Programs and Pilots.** A completed impact evaluation of OPower programs covering all cohorts, fuels, and PAs in the state to date indicates that these programs generally appear to be producing savings consistent with initial forecasts. Noteworthy is the fact that savings appear to increase when a given cohort continues to receive mailers for a second year, a finding that is consistent with the results of OPower programs elsewhere in the U.S.

A draft impact evaluation of WMECO's Efficiency 2.0 pilot focusing on the mailer component yields estimated savings of 0.4% per household, a result that we believe it would be fair to characterize as somewhat disappointing. However, it is important to note that the mailer is only one component of this pilot, with the web-site being another important piece of the puzzle. Impact evaluation results on the web-site component are due in June.

- **HES Impact Evaluation.** A summary of the impact evaluation findings has been presented to the PAs and the EEAC evaluation advisor. Cadmus is presently addressing the comments received and will have a draft of the report in the next two weeks. The results of this study will be applied only prospectively.



- **HES Net-to-Gross Ratio.** The draft report on a new NTG study of HES shows a drop in NTG from 112% in 2010 to 98% in 2011. The drop is mostly due to a higher freeridership and lower participant spillover rate for CFLs. The 2011 study is broader than previous studies and includes spillover estimates for air sealing. Air sealing and insulation have NTG ratios of over 100%, while CFLs and refrigerators have NTG less than 100%. These results will be applied both retrospectively and prospectively.
- **Multi-Family Engineering Assessment.** An engineering assessment was made of the MF program and the assumptions used by each PA. The report develops a revised set of assumptions that can be used across MA. These results will be applied only prospectively. Survey results indicate that the multifamily program is experiencing excellent installation and persistence rates. Free ridership was calculated at 18% and spillover was less than 1%.
- **Low-Income Impact Evaluation.** The near-complete impact evaluation of the low income process finds that billing analysis confirms the saving estimates used in program planning. On average across the state, the billing analysis is finding the savings for insulation and air sealing, boiler replacement, and furnace replacement higher than expected.
- **Brushless Fan Motors Pilot Impact Evaluation.** Savings from 40 monitored sites indicates that fans operated 1,493 hours per year, which is significantly less than the deemed savings assumption of 5,000 hours. This translates into a savings of 246 kWh per motor, down from the assumed savings of 600 kWh/motor. This evaluation does not address the performance of a similar technology referred to as an electrically commutated motor (ECM) offered as a lost opportunity measure.
- **Heat Pump Water Heaters Evaluation of Field Installed Performance.** A year-long field test of 14 monitored HPWHs showed that performance was more than twice as efficient as traditional electric resistance tank water heaters.

Upcoming Activities

The sections below detail expected project efforts in the coming month. A two-month calendar of significant milestones and events appears after the Advisory Group summaries.

Planning & Analysis Advisory Group

Three-Year Plan activities continue to be the major focus of nearly the entire Consultant Team. Some of the specific tasks we anticipate are:

- Continue analysis for the development of the 2013-2015 Three-Year Plans.
- Review the Revised Draft Plan (expected on July 2nd) in June and July. Conduct analysis and draft comments for review and consideration by the Council. This will be the primary Planning & Analysis task during these two months.
- Meet with the PAs to discuss and consider the key components of the next Three-Year Plans, including savings and benefit goals, key program enhancements and strategies to support the Council's priorities, program costs, bill impacts, and performance incentives.
- Analyze the drivers of program costs and compare the analysis and data with the PAs' estimates.



- Develop and analyze options and approaches for performance incentives, overall incentive levels, and the performance incentive mechanism details for the next Three-Year Plans. Provide a briefing on performance incentives and future options to the Council.
- Support the EEAC by continuing analysis and work on the DPU EE Guidelines NOI regarding net savings and environmental/carbon compliance costs, as directed by the Council. Participate in any additional discussions or follow up as directed, including in meetings with the PAs and others.
- Support the EEAC in its review and analysis of the DPU NOI Phase II order, dated May 25th, regarding the DPU's straw proposal on the regulatory review and approval of performance reports, performance incentives, energy efficiency surcharges, and mid-term modifications.
- Participate on behalf of the Council in any other DPU 08-50 processes, as scheduled and as assigned.
- Review, compile, and comment on 2012 quarterly reports and the dashboard monthly reports and trends.
- Analyze progress towards full incorporation of the key building blocks for accomplishing the goals of the Three-Year Plans to achieve deeper savings and other key Council priorities.

C&I Advisory Group

- The C&I CT remains focused on working with the PAs on revising the 3 Year Plan drafts to support advancement of Council Priorities and achievement of proposed goals.

Residential Advisory Group

- **General:** Engage with the PAs at the RMC on 3-year planning activities. Provide feedback and recommendations to the PAs on revised program descriptions, and proposed savings and budgets, in preparation for the July filing. Continue important planning discussions with the PAs, including on LED lighting and Behavior-Feedback programs.
- **Behavior-Feedback:** Discuss Behavior-Feedback EM&V study results and recommendations, and engage PAs on new ideas and a coordinated strategy for the Three-year plan.
- **Home Energy Services:** Continue to work with the PAs on Three-year planning and provide feedback on proposed program designs, savings and budgets.
- **Multifamily:** Continue to engage with the PAs on Three-year planning and provide feedback on proposed program designs, savings and budgets.
- **Products:** Continue to work with PAs, NEEP, D&R, and Council evaluation consultant (R. Prah) to implement market lift model. Discuss LED lifetime and other key lighting planning assumptions. Engage PAs on Three-year planning and provide feedback on proposed program designs, program savings and budgets.
- **HVAC:** Continue to work with C&I Consultants and PAs to develop upstream HVAC implementation model. Continue to work to further residential gas-electric integration. Engage PAs on Three-year planning and provide feedback on proposed program designs, savings and budgets.

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CONSULTANT TEAM

- **Residential New Construction:** Continue to work with PAs on initiative design modifications (prescriptive/checklist approach, mid-rise multifamily and advanced lighting and controls) in anticipation of rising baselines with the new energy code. Incorporate recent findings from baseline study into Three-year planning process and determine initiative changes necessary to keep cost-effectiveness greater than 1.0. Engage PAs on Three-year planning and provide feedback on proposed initiative designs, savings and budgets.
- **Low Income Retrofit & Multifamily:** Continue to engage with the PAs on Three-year planning and provide feedback on proposed program designs, savings and budgets.
- **Codes & Standards:** Continue to work with PAs to review and provide feedback on initiative approach, design, integration with DOER code efforts and savings attribution methodologies

EM&V Advisory Group

- We anticipate that our activities over the next month will be dominated by finalizing the remainder of the current wave of final reports and working on the application of the results, although we will also continue to be involved in a wide range of EM&V planning and implementation activities. In our June report we expect to summarize key process evaluation and market assessment results, including the following studies:
 - C&I new construction code compliance study
 - Residential new construction baseline and code compliance study.
 - C&I HVAC supply-side study
 - Large C&I process evaluation
 - Behavioral programs process evaluation and integrated report
 - HES process evaluation
 - C&I Non-Energy Impacts study
 - Umbrella marketing baseline study
 - Multi-family and low income process evaluations.
 - Several residential retrofit pilot studies.



June 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
				1 EE Conference and Expo, Intercontinental
4	5	6	7	8 Springfield MPG Pilot WIP Training
11	12 EEAC Meeting	13 NEEP Summit, Stamford	14	15
18	19 DPU NOI Phase II Technical Session	20	21	22
25	26	27	28	29



July 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
2	3	4	5	6
9	10 EEAC Meeting	11	12 Comments due on DPU NOI Phase II	13
16	17	18	19	20
23	24 EEAC Meeting (2 nd meeting in July)	25	26	27
30	31			