mass save
Savings through energy efficiency

# 2013-2015

# Massachusetts
# Joint Statewide Three-Year
# Electric and Gas Energy Efficiency Plan

nationalgrid

NSTAR

Columbia Gas of Massachusetts
A NiSource Company

Western Massachusetts Electric
The Northeast Utilities System

Cape Light Compact

berkshire gas
A UIL HOLDINGS COMPANY

New England Gas Company

Unitil

BLACKSTONE GAS COMPANY

## November 2, 2012

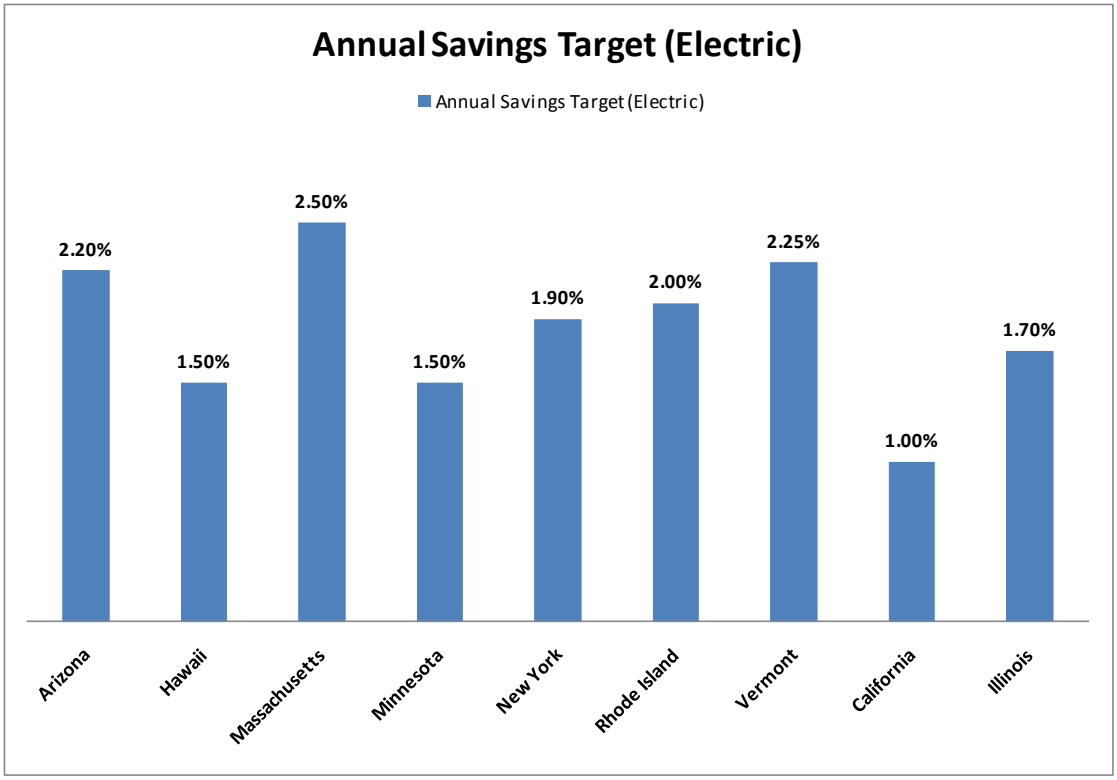
# 2013-2015 MASSACHUSETTS JOINT STATEWIDE THREE-YEAR ELECTRIC & GAS ENERGY EFFICIENCY PLAN

**Prologue:**

## THE BIG PICTURE: AGGRESSIVE SAVINGS, STREAMLINED COSTS, AND INNOVATION

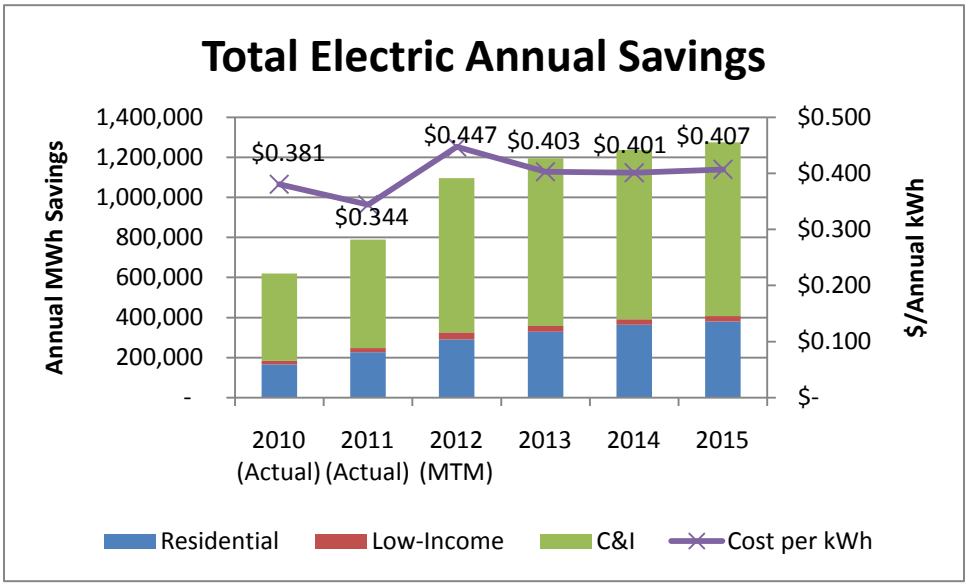
- **The PAs are proposing the most aggressive savings goals for an integrated gas and electric statewide energy efficiency program anywhere in the nation.**

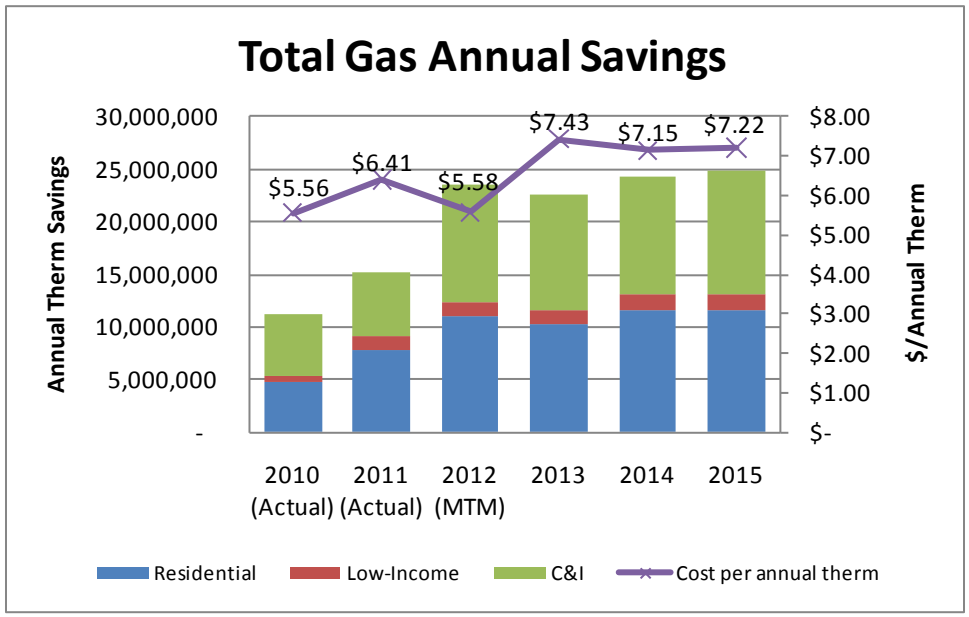
  Escalating electric target of 2.5 percent, 2.55 percent, and 2.6 percent of retail sales compares with California target of approximately 1 percent.




NSTAR, Western Massachusetts Electric Company, and National Grid electric savings levels each **exceed** 2.5 percent. The Council's escalating gas target is 1.10 percent, 1.12 percent, and 1.15 percent of retail sales. National Grid Gas and NSTAR Gas have adopted savings targets that meet or exceed this level on a three-year basis. All gas PAs have significantly **increased** savings goals from July 2, 2012 and September 19, 2012 proposals, even with the challenges of new evaluation results. Electric and gas savings, statewide and for each PA, exceed goals set forth in the October 29, 2012 Term Sheets.

Annual savings set at consistently high levels over the three years of the Plan, with level costs, as shown below:




- To achieve these challenging savings levels in light of: (1) new codes and standards requirements for more efficient equipment, and (2) evaluation results, the Program Administrators will **ramp up production** and **reach more customers**, with more equipment installed and services provided.
- These savings targets and costs factor in CHP project availability and EM&V studies showing decreased net savings in certain programs (in particular on the gas side), and challenges posed by increasing efficiency baselines (especially EISA lighting standards). To maintain savings, PAs must consistently do more.
- Results to date demonstrate that the PAs have prudently expended customer funds and have been able to deliver savings at historic levels below projected costs; this commitment to cost-efficiency will continue in 2013-2015.

**TERM SHEETS**

- PAs, DOER, and the Attorney General have come to an overall agreement in principle on core 2013-2015 items, including budgets, savings, and benefits and performance incentives. These agreements reflect intensive discussions that concluded on October 29, 2012.
- The Plan is consistent with the Term Sheets and reflects the consensus positions.
- The full Council is expected to act in support of the Term Sheets on November 5, 2012.

**NEW BREAKOUT INNOVATIONS FOR 2013-2015**

- **Efficient Neighborhoods+**: The PAs are proposing this bold new initiative to serve lower income and working-class communities that incorporates extensive public feedback and targets economically challenged neighborhoods and will explore target communities such as the Commonwealth's "Gateway Cities" and Green Communities.
- The PAs will drive the **lighting revolution** they have led: new technologies, more savings, better lighting quality, more satisfied customers.
- State-of-the-art **new approaches** target the healthcare sector, office space and municipalities: multi-year MOUs, new technologies, Office of the Future efforts, a new approach across the Commonwealth to serve and proactively engage with cities and towns, including Green Communities, and an effort that is focused on wastewater and drinking water treatment facilities in collaboration with DEP.
- **Public education**: a new commitment to schools, developing curricula and driving a culture of sustainability based upon suggestions from stakeholders.
- Enhanced use of **market segmentation studies** and sector-focused "Go-to-Market" approaches.

**CONTINUATION OF AREAS OF EXCELLENCE**

- A commitment to Massachusetts' outstanding EM&V: continuation of the successful EMC, ensuring confidence in results, learning from experience. Over $69 million budgeted for EM&V activities in accordance with the Term Sheets.
- Sharing of best practices and adoption of new technologies: the C&IMC, RMC, Low-Income Best Practices Group, Statewide Marketing Committee, and MTAC; each group integrated across gas and electric PAs – no state matches the effort and cooperation of the Massachusetts Program Administrators.
- Cohesive and extensive marketing and outreach efforts including extensive community engagement and creative new campaigns.
- Continued sensitivity to customer bill impacts and sustainability.

**BENEFITS ACROSS THE BOARD**

- **Over $8.92 Billion** in economic benefits for customers.
- Environmental benefits, as a legacy for future generations, comparable to taking approximately 403,407 cars off the road or eliminating the output of a 470 MW power plant for one year.
- Important job creation benefits- ongoing research is indicating that each million dollars spent on residential weatherization supports 12 direct in-the-field full time jobs and, according to the 2012 Massachusetts Clean Energy Industry Report, energy efficiency has been adding jobs to the Commonwealth at a 10 percent growth rate since 2011.
- Robust BCRs of 3.69 (electric) and 1.81 (gas).
- Improved quality of life for our most vulnerable low-income customers as a result of the historic partnership between LEAN and the PAs.

**UPDATES SINCE JULY 2, 2012 AND SEPTEMBER 19, 2012 DRAFT PLANS**

- All PAs have increased savings in response to the Council's requests and are at or above PA-specific and statewide levels set forth in the Term Sheets.
- Each PA has focused on increasing savings and reducing costs, with the understanding the budgets, savings, and performance incentives are interlinked.
- The PAs, DOER, the Attorney General, and the Council's Consultants have engaged in good faith negotiations on goals and costs, sharing detailed analytics both statewide and PA-specific and have eliminated previous gaps.
- Statewide electric **increases savings** by 102,108 MWh and **decreases costs** over $73.7 million notwithstanding the significantly increased savings from July values. The costs savings are even higher, **$118 million**, if July costs are applied to the increased savings levels presented today.
- Statewide gas **increases savings** approximately 8% in both lifetime and annual savings as compared with the July 2, 2012 filing.
- Gas costs have decreased as compared to the September 19, 2012 draft, and are at levels supported in the Term Sheet.
- Cost drivers and variances tables (electric and gas) indicate **decreasing expenditures on PP&A** (proportionate), and that increased budget dollars are flowing **to customers** in the form of incentives and technical assistance, as well as increased expenditures (proportionate) for EM&V
- While some differences in BCRs remain at the initiative level, there has been much increased convergence. When BCRs are analyzed at the portfolio level, particularly on the gas side, they are notably in alignment:

| 2013 BCRs | CMA | NGRID | NSTAR | UNITIL | NEG | BERKSHIRE |
|---|---|---|---|---|---|---|
| GRAND TOTAL | 1.95 | 1.77 | 1.78 | 1.72 | 1.85 | 2.05 |

- PAs have reinforced commitment to deep savings and comprehensiveness.
- PAs have focused on streamlining the participation experience in all sectors and making efforts more customer-focused:
  - PAs are seeking to address unique needs by segments of customer base
  - Emphasis has remained on gas/electric integration.
- Proposed savings targets are on favorable trajectory to support CECP objectives.
- Program design enhancements detailed below in response to Council and stakeholder suggestions.

**THANKS: MANY HANDS PULLING ON THE OARS**

- The PAs have received constructive input from Councilors, government officials, stakeholders, energy experts and consultants, and participants in the groundbreaking Appreciative Inquiry Summit and Energy Expos. This Plan has benefited from extensive input.
- The PAs appreciate their team: every PA contributes, every PA leads, and every PA learns.
- The PAs are committed to continuous improvement. Even the best efforts can be improved over time.

# I. EXECUTIVE SUMMARY

## A. Introduction

The gas and electric distribution companies and municipal aggregator ("Program Administrators" or "PAs")[1] are pleased to submit this 2013-2015 three-year energy efficiency plan (the "Plan") in accordance with Green Communities Act ("GCA").[2] The objective of the Program Administrators is to set aggressive, sustainable goals for the next three years through a sustained and integrated statewide energy efficiency effort that (1) captures all available cost-effective energy efficiency, (2) maximizes net economic benefits, (3) achieves energy, capacity, climate and environmental goals, and (4) considers both short-term customer bill impacts and longer-term benefits expected from proposed efforts. The Plan is intended to be viewed as an integrated and interrelated whole, whose various and interconnected parts will work together as a package over the next three years to provide innovative energy efficiency services, deliver on PAs' savings goals, maintain the Commonwealth's first-in-the-nation energy efficiency status and advance the Commonwealth's energy efficiency policy objectives and clean energy and climate plan goals.

Based on the goals set forth in this Plan, the Program Administrators expect that the net present economic value of the benefits to be achieved under the Plan is greater than **$8.92 billion** statewide over the three years. The Plan marks the most aggressive integrated gas and electric savings effort undertaken in the nation and keeps Massachusetts at the forefront of leadership in energy efficiency. Importantly, today the Program Administrators are filing one, single integrated gas and electric Plan, as opposed to two separate three-year Plans as was done with the initial Plan for effect in 2010-2012. This achievement reflects the remarkable working relationship among Program Administrators, which includes sharing of ideas and best practices and is a critical component of the Program Administrators' successful delivery of energy efficiency to date.

## B. Core Goals for 2013-2015

In the 2013-2015 Plan, the Program Administrators seek to build on the lessons learned from the initial Three-Year Plan, including both its successes and challenges, and are refining the Plan to best achieve the Commonwealth's energy efficiency goals. The 2010-2012 Three-Year Plan laid the foundation for continuing growth in energy efficiency efforts in the Commonwealth, and the PAs propose to continue to build on these efforts in 2013-2015. The Program Administrators will pursue all available cost-effective energy efficiency, subject to reasonable short-term customer bill impacts, as mandated by the Green Communities Act, and will seek to maximize benefits to the Commonwealth and its citizens.

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[1] Bay State Gas Company d/b/a Columbia Gas of Massachusetts, The Berkshire Gas Company, Blackstone Gas Company, Boston Gas Company and Colonial Gas Company each d/b/a National Grid, Cape Light Compact, Fitchburg Gas & Electric Light Company d/b/a Unitil, Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid, New England Gas Company, NSTAR Electric Company and NSTAR Gas Company, and Western Massachusetts Electric Company.

[2] An Act Relative to Green Communities, Acts of 2008, chapter 169, section 11.

The 2013-2015 Plan is focused on both short-term and longer-term goals that include creating greater awareness of available energy efficiency services, improving the customer experience for program participants, focusing on education-based initiatives in schools as a way to help to create a culture of sustainability in the state, training for trade allies in support of infrastructure development, and continuing to ensure that efforts remain dynamic, incorporating evolving measures and services and responding to findings from program evaluation efforts. Proposed efforts are anticipated to result in historic levels of savings, while taking into account the challenges of achieving these results at a time when incremental savings for many actions are reduced due to improved codes and standards. For example, NSTAR Electric estimates that if savings in the third year of this plan (2015) were calculated consistent with how savings are calculated in 2012, the anticipated savings would be approximately 2.9% of its sales in 2015. In addition, the Plan also takes into account the impact of low energy costs, particularly low natural gas costs, which create longer payback periods for consumers considering energy efficiency investments.

Another key goal of the 2013-2015 Plan is to address the Council Priorities set forth in the Council's Resolution of February 14, 2012 (see Section I.G of this Plan). The PAs are setting aggressive but sustainable goals that will capture all available cost-effective energy efficiency over the next three years. The PAs are also combining multiple core initiatives into fewer programs in order to allow for fluidity of resources, to reduce customer confusion, and to seek deeper savings in all sectors. Consistent with the GCA and their public service obligation, the PAs will seek to improve the cost efficiency of program delivery and pursue available funding and financing options to maximize benefits. The PAs are also committed to consistently addressing market barriers, including accessibility and affordability, as well as any tenant-landlord or unique service territory barriers, through their programs, initiatives, community engagement efforts, and hard-to-measure programs. Specifically, the PAs are currently implementing an initiative to study possible solutions to pre-weatherization barriers, and will apply these lessons learned to 2013-2015. For reporting purposes, PAs will continue to explore data management and analytics that provide benefits to the PAs and multiple stakeholders; active, continuing discussions on data matters are ongoing, as is discussed in more detail in Section III.N.

The PAs have made significant progress integrating gas and electric energy efficiency services and commit in this Plan to further progress in both the residential and non-residential sectors. In addition, customer outreach efforts continue to rely on consistent messaging and seamless delivery in all sectors.

An additional PA objective for the 2013-2015 Plan is to implement the Plan as one three-year plan rather than three one-year plans where practicable, which will provide greater flexibility and allow the PAs to build upon lessons learned and best practices developed throughout the course of the Plan. This will also allow for a better, more efficient use of resources for PAs, regulators, and other stakeholders. The PAs remain committed to coordination and cooperation with each other and with other stakeholders in order to identify and share best practices, including seeking out information on the customer experience for both planning and implementation purposes.

## C. A Retrospective – Past and Current Achievements

In the proposed Plan, the PAs build on the detailed 2010-2012 three-year plan by continuing elements that worked, discontinuing elements that did not, moving forward with the lessons learned, and implementing new innovations and strategies to seek even greater levels of success in 2013-2015. There is a solid foundation of programs from which to build, informed by sharing best practices, a commitment to efforts that evolve dynamically in response to market changes, evaluation findings, and the introduction of new measures and services within programs. These leading efforts have been recognized both within the Commonwealth and nationally, including the receipt of awards and honors, such as the following:

| Year | Award | Reason | Awarded to |
|---|---|---|---|
| 2010 | US Environmental Protection Agency | ENERGY STAR® Homes Leadership in Housing Award | Joint Management Committee ("JMC") (New Homes working group) |
| 2010 | US Environmental Protection Agency | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery | National Grid |
| 2010 | US Environmental Protection Agency | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery | Northeast Energy Efficiency Partnerships ("NEEP") (with electric PAs recognized) |
| 2010 | National Energy Education Development Project ("NEED") | National and State Senior Level School of the Year | Sandwich High School and Cape Light Compact ("CLC") |
| 2010 | NEED | National and State Elementary Level School of the Year Finalist | Eastham Elementary School and CLC |
| 2010 | NEED | State Middle School of the Year | Cape Cod Lighthouse Charter School and CLC |
| 2010 | NEED | State Senior Level School Finalist | Nauset Regional High School and CLC |
| 2010 | Publicity Club of New England Bell Ringer Awards | Publicity Club of New England Bell Ringer Awards | National Grid |
| 2010 | Platts 2010 Global Energy Awards | Energy Efficiency Program of the Year Energy Supplier, Finalist for Home Energy Reports Program | National Grid |
| 2011 | Mayors Climate Protection Center | Honorable Mention - Best Practices 2011 Climate Award | City of New Bedford (New Bedford Community Retrofit Program) |

| Year | Award | Reason | Awarded to |
|---|---|---|---|
| 2011 | US Environmental Protection Agency | ENERGY STAR® for Homes Leadership in Housing Award | JMC |
| 2011 | Association of Energy Services Professionals | Outstanding Achievement in Marketing and Communications | Mass Save Statewide |
| 2011 | American Council for an Energy-Efficient Economy | Massachusetts ranked number one in the nation for energy efficiency | Commonwealth of Massachusetts |
| 2011 | US Environmental Protection Agency | ENERGY STAR® Award for Excellence in ENERGY STAR® Promotion | National Grid |
| 2011 | US Environmental Protection Agency | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery | NEEP (with electric PAs recognized) |
| 2011 | PowerGrid International Award | Best Energy Efficiency/ Demand Response Project of the Year, Home Energy Reports Program | National Grid |
| 2011 | ESource | Best Business Ad | Mass Save Statewide |
| 2011 | NEED | National and State Special Project of the Year | Harwich Community Learning Center and CLC |
| 2011 | NEED | National Senior Level Rookie School of the Year | Boston Latin and NSTAR |
| 2011 | NEED | State Elementary School of the Year and National Finalist | Eastham Elementary School and CLC |
| 2011 | NEED | State Senior Rookie Finalist | Cape Cod Academy and CLC |
| 2011 | NEED | State Senior School Finalist | Nauset Regional High School and CLC |
| 2011 | Interstate Renewable Energy Council | Renewable Energy Innovation Award | CLC Energy Education Programs |
| 2011 | MA Association of Science Teachers | Science Educator of the Year-Barnstable County | CLC Education Staff |
| 2012 | American Council for an Energy-Efficient Economy | Massachusetts ranked number one in the nation for energy efficiency | Commonwealth of Massachusetts |
| 2012 | US Environmental Protection Agency | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery | Northeast Retail Products Initiative |
| 2012 | US Environmental Protection Agency | ENERGY STAR® for Homes Leadership in Housing Award | JMC |

| Year | Award | Reason | Awarded to |
|---|---|---|---|
| 2012 | US Environmental Protection Agency | ENERGY STAR® Award for Sustained Excellence in Energy Efficiency Program Delivery | JMC |
| 2012 | AESP | Outstanding Achievement in Residential Program Design & Implementation | NSTAR's Community Based Outreach Initiative |
| 2012 | National Energy Solutions Center | Award for Partnership with Smith College | Columbia Gas of Massachusetts |
| 2012 | National Energy Solutions Center | Award for partnership with Mary Immaculate Nursing and Restorative Center | Columbia Gas of Massachusetts |
| 2012 | US Environmental Protection Agency | ENERGY STAR® Award for Excellence in ENERGY STAR® Promotion | National Grid |
| 2012 | "e" inc. | 2012 Planet Protector Award | NSTAR Electric - Residential Education |
| 2012 | NEED | Senior Level Rookie of the Year National and State | Acton Boxborough High School & NSTAR |
| 2012 | NEED | Senior Level Finalist - National & State | Boston Latin School & NSTAR |
| 2012 | NEED | National and State Special Projects of the Year | Harwich Community Learning Center and CLC |
| 2012 | NEED | State Senior Finalist | Sandwich High School and CLC |
| 2012 | NEED | State Junior School of the Year | Bourne Middle School and CLC |
| 2012 | NEED | State and National Elementary School of the Year | Eastham Elementary School and CLC |
| 2012 | NEED | State Elementary Rookie of the Year | Forestdale School and CLC |
| 2012 | Tools of Change peer selection panel | Smart Home Energy Monitoring Pilot Designated a Landmark Case Study | Cape Light Compact |

## D. The Future – Achievements to Come

In this section, the Program Administrators are pleased to provide statewide summaries of certain key aspects of the targets for their three-year energy efficiency plan for 2013-2015.[3]

[3] Note that the PAs utilized the same single-page summary format adopted by the Energy Efficiency Advisory Council (the "Council") with respect to their initial 2010-2012 gas and electric plans.

The first summary table addresses statewide electric savings and budget targets, and the second summary table addresses statewide gas savings and budget targets.

The Program Administrators have worked collaboratively together and with the Council, the Council's consultants ("Consultants"), and other multiple and diverse stakeholders, to develop these statewide targets and their individual PA-specific proposals. The proposals reflect feedback and suggestions on the Program Administrators' short form 2013-2015 submission of April 30, 2012 and detailed Plan filings of July 2, 2012 and September 19, 2012, as well as ideas brought forward in the Program Administrators' ground-breaking Appreciative Inquiry process, suggestions presented by various stakeholders at Council meetings, and in informal discussions with stakeholders. As detailed in Section I.D.3 below, this Plan also executes upon the October 29, 2012 Electric Term Sheet: 2013 – 2015 Plan ("Electric Term Sheet") and Gas Term Sheet: 2013 – 2015 Plan ("Gas Term Sheet") (together, the "Term Sheets") that set forth key areas of agreement in principle among the PAs, the Department of Energy Resources ("DOER"), and the Office of the Attorney General ("Attorney General") on core terms for 2013-2015 energy efficiency efforts.

As a result of stakeholder input, today's Plan calls for, among other things, a bold new initiative, Efficient Neighborhoods+. This core initiative targets economically challenged neighborhoods throughout the Commonwealth, and will explore target communities such as the City of Boston and the Commonwealth's "Gateway Cities"[4] and Green Communities. The Plan also sets forth creative new approaches to working with municipalities, a new focus on the healthcare sector, and plans to tailor available services to the unique needs of other key sectors where significant savings are likely including but not limited to drinking water and wastewater treatment facilities and grocery stores.

The Plan maintains and enhances the Program Administrators' nationally recognized commercial and industrial ("C&I") and residential efforts, and the enormously successful and pioneering partnership with the Commonwealth's Low-Income Service Provider/Weatherization Assistance Program ("WAP") Network. The proposals to be implemented benefit all customer sectors over the three-year period 2013-2015, resulting in long term economic and environmental benefits for Massachusetts residents and businesses, and should result in the Commonwealth continuing its nation-leading energy efficiency programming.

[4] The following communities have been designated as Gateway Cities: Barnstable, Brockton, Chelsea, Chicopee, Everett, Fall River, Fitchburg, Haverhill, Holyoke, Lawrence, Leominster, Lowell, Lynn, Malden, Methuen, New Bedford, Pittsfield, Quincy, Revere, Salem, Springfield, Taunton, Westfield, and Worcester.

1. Statewide Electric Summary:

| | 2013 | 2014 | 2015 | Total 2013-2015 |
|---|---|---|---|---|
| Statewide Council Savings Target as % of Retail Energy Sales | 2.5% | 2.55% | 2.6% | 2.55% |
| PA Proposed Savings Goals as % of Retail Energy Sales | 2.5% | 2.55% | 2.6% | 2.55% |
| Council Target Annual Energy Savings in GWh | 1,194 | 1,235 | 1,273 | 3,702 |
| PA Proposed Annual Energy Savings in GWh | 1,195 | 1,236 | 1,275 | 3,706 |
| Performance Incentive at Design ($ million) | $25.8 | $26.7 | $27.5 | $80.0 |
| Threshold to Begin Earning Incentives | 75% | 75% | 80% | 75%-80% |
| Performance Incentive Cap | 125% | 125% | 125% | 125% |
| Program Budget ($ million) per Term Sheet | $479.10 | $499.37 | $516.53 | $1,495.0 |
| PA Proposed Program Budget ($ million) | $481.32 | $495.66 | $518.72 | $1495.70 |
| Cost Per Annual kWh Saved per Term Sheet | $0.401 | $0.404 | $0.406 | $0.4037 |
| PA Proposed Cost Per Annual kWh Saved | $0.403 | $0.401 | $0.407 | $0.4036 |
| PA Proposed Cost Per Lifetime kWh | $0.0366 | $0.0374 | $0.0374 | $0.0371 |

- Flexibility provided for PA savings goals to be lower or higher than the savings target, but with the statewide savings targets (set forth in GWh above) remaining the same. Cape Light Compact and Unitil have variances from the statewide targets because of the unique characteristics of their service areas as has been historically recognized by the Council and found appropriate for 2013-2015 in the Term Sheet. National Grid, NSTAR, and Western Massachusetts Electric Company are proposing savings goals in excess of the escalating 2.5 percent target.
- Incentive pool is allocated to individual PAs based on the dollar benefits and dollar net benefits target each year.
- Incentive mechanism provides higher incentives for the higher savings targets. Performance incentive threshold for National Grid and NSTAR/WMECo is based on the 2.50%, 2.55%, and 2.6% thresholds in applicable years where savings goals are in excess of these targets.
- Incentive pool of $80.0 million is the maximum pool at the target savings level for the three years.
- Performance Incentives three component approach is based upon 2011-2012 approach, with limited performance metrics component.
- Program cost to achieve is materially less than 2012 MTM costs and earlier draft 2013-2015 filings.
- Program consolidation per Residential Management Committee and C&I Management Committee recommendation.
- For cost-effectiveness, the PAs used the 2011 Avoided Energy Supply Cost and current Non-Energy Impacts studies, with updates on certain NEIs based upon best current information.
- PAs to perform defined follow-up study on 2011 Avoided Energy Supply Cost Study (*e.g.*, confirming DRIPE) based upon Term Sheets.
- Targets and proposals may require adjustments in the event of new legislation, opt-out pilot participation by largest customers, new municipal aggregators, material new EM&V results, or any material regulatory changes.

2. Statewide Gas Targets Summary:

| | 2013 | 2014 | 2015 | Total 2013-2015 |
|---|---|---|---|---|
| Statewide Council Savings Target as % of Retail Energy Sales | 1.10% | 1.12% | 1.15% | 1.12% |
| PA Proposed Savings Goals as % of Retail Energy Sales per Term Sheet | 1.07% | 1.13% | 1.14% | 1.11% |
| Annual Energy Savings Goals (therms) per Term Sheet | 23,000,000 | 24,250,000 | 24,750,000 | 72,000,000 |
| PA Proposed Annual Energy Savings (therms) | 22,661,039 | 24,401,130 | 24,949,014 | 72,011,183 |
| Performance Incentive at Design ($ million) | $5.1 | $5.4 | $5.5 | $16.0 |
| Threshold to Begin Earning Incentives | 75% | 75% | 80% | 75%-80% |
| Performance Incentive Cap | 125% | 125% | 125% | 125% |
| Program Budgets ($ million) per Term Sheet | $169 | $175 | $181 | $525 |
| PA Proposed Program Budgets ($ million) | $168 | $175 | $180 | $523 |
| Cost Per Annual Therm Saved per Term Sheet | $7.348 | $7.216 | $7.313 | $7.292 |
| PA Proposed Cost Per Annual Therm Saved | $7.433 | $7.154 | $7.218 | $7.264 |
| PA Proposed Cost Per Lifetime Therm | $0.554 | $0.558 | $0.560 | $0.557 |

- Flexibility provided for PA savings goals to be lower or higher than the savings target, but with the statewide savings targets (set forth in therms above) remaining the same. All gas PAs have significantly increased savings goals from earlier draft Plan levels and savings goals for all PAs, tailored to service area characteristics, are found appropriate for 2013-2015 in the Term Sheet. Unitil (gas and electric), Berkshire and New England Gas will conduct studies of remaining potential in 2014 for use in the next three-year plan per Term Sheet.
- Goals reflect savings reductions based upon most recent EM&V findings.
- Incentive pool is allocated to individual PAs based on the dollar benefits and dollar net benefits target each year.
- Incentive mechanism provides higher incentives for the higher savings targets. Performance incentive threshold for National Grid and NSTAR is based on the 1.10%, 1.12%, and 1.15% savings targets, in applicable years when their savings goals are in excess of these savings targets.
- Incentive pool of $16.0 million is the maximum pool at the target savings level for the three years.
- Performance Incentives three component approach is based upon 2011-2012 approach, with limited performance metrics component.
- Program cost to achieve assumes continued low gas costs in 2013-2015, requiring some increased incentives to meet aggressive savings targets, as well as reduced savings levels based upon most recent EM&V results.
- Program consolidation per Residential Management Committee and C&I Management Committee recommendation.
- For cost-effectiveness, the PAs used the 2011 Avoided Energy Supply Cost and current NEIs studies, with updates on certain NEIs based upon best current information.
- Targets and proposals may require adjustments in the event of new legislation, opt-out pilot participation by largest customers, new municipal aggregators, material new EM&V results, or any material regulatory changes.

3. Term Sheets

On October 29, 2012, the Term Sheets were finalized after extensive and diligent discussions and negotiations. The term sheets set forth the overall agreement in principle among the PAs, the DOER, and the Attorney General with respect to savings, budgets, benefits and performance incentives for 2013-2015. See Section IV, Appendix R and November 1, 2012 letter from Mark Sylvia, Chair of the Energy Efficiency Advisory Council (the "November 1 Letter") to the Department of Public Utilities ("Department"), which letter is filed by each of the PAs as a part of its individual Plan. As noted in the November 1 Letter, DOER anticipates a vote on the Term Sheets at a Council meeting on November 5, 2012, stating:

> At that Council meeting, we anticipate a vote on a Council Resolution to approve the terms governing the aforementioned agreement in principle. Shortly thereafter, a subsequent meeting of the Council will be convened to render a more detailed assessment of the contents of the EEIPs, whose publication is currently in production, and accordingly has not been reviewed by the Council in final form. It is our desire, consistent with the spirit of M.G.L. c.25, § 21 (d)(l), to provide our assessment of the final EEIPs by way of a second Council Resolution, giving commentary on any unresolved issues that we might identify in the EEIPs submitted to the Department by the PAs on November 2, 2012, reflecting the two-day extension granted by the Department in recognition of the storm.

In this Plan, the PAs have included each of the provisions of the Term Sheets and have sought in good faith to clearly support each of the items in the Term Sheets. The following table illustrates how the PAs have incorporated key quantitative elements of the Term Sheets into this Plan.[5]

| | **Term Sheet Provision** | **Three-Year Plan Provision** |
|---|---|---|
| Electric PA Total Annual Energy Savings Goals (MWh) | 3,702,844 | 3,705,368 |
| Gas PA Total Annual Energy Savings Goals (Therms) | 72,000,000 | 72,011,183 |
| Benefits ($, million) - Electric and Gas Combined | $8,770 | $8,922 |
| Benefits ($, million) - Electric | $7,500 | $7,638 |
| Benefits ($, million) - Gas | $1,270 | $1,284 |
| Budget ($, million) - Electric and Gas Combined | $2,020 | $2,018.8 |
| Budget ($, million) - Electric | $1,495 | $1,495.7 |
| Budget ($, million) - Gas | $525 | $523.1 |
| Cost per Annual kWh Saved - Electric | $0.4037 | $0.4036 |
| Cost per Annual Therm Saved - Gas | $7.292 | $7.264 |

[5] The Term Sheets provide that: "Final numbers may be slightly higher or lower than these values, but all within a reasonable, non-material bandwidth." Any variances noted above, in the PAs' view, are within this bandwidth, and indeed with respect to almost every single metric/goal under the Term Sheets, the PAs have actually exceeded the rigorous standards adopted in the Term Sheets.

In sum, the PAs are proposing more overall savings at a lower overall cost and with more benefits than in the very aggressive Term Sheets. Where limited individual items are outside the levels in the Term Sheets, they are within the reasonable bandwidth contemplated in the Term Sheets.

In addition to budgets, savings, and benefits, the PAs have also reflected the other, qualitative provisions of the Term Sheets in this Plan, including agreements related to the Clean Energy and Climate Plan, flexibility for PAs, performance incentives, support for the Mass Save mark, and commitment to perform a new DRIPE study.

The PAs express their appreciation of the diligent efforts devoted to finalizing the Term Sheets by DOER and the Attorney General, as well as the Council's consultants.

## E. Significant Updates & Highlights

### 1. Bold New Initiative Targeting Economically Challenged Neighborhoods

The Program Administrators are proposing a bold new initiative targeting economically challenged neighborhoods in cities throughout Massachusetts, and will explore target communities such as Boston and cities identified as "Gateway Cities" by the Commonwealth and Green Communities. This new initiative, Efficient Neighborhoods+ is described in further detail in Section III.F.6.b.i below. The Program Administrators have developed this initiative based on feedback and suggestions at Council meetings, including the Council meeting of January 10, 2012, and at the Appreciative Inquiry Summit, as well as informal discussions with members of the Council ("Councilors") and stakeholders, especially those Councilors who have raised particular concerns with respect to low to moderate income customers. The initiative, which will be refined over a review period as described in Section III.F.6.b.i, is aimed at providing energy efficiency services in neighborhoods that contain high portions of economically challenged customers, including lower income and lower middle class families. The initiative calls for neighborhood-focused outreach, including special incentive structures, and engagement with community representatives and local government agencies. By utilizing a neighborhood approach that is developed based upon the Commonwealth's Gateway Cities program, the PAs will be able to target economically-challenged customers that have been a core priority for the Council and stakeholders. It is also expected that these targeted neighborhoods will include low-income qualified/eligible consumers. Thus, the Program Administrators plan to include the Low-income Energy Affordability Network ("LEAN") in the initiative design and implementation phases to ensure a fully integrated cross-sector approach. The Program Administrators will also seek input from other interested parties as they finalize the design of this new initiative.

### 2. Continuing Focus on Segmentation

The PAs will continue to refine their go-to-market approach that is based on segmenting their non-residential customer base by industry type, identifying common messaging, barriers, opportunities, decision making processes and other unique attributes, thereby allowing for greater penetration into the market. These efforts continue to be actively tested and refined across the spectrum of C&I customers. For example:

- As set forth in section III.F.6.d below, as part of their C&I effort, the Program Administrators have a customized approach to the healthcare sector, which is one of the core economic drivers in Massachusetts. The PAs have had a great deal of success in tailoring efforts to this important sector, along with multi-year agreements focused on both electric and gas energy efficiency opportunities with some of the largest hospitals in the Commonwealth. Building on this success, the PAs will continue to focus on this important sector in 2013-2015. Of special importance is the PAs' new engagement with the Fraunhofer Center for Sustainable Energy Systems CSE, located in Cambridge, Massachusetts. Fraunhofer will be supporting the effort to identify and address opportunities for efficient equipment specific to the healthcare industry. The expected results from this effort include equipment selection criteria and operating opportunities, as well as engagement with manufacturers to provide additional focus on energy in this key sector.

- While engaging with customers from the commercial real estate sector, the PAs have found several factors affecting efficiency investments. These factors include some of the unique characteristics of the tenant/landlord relationship, primarily through varying lease structures as well as differences in owner operated or third party operated buildings. In addition, the owner's long or short term philosophy for the asset also impacts these decisions. The PAs continue to engage with several large property managers and are actively testing various structures to address some of these barriers. Results from these efforts will be available by the second quarter of 2013 and will be used to further refine the PAs' go to market strategies for engaging with this important sector.

- The municipal sector also has unique attributes affecting its decisions on efficiency investments. Cities and towns are generally resource constrained, requiring financial assistance to both identify energy efficiency opportunities and to deploy identified measures and practices that lead to energy savings. In addition, the plan/specification process for municipal decision making can be challenging to the design/build nature of efficiency. The PAs address these challenges by engaging communities at the highest levels and providing assistance on several fronts, including technical assistance and turn-key implementation services. There have been significant successes with large cities leveraging the Memorandum of Understanding ("MOU")/ Strategic Energy Management Plan ("SEMP") process. The PAs have also engaged a number of communities to develop a streamlined approach more appropriate and scalable for smaller towns. Specifically, National Grid and NSTAR will implement a dedicated track for municipal customers within the C&I Retrofit Program in 2013 and will share experiences with other PAs for review for potential broader implementation.

3. Public Education

The PAs have been at the forefront of creating a "culture of sustainability" in Massachusetts. The Program Administrators have hosted, after extensive planning, two major forums: the Appreciative Inquiry Summit at Gillette Stadium of May 15-16, and the Energy Expo at the Intercontinental Hotel on June 2, 2012. Over 600 stakeholders and efficiency

experts participated in these events. At these events, the PAs were able to obtain notable, high-profile speakers, including Governor Patrick, John Fernandez, Massachusetts Eye and Ear Infirmary CEO and president, and two of the top 10 "Most Influential Bostonians" as recognized in Boston Magazine: John Fish, chairman and CEO of Suffolk Construction and Anne M. Finucane, Global Strategy and Marketing officer at Bank of America. All of these influential speakers emphasized the importance of energy efficiency and attention to issues of sustainability, and the PAs are grateful for their participation. Energy efficiency is closer to the forefront of the public's consciousness and as a result, it has become clear, based upon comments from multiple stakeholders in events such as the Appreciative Inquiry Summit, that an enhanced public education initiative regarding energy efficiency enjoys broad support. In today's filing, in Section III.H.3, the Program Administrators outline their approach to exploring and developing state-of-the-art energy efficiency curricula and training, not only for school-aged children, but also in community colleges, vocational schools, and other educational opportunities. Such a commitment to public education is squarely consistent with G.L. c. 25, § 21(b)(2), which endorses public education efforts.

4. Enhanced Integration of Gas and Electric Energy Efficiency Services Plan

The Program Administrators continue to refine their program designs to reflect the enhanced integration of gas and electric efforts. Regular communication and interaction with each other allows the Program Administrators to share best practices and lessons learned, and the ability to provide gas and electric information to customers in an integrated manner in order to promote comprehensive installations. The PAs have developed effective strategies and made significant progress in integrated program delivery during the initial three-year plan of 2010-2013. Based upon anecdotal information from Councilors and some of the findings in the Synapse study presented to the Council on April 10, 2012, the Program Administrators are continuing to analyze ways in which to streamline further the customer experience and make it more seamless. The PAs are committed to seeking further synergies to provide customers with a streamlined experience, where electric and gas opportunities are provided to customers simultaneously. The filing of one integrated joint electric and gas statewide Plan for 2013-2015 reflects the commitment and success of the Program Administrators in embracing seamless program delivery for customers. One specific area for particular focus of integrated efforts will be wastewater facilities, which the Program Administrators are already targeting with the assistance of the Department of Environmental Protection ("DEP"), which has identified several potential facilities that can benefit from efficiency measures. The Program Administrators note their appreciation of the active engagement of DEP and DOER on wastewater facilities efforts.

5. Program Consolidation

In their 2012 MTM filings, the Program Administrators proposed to consolidate the Low-Income Single Family Retrofit and Low-Income Multi-Family Retrofit Programs into a single Low-Income Retrofit Program, noting the expected benefits of increasing flexibility to meet customer needs.[6] The Program Administrators plan to further consolidate efforts in both the

[6] Throughout the 2013-2015 Plan, the residential low-income sector will remain a separate budget sector and retain the consolidated program categories the Program Administrators proposed in their 2012 Mid-Term Modification filings.

residential and C&I sectors.[7] Residential sector programs will be consolidated into two primary categories: Whole House and Products. Similarly, the Program Administrators also plan to consolidate the C&I sector programs into two primary categories: New Construction and Retrofit. The primary purpose and benefit of this consolidation is greater implementation flexibility to address shifts in market conditions and consumer demand and reduced customer confusion. For purposes of transparency, and to satisfy the priority placed by the Council on more discrete data, the Program Administrators will continue to track and report spending and savings associated with each core initiative within each program, but overall program level reporting will be done in the aggregate.

6. Budget/Savings Goals: Comparison to 2010-2012

For electric Program Administrators, the proposed three-year annual savings for the period 2013-2015 is more than 1.19 million megawatt hours ("MWh") greater than the combined 2010-2012 levels.[8] As compared to 2010-2012, this Plan includes a budget increase of approximately $498 million in order to increase savings and reach the Commonwealth's energy efficiency goals. Electric budgets in 2013 include an $8.7 million decrease compared to 2012. These changes are expected to lead to an additional $2.74 billion in projected benefits in 2013-2015 as compared to 2010-2012.

For gas Program Administrators, the proposed three-year annual savings for the period 2013-2015 is almost 22 million therms greater than the combined 2010-2012 levels. The 2013 planned savings relates closely to 2012 MTM savings levels to account for the setting of challenging but achievable goals. As compared to 2010-2012, this Plan will include a budget increase of nearly $231 million in order to increase savings and reach the Commonwealth's energy efficiency goals. Gas budgets in 2013 include a $36.8 million increase over 2012. These changes equal an additional $388 million in projected benefits in 2013-2015 as compared to 2010-2012.

The total projected additional benefits in this 2013-2015 Plan are over $3.1 billion greater than the benefits in 2010-2012. The Program Administrators sought to set goals that seek all available cost-effective energy efficiency. Therefore, the goals are aggressive and challenging, but also sustainable and cognizant of bill impacts, all in accordance with the Council's priorities.

7. Innovation and Best Practices

In 2013-2015, the Program Administrators are committed to seeking even greater levels of innovation, and new mechanisms with which to serve customers and promote deeper energy efficiency savings. The Program Administrators seek to implement best practices at all times,

[7] Pilot programs will retain individual budget line item status and specific names throughout the 2013-2015 Plan.

[8] The figures in this section are based upon statewide "rolled-up" Program Administrator proposals for 2013-2015, as set forth in the Excel spreadsheets included with this Plan. 2010-2012 levels are equal to 2010 Energy Efficiency Annual Report values, 2011 Energy Efficiency Annual Report Values, and 2012 Mid-Term Modification values.

and the list of awards noted in Section I.C above is testament to their success. The Program Administrators strongly support continuing education programs for their staff, and members of the Massachusetts Program Administrator team are frequent speakers at national and regional energy efficiency events. The PAs will continue active participation in the Massachusetts Technical Assessment Committee ("MTAC"), which is a forum created, organized, and implemented by the Program Administrators in order to systematically and, at a statewide level, review and discuss new technologies and innovations in the field of energy efficiency. Technologies and innovations that pass MTAC screening are eligible for implementation on a common basis throughout the Commonwealth. As described in more detail in Section III.F.4 below, the MTAC is an outstanding example of the approaches employed by the Program Administrators to foster innovation, embrace new technologies and provide consistency in program offerings across Program Administrators and service areas. The PAs coordinate to ensure that any innovative strategies spearheaded by one PA are shared with others, including the level of success of such ventures. The PAs also learn from various assessments, including the Point 380 study, and will take into account the information gleaned from participants at the Appreciative Inquiry held in May 2012, and any reports, consolidated comments and ideas generated at the Appreciative Inquiry Summit. Other customer feedback, including daily interactions with customers and public comments at Council meetings, contractor best practices meetings facilitated by the PAs, feedback at training sessions, and other direct customer feedback are all taken into account by the PAs when reviewing innovating strategies and determining best practices. The Program Administrators will continue to collaboratively look for innovative ways to secure all available cost-effective energy efficiency in a manner that is sustainable and takes bill impacts into account.

To achieve the GCA's mandate for a sustained and integrated statewide energy efficiency effort, the Program Administrators will continue to engage in the unprecedented levels of integration, coordination and cooperation that have been the hallmark of the initial three-year plan, including working together on all levels of programming, implementation, and regulation. The Program Administrators currently work together in formal groups, in regularly scheduled and recurring meetings, and through *ad hoc* discussions. Examples of PA groups organized to plan together and share experiences and ideas include: the Residential Management Committee, the C&I Management Committee, the Evaluation Management Committee, Low-Income Best Practices (convened by LEAN about ten years ago in order to coordinate practices across all PAs and agencies, as well as to review new measures and innovations), and the Statewide Marketing Committee, all of which meet regularly with representatives from all PAs, in person, and for extended time periods, and cover all elements of planning, implementation, and evaluation, including discussions related to best practices for reaching goals. In order to support innovation and new technologies, the PAs all participate in the MTAC where they determine best practices with respect to new technologies collaboratively. The PAs also participate in various topical groups related to different programs, initiatives, and technologies.

The PAs also prepare materials for Council meetings jointly, including programming and implementation presentations, data dashboards, and quarterly reports. Many regulatory requirements are also met by the Program Administrators, who coordinate regulatory filings including, without limitation, three-year plan filings and related draft submissions, annual reports, mid-term modifications, comments and presentations related to investigations by the

Department, and RCS compliance filings. Efforts such as energy efficiency bill impact model creation, preparation and quality control of PA-specific and statewide "rolled-up" D.P.U. 08-50 tables, and formation of the EM&V plan have been accomplished through a group effort of the Program Administrators. A common statewide website (MassSave.com) devoted to energy efficiency, coordinated training sessions, marketing materials, and presentations to interested stakeholders, and special events, including the Appreciative Inquiry Summit, are other examples of work that has been accomplished through coordination across all Program Administrators, with many people working together to share ideas, develop best practices, coordinate messaging, and accomplish common goals. The Program Administrators meet in-person monthly, and participate in frequent discussions and subject matter group meetings. The PAs provide appropriate flexibility for individual PAs to try a unique initiative, with the understanding that any results are shared and that successful initiatives and strategies can be adopted by other PAs.

The Program Administrators discuss all aspects of the three-year plan and energy efficiency programming on frequent topical group calls, as well as on one-to-one calls and emails, in which each PA regularly reaches out to others to share and analyze planning and implementation successes and challenges, and benefit from shared knowledge and PA expertise.

8. Reducing Administrative Burdens/Streamlining Processes

Council meetings have been an important tool in planning for and implementing the initial three-year plan. As the second Three-Year Plan begins, the Program Administrators will have (1) three years of GCA-related energy efficiency experience with more mature programs, which will inform future efforts to achieve energy efficiency cost effectively; (2) a better understanding of the concerns and interests of the Councilors and an effective means of continuing dialogue with them (through Council resolutions and other Council documents, Council Executive Committee meetings and individual communications as well as Consultant communications); (3) an established means of reporting data to the Council (through monthly, quarterly and annual reports). Given the success and experience with this construct, the Program Administrators will seek ways to streamline processes in 2013-2015, including ways to spend more time with customers seeking savings. The PAs appreciate and recognize the work and time invested by Councilors in preparing for Council meetings to ensure the mandates of the GCA are being achieved. The Program Administrators devote time and attention to being as well prepared as possible for each meeting, and respond to Councilors' concerns during and after Council meetings. The Program Administrators continue to support the role of the Council established in the Green Communities Act and recognize that their energy efficiency programs have benefitted from the many excellent suggestions of Councilors. The PAs will seek Councilor input on ways to streamline processes and reduce meetings, while maintaining transparency and providing the optimal amount of information to the Councilors. The Program Administrators are seeking to leverage collective experience, identify possible efficiencies and optimize all stakeholders' time given the experience gained through the initial three-year plan. The Program Administrators believe that the ongoing proceedings in the Department's investigation in D.P.U. 11-120 will also serve as a useful forum for exploring improved efficiencies.

9. Incorporating RCS in Three-Year Plan

In accordance with Section 32 of An Act Relative to Competitively Priced Electricity in the Commonwealth, Chapter 209 of the Acts of 2012 ("Energy Act of 2012"), the Program Administrators included their proposed operating budgets for the Residential Conservation Services ("RCS") program in the Plan to meet the requirements of subsection (b) of Section 7 of chapter 465 of the Acts of 1980. The RCS budgets have been combined with the Home Energy Services core initiative in the Whole House program. Further, the PAs propose that the Department allow recovery of RCS funds through each PA's respective energy efficiency surcharge, in accordance with the Energy Act of 2012. The gas Program Administrators will not only incorporate RCS into the energy efficiency surcharge but will also change their tariffs to cancel the separate gas RCS surcharge. Additionally, the Program Administrators propose that this Three-Year Plan shall be the Coalition Action Plan for 2013-2015, as described in 225 C.M.R. 4.00 et seq.

10. Engaging Third Party Stakeholders

The breadth of stakeholders with whom the PAs interact on a regular basis spans the entire supply chain, including manufacturers, equipment distributors, contractors and service providers, trade associations, policy makers, community advocates, civic leaders, and customers. Each of these groups, individually and collectively, has an interest in, and is affected by, the energy efficiency plans designed and implemented by the PAs. The legislature recognized this when it created the Council, the formal entity responsible for stakeholder input.

The PAs recognize that other informal interactions also can benefit program development and delivery, and have therefore established several venues to foster this interaction, including:

1. **Annual Open House meetings for trade allies/vendors** during which PAs present program changes and updates from the prior year, and trade allies have an opportunity to network with each other and PA staff and ask questions regarding the programs.

2. **The Unsolicited Proposal Process** by which vendors and trade allies wishing to do work for the statewide committees/PAs can submit a formal proposal to the C&IMC.

3. **Informal PA Speakers' Bureau for Trade Association and Related Meetings** in which PAs respond to invitations from Industry and Trade Associations seeking knowledgeable speakers to explain how programs work and provide case study examples pertinent to their industry. Examples have included the Massachusetts Restaurant Association and the Mass Lodging Association. Such meetings give attendees the chance to ask questions of PAs, learn about industry-specific best practices, and establish contact for future projects.

4. **MTAC Committee** which discusses and screens prospective new C&I technologies. This committee was established in an effort to systematize the review of new energy efficient technology proposals. Having a protocol and set process has not only streamlined the workload of reviewing such proposals, but has also resulted in much greater flow of new efficiency measures into the market.

5. **Ad hoc discussions with Individual PAs** in which stakeholder groups routinely contact C&IMC members and other PAs, engaging them in one-off conversations regarding program logistics and possible improvements and opportunities for collaboration.

6. **Provision of Collateral Materials for Customer Events** where individual PAs routinely offer stakeholders significant volumes of program collateral for distribution at local community and trade association meetings.

7. **Customer Feedback** from which the PAs benefit from long term, close relationships with their customers, allowing for continual feedback and refinement. This is one of the most vital areas of benefit to the programs and process.

During the preparing of this Plan, at least one C&I stakeholder group has requested the additional option of meeting with the C&IMC directly, outside the channels listed above, to provide input to the Plan. The C&IMC recognizes stakeholders such as this would like a more formalized process for engaging with the PAs, however, the PAs feel strongly that the C&IMC is not the appropriate venue. Instead, the C&IMC will take the lead to review best current structures as previously described, as well as best practices in other states, with the intent of creating a common process and guidelines to ensure consistent and effective responses from the PAs as a collective. The details of this concept will be developed during Q4 2012 with expected implementation in Q1 2013.

## 11. Updates Since July 2, 2012 and September 19, 2012 Draft Plans

Following the submission of the July 2, 2012 and September 19, 2012 drafts of this Plan, the Program Administrators have made significant updates based on stakeholder input and additional PA review culminating in the Term Sheets. Each PA has reviewed its budget and savings goals, and has increased savings over the three years of the Plan. For electric PAs, budgets have reduced by approximately $118 million based upon the increased savings goals and decreased costs proposed in this Plan when compared on a proportionate basis with the July 2, 2012 draft. This demonstrates the PAs' careful consideration of, and responsiveness to, the Council's resolution of July 23, 2012 and continuing discussions with DOER, the Attorney General, the Council's consultants and other stakeholders. While working to increase savings, the PAs have continued to be mindful of commensurate budget increases and bill impacts and note the budgets, and savings interlink with performance incentives. The PAs have retained their commitment to going deeper, and to providing comprehensive energy efficiency services. In their efforts to go deeper, the PAs have sought to utilize segmentation in order to address the unique needs of specific customer types, including those within the healthcare and property management industries, as well as municipalities. In addition, the PAs have also emphasized gas and electric integration, which provides a seamless experience for customers and an environment promoting deeper energy efficiency measures.

Within the residential and low-income sectors, the PAs have focused on hard-to-reach and hard-to-serve markets, particularly in developing the Efficient Neighborhoods+ initiative. PAs have also been investigating tenant/landlord split incentives barriers, and assessing pre-weatherization incentives, as informed by 2012 evaluation findings. Other areas of recent focus include assessing packaging incentives into the Home Energy Services core initiative,

developing an integrated HVAC / Heating equipment early retirement incentive by Q2 2013, and providing enhanced incentives for Top Ten appliances. The PAs have also been updating efforts for condominiums, including expanded availability of the HEAT loan.

In the C&I sector, PAs have been developing segmentation efforts, as described above, and preparing targeted outreach to assist municipalities, including promoting Green Communities. Working with DEP, the PAs are emphasizing their commitment to build on success and implement more energy efficiency at the 120 municipal/district wastewater treatment plants and 250 municipal/district drinking water treatment plants in the Commonwealth.

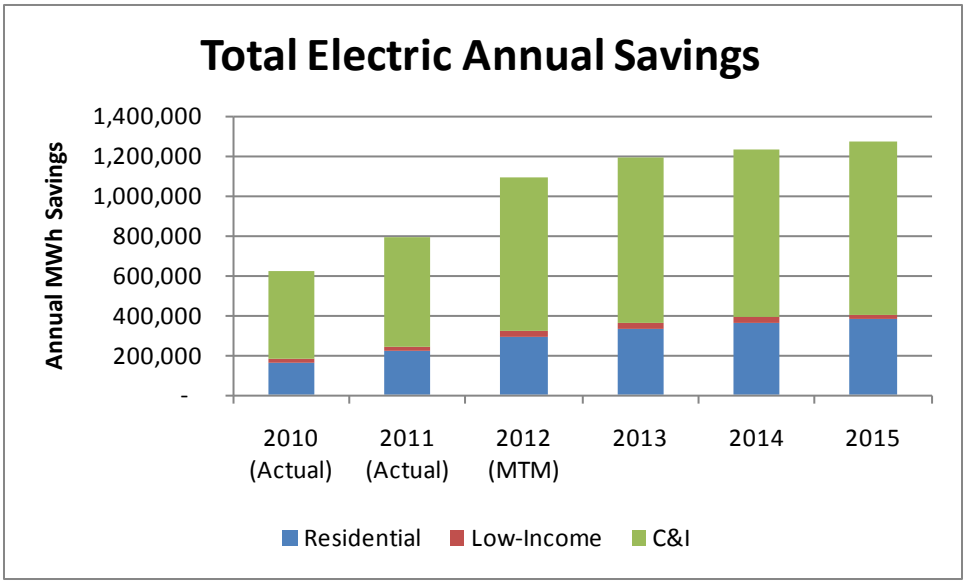
See Section I.G.5 below for a matrix of actions taken in response to the Council's resolution of July 23, 2012, which demonstrates the PAs' diligence in considering Council recommendations.

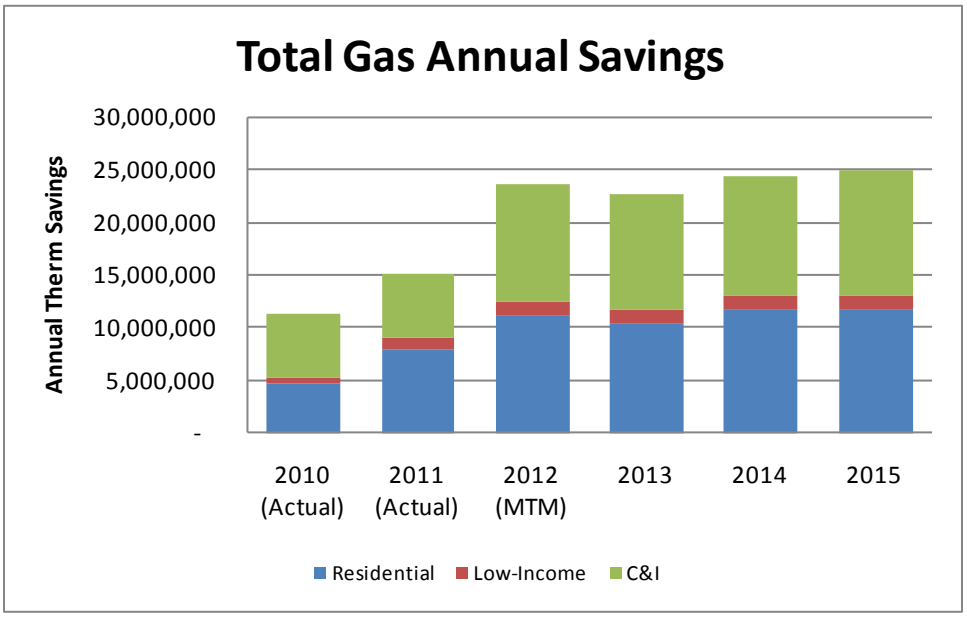
## F. Overview of the Key Aspects of the Plan

### 1. Savings and Core Benefits

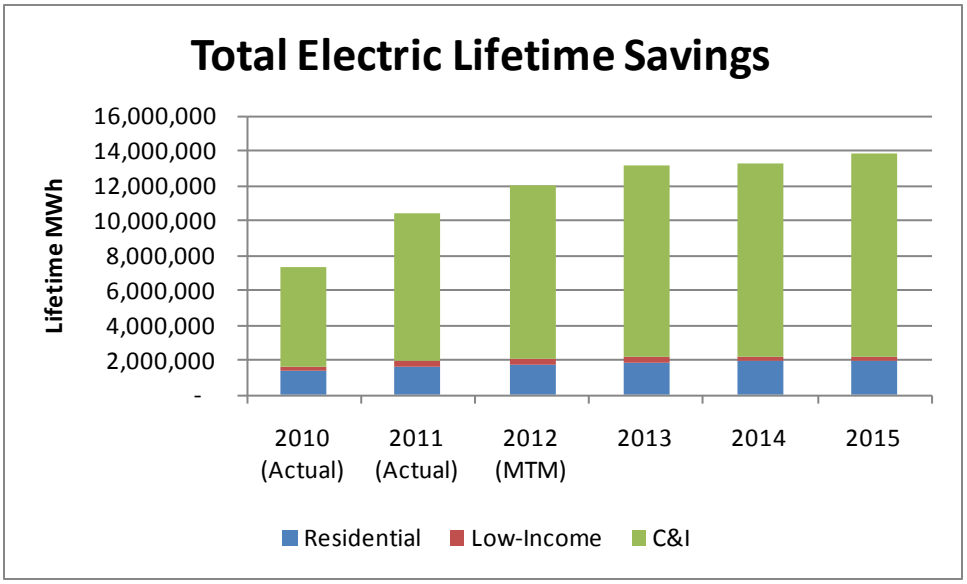
The Program Administrators are proposing to obtain all available cost-effective energy efficiency through an aggressive and sustainable level of savings for their energy efficiency activities. The PAs' savings goals are consistent with the Department's orders and the Council's priorities, both of which emphasize setting challenging goals that take into account bill impacts and sustainability of efforts over an extended period, and the Term Sheets. Based upon the statewide targets representing the aggregation of each Program Administrator's proposals for 2013-2015 (set forth in the tables provided with this Plan), the 2013-2015 Plan calls for electric savings on an overall statewide basis of 3,705,368 annual MWh over the three-year period and 40,271,670 lifetime MWh savings. This Plan also calls for gas savings on an overall statewide basis of 72,011,183 annual therms over the three-year period and 938,314,079 lifetime therm savings. As a direct result of these savings, GHG emissions will be reduced by approximately 25,602,440 short tons over the life of those savings. This achievement, over the three years of the plan, is comparable to the environmental benefits achieved of taking approximately 403,407 cars off the road or eliminating the output of a 470 MW power plant for one year.

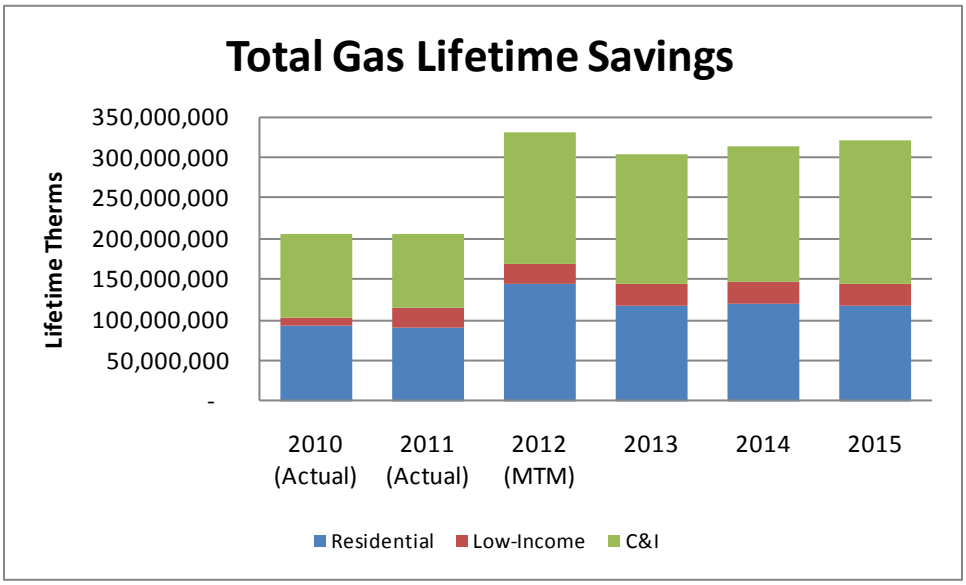
Please see the following tables for a graphical comparison of annual savings from 2010 through 2015.




Please see the following tables for a graphical comparison of lifetime savings from 2010 through 2015.



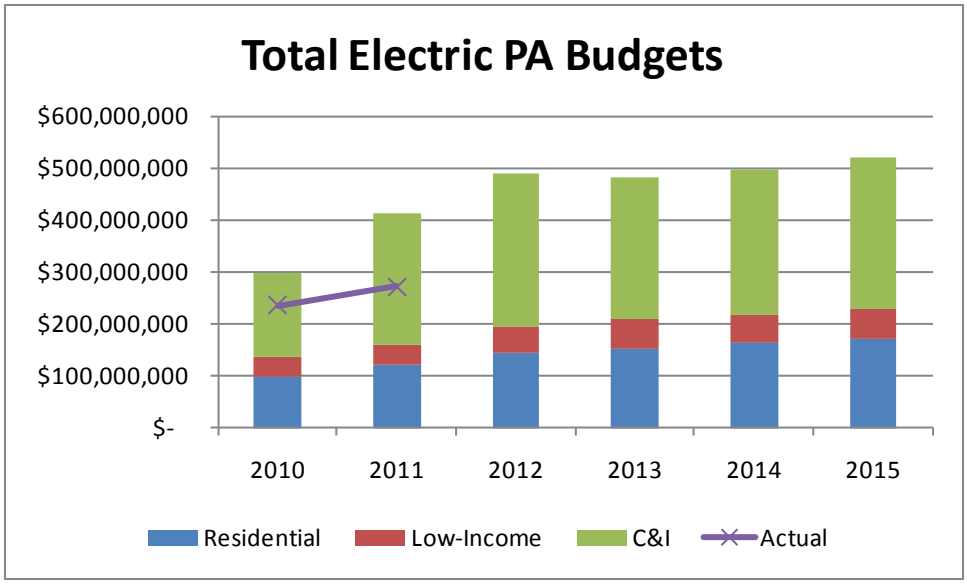

The Program Administrators developed these goals based on their review of the Council's priorities, including sustainability, cost drivers and bill impacts, as well as the mandates of the Green Communities Act, and in their discussions culminating in the Term Sheets. Following the adoption of the "Sense of the Council," prepared by the Council on June 12, 2012 and the Department's resolution of July 23, 2012, as well as in response to additional stakeholder comments and continued discussions, the PAs re-assessed their savings goals and the manner in which they were determined, and established the figures set forth herein. In formulating these goals, the PAs reviewed the types of projects, customers already served, those markets that have potential to be served as informed by the PAs' market assessment, historical performance (taking into account any outliers), EM&V results, preliminary results, and bill impacts. These savings goals are designed to achieve all available cost-effective energy efficiency with due consideration of bill impacts. As set forth in Appendix D, based upon the PAs' research to date, the level of savings set forth herein exceeds the saving goals of any other

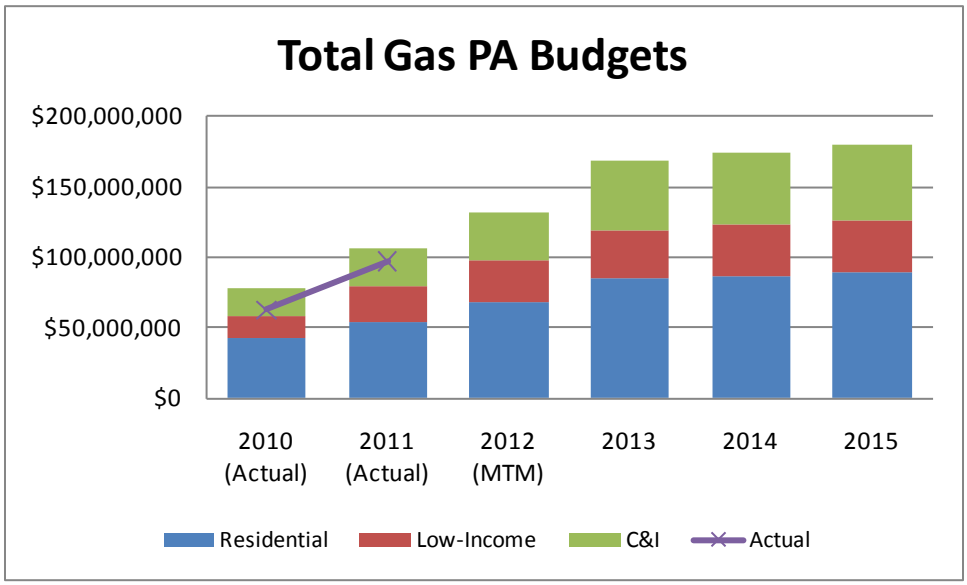
state on a proportionate basis. Section III.D of this Plan and Appendix C provide more detail on savings and benefits of the Plan, including cost-drivers and unique drivers of savings goals in specific territories.

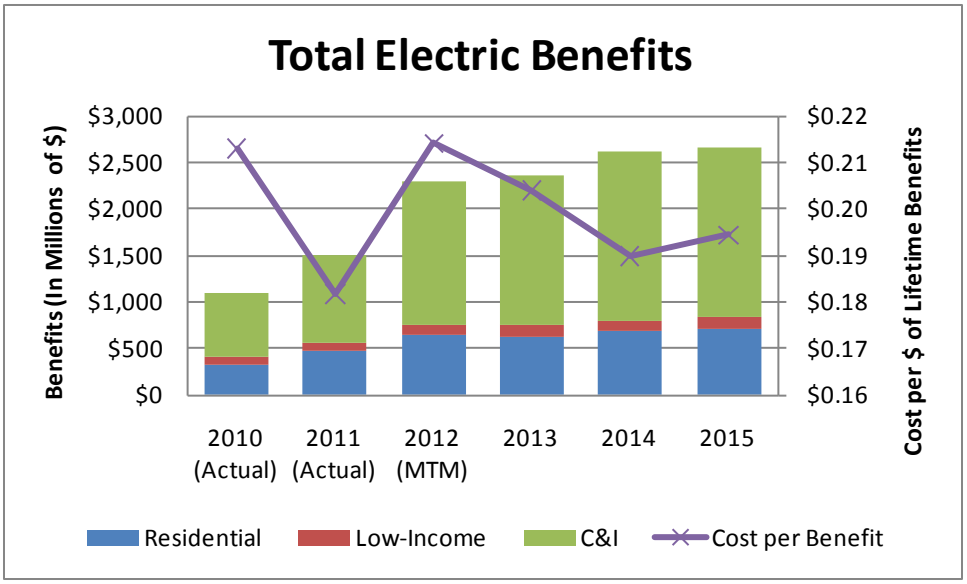
2. Program Budgets

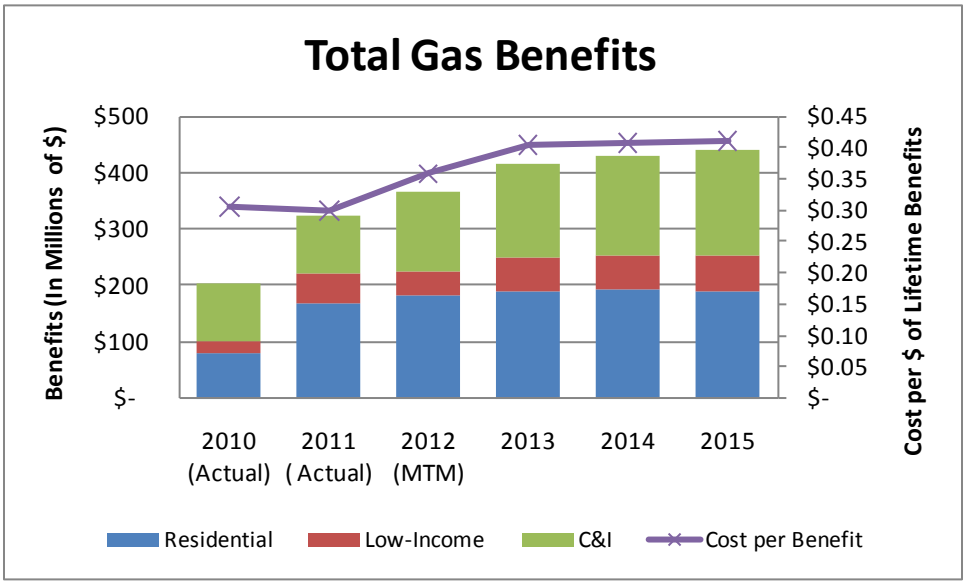
The Program Administrators' proposed energy efficiency budgets for the period 2013-2015 are provided in this Plan at the program level, and reflect the cost of achieving all available cost-effective energy efficiency and the aggressive stretch savings goals detailed above. These budgets allow for continued progress on identified Council priorities, all while remaining mindful of bill impacts (highlighted in Section III.E of the Plan).[9] The proposed budgets reflect economies realized through prior efforts in 2010-2012. As graphically illustrated below, based upon "rolled-up" Program Administrator proposals for 2013-2015, the Plan calls for cumulative electric expenditures on an overall statewide basis of $1,495,698,331 over the three-year period, and cumulative gas expenditures on an overall statewide basis of $523,085,799 over the three-year period. The overall statewide electric and gas budgets proposed in this Plan are below the levels specified in the Term Sheets. While the planned expenditures on energy efficiency under the Plan are significant, the net present economic value of the benefits to be achieved under the Plan greatly outweighs expected costs. The magnitude of these expected benefits, with a statewide electric and gas value of $8,921,966,158, demonstrates the exceptional value of the increased energy efficiency expenditures called for in the Plan. Please see the graphical comparison of the 2010-2015 budgets and benefits below.

[9] The PAs have included $500,000 of funding for a statewide database in each annual budget for the next three years. For additional details, see Section III.N.


Total Electric PA Budgets
$600,000,000
$500,000,000
$400,000,000
$300,000,000
$200,000,000
$100,000,000
$-
2010
2011
2012
2013
2014
2015
Residential
Low-Income
C&I
Actual


Total Gas PA Budgets
$200,000,000
$150,000,000
$100,000,000
$50,000,000
$0
2010 (Actual)
2011 (Actual)
2012 (MTM)
2013
2014
2015
Residential
Low-Income
C&I
Actual




The Program Administrators determined the costs and benefits of the energy efficiency plan for 2013-2015 following an extensive review of Plan objectives, cost drivers, as well as savings goals and the cost to achieve savings (including deeper savings), the costs of new and innovative strategies, methods of cost reduction and cost efficiency, historical data, and the discussions culminating in the Term Sheets. Proposed budgets also take into account new initiatives and other efforts that have been included in the Plan in response to stakeholder input and reflect over $69.2 million in statewide EM&V expenditures as called for in the Term Sheets.

Section III.D of this Plan and Appendix C provide more detail on budgets and benefits of the Plan, including cost drivers.

3. Cost Effectiveness

Consistent with the statutory mandate that the Plans "provide for the acquisition of all available energy efficiency and demand reduction resources that are cost-effective or less expensive than supply" (G.L. c. 25, § 21(b)(1)), the Program Administrators have conducted cost-effectiveness screening associated with the energy efficiency programs and services they plan to administer in 2013-2015 using the Total Resource Cost ("TRC") test, consistent with Department's directive in Energy Efficiency Guidelines, D.P.U. 08-50-A at 14 (2009) and as reaffirmed by the Department. Electric Order at 48; Gas Order at 47.

In addition to individual, PA-specific cost-effectiveness screening, the Program Administrators have undertaken a statewide-level screening of the cost-effectiveness of the implementation of the 2013-2015 Plan using the Department's TRC test at the sector level. The results of this testing indicate that, at a statewide level, the proposed Plan is projected to be cost-effective.

The PAs note that the Department is considering changes to the avoided costs that have been used in the current analysis of cost-effectiveness. If the Department directs the PAs to make changes to these avoided costs, then proposed efforts may need to be re-evaluated for cost-effectiveness.

Section III.A.3 of this Plan provides more detail on cost-effectiveness for 2013-2015.

4. Progress Toward Green Communities Act Requirements and Goals

The PAs are committed to meeting in the 2013-2015 Plan all of the requirements and achieving the goals set forth in the Green Communities Act, including the attainment of all available cost-effective energy efficiency, and the mandate that electric and natural gas resource needs shall first be met through all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply. G.L. c. 25, § 21(b)(1). In determining the level of savings to achieve in order to satisfy these mandates and to provide the optimal value for their customers and the Commonwealth, the Program Administrators took into account the considerations set out in Department Orders (including the need to consider bill impacts), various assessments and other evaluation studies. As noted in Section III.B.1.h below, the PAs also reassessed all savings goals originally filed on April 30, 2012, consistent with the Council's request at its June 12, 2012 meeting. The PAs again assessed savings following the Council's July 23, 2012 resolution and after the September 19, 2012 draft submission, and have increased savings goals even further, to levels above those set forth in the Term Sheets, and that are unmatched for any comprehensive, integrated, statewide effort anywhere in the United States. In this Plan, the PAs also discuss certain key factors, challenges and market barriers that have factored into their assessment of the achievable level of energy efficiency set forth in the Plan. The PAs also seek to meet requirements and goals related to coordination and integration of efforts, low-income funding, minimizing administrative costs, competitive procurement processes, and demand response.

In order to achieve the nation-leading savings targets proposed in this Plan, in light of more rigorous codes and standards and EM&V results, the PAs are proposing to deliver more products and services to customers over the next three years.

5. Programs

The Plan sets forth general program descriptions as well as detailed strategies for coordinated program implementation in the residential, low-income, and C&I sectors. The program descriptions represent the results of collaboration and cooperation among the Program Administrators, Council members, Consultants, and other interested parties. The program designs reflect comprehensive proven strategies that provide for: (1) greater consistency in offerings throughout the Commonwealth; (2) an enhanced customer experience, including seamless delivery strategies that integrate gas and electric efforts; (3) an expanded, diverse, and well-trained workforce; and (4) the delivery of new state-of-the-art technologies and services. In addition, the PAs have incorporated numerous new and innovative strategies into planned efforts in response to stakeholder input, including input following the submission of draft versions of this Plan.

Section III.F of this Plan provides more detail on statewide electric and gas programs for 2013-2015.

6. Evaluation, Monitoring and Verification

The proposed EM&V framework in this 2013-2015 Plan is designed to build on the extensive EM&V achievements accomplished in 2010-2012, and reflects both the core principles of the Council Resolution on Evaluation, Measurement, and Verification approved on September 8, 2009 ("EM&V Resolution") and key lessons learned over the last three years. For the 2013-2015 Plan, the Program Administrators, after discussion with the Council's independent expert EM&V consultant, are proposing several enhancements to the current EM&V framework, including the reduction of research areas from six to three and the continuation of the Evaluation Management Committee ("EMC") that was created in 2012. These enhancements are intended to improve the EM&V framework based upon actual experience in order to make evaluation efforts more streamlined and transparent, with the goal of improving the precision and usefulness of the studies. The EMC provides a forum for statewide evaluation issues, and provides guidance, planning and direction to each of the evaluation research areas. As tellingly demonstrated during the EM&V webinar of June 25, 2012, the EM&V framework and EMC are high functioning and marked by excellence and commitment to nation-leading EM&V practices that ensure confidence in energy efficiency efforts. The three-year combined gas and electric EM&V budget is nearly $70 million, in accordance with the Term Sheets.

Section III.I of this Plan provides more detail on the enhancements to the current evaluation framework that are being proposed.

7. Cost Recovery and Performance Incentives

Cost recovery, including the recovery of lost base revenues ("LBR") for those PAs without a Department-approved revenue decoupling mechanism, as well as the ability to recover performance incentives[10], are critical elements of the Plan. The Plan sets forth proposals on cost recovery that seek to utilize existing recovery mechanisms that have worked over time and that are well understood by most customers.[11] The Plan seeks to ensure that, prior to the collection of funds from customers, the Program Administrators have fully accessed other potential available sources of funding, such as funds available from the Regional Greenhouse Gas Initiative ("RGGI"), the Forward Capacity Market ("FCM") (which are available to electric PAs), and other sources as available.

The Plan allows the Program Administrators the opportunity to recover their costs and be made economically whole for aggressively pursuing sales-reducing energy efficiency efforts, as well as to earn a modest return associated with these efforts based upon their actual performance compared to approved goals. In this regard, patterned on the approach reviewed and approved by the Department in the Orders for the 2010-2012 Plan, with adjustments consistent with the Term Sheets, the Program Administrators have set savings targets that provide for an incentive pool of $80.0 million for electric PAs, and $16.0 million for gas PAs, for a total three-year electric and gas incentive pool of $96.0 million statewide. The Program Administrators will substantially maintain the performance incentive models applicable to their initial three-year plans as a basis for the 2013-2015 performance incentive model and allocations, with a limited number of performance metrics and related lower allocation value. The model maintains the Savings Mechanism, the Value Mechanism, and Performance Metrics with uniform payout rates for all electric PAs (excluding Cape Light Compact), and for all gas PAs, in the Savings and Value Mechanisms, all consistent with the Term Sheets. Overall, the performance incentive mechanism currently in place has functioned well and has been retained for 2013-2015.

Sections III.K and III.L of this Plan provide more detail on performance incentives and cost recovery.

8. Mid-Term Modifications

In D.P.U. 08-50-A and the D.P.U. 08-50-B Guidelines, the Department directed the Program Administrators to seek Department approval for certain specified Mid-Term Modifications, including adding or terminating a program, and changes in a program budget, savings goals, or performance incentives of greater than 20 percent. D.P.U. 08-50-A at 64; D.P.U. 08-50-B Guidelines at § 3.8.2.

Subsequent to D.P.U. 08-50-A and B, the Department provided further guidance regarding the need for Department approval of proposed mid-term program modifications. Specifically, in Cape Light Compact, D.P.U. 10-106 (2011), the Department clarified that

[10] As a public entity and municipal aggregator, the Cape Light Compact does not participate in performance incentives.

[11] The PAs will seek approval to recover Plan related costs from the Department of Public Utilities as a part of Plan approval. Specific cost-recovery details will be the subject of separate proceedings. The requirements for those cost-recovery proceedings may be affected by Department decisions anticipated in DPU 11-120.

Program Administrators are required to seek Department approval only for a program budget modification that is 20 percent greater than the program's three-year budget. Subject to the outcome in D.P.U. 11-120, Phase II, the Program Administrators propose to apply the D.P.U. 08-50-B Guidelines, as clarified by the Department in D.P.U. 10-106, *supra*, to program modifications that lead to savings adjustments during the three years of the Plan. This will allow Program Administrators continued flexibility to make adjustments to programs that are necessary to promote innovation and efficiency without unduly burdening the administrative process for the Department as well as the PAs and other stakeholders.

As discussed in Sections II.G and III.O, the Department issued an order on May 25, 2012, opening an investigation into the mid-term modifications process in order to potentially simplify the process based upon lessons learned over the last three years. The Department called for comments on or before July 12, 2012, on its straw proposal streamlining the MTM process; The Department subsequently issued on September 21, 2012 updated revised Energy Efficiency Guidelines which are currently the subject of ongoing comment and review. The results of this ongoing process may result in Program Administrators adjusting their approach to mid-term modifications for 2013-2015. The Program Administrators appreciate the Department's development of a straw proposal and the Revised Guidelines and its concerns discussed in the accompanying order, as well as the Department's efforts for the technical conferences convened and facilitated by the Department on June 19, 2012 and August 16, 2012.

Section III.M of this Plan provides more detail on the mid-term modifications process currently anticipated for 2013-2015.

9. Economic Development and Job Growth

An important element of the Plan is the economic impact of energy efficiency on the Commonwealth and its citizens, including job creation and retention stemming from energy efficiency programs. One way that energy efficiency affects consumers and businesses is by reducing energy costs, thereby allowing the money saved to be spent elsewhere, thus stimulating the economy. Additionally, energy efficiency programs create a wide variety of jobs, many of them tied to local communities. According to the 2012 Massachusetts Clean Energy Industry Report, energy efficiency has been adding jobs to the Commonwealth at a 10% growth rate since 2011. To quantify the job creation impacts of its energy efficiency programs, the Program Administrators engaged the New England Clean Energy Foundation ("NECEF") to update NECEF's analysis of workforce requirements and impacts associated with Program Administrator energy efficiency programs. The resulting report entitled "An Estimate of Direct Full-Time Equivalent (FTE) Employment in 2011 Supported by Mass Save Energy Efficiency Programs" is included at Appendix P, Study 16.

The Program Administrators are committed to job training for emerging clean energy industries, as well as sustainable funding of energy efficiency programs in order to maintain a consistent workforce.

Section III.A.5.b of this Plan provides preliminary results of NECEF's research.

10. Conclusion

The Plan represents the ongoing results of an unprecedented collaboration among all the Program Administrators in Massachusetts, both gas and electric, as well as diverse interested parties, and fully complies with the bold initiatives required under the Green Communities Act. The Program Administrators thank the Council, DOER, the Attorney General, the Council's consultants, and other stakeholders for participating in the Plan development process and for all their efforts, analysis, and suggestions to date. The Program Administrators look forward to working cooperatively with the Council and other interested parties in reviewing this Plan and ensuring that Massachusetts customers are provided with programs that are marked by excellence and innovation, and that produce economic and environmental benefits throughout the Commonwealth.

## G. Council Priorities, Sense of the Council, Council Action Plans and Individual Councilor Comments

For ease of reference, the PAs provide the following charts detailing various activities and outcomes that were identified as Council priorities along with the location in this document where the Program Administrators discuss strategies to focus explicitly on these activities and outcomes.

### 1. Council Priorities

In its February 14, 2012 Resolution Concerning Its Priorities for 2012, the Council articulated its priorities for program planning, analysis, implementation, and evaluation. The PAs are committed to these priorities, including building on the initial plan, achieving all available cost-effective energy efficiency, maximizing net economic benefits through a sustained and integrated statewide energy efficiency effort, setting aggressive, achievable goals, while staying focused on bill impacts, cost efficiency and integrated program delivery. The PAs are also committed to seeking outside financing and funding and addressing any barriers to energy efficiency, where possible.

| **Council Priority** | **PA Summary Discussion**<br>(Details in Section III) |
|---|---|
| **Support the achievement of the savings goals set in the 2010-2012 program plans and the maximization of benefits.** | Intense in-the-field efforts are ongoing, as documented in periodic reports to the Council.<br><br>For details, see Section II.C. |
| **Set Aggressive and Achievable Targets for 2013-2015 plans.** | Most aggressive savings goals for any integrated electric and gas effort ever undertaken in the United States. Goal of $8.79 billion in benefits is aggressive and layered on top of historic goals and achievements in the 2010-2012 period. Goals reflect experience-based knowledge from the initial Three-Year Plan, as well as available market intelligence. Goals have increased since July 2 draft Plan and are consistent with the Term Sheets..<br><br>For details, see Sections I.B, I.D, I.F.1, III.A, III.B, III.D, III.E |
| **Continue to Improve the Cost Efficiency of Program Delivery** | The Program Administrators meet regularly in the Residential Management Committee, the C&I Management Committee, the Evaluation Management Committee and the Low-Income Best Practices Group to review and share best practices, go to market strategies,[12] and discuss MTAC findings about new technologies in order to enhance cost-effectiveness. The evaluation effort which includes joint procurement practices demonstrates where efficiencies can be gained. Also, upstream initiatives are a good example of efforts to enhance cost-effectiveness. In addition, planning and reporting requirements are shared by the Program Administrators, who coordinate filings and presentations to the Department and Council, thus avoiding some duplication of costs and resources.<br><br>For details, see Sections I.B., I.F.4, III.A, III.B, and III.D |
| **Provide Support on Key Program Development and Implementation Needs** | The sections cited below describe integration successes and plans. Bold new initiatives targeting economically challenged neighborhoods, municipalities, health |

[12] "Go to market" strategies include the tactics employed by a PA to bring program services to a customer that frames the opportunities in a way that will resonate with the customer and that helps the PA to leverage both its internal and external resources.

| **Council Priority** | **PA Summary Discussion**<br><br>(Details in Section III) |
|---|---|
| | care sector and public education. Broadly supported pre-weatherization approach is underway and will guide final 2013-2015 approach. Tenant-landlord barriers and hard-to-reach customers are also being targeted in community engagement strategies described in Section II.H.2. In addition, the PAs meet consistently with the Council, its Consultants, and efficiency experts to focus on continuous improvement of energy efficiency efforts.<br><br>For details, see Sections III.F, III.G and III.H. |
| **Define and Encourage Better Data Analytics and Access** | The PAs are currently reporting statewide data in a consistent and timely manner. An enormous amount of data is being successfully and consistently provided in a public and transparent manner by the PAs, including DOER's PARIS database, which requires substantial PA time and resources to populate. The PAs have been working collaboratively and proactively with DOER for over eight months to discuss the purpose, challenges and strategies for developing a new, enhanced database that would provide value both to the PAs and to the Commonwealth generally. The PAs remain committed to working with DOER and other stakeholders to develop a database solution that is efficient, reliable, and useful. The PAs have identified core issues, concerns and questions and suggested next steps that they believe should be addressed before a potentially costly, new database development initiative is launched. The PAs remain committed to determining if there is a workable database solution that will provide cost-effective benefits to both the PAs and the Commonwealth in general. The PAs have included budget resources for possible new database initiatives in this Plan. Additionally, the PAs have developed and are providing new statewide data analysis tables with this Plan, which provide key statewide and PA-specific data in a user friendly format.<br><br>For details, see Section III.N. *See also* Appendix L. |
| **Identify Best Practices** | Intense commitment to sharing of ideas and to cooperation, professional development and participation in seminars/industry groups/continuing education |

| **Council Priority** | **PA Summary Discussion**<br><br>(Details in Section III) |
|---|---|
| | and innovation, such as the creation of the MTAC, are all hallmarks of the PAs' commitment to drive and embrace best practices. Hosting of Appreciative Inquiry Summit and Energy Expos to drive best thinking and cross pollination of ideas - even when critical of aspects of PA efforts. Active and coordinated engagement in regulatory proceedings, such as D.P.U. 11-120, which are probing best practices in multiple areas, from planning to logistics, such as MTMs. Ongoing work of Residential Management Committee and C&I Management Committee, Evaluation Management Committee, and Low Income Best Practices Working Group. PAs are fully and intensely engaged in diverse public processes seeking out best energy efficiency practices.<br><br>For details, see Sections I.E, III.A.4, III.F, III.G., III.H., III.I, III.J, III.N |

2. Sense of the Council Regarding the Three-Year Plans (2013-2015)

In its June 12, 2012 Summary of EEAC Discussion – Sense of the Council Regarding the Three-Year Plans (2013-2015), the Council discussed its expectations on what the PAs should include and specifically address in the July 2, 2012 draft Gas and Electric Energy Efficiency Plan. The PAs addressed these expectations in the July 2, 2012 draft Plan, including reassessment of savings goals, costs and cost drivers, innovation in pursuing aggressive and sustainable savings goals and best practices, and have continued to review these areas of interest and update the Plan accordingly for this September draft of the Plan. The PAs are also including action plan summaries for the Council's convenience in Section I.G.3 below

| **Sense of the Council** | **PA Summary Discussion** |
|---|---|
| ***Reassessment of Savings Goals***<br>Reassessment of Savings Goals—where appropriate, considering all-cost-effective mandate, the Council's priorities, including sustainability, cost drivers and bill impacts, determine whether the PAs can increase savings goals for both gas and electric program | The PAs have adjusted proposed savings goals to take into account comments received from the Council, Council consultants, and other stakeholders. Findings from recently completed evaluation studies and other market intelligence has also been factored into proposed savings goals. National Grid, NSTAR, and Western Massachusetts Electric Company ("WMECO") have increased electric savings goals over the nation-leading 2.5 percent level. On the gas side, notwithstanding serious challenges from EM&V results, Berkshire, Columbia Gas, New England |

| Sense of the Council | PA Summary Discussion |
|---|---|
| portfolios, supported with scenario analysis where helpful. This should include a detailed explanation as to how the ultimate determination was made. | Gas, and Unitil have all increased savings goals above April 30th levels. Where PAs did not increase goals, such action was taken only after review of EM&V results and/or unique service area challenges. Following the July 23, 2012 Council resolution, all PAs have further increased savings. Savings goals are set at levels for all PAs that are consistent with the Term Sheets and are appropriate for 2013-2015.<br><br>For details, see Section III.B.1.h. |
| ***Costs and Cost Drivers***<br>Include the complete analysis, methodologies used, assumptions, background, data sources, market uncertainties, etc. used to analyze the cost drivers and build the budgets. Connect the cost drivers to initiatives contained within the programs and indicate their effect—both positive and negative. Factor past actual costs into estimates for the 2013-2015 gas and electric plans. | The PAs have carefully examined cost drivers, including sector cost trends, the impact of CHP in 2011 and 2010, C&I cost drivers, upcoming changes in federal codes and standards and resulting changes to program impacts, residential sector cost and increasing reliance on savings to be obtained in that sector in the next three-year plan, production and savings, and gas costs and evaluation impacts. Detailed discussion is provided in this Plan. As a key milestone, the PAs made presentations on these issues to the Council in July and September 2012. Overall gas and electric 2013-2015 budgets are below overall levels in Term Sheets.<br><br>For a detailed discussion, including multiple tables, see Section III.D. |
| ***Innovation***<br>Innovation in pursuing aggressive and sustainable savings goals—provide specific and detailed information as to how Point 380, the January 10, 2012 Public Comments, the Appreciative Inquiry and the Synapse economic study were reviewed and used to inform, enhance and deliver the gas and electric plans. | New initiatives targeting economically challenged neighborhoods, the healthcare sector, municipalities and public education have been directly informed by January 10, 2012 public comments, Appreciative Inquiry and Council comments. The Point 380 Study has informed the market segments that should be targeted in this Plan and continues to be used as a tool to inform "go to market" strategies. The Synapse study confirmed the PAs' expectations with respect to the economy for 2013 -2015, and provided customer interviews reviewed by the C&I Management Committee to help develop enhanced integration strategies for 2013-2015. Synapse did not project a major economic boom or major recession in 2013 -2015, and PA goals similarly are not predicated on extreme economic swings as compared with current conditions.<br><br>For additional, more detailed discussion, see Sections I.E, III.A.4, III.B, III.F, III.G, III.H., III.I, III.J |

| Sense of the Council | PA Summary Discussion |
|---|---|
| ***Action Plans***<br>For each sector and key related programs or initiatives (i.e., those that have a major impact on savings/benefits or that are associated with a major driver of costs), provide an action plan with defined goals, deliverables, timelines and methods of evaluation (working within the EM&V framework). | The PAs strongly emphasize that this Plan is an integrated document with multiple parts interrelating. In order to fully appreciate and understand the PAs' approach to addressing key sectors, the provisions of the entire Plan need to be considered. In particular, the most detailed descriptions of program plans and action strategies, including key goals and dates, are within the program descriptions or other applicable sections within this Plan.<br><br>For additional, more detailed discussion, see Sections I.G.3, III.F, III.G., III.H, III.I. |
| ***Best Practices***<br>For each sector and related programs, explain how best practices were reviewed and modeled across PAs, and then used to develop and implement best practices across all PAs' gas and electric plans. | The sharing of best practices is an activity that occurs consistently within the C&I Management Committee, Residential Management Committee, Low Income Best Practices Working Group, and the Evaluation Management Committee. The sharing of these best practices results in dynamic program efforts that evolve over time. The program designs in each sector are the cumulative result of distilling best practices in the field and from the industry. These designs were developed through the C&I Management Committee, Residential Management Committee, and Low Income Best Practices Working Group and were developed only after sharing early drafts with the Council's Consultants and considering the Consultants' comments. Early draft designs were also shared with individual Councilors in order to allow them to weigh in with suggestions and recommended best practices. The PAs also developed checklists of all Councilor comments on the April 30 short form draft plan as well as a report on suggestions coming out of the Appreciative Inquiry Summit in order to help systematically review recommended best practices. The PAs have proactively and aggressively sought out the best thinking on energy efficiency, both critical and supportive, to better inform this Plan – no other state has embraced the open Appreciative Inquiry Summit process with respect to energy efficiency, nor the level of PA cooperation and collaboration.<br><br>For additional and more detailed discussion, see Sections I.E, III.A.4, III.F, III.G., III.H., III.I, III.J, and III.N. |

3. Action Plans for the Three-Year Plans

On June 18, 2012, the Council voting members circulated an Action Plans document for the next three year plan. The Council explained that it is an extension of the Sense of the Council prepared on June 12, 2012, and represents the specific requests of voting Council members. The Council further explained that it does not supersede the Council priorities, but requests more planning on the most significant programmatic and market sector issues to the voting Council.

In the following stand-alone section, the PAs provide Action Plans with respect to each of the 12 topics requested by the Council. The PAs strongly emphasize that this Plan is an integrated document with multiple parts interrelating. In order to fully appreciate and understand the PAs' approach to addressing each of these 12 items highlighted by the Council, the provisions of the entire Plan need to be considered. In particular, the most detailed descriptions of program plans and action strategies are within the program descriptions or other applicable sections within this Plan. The PAs recognize, however, that having a separate section highlighting action items and key milestones is useful and directly responsive to Council requests. Accordingly, the PAs have summarized their action plans with respect to the 12 items noted by the Council below.

| **Council Request** | **PA Action Plan** | **Applicable EM&V Studies** |
|---|---|---|
| 1. Enhanced fuel integration through program delivery in the C&I sector | The PAs have made significant progress integrating electric and gas service delivery in the C&I sector. There has been significant progress in providing customers with a uniform message about energy efficiency. Examples of current efforts that have contributed to integration include but are not limited to cross training for PAs and vendors, consistent requirements and post inspection verification for contracted vendors, continued support of the MTAC process, and the combined screening tool. Additional efforts focused on fuel integration will continue in 2013.<br>1. For 2013, additional gas measures will be evaluated for inclusion in the C&I Direct Install initiative.<br>2. Although PAs encourage comprehensive Technical Assistance ("TA") studies, these efforts are supported and therefore directed by both the PA and the customer. To encourage customers to consider comprehensive gas and | *Large C&I - Process Evaluation of the Large Commercial and Industrial Energy Efficiency Programs* included in the 2011 Annual Report. |

| Council Request | PA Action Plan | Applicable EM&V Studies |
|---|---|---|
| | electric opportunities, the PAs will require the consideration of combined gas and electric opportunities in order to be eligible for TA funds.<br><br>3. In those service areas which have separate gas and electric PAs, opportunities may exist for more formal strategies including cross-sales support and combined MOUs. NSTAR and National Grid will develop and test these concepts in the cities of Boston and Worcester. Although initial efforts are with two large PAs, lessons learned and best practices will be shared with the other PAs. Results reviewed at the end of 2nd quarter of 2013 and best practices expanded to all PAs/communities.<br><br>4. The PAs will also provide continued formal statewide gas and electric integration training to staff with the purpose of: (1) Increasing networking among the PAs so the electric and gas PAs can meet with their counterparts increasing the ability to share knowledge; (2) Training electric staff on how they may identify gas measures and training gas staff on how they may identify electric measures (and potential leads) for the partner PA when at customer site visits; (3) Developing a closer partnership between the Cool Smart/GasNetworks' rebate initiatives; and (4) Development of an Integrated Gas & Electric Working Group.<br><br>For details, see Sections I.E.4, III.F.3, and III.F.6.d. | |
| 2. Community mobilization models | Community-based pilots developed during the last three-year plan provided valuable lessons and were instrumental in identifying outreach challenges and barriers to participation that exist in certain communities. Over the course of the next three years, the PAs plan to continue working closely with community organizations and advocates to enhance the engagement process as a means to increase | *Community-Based Partnerships 2011 Evaluation Final Report* included in the 2011 Annual Report.<br>A study to review the Northampton and Pittsfield |

| Council Request | PA Action Plan | Applicable EM&V Studies |
|---|---|---|
| | program participation levels.<br><br>While the PAs acknowledge there are varying scopes for community-based engagement efforts, there is also acknowledgement that having an established framework to serve as a common delivery model across PAs may be beneficial for achieving and measuring success. The PAs also recognize the frame work needs to be flexible enough to adjust for size and scope, yet common core elements will be designed to yield measurable energy savings and benefits to the community participants. Examples of core components include, but are not limited to: creating a formalized application process, establishing engagement specific saving goals and reporting process, and developing a performance-based incentive mechanism.<br><br>Projected Milestones:<br><br>• PAs will develop a statewide framework which incorporates an application process, establishing a community specific saving goals and reporting process, and developing a performance-based incentive mechanism by the end of Q3 2013.<br><br>Each PA will work with their internal staff, implementation vendors, and community organizations (where applicable) to introduce and incorporate the formalized process to planned engagement activities by Q4 2013.<br><br>For details, see Sections III.H.2. See also the details and dates with respect to the new Efficient Neighborhoods+ initiative in Section III.F.6.b.i. | commercial outreach efforts is planned for 2012. |
| 3. Hard to reach and lower income strategies, including | Building on the successful community engagement efforts and low-income programs, the PAs plan to develop a new initiative called | Potential study to review the 2013 enhanced strategies to |

| **Council Request** | **PA Action Plan** | **Applicable EM&V Studies** |
|---|---|---|
| understanding and addressing the 61-120% of state median income customer segment | Efficient Neighborhoods+. This initiative will target lower to moderate-income consumers in designated communities and neighborhoods. As an extension of the Home Energy Services ("HES") core initiative, Efficient Neighborhoods+ is intended to provide significant energy saving benefits to customers who live in neighborhoods with older housing stock and are often financially constrained from making energy efficiency investments. In addition to the benefits provided by the HES core initiative, Efficient Neighborhoods+ will include an enhanced incentive structure designed to make energy efficient improvements more affordable for consumers living in these sometimes harder to reach neighborhoods.<br><br>Projected Milestones:<br><br>1. PAs intend to define target neighborhoods and finalize initiative design (including incentive structure) by the end of Q1 2013.<br><br>2. PAs plan to test this initiative in May-August, 2013. This timeline will serve the secondary goal of maintaining a steady work flow for IICs and HPCs.<br><br>3. Monthly reporting of the uptake will be submitted by the lead vendors to the PAs.<br><br>4. PAs will assess results and report to Council in Q1 2014.<br><br>PAs plan to include LEAN in the initiative design and implementation phases to ensure a fully integrated cross-sector approach.<br><br>For details, see Section III.F.6.b.i. *See also* III.H.2. | increase penetration into hard to reach markets to be launched in late 2013. |
| 4. Enhancements to the multi-family program, including integration of | The PAs will continue integration efforts in multi-family facilities to provide consistent messaging and seamless delivery to customers within this unique sector. The PAs have developed effective | Potential study to review the initiative to streamline delivery of packaged, |

| Council Request | PA Action Plan | Applicable EM&V Studies |
|---|---|---|
| commercial and residential services that result in increased penetration with renters | strategies and made great strides toward integration of program delivery services during the 2010-2012 three-year plan. For example, the PAs discovered that condominium owners within this initiative view themselves and act similar to the single family homeowner. In an effort to meet the condo customers' expectations, the PAs expanded the HEAT Loan eligibility and allowed for single unit assessments where warranted. In 2013, all PAs plan to offer a coordinated facility assessment, regardless of meter type, and a packaged offer to a facility, based on the positive experiences seen by some PAs that previously implemented this approach. To further increase penetration with renters, PAs will enhance efforts to target landlords, property management firms, building management, building operator trade associations, and design professionals. See Section III.H. PAs will also consider stakeholder comments and ideas generated at the Appreciative Inquiry Summit in May 2012.<br><br>**Milestones**<br>• PAs will develop a statewide template which incorporates measures and incentives into a packaged portfolio for presentation to the facility owner by the end of Q2 2013.<br>• Each PA will work with their internal staff, implementation vendors, the Multi-Family Market Integrator and PA data support teams to implement a seamless process by Q4 2013<br>• PAs plan to engage multi-family stakeholders in a focus group setting to assess the effectiveness of new enhancements and future program planning by Q1 2014. Dates of implementing marketing tactics will be dependent on PA goal attainment.<br><br>For details, see Sections III.F.6.a, III.H.2 | comprehensive energy efficiency services to the multi-family sector to be launched in late 2013. |

| **Council Request** | **PA Action Plan** | **Applicable EM&V Studies** |
|---|---|---|
| 5. Implementation of pre-weatherization measures in residential services as determined through the value to greater savings | As discussed previously at Council meetings, the PAs offered limited time incentives from May to July 2012 for combustion safety repairs, knob and tube wiring inspections, or repair of improper dryer venting. Up to $1,000 has been included for knob and tube upgrades and remediation of moisture in the HEAT Loan.<br><br>In Q3 2012, the evaluation contractor is expected to provide preliminary results, and full results are expected in Q4 2012.<br><br>Evaluation results will inform initiative design in Q1 2013 with expected implementation at the end of Q2 2013.<br><br>For details, see Section III.F.6.a. | Ongoing study to review the 2012 pre-weatherization barrier initiative expected to be completed shortly. |
| 6. A consistent and more comprehensive approach with municipalities | The PAs recognize that municipal customers have unique barriers and challenges to adopting energy efficiency. Effective in 2013 the PAs will consider broader adoption of a dedicated turn-key track within the C&I Retrofit Program to assist in overcoming these barriers and providing closer alignment with the Green Communities division of the Office of Energy and Environmental Affairs. National Grid and NSTAR will implement a dedicated key track for municipal customer within the C&I Retrofit program in 2012 and will share experiences with other PAs. This new approach is a core benefit of this Plan. Review by all PAs of this new approach being implemented by NSTAR and National Grid will occur in the second quarter of 2013.<br><br>For details, see Sections III.F.6.b.i., III.F.6.d, and III.H. | None currently planned; a customized approach could be developed based upon future plans. |
| 7. Targeted strategies for the midsized commercial market (greater than 300 kW, not account managed) | National Grid historically served these customers as managed accounts with implementation support through contracted program expediter ("PEX") vendors. In 2012, NSTAR created a tiered sales force whereby all accounts above 300 kW are now assigned and managed. NSTAR also adopted the National Grid model with a | *Large C&I - Process Evaluation of the Large Commercial and Industrial Energy Efficiency Programs* included in the 2011 Annual |

| Council Request | PA Action Plan | Applicable EM&V Studies |
|---|---|---|
| | stable of contracted PEX vendors. By 2013, WMECo will also follow this model. Effectiveness will be shared and reviewed within C&IMC.<br><br>For details, see Section III.F.6.d. | Report. *2012 Massachusetts Umbrella Marketing Evaluation Report* included in the 2011 Annual Report.<br><br>A study to assess mid-sized C&I customer needs is planned for 2012. |
| 8. Targeted strategies for commercial real estate, including resources for building performance management tools, as well as potential behavior programs and increased penetration with lessees | These three efforts are being targeted comprehensively through an MOU strategy. In order to achieve persistence, multi-year corporate engagement is critical. The barriers here include lease structures, owner/management structures and buy-hold versus flip business models. NSTAR and National Grid have been working with several large commercial property owners/operators and are currently testing some concepts to begin addressing these barriers. By second quarter of 2013, progress will be reviewed and actions adjusted in response to lessons learned.<br><br>In parallel, the PAs are also progressing on the Office of the Future effort. This is focused on the technical opportunities for deeper savings along with the associated cost challenges. National collaboration has provided several initial technical projects focused on system integration techniques to provide deeper savings. Although cost effective, these projects were several orders of magnitude more costly than traditional approaches. Opportunities to fine tune the balance between budgets and savings exist. NSTAR and National Grid are in talks with several commercial property owners to implement up to 12 projects which will guide efforts forward. An external project manager and consultant team has been retained. With buy-in from property owners, implementation will be targeted for 2013 and results available for review in 2014. | A study to assess mid-sized C&I customer needs is planned for 2012.<br><br>A study to develop customer profiles for C&I customers is planned for 2012. |

| Council Request | PA Action Plan | Applicable EM&V Studies |
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| | For details, see Section III.F.6.d. | |
| 9. Targeted strategies for healthcare that meet the needs of both large academic medical centers as well as smaller healthcare facilities | The PAs commit to a continued focus on this customer sector. MOUs are already in place with several health care sector customers leading to significant savings in this important sector. The PAs continue to work closely with customers in this sector to refine energy efficiency services in a meaningful way. These efforts will continue in this and other sectors in 2013 – 2015.<br><br>MTAC has also begun work with the Fraunhofer Center for Sustainable Energy Systems CSE, located in Cambridge, Massachusetts. Fraunhofer CSE, part of the international Fraunhofer applied research organization, specifically focuses on building energy technologies. Along with supporting MTAC's overall proactive charter, they will be supporting the effort of identifying and addressing opportunities for equipment specific to the healthcare industry. Key milestone: initial findings are expected to be reviewed in 1st quarter of 2013 and will guide the direction of the effort going forward.<br><br>For details, see Sections I.E.2, III.F.1, III.F.6.d, and III.H.1. | A study to assess mid-sized customer needs is planned for 2012. |
| 10. Enablement for statewide data management and statewide data reporting in a consistent and timely manner | As discussed in more detail in the Council Priorities above, the PAs are currently reporting statewide data in a consistent and timely manner on a monthly, quarterly and annual basis. There is an enormous amount of data that is being successfully and consistently provided in a public and transparent manner by the Massachusetts PAs, including DOER's PARIS database, which the PAs have populated throughout the Plan term. The PAs remain committed to developing database solutions that will provide cost-effective benefits to both the PAs and the Commonwealth in general. Key milestone: PAs participate in database webinar hosted by DOER, which is to be scheduled by DOER. | None currently planned; a customized approach could be developed based upon future plans. |

| **Council Request** | **PA Action Plan** | **Applicable EM&V Studies** |
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| | For details, see Section III.N. *See also* Appendix L. | |
| 11. Roadmap to organizational structure and staffing resources, including systems for best practices review, customer experience and satisfaction in each sector | Organizational structures adopted by individual PAs have evolved over time to address evolving organizational objectives and cost-efficiencies in operations. As concretely demonstrated by the budgets provided in this Plan, each PA is committed to maintaining sufficient staffing levels, supplemented where necessary and appropriate with external vendors, to continue to deliver successful energy efficiency services to all customers. Each PA is acutely focused on identifying and implementing strategies and tactics that lead to an enhanced customer experience and high levels of customer satisfaction. In addition, each PA is committed to providing staff with ongoing education and training in support of keeping efforts successful. Each PA also has a dedicated senior expert who sits as a Council member and who stands ready to meet with and talk to other Councilors.<br><br>The PAs also anticipate continuing to leverage resources by sharing common resources. Examples of where this has been successful include but are not limited to the technical review of potential new technologies through the MTAC, sharing evaluation resources, joint program design efforts, joint marketing efforts, having one or two PAs staff meetings and reporting back to the group. The PAs commit to continue to leverage resources between each organization as a way to manage costs and overall efficiency.<br><br>Customer experience and satisfaction are also objectively reviewed and measured through the comprehensive EM&V framework adopted in Massachusetts and proposed for continuation in 2013-2015. Approximately three and a half percent of the overall budgets for the PAs' energy efficiency efforts are dedicated to EM&V work.<br><br>For details, see Sections I.E, III.A.4, III.B.4, III.B.5, III.F, III.G, | *Large C&I - Process Evaluation of the Large Commercial and Industrial Energy Efficiency Programs* included in the 2011 Annual Report. |

| Council Request | PA Action Plan | Applicable EM&V Studies |
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| | III.H., III.I, III.J, and III.N. | |
| 12. Increased statewide marketing and statewide consistency in branding and messaging efforts including the use of the Mass Save® mark to reinforce seamless program offerings across the state | Support of the Mass Save mark and statewide brand is an important priority. The PAs commit to statewide marketing efforts that include the prominent integration and placement of the Mass Save mark as the statewide brand. PAs will include the Mass Save mark on statewide program, outreach and marketing materials and will include a link to the Mass Save website on the portion of their PA websites that is focused on energy efficiency services in Massachusetts, except where expressly limited by internal corporate website policies. PAs, in collaboration with DOER and the EEAC, will conduct an evaluation of the effectiveness of all joint statewide branding efforts to ensure that such brands support clear and recognizable messages that help promote program awareness. Such an evaluation will be completed by the end of 2013 and submitted to the EEAC.<br><br>The key themes for the Statewide Marketing efforts for the 2013-2015 planning cycle are as follows:<br>• Statewide Marketing's role is to define who and what Mass Save® is and what it means to the customer<br>• Statewide Marketing will take a strategic approach to message and graphically tie in the PA Brand Logos with the Mass Save mark to create a strong association and clarity of message<br>• Statewide Marketing will utilize the segmentation work identified by the RMC and C&IMC so we can better and more consistently target customers from a program and statewide awareness level.<br><br>A request for proposal ("RFP") was issued in July 2012 for a new | *Phase II (2012): Umbrella Marketing* included in the 2011 Annual Report.<br>A follow up study which will include post-campaign analysis is planned for 2012. |

| Council Request | PA Action Plan | Applicable EM&V Studies |
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| | advertising agency to create and execute communications for the Statewide Marketing Working Group. The PAs continue to review the proposals and make a decision on a new agency after candidate interviews in Q4 2012. The PAs will implement an agency review process semi-annually to keep themselves and the agency on track with a formal review mid-2014 prior to considering a contract renewal for the final year. As part of that RFP process, the winning agency will provide the PAs with recommendations and suggestions for a 2013 communications plan, which can be leveraged and built upon for development of the PAs' 2013 campaign to be in market Q1 2013. The 2013 plan will address the following:<br>• PAs' communications strategy by sector will be more diverse and targeted and yield an improvement in awareness.<br>• A need for increased spending has been identified so that the PAs can adequately cover at least nine months versus six months of activity in the market to support specific program efforts. This will also be accomplished by a selective and targeted use of the appropriate channels and media weights.<br>• Mass Save Style Guidelines will be re-evaluated by the PAs with the agency to determine their effectiveness and usability and will be re-issued following this refinement within the first half of 2013.<br>• The 2014 and 2015 campaigns will be in market within the first quarter of each year to complement the marketing activities of the individual program communications.<br><br>From a market research perspective, the PAs will work with the EM&V team to conduct a pre/post campaign study. Through the PAs' ad agency, the PAs will implement copy testing. The pre-test will commence in Q1 2013 prior to the campaign being in market | |

| Council Request | PA Action Plan | Applicable EM&V Studies |
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| | and will be conducted by sector and will be compared to the same time in the prior year. The post test will commence immediately following the conclusion of the campaign in Q4 2013. The copy test will be conducted prior to creative execution in Q1 2013 so that the PAs can be sure they have the right communication in the market in that it is meaningful to the target and the channels the PAs elect to use are appropriate. MassSave.com will be evaluated for content, usability and improvements and a team established to maintain its integrity.<br><br>As mentioned above, MassSave.com will be evaluated within Q1 2013 with a re-launch in Q2 2013. Subsequent reviews and evaluations will take place quarterly to maintain its integrity and technical prowess. The PAs will continue to feature all the PAs' brands in conjunction with use of the Mass Save service mark per the findings from the Umbrella Studies, which is also consistent with the PAs' goal to convey who and what Mass Save is.<br><br>Campaign tracking was introduced as a new process in 2012 and will continue for each campaign. This activity will be set up at the beginning of each campaign prior to launch and reviewed monthly and then at the conclusion of each campaign year. The tracking results will be utilized to plan going forward into the next year. Tracking will include the number of customers visiting MassSave.com, what they review and how much time they spend. Surveys among visitors will be conducted on a half-year basis for further learning.<br><br>For details, see Sections III.F.2 and III.H. | |

4. Individual Councilor Comments Draft Plans

Under the process developed by the PAs and the Council, and in compliance with the GCA, the PAs submitted their short form draft of the Plan on April 30, 2012, an expanded, full draft on July 2, 2012, and an additional draft on September 19, 2012. Following those submissions, the PAs solicited and received feedback from individual Councilors both in writing and in individual meetings. The PAs collated and categorized the written comments from Councilors on the April 30 draft, as reflected in the chart attached as Appendix E, and considered both written and oral comments from Councilors in building the July 2 and September 19 drafts of the Plan. The PAs appreciate the time and effort that the Councilors' have devoted to providing comments on the draft Plans. The PAs have endeavored to address these comments wherever possible (see tables above which capture many of these comments), but given their sheer number, complexity and interconnectedness with other issues, the PAs do not provide specific references in the Plan to each and every comment. There are some instances in which the PAs have not addressed comments directly because the PAs respectfully disagree with such comments after consideration, or believe that such comments are too detailed for a strategic program plan over three years. Accordingly, the PAs look forward to continuing discussions on these issues with Councilors.

5. Council Resolution of July 23, 2012

In its July 23, 2012 Resolution Concerning Its Priorities for 2012, the Council provided many positive comments on the PAs' July 2, 2012 draft plan. The Council also provided comments and suggestions for enhancements as required by the GCA on the PAs' draft plan. The Council commended the PAs on the success achieved during 2010-2012, including the PA role in Massachusetts' number one ranking for energy efficiency by the American Council for an Energy-Efficient Economy ("ACEEE"). The Council recognized that the PAs are going where no energy efficiency providers have gone before with PA collaboration that is unparalleled. The Council applauded the cooperation among PAs, the Council, its consultants and stakeholders. The Council found that the PAs' Plan "is well-written, responsive to input of the EEAC and its consultants, reflective of stakeholder feedback, and worthy of Massachusetts' nation-leading status." The Council provided comments and suggestions on ten topics following the July 2, 2012 draft of the Plan. The PAs are committed to working to address the Council's comments where possible and as discussed below and throughout this Plan. As demonstrated by the increased savings and decreased costs in this version of the Plan, the PAs have worked diligently to be responsive to the comments of the Council.

| Council Resolution | PA Summary Discussion |
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| **Energy Savings Goals**<br>The Council believes that<br>1. PA-proposed goals in the July Plan are low.<br>2. Benefit cost ratios of 3.19 for the electric programs suggest the PAs can pursue additional energy savings.<br>3. PA programs and goals must be aligned with the Clean Energy and Climate Plan (CECP).<br>4. PA goals should be increased to be consistent with the trajectories in the CECP "in pursuit of all available cost-effective energy efficiency pursuant to the GCA."<br>5. PA goals need to increase "without increasing costs to utility customers."<br>6. Gas PAs should "increase the number of training opportunities with their vendors, as well as colleges and technical schools to expand the technical capacity in thermal applications and enable greater achievement of savings." | 1. After careful analysis of cost drivers, PA variances, potential savings, performance incentives, and customer bill impacts, and after productive discussions with the Consultants and other stakeholders, the PAs are proposing higher goals than in the July Plan, which they believe can be achieved in a cost-effective and sustained manner. To the PAs' knowledge, these are the highest savings targets ever proposed for an integrated statewide effort. These savings are at or above the levels supported in the Term Sheets. For additional discussion, see Sections I.B, I.D, I.F.1, III.A, III.B, III.D, and III.E.<br>2. The PAs continue to seek all cost effective energy efficiency as mandated by the GCA and are committed to achieving deeper savings, which in some instances can correlate with lower BCRs. But several factors affect the TRC test and BCRs do not necessarily always correlate with deep savings. The PAs continue to seek robust BCRs in order to keep programs cost effective through normal programmatic transitions. In response to BCR questions, the PAs have developed and provided a detailed new table providing core initiative level BCR analysis at both the statewide and PA-specific level. The table indicates increasing convergence among PAs on BCRs, especially at the portfolio level. For additional discussion, see supplemental statewide summary tables provided with this Plan; see Sections III.D.1 and III.D.4.<br>3. Proposed savings targets are projected to attain environmental benefits that are aligned with the CECP. For additional discussion, see Section III.P.<br>4. Proposed savings targets are on a favorable trajectory to support CECP objectives. Most tellingly, the savings goals provided in today's filing include the incrementally higher savings trajectories for each of 2013, 2014, and 2015, which is an important priority of |

| Council Resolution | PA Summary Discussion |
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| | Councilors. In addition, the PAs had productive discussions with the Consultants, DEP and DOER on this issue. PA goals are set consistent with the GCA's mandate to pursue all available cost-effective energy efficiency and Department precedent. The Commonwealth's climate plan is distinct from the GCA and does not impose a statutory or regulatory mandate on PAs or other industries. The PAs are committed to achieving GHG reductions in a manner consistent with the CECP goals, but must do so within the confines of the regulatory requirements of the GCA and the Department. In support of both the mandate of all cost-effective energy efficiency provided for in the GCA and the greenhouse gas reduction goals established by the GWSA, the PAs will utilize full and diligent effort to meet their established savings goals as set forth in this term sheet and participate in developing strategies to assist the Commonwealth of Massachusetts in meeting its CECP goals. For additional discussion, see Section III.P.<br><br>5. Since the July and September draft Plans, each PA has been focused on increasing savings targets and reducing costs. This has been an iterative process informed by Council comments, discussions with EEAC consultant team, and feedback from other stakeholders. All PAs are increasing savings goals from July Plan, diligently following up on the Council's request. Each PA is identifying budgets needed to achieve higher savings targets while being mindful of EEAC concerns on costs. The PAs emphasize that savings, costs and performance incentives are interlinked. This Plan sets forth savings, costs, and incentive levels that flow from, and are consistent with, the Term Sheets. For additional discussion, see Sections I.B, I.D, I.F.1, III.A, III.B, III.D, and III.E. |
| **Benefits**<br>The July Plan estimates $8 billion in total benefits from | This Plan estimates $8.92 billion in total benefits for 2013-2105. For additional discussion, see Sections I.F.1 and III.A. |

| Council Resolution | PA Summary Discussion |
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| the 2013-2015 electric and gas energy efficiency programs. This level of total benefits is impressive and demonstrates the significant value of cost-effective energy efficiency for consumers, businesses, and the Commonwealth. | |
| **Deeper Savings**<br>PAs should have continued focus on deeper savings strategies, which should lead to greater savings for more customers, in all sectors, throughout the decade. The plan should highlight the deeper savings strategies proposed for all customer segments. PAs are encouraged to implement deeper savings strategies in communities and neighborhoods, including the harder-to-reach/harder-to-serve customers, and carry deeper savings strategies through to the commercial and industrial sector, including well-designed MOU practices with a specific focus on small and medium business customers, including commercial real estate, municipal and healthcare facilities. | The PAs' strategies in all sectors focus on serving more customers and increasing comprehensiveness. The PAs are focused on streamlining the participation experience in all sectors and making efforts more customer-focused (*i.e.*, addressing unique needs by segments of customer base). For residential and low-income customers, the PAs have strong commitments to investigate tenant/landlord split incentives barriers; assess packaging incentives in HES; target 60% - 80% of average median income through Efficient Neighborhood+ initiative (in development); assess current pre-weatherization incentives informed by 2012 evaluation findings; focus on early retirement of boilers in HES; develop an integrated HVAC/Heating equipment early retirement incentive by Q2 2013; and provide enhanced incentives for Top Ten appliances. In the low-income sector, PAs will continue funding comprehensive whole-house solutions. For multi-family, PAs will look to expand the availability of the HEAT Loan to condominium owners and coordinate between Residential and C&I teams to increase comprehensiveness in multi-family facilities. The PAS hired a vendor to identify efficiency opportunities in the healthcare industry with a specific focus on large medical equipment. The PAs continue to support energy efficiency efforts with municipalities, Green Communities, wastewater and water treatment plants and in the property management/real estate sector. For additional discussion, see Sections III.F, III.G and III.H. |
| **Program Costs**<br>Costs to achieve the goals are expected to be reduced, taking into account the cost ranges identified by the EEAC consultants. PAs should provide different | PAs have been engaged in extensive cost and cost driver analysis and modeling culminating in the budgets set forth in the Terms Sheets and this Plan. Since the July and September Plans, there have been intensive efforts by and productive and frequent meetings/calls with the PAs/Consultant on |

| Council Resolution | PA Summary Discussion |
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| scenarios to show what would be needed in terms of program budgets to get to the level of savings goals presented by the Council Consultants. These scenarios should answer the following questions: What additional actions must the PAs perform, and what would be the necessary budget levels? What would be the benefit-cost ratios of these scenarios? | cost drivers. The key drivers in discussion are: EM&V results, new developments (including upstream lighting, upstream HVAC, behavioral programs, CFLs vs. LEDs, addition of RCS to energy efficiency plan), Codes & Standards, CHP levels, measure mix, and EM&V costs. This process has allowed a good faith understanding of costs drivers, with goal of achieving consensus on costs. The PAs have reduced electric costs as compared to the July draft. PAs not proposing to achieve statewide targets due to unique service area characteristics have provided information and scenario analyses on the cost to achieve targets in the appendices. The gap between savings targets and the PAs' proposed savings level has been materially reduced. Efforts to achieve these reduced differences have been the core focus of much PA effort. For additional discussion, see Sections III.D and IV, Apps. G and H. |
| **Bill Impacts**<br>PAs, the DPU, and the EEAC and its consultants will continue to work together to provide a bill impact model that accurately captures overall impacts for customers in a transparent, consistent and comprehensive manner. | On August 16, 2012, the Department announced at a meeting of the Bill Impacts Working Group that it intends to return to the use of traditional bill impacts. Based on a historical review and reexamination of the goal of bill impact models, the Department proposed to use traditional bill impacts in 2013-2015. Comments were filed with the Department by September 14, 2012, and the Department issued updated directives on October 19, 2012. For additional discussion, see Section III.E. |
| **Participation**<br>PAs will work on properly and precisely defining program participants, which will facilitate a more realistic estimation of market penetration, avoid double counting of customers, and better facilitate the bill impact analysis. To aid in transparency of programs, PAs will distinguish customers from products by sector to better demonstrate program penetration and customer benefits, including for heating oil and delivered fuel customers served through the electric programs. PAs will share the participant data with the | The PAs recognize the development of common definitions as a core priority and have been diligently working toward common definitions. The RMC and the C&IMC each met with the tables group in order to agree on common participant definitions for 2013-2015. The definitions resulting from these discussions are included in this Plan. See Section III.D.3 and Section IV, Appendix M. |

| Council Resolution | PA Summary Discussion |
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| Council and interested stakeholders in a transparent and timely manner. | |
| **Statewide Database**<br>Voting Councilors are encouraged by the potential of enhanced transparency to programs and more timely access to program data. We look forward to continue to investigate, establish, and implement systems in collaboration with the PAs and Council Consultants that work to meet these objectives. | The Program Administrators will continue to collaborate with the Council to explore and develop options that are timely, appropriate and efficient for all users. For additional discussion, see Section III.N. |
| **Statewide Marketing**<br>Brand recognition and awareness is a critical element to the engagement of program participants and increasing participation in programs. The Plan should have more detail on the statewide branding efforts for 2013-2015, including the efforts to emphasize and increase awareness of the Mass Save brand, implement community engagement initiatives and associated budget, and heighten awareness of the energy efficiency programs throughout the Commonwealth and all the customer sectors. | The PAs are continuing a strong marketing campaign. The PAs look forward to continuing productive conversations with DOER on statewide marketing issues. The PAs have issued an RFP for advertising services and will be interviewing finalists at the end of October. The vendor selected for this RFP will help inform statewide marketing efforts for 2013-2105. In addition, the PAs incorporate into this Plan results of and lessons learned from the Umbrella Marketing Study. The PAs will also implement the marketing provisions of the Term Sheets. For additional discussion, see Sections III.F.2 and III.H. |
| **Inconsistencies and Variations Across the PAs**<br>There are significant variations and inconsistencies in benefit/cost ratios, savings and savings targets, costs, and cost per unit savings across the PAs. The PAs need to provide justification for or resolve these variations in detail. | At the September 11, 2012 EEAC meeting the PAs put forth a detailed presentation on the drivers of appropriate cost variations among PAs as a follow up to the Council's request. As noted in that presentation, which was supported by extensive statewide data, some variations in savings goals and cost to achieve are appropriate due to unique characteristics in service territories. Both the EEAC and the Department have supported variances for the current Plan. Each PA has unique expertise and knowledge regarding their individual customer needs. Prior to 2012, and to a degree for 2012, multiple different assumptions/EM&V results were used and approved for each PA. The key developing trend for 2013-2015 is fewer variances. Cost to achieve and costs and savings estimates are converging |

| Council Resolution | PA Summary Discussion |
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| | due to intense efforts of the C&IMC, RMC, LI Best Practices, and common assumptions working group to develop common program designs, common definition of participants, the TRM, and the statewide EM&V framework. PAs with robust C&I customer bases have deeper savings opportunities to mine and those savings can be achieved less expensively than low-income or residential savings. Savings variations are at an appropriate level, and budgets for each PA are reasonable, for 2013-2015, as determined in the Term Sheets. For additional discussion, see Section III.D. |
| **PA Performance Incentives**<br>Performance incentives are an integral part of the planning process and program implementation. The Council will review the overall framework of the current performance incentive model, with the PAs and Council consultants, to optimize and calibrate the current structure including metrics. The Council will review the performance incentive model, including the 75% threshold and the incentive cap, and work with the PA and EEAC consultants to potentially modify specific details of the overall performance incentive model. | Performance incentives are closely tied to savings goals. The current structure was carefully negotiated and reviewed by the DPU. The Term Sheets propose some adjustments, and lower the incentive pool from the levels in the July and September drafts. Thresholds for 2015 are increased to 80%. Performance metrics will be developed consistent with the Term Sheets and submitted in a supplemental filing. For additional discussion, see Sections III.K. |

# II. PROCEDURAL BACKGROUND

## A. The Green Communities Act

The Green Communities Act was signed into law on July 2, 2008. The legislation promotes enhanced energy efficiency throughout the Commonwealth and requires the 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." G.L. c. 25, § 21(b)(1). Electric and gas Program Administrators, respectively, are required to submit a statewide electric efficiency investment plan and a statewide natural gas efficiency investment plan on or before April 30, 2012 to the Council.[13] The contents of those plans, which are specified in the statute, are to be prepared by the Program Administrators in coordination with the Council. Id., at § 21(b)(1)-(2). In meeting that statutory deadline, the Massachusetts gas and electric Program Administrators worked collaboratively to prepare a Plan that represents the collective efforts and objectives of the Program Administrators, and is intended to meet statutory requirements. In accordance with the schedule and processes developed with the Council for the 2013-2015 Plan, on April 30, 2012, the electric and gas Program Administrators submitted their short form initial draft 2013-2015 three-year energy efficiency plan for the Council's comment and approval.

Since their initial, short-form submittal, the Program Administrators have remained engaged in a collaborative process with the Council and its Consultants, as well as other interested stakeholders, to further develop and refine the statewide Plan. These discussions have been successful, as reflected in the Term Sheets. This Plan marks the fourth iteration of the 2013-2015 Plan and, in accordance with the processes and schedule developed for the 2013-2015 Plan, contains full detail on program designs, budgets and savings goals. In accordance with the GCA, the Program Administrators are required to file their respective PA-specific three-year plans, "together with the Council's approval or comments and a statement of any unresolved issues, to the Department . . . on or before October 31." G.L. c. 25, § 21(d). Given customer service requirements and priorities resulting from Hurricane Sandy, this Plan is being filed on November 2, 2012, as such date has been reviewed with the Department, DOER, and the Attorney General.

Although this Plan meets statutory objectives for three-year plans, the Program Administrators are also cognizant of the role that the statewide electric and gas efficiency

[13] The Energy Efficiency Advisory Council is an advisory body consisting of eleven voting members of diverse backgrounds and expertise, a non-voting member from the heating oil industry, a non-voting member from the energy efficiency business, and a non-voting member from each Program Administrator. G.L. c. 25, § 22. The PAs have been active and engaged participants in the Council process, participating in at least 56 full Council meetings and 11 Council executive committee meetings since 2009. Sections 8 and 9 of An Act Relative to Competitively Priced Electricity in the Commonwealth, St. 2012, c. 209, approved August 3, 2012, increase the voting members of the Council to 15 by adding the following entities: the Massachusetts Non-Profit Network, a yet to be designated municipality, The Massachusetts Association of Realtors and an energy efficiency service business having 10 or fewer employees (which business is to be elected by a majority of the businesses performing energy efficiency services in the Mass Save program). Additionally, Section 10 of that statute adds ISO New England to the non-voting members of the Council.

investment plans occupy in the Commonwealth's broader policy objectives. With a series of additional legislative enactments in 2008, the Commonwealth has signaled its commitment to ensuring that the Commonwealth is a worldwide leader in developing the green economy through the Global Warming Solutions Act, St. 2008, c. 298 ("GWSA"), and the Green Jobs Act, St. 2008, c. 307. The GWSA mandates the gradual reduction of greenhouse gas emissions ("GHG") in the Commonwealth, thus spurring innovation and promoting research and development in the area of clean energy. Enacted concurrently, the Green Jobs Act provides a robust funding source for the green technology industry, facilitating economic development and job growth in the clean energy sector. Taken together, these legislative enactments reflect the Commonwealth's commitment to climate protection and its leadership in promoting clean and renewable energy. The Program Administrators welcome the opportunity provided by this new three-year Plan to further design and implement innovative energy efficiency programs that not only advance the objectives of the Green Communities Act, but also promote the parallel goals of decreasing GHGs and promoting job creation in the clean energy sector.

## B. D.P.U. 08-50-A

After the passage of the Green Communities Act, and in conjunction with the Program Administrators' well-established energy efficiency programs, the Department opened an investigation to update the Department's energy efficiency guidelines, as previously established in Investigation to Establish Methods and Procedures to Evaluate and Approve Energy Efficiency Programs, D.T.E. 98-100 (2000) ("D.T.E. 98-100 Guidelines"), to ensure that they were consistent with the Green Communities Act. In that proceeding, Energy Efficiency Guidelines, D.P.U. 08-50 (2008) ("D.P.U. 08-50"), the Department issued revised energy efficiency guidelines, to address issues such as: (1) funding sources; (2) budgets; (3) cost-effectiveness test; (4) evaluation plans; (5) performance incentives; (6) review of three-year plans; and (7) mid-term modifications ("MTM").

During the Department's proceedings in D.P.U. 08-50, it solicited comments from the Program Administrators, governmental bodies, and other interested stakeholders. The resulting first Order, D.P.U. 08-50-A (March 16, 2009), provided a clarification of the criteria to be applied in demonstrating cost-effectiveness and the process by which three-year energy efficiency plans should be prepared and reviewed. In D.P.U. 08-50-A, the Department mandated that the Program Administrators seek Department approval for certain specified mid-term modifications. As a result, the PAs have filed mid-term modifications for 2011 and 2012 in accordance with D.P.U. 08-50-A and D.P.U. 08-50-B, discussed below.

The Program Administrators have participated with the Department, DOER, and other interested stakeholders in various D.P.U. 08-50 Working Group sessions convened and moderated by the Department. The format of today's filing, including the organization of the Plan, statistical tables, and the bill impact review model, reflect the collaborative process that occurred in the context of the D.P.U. 08-50 Working Groups.

## C. D.P.U. 08-50-B

The Department supplemented its 08-50-A Order with the issuance of D.P.U. 08-50-B (October 26, 2009), which includes further directives clarifying how the Program Administrators

are to conduct and present their bill impact analysis and evaluation, monitoring and verification processes, and established the energy efficiency guidelines which the PAs now rely upon for such matters as annual report filings and mid-term modification filings or notifications (the "D.P.U. 08-50-B Guidelines"). Through Orders D.P.U. 08-50-A and D.P.U. 08-50-B, the Department established standards that sought to balance the need for Program Administrators to make improvements to energy efficiency programs during the course of a three-year plan, with the need for adequate regulatory review and stakeholder input of significant changes to the Program Administrators' planning assumptions and parameters.

## D. D.P.U. 08-50-C

Following its Order in D.P.U. 08-50-B, the Department established a working group to review existing practices and develop an annual report template for review and comment, resulting in an Order in D.P.U. 08-50-C (2011), which established a template for Energy Efficiency Annual Reports.

The Department noted that the purpose of the Annual Report template is: (1) to clearly identify the information that a Program Administrator is required to provide to fully review the PA's energy efficiency program performance for a particular year; and (2) to specify the format for providing the required information. D.P.U. 08-50-C at 13-14. The PAs have used the Annual Report template, in preparing their respective annual reports filed with the Department each year on or about August 1st, and in compliance with G.L. c. 25, § 21(b)(3).

## E. Initial Three-Year Plans - D.P.U. 09-116 to D.P.U. 09-128

On October 31, 2009, the Program Administrators filed their respective PA-specific three-year plans, together with the Council's Resolution of October 27, 2009 (which Resolution constituted the Council's approval, comments and statement of any unresolved issues) with the Department pursuant to G.L. c. 25, § 21(d). The plans sought to capture all available cost-effective energy efficiency for the three-year period beginning January 1, 2010, with the consideration of factors and concerns noted at the Council, including, but not limited to, bill impacts, environmental benefits, and the need for a reasonable ramp-up schedule.

On January 28, 2010, the Department issued Orders on the initial three-year plans in dockets D.P.U. 09-116 through D.P.U. 09-120 ("Electric Order") and D.P.U. 09-121 through D.P.U. 09-128 ("Gas Order") (together, the "Orders"), approving the Plans subject to limited specified exceptions and directives. The Program Administrators have provided quarterly reports to the Council, and the Council in turn has provided an annual report to the Department. G.L. c. 25, § 22(d). The Department is required to determine the cost-effectiveness of each Program Administrator's plan on an annual basis. Id., § 21(d)(2).

In addition to quarterly reports to the Council, the PAs voluntarily provide monthly data dashboards to enhance transparency on implementation efforts under the initial three-year term. These reports are provided in a timely fashion, in formats that were developed collaboratively by the Program Administrators and the Council's Consultants. The Program Administrators also filed detailed annual reports in August of 2011 for program year 2010 and in August 2012 for the program year 2011. In preparing these reports (monthly, quarterly and annual), the Program

Administrators collaborate, share assumptions, best practices and ideas; and, provide informal review and quality control functions for each other.

As approved by the Department and as implemented by the PAs, these three-year plans have supported the development of an enhanced energy services delivery infrastructure in Massachusetts, promoted job creation throughout the Commonwealth in the energy efficiency services sector, and enhanced program designs in order to provide a more seamless experience for customers seeking energy efficiency services from both gas and electric Program Administrators. Further, these joint efforts of the PAs, the Council, state regulators, and other interested stakeholders, have taken Massachusetts to the forefront of energy efficiency efforts in the nation, leading the ACEEE to name Massachusetts "the number one state in Energy Efficiency" in both 2011 and 2012. Similar coordination by the Program Administrators and the Council through this next three-year plan should allow for the continued aggressive pursuit of all available cost-effective energy efficiency in a sustainable manner to achieve deeper and broader levels of savings at customer homes and facilities. In turn, increased savings over time will continue to provide economic and environmental benefits to all customers.

## F. D.P.U. 10-106

While § 3.8.2 of the D.P.U. 08-50-B Guidelines describes the conditions that require a filing of a mid-term modification, that section did not state whether the 20 percent thresholds should be applied on a three-year or an annual basis. On August 13, 2010, Cape Light Compact (the "Compact") filed a request with the Department for a mid-year modification of its 2010-2012 Three-Year Plan, consisting of an adjustment of its 2010 program budgets. The Compact sought Department approval for a program budget change that was 20 percent greater than the program's annual budget. On January 10, 2011, the Department issued an Order in Cape Light Compact, D.P.U. 10-106 stating that the three-year plan review process should move away from routine mid-term modifications, and clarifying that D.P.U. 08-50-B "Guidelines § 3.8.2 should be interpreted such that Department approval is required for a program budget change that is 20 percent greater than the program's three-year budget." D.P.U. 10-106, at 7-8. Additionally, the Department noted that the D.P.U. 08-50-B Guidelines are not fixed and are intended to be updated over time. Id. at 8-9.

## G. D.P.U. 11-120

On November 29, 2011, the Department opened an investigation to examine issues associated with the Program Administrators' three-year energy efficiency plans. Energy Efficiency Guidelines, D.P.U. 11-120, Vote and Order Opening Investigation (2011). In the first phase of the investigation, the Department announced that it will examine the following issues associated with energy efficiency program benefits that are included in the cost-effectiveness determination: (1) the method used to calculate program net savings; and (2) the method used to calculate reasonably anticipated environmental compliance costs, in particular those associated with the emission of carbon dioxide ("$CO_2$"). Id. at 3. The Department stated that its investigation did not mean that a change to the long-standing treatment of these benefits is either necessary or appropriate at this time. Id. Instead, the Department solicited comments in order to determine whether such changes are necessary and, if so, when and how such changes should be incorporated into the measure of cost-effectiveness. Id. at 3-4.

Interested parties filed initial comments on these two issues by January 31, 2012. Reply comments on $CO_2$ compliance costs were filed by February 27, 2012. The Department held a technical session on March 28, 2012, to discuss: (1) the extent to which the existing approaches used to estimate net savings produce accurate and reliable results; and (2) alternate ways to determine net savings estimates that may improve upon the existing approaches. Interested parties filed reply comments on these savings issues by May 7, 2012.

In an example of the collaborative spirit and search for best practices brought to bear by the Program Administrators and other stakeholders such as the DOER, Department of Environmental Protection ("DEP") and Environment Northeast ("ENE"), on May 7, 2012, the Program Administrators joined a diverse group of stakeholders in a set of common comments with respect to the issue of calculating net savings. The ability to file comments with such a diverse group of stakeholders underscores the commitment to sharing ideas and best practices of the multiple parties interested in energy efficiency in Massachusetts. The Program Administrators were proud to take a leadership role in the development, drafting and submission of these joint comments.

On May 25, 2012, the Department opened a second phase of this investigation to examine issues associated with the Program Administrators' three-year energy efficiency plans. D.P.U. 11-120, Phase II, Order on Investigation--Phase II (2012). In the second phase of this proceeding, the Department expanded the scope of its investigation to include recurring filings that the Department has reviewed during the term of the first three-year plans, including: (1) mid-term modifications ("MTMs"); (2) the performance reports submitted by each Program Administrator annually, which include the calculation of a performance incentive payment; and (3) the calculation and reconciliation of each Program Administrator's energy efficiency surcharges ("EESs"). The Department held a technical session on June 19, 2012, to discuss these three issues. Initial comments were filed on July 12, 2012, and a second technical session was held on August 16, 2012. At the Department's request, on September 14, 2012, the PAs filed comments on two raised by the Department at the second technical session.

On August 10, 2012, the Department issued D.P.U. 11-120-A Order, addressing two issues related to program net savings: (1) alternate methods to determine program net savings; and (2) the prospective or retrospective application of evaluation study results. D.P.U. 11-120-A, Order on Program Net Savings and Environmental Compliance Costs, at 12 (2012). In addition, the Department declined to adopt an interim proxy value for carbon dioxide to be used in the cost-effectiveness determination of energy efficiency programs. Id. at 18.

With respect to net savings, the Department indicated support for alternative approaches to determining net savings that look at effects that occur over multi-year periods and across programs, which is consistent with the approach recommended in the joint comments of the Program Administrators, DOER, DEP, ENE and NEEP. The Department announced that it would convene a working group to explore if and how an alternate (i.e., market-focused) approach to determine program net savings could be developed and implemented. Id. at 13. The Department scheduled a net savings technical session for September 7, 2012, which was postponed to a future time at the request of the PAs and DOER. The Program Administrators expect to continue efforts in future working groups on net savings organized by the Department, after the filing of this Plan, and envision adopting any new approaches on a prospective basis.

With respect to EM&V results, the Department found that is appropriate for Program Administrators, when calculating post-implementation program savings (gross and net), to use: (1) the most recently updated gross savings impact factors; and (2) the net savings impact factors that were used when the programs were designed and developed. Id. at 13-16. The Program Administrators will apply this measurement approach for post-implementation savings calculations resulting from this Plan.

On September 21, 2012, the Department invited all interested persons to file comments on its proposed revisions to the energy efficiency guidelines ("Revised Guidelines"), which the Department explained are based on the discussions at the technical sessions and in the initial comments. Interested parties filed initial comments on the Revised Guidelines on October 15, 2012. The Program Administrators filed joint comments generally in support of the Revised Guidelines.

As this proceeding continues, the Program Administrators will remain engaged. They discuss the possible future implications of this investigation in Section III.O.

## H. 2010 Annual Reports, D.P.U. 11-63 through D.P.U. 11-73, D.P.U. 11-126

On August 15, 2011, the PAs each filed for Department approval a 2010 Energy Efficiency Annual Report. Consistent with D.P.U. 08-50-C, each Annual Report summarizes the activities related to the delivery of each PA's energy efficiency programs from January 1, 2010 to December 31, 2010 ("2010 Annual Report"), the first year of each PA's initial Three-Year Energy Efficiency Plan. On March 23, 2012, the Attorney General and the DOER filed comments in the 2010 Annual Report proceedings, making a number of recommendations to be applied in the future, but neither opposed approval of the 2010 Annual Reports by the Department. On April 6, 2012, the PAs filed reply comments.

Pursuant to the Annual Report Template in D.P.U. 08-50-C, each 2010 Annual Report submitted to the Department: (1) provides a comparison of its planned, preliminary year-end, and evaluated (where applicable) expenses, savings, and benefits at the portfolio, sector, and program levels for the program year;[14] (2) identifies significant variances between its planned and evaluated costs, savings, and benefits for the program year, and discusses reasons for such variances; (3) discusses how program performance during the program year informs the Program Administrator's consideration of modifications to program implementation during upcoming years; (4) describes the evaluation, monitoring, and verification activities ("EM&V") undertaken by the Program Administrator (both individually and jointly with other Program Administrators)

[14] Before a program year, each Program Administrator projects its planned values for expenses, savings, and benefits based on anticipated performance during the year. At the end of the program year, each Program Administrator estimates its preliminary year-end values based on actual performance during the year. Finally, evaluated values revise the preliminary year-end values to take into account the evaluation studies in which a Program Administrator participated during a program year. See Energy Efficiency Guidelines, D.P.U. 08-50-C at 17 n.10 (2011).

and explains how the results of the activities influence program cost-effectiveness; and (5) describes the performance incentive that the Program Administrator seeks to collect.[15]

Discovery in this proceeding has been issued by the Department, the Attorney General and the DOER and the PAs have responded to these statewide and individual information requests. Finally, the PAs, the Attorney General and DOER have filed initial and reply comments.

## I. 2011 Annual Reports, D.P.U. 12-51 through D.P.U. 12-61

On August 1, 2012, the PAs each filed for Department approval a 2011 Energy Efficiency Annual Report. Consistent with D.P.U. 08-50-C, each Annual Report summarizes the activities related to the delivery of each PA's energy efficiency programs from January 1, 2011 to December 31, 2012 ("2011 Annual Report"), the second year of each PA's initial Three-Year Energy Efficiency Plan.

Pursuant to the Annual Report Template in D.P.U. 08-50-C, each 2010 Annual Report submitted to the Department: (1) provides a comparison of its planned, preliminary year-end, and evaluated (where applicable) expenses, savings, and benefits at the portfolio, sector, and program levels for the program year; (2) identifies significant variances between its planned and evaluated costs, savings, and benefits for the program year, and discusses reasons for such variances; (3) discusses how program performance during the program year informs the Program Administrator's consideration of modifications to program implementation during upcoming years; (4) describes the evaluation, monitoring, and verification activities ("EM&V") undertaken by the Program Administrator (both individually and jointly with other Program Administrators) and explains how the results of the activities influence program cost-effectiveness; and (5) describes the performance incentive that the Program Administrator seeks to collect.

The filing of very detailed 2011 annual reports, using a common template, represents a milestone achievement by all PAs, as such reports contain a wealth of new EM&V data and demonstrate historically high 2011 savings levels, based on objective evidence.

## J. 2011 Energy Efficiency Mid-Term Modifications, D.P.U. 10-140 through 10-150

Each Program Administrator individually filed MTMs to its initial three-year energy efficiency plan for effect in calendar year 2011 ("2011 MTMs") on or about October 29, 2010, pursuant to § 3.8 of the Department's D.P.U. 08-50-B Guidelines and the Department's Gas Order and Electric Order. The PAs developed their 2011 MTMs based on a set of four "operating assumptions" which were based on their interpretation of the Guidelines as set out in D.P.U. 08-50-B, particularly Guideline §3.8.2 which relates to the timing and substantive requirements for MTMs.

[15] In D.P.U. 08-50-C, the Department adopted a template, developed by a Department-convened working group, to be used by the Program Administrators in preparing their performance reports. D.P.U. 08-50-C at 3-4.

The 2011 MTMs submitted to the Department included: (1) a Petition; (2) an Executive Summary; (3) Savings, Budget, and Performance Incentive Modifications pursuant to § 3.8 of the Guidelines; (4) the 2011 EM&V Plan; (5) a 2011 Performance Incentives Proposal; (6) Pilots; (7) a Cost-Effectiveness Analysis; (8) Updated 08-50 Tables; (9) the Technical Reference Manual- 2011 Plan Version; and (10) Appendices. In addition, the PAs responded to numerous statewide and individual information responses from the Department and intervenors. Finally and significantly, on December 14, 2010, the Council adopted a resolution in support of the 2011 MTMs.

On April 15, 2011, following comprehensive negotiations, the PAs, DOER, the Low-Income Weatherization and Fuel Assistance Network, Massachusetts Energy Directors Association, the Low-Income Energy Affordability Network and Environment Northeast jointly filed for approval with the Department a Memorandum of Agreement ("MOA") intended to resolve all issues related to the respective requests for the 2011 MTMs. The MOA resolves eleven docketed matters of first impression and has the support of a broad array of stakeholders, including the approval of the Council. On July 1, 2011, the Attorney General filed comments in the 2011 MTM proceedings, making a number of recommendations but not opposing approval of the MOA by the Department.

## K. 2012 Energy Efficiency Mid-Term Modifications, D.P.U. 11-106 through D.P.U. 11-116

Each Program Administrator individually filed MTMs to its Three-Year Energy Efficiency Plan ("Plan") for effect in calendar year 2012 ("2012 MTMs") on October 31, 2011, also pursuant to § 3.8 of the Department's D.P.U. 08-50-B Guidelines and the Department's Gas Order and Electric Order.

Like the 2011 MTMs, the 2012 MTMs submitted to the Department included: (1) a Petition; (2) an Executive Summary; (3) Savings, Budget, and Performance Incentive Modifications pursuant to § 3.8 of the Guidelines; (4) the 2011 EM&V Plan; (5) a 2011 Performance Incentives Proposal; (6) Pilots; (7) a Cost-Effectiveness Analysis; (8) Updated 08-50 Tables; (9) the Technical Reference Manual- 2012 Plan Version; and (10) Appendices. In addition, the PAs have responded to numerous statewide and individual information requests from the Department and other intervenors. Finally and significantly, on December 12, 2011, DOER filed with the Department the Council's resolution in support of the 2012 MTMS, which was adopted on November 8, 2011.

On May 2, 2012, the Department approved a Partial Settlement on Scope of the Proceedings, submitted jointly by the PAs and the Attorney General , DOER, and the Low-Income Weatherization and Fuel Assistance Program Network, the Massachusetts Energy Directors Association, the Low-Income Energy Affordability Network (collectively, "Network"), and Environment Northeast. Accordingly, any issue with respect to the use of estimated avoided costs based on the 2011 Avoided Energy Supply Costs in New England: 2011 Report (July 21, 2011, amended August 11, 2011) ("2011 AESC Study") and estimated non-energy benefits (also known as non-energy impacts) based on the Massachusetts Special and Cross-Sector Studies Area, Residential and Low-Income Non-Energy Impacts ("NEI") Evaluation (August 15, 2011) (the "NEI Evaluation") would not be addressed in the 2012 MTM proceedings.

## L. D.P.U. 08-50-D

On October 19, 2012, the Department issued an order on bill impacts, explaining that the pace at which the Program Administrators acquire all available cost-effective energy efficiency resources "is moderated in part by the requirement that the Department consider the effect of any rate increases on residential and commercial customers bills before the approval of ratepayer funding for energy efficiency programs." Energy Efficiency Guidelines, D.P.U. 08-50-D, Order on Bill Impacts at 9 (2012).[16]

The Department acknowledged the efforts of the D.P.U. 08-50 Bill Impact Working Group, a large group of stakeholders who developed various bill impact models consistent with Department directives in D.P.U. 08-50. Id. at 10. The Department, however, declined to adopt the bill impact models under discussion. Id.

The Department concluded "that the model suffers from at least two deficiencies that preclude [the Department] from using it in analyzing energy efficiency bill impacts." Id. The Department explained that "the electric efficiency model requires the Program Administrators to make assumptions . . . [that] significantly compromise the reliability and accuracy of the model's results." Id. at 10-11. The Department determined that, "notwithstanding the great effort devoted to this task, stakeholders were unable to devise a way to meaningfully analyze bill impacts for program participants using this model." Id. at 11.

Second, and more importantly, the Department recognized that, "because of its long-term focus, the D.P.U. 08-50 bill impact model is not an appropriate means to satisfy [the Department's] statutory mandate to consider the effect of any rate increases on residential and commercial customers. Id. Instead, the Department determined that "this mandate is best satisfied through a traditional bill impact analysis which, with its short-term perspective that isolates the effect of a proposed change in the EES, will provide an accurate and understandable assessment of the increase that will actually appear on customers' bills." Id. The Department agreed "with the stakeholders who argue that, when considering the reasonableness of a short-term bill impact from energy efficiency activities, it is important to look at it the long-term benefits that energy efficiency will achieve." The Department stated that the "long-term benefits of energy efficiency are fully documented by the Program Administrators and reviewed by the Department and stakeholders in the context of evaluating program cost-effectiveness" and that the Department will consider bill impacts through "the lens of the long-term benefits that energy efficiency can achieve." Id. at 11-12 (citations omitted).

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16 "Determining a reasonable pace for a sustained acquisition requires the Program Administrators and the [Energy Efficiency Advisory] Council (in developing the three-year plans) and the Department (in reviewing the three-year plans) to strike an appropriate balance between several factors, including: (1) identifying the potential level of cost-effective resources currently available; (2) exploring ways in which this level can be increased; (3) assessing the capability of the energy efficiency vendor and contractor industry to support increased program activity; and (4) assessing the capacity of the Program Administrators to administer increases in program activity efficiently and effectively. The Department must take into consideration an additional factor: the rate and bill impacts that result from increased program activity." Id. at n.11 (citations omitted)

The Department directed the PAs to conduct bill impact analyses going forward for energy efficiency participants as well as non-participants. This methodology is discussed in more detail in Section III.E.

# III. THE THREE-YEAR PLAN

## A. Core Benefits and Cost-Effectiveness

### 1. Energy and Demand Savings

The savings goals and program budgets set forth in the body of this Plan are presented on an aggregate, statewide basis by program. In the D.P.U. 08-50 table format, each Program Administrator has set forth its own recommended savings and budget levels for the three-year period commencing January 1, 2013, consistent with the overall goals and budgets developed in the statewide Plan review process, which are included as supplemental enclosures with this Plan. The statewide Plan review process is a phased process that first requires the filing of a joint statewide plan by all Program Administrators in April, followed in October by individual PA-specific plans, after the conclusion of the review process of the statewide plans at the Council. G.L. c. 25, §§ 21(b)-21(d).[17]

In developing the proposed statewide goals and budgets in this Plan, the Program Administrators first submitted goals and budgets on April 30, 2012 and revised, updated goals and budgets on July 2, 2012 and September 19, 2012. The Program Administrators discussed these goals and budgets among themselves and with the Council and the Council's Consultants and have considered feedback on the April 30th, July 2nd, and September 19th versions, as well as important new EM&V results and information described further below. For the September draft, each Program Administrator was tasked with submitting to the full group of Program Administrators its own PA-specific proposed savings goals and budgets for the three-year period. These proposals were subject to an internal review and discussion process, as described in Section III.D.2 that allowed for adjustments to be made by all Program Administrators based not only on peer review, but also upon the presentations made at the Council meetings by the Consultants and based on discussions with stakeholders, including DOER. Subsequent to the September draft, and in advance of the filing of this Plan, the Program Administrators performed the same proposal and review process. Further, the PAs engaged in intensive discussions regarding savings goals, budgets, benefits, and incentives with DOER, the Attorney General, and the Consultants, culminating in the Term Sheets. The savings goals and budgets presented on a statewide basis by the Program Administrators in this Plan represent the results of that collaborative process. As noted in the Term Sheets, "[s]avings goals are set on the path to satisfy the Green Communities Act ("GCA") mandate to capture all available cost-effective energy efficiency, with consideration of sustainability and bill impacts, while supporting the achievement of the emissions reductions called for in the Clean Energy and Climate Plan ("CECP"). NU and National Grid have shown leadership by proposing savings goals that exceed the statewide total savings targets of 2.50% in 2013, 2.55% in 2014, and 2.60% in 2015, and all Program Administrators ("PAs") have contributed to committing to unprecedented statewide savings goals."

While each Program Administrator is increasing its aggregate three-year saving goals and budgets relative to historic aggregate three-year levels, the levels of these increases will not be

[17] This Plan is being filed on November 2 due to recovery efforts in the aftermath of Hurricane Sandy. The Department, DOER, and the Attorney General have reviewed this two day delay.

directly proportionate across all Program Administrators. The increases that are set forth in each Program Administrator's PA-specific filing reflect the unique characteristics of each Program Administrator's service area and the specific needs of its customers and are appropriate for 2013-2015. The Program Administrators' have aggregated savings goals and budgets presented individually by the Program Administrators in their PA-specific filings that are consistent with, and flow out of, the overall goals developed in the statewide Plan review process.[18] Please see Section III.D for the annual savings goals proposed by the Program Administrators in this Plan, on a per sector basis, by year and in total. Please also see Appendix C for statewide D.P.U. 08-50 tables for budgets, savings, benefits, and cost-effectiveness.

2. Environmental Benefits

In addition to economic benefits, energy efficiency resources bring significant environmental benefits including reduced air pollution and improved air quality in Massachusetts and in the region from the reduction in the amount of electricity and natural gas required to run the Commonwealth's economy, as well as other resource benefits such as oil savings and water savings. The more efficient homes, businesses and schools are the less energy and other resources they are likely to consume. Decreasing energy consumption results in less demand for energy from fossil fuel power plants and natural gas pipelines. By reducing plant operation time, emissions of air pollutants and greenhouse gases can be reduced. In addition, Massachusetts can become a more cost-efficient place in which to live and work.

Generating electricity from non-renewable fossil fuels (*e.g.*, coal, oil or natural gas) produces nitrogen and sulfur oxides - two of the six "criteria pollutants" defined by the Clean Air Act and identified as air quality indicators by the U.S. Environmental Protection Agency. Nitrogen oxides are precursors to ozone, a primary component of summer smog. In addition, nitrogen and sulfur oxides in particulate form reduce visibility and are associated with public health problems such as asthma; both air pollutants are linked to acid rain. Reducing the amount of fossil fuel needed to run power plants through the adoption of energy efficiency reduces the amount of nitrogen and sulfur oxide pollution emitted into the atmosphere. In addition to providing cleaner air and water for Massachusetts, the Plan's programs will provide climate benefits in the form of reduced greenhouse gas ("GHG") emissions.

Collectively, the programs contained in this Plan are expected to provide three-year electric annual savings of 3,705,368 MWh and electric lifetime savings of 40,271,670 MWh, and three-year gas annual savings of 72,011,183 therms and gas lifetime savings of 938,314,079 therms. Based on the region's average power plant emissions rate, these lifetime savings are the equivalent to reductions in air emissions of 25,602,440 short tons of GHG,

[18] Program Administrators are not required to make all changes or revisions recommended by the Council in filing their PA-specific plans. G.L. c. 25, § 21(c)-(d)(1). It is the plan and goal, however, of each Program Administrator to be able to support in full the statewide Plan that ultimately results from the Council review process. The Program Administrators seek full PA consensus on the statewide Plan, as well as unanimous Council approval. Each Program Administrator must necessarily reserve its statutory rights in the event of unexpected developments in the Council review process that it does not believe are consistent with the best interests of its customers, but it is the goal of Program Administrators that their PA-specific filings be built upon and consistent with the statewide Plan.

29,446 short tons of SO2, and 10,393 short tons of NOx. In addition, these programs will provide non-electric and non-gas benefits such as reductions in fuel oil and water use.

Under climate cap and trade programs such as RGGI and any potential federal program, and the Commonwealth's climate change initiatives under the GWSA, investment in energy efficiency is recognized as the most effective cost-containment and climate protection tool of the Commonwealth. Indeed, the Program Administrators expect that some portion of the three-year Plan's funding will come from the proceeds of the sale of RGGI allowances. Investing cap and trade proceeds in energy efficiency lowers energy consumption, which reduces GHGs and the demand for allowances. The result is a lower price for carbon allowances and lower overall cost of the cap and trade program.

3. Net Benefits and Cost-Effectiveness

The Program Administrators have projected the expected benefits and costs associated with this statewide Plan consistent with the requirements of D.P.U. 08-50-A, in which the Department reaffirmed that "the Total Resource Cost test is the appropriate test for evaluation of the cost-effectiveness of ratepayer-funded energy efficiency programs." D.P.U. 08-50-A at 14. To conduct the TRC test, Program Administrators routinely update their 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. In general, the benefit categories in the TRC test include the value of energy savings, gas and electric system benefits, and other measurable benefits (for example, participant resource benefits, participant non-resource benefits and benefits due to measurable market effects).

Costs included in the TRC test include all Program Administrator costs and program participant costs. Program Administrator costs include program implementation expenses, evaluation costs, proposed performance incentives, and the tax liability for performance incentives. Program-participant costs include initial costs incurred by the 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 ("BCRs") 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 in the program.

The tables below summarize the expected benefits, costs, and BCRs at the sector level for the portfolio of programs the Program Administrators propose to implement over the three-year period. For more detailed information on savings, budgets, and benefits, please see tables in Section III.D below and Appendix C.

Electric Program Administrators

**BENEFIT-COST RATIOS**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | 3.12 | 3.21 | 3.27 | 3.20 |
| Low-Income | 2.08 | 2.16 | 2.16 | 2.13 |
| C&I | 3.88 | 4.27 | 4.27 | 4.14 |
| **TOTAL** | 3.50 | 3.77 | 3.79 | 3.69 |

Gas Program Administrators

**BENEFIT-COST RATIOS**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | 1.53 | 1.55 | 1.57 | 1.55 |
| Low-Income | 1.65 | 1.66 | 1.66 | 1.66 |
| C&I | 2.24 | 2.28 | 2.42 | 2.31 |
| **TOTAL** | 1.77 | 1.80 | 1.86 | 1.81 |

The Program Administrators note that for cost-effectiveness screening purposes they are utilizing the 2011 Avoided Energy Supply Cost Study ("AESC Study") and current Non-Energy Impact ("NEI") study.[19] Certain NEIs have undergone a collaborative process of review by the Program Administrators, the Council's Consultants and the LEAN. The cost-effectiveness screening utilized in this filing reflects the most current NEI information resulting from this collaborative process and is supported by LEAN, the Council's EM&V consultant and the Program Administrators. The Program Administrators also note that, in agreement with LEAN, the PAs plan to study low-income health benefits in 2013-2015. With respect to carbon compliance cost items, the current AESC Study is being utilized, without any additional carbon compliance proxy value as directed by the Department in its Order on Program Net Savings and Environmental Compliance Costs in docket D.P.U. 11-120-A. Also, the Program Administrators will continue to review possible approaches to coordinate updates or new avoided cost studies in an optimal manner. One idea under consideration is examining the possibility of keeping avoided cost values in place for a full three years that is synchronized with the three years of the applicable plan, as opposed to having mid-term updates for avoided cost values. Given the regional nature of avoided cost study work, the consideration of such an approach is necessarily complex and multifaceted.

The PAs are committed to perform a follow-up study on the level and accuracy of Demand Reduction Induced Price Effects ("DRIPE") as set forth in the 2011 Avoided Energy Supply Cost Study, and as utilized as an economic benefit in the TRC test. This study will help

[19] Because the AESC Study's Energy DRIPE estimates extend only through 2013, the Program Administrators extrapolated 2014 and 2015 Energy DRIPE consistent with the methodologies and assumptions of the AESC Study.

inform and optimize the accuracy of DRIPE in future avoided cost studies, which is a continued and important priority for the Attorney General, DOER and the PAs, as is the accuracy of all components of the TRC test. The DRIPE study will not affect the performance incentive pool set forth herein. This DRIPE study is expressly called for in the Term Sheets.

4. Gas and Electric Program Integration and Coordination

*a. Focus on Seamless Delivery*

The PAs remain committed to a continuous focus on improving the customer's participation experience. Over the next three years, the Program Administrators will continue to work collaboratively to increase the seamless delivery of gas and electric energy efficiency programs. The electric and gas PAs are working together to implement processes and procedures that will lead to increased coordination when providing electric and gas energy efficiency services to customers. Participation in management committee meetings by each Program Administrator allows for regular communication and real time refinement of programs and the streamlining of work with regard to conducting such refinements. In addition, the Program Administrators continue to improve the working group structures dedicated to each program delivery area in an effort to share best practices and to discuss the relative merits of alternative "go-to-market" strategies (*i.e.*, the mechanism by which the Program Administrators propose to deliver energy efficiency to customers) and program needs. Most recently, the Program Administrators have introduced a combined gas and electric working group for the C&I sector to handle and improve upon any program discrepancies or communication issues between gas and electric program delivery.

The Program Administrators will also focus on enhanced integration of gas and electric measures on program applications. In addition, the PAs will provide continued formal statewide gas and electric integration training to staff with the purpose of: (1) increasing networking among the PAs so the electric and gas PAs can meet with their counterparts, increasing the ability

## Interplex Metal Logic: Comprehensive Gas and Electric Project


Interplex Metal Logic in Attleboro, MA partnered with National Grid to perform energy efficient equipment upgrades to help reduce energy costs at the facility. A combination of high efficient lighting, a variable displacement air compressor, variable frequency drive motors, an energy management system and an efficient HVAC were installed resulting in gas and electric savings, a reduced impact on the environment and improved efficiency of their facility.

to share knowledge; (2) training electric staff on how they may identify gas measures and training gas staff on how they may identify electric measures (and potential leads) for the partner PA when on customer site visits; (3) developing a closer partnership between the Cool Smart/GasNetworks' rebate initiatives; and (4) development of an Integrated Gas & Electric Working Group.

An additional key element of greater gas and electric integration will be expanding the network of capable trade allies through more active vendor training and outreach. The program descriptions set forth in Section III.F illustrate many of the ways in which the Program Administrators have implemented a coordinated gas and electric delivery system. The PAs will continue to work toward a seamless integrated delivery process throughout the next three-year plan.

*b. Ongoing Work of Management Committees*

The Program Administrators have developed a management committee structure to facilitate the process of enhanced integration and coordination between gas and electric programs. These efforts are focused on sharing best practices, identifying and sharing innovative strategies that drive success in program deployment efforts, identifying and securing cost-efficiencies where joint efforts may result in reduced costs compared to independent efforts, and jointly addressing other key issues. Through development of the Residential Management Committee ("RMC") structure and C&I Management Committee ("C&IMC") structure, the Program Administrators are effectively able to work toward implementation of seamless program designs and delivery strategies to achieve savings goals. In addition, the Evaluation Management Committee ("EMC") provides a forum for EM&V discussions and decision making, and the Low-Income Best Practices Committee, instituted originally by LEAN, continues to offer opportunities for various stakeholders to discuss program implementation, new measures and other matters related to the PAs' low-income programs.

The RMC and C&IMC each meet bi-weekly (or as needed). From these meetings, the Program Administrators are able to: (a) stay up to date on the key energy efficiency activities of other Program Administrators; (b) integrate and coordinate energy efficiency implementation activities and efforts by all Program Administrators; (c) develop statewide marketing and media campaigns with easy-to-understand communications for all customers; and (d) review and discuss best practices and integration/coordination efforts in other jurisdictions to maximize collaboration efforts and build on the experiences in other regions. The agenda for management committee meetings may be set based on any of the following:

- Special attendees
- Pertinent issues that arise
- Requests of committee members
- Council reporting/presentations that need to be developed
- Unsolicited proposals that are submitted for review
- Updates that are required from specific statewide working groups, evaluation, or marketing teams

The EMC serves as a steering committee for statewide evaluation issues, providing guidance and direction to each of the evaluation research areas. The EMC will also help plan, prioritize and delineate the research studies to be undertaken over the three-year plan period. First organized in spring 2012, the EMC has already held seven meetings and successfully developed a mechanism to track the progress of evaluation studies and a straw proposal of best practices in research area management, to build on lessons learned during the first three-year plan. The Program Administrators believe that the EMC will be an effective tool in 2013-2015 to facilitate evaluation efforts, enhance communication and improve EM&V efforts for the benefit of customers.

The statewide management committees established by the Program Administrators over the past three years play an integral part in the continued improvement and offering of gas and electric program integration and coordination. These management structure and decision making processes will allow the Program Administrators to focus efforts more proactively over the course of the next three-year plan, specifically with regard to exploration of new program delivery models and expanded service offerings for customers. The invention, organization and ongoing successful work of these committees across multiple sectors is a uniquely Massachusetts-based success story and demonstrates the Program Administrators' conviction and commitment to not only adopting and sharing best practices, but to driving new program enhancements and new best practices.

5. Additional Benefits

*a. Reduction in Peak Load*

Energy efficiency efforts often provide capacity savings in addition to energy savings. These capacity savings and benefits are reflected under the cost-effectiveness screening efforts described in Section III.A.3 above.

*b. Economic Development and Job Growth/Retention*

i. New England Clean Energy Foundation Study

The Program Administrators have engaged the New England Clean Energy Foundation ("NECEF") to estimate the number of full-time equivalent workers ("FTE") *directly* involved in selected activities related to the implementation of the approved programs for residential, low income and C&I energy efficiency during calendar year 2011. To assure that the NECEF study team could make accurate estimates, the PAs provided significant data on residential and C&I participation and expenditures.

The NECEF study, "An Estimate of Direct Full-Time Equivalent (FTE) Employment in 2011 Supported by Mass Save Energy Efficiency Programs", estimates that **a minimum of 2,300 FTE workers** were directly involved in the selected energy efficiency implementation activities in Massachusetts in 2011.

The study report details the breakdown of these FTEs among residential, low-income and C&I programs. The study also outlines the study methodology in detail and provides related

information on the structure of the PA energy efficiency programs, including appendices, noting the names of many of the contractors involved.

Because the NECEF study is narrowly focused on direct FTEs in selected categories in a specific calendar year, it **does not capture all direct jobs** in energy efficiency, and it does not seek to estimate indirect jobs, and "induced" employment. The targeted focus of the study, however, has produced information that will be especially helpful to the Commonwealth's workforce development community in their efforts to understand the number and type of direct FTEs working to implement PA energy efficiency initiatives in the Commonwealth.

Draft findings were reviewed by expert evaluators and by professional members of appropriate committees involved in implementing residential and C&I programs, and the NECEF study team responded to these comments and queries as they completed the final report.

The final report is included at Appendix P, Study 16.

ii. Contribution to Clean Energy Economy

The Massachusetts Clean Energy Industry Report 2012 ("Report") published by the Massachusetts Clean Energy Center has identified energy efficiency as responsible for 9.9 percent of the growth in the Clean Energy job sector of the Massachusetts economy between 2011 and 2012. *See* Report at p. 8-9. During the 2013-2015 Plan, energy efficiency vendors and contractors funded in part by incentives under the Plan will continue to make a comparable if not greater contribution to the clean energy economy and jobs in the Commonwealth.

## B. Progress towards Green Communities Act Requirements and Goals

### 1. Acquisition and Assessment of All Available Cost-Effective Energy Efficiency and Demand Reduction Resources

This Plan seeks to capture all available cost-effective energy efficiency for the three-year period beginning January 1, 2013 pursuant to G.L c. 25, § 21 (b)(1), with the consideration of factors and concerns noted at the Council and in Department Orders, including, but not limited to, bill impacts, environmental benefits, and the need for sustainability. The GCA does not define "all available" cost effective energy efficiency, and thus developing related values requires a reasonable level of judgment. There is no single study or planning tool that can reliably set forth such a value. Rather, a multifaceted approach is necessarily employed and multiple reference points are considered. In determining the level of savings to achieve in order to satisfy this mandate, the Program Administrators considered and weighed multiple factors, including: (1) the plain language of the GCA; (2) the directives of the Council, including the Council's Priorities of February 14, 2012, the Sense of the Council of June 12, 2012, the Action Plans of June 18, 2012, and the Council Resolution of July 23, 2012; (3) the Department's Orders approving the Program Administrators 2010-2012 plans and the assessment contained therein, (4) the Department's Order in D.P.U. 08-50-A (including bill impact considerations); (5) the Department's Order in D.P.U. 08-50-B; (6) assessments of all available cost effective energy efficiency noted below; (7) multiple studies and reports; and (8) the PAs' experience in implementing nationally-recognized energy efficiency programs for over two decades. The

Program Administrators met collaboratively on a frequent basis to determine the appropriate savings goals and budgets to propose in this Plan. The Program Administrators also engaged in numerous discussions with the Councilors and Consultants, culminating in the Term Sheets, which have all helped establish statewide savings targets, performance incentives, and projected program costs.

*a. Experience in Field*

First and foremost, the Plan has been designed based on the in-depth experience of the Program Administrators in designing and implementing energy efficiency programs over more than 20 years, and, more specifically, in the course of implementing the first three-year plans for the period 2010-2012. This experience includes (1) understanding of the customers' circumstances and the cost of implementing aggressive programs over a sustained period and (2) knowledge that the PAs can very successfully deliver impressive savings levels in the field. This experience also informs the PAs that as energy efficiency efforts yielding high savings become more difficult to identify and achieve and as market penetration increases, there will be challenges in achieving additional savings. Importantly, the Program Administrators are factoring in upward pressures on the cost to achieve energy efficiency savings in 2013-2015, especially as the result of EM&V results, the level of CHP projects currently foreseen, and increased efficiency codes and standards that make the achievement of incremental efficiencies through PA-sponsored programs more difficult. (Also, please refer to Section III.D.1 below for more detailed discussion of cost drivers that have been identified by the Program Administrators.) In short, the PAs' experience in the field provides valuable lessons that inform this planning process in a uniquely important way.

*b. Point 380 Market Characterization*

NSTAR and National Grid have led an effort to characterize the market for energy efficiency during the term of the 2013-2015 Plan through a study performed by the consulting firm Point 380. WMECO has similarly engaged Point 380. The Point 380 study results have been, and will continue to be, used to inform the PAs "go-to-market" strategies by identifying the industries, building types and end uses representing greater efficiency opportunities and thus warranting relatively greater attention. The results also greatly support sales force planning and resource allocation while enabling more relevant and effective value propositions to better meet specific customers' needs. The Point 380 materials were shared with all Program Administrators, who have each benefitted from this effort. NSTAR and National Grid made a joint presentation to the Council summarizing the Point 380 study, which is available at http://www.ma-eeac.org.

*c. Synapse Assessment*

The Plan has also been informed by a study performed for the Council by Synapse Energy Economics of C&I customer perspectives on energy efficiency opportunities in Massachusetts. The primary purposes of the study were to help the Council in understanding the economic environment likely in New England over 2013-2015 and to assess the extent to which C&I customers are likely to participate in Massachusetts energy efficiency programs over the next few years. The Synapse study for the Council informed Program Administrators' Plans in

that it forecasted an improving economy but not at dramatic levels; Synapse also forecasted that economic recession conditions would not return. In developing the 2013-2015 Plan, this information was a useful calibration point for the PAs with respect to their own views of current and future economic conditions. In addition, the Synapse study provided qualitative information that the PAs have used in program design to help foster more seamless delivery for gas and electric customers. The study indicated that the payback period is the main criteria for evaluating energy efficiency investments and often must be two years or less. In addition, it found that a better understanding of customer participation types would provide the PAs with useful information about where the untapped efficiency opportunities lie and how to pursue them. The study also provided that encouraging customers to adopt a deeper level of efficiency measures will require increased engagement from the PAs' staff.

*d. Review of EM&V Results*

Working together and with the Council, the Program Administrators have undertaken extensive EM&V efforts designed to ensure accuracy and accountability in program planning and implementation and to guide the PAs as they focus on improving energy efficiency program efforts. Section III.I of the Plan includes information regarding the comprehensive EM&V efforts that have been undertaken to date, which has informed the Program Administrators' program designs and savings goals for 2013-2015. EM&V efforts will continue throughout the term of the Plan. As discussed below, EM&V results have been used by the Program Administrators to more accurately forecast the actual savings resulting from their energy efficiency activities, in particular, net savings resulting from these activities. EM&V results indicate that strong savings are occurring as a result of the Program Administrators' efforts, but that savings, in particular for several gas programs, are not as high as originally forecasted. This is an important factor in looking to establish goals for 2013 -2015.

*e. Appreciative Inquiry Summit*

The Plan takes into account the results of the Appreciative Inquiry Summit hosted by the Program Administrators in May 2012. This PA-hosted summit, independent from the efforts of the Council, provided a venue for a diverse array of nearly 300 key stakeholders, including customers, civic leaders, contractors, key trade allies, energy efficiency experts, and others to provide the PAs with insights to guide efforts designed to continue to create a culture of sustainability in the Commonwealth.

The event provided an opportunity for customers and other stakeholders to contribute their expertise, their opinions, and their experiences to help the PAs better understand their needs and interests. Additionally, the attendees were offered an opportunity to better understand the full breadth of activities being undertaken and planned by the PAs and to contribute to making this Plan and its implementation more responsive and effective to make homes, businesses, and organizations more energy efficient.

Participants articulated their needs and wishes with respect to energy efficiency and developed specific recommendations for the future. The needs and wishes in those statements have been considered and addressed in this Plan. Dominant themes emerging from participants include: the need for more education and training of students and practicing energy efficiency

professionals to build a broader base of educated and capable consumers and providers; the need to develop more targeted and customer-centric offerings and initiatives to specific subsets of customers; and simplifying and improving the customer experience.

The PAs have developed a detailed report on the Appreciative Inquiry Summit that is now posted on the Mass Save website for easy access to all participants.

*f. Council Meetings*

The Program Administrators have also considered presentations made and materials presented at Council meetings both by the Councilors, their Consultants, industry stakeholders and the general public. The level of interest and commitment evidenced by these presentations confirms that opportunities for savings remain in Massachusetts because its citizens embrace a culture of energy efficiency and sustainability. At a more specific level, these comments have suggested, among other things, program design enhancements that the Program Administrators believe will help them target and achieve new savings in 2013-2015. For example, public comments have helped shape the Program Administrators' new initiative targeting economically challenged areas and their new approaches to targeting the healthcare sector and municipalities. Comments from the DEP have been particularly helpful in identifying opportunities in the wastewater facility sector.

*g. Consultant Assessment*

The Program Administrators have reviewed the energy efficiency potential assessment developed and prepared by the Council's Consultants and presented at the March 13, 2012 Council meeting. After a careful review of this assessment, the PAs note that differences are driven by the following core issues:

- The assessment was conducted before the most recent set of EM&V results were available. Therefore, the Consultants were not able to take into account evolving baselines or evaluation findings when completing their review of available secondary data. In the Program Administrators' view, this understandable impediment has resulted in an overstatement of available cost-effective opportunities, especially in the gas sector.
- The Program Administrators project that the cost of savings to achieve the stretch goals in this Plan are higher than proposed by the Consultants in their assessment. The Program Administrators have carefully reviewed proposed cost drivers and have summarized those drivers in section III.D.1 below. The Program Administrators have shared their analysis with the Consultants and anticipate continuing to work together.
- The PAs believe that they will be able to have more effective and informed discussions with the consulting team on their initial assessment given the existence of new EM&V results and the extensive planning efforts reflected in this Plan.

Based on the PAs' review of the Consultants' assessment, the PAs have determined that the assessment relies heavily on assumptions that have serious technical issues. The key analyses utilized by the Consultants and the areas of concern that were identified are as follows:

- The Marketing Opportunity Analysis (Point 380 Study) results are misapplied. This analysis was framed to inform go-to-market strategies and not as a technical potential study.
- Based on conversations with customers, savings associated with an early retirement opportunity have been overstated in the Consultants' assessment.
- The PAs have limited confidence in the applicability of the out-of-state potential studies referenced in the assessment in view of the mature efficiency market in Massachusetts. In addition, some of the referenced studies are dated and, as a result, do not take into account changes in baseline energy use assumptions that are reflected in the Program Administrator's proposed savings goals.

These three technical concerns are discussed below.

- Marketing Opportunity Analysis (Point 380 Study)

The objective of the analysis was to deliver relative market opportunity findings and was neither designed nor executed in an appropriate fashion to meet needs of a potential study. The study confirms that there are large opportunities in key segments and those opportunities are being leveraged to inform PA go-to-market strategies. Although the study presented achievable market opportunity in year one, this was necessary in order to demonstrate the relative importance of sectors and measures only. The achievable market opportunity values presented are not proportional to total achievable market opportunity and are intended only to forecast the market opportunity for a given set of measures implemented in the near term.

The study was informed by PA-specific considerations such as past performance, budgets and operating characteristics. Neither the speed of ramp-up nor slope of s-curve was defined. Even minor discount rate changes could significantly impact aggregate potential estimates. Furthermore, the study relies heavily on secondary data (note: primary data collection would have been emphasized had total achievable potential been a key objective).

- Early Retirement Opportunity Assessment

It is critical to understand that customers do not make the decision to replace functioning equipment based on efficiency alone. Customers need to "assume" that the equipment could breakdown anyway in the near future. Barriers to early retirement include:

  - Replacement cost is very high compared to savings and maintenance and repair costs which are relatively modest in many cases
  - Best case scenarios have paybacks of 10-20 years
  - There is no "burning platform" for customers when equipment is still functioning
  - Furnaces & boilers are not 1-1 replacements, with larger scope, cost and risk
  - Code compliance issues

- Additional Referenced Studies

*Massachusetts* - The GDS study was completed in 2009 and thus did not account for significantly lower gas avoided costs, which are used to determine cost-effectiveness. In addition, this study did not take into account changes in baseline energy use or evaluation study results that are now reflected in proposed efforts.

*Vermont* - While the study was conducted for a state in the same region, the demographics and firmographics of Vermont differ significantly from Massachusetts, which limits the applicability of that study's findings in Massachusetts.

*Rhode Island* - A significant portion of projected achievable savings were from:

- Behavioral programs not yet launched in Rhode Island where evaluated results could not be used to inform performance as is the case in Massachusetts.
- Price response programs included in the assessment that are not designed and, in addition, may not be compatible with energy efficiency.
- New/emerging technologies that were identified as measures that had technical potential, but were not yet economical.

Furthermore, no modeling was used to demonstrate how specific items that are not currently economically justified would become economical. Cost modeling of future technologies was not informed by research and likely underestimates the actual costs needed to realize the "achievable" potential. The report indicates that it is based on conservative assumptions, but that assertion is supported with only logical arguments as opposed to empirical evidence/facts.

As noted above, now that EM&V results are in and cost drivers are better understood, the Program Administrators are engaging in more refined, informed, and effective discussion with the consulting team about its assessment. The Program Administrators remain open-minded to suggestions that will increase opportunities to deliver available cost-effective energy efficiency savings.

*h. Re-Assessment of Savings Goals following June, July, August, and September Council Meetings*

At its June 12, 2012 meeting, the Council requested that the PAs reassess the savings goals in their April 30, 2012 short form submission. The Council stated:

> Reassessment of Savings Goals—where appropriate, considering all-cost-effective mandate, the Council's priorities, including sustainability, cost drivers and bill impacts, determine whether the PAs can increase savings goals for both gas and electric program portfolios, supported with scenario analysis where helpful.

At its July 23, 2012 Council meeting, and then at its September 27, 2012 meeting reviewing the September 19, 2012 draft Plan, the Council, while noting much positive progress,

requested that the PAs continue to assess savings goals and increase them even further. Each of the PAs has reassessed savings goals consistent with these requests, after expressly considering the factors enumerated by the Council. In this Plan, the Program Administrators provide detailed discussion of their review of the all cost-effective energy efficiency mandate (Sections I.F.3, III.A.3, III.B.1, and III.D), the Council priorities (Section I.G), sustainability (Sections I.G, III.B, and III.D), cost drivers (Section III.D.1), and bill impacts (Section III.E). In addition, each PA internally conducted multiple scenario analyses examining measure mixes, different costs, and different savings levels. The PAs engaged in extensive collaborative discussion with each other, considering multiple data points, including the Council's Consultants' recommended savings levels, planning assumptions, and sharing of best practices. As indicated in Section III.D.3 and Appendix H, a number of PAs with unique service area challenges expressly reviewed scenarios showing potential bill impact effects associated with materially higher savings levels and have presented the results of such analyses in summary format.[20]

Another essential factor that was considered by the PAs after the submission of the April 30, 2012 short form submission was the application of new EM&V results. As effectively presented during the June 25, 2012 EM&V webinar, new study results that became available after the April 30, 2012 short form submission for both electric PAs (in particular with respect to the Home Energy Services initiative) and for gas PAs (in particular with respect to large C&I projects and weatherization projects, as well as with respect to certain equipment rebates) have materially reduced savings estimates for a number of important initiatives offered by the Program Administrators. As described in the cost drivers section in Section III.D.1 above, the effect of these results is to make it more challenging and more costly to achieve the savings levels presented in the April 30, 2012 short form submission. In short, maintaining the savings goals presented in the April 30, 2012 short form submission became much more challenging.

Following the Council's September 27, 2012 meeting, the PAs continued to engage in rigorous discussions with the DOER, as chair of the Council, the Attorney General and the Council's consultants. As a result of these discussions, these parties were able to reduce, and then eliminate, the gaps in their differences with respect to savings, benefits, budgets and incentives for 2013-2015 in the context of an overall, negotiated resolution, with "puts and takes" by all parties. The agreements in principle reached with respect to these core elements of the Plan are set forth in the Term Sheets, which are scheduled to be presented to the full Council for a supportive resolution on Monday, November 5, 2012. This Plan is designed to be consistent with each of the elements of the Term Sheets, and to reflect the culmination of ongoing Council discussion and review that began even in advance of the original April 30, 2012 short form Plan.

The PAs have proposed the most aggressive set of integrated electric and gas savings goals in the nation, reflecting the PAs' deep commitment to fulfilling the mandates of the GCA, and their reasoned confidence in their excellence in in-the-field implementation. See Appendix D. Notably, for electric PAs, the Commonwealth's two largest electric companies, National Grid and NSTAR, as well as WMECO, are each proposing escalating savings levels of 2.5 percent,

[20] As indicated at the June 12, 2012 Council meeting, there are multiple different methods of scenario planning that are possible.

2.55 percent, and 2.6 percent of retail sales, which are more challenging goals than have been historically set. Both Cape Light Compact and Unitil are proposing very aggressive savings goals that reflect the unique challenges of their service areas, as have been recognized previously by the Council. Electric PAs have increased savings goals (and decreased costs) in response to comments and suggestions on the July 2, 2012 and September 19 draft Plans. For gas PAs, based on Council and DOER requests for increased savings targets from the levels proposed on July 2, 2012 and September 19, 2012, the Program Administrators have proposed escalating statewide savings goals of 1.07 percent, 1.13 percent, and 1.14 percent of retail load, which goals are supported by the Term Sheets. These targets are supported by the Council's Consultants. Each of NSTAR and National Grid is proposing savings levels in excess of these challenging benchmarks. Moreover, Columbia Gas of Massachusetts, The Berkshire Gas Company, New England Gas Company, and Unitil, have each increased overall savings goals as compared to the levels proposed in the July 2, 2012 submission based upon the Council's and DOER's requests to reassess savings goals and each Company's continuous self-assessment.

In sum, each of the PAs has carefully considered and reassessed its savings goals in light of the Council's request and in light of the factors enumerated by the Council, as well as multiple other factors described in this Plan. The PAs emphasize that this Plan is an integrated whole and each of the multiple elements set forth in the Plan relate to a certain degree with the goal setting process. The process is iterative, data-reliant, integrated, and involves a level of judgment after consideration of multiple data points. The PAs have aggressively looked to see how they can increase savings goals while also remaining cognizant of the additional priorities and emphases enumerated by the Council. The nation-leading and aggressive savings goals set forth in this Plan reflect those intense efforts, and the PAs' reasoned confidence, as a statewide team, in their abilities to deliver benefits on an integrated basis to customers at levels that lead the country. Importantly, the goals demonstrate the PAs' careful consideration of the Council's requests on July 23, 2012 and September 27, 2012 and their responsiveness to these requests. In short, the Program Administrators are proposing integrated savings goals that have never been matched for any similar sustained effort—they are helping Massachusetts to lead the nation in energy efficiency.

### 2. Key Factors, Challenges and Market Barriers

While seeking all available energy efficiency and demand reduction resources that are cost-effective or less expensive than supply, the PAs considered certain key factors, challenges and market barriers in their assessment of the achievable level of energy efficiency set forth in the Plan. These factors were included in the assessment of all available cost effective energy efficiency in the 2010-2012 three year plan supported by the Council and approved in the Orders. Accordingly, they have been considered by the Program Administrators in developing the proposals set forth in this Plan.

#### *a. Market Barriers*

This Plan, which strives to obtain all available cost-effective energy efficiency, is grounded in an understanding that market barriers exist and deliberately strives to address significant market barriers and policy concerns.

To be successful in energy efficiency, the programs must bridge the five major market barriers of awareness, availability, accessibility, affordability, and aversion to risk. These barriers affect customers' adoption of energy efficiency measures and the ability of Program Administrators to achieve and obtain savings. This Plan outlines many initiatives that Program Administrators feel are critical in bridging these five major market barriers.

- **Awareness** is a barrier that historically was not confronted on a large scale, given capped budgets, marketing, and outreach. This Plan recognizes that continued strong public education, marketing, and outreach, including community-based efforts, will be needed to achieve deeper and broader penetration. Deeper penetration refers to the promotion of additional cost-effective technologies and strategies to capture comprehensive, whole-building savings among the traditional base of expected program participants. This deeper penetration requires raising participants' awareness and understanding of the value of investing in additional measures that create increased savings per participant. In addition to expanding marketing and incentive promotion strategies, this Plan incorporates other strategies to overcome awareness barriers, with the goal of sustaining and increasing the level of participation among eligible customers, *i.e.*, making participation broader. Broader penetration can include outreach to traditionally hard-to-reach customer groups, including economically marginalized communities and groups where English is not the first language.

- **Availability** is a barrier when manufacturers either do not produce or do not effectively market sufficient quantities of energy efficient products and services. Availability may also be constrained by limited workforce or delivery mechanisms. The challenge for manufacturers in the energy efficiency sector is to respond not only to the Commonwealth's demand for more efficient products, but also to demands for such products nationally or even globally. This challenge is compounded by the economic pressures which reduce manufacturers' willingness to make additional investments. From a workforce perspective, Program Administrators recognize that continued workforce training and deployment is required to effectively deliver the programs. This is not an insignificant barrier.

- **Accessibility** is another market barrier which refers to the customers' access to the product. To mitigate this barrier, Program Administrators must continue to connect with mid-stream market actors, such as distributors, to help ensure that products are displayed and stocked in sufficient quantity. The program descriptions set forth in this Plan provide for continued work with key market actors, and include campaigns for training and marketing, as well as proposed community mobilization outreach strategies.

- **Affordability** is a market barrier resulting from the initial cost of energy efficiency solutions. Program Administrators are concerned that affordability remains a major barrier and one that is more difficult to predict as customer buying patterns have changed dramatically with the advent of more limited credit. The Plan attempts to mitigate this barrier through the use of incentives, new delivery models for economically challenged neighborhoods, as well as through the use of broadly accessible financing In some cases, particularly with respect to gas energy efficiency efforts, the PAs are proposing to

increase incentives for measures so that the low commodity cost of natural gas does not impede investments in cost-effective gas energy efficiency measures and services.

- **Aversion to Risk** is a market barrier that describes customers who are unwilling to take a chance on technologies that they perceive to be unproven. In order to address this barrier, the Program Administrators seek to provide detailed, clear information to customers about the direct benefits of energy efficiency measures. In some cases, this information will be provided to customers in the form of a case study that highlights the performance of proposed measures, helping to reduce the perceived risk associated with energy efficient measures and practices.

*b. Policy Issues*

In addition to market barriers, it is important to also understand the policy issues that need to be addressed to secure all available energy efficiency. These include economic, sustainability, and regulatory issues.

- **Economic** obstacles continue to be relevant in today's environment. The Program Administrators recognize the Plan's tremendous value, but also understand that it is important to consider the short-term rate impacts of the ramp-up of these programs. Given the sensitivity to the cost of the programs, this Plan discusses the associated preliminary expected bill impacts of program implementation. Traditional incremental bill impact analyses, as well as participant analyses are provided for each Program Administrator in the PA-specific filings. Detailed bill impact analyses for each Program Administrator using traditional bill impact models are provided with each PA's Plan and will also contain the information required by the Department's orders in D.P.U. 08-50-D.

- **Sustainability** of the programs is an important consideration for the Plan and an expressly repeated priority of the Council. Many advocates, including the Program Administrators and the Attorney General, stress that in achieving all available energy efficiency, the annual efforts must also strive to be sustainable for the long term. This sustainability is vital to support the health of the economy, and the growth of the workforce and infrastructure needed to ensure the long-term benefits of these efforts.

- **Regulatory Guidance** includes the support of strong regulatory frameworks that complement the Program Administrators' ramp-up of programs. These frameworks create a healthy regulatory infrastructure by which Program Administrators can confidently advance programs knowing that there is clarity in the regulatory rules and process and the opportunity to align shareholder objectives with public policy objectives. The Department's investigation in D.P.U. 11-120 is an ongoing example of the strong commitment to regulatory guidance in Massachusetts, and the Program Administrators will incorporate any outcomes from this proceeding into their plans as soon as practicable after an Order is issued. The Program Administrators appreciate ongoing efforts of the Department and other stakeholders to streamline regulatory processes associated with energy efficiency, as evidenced in the D.P.U. 11-120 Phase II proposal.

*c. Assessing Technical Potential*

As noted above, the Program Administrators used multiple resources to build a robust understanding of the potential for all available cost-effective energy efficiency and demand-reduction resources. These efforts all are grounded in the definition of "Technical Potential" as the complete penetration of all measures analyzed in applications where they are deemed technically feasible from an engineering perspective. Technical Potential does not necessarily take into account cost-effectiveness, budget constraints, or whether homeowners or businesses are willing to undertake energy saving actions or investments

Economically Achievable Energy Efficiency Potential ("EAEEP") is defined as that portion of the technical potential that is cost-effective (either from a customer, societal, or total resources perspective). As was endorsed in the 2010-2012 Plan as approved in the Orders, this 2013-2015 Plan aggressively targets all available cost-effective energy-efficiency resources, but the Plan also takes in account program implementation constraints such as market and policy barriers. Such barriers led to this Plan's focus on obtaining all available cost-effective energy efficiency in a manner that allows for a sustained effort and that does not create unacceptable bill impacts, consistent with the Council's Priorities, the Sense of the Council document of June 12, 2012, Department precedent and the PAs' public service obligation to their customers.

Assessing potential takes into account impediments to program implementation, including financial, political, and regulatory barriers that are likely to limit the amount of savings that might be achieved through energy efficiency and demand response programs. It, therefore, recognizes both the market and policy barriers. After more than two decades of successfully implementing energy efficiency programs, the Program Administrators have an in-depth understanding of these barriers and were able to integrate their knowledge of both market and policy concerns to inform this Plan. The program incentive design, delivery models, and support infrastructure developed by the Program Administrators and discussed throughout this Plan are informed by a careful review of different types of potential.

3. Allocation of Funds for Low-Income Programs and Education

Energy efficiency funds shall be allocated to customer classes in proportion to their contributions to those funds, and, "at least 10 percent of the amount expended for electric energy efficiency programs and at least 20 percent of the amount expended for gas energy efficiency programs shall be spent on comprehensive low-income residential demand side management and education programs." G.L. c. 25, § 19(c). Based on the budget figures set forth in this Plan, for electric Program Administrators, 11 percent of the total budget will be allocated to the electric low-income residential sector for 2013-2015. Based on the budget figures set forth in this Plan, for gas Program Administrators, approximately 21 percent of the total budget will be allocated to the gas low-income residential sector for 2013-2015.

4. Minimizing Administrative Cost

General Laws c. 25, § 19(a) requires the Department, when authorizing energy efficiency programs, to ensure that such programs minimize administrative costs to the fullest extent practicable. Administrative costs, also commonly referred to as Program Planning & Administration ("PP&A") costs, have traditionally been defined as all in-house and outsourced costs associated with planning activities and program administration. These include costs

associated with developing program plans, and day-to-day program administration, including labor, overhead costs, and any regulatory costs associated with energy efficiency activities.

As has been their historical practice, each of the Program Administrators is fully committed to pursuing both internal and external opportunities to streamline the administration of their energy efficiency programs and thus their associated administrative costs. To that end, and within the context of the D.P.U. 08-50 Working Group, the Program Administrators initiated discussions in 2010 to review the definition of administrative costs and the classification of the costs in this category to ensure that all Program Administrators report such costs consistently. The result of this effort is that, with one limited exception of the categorization of employee salaries and related expenses,[21] consistent statewide cost categories are in place across all Program Administrators. This allows all interested stakeholders to review administrative costs in an objective manner.

The most significant factor in the PA approach to minimizing administrative costs is the statewide collaborative process, which is used by the Program Administrators to coordinate planning, the adoption of consistent programs and processes, program design, EM&V studies, statewide marketing, regulatory proceedings, and the development and sharing of all best practices. Sharing of these costs, which would otherwise be borne by each Program Administrator individually, results in economies of scale that reduce the cost for each Program Administrator. For example, joint releases of Requests for Proposals ("RFPs) lead to minimization of administrative costs in that the cost for preparation and release of the RFP are shared by the PAs. The Program Administrators also minimize administrative costs by coordinating energy efficiency program delivery, where appropriate, with other customer service activities such as customer acquisition, key account management and trade ally relationships.

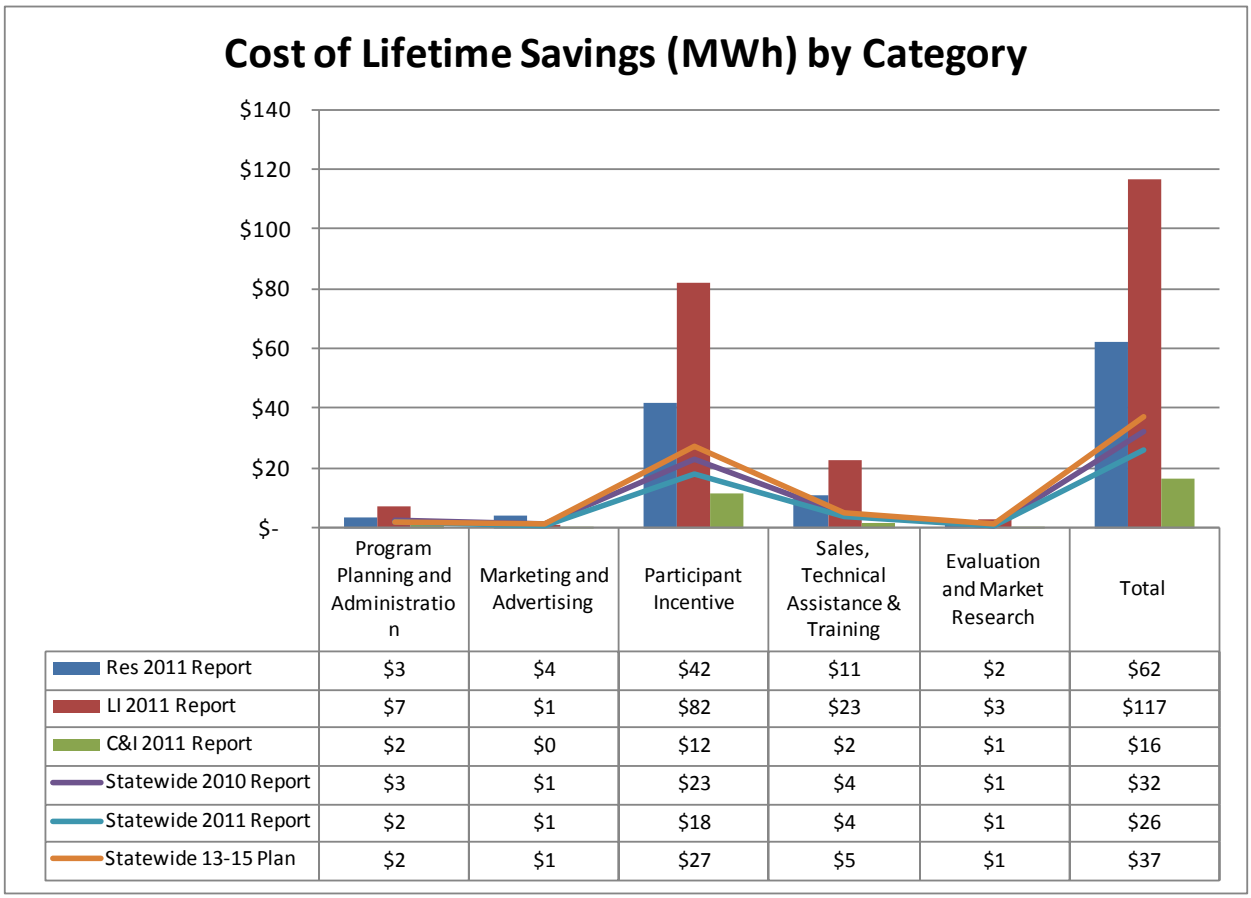
Notwithstanding any appropriate coordination with other customer service departments, it is necessary and appropriate for all Program Administrators to maintain a skilled and dedicated administrative staff in order to ensure successful delivery of programs, compliance with the GCA, timely responses to the directives of the Council, Department, and DOER; and documentation and achievement of substantial savings. The Program Administrators seek to balance the need to minimize administrative costs to the extent prudent with the need to maximize program quality and oversight. Councilors have emphasized the need to devote sufficient administrative resources to successfully implement the aggressive programs called for in this Plan.

While the economies of scale and other steps taken by the PAs to minimize costs are effective, and administrative costs incurred by the PAs are transparent and are presented in each Program Administrator's D.P.U. 08-50 tables, exact quantification of the minimization of administrative costs is not possible in a meaningful way. This is because the continuous scaling up and evolution of the Plans make it impossible to establish a solid baseline for a comparison.

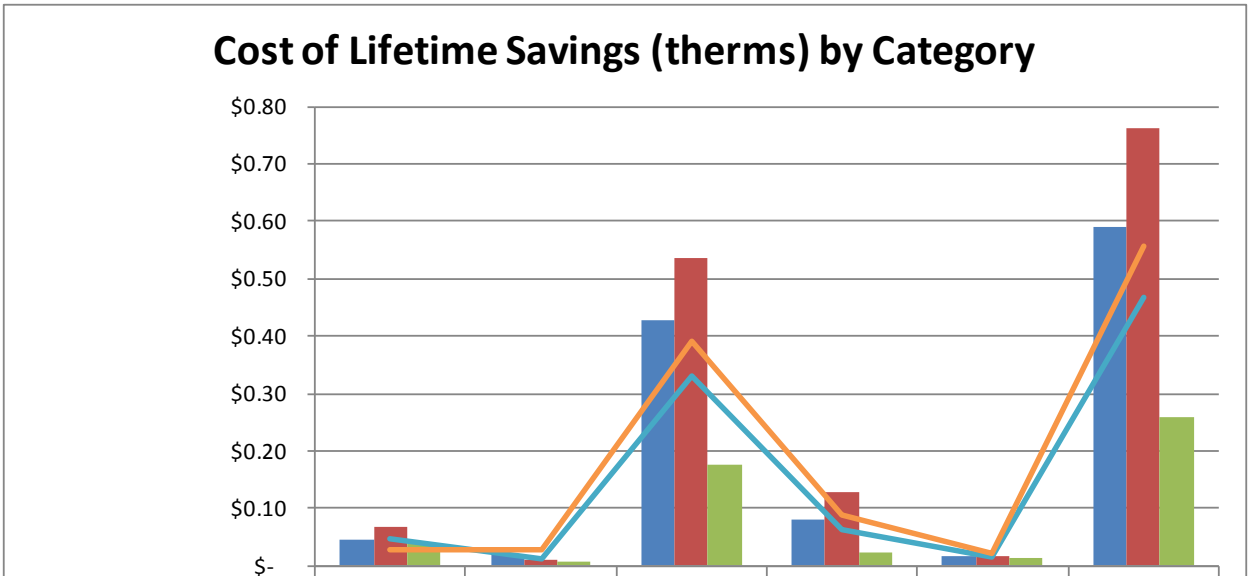
[21] For certain PAs, employee labor and related expenses are included in the PP&A, Marketing-Advertising, Sales, Technical Assistance & Training, and Evaluation & Market Research categories, depending on the employee's responsibility; for other PAs, all employee labor costs and related expenses are included in the PP&A category. This one limited difference is due to different historical practices and differing staff sizes and staff assignments, as well as internal tracking mechanisms.

When the variables are constantly (and necessarily) shifting, there is no opportunity to make a meaningful quantitative comparison or to estimate a counterfactual. Further, a direct quantitative comparison would not be useful because it would only provide a comparison of two points in time; the mandate of the GCA, however, is to seek administrative efficiencies, which is a continuous process that evolves along with energy efficiency planning and programming, whereas costs and administrative efficiency opportunities are always changing. The Program Administrators seek to minimize costs at all available opportunities, and not just from one point in time to another.

The PAs note, however, that they carefully track administrative costs and, as indicated in the statewide summary tables provided with this Plan (and as highlighted in the PAs' September 11, 2012 presentation to the Council), administrative costs as a proportion of overall PA-spending is projected to decrease in 2013-2015, with increases in proportionate spending on customer incentives and technical assistance. Please see the tables below for a graphical view of costs.




| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total |
|---|---|---|---|---|---|---|
| Res 2011 Report | $3 | $4 | $42 | $11 | $2 | $62 |
| LI 2011 Report | $7 | $1 | $82 | $23 | $3 | $117 |
| C&I 2011 Report | $2 | $0 | $12 | $2 | $1 | $16 |
| Statewide 2010 Report | $3 | $1 | $23 | $4 | $1 | $32 |
| Statewide 2011 Report | $2 | $1 | $18 | $4 | $1 | $26 |
| Statewide 13-15 Plan | $2 | $1 | $27 | $5 | $1 | $37 |




| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total |
|---|---|---|---|---|---|---|
| Res 2011 Report | $0.05 | $0.02 | $0.43 | $0.08 | $0.02 | $0.59 |
| LI 2011 Report | $0.07 | $0.01 | $0.54 | $0.13 | $0.02 | $0.76 |
| C&I 2011 Report | $0.04 | $0.01 | $0.18 | $0.02 | $0.01 | $0.26 |
| Statewide 2011 Report | $0.05 | $0.01 | $0.33 | $0.06 | $0.01 | $0.47 |
| Statewide 13-15 Plan | $0.03 | $0.03 | $0.39 | $0.09 | $0.02 | $0.56 |

5. Competitive Procurement Process

The Program Administrators utilize competitive procurement processes to engage and retain contractors and vendors to perform activities including, but not limited to: audit delivery; quality control; monitoring and evaluation; marketing; and website design. The Program Administrators are committed to continuing to utilize competitive procurement practices to the fullest extent practicable throughout the implementation of the 2013-2015 Plan. Therefore, consistent with past practice, the Program Administrators anticipate that they will issue RFPs to engage appropriate third party vendors to provide energy efficiency services, consider the input of the Council with respect to the retention of necessary consultants, and, where necessary, work collaboratively to ensure that energy efficiency services have been procured in a manner that minimizes cost to the ratepayers, while maximizing the associated benefits of that investment. In order to build upon the progress made in the 2010-2012 Plan, the Program Administrators will continue to work to expand the pool of qualified program vendors, promote the entry of new market actors into contractor and subcontractor roles, and ensure the transparency of the contractor bidding process and selection criteria used to evaluate proposals.

6. Demand Response

Demand Response is not a key focus in the proposed Plan because such efforts are difficult to cost-justify using the current Total Resource Cost test. Demand savings, however, are a key benefit of proposed efforts. In addition, demand response "enabled" measures and

systems, including those that have the potential to be dispatched or controlled in conjunction with Smart Grid systems, are featured in proposed efforts. Further, where applicable, the PAs will facilitate engagement with demand response providers in the open marketplace. Examples of potential measures and systems contemplated include but are not limited to "Smart" devices, energy management system sequence of operations, dimmable lighting systems and controls, as well as demand response enabled technologies.

## C. Funding Sources & Financing Initiatives

The Program Administrators seek to leverage available funding sources and financing initiatives in order to increase the benefits of the Plan and minimize customer rate impacts. The following funding sources and financing initiatives are currently available to the Program Administrators.

### 1. System Benefit Charge (electric only)

The System Benefit Charge ("SBC") is calculated consistent with G.L. c. 25, § 19(a) which states: "The [D]epartment shall require a mandatory charge of 2.5 mills per kilowatt-hour for all consumers, except those served by a municipal lighting plant, to fund energy efficiency programs including, but not limited to, demand side management programs."

### 2. Forward Capacity Market ("FCM") Proceeds (electric only)

Pursuant to G.L. c. 25, § 19(a), electric Program Administrators' energy efficiency plans shall be funded in part by "amounts generated by the distribution companies and municipal aggregators under the Forward Capacity Market program administered by ISO-NE, as defined in section 1 of chapter 164."

The Program Administrators allocate FCM funds across customer sectors according to each sector's percentage of contribution to SBC funds. Each Program Administrator's projection of individual FCM revenues is based on its respective FCM bidding.

Bid levels are based on projected and historic achieved annual peak period MW reductions from a PA's energy efficiency programs, as well as ongoing studies and evaluations that may affect savings. Bids into the FCM must be submitted three years in advance. Therefore, the PAs develop bids based on estimates using the best information available at the time. The PAs also must balance the goal of maximizing FCM revenue with the financial risk to program funding if projected peak savings are not achieved.

As noted above, a portion of the funding for energy efficiency efforts including customer incentives is derived through participation in the FCM. Although limited, there are some unique opportunities to further benefit customers and increase savings, as well as the region's capacity requirements. The PAs will provide FCM-supported energy efficiency services to electric customers who are not currently eligible for services due to other factors. For these customers, incentives would be limited to the value of the lifetime revenue stream associated with the demand savings from the project less any administrative expenses that are associated with the project.

3. Regional Greenhouse Gas Initiative Proceeds (electric only)

The electric Program Administrators have estimated the proceeds they expect to receive from Massachusetts' participation in the RGGI based on the following assumptions.

Projections take into account anticipated lags between when RGGI auctions occur and when DOER is able to transfer funds to each electric PA. In 2013, the electric Program Administrators will be allocated revenues from a part of 2012 and part of 2013 RGGI auctions. In 2014, the electric Program Administrators will be allocated revenues from a portion of 2013 and a portion of 2014 RGGI auctions. Similarly, in 2015, the electric Program Administrators will be allocated revenue from a portion of 2014 and a portion of 2015 RGGI auctions. The Program Administrators are working with DOER to develop a forecast that more accurately projects receipt of funds from DOER.

Eighty percent of the Massachusetts proceeds from RGGI auctions will be allocated to energy efficiency Program Administrators, consistent with the Green Communities Act's directives that cap-and-trade pollution control programs including, but not limited to, not less than 80 percent of amounts generated by the carbon dioxide allowance trading mechanism established under the RGGI Memorandum of Understanding and the NOx Allowance Trading Program, will be made available for energy efficiency program expenditures. G.L. c. 25, § 19(a).

Electric Program Administrators will receive RGGI proceeds in proportion to the amount of funding required to fund their energy efficiency programs above the SBC and FCM.

The electric PAs expect that DOER will continue to pay the electric Program Administrators' portion of the costs of the Council's Consultants retained pursuant to G.L. c. 25, §22(c) out of the 80 percent of RGGI auction proceeds that are allocated to the PAs. This assumption is reflected in anticipated RGGI proceeds amounts, which take into account the reduction of proceeds receivable by the PAs by the amount payable to the Consultants. Because the Consultant fees will be paid by DOER directly out of the RGGI proceeds, the electric PAs' proposed budgets do not include separate expense amounts for Council Consultant costs.

Additional assumptions used by the Program Administrators with regard to the number of Massachusetts allowances sold in each year and the clearing price of future auctions are provided in the table below.

**Forecast: RGGI Allowance Sales & MA EE Funding**

| | 2013 | 2014 | 2015 |
|---|---|---|---|
| Allowance Price ($/Ton) | 1.97 | 2.01 | 2.05 |
| Total RGGI Proceeds ($M) | 232 | 236 | 231 |
| MA RGGI Proceeds ($M) | 38 | 39 | 37 |
| **MA EE RGGI Funds ($M)[1]** | **30** | **31** | **29** |

(1) 80% of MA RGGI proceeds dedicated to energy efficiency

The Program Administrators have been monitoring the 2012 RGGI program review. The projected allowance, allowance price and revenue forecast included in this Plan assumes no changes to the current operating structure. The PAs will continue to monitor RGGI market conditions.

4. Energy Efficiency Reconciliation Factor ("EERF") (electric only)

In the event that program costs exceed other available revenue sources, a fully reconciling funding mechanism, the EERF, ensures that the costs for all available cost-effective energy efficiency measures will be funded. The EERF recovers and reconciles energy efficiency costs for a particular program year with the revenue an electric PA receives through: (1) the SBC; (2) participation in the FCM; (3) proceeds from participation in cap-and-trade programs such as RGGI; (4) LBR, for electric PAs without a Department-approved decoupling mechanism; and (5) proceeds available from other private or public funds that may be available for energy efficiency or demand resources. G.L. c. 25, § 21.

5. Carryover Information

In determining its Energy Efficiency Surcharge, a Program Administrator takes into account funds carried over from the previous year's program, whether positive or negative. These "fund balances" are used to adjust projected funding levels in the Plan.[22]

6. Outside Funding Levels

The 2013-2015 Plan does not contain outside funding assumptions given the absence of material viable funding sources. The Program Administrators, as well as Councilors and government agencies, all actively continue to seek new sources of outside funding. The Program Administrators' approach in this regard reflects lessons learned over the course of the 2010-2012 plan, in particular the low likelihood that a major new federal "cap and trade" program will be implemented in the foreseeable future as had been anticipated when the 2010-2012 Plans were initially developed and approved by the Council.

7. Financing Initiatives

During the course of the last two years, the Program Administrators developed, deployed an offered customers several financial products in conjunction with the Massachusetts Bankers Association and Credit Unions - with roughly fifty financial institutions participating in this initiative. The new Mass Save® financing initiative is offered through multiple financial institutions. The Program Administrators expect to have enough capital infusion from the diverse Massachusetts lending community to meet customer demand for financing in the next three years. The Program Administrators' collaboratively-developed financing initiatives reflect both the strong coordination among the PAs, as well as the Program Administrators' responsiveness to comments and suggestions from Councilors. Program implementers in other

[22] The Cape Light Compact has identified the need to update its 2012 historical budget. While the total is correct, there is a difference of about 2% of the total budget from the actual allocation to the sectors. This update has no affect on the 2013-2015 plan numbers and bill impacts.

states have frequently contacted the Program Administrators to learn from the Massachusetts experience in development of a state-of-the-art lending initiative that leverages the experience of local banks.

The HEAT Loan initiative also remains available, which provides qualified customers with zero percent interest loans up to $25,000 with terms up to seven years and can be applied towards certain specified energy efficiency upgrades. With the express support of DOER and the Council, a portion of the HEAT Loan may be used to finance the mitigation of barriers preventing the installation of energy efficient measures (*i.e.*, pre-weatherization measures). From 2010 to 2012 (to date), HEAT Loan funds totaling approximately $70,106,000 were approved for customers to make energy efficiency improvements. For 2013-2015, certain gas PAs are proposing additional budgetary dollars in the Residential Home Energy Services initiative to make the HEAT Loan available in support of gas energy efficiency efforts in service territories where electricity is supplied by a municipal light plant. All customers of electric PAs will receive the HEAT Loan applications. Gas PAs that have municipal electric companies within their territories will offer the HEAT Loan to those natural gas/municipal electric customers. Hence, all customers that pay into the SBC funds will be able to access the HEAT Loan. The gas PAs that have no line-item budget for the HEAT Loan have no municipal electric customers within their respective territories.

Financing allows customers, who may not be able to raise enough capital to pay for their customer contribution, to borrow funds in order to invest in energy efficiency. Customer financing does not reduce the amount of money necessary to be collected from ratepayers because it does not reduce the Program Administrators' energy efficiency budgets. To the extent that access to low-cost capital is a barrier for certain customers, financing can alleviate that and encourage energy efficiency investments.

The Program Administrators are continuing their efforts to understand the nature of barriers, for different customer segments, which may be related to accessing capital, and to explore financing products/solutions to address them, particularly for C&I customers who have not taken advantage of the financing mechanism described above in great numbers as has been the case for residential customers. In addition, some of the Program Administrators are proposing to provide customers with the ability to repay their share of program costs with zero percent interest over a two year period.

## D. Summary of Budgets, Savings, and Benefits

For the 2013-2015 Plan, the Program Administrators have sought to balance savings and budgets; therefore, savings goals are aggressive in order to acquire all available cost-effective energy efficiency, but sustainable so that these aggressive goals can be maintained throughout the entire three-year period and planned with consideration of bill impacts. The Program Administrators have integrated planning and implementation in order to achieve sustainable savings. Based on prior experience, in this Plan, the Program Administrators have taken note of EM&V factors and trends when planning savings goals. The process for developing goals is discussed further in Section III.D.2, below. In order to present reliable data, the Program Administrators have focused on program-driven savings, which are the savings achieved through the efforts of the PAs. The PAs intend to participate in the working group which will be

convened to explore if and how a market-based approach could be developed and implemented per D.P.U. 11-120-A, as discussed in Section III.O below.

Budgets in this Plan take into account statutory low-income expenditure requirements, and reflect economies realized through prior efforts. In 2013-2015, the PAs are placing an increased focus on benefits. In determining target benefits, the PAs have sought to accommodate the effect of changed avoided costs.

The budgets, savings, and benefits tables in this Plan are preliminary, and will necessary evolve based on (1) any (currently unexpected) changes in regulatory policy, such as cost recovery and incentive plans; (2) planning refinements; and (3) program level data.

1. Cost Drivers

**Introduction**

The Program Administrators' statewide energy efficiency programs have evolved significantly since the development of the first three-year plan in 2009. As a result of their success, the Program Administrators are currently facing a new series of challenges – changes in projected program costs and the hurdles associated with achieving historically high savings levels on a sustained basis after having already had notable success in penetrating markets. To address these challenges and deliver the most cost-effective energy efficiency programs to their Massachusetts gas and electric customers, the Program Administrators seek to develop a thorough understanding of current and future cost drivers and savings levels for their proposed energy efficiency programs. The Council has identified cost drivers as a core priority and has asked that the Program Administrators continue to discuss such cost drivers in the Plan. The Program Administrators address this priority below.

Since the July 2 and September 19 submissions of the Plan, the PAs have continued to work with the Consultants to identify the largest, most material cost drivers and to understand the impacts to the PAs budgets, savings goals and bill impacts. This work has entailed an intensive, good faith effort, with multiple conference calls and exchanges of data, utilizing data from National Grid and NSTAR given their indicative role as the PAs with the largest customer bases in the Commonwealth. While multiple inputs and assumptions at the detailed measure level, and at the macro statewide level all drive costs, based on the work of the PAs and the consultants to date, the four main drivers that affect the PA cost of savings are Evaluation, Measurement and Verification results, new codes and standards that increase baselines and decrease potential savings, new measures and approaches that were not implemented in 2011, and the effect of varying measure mixes in each PA's projections.

The PAs and Council Consultants primarily used 2011 evaluated results as a baseline for costs to achieve, as it represents the most recent and best available information. It is important to note however that 2010 information (which had higher costs than 2011, e.g., $0.032 per lifetime kWh as opposed to $0.026 in 2011) and 2012 MTM data (again with higher costs at $0.041 per kWh than 2011) are also important data points and factor into any overall discussion of cost drivers From there, the cost drivers team looked at the four drivers listed above in an attempt to quantify the effect on costs going forward and to narrow the previously existing gaps in the

consultants and the PAs views on costs to achieve in 2013-2015. The cost drivers can have both negative and positive impacts on the cost of savings, but overall the PAs experienced a net increase in costs to achieve its savings targets in 2013-2015 relative to 2011. Some key takeaways:

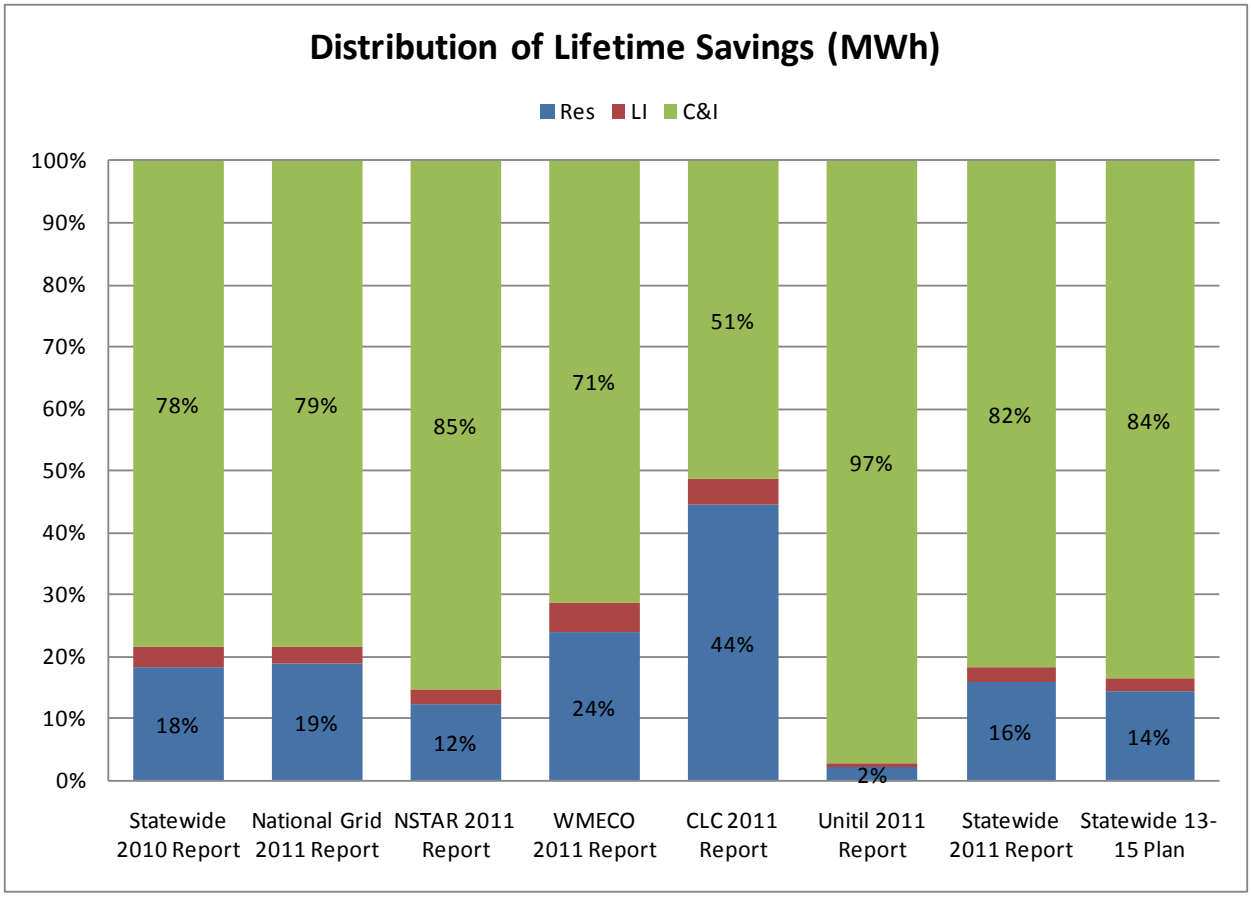
- Adopting EISA standards for lighting measures and shifting the measure mix more towards LEDs instead of CFLs will increase the cost per kWh.
- Furnace standards increased from 78% to 90% AFUE and boiler standards increased from 80% to 82% AFUE. Increased standards raise the baseline for energy efficient equipment, decreasing the incremental savings that PAs can claim. PAs had to change its measure mix to offer equipment above the new standards. These changes increased the cost per therm.
- New approaches, such as Efficient Neighborhoods+, paying for the costs of pre-weatherization, and serving multi-family master-metered gas customers, will increase the cost per unit of savings.
- 2011 CHP savings levels are not replicable in the 2013-2015 Plan. This large, low-cost measure decreased the 2011 cost per kWh as compared to what is reasonably projected going forward.
- EM&V results for the Home Energy Services core initiative increased the cost to achieve for the electric initiative and decreased the cost to achieve for the gas initiative.
- PAs have significantly reduced savings claimed for thermostats in gas residential programs and spray valves in gas C&I programs. This decrease to savings increases the cost per therm.

The PAs have engaged in numerous discussions with the Council's Consultants on cost drivers, and the costs set forth herein reflect these discussions and collaborative efforts.

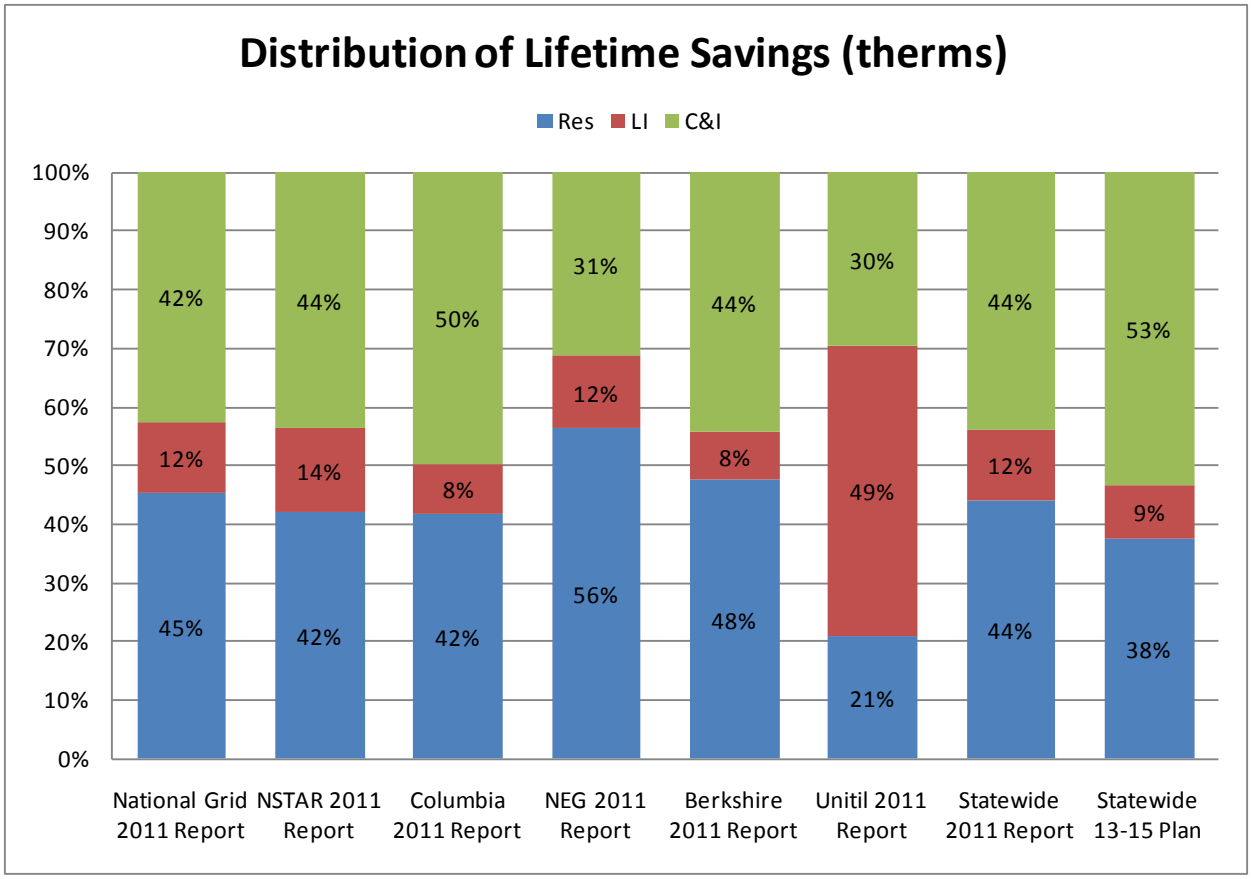
**Appropriate Variances among the Program Administrators**

Each Program Administrator is affected differently by each cost driver. Despite statewide offerings and increased application of common assumptions, some variations in savings goals and cost to achieve these goals are appropriate due to unique characteristics in service territories and PA knowledge and historical experience with its customer base. Building demographics, income types, fuel type and population density vary widely across each PA's service territory and will influence how each PA plans to achieve its goals.

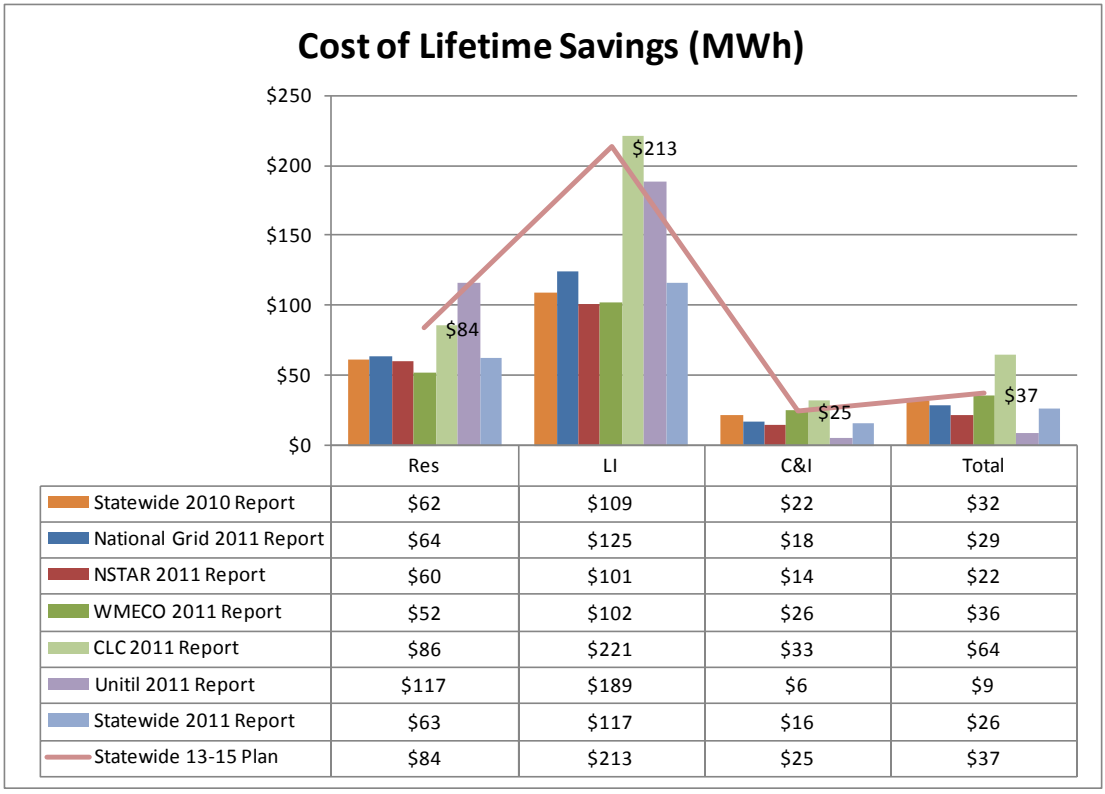
The graph below shows the balance of electric savings by PA and between sectors. The graph shows that the balance of savings between residential, low-income and C&I sectors varies both among the PAs and across years. For example, 97% of Unitil's 2011 savings were achieved in the C&I sector due to a large CHP project. This achievement is not indicative of Unitil's 2013-2015 Plan, and underlies the importance of taking a multi-year look at costs and savings.



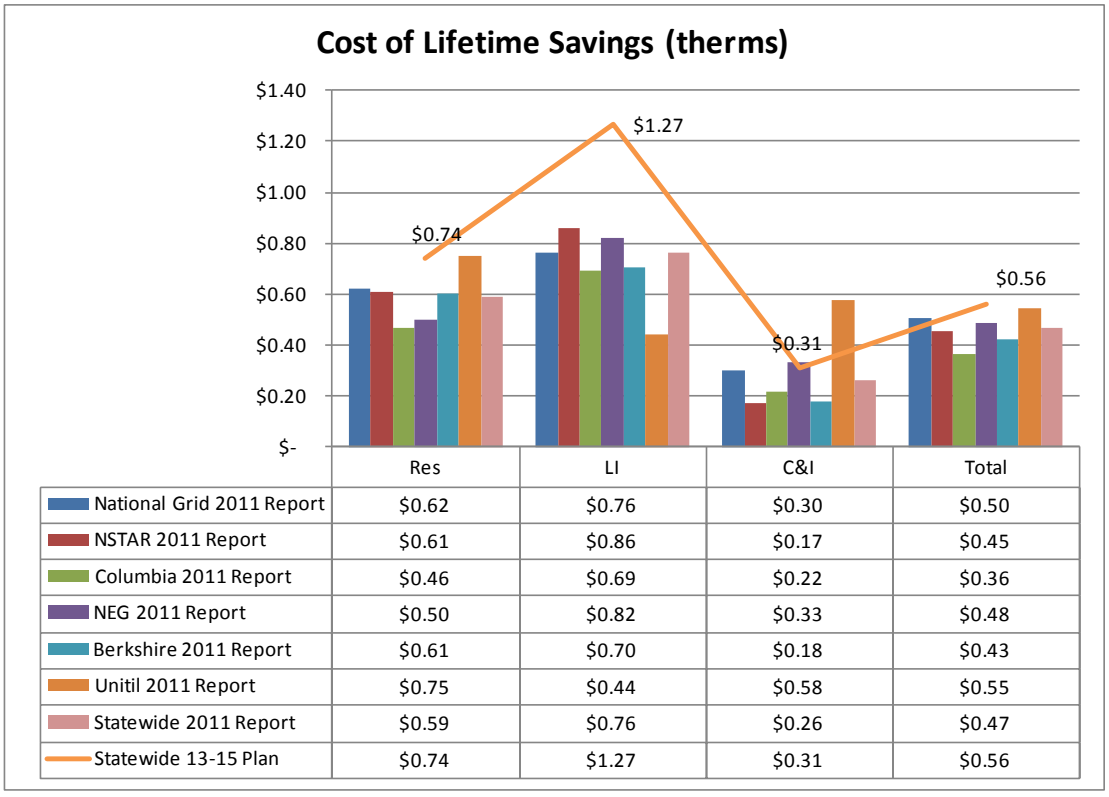

The balance of gas savings between residential, low-income and C&I sectors varies less than electric, as shown in the graph below. However, in the 2013-2015 Plan, more savings are attributable to the C&I sector than what the PAs have experienced in the past.




The distribution of savings among sectors is important to understand because each sector has a very different cost to achieve, with C&I historically being the least expensive sector and low-income being the most expensive sector. The graphs below show the cost of lifetime savings by sector and by PA for 2010, 2011 and 2013-2015.




| | Res | LI | C&I | Total |
|---|---|---|---|---|
| Statewide 2010 Report | $62 | $109 | $22 | $32 |
| National Grid 2011 Report | $64 | $125 | $18 | $29 |
| NSTAR 2011 Report | $60 | $101 | $14 | $22 |
| WMECO 2011 Report | $52 | $102 | $26 | $36 |
| CLC 2011 Report | $86 | $221 | $33 | $64 |
| Unitil 2011 Report | $117 | $189 | $6 | $9 |
| Statewide 2011 Report | $63 | $117 | $16 | $26 |
| Statewide 13-15 Plan | $84 | $213 | $25 | $37 |




| | Res | LI | C&I | Total |
|---|---|---|---|---|
| National Grid 2011 Report | $0.62 | $0.76 | $0.30 | $0.50 |
| NSTAR 2011 Report | $0.61 | $0.86 | $0.17 | $0.45 |
| Columbia 2011 Report | $0.46 | $0.69 | $0.22 | $0.36 |
| NEG 2011 Report | $0.50 | $0.82 | $0.33 | $0.48 |
| Berkshire 2011 Report | $0.61 | $0.70 | $0.18 | $0.43 |
| Unitil 2011 Report | $0.75 | $0.44 | $0.58 | $0.55 |
| Statewide 2011 Report | $0.59 | $0.76 | $0.26 | $0.47 |
| Statewide 13-15 Plan | $0.74 | $1.27 | $0.31 | $0.56 |

The important cost drivers implications from these data are that customer and measure mixes are important elements in driving costs (and savings opportunities), and that it is expected

and appropriate that there will be some variations in costs (and savings) among PAs based upon their unique mixes and customers and measures within their service areas.

**Conclusion**

As always, the Program Administrators will strive to keep costs down, but the PAs do not control the eroding savings from increases in federal standards and any downward free-rider results from evaluations. There is potential, however, for new opportunities, which the Program Administrators will continue to explore through best practices and market assessments. As standards rise, incremental cost will decline, and this could allow for new technologies and measures that were previously too cost-prohibitive to be included in the PAs' already robust portfolio of programs.

Additionally, the PAs will continue to strive to reduce variations in costs to achieve to the extent practicable through the use of common assumptions. The PAs emphasize, however, that some variations are acceptable and appropriate due to different service territories and varying planned measure mixes, as indicated in the data presented above and in the appendices to this Plan.

2. Process to Determine Goals

The PAs engage in a collaborative and iterative planning process for setting savings goals and budgets. The planning process for savings varies for each program and initiative, but certain common assumptions are used across programs and initiatives. An example of a specific planning process includes budgeting for core initiatives within the Residential Products Program, which is very measure-specific and driven by the number of rebates. Other initiatives take a whole house approach and plan by audits, homes, or customer sites. Regardless of the type of program, the PAs typically begin the planning process by looking at historical data from the most recent few years and examine some key metrics that provide insight into participation trends (*i.e.*, how many boilers were rebated or number of weatherization jobs completed), savings achieved, and costs to achieve these savings. The PAs collaboratively discuss changes that need to be made to each program based on both the historical data as well as forward-looking information. Using this information, the PAs may decide, for example, to discontinue measures that have become standard efficiency, or to test new measures for cost-effectiveness and add them to the appropriate program. These types of overarching decisions are done at the statewide level at the respective management committees, ensuring input from all stakeholders and continuous sharing of best practices and facilitating consistency of offerings among the Program Administrators.

Each PA uses this information to develop a forecast that is sustainable for the planning period. To help verify these forecasts, PAs may consult their lead vendors to assist with realistic projections based on field experience in the program or what is in the vendor's queue.

The latest savings impacts are applied to the forecast savings, and the annual and lifetime savings are summed up at the program, sector and portfolio level. The process must be fluid and flexible, because information is received at various times during the planning process that is critical to include, such as evaluation impact results. Changes dictated by evaluation impact

results are what make the planning process so iterative. If an evaluation impact result lowers savings for a specific program, the PAs need to adjust the implementation strategies to ensure that the overall goal at the portfolio is still achievable, while minimizing the impact to the budget. As an example, the 2010 High Efficiency Heating Equipment gas evaluation impacted the PAs so significantly that they would have had to spend three times the program's original budget to achieve the original savings estimates. Instead, PAs reallocated part of this budget to other programs that yielded a lower, more realistic cost per savings.

In addition to forecasting savings goals, PAs must also develop budgets for marketing expenses, internal payroll, evaluation, administrative expenses and vendor-related fees. These budgets are program-specific and are often driven by how aggressive the goals are (a large ramp-up in savings goals typically needs more marketing dollars), when the program was last evaluated, and how many full-time employees are dedicated to each program. These budgets can vary significantly by PA, and typically make up a quarter to a third of each program's budget, with the largest portion of the budget typically dedicated to customer incentives.

3. Common Assumptions

The Program Administrators recognized that they historically have used different assumptions in energy efficiency planning and reporting. As part of the process of integration, the PAs have emphasized the need for common assumptions and have jointly revised the assumptions used in order to meet this goal. The Program Administrators have common program designs, and continuously work together to develop assumptions and to apply those assumptions in the RMC, C&IMC, low-income best practices, EMC, common assumptions working group, and other PA working groups and discussions.

Despite common program designs, the PAs identified and set forth to eliminate discrepancies with some key planning assumptions such as the definition of a participant, application of evaluation results, budgets, and avoided costs.

The Program Administrators have developed a set of definition guidelines that guide each PA's participant calculation in order to be able to review participants in a consistent manner. Such definitions were designed to most accurately reflect a unique participant in each program, while keeping in mind the differences in PA tracking. In certain instances, particularly for C&I programs, the PAs seek to reach a conceptual definition, such as location, but may reach it through different fields that are available in their tracking system, such as a representative account number or representative meter at specific location. The definitions that the PAs have used for participants in this Plan are set forth in Appendix M. Using these common definitions, the PAs have worked together to determine how best to apply them to estimate the number of participants for this Plan in a consistent manner.

PAs have also confirmed common approaches to various cost and savings data. The manner of application of evaluation results, including non-energy impacts, has also been determined collectively. Specific program assumptions have been accounted for uniformly, and algorithms will be applied in the same manner across PAs, with such assumptions set forth in the TRM. The PAs also collectively agreed to use the avoided costs from the 2011 AESC study for all three years within the Plan, inflated to 2013 dollars. Transmission and distribution costs have

been updated and inflated consistently. PAs have made changes to energy DRIPE that will slightly increase DRIPE values in 2014 and 2015 consistently across PAs. Additionally, PA cost categories are now consistent, with one limited exception of the categorization of employee salaries and related expenses.[23]

The PAs have reviewed all assumptions included in the development of this Plan in order to harmonize them to the greatest extent practicable. This has reduced variances between PAs and allows the PAs to provide the best available data in the most consistent manner.

4. Unique Service Areas - Drivers of Appropriate Savings Variations among PAs

As the Program Administrators' statewide energy efficiency programs have successfully evolved to sustain acquisition of all cost-effective energy efficiency, they currently face new challenges in terms of increasing savings targets beyond the already historic levels in place. The PAs are going where no other utilities in this nation have ventured in terms of an integrated statewide, sustained energy efficiency effort. The Council has identified PA variances on savings levels as a core priority and has asked that the Program Administrators discuss what actions and budget levels would be necessary to achieve the level of savings goals presented by the Council Consultants. To understand current and future drivers of savings levels for PAs' proposed energy efficiency programs requires an understanding of cost drivers and how savings, costs and performance incentives are interlinked, which are discussed throughout this Plan. But it also requires an understanding of the unique characteristics and service territories of each Program Administrator.

Some variations among PAs in savings goals and costs to achieve, as discussed in Section III.D.1, are appropriate due to unique characteristics in each PA's service territory, and should continue to be supported by both the EEAC and the Department consistent with sound regulatory policy and the GCA. The Commonwealth of Massachusetts is a composite of different communities and regions. While it is necessary to address energy efficiency plans, programs and objectives on a statewide basis, the detailed factors that influence costs, savings potential, and the cost to achieve savings are different in each PA's service territory. In general, as noted in section III.D.1, and as presented to the Council on September 11, 2012, the data show

[23] For certain PAs, employee labor and related expenses are included in the PP&A, Marketing-Advertising, Sales, Technical Assistance & Training, and Evaluation & Market Research categories, depending on the employee's responsibility; for other PAs, all employee labor costs and related expenses are included in the PP&A category. This one limited difference is due to different historical practices and differing staff sizes and staff assignments, as well as internal tracking mechanisms.

that service areas with a more robust C&I customer base have more opportunities for savings at lower costs than PAs without this customer mix.

Each PA has a distinct mix of customers and sectors, which affects energy efficiency programs in different ways. For some PAs, the variety of communities in which they serve results in costs, savings and costs to achieve that closely resemble the statewide average. However, for other PAs, the unique or more limited geographical regions they serve can result in a mix of specific characteristics that are significantly different from statewide averages. These specific factors have a direct impact on the costs, savings and cost to achieve that these PAs need to reflect in their individual PA energy efficiency plans.

Each PA has unique demographics, with different mixes of building types, income types, fuel types and population density. For example, the geographical area served by one PA may have a disproportionately smaller percentage of commercial customers in its territory as compared with the statewide averages. Similarly, a PA may have a disproportionately lower-income population than the statewide averages, or serve a region that is economically disadvantaged as compared with the Commonwealth as a whole.

At a more granular level, the mix of energy efficiency measures deployed by one PA may also vary considerably from statewide averages based on factors such as the age of the housing stock, the percentage of homes with electric heat, or the concentration of certain industries and business in the service area. While PAs with lower diversity in key customer segments can be susceptible to larger uncertainties in program performance, they may also be able to tailor go-to-market strategies and outreach approaches more specifically to their customers in ways that positively impact planning assumptions. All of these factors can result in variances in a particular PA's costs, savings and cost to achieve relative to statewide averages.

In addition, each PA has unique customer demand and customers who have competing priorities. Each PA also has a unique saturation level, with histories of successes. Moreover, each PA has unique expertise and knowledge regarding its individual customer needs, and has taken this into account in setting its savings goals. Despite these many variations, all PAs are increasing their savings goals from the July 2 draft Plan.

As recognized explicitly in the Gas Order and the Electric Order and in the Council's resolutions with respect to the 2010-2012 gas and electric plans, these differences in service areas can justify variations from statewide targets in savings goals and related matters. See, e.g., Gas Order at 28; Council Resolution of October 27, 2009. Specific factors that the Department considered in endorsing the Council's approach included "economic conditions and median income." Gas Order at 28.

In this Plan, The Berkshire Gas Company, New England Gas Company, Unitil and Cape Light Compact are proposing aggressive savings goals that are tailored to the conditions within and characteristics of their service areas and to ensure compliance with the GCA's mandate to acquire all available cost-effective energy efficiency in a sustainable manner. Each of these PAs has also increased its savings goals as compared with the aggressive goals set forth in the July 2 and September 19 drafts of the Plan in response to the Council's comments and outreach efforts

by DOER. Presentations related to their specific service territories can be found in Appendix H, with the presentations referring to/summarizing scenario analyses consistent with the Council's requests.[24] Maps showing the PA service territories in the Commonwealth are included in Appendix G. While these PAs expect that BCRs would decrease somewhat as increased savings opportunities are pursued, their core concerns with adopting the Consultants' proposed savings targets are not BCRs, but rather are costs, achievability based upon the characteristics of their customer base and bill impacts.

The presentations in Appendix H outline unique challenges in each PA's respective service area that justify variations from statewide targets and these PAs have welcomed Councilors to visit their service areas: unique communities in which they are all proud to serve. The largest of these PAs, Cape Light Compact, has also made supplemental filings discussing its unique service territory in connection with both the July 2 draft Plan and the September Plan. As part of these filings, the Compact provides a report from an independent expert consulting firm, Synapse Energy Economics, Inc. The report examines the key drivers behind higher costs per lifetime MWh savings for the Compact as compared to other PAs. Both the Council and the Department supported variations from state targets for each of these Program Administrators with respect to the 2010-2012 Plan, and the sound reasoning applied in that decision-making process continues to apply for the 2013-2015 Plan.

In the Term Sheets, the need for flexibility for PAs with unique service areas is expressly supported, as is the PAs' approach to utilizing an integrated, statewide approach to achieving savings. The savings goals proposed for Cape Light Compact, The Berkshire Gas Company, New England Gas Company, and Unitil are found appropriate for the 2013-2015 Plan, and each of the utility PAs noted will be required to document the penetration of program offerings and remaining cost-effective potential for energy efficiency in that PA's service territory through a study (joint or by PA, and with input and review by the Council's Consultant) that would be prepared and finalized during 2014, in time for the planning stages of the 2016-2018 Plan.

All Program Administrators are supportive of these specific requests and note the valuable contributions to the overarching statewide effort set forth in this Plan that are provided by each of these Program Administrators and their personnel. Each Program Administrator, regardless of size, contributes uniquely and materially to the overall statewide effort and commitment that is the hallmark of energy efficiency implementation in Massachusetts. By way of example, the chair of the statewide and essential RMC has been a representative of the comparatively very small Berkshire Gas and the RMC has achieved notable success with his leadership. The Massachusetts PAs have developed a team, with each PA assisting the others on energy efficiency efforts based on its strengths and challenges. Reasonable variances in savings goals that reflect these unique strengths and challenges among service areas are entirely appropriate.

[24] Columbia Gas of Massachusetts has set incremental goals that place it on track to achieve the current statewide savings target of 1.1% of retail sales. Because CMA's goals are only slightly below current savings targets, this variance did not merit separate discussion in this section. By committing to achieve savings targets of 1.02, 1.05 and 1.075 over the next three years, CMA has sought to set goals that are incremental, achievable and sustainable and that will allow for success year to year.

5. Electric Statewide Budget, Annual Savings, Lifetime Savings, and Benefits

**BUDGET ($)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | $ 153,238,206 | $ 162,494,057 | $ 170,956,663 | $ 486,688,926 |
| Low-Income | $ 54,136,213 | $ 54,923,052 | $ 56,912,443 | $ 165,971,708 |
| C&I | $ 273,941,506 | $ 278,240,071 | $ 290,856,118 | $ 843,037,696 |
| **TOTAL** | $ 481,315,926 | $ 495,657,181 | $ 518,725,224 | $ 1,495,698,331 |

**ANNUAL SAVINGS (MWh)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | 329,216 | 364,244 | 380,343 | 1,073,804 |
| Low-Income | 28,782 | 27,756 | 26,795 | 83,332 |
| C&I | 836,559 | 844,268 | 867,405 | 2,548,232 |
| **TOTAL** | 1,194,556 | 1,236,268 | 1,274,544 | 3,705,368 |

**LIFETIME SAVINGS (MWh)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | 1,890,890 | 1,948,146 | 1,984,491 | 5,823,526 |
| Low-Income | 264,621 | 259,958 | 254,194 | 778,773 |
| C&I | 10,989,232 | 11,056,228 | 11,623,911 | 33,669,371 |
| **TOTAL** | 13,144,743 | 13,264,331 | 13,862,596 | 40,271,670 |

**BENEFITS ($)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | $ 630,276,894 | $ 686,562,530 | $ 712,396,495 | $ 2,029,235,918 |
| Low-Income | $ 119,649,869 | $ 122,215,676 | $ 123,284,674 | $ 365,150,220 |
| C&I | $ 1,609,497,918 | $ 1,801,908,673 | $ 1,832,252,644 | $ 5,243,659,235 |
| **TOTAL** | $ 2,359,424,681 | $ 2,610,686,879 | $ 2,667,933,813 | $ 7,638,045,373 |

* All of these tables reflect statewide “rolled-up” proposals of the individual Program Administrators for 2013-2015.

6. Gas Statewide Budget, Annual Savings, Lifetime Savings, and Benefits

**BUDGET ($)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | $ 84,772,958 | $ 86,874,337 | $ 88,758,509 | $ 260,405,804 |
| Low-Income | $ 34,409,368 | $ 35,928,797 | $ 37,844,460 | $ 108,182,625 |
| C&I | $ 49,247,475 | $ 51,760,258 | $ 53,489,638 | $ 154,497,371 |
| **TOTAL** | $ 168,429,800 | $ 174,563,392 | $ 180,092,607 | $ 523,085,799 |

**ANNUAL SAVINGS (Therms)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | 10,291,144 | 11,608,186 | 11,605,934 | 33,505,264 |
| Low-Income | 1,397,743 | 1,438,993 | 1,486,017 | 4,322,753 |
| C&I | 10,972,151 | 11,353,951 | 11,857,063 | 34,183,165 |
| **TOTAL** | 22,661,039 | 24,401,130 | 24,949,014 | 72,011,183 |

**LIFETIME SAVINGS (Therms)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | 117,101,911 | 119,419,923 | 116,138,323 | 352,660,157 |
| Low-Income | 27,514,929 | 28,353,158 | 29,325,641 | 85,193,728 |
| C&I | 159,357,540 | 165,248,442 | 175,854,213 | 500,460,194 |
| **TOTAL** | 303,974,380 | 313,021,522 | 321,318,178 | 938,314,079 |

**BENEFITS ($)**

| Sector | 2013 | 2014 | 2015 | 2013-2015 |
|---|---|---|---|---|
| Residential | $ 190,646,393 | $ 194,283,532 | $ 191,047,468 | $ 575,977,393 |
| Low-Income | $ 58,078,882 | $ 59,211,343 | $ 60,783,199 | $ 178,073,424 |
| C&I | $ 167,676,684 | $ 175,072,864 | $ 187,120,420 | $ 529,869,969 |
| **TOTAL** | $ 416,401,958 | $ 428,567,739 | $ 438,951,088 | $ 1,283,920,785 |

* All of these tables reflect statewide “rolled-up” proposals of the individual Program Administrators for 2013-2015.

## E. Bill Impacts

Consistent with the goal of the three-year Plan to provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply, the Program Administrators sought to develop a statewide Plan that provides for this acquisition with the lowest reasonable customer contribution. G.L. c. 25, § 21(b). Additionally, consistent with the requirements of the GCA and of the Department's Order in D.P.U. 08-50-A, the Program Administrators worked diligently and collaboratively to review and analyze the rate and bill impacts associated with the implementation of the Plan in order to ensure that such impacts are equitable. The PAs have sought to balance the value of the long-term benefits expected from proposed energy efficiency efforts with short-term customer bill impacts. Proposed budgets reflect these considerations along with a focus on the equitable distribution of costs and benefits for customers.

Through the D.P.U. 08-50 Bill Impact Working Group, the Program Administrators, the Department, and interested stakeholders, including DOER and the Attorney General, prepared and reviewed common analytic models for billing analysis, and reviewed the output and utility of such detailed models. The collaborative work on bill impacts is an example of the Program Administrators' commitment to developing and sharing best practices, not only among themselves, but also with interested stakeholders (including learning from such stakeholders).

The Department convened a technical session on August 16, 2012, at which the Department reviewed the history of bill impacts and D.P.U. 08-50, GCA requirements, the Department's goals with respect to rate continuity, and different aspects of the traditional bill impact models and the D.P.U. 08-50 bill impact models. Ultimately, the Department explained that the short-term information provided in traditional bill impact models satisfies the GCA requirement that the Department consider the effect of any rate increases on residential and commercial customer bills before approving ratepayer funding of energy efficiency programs. See G.L. c. 25, § 19(a).

On October 19, 2012, the Department issued an order acknowledging the efforts of the Bill Impact Working Group, but declining to adopt the bill impact models under discussion. D.P.U. 08-50-D; see also Section II.L, supra. Instead, the Department directed the PAs to submit traditional bill impacts for nonparticipants under the following scenarios:

1. the current (e.g., 2012) EES to the proposed EES for the first year of the three-year plan (e.g., 2013);
2. the EES from the first year of the three-year plan (e.g., 2013) to the proposed EES for the second year of the three-year plan (e.g., 2014);
3. the EES from the second year of the three-year plan (e.g., 2014) to the proposed EES for the third year of the three-year plan (e.g., 2015);
4. the current EES (e.g., 2012) to the proposed EES for the third year of the three-year plan (e.g., 2015).

D.P.U. 08-50-D at 12. The Department also directed the PAs to submit bill impacts for participants, "where consumption is reduced for three levels of savings -- low, medium, and high -- and [to] provide a description of how these savings levels were determined." Id. The Department later clarified the bill impact requirements for non-participants by providing a spreadsheet to the PAs directing them to use average monthly usage levels under the first and fourth scenarios listed above.

Accordingly, to calculate bill impacts for participants, the PAs will populate the Department's spreadsheet (with peak and off-peak rates on separate sheets), using the average monthly average kWh and/or therm usage for nonparticipants for each rate class, and the percentages set forth in the table below. To best approximate, consistent with the Department's directive in D.P.U. 08-50-D, low, medium and high annual savings, the PAs collaborated on appropriate assumptions for residential, low-income and C&I programs to develop statewide percentages that best approximate savings for those types of participants. The PAs determined that the percentages in the table below will provide directional information on the bill impacts a residential, low-income or C&I participant may experience.

The PAs determined that there is no low, medium and high savings scenario for low-income participants. These participants typically receive a comprehensive "whole house" energy efficiency approach, meaning potential measures are installed in most cases (the work that can be done is done). Similarly, the PAs determined that there is no low, medium and high savings scenario for residential and low-income gas non-heating participants and street lighting. Accordingly, the PAs determined that the percentages in the table below best approximate savings for those types of participants.

| | **Low** | **Medium** | **High** |
|---|---|---|---|
| Residential- Electric: | 2% | 10% | 30% |
| Residential- Gas: | 2% | 15% | 30% |
| Residential Gas Non-Heating: | 2% | | |
| Low-Income Gas Non-Heating: | 2% | | |
| Low-Income: | 25% | | |
| Street Lighting: | 10% | | |
| C&I- Electric: | 1% | 10% | 20% |
| C&I- Gas: | 1% | 10% | 20% |

Each PA will provide these bill impacts for all rate classes in its individual filing to be made at the Department on the same date as this Plan.

The Program Administrators emphasize that the actual rate and bill impact that will be realized by a customer will depend on several variables, including the cost of service in a particular Program Administrator's service territory, the customer's actual individual usage, the level and quality of measure installation, and the availability of public or private funds other than those collected through the SBC for application towards energy efficiency expenditures, such as proceeds realized from the FCM or from cap-and-trade programs (*e.g.*, the RGGI).

## F. Statewide Programs

### 1. Strategic Overview of Residential, Low-Income, and C&I Programs and Program Consolidation

Throughout this 2013-2015 Plan, the Program Administrators intend to expand upon strategies to promote greater energy savings and peak demand reductions by building on existing programs and services. The PAs intend to continuously improve the methods by which programs are delivered by focusing on developing the suite of measures and practices in order to remain relevant over time. The Program Administrators will pursue new technologies and incentive structures to encourage expanded and more comprehensive program participation. Consistent with Council priorities, the depth of existing programs will also continue to expand over the next three years as new initiatives are introduced to increase participation and savings. Programs that address potential energy and demand savings in both existing buildings and new construction, which have a history of producing significant savings, will be ramped up and new initiatives will be developed and introduced.

In the 2013-2015 Plan, the PAs are providing consolidated programs, with several core initiatives available under each program. This consolidation will allow for increased flexibility to address market conditions and maximize savings, reduced customer confusion, and potentially reduce the need for mid-term modifications.

### 2. Consistent Messaging

A critical component of integration and seamless delivery is consistent messaging. The Program Administrators continue to improve and expand the statewide website (marketing portal) and marketing approach to increase customer awareness of program offerings and the Mass Save® mark as a representation of the consistency across all Program Administrators.[25] Continued use of the Mass Save mark as the umbrella under which the PAs' energy efficiency programs operate will reinforce that the Program Administrator offerings across the state are seamless and consistent. Per with evaluation findings, the PAs will continue their practice of co-branding by using the Mass Save mark concurrently with the Program Administrators' brands, which represent highly recognizable local entities that are trusted by customers. The Program Administrators will continue their practice of communicating to customers that Mass Save is brought to them through the local utility or municipal aggregator. Individual Program Administrators will continue to implement their own complementary marketing initiatives to reinforce and support the overall statewide marketing strategy, as well as to address unique needs or local conditions and/or sub-markets in their service areas. These individual activities will be undertaken in consultation with all other Program Administrators in order to avoid inadvertent inconsistent messaging.[26] As stated in the Term Sheets, support of the Mass Save mark and statewide brand is an important priority. The PAs commit to statewide marketing efforts that include the prominent integration and placement of the Mass Save mark as the statewide brand.

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[25] Mass Save is a registered trademark of the Program Administrators and all rights thereto are reserved.

[26] Program Administrators have used the ENERGY STAR®, GasNetworks, and COOL SMART brands on a consistent basis for applicable equipment initiatives in order to help drive participation.

PAs will include the Mass Save mark on statewide program, outreach and marketing materials and will include a link to the Mass Save website on the portion of their PA websites that is focused on energy efficiency services in Massachusetts, except where expressly limited by internal corporate website policies. PAs, in collaboration with DOER and the Council, will conduct an evaluation of the effectiveness of all joint statewide branding efforts to ensure that such brands support clear and recognizable messages that help promote program awareness. Such an evaluation will be completed by the end of 2013 and submitted to the Council.

3. Same Delivery Mechanism for Gas and Electric

The Program Administrators will continue to utilize consistent delivery mechanisms for gas and electric programs. While delivery will remain seamless across the state, the Program Administrators plan to continue to examine additional ways to reach new gas and electric customers. New delivery mechanisms for gas and electric will be explored from a statewide prospective (*e.g.*, with C&I customers, the feasibility of introducing a self service portal for smaller customers, personal conduits via web-based chat or telephone assistance, and provision of fee-based on-site assessments for C&I customers). In addition, the Program Administrators plan to expand upon current delivery mechanisms which have proven successful including expanding upstream offerings to include other gas and electric equipment within the replacement on failure market. Coordination and consistency among and between electric and gas PAs will continue to be a point of emphasis, including in the process of interacting with customers.

4. Review of New Technologies

There is a steady flow of new technologies being developed and offered to increase the efficiency of energy use for residential and C&I customers. Before incorporating new or unfamiliar technologies in their program offerings, the Program Administrators are responsible for performing a thorough review to ensure that such products or devices will provide cost-effective energy savings for their customers. To address the need for these reviews, the Program Administrators have established the Massachusetts Technical Assessment Committee ("MTAC").

The MTAC consists of key technical staff from each Program Administrator as well as a representative of the advisor hired by the PAs to act as a facilitator for this committee. The MTAC reviews technical and incentive issues of statewide interest and is coordinated by a project manager designated by the Program Administrators represented in the committee. MTAC provides documented technical interpretations and technology assessments to the program implementers and is the authority for consistent program interpretation of technical matters for all of the participating Program Administrators. The MTAC has developed a set of protocols for the content of their review and procedures for documenting and disseminating their conclusions and technical interpretations. The MTAC meets as needed to address specific issues and during the annual Program review and planning periods.

Requests for program consideration of a new or unfamiliar technology that come from a vendor or customer are forwarded to the MTAC by the receiving Program Administrator or through the Mass Save website. This group can undertake or direct such tasks as:

- Research and analysis of specific measures that are candidates for inclusion in the programs.
- Determination whether a specific new technology should be approved as a) a prescriptive measure eligible for all appropriate PA programs or b) a measure whose eligibility is limited to custom projects where savings and cost effectiveness are to be determined on a site-specific basis.
- When appropriate and agreed to by the respective Program Administrators, development of common program implementation materials or procedures including: technical specifications, technical study/commissioning protocols, equipment baseline reference sheets, inspection forms, and other technical and administrative support materials, for use by the respective Program Administrators' staff and contractors.
- Development and maintenance of statewide uniform "custom express" software applications which provide an expedited approach to calculating savings and incentives for certain custom technology projects.
- Recommendation of new items or changes to existing items on prescriptive offering lists, adjustments to savings estimations, and additions or modifications to the list of acceptable measures on an annual basis, or on a cycle and through a procedure to be determined.
- As-needed assignments to collect data and/or to produce recommendations which would allow the Program Administrators to address unanticipated program implementation issues.

5. Long-term Goals

The Plan's long-term goal is to provide a consistent set of statewide programs and strategies that can be delivered to customers in a seamless fashion, regardless of whether the customer is served by a combined gas/electric Program Administrator, by different gas and electric Program Administrators, or has facilities or projects in multiple Program Administrator service areas. Program Administrators will continue to explore ways to achieve this goal.

In line with increasing savings goals, the Program Administrators are looking to garner participation throughout market sectors that have had historically low participation rates in Massachusetts programs, while identifying ways to provide customers who are more active in Mass Save programs packaging of services to encourage the pursuit of more comprehensive projects.

Over this Three-Year Plan, the Program Administrators are committed to a continued focus on deeper savings, exploring ways to effectively encourage customers and trade allies to focus on more long-term, comprehensive and advanced energy efficiency solutions. The PAs also recognize that reducing or eliminating barriers to customer and vendor participation is an important driver of successful program operations, and the PAs will work to implement findings from process evaluations to streamline and improve programs. In addition, the Program Administrators will continue to improve delivery mechanisms to encourage statewide participation in energy efficiency programs by all customer segments.

6. Program Descriptions

*a. Residential Program & Core Initiative Descriptions*

Over the course of the next three years the PAs plan to build on the many successes that occurred in the electric and gas residential and low-income sectors during the initial three-year plan. As noted in the following program descriptions, there are many new program enhancements planned for 2013-2015. These enhancements are designed to take residential and low-income programs to the next level in terms of strategic program delivery and maximizing energy savings opportunities for our consumers.

While there are many new components within these descriptions, there are also fundamental program elements that will continue to serve as the core infrastructure for future innovation. The best example of this is the Home Energy Services initiative that provides the gateway for residential consumer participation and exposure to the broad array of complementary program initiatives that drive broader and deeper savings. The PAs plan to enhance and refine this recently redesigned initiative (strongly supported by the Council) through greater initiative integration and inclusion of innovative strategies designed to minimize participation barriers.

As noted throughout this Plan, the PAs are committed to building upon the other successful electric and gas residential and low-income programs through greater integration, introduction and acceleration of new technologies such as LED lighting, strategic focus on multi-family and performance-based community engagement initiatives, combined with an overall goal of delivering robust, cost-effective programs.

## Mass Saver Combo Events Tour Malls and Outlets Across the State


Cape Light Compact booth, shown here at the Cape Cod Mall, distributed 2,500 packages of the most cost effective energy efficient lighting products to customers between March & April, 2012. Statewide, all PAs distributed over 21,000 packages through similar mall events during 2011.

# RESIDENTIAL WHOLE HOUSE PROGRAM

**Description:**

This program focuses on comprehensive gas and electric energy efficiency opportunities associated with mechanical, electrical and thermal systems in existing residential single homes and multi-family facilities. It offers energy assessments and provides technical assistance and incentives in a variety of core initiatives to encourage whole house or whole building upgrades of measures and equipment with a higher efficiency product. The program also includes new construction opportunities in conjunction with retrofit efforts for residential customers in the Commonwealth.

Program services include technical assistance (to identify and quantify opportunities), and financial incentives, typically based on a percentage of project costs (both material and labor) that make upgrades attractive to building owners, home owners, tenants and new construction builders. The Program Administrators also partner with advocates, building scientists, and regulators to ensure that the best practices in building design and equipment specifications introduced and propagated by the program are ultimately built into the evolution of better building requirements.

For the 2013-2015 Plan, the Program Administrators are proposing to include all whole house core initiatives (*i.e.*, HES, Multi-Family Retrofit, and Residential New Construction) within the overall Residential Whole House Program. As the name implies, this program targets residential single family homes and residential multi-family dwellings by addressing the entire home or facility with energy efficiency opportunities. The core initiatives offer incentives, for recommended retrofit measures including lighting, refrigeration, insulation and air sealing, and coordinates with the Residential Products Program to incorporate technologies such as heating and cooling equipment, controls, and programmable thermostats. In addition to the financial incentives, the HES and Multi-Family Retrofit core initiatives allow participants to qualify for interest-free loans for the customer portion of project costs.

Behavioral-based Initiatives

Program Administrators understand that identifying the motivational factors that cause residential customers to actively employ personal energy saving actions and/or participate in energy efficiency programs is integral to meeting the PAs' long and short term goals. Over the course of the last three-year plan, several PAs have introduced various behavior–based initiatives within their respective territories. These initiatives all varied in size and scope and included different implementation mechanisms along with a mix of vendors. They also included various delivery methodologies such as opt in/opt out, rewards based, energy reports, meter data feedback, and in some cases a combination thereof.

For the 2013-2015 Three-Year Plan, there is a consensus among the PAs to research offering a behavioral-based initiative. However, an evaluation study of the existing behavior-based initiatives has been conducted concurrently with these draft filings to-date. Thus, the pending results are expected to influence the specific path and direction of PA initiatives. For PAs

participating in a behavioral-based initiative, separate budget line items appear in the D.P.U. 08-50 tables.

Codes and Standards

The PAs plan to pursue a codes and standards initiative in the Residential Whole House program. Activities under this initiative will be tracked by the PAs so there is better understanding of budgets for future funding cycles.

The theory behind a codes and standards effort is that the PAs can provide support to improve compliance with building energy codes and appliance standards. As codes become increasingly stringent, the residential building community (owners, developers, contractors) is struggling to interpret requirements and to comply with building codes. The recently completed Massachusetts code compliance study highlighted that many energy code requirements in new construction homes were not fully compliant with the energy code. The Residential Whole House program has a successful history of promoting, educating, and delivering energy efficient measures and products in the past. For these reasons, the PAs are in an advantageous position to support code compliance and code enhancement through energy codes training and education as they work closely with policy makers and trade allies. The PAs' efforts could supplement the efforts of code enforcement officials who may be challenged to fully enforce the energy use provisions, where their focus is more on health and safety related aspects of the code. Existing infrastructure could also be leveraged to provide the research and advocacy required to promote increased codes and standards. The PAs plan to act as a conduit to influence and recommend increases and improvements to new stretch codes and appliance standards. Through their relationship with contractors and builders, the PAs will be able to support the implementation of those improvements going forward. This should result in the realization of the energy savings that are lost when newly constructed homes are not 100 percent compliant with the locally applicable building code. The PAs could expand upon existing incentive-based new construction program outreach efforts to target various stakeholders.

The Program Administrators plan to introduce efforts to assist in encouraging the adoption of and compliance with more stringent building energy codes and appliance efficiency standards during the 2013-2015 program cycle. The intent is to claim the additional savings generated through the unique efforts attributable to PA actions. The potential paths to achieving savings through codes and standards efforts by the PAs include:

1. Compliance Support for Base and Stretch Code: The PAs would work with local builders, contractors and building enforcement officials to increase the number of homes complying with the locally applicable energy code, generally either the IRC (International Residential Code) version adopted statewide, or the Stretch Code. Activities may include targeted trainings, outreach and technical support in the form of code ambassadors and circuit riders, compliance documentation tool development, and review support. Looking ahead, additional infrastructure needs to be developed to support the next iteration of requirements for residential new construction. For example, the IECC 2012 building code requires blower door testing for all residential buildings. Starting in 2013, the PAs plan to begin the strategic identification of jurisdictions that would benefit from code compliance support.

2. Stretch Code Development Support: The PAs will support the DOER's development of a stretch code that exceeds statewide minimum requirements and is adopted by local governments. A coordinated approach by the PAs will provide technical support for the DOER's development of the next round of stretch code (potentially 2015 version) to avoid duplicate efforts and costs.

3. Appliance Standards Advocacy: The objective here would be to accelerate the development and adoption of targeted new residential appliance standards as the selected appliances and their advanced levels of efficiency start to become established as current good practice in the marketplace. PAs would provide support, which may include the technical resources necessary for assessment of potential appliance standards and advocacy either at the state or regional/federal level. Market and technical potential studies (in coordination with Northeast Energy Efficiency Partnerships ("NEEP") and Appliance Standards Awareness Project ("ASAP")) for a handful of residential appliances will begin in 2013 and may include game consoles, set-top boxes, outdoor lighting and televisions.

Evaluation, Savings, Attribution: The PAs will collaborate with the stakeholders on development of an evaluation plan that will enable the measurement and attribution of savings from these efforts to the PAs for the 2013-2015 program cycle. A detailed evaluation plan, along with an appropriate attribution methodology, will be developed in 2013. Qualitative as well as quantitative research would be planned for in 2013 and 2014 to evaluate ongoing initiative efforts and will be used for savings projections that can potentially be claimed within this three year cycle and future cycles.

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
|---|---|---|---|---|---|
| RESIDENTIAL | WHOLE HOUSE | RESIDENTIAL NEW CONSTRUCTION | ELECTRIC & GAS PAs | • | JOINT |
| | | | | | PA - SPECIFIC |
| **Core Initiative Overview** | **Key Objectives:**<br><br>The Massachusetts Residential New Construction ("RNC") Core Initiative strives to increase the construction of energy efficient market rate homes that exceed the state's energy code. To address the challenges of rising energy codes and a downturn in the housing market, the Program Administrators will look to incorporate the lessons learned from the past three years and the associated initiative pilots (lighting design and multi-family new construction) to increase participation and energy savings.<br><br>The PAs will continue working with the Home Energy Rating System ("HERS") infrastructure and provide ongoing training to the construction industry. The initiative is a proud participant of the national ENERGY STAR® Homes Program and benefits from the regional, as well as national, advertising efforts that ENERGY STAR® Homes implements. | | | | |
| | **New Enhancements**<br><br>• The PAs plan to incorporate the multi-family new construction pilots mentioned above by Q1 2013.<br><br>• The initiative will transition to add prescriptive offerings for homes exceeding the Massachusetts User Defined Reference Home ("UDRH") by Q1 2013.<br><br>• As a means to maintain high performance builders and attract new builder participation:<br><br>o PAs to work with Evaluation to explore an alternative method to calculate savings for the | | | | |

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| | Performance Path<br>o Streamline and simplify builder participation path through prescriptive package offerings<br><br>These additional initiative enhancements, will build on the current initiative structure to help broaden participation and overall market penetration and gain additional energy savings. The prescriptive offerings are detailed in the "Core Initiative Design" section below. |
| **Core Initiative Design** | The PAs continue their strong commitment to a whole-house approach for the residential new construction market. The initiative is committed to achieving both a broader market penetration of energy-efficient homes as well as moving builders toward deeper energy savings where possible. The PAs will strive to both retain existing participating builders and recruit additional homebuilders and contractors. The PAs will train builders on the Environmental Protection Agency's ("EPA") ENERGY STAR® Homes Program in support of the 2012 Massachusetts Stretch Energy Code.<br><br>The initiative will provide incentives for projects exceeding the UDRH:<br><br>• Prescriptive Option 1 – a bundle of prescriptive measures that address heating, cooling, and hot water equipment, lighting, water use reduction, efficient appliances, and enhanced envelope air tightness and duct tightness.<br><br>• Prescriptive Option 2 - a bundle of prescriptive measures that include all Option 1 measures as well as enhanced envelope thermal performance<br><br>• Performance Tier 1 - 15% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist<br><br>• Performance Tier 2 - 30% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist<br><br>• Performance Tier 3 - 45% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist<br><br>All percentages may vary due to UDRH changes.<br><br>Builders are encouraged to improve a building's energy usage through enhanced envelope measures, energy efficient space and water heating, appropriately sized cooling equipment, programmable |

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| | thermostats, ENERGY STAR® qualified appliances, Water Sense plumbing fixtures, efficient lighting and controls, and proper mechanical ventilation. Builders are also encouraged to properly orient homes to take advantage of passive heating and cooling.<br><br>All homes participating in the initiative are required to install efficient lighting products in appropriate hard wired sockets and pass a final verification inspection. As energy codes become more stringent, the PAs will continue to encourage proper lighting design and the installation of new, cutting edge, lighting products and controls. A single family home is defined as a single family detached house, while a multi-family home is defined as two or more attached units. All residential new construction projects in the Commonwealth are encouraged to participate in the initiative. Mixed-use and large buildings are addressed on a custom basis in cooperation with the commercial initiatives.<br><br>The Multi-Family New Construction ("MFNC") core initiative offers incentives to eligible 4+ story multi-family facilities that are located in participating PA territories. The goal of the MFNC core initiative is to provide a seamless transition from the current multi-family pilot to a fully integrated initiative. This initiative will take the lessons learned from the three year pilot and continue to provide a single point-of-contact for the participants and service for all fuel sources and meter configurations. A suite of offerings will include a comprehensive list of measures, such as wall insulation, heating systems, instant savings domestic hot water measures, appliances, lighting, and controls, to maximize energy savings above Massachusetts energy code. |
| **Marketing Overview** | **Target Market:**<br><br>Homebuilders/Developers<br>Contractors<br>Architects/Designers<br>Trade allies<br>HERS raters<br>Homebuyers<br>Realtors<br>Code Officials<br>Appraisers/Mortgage bankers |

<table>
<tr><td></td><td>Strategy:<br>The initiative will use a combination of the following to reach the target markets:<br>Trade shows, builder training (on-site and lecture), lumber yard outreach, strategic partnerships such as Home Builders Associations (“HBA”), geo-specific targeting based on construction activity.</td></tr>
<tr><td>Technologies/Incentives</td><td>The following is a list of packages, recommended technologies, and incentives offered:
<table>
<tr><th>Package</th><th>Requirements</th><th>Incentive</th><th></th><th></th><th></th></tr>
<tr><td>Performance Path</td><td></td><td>Single Family</td><td>Multi Family</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td>2-99 units</td><td>100-199 units</td><td>200+ units</td></tr>
<tr><td>Tier 1</td><td>15% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist</td><td>$750</td><td>$650</td><td>$500</td><td>$350</td></tr>
<tr><td>Tier 2</td><td>30% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist</td><td>$1,250</td><td>$1,150</td><td>$850</td><td>$550</td></tr>
<tr><td>Tier 3</td><td>45% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist</td><td>$7,000</td><td>$4,000</td><td>$3,000</td><td>$2,000</td></tr>
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| | | | | | |
|---|---|---|---|---|---|
| Prescriptive Path | | | | | |
| Prescriptive Option 1 | heating, cooling, and hot water equipment, lighting, water use reduction, efficient appliances, and enhanced envelope air tightness and duct tightness | $1,250 | $1,150 | $850 | $550 |
| Prescriptive Option 2 | a bundle of prescriptive measures that include all Option 1 measures as well as enhanced envelope thermal performance | $7,000 | $4,000 | $3,000 | $2,000 |

Single Family is defined as a detached unit. Two or more attached units are classified as Multi-family. A Multi-family project must be no more than three stories and residentially permitted to qualify.

Multi-family Buildings with Four or More Stories

| Package | Requirements | Incentives |
|---|---|---|
| Prescriptive In-unit | Efficient heating, cooling, and ventilation equipment, efficient hot water equipment, lighting power reduction, water use reduction, and efficient | Up to $250 per unit |

<table>
<tr><td></td><td>
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<tr><td></td><td>appliances</td><td></td></tr>
<tr><td>Whole building & prescriptive in-unit</td><td>Same as in unit prescriptive incentive. Whole building measures include enhanced envelope, efficient central heating, cooling, and ventilation equipment, efficient central laundry equipment, and efficient lighting and controls in common areas</td><td>Prescriptive whole building incentives to be determined</td></tr>
<tr><td>Whole Building Custom</td><td>Commercially metered projects are eligible for the same instant savings measures and will be referred to the vendor to evaluate applicable custom improvements.</td><td>Custom incentives</td></tr>
</table>
<br>The PAs will work with the MTAC to include new measures or technologies as appropriate.</td></tr>
<tr><td>Delivery Mechanism</td><td>The initiative is administered statewide by the PAs. Through a competitive bid process, the PAs chose a statewide implementation vendor to oversee the daily operations. The vendor is responsible for tracking and reporting program activity to each PA. Throughout the planned timeframe, the PAs will continue to work with the market-based network of trained contractors who offer energy efficiency and rating services to homebuilders.<br><br>The PAs will deliver in-depth trainings to the target market in the fundamentals of building science, energy codes, and the latest emerging technologies to promote the initiative, as well as support workforce development efforts through the Green Jobs Act.</td></tr>
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| **Three-Year Deployment Strategy/Roadmap** | For residential new construction, the efforts to achieve both deeper savings and gain broader market penetration will continue through multiple channels of participation, one of which continues to push homes closer to net zero energy. The initiative is dedicated to promoting energy efficient new construction by supporting the target market.<br>For the three-year deployment, the PAs will focus on the following efforts:<br>• Support target market in achieving deeper levels of energy savings with relevant trainings<br>• Expansion of the base of participating builders/homeowners<br>• Continued coordination with existing and new market allies<br>• Continue to promote consumer awareness through statewide marketing |
| **Special Notes** | |

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
|---|---|---|---|---|---|
| RESIDENTIAL | WHOLE HOUSE | HOME ENERGY SERVICES | ELECTRIC & GAS PAs | • | JOINT |
| | | | | | PA - SPECIFIC |
| **Core Initiative Overview** | **Key Objectives:**<br><br>To offer single family (1-4 units) residential customers energy efficiency recommendations and incentives that enable those customers to identify and implement cost-effective energy efficiency improvements. The Home Energy Services ("HES") Core Initiative utilizes outreach mechanisms, cross-marketing, incentives, and financing to make it easy, clear, and compelling for customers to participate in all residential energy efficiency programs. 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. | | | | |
| | **New Enhancements:**<br><br>The PAs are considering various initiatives for implementation over the next three years. However, as the redesigned market model continues into the next three year plan, it is our recommendation that new initiatives are phased in throughout the three-year plan. As Independent Installation Contractors and Home Performance Contractors are still familiarizing themselves with the new program model, we believe it is best to allow adequate time for the contractors to become proficient.<br><br>Also, to ensure proper roll out, the PAs recommend allowing for adequate planning of timelines for various initiatives to include a test period and review prior to launch. The PAs are fully committed to the enhancements listed below and will make every attempt to roll out, where feasible, any new enhancements, prior to the noted timelines<br><br>The PAs are also making strides towards deeper savings. Some examples include the PAs' exploration of:<br>Targeted customer segmentation outreach (best opportunities to fit the customer's needs) | | | | |

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| | Packaging of measures<br>Whole house incentives (for multi-unit, single-family homes)<br>Targeted hard-to-reach (such as Efficient Neighborhoods+)<br>Pre-weatherization incentives<br>Inclusion of renovation and deeper savings measures incentives<br>Early retirement incentives for heating and cooling equipment<br>Targeting of higher tiered appliances for incentive offerings<br>Potential for engagement with the Massachusetts Clean Energy Center, if applicable<br><br>• PAs plan to investigate the opportunity to incorporate cost-effective new technologies and measures (e.g. advanced insulation including spray foam insulation). PAs plan to work with the evaluation team to review measures by Q2 2013.<br>• PAs intend to explore offering recognition events to encourage contractors to maintain high quality work, highlight best practices and recognize various program partners for excelling in their profession. PAs plan to work with Contractor Best Practices Group on ways to highlight quality installers and installations.<br>• PAs plan to explore enhanced customer follow-up strategies to encourage increased major measure implementation. Strategies may include targeted emails and mailings. This is an ongoing effort.<br>• PAs intend to investigate online options for customer sign-up/tracking by enhancing web/mobile friendly applications for ease of customer use. For example, PAs would like to explore capturing customer interest in receiving a Home Energy Assessment through the online portal. The HES Core Initiative plan to work with other initiatives to coordinate implementation with the statewide marketing group.<br>• PAs intend to define the hard to reach/hard to serve market and explore solutions. PAs plan to investigate options to overcome tenant-landlord barriers to program participation, focusing on clear program outreach to maximize savings and benefits from this hard to reach/ hard to serve market. PAs plan to build on lessons learned from past experience. Please refer the Efficient Neighborhoods+.<br>• PAs plan to review evaluation results from the 2012 Pre-weatherization barrier initiative, which offered incentives to evaluate conditions and remediate health and safety barriers such as knob and |

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| | tube wiring, dryer vents, and combustion safety. Based on the analysis, PAs intend to design a standard pre-weatherization barrier offer and may review incentives for other barriers. Please refer to the Action Plan section on Pre-weatherization.<br>• PAs intend to continue supporting the development of highly qualified Home Performance Contractors ("HPCs") and Independent Insulation Contractors ("IICs") by offering various training subsidies for workforce development needs such as technical skills, business skills, and sales trainings. This is an ongoing effort.<br>• PAs intend to explore a shared incentive approach in multi-unit (2-4 unit) buildings to maximize the incentive among all units in the building to achieve deeper energy savings. This approach will address a whole-building approach as opposed to a unit-focused approach. The PAs plan to identify a program model by Q3 2013 with implementation by Q2 2014.<br>• PAs plan to continue engagement with community groups and initiatives to market HES. Refer to the *Elements of a Community Model* section submitted as part of Metric #2 of the "2011 Community Outreach Report", as well as the Community Engagement description in Section III.H.2 of this Plan. This is an ongoing effort.<br>• PAs intend to test the efficacy of enhanced incentives to increase penetration into hard to reach markets, such as 2-4 unit dwellings and economically challenged neighborhoods in 2013. PAs will seek to incorporate lessons learned from a similar program offered in the early 2000s. PAs intend to use lessons learned from the 2013 trial offer to implement a broad offering in 2014 and beyond.<br>• PAs plan to review the HPC evaluation results to identify any variations in customer experience and implementation rates to develop strategies for continued improvements. Recommendations may be implemented among Lead Vendor Energy Specialists and Home Performance Contractors. This is an ongoing effort.<br>• PAs anticipate offering deeper energy savings based upon lessons learned from the major renovations, including additions and deep energy retrofit pilots. Significant research is necessary to develop the trainings needed to build the contractor infrastructure to implement this initiative successfully. Currently, efforts are underway to create a manual for deep energy retrofit components, but key trainings will be needed to ensure a quality end-product. The PAs plan to offer new approaches to these efforts with key trade allies by Q1 2014. PAs intend to explore possible partnerships and incentive offerings with trade allies such as fuel dealers, general |

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| | contractors, roofers, and siding contractors to increase customer participation by promoting the HES initiative. Based on evaluations, these efforts may take some continued efforts. The PAs plan to continue offer information to interested contractors and plan to work with other initiatives to offer materials by Q2 2013. PAs plan to review the results of the 2011 "Packaged Measures Pilot" for lessons learned to develop a cost-effective package or bundle of incentives for customers to implement multiple deeper energy savings measures. Based on evaluations, these efforts may take some continued efforts. The PAs plan to offer information to interested contractors and work with other initiatives to offer a new packaged measure for a limited time promotional timeframe by Q3-2013. |
| **Core Initiative Design** | The HES core initiative is committed to a comprehensive whole-house approach and seeks to maximize energy savings. The initiative directs customers using natural gas for space heating to their gas provider and customers using electric, oil or propane for space heating to their electric provider. It is also recognized that exceptions to this guideline may occur (*e.g.*, specialized high bill complaints, community outreach programs, etc.). In these cases, and unless there are prior mutual agreements between the gas and electric PAs, the PAs will seek to negotiate in good faith to achieve a resolution that serves the common interests of both PAs, the interests of the consumer, and maximizes savings opportunities on a fuel-neutral basis. The initiative is committed to achieving maximum program success and deeper energy savings. The program aims to make distinctions indiscernible to consumers.<br><br>The service is intended to be customizable, providing personalized information and incentives to a broad group of customers. Customers are guided to the appropriate program services, including targeted energy efficiency information, advanced diagnostics, and efficiency rebates and incentives. Low-income customers are referred to appropriate low-income programs.<br><br>The PAs currently offer one single comprehensive assessment, called the Home Energy Assessment.<br><br>This assessment is an in-home visit designed to provide general information and education about energy efficiency and identify opportunities and challenges for energy saving installations. With the customer's permission, Compact Fluorescent Lights ("CFLs") are installed for no cost in all appropriate locations, as are low-flow shower heads, faucet aerators and programmable thermostats (as needed and qualified). The instant energy savings realized during the Home Energy Assessment are intended, on average, to exceed |

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| | the expected average cost to deliver this visit. Additionally, during this visit, customers' specific needs will be evaluated, and opportunities for subsequent direct installation measures may be identified. Customers will be directed to other energy-efficiency resources as appropriate.<br><br>The Home Energy Assessment also includes a variety of diagnostic techniques such as infrared scanning (temperature permitting). Wherever feasible, full installation of targeted cost-effective air sealing is provided at no cost to the customer. In all cases where the customer elects the fully subsidized air sealing offer, or installation of insulation, a blower door test and combustion safety test will be performed pre and post installation to maximize air leakage reduction and maintain combustion safety standards. If specific energy-efficient improvements require professional contractors, or a customer contribution, the Energy Specialist explains the contractor services required to install recommended measures, as well as all available energy efficiency financial incentives.<br><br>Another visit, the Special Home Visit, may be scheduled for those customers interested in measure screening such as a refrigerator screening or in "no heat" emergency situations where a pre-screening for an applicable incentive is required. An Energy Specialist will perform a quick assessment of the home for energy efficiency opportunities, install instant savings measures (where appropriate), and screen the refrigerator or heating system for upgrade eligibility. A customer may be scheduled for a Special Home Visit as determined during the initial intake process.<br><br>To ensure all work is completed to the PAs' standards, the Quality Assurance Visit allows all work to be inspected. This may be done through a combination of methods, including a phone survey, postcard, e-mail or actual site visit by the lead vendor and/or a third-party PA-approved vendor. Quality inspections are performed to ensure that contractor-installed measures are accurate, professional, and safely installed based on initiative standards, as well as to ensure savings.<br><br>The PAs 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 focused on achieving maximum energy savings and ready and able to meet customer demand. |
| **Marketing Overview** | **Target Market:** |

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| | The HES initiative target market is all non-low-income residential customers living in single family houses or one- to four-unit buildings that are not part of a larger site where an association exists (such as a condo association with multiple 4-unit buildings). The initiative aims to reach the aforementioned customers who are interested in making their homes more energy efficient. HES is a fuel-blind initiative. |
| | **Strategy:**<br><br>Outreach and marketing efforts will be expanded and PAs plan to explore 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 PAs will also continue market segmentation work to strategically target customers with the most opportunity as to increase the rate of audits that result in energy efficiency measure recommendations.<br><br>The PAs plan to work closely with Independent Installation Contractors and Home Performance Contractors as a means to increase participation and consumer savings. Further, the PAs plan to continue to seek new ways to identify, educate and reach landlords and other hard to reach/ hard to serve customers to increase participation. Efforts may include targeted marketing based on identified key demographics to better reach the 2-4 unit property sector.<br><br>The initiative's multi-media outreach campaign will focus on partnerships with local media outlets or affiliates, radio, print advertising, web-based marketing through various social media sites, and through part of the consolidated website, www.masssave.com, which integrates all of the Massachusetts energy efficiency programs and incentives into a single source web-based outlet.<br><br>Current forms of multi-media outreach include:<br>• Mass Save® website (enhanced via the Statewide Integrated Energy Efficiency Website)<br>• Bill inserts<br>• Highly visible billboards<br>• Radio, print and visual media advertising<br>• Registry of Motor Vehicle advertising |

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<tr><td></td><td>
<ul>
<li>Cinema advertising</li>
<li>New media advertising (advanced online options)</li>
<li>Targeted outreach through Community-based Outreach Initiatives (“CBOs”). These initiatives utilize community outreach for promoting this program and the array of incentives available.</li>
</ul>
Individual Program Administrators may conduct additional marketing, such as behavior feedback mechanisms, if applicable and may ramp their marketing up or down as needed to meet participation and budget goals.
</td></tr>
<tr><td>Technologies/Incentives</td><td>
The following is a list of targeted end uses, recommended technologies, and incentives offered:
<table>
<tr><th>Targeted End Use</th><th>Technology</th><th>Incentive</th></tr>
<tr><td>In Unit Lighting</td><td>Compact Fluorescent Light Bulbs</td><td>No Cost to Customer</td></tr>
<tr><td>In Unit Lighting</td><td>LED technology</td><td>limited (subject to planning and budget impact)</td></tr>
<tr><td>Water Conservation</td><td>Faucet Aerators and Showerheads</td><td>No Cost to Customer</td></tr>
<tr><td>Heating and Cooling</td><td>Programmable Thermostats – electric heat</td><td>No Cost to Customer</td></tr>
<tr><td>Electricity Conservation</td><td>Smart Strips (where applicable)</td><td>No Cost to Customer</td></tr>
<tr><td>Heating and Cooling</td><td>Targeted cost effective air sealing</td><td>No Cost to Customer</td></tr>
<tr><td>Weatherization</td><td>Attic Insulation<br>Wall Insulation<br>Basement/Crawl Space Insulation<br>Rim Joist Insulation<br>DHW insulation<br>Pipe Insulation</td><td>75% Incentive up to $2,000</td></tr>
<tr><td>Appliances</td><td>ENERGY STAR® Rated Refrigerator</td><td>$150 For Qualified Replacements</td></tr>
<tr><td>Heating</td><td>Heating System</td><td>Varies by type</td></tr>
<tr><td>Water Heating</td><td>Water Heating</td><td>Varies by type</td></tr>
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| | **Additionally:**<br><br>• 0% financing HEAT Loan offers $500-$25,000 with terms from 2 - 7 years for qualified customers<br>• Alternative insulation types, if cost effective, (*e.g.*, spray foam, rock wool) will be incorporated into the program offers<br>• Pre-weatherization offers<br>• Early heating system and heat pump water heater replacement rebates<br>• The PAs will work with the MTAC to include new measures or technologies as appropriate. |
| **Delivery Mechanism** | The program is delivered by lead vendors selected through a competitive bidding process. Lead vendors are responsible for managing and training market based participants such as participating IICs and HPCs. Additional lead vendor responsibilities include:<br><br>• Consistent statewide training<br>• Data reporting<br>• Achieving aggressive savings<br>• Customer satisfaction<br>• Quality control standards<br>• Scheduling requirements<br>• Technical Assistance<br>• Maintain and report health and safety information<br><br>Two groups of participating contractors, Home Performance Contractors ("HPCs"), and Independent Installation Contractors ("IICs") provide services in addition to those services offered by the lead vendor. All participating contractors must meet program eligibility and requirements. HPCs independently recruit customers, provide Home Energy Assessments, and implement weatherization measures. IICs provide installation of weatherization measures for those customers who received a Home Energy Assessment from the lead vendor. IICs also have the opportunity to independently recruit customers and refer them to the lead vendor for the Home Energy Assessment.<br><br>In order to receive incentives or program rebates, customers are required to have a Home Energy Assessment through either the PAs lead vendor or via a participating Home Performance Contractor to |

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| | identify and prioritize all cost-effective energy efficiency upgrades. Insulation work, whether performed by a Home Performance Contractor or Independent Installation Contractor, will have a quality control inspection performed by the PA-vendor, or third party vendor when the work is complete. This will ensure that high quality is maintained, and installations meet BPI standards or similar standards set by the PAs. After a competitive bidding process, the PAs contracted with a third-party Quality Control ("QC") vendor to perform QC inspections of program implementation vendors, and participating contractors. The QC vendor will provide valuable information and feedback to the HES members on successes and identify areas of possible improvement.<br><br>The HES members are working together toward a "best practices" approach to provide a more coordinated statewide training to reinforce quality installation techniques in HES. It is expected that training requirements will increase over time in order for contractors to retain their status as a HES participating contractor. Additionally, contractors must maintain a high level of customer satisfaction to continue participating in the initiative. |
| **Three-Year Deployment Strategy/Roadmap** | With the numerous enhancements that have been identified for this initiative, HES will continue to prioritize the enhancements that will lead to the most benefits for the largest number of customers. PAs intend to better capture and utilize property data for the purpose of identifying properties with potential installation opportunities to implement targeting marketing efforts. PAs will continue to explore new technologies in conjunction with significantly increasing the implementation of known cost effective measures. PAs intend to continue to develop the proficiency of participating contractors through establishing qualification/training guidelines using the BPI or its equivalent as a benchmark. Please see Core Initiative Overview section for near term and longer term enhancements that will be explored in this three-year plan. |
| **Special Notes** | HES underwent significant changes in 2011, and numerous enhancements are proposed to continually address customer needs. The priorities have been made to address the most customers with the biggest savings impacts. The PAs will continue to refine the priorities as evaluations are completed. The key to proposed efforts will be to research, train, and test theories before full-blown implementation to ensure that the PAs are addressing opportunities with the best information available. One key effort, Efficient Neighborhoods+, will address hard to reach/hard to serve customers in economically challenged neighborhoods. For further detail, please refer to section III.F.6.b.i. |

<table>
<tr><th>SECTOR</th><th>PROGRAM</th><th>CORE INITIATIVE</th><th colspan="3">ADMINISTERED BY</th></tr>
<tr><td rowspan="2">RESIDENTIAL</td><td rowspan="2">WHOLE HOUSE</td><td rowspan="2">MULTI-FAMILY RETROFIT</td><td rowspan="2">ELECTRIC & GAS PAs</td><td>•</td><td>JOINT</td></tr>
<tr><td></td><td>PA – SPECIFIC</td></tr>
<tr><td>Core Initiative Overview</td><td colspan="5">Key Objectives:<br><br>The Multi-Family Retrofit core initiative offers energy assessments to eligible multi-family facilities, containing five or more dwelling units that are located in participating PA service territories. Incentives are offered for eligible cost-effective improvements that increase gas and electric efficiency (including, but not limited to lighting, hot water measures, shell improvements, heating, cooling and water heating equipment and controls). They are supplemented by additional incentives and services from the applicable C&I initiatives.</td></tr>
<tr><td></td><td colspan="5">New Enhancements:<br><br>Strategies under consideration to achieve deeper savings include (please refer to the Multi-Family Action Plan):<br>• Differentiated services for condominiums - The PAs discovered that condominium owners within this initiative view themselves and act similar to the single family homeowner. In an effort to meet the condo customers' expectations, the PAs are expanding the HEAT Loan eligibility and allowing for single unit assessments where warranted by Q1 2013.<br>• Incorporate additional emerging technologies. Ongoing throughout program years 2013-2015.<br>• Modify weatherization incentives to master-metered gas heated sites for greater consistency across the entire multi-family sector. The PAs plan to coordinate with C&I team and have incentives in place in Q2 2013.<br>• Consider expanding offerings to certain multi-family market segments to allow customers to</td></tr>
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| | receive incentives for deliverable fuel efficiency improvements from their electric PA. Effort will be prioritized during program year 2013.<br>• Target landlord, building management, building operator trade associations, and design professionals, including the expansion of successful case studies. Ongoing throughout program years 2013-2015.<br>• Renew focus on coordinating the multi-family and commercial initiatives to streamline delivery of packaged, comprehensive energy efficiency services to the multi-family sector. The PAs will coordinate with C&I team and work to identify potential approaches by Q2 2013.<br>• Develop opportunities for lead generation through other PA programs. Ongoing throughout program years 2013-2015. |
| **Core Initiative Design** | The initiative design is based upon the following guiding principles:<br>• Participants will initiate a request for all services offered by the initiative 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.<br>• Eligibility for initiative 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.<br>• The initiative is structured to ensure that participants are provided with an integrated "whole facility" assessment that would provide the customer with documented opportunities for improvement regardless of fuel type.<br>• For condominium owners who wish to receive a single assessment rather than involve the condominium association, the initiative is structured so a request for facility management contact information is made. The design and goal is to pursue engagement of the entire facility to receive services, thus having the ability to obtain deeper savings for the facility.<br>The PAs strive to deliver a fully integrated offering to a participant, regardless of fuel type, service territory or rate class, in a manner that will result in a seamless customer experience, thus mitigating the potential for customer confusion and lost opportunities. An integral part of the initiative's design involves the services of a Multi-Family Market Integrator ("MMI") who provides a single point-of-contact at intake |

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| | to help ensure the seamless delivery of the initiative's phases described below.<br><br>Participant Screening:<br>Delivering energy efficiency services to the multi-family market is challenging because of the many variations in size and construction, as well as ownership and decision making structures that exist. The Program Administrators will ensure that the services offered by the Multi-Family Retrofit Core Initiative are easily scalable to accommodate simple projects to highly complex projects. In addition, there will be a screening process to identify where along this continuum a project lies. The screening information will be obtained when the potential participant is contacted upon enrollment. It is during the initial discussion with the potential participant, that the MMI will gain a better understanding of the end uses available for treatment and the motivations that drove the potential participant to solicit energy efficiency services. Armed with this information, the MMI will explain that, in addition to the measures initially requested, a more complete assessment may be performed to identify other energy savings opportunities. By motivating the participant to accept the whole facility assessment, the project could ultimately result in deeper savings than otherwise would have been realized.<br><br>Enrollment:<br>Because of the diversity within the multi-family sector and the various market actors that may be involved in lead generation, the Initiative allows for multiple points of entry that will all ultimately provide participants with comprehensive offerings and a seamless experience. Participants may enroll via telephone or their request for services may be initiated by other market actors, such as a PA's Account Executive, referral from another PA initiative, a contractor, a consultant or engineer. Each participant will need to contact only one party to avail themselves of comprehensive services. Once the MMI is made aware of a project (either via telephone or lead from another market actor), he or she reviews the information provided then makes the initial contact with the customer and collects further information, as needed, to complete the enrollment.<br><br>Whole Facility Assessment<br>Based on the outcome of the screening/enrollment process, the appropriate technical resources will be assigned to conduct a whole facility, fuel-blind assessment. The MMI will attempt, through the screening process, to identify all resources required for the assessment; however, there may be instances where additional expertise is required and further site visits may be necessary. Technical assessments, benchmarking, and engineering studies may be conducted on a custom basis. |

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| | Proposal for Energy Efficiency Services<br>Using the findings from the site specific assessment, the appropriate parties will draft a project proposal including measures, other available services and incentives. Once the comprehensive offer receives PA approval, it will be presented to the participant by the parties required to help the customer fully understand the offering.<br><br>Delivery of Measures and Services<br>The implementation vendor(s) will coordinate the delivery of the measures and services opted by the customer. To the extent possible, all dwelling unit measures will be installed in a single visit to minimize disruption for the tenants; however, multiple visits may be required for the installation of common area measures. The multi-family core initiative will continue to integrate with the commercial initiatives for applicable measures and services for seamless delivery to the customer.<br><br>Quality Assurance<br>Quality assurance will be performed in support of this initiative. After a competitive bidding process, the PAs contracted with a third-party Quality Assurance/Quality Control ("QA/QC") vendor to perform inspections on a select percentage of projects. The QA/QC vendor will provide valuable information and feedback on successes and identify areas of possible improvement. These inspections will be in addition to the final inspections already performed by the implementation vendors of their subcontractors.<br><br>Additional Core Initiative Design Elements<br>A link to the current EPA Benchmarking tool (Portfolio Manager), or other comparable tool, is included on the website page(s) associated with the Multi-Family Retrofit Core Initiative. This will allow building owners/managers to assess the energy efficiency of their buildings against comparable facilities.<br><br>The PAs recognize that proper training for building operator and maintenance staff is a key factor in ensuring that expected savings are realized initially and persist over time. PAs plan to fund training events and opportunities as appropriate. |
| **Marketing Overview** | **Target Market:**<br><br>Residential multi-family facilities with five or more dwelling units. The initiative will address unique circumstances associated with mixed use buildings. |

<table>
<tr><td></td><td>Strategy:<ul><li>Strategies for marketing to target market and industry actors should focus on, but not be limited to: lower energy and maintenance costs, more durable and comfortable building, enhanced property value, generous financial incentives, tenant retention, and environmental benefits for your community.</li><li>Continue to develop and promote case studies for print and online media to help educate and market to facility owners.</li><li>Develop additional marketing strategies to capture and use data on participant in other initiatives to help achieve deeper market penetration.</li><li>Target landlord, building management, building operator trade associations, and design professionals, including the expansion of successful case studies.</li><li>PAs will investigate ways to enhance the online user experience.</li><li>Continue to build on the MMI relationship with larger property manager to enroll complete portfolios of eligible sites.</li><li>Explore opportunities in industry newsletters to educate market actors such as engineers, realtors, architects and/or property manager.</li><li>Participate, as appropriate, in trade ally shows, such as realtor conferences, multi-family property manager conferences, for example: the Rental Housing Association Conference and Expo.</li></ul></td></tr>
<tr><td>Technologies/Incentives</td><td>The following is a list of targeted end uses, recommended technologies, and incentives offered for qualified replacements with dollars caps (as applicable):<table><tr><th>Targeted End Use</th><th>Technology</th><th>Incentive</th></tr><tr><td>In Unit Lighting</td><td>Compact Fluorescent Light Bulbs</td><td>No Cost to Customer</td></tr><tr><td>In Unit Lighting</td><td>ENERGY STAR® Rated Light Fixtures (in unit)</td><td>No Cost to Customer</td></tr><tr><td>In Unit Lighting</td><td>LED technology</td><td>Copayment varies, based on cost-effectiveness screening</td></tr></table></td></tr>
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| Water Conservation | Faucet Aerators and Showerheads | No Cost to Customer |
| Heating and Cooling | Programmable Thermostats | No Cost to Customer |
| Weatherization | Air Sealing | No Cost to Customer |
| DHW Insulation | Pipe Insulation | No Cost to Customer |
| Electricity Conservation | Smart Strips | No Cost to Customer |
| In Unit Lighting | Night Lights | No Cost to Customer |
| Insulation | Attic Insulation | 75% Incentive |
| Insulation | Wall Insulation | 75% Incentive |
| Insulation | Basement/ Crawl Space Insulation | 75% Incentive |
| Insulation | Rim Joist Insulation | 75% Incentive |
| Common Space Lighting | ENERGY STAR® Light Fixtures for Common Areas | $10 Co-Payment per fixture |
| Common Space Lighting | Metal Halide Pulse Start Lighting | $10 Co-Payment per fixture |
| Common Space Lighting | Daylight Dimming | $10 Co-Payment per fixture |
| Common Space Lighting | Occupancy Sensors: Remote Mount | $10 Co-Payment per fixture |
| Common Space Lighting | Occupancy Sensors: Wall Mount | $10 Co-Payment per fixture |
| Common Space Lighting | HIF and HID: Wall Mount | $10 Co-Payment per fixture |
| Common Space Lighting | HIF and HID: Ceiling Mount | $10 Co-Payment per fixture |
| Safety and Lighting | Exit Signs | $10 Co-Payment per fixture |
| Common Space Lighting | LED technology | Copayment varies, based on cost-effectiveness screening |
| Appliances | ENERGY STAR® Rated Refrigerator | $150 For Qualified Replacements |
| *Future Technologies under consideration:* | | |
| Domestic Hot Water | Demand Control Circulators | Copayment determined on a custom basis after cost-effectiveness screening |
| Controls | WiFi Thermostats | $100 |
| Indoor Air Quality | Improved ventilation systems | Custom incentive, based on cost-effectiveness |

Additionally, the PAs will work with the MTAC to include new measures or technologies as appropriate. Commercially metered projects are eligible for the same instant savings measures and will be referred to

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| | the C&I program measures list for any applicable custom improvements.<br><br>The multi-family core initiative will extend the residential 0% HEAT Loan to residentially metered condominium owners residing in facilities with five or more dwelling units in the association. |
| **Delivery Mechanism** | The initiative will be administered cooperatively by the gas and electric Program Administrators. Each PA is represented in the Multi-Family Working Group which will continue to be responsible for oversight of the initiative and promoting continuous improvement/best practices with regard to the multi-family market.<br><br>The MMI role will be a key to the delivery of this fully integrated statewide Multi-Family Retrofit Core Initiative. The MMI creates a seamless customer experience for participants regardless of the fuels, rates and service territories involved in a project. The MMI will be responsible for facilitating the delivery of the initiative's services as well as acting as the conduit through which participant questions and concerns are directed to ensure that participants are not required to directly contact multiple parties during the project lifecycle.<br><br>Provisions will be made within the delivery process to allow for participants to use their own staff or contractors to install the measures, provided that they have PA approval which will involve providing documentation of their qualifications prior to the installation. |
| **Three-Year Deployment Strategy/Roadmap** | The PAs will continue to coordinate efforts through the MMI and other PA initiatives to ensure consistent implementation across the Commonwealth for the next three years. The PAs will accomplish training by working with industry stakeholders, implementation vendors and the MMI. The Multi-Family Working Group will continually review and evaluate new, applicable measures and technologies. Through marketing efforts the PAs plan to broaden participation and incorporate deeper savings opportunities using a comprehensive, whole facility approach.<br><br>The Multi-Family Working Group will continue to coordinate with the Residential and C&I Management Committees and the Low Income Best Practices group to ensure consistency and support for an integrated initiative. |
| **Special Notes** | |

# RESIDENTIAL PRODUCTS

**Description:**

The Residential Products Program is designed to optimize the efficiency of lighting, heating and cooling equipment used by residential customers served by the Program Administrators. In the 2013-15 Plan, the Program Administrators are proposing to include all the product-focused core initiatives (*i.e.*, Residential Heating, Water Heating, Cooling, and ENERGY STAR® Lighting and Consumer Products) within the broader Residential Products Program. In this Program, the Program Administrators partner with retailers, manufacturers, distributors, and trade allies to ensure the highest quality, energy efficient products are introduced and promoted to the residential consumer market. The core initiatives offer incentives, for a variety of cost-effective, ENERGY STAR® qualified lighting products, ENERGY STAR® qualified appliances, high efficiency heating and water heating equipment, programmable thermostats and controls, all within the Residential Products Core Initiatives.

As a form of best practices, the Residential Products Program Core Initiatives will leverage a single circuit rider for gas and electric products to coordinate with participating retailers and distributors. This allows the PAs to consolidate efforts within the retail space as well as offer a "one-stop-shopping" experience to retail partners that may participate in multiple initiatives.

<table>
<tr><th>SECTOR</th><th>PROGRAM</th><th>CORE INITIATIVE</th><th colspan="3">ADMINISTERED BY</th></tr>
<tr><td rowspan="2">RESIDENTIAL</td><td rowspan="2">PRODUCTS</td><td rowspan="2">RESIDENTIAL LIGHTING</td><td rowspan="2">ELECTRIC PAs</td><td>•</td><td>JOINT</td></tr>
<tr><td></td><td>PA – SPECIFIC</td></tr>
<tr><td>Core Initiative Overview</td><td colspan="5">Key Objectives:<br><br>To increase consumer awareness of the importance and benefits of purchasing ENERGY STAR® qualified lighting products and expand the availability, consumer acceptance, and use of high-quality energy-efficient lighting technologies and controls. The initiative utilizes upstream incentives and an online catalog channel, which dramatically increased sales and lowered costs of product for the customer. Additionally, lighting technology has extended past basic compact fluorescent spirals to more specialty products and light emitting diodes (“LEDs”). Expansion of customer education to promote understanding of the impacts of the Energy Independence and Security Act (“EISA”) on product selection and the rapidly expanding market for LED products.</td></tr>
<tr><td></td><td colspan="5">New Enhancements:<br><br>Further expansion and focus on introducing LED bulbs and fixtures into the marketplace.<ul><li>The PAs will continue to explore ways to mitigate declining savings issues, such as new EISA standards, including market lift and other strategies. This is an ongoing effort, but PAs plan to work with the EMC to review measures in Q1 2014.</li><li>The PAs will also explore lighting controls as a possible measure for initiative expansion. The PAs will work with other research and development efforts to coordinate.</li></ul></td></tr>
<tr><td>Core Initiative Design</td><td colspan="5">The ongoing collection of data on overall market conditions, product availability, market share, and pricing keeps PAs up-to-date on changes in the residential lighting market. That awareness, in turn, enables PAs to adapt initiative offerings as needed to maintain momentum in increasing the market share</td></tr>
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| | of energy-efficient lighting products.<br><br>The Residential Lighting Core Initiative includes several components designed to educate consumers about the benefits of ENERGY STAR® qualified lighting products and to make these products more affordable:<br><br>• The internet/mail-order sales channel offers education, rebates, and introductions to new products that may not be available at most retailers, and access to a variety of hard-to-find replacement bulbs. Internet sales account for a high percentage of this component's sales. Recognizing the importance of Internet sales, the PAs are working to improve the internet/mail-order website as an educational tool for consumers.<br><br>• Upstream incentives/negotiated promotions provide instant price relief to the consumer for qualified products. By leveraging prices at that level, it has a magnifying effect to the consumer, as well as assurance that the product will be available at a wider variety of retail outlets.<br><br>• "Pop-up" retail allows the PAs to offer efficient lighting products to consumers in temporary retail locations, such as mall kiosks, corporate and public events, basically bringing both the technology and education about it to the consumer.<br><br>• School fundraising offers the opportunity for the PAs to educate students on the benefits of energy efficiency, while allowing the schools to raise funds through the sale of lighting products. |
| **Marketing Overview** | **Target Market:**<br><br>All residential electric customers. |
| | **Strategy:**<br><br>The focus for Residential Lighting initiative over the next three years will be to strategically leverage the market impact of the Energy and Security Act of 2007 to drive increased participation.<br><br>Two key, strategic approaches will be employed, including:<br><br>1. Maintain and build market share for bare spiral and specialty ENERGY STAR® qualified CFLs, and |

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2. Building demand and purchase of select ENERGY STAR® LED replacement bulbs.<br><br>
To continue promotion of CFLs, several tactics will be utilized, including retail promotions, community outreach, and consumer education, all designed to protect and build market share from the introduction of EISA compliant incandescent and halogen products.<br><br>
As LED replacement bulbs and fixtures are increasingly introduced into the market, marketing initiatives will be geared towards encouraging consumer trial of these new technologies with the use of discounted products and special manufacturer/retailer promotions. Key to growing market share for LEDs will be to shift consumer perception of lighting from a commodity product to a more considered purchase and educating customers about the product's benefits, which will be accomplished through educational advertising, in-store displays, social media outreach, and other point-of-sale communications.<br><br>
In addition, consumers will be educated on the benefits of lighting controls through in-store displays, community outreach, and retail point-of-purchase materials to highlight the ease of use and their energy savings potential. A key consideration for this overarching lighting strategy is a classic Consumer Packaged Good (“CPG”) “Good, Better, Best” strategy, which can help to unite these diverse product offerings as a robust, energy-efficient lighting portfolio.
</td></tr>
<tr><td>Technologies/Incentives</td><td>
The following is a list of targeted end uses, recommended technologies, and incentives offered:
<table>
<tr><th>Targeted End Use</th><th>Technology</th><th>Incentive</th></tr>
<tr><td>Residential lighting</td><td>Standard spiral Compact Fluorescent Bulbs (CFL)</td><td>Maximum $1.40</td></tr>
<tr><td>Residential lighting</td><td>“Specialty” CFL</td><td>Maximum $6.00</td></tr>
<tr><td>Residential lighting</td><td>Compact Fluorescent Fixtures</td><td>Maximum $15.00</td></tr>
<tr><td>Residential lighting</td><td>Light Emitting Diode Bulbs (LED)</td><td>Maximum $20.00</td></tr>
<tr><td>Residential lighting</td><td>LED Fixtures</td><td>Maximum $15.00</td></tr>
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</td></tr>
<tr><td>Delivery Mechanism</td><td>A manufacturer/retailer outreach contractor will recruit and train retailers, including discount retail outlets, to participate in the program; place point-of-purchase materials in participating retail stores; oversee the Negotiated Cooperative Promotions (“NCP”) process; and act as a liaison for PAs, manufacturers, and retailers.</td></tr>
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| | A rebate fulfillment contractor will collect data and payment requests from manufacturers, retailers, and consumers; process reimbursement requests from NCP partners and provide documentation to the Program Administrators for program tracking and evaluation purposes.<br><br>An internet/mail-order sales channel contractor will purchase and stock products offered through the catalog and the Mass Save website; staff a toll-free line for customers; and process catalog and website purchases.<br><br>PAs may employ temporary retail kiosks at key events and locations. |
| **Three-Year Deployment Strategy/Roadmap** | The Residential Lighting Core Initiative faces some challenges in the upcoming three-year period. The per-unit annual savings for CFLs and LEDs will decline over the three years to account for the anticipated multi-year phase out of incandescent bulbs due to EISA standards. In addition, the per-unit lifetime savings have been reduced in this Plan to account for the post 2020 EISA savings for both CFLs and LEDs. 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 uncertainty with regards to savings from LEDs 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.<br><br>For the three-year deployment, the PAs will focus on:<br>• Expansion of the mix of products available in retail<br>• Increased focus on specialty products to reach “deeper” savings for each customer with more options for each socket<br>• Expansion of retailers and other channels for the sale and distribution of efficient lighting, such as online retailers<br>• Continuous offerings over longer horizon periods at retail to assure year-round product availability to consumers<br>• Innovative approaches to community and corporate events (including hard-to-reach communities) |

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| | • Phasing in of qualified products for new technologies that require new entrants and implementation strategies. |
| **Special Notes** | |

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
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| RESIDENTIAL | PRODUCTS | CONSUMER PRODUCTS | ELECTRIC PAs | • | JOINT |
| | | | | | PA – SPECIFIC |
| **Core Initiative Overview** | **Key Objectives:**<br><br>To increase consumer awareness of the importance and benefits of purchasing or recycling ENERGY STAR® qualified appliances and electronic products and expand the availability, consumer acceptance, and use of high-quality energy-efficient technologies. The initiative utilizes upstream incentives and mail-in rebates, which dramatically increases sales and lowers the costs of product for the customer. | | | | |
| | **New Enhancements:**<br><br>• The PAs are exploring various methods to streamline incentive delivery methods to the consumer (*e.g.*, midstream/upstream) and to address the rapidly changing electronics marketplace. This is an ongoing effort, but PAs plan to review delivery methods by Q1 2014.<br>• The PAs also plan to work with retailers to explore the potential for streamlining the rebate process via online purchases. PAs plan to conduct a review of online rebate application offered by current rebate processing vendor and on-line applications offered by other PAs from across the country by Q4 2013. If deemed practical from a cost and implementation perspective PAs would plan an expected roll-out by Q3 2014. | | | | |
| **Core Initiative Design** | The Consumer Products Core Initiative educates consumers about the benefits of ENERGY STAR® qualified products to increase consumer acceptance of products and to encourage them to look for and purchase ENERGY STAR® qualified models when they shop.<br><br>The initiative promotes select ENERGY STAR® qualified consumer products at the point-of-sale by | | | | |

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| | providing promotional literature and displays to retailers, working with sales staffs to ensure they understand and can accurately market the benefits of these products, and providing labels to identify models that meet ENERGY STAR® standards. As ENERGY STAR® qualified products achieve a high share of market sales, the PAs and other interested parties are in a good position to advocate for higher minimum federal and ENERGY STAR® standards.<br><br>The initiative actively participates in national ENERGY STAR® awareness campaigns and in efforts to keep ENERGY STAR® specifications up to date and relevant. Similarly, the PAs will also work with the Consortium for Energy Efficiency ("CEE") to develop efficiency tiers above ENERGY STAR® for many products. |
| **Marketing Overview** | **Target Market:**<br><br>All residential electric customers |
| | **Strategy:**<br><br>In the appliance and electronics category, marketing initiatives will be designed to leverage new product specifications being rolled out in several product categories, the emergence of high efficiency initiatives. Key marketing strategies will aim to build awareness of and demand for new, high efficiency products, and consumer education to help customers take advantage of these new technologies.<br><br>Consumer education tactics will continue to employ retail point-of-purchase materials and sales promotions, consumer engagement events, social media, email, and other best practice marketing tactics to drive sales of qualified energy-efficient appliances and electronics.<br><br>Efforts will also continue in monitoring smart metering and the market for energy-efficient "smart" technologies in appliances and consumer electronics to inform future program planning and marketing opportunities. Go-to-market strategies will be explored to introduce new "connected" smart appliances and plug load controlling electronics into the marketplace.<br><br>Tactics to support these efforts will include consumer education via social media channels, consumer events, and retail promotions and point-of-sale materials to educate and motivate consumers to use these |

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<tr><td></td><td>new technologies. It is the PAs intention to be prepared for these technologies, as they become more prevalent toward the third year of this plan.</td></tr>
<tr><td>Technologies/Incentives</td><td>The following is a list of current targeted end uses, recommended technologies, and incentives offered:
<table>
<tr><th>Targeted End Use</th><th>Technology</th><th>Incentive</th></tr>
<tr><td>Consumer products</td><td>Room Air Cleaners</td><td>$20.00</td></tr>
<tr><td>Consumer products</td><td>Advanced Power Strips</td><td>$10.00</td></tr>
<tr><td>Consumer products</td><td>Televisions</td><td>$20.00</td></tr>
<tr><td>Consumer products</td><td>Desktop Computers</td><td>$10.00</td></tr>
<tr><td>Consumer products</td><td>Computer Monitors</td><td>$20.00</td></tr>
<tr><td>Consumer products</td><td>Pool pumps</td><td>$250.00</td></tr>
<tr><td>Consumer products</td><td>Refrigerator/Freezer Recycling</td><td>$50.00</td></tr>
<tr><td>Consumer products</td><td>Refrigerators/Freezers</td><td>up to $75</td></tr>
<tr><td>Consumer products</td><td>Room Air Conditioners</td><td>$25.00</td></tr>
</table></td></tr>
<tr><td>Delivery Mechanism</td><td>A manufacturer/retailer outreach contractor will recruit and train retailers to participate in the program; place point-of-purchase materials and rebate applications in participating retail stores; oversee the NCP process; and act as a liaison for PAs, manufacturers, and retailers.<br><br>A rebate fulfillment contractor will collect data and payment requests from manufacturers, retailers, and consumers; process rebate applications and NCPs; and provide documentation to the PAs for program tracking and evaluation purposes.</td></tr>
<tr><td>Three-Year Deployment Strategy/Roadmap</td><td>For consumer products, efforts to broaden categories as well as allow consumers the opportunity to increase the savings in their homes with new technologies provide unique challenges for the PAs. For 2013-2015 planning, increasing standards and market saturation will continue to decrease kWh savings for some energy efficient products, forcing the PAs to adapt and explore avenues of program deployment that are new and possibly untested.<br><br>The PAs began to expand their upstream efforts in 2010 from just advanced power strips to ENERGY STAR® TVs and Room Air Conditioners, in efforts to maximize the effect of lower incentive dollars, with</td></tr>
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| | some success. Over the next three years, the PAs will continue to explore expanding the products included in upstream efforts, in an attempt to duplicate the successes with lighting.<br><br>As standards become more stringent, the PAs will look into promoting more efficient products to consumers, using such categories as the higher CEE Tiers, and the newer higher tier of ENERGY STAR® "Most Efficient" and "Top Ten" categories.<br><br>The PAs will also explore tactics to support deeper savings through education, promotion, and possibly higher incentive offerings, if appropriate.<br><br>The PAs would like to explore the Lighting "Market Lift" model for use with products that have similar acceptance histories to CFLs, such as clothes washers. |
| **Special Notes** | |

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
|---|---|---|---|---|---|
| RESIDENTIAL | RESIDENTIAL PRODUCTS | RESIDENTIAL HEATING AND COOLING - HVAC | ELECTRIC PAs | • | JOINT |
| | | | | | PA - SPECIFIC |
| **Core Initiative Overview** | **Key Objectives:**<br><br>The Residential Heating and Cooling core initiative ("CoolSmart") is designed to increase consumer awareness, sales, and market share of ENERGY STAR® qualified central air conditioning units, air source heat pumps, and electronically commutated motor ("ECM") furnace fan systems by offering customer rebates and contractor incentives. The initiative also promotes best installation practices and quality installations, as promulgated by the Air Conditioning Contractors of America ("ACCA") and the Environmental Protection Agency's ENERGY STAR® Quality Installation ("QIV") Program. | | | | |
| | **New Enhancements:**<br><br>The PAs will explore the following proposed enhancements:<br>• An early replacement package offer, which provides ECM Furnace with Central Air Conditioning. The PAs plan to work with evaluation team to develop the offer for measure implementation by Q2 2013.<br>• Partnering with HPWH leasing companies to increase participation and savings. The PAs plan to research existing water heating leasing infrastructure and determine leasing offer potential by Q3 2013.<br>• An HPWH early retirement program component; coordinate with the PAs whole home initiatives. PAs plan to use lessons learned from the 2012 gas heating early retirement offer to implement a similar offer by Q2 2013.<br>• Emerging technologies such as residential climate controls, geothermal heat pumps and drain water | | | | |

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| | heat recovery systems will be reviewed and considered for implementation. Ongoing effort but PAs plan to work with the evaluation team to review all potential measures for consideration by Q1 2014.<br>• Continue to investigate opportunities for resistance heat to cold climate heat pump conversions. PAs plan to work with the evaluation team to review conversion potential measures by Q2 2014.<br>• An upstream program model to increase overall participation levels. The PAs plan to coordinate with C&I team and work with manufacturers and distributors to identify potential approaches by Q2 2013.<br>• Modify existing equipment rebates subject to review of market conditions, equipment qualifying for the new ENERGY STAR® Most Efficient or Top Ten rating, combined with incremental costs of high efficiency equipment. Ongoing review throughout program years 2013-2015.<br>• Review and adjust contractor incentives with emphasis on achieving program savings from improved equipment specification and installation. Ongoing review throughout program years 2013-2015.<br>• Expanded training programs to greatly increase contractor capabilities related to HVAC system efficiencies and quality installation practices. Ongoing throughout program years 2013-2015.<br>• Work with Residential Heating and Water Heating Core Initiative to further coordinate implementation, marketing and training activities and to develop and implement joint program offerings whenever feasible and cost-effective. Efforts will be prioritized during program year 2013 but ongoing throughout three-year period.<br>• Simplify customer and contractor transactions, such as online rebate fulfillment. PAs plan to conduct a review of an online rebate application offered by current rebate processing vendor, as well as online applications offered by other PAs from across the country (e.g., PG&E) by Q4 2013. If deemed practical, PAs plan an expected roll-out by Q3 2014.<br>• Continue focus on curriculum of contractor training and look for opportunities for vocational school teacher training. Contractor training is planned as an ongoing effort throughout 2013-2015 but PAs plan to evaluate the potential of trainings for vocational schoolteachers by Q1 2013. |

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| **Core Initiative Design** | This initiative provides customer rebates for the installation of ENERGY STAR® qualified HVAC equipment, as well as a "voluntary" QIV incentive for those customers who work with a residential heating and cooling trained contractor to install and properly test their rebate eligible equipment. Cool Smart trained contractors also earn an incentive for doing the proper testing to check and adjust system air flow and refrigerant charge using third-party verification. Other incentivized measures include duct testing and sealing, and downsizing of replacement equipment.<br><br>PAs use a third-party verification process for its quality installation verification offerings for all residential HVAC installations and tune-ups, including existing systems, retrofit and new installations.<br><br>The Residential Heating and Cooling core initiative will continue to work with the Residential Heating and Water Heating core initiative ("GasNetworks®") on joint offerings; marketing, contractor training and trade ally outreach, including circuit rider, and strive toward creating a seamless integration of the gas and electric energy efficiency programs. The PAs will continue their work with HVAC distributors, and where possible, develop upstream opportunities.<br><br>In addition, the PAs will continue to work with the following industry partners to promote best installation practices, awareness, education, and training for HVAC contractors:<br><br>ENERGY STAR® HVAC Quality Installation Program (EPA)<br>Consortium for Energy Efficiency (CEE)<br>Air Conditioning Contractors of America (ACCA)<br>Northeast Energy Efficiency Partnerships (NEEP)<br><br>The Residential Heating and Cooling core initiative will also continue to promote the North American Technician Excellence ("NATE") in HVAC contractor and customer educational materials. This strategy is designed to promote the value of NATE certification in the HVAC community and support best installation practices, education, and training for HVAC technicians and contractors |
| **Marketing Overview** | **Target Market:**<br><br>The Residential Heating and Cooling core initiative provides an opportunity for HVAC professionals to achieve a measure of success that might not otherwise be available to them. Effectively marketing the |

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| | advantages of this initiative will help enable the PAs to achieve their energy saving goals. Consumers will benefit from having lower energy costs than they would otherwise have, during the cooling and heating seasons.<br><br>Marketing activities will continue to align the elements of this initiative with that of the EPA's ENERGY STAR® QI standard, and will emphasize outreach to HVAC professionals (contractors and distributors, including gas contractors). The PAs will work in collaboration to build an integrated marketing and branding approach incorporating key elements such as contractor and distributor outreach and training, the CoolSmart portion of the Mass Save website, collateral updates, e-mail blasts, bill inserts, as well as other activities. In 2013-2015 the marketing strategy will utilize effective contractor and customer education messaging to meet the initiative goals and provide essential opportunities for HVAC professionals in coordination with all Residential Whole House Core Initiatives. The marketing activities described above aim to reach several target markets:<br><br>• New systems in existing and new homes (new systems)<br>• Replacement systems in existing homes (new equipment/old systems), including the early retirement of existing equipment.<br>• Improvements in operational systems in existing homes (new equipment/old systems)<br><br>The Residential Heating and Cooling core initiative targets the following market actors:<br><br>• Residential customers in the market to purchase HVAC equipment<br>• HVAC contractors and technicians<br>• Manufacturers, distributors, and suppliers of HVAC equipment<br>• New-home builders and remodeling contractors<br>• Big-box stores |
| | **Strategy:**<br><br>The Residential Heating and Cooling core initiative is designed to promote the purchase and proper installation of ENERGY STAR® residential central air conditioning and air source 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 |

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| | Residential Heating and Cooling core initiative will collaborate with the Residential Heating and Hot Water core initiative to develop and implement joint marketing activities whenever feasible. The planned marketing effort include:<br>• A joint circuit rider provides outreach services, education, and support in the field through visits and calls to HVAC distributors, supply houses, and contractors. The circuit rider also participates in training, trade shows and related industry events.<br>• Development of cooperative ("upstream") promotions with the HVAC industry, in coordination with C&I where feasible.<br>• Sponsorship of contractor competitions and awards programs for rebates and QIV services, and an annual recognition celebration for contractors in a venue that helps recruit more contractors<br>• Periodic COOL Talk meetings with QIV-listed HVAC contractors and distributors<br>• Targeted outreach to large HVAC contractors previously inactive in the program.<br>• Development of consumer testimonials affirming the benefits of program measures.<br>• Customer certificates when a quality installation is performed<br>• Print and media advertising targeting consumers, contractors, and distributors (including bill inserts, information on the website, participation at trades shows, articles in trade publications, mailings to distributors, contractor, and non participants). These will be in conjunction with the Residential Heating and Hot Water core initiative, where possible.<br>• Promote program education and awareness utilizing manufacturer/distributor level marketing and training infrastructure as a platform to educate contractors and wholesalers at a regional level. These will be in conjunction with the Residential Heating and Hot Water core initiative, where possible.<br>• PAs will market and leverage all available federal tax credits where applicable as well as all supplemental consumer incentives (*e.g.*, equipment manufacturers) as a means to increase consumer adoption of purchases of high efficiency central air conditioning and heat pump systems.<br>• PAs will work with the ENERGY STAR® HVAC Quality Installation Program team, the CEE HVAC Committee, and other industry partners to promote best installation practices, awareness, |

<table>
<tr><td></td><td>education, and training for HVAC contractors.</td></tr>
<tr><td>Technologies/Incentives</td><td>The following is a list of targeted end uses, recommended technologies, and incentives offered:
<table>
<tr><th>Targeted End Use</th><th>Technology</th><th>Incentive</th></tr>
<tr><td>Incentives for Equipment</td><td></td><td></td></tr>
<tr><td>Cooling</td><td>Central Air Conditioning SEER≥14.5 EER≥12</td><td>$150</td></tr>
<tr><td>Heating and Cooling</td><td>Air Source Heat Pump SEER≥14.5 EER≥12 HSPF ≥ 8.2</td><td>$150</td></tr>
<tr><td>Cooling</td><td>Central Air Conditioning SEER≥15 EER≥12.5</td><td>$300</td></tr>
<tr><td>Heating and Cooling</td><td>Air Source Heat Pump SEER≥15 EER≥12.5<br>HSPF ≥ 8.5</td><td>$300</td></tr>
<tr><td>Cooling</td><td>Central Air Conditioning SEER≥16 EER≥13</td><td>$500</td></tr>
<tr><td>Heating and Cooling</td><td>Ductless Minisplit Heat Pump: SEER >14.5 EER ≥12 HSPF≥ 8.2</td><td>$150</td></tr>
<tr><td>Heating and Cooling</td><td>Ductless Minisplit Heat Pump: SEER >19 EER ≥12.8 HSPF≥ 10</td><td>$300</td></tr>
<tr><td>Heating and Cooling</td><td>Ductless Minisplit Heat Pump: SEER >23 EER ≥13 HSPF≥ 10.6</td><td>$500</td></tr>
<tr><td>Cooling</td><td>Ductless Mini Split Cool only: SEER≥14.5 EER >12</td><td>Up to $100</td></tr>
<tr><td>Incentives for Services</td><td></td><td></td></tr>
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| | Cooling | Quality Installation Verification (QIV) - CAC | $175 |
| | Heating | Quality Installation Verification (QIV) – Heat Pump | $175 |
| | Heating and Cooling | ENERGY STAR® Quality Installation Program (“QIV”).<br>Promotes best installation practices, as promulgated by the Air Conditioning Contractors of America (“ACCA”) and the Environmental Protection Agency | $125 ($75 airflow testing + $50 CO Monitor installed) |
| | Heating and Cooling | ENERGY STAR® Quality Installation Program (“QIV”) with duct modifications.<br>Promotes best installation practices, as promulgated by the Air Conditioning Contractors of America (“ACCA”) and the Environmental Protection Agency. | $525 ($75 airflow testing + $50 CO monitor installed + duct sealing repairs) |
| | Heating and Cooling | Customer incentive for QIV | $150 |
| | Heating and Cooling | Duct Sealing in spaces outside the building envelope that have air conditioning and heat in connected ductwork. | $2.00 per cfm reduction up to $600 maximum. |
| | Cooling | Down Sizing per ½ ton reduction | $ 250.00 per ½ ton |
| | Heating and Cooling | Early Replacement of central AC equipment | $850 |
| | Heating | ECM Furnace – 95% and 97% | $100 |
| | Heating and Cooling | Brushless Fan Motor | $150 placeholder – pending |

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<tr><td></td><td>
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<tr><td></td><td></td><td>evaluation</td></tr>
<tr><td>Water Heating</td><td>Heat Pump Water Heater – 50 gallon; must replace existing electric storage tank water heater</td><td>$750</td></tr>
<tr><td>Water Heating</td><td>Heat Pump Water Heater – 80 gallon; must replace existing electric storage tank water heater - *subject to change in 2015</td><td>$750*</td></tr>
<tr><td>Water Heating</td><td>Heat Pump Water Heater – Lease HPWH through a nationally recognized leasing company</td><td>Incentive to be determined.</td></tr>
<tr><td>Heating and Cooling</td><td>Air Source Heat Pump SEER≥16 EER≥13 HSPF ≥ 8.5</td><td>$500 (proposed)</td></tr>
</table>
<br>Additionally, customers may now utilize the 0% HEAT loan to finance eligible HVAC equipment purchases.</td></tr>
<tr><td>Delivery Mechanism</td><td>The Residential Heating and Cooling core initiative will be administered by the PAs in each service territory. Delivery is through a common vendor selected through a common RFP. Whenever possible, there is coordination with the Residential Heating and Hot Water core initiative. These initiatives will continue to use a single, joint circuit rider in the field. The Residential Heating and Cooling initiative leverages the Residential New Construction, HES, and Multi-Family Retrofit Core Initiatives:<br><br>• Participating residential new construction builders and their HVAC contractors are referred to the Residential Heating and Cooling for training and QIV. Whenever appropriate, these training will be provided jointly with the Residential Heating and Hot Water core initiative.<br><br>• HES and qualifying Multi-Family Retrofit participants are referred to residential heating and cooling for HVAC measures using residential heating and cooling literature, which is part of the standard HES information package.<br><br>Quality control/follow-up inspections are performed by independent inspectors on up to 10 percent of</td></tr>
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| | installations to verify equipment installation and performance.<br><br>The initiative continues to use equipment distributors to sell high-efficiency equipment and QIV-related technology, and to provide indoor training labs for HVAC contractors. |
| **Three-Year Deployment Strategy/Roadmap** | The PAs believe that an adjustment in equipment incentive levels may be required to address market barriers and achieve higher levels of participation and savings goals during 2013-2015. Rebate levels approaching full system incremental cost may be required to address two fundamental market barriers in the state.<br><br>• In Massachusetts, a low dollar savings compared to incremental costs associated with high efficiency air conditioning investments represents a significant program barrier to increasing the market share of high SEER/EER equipment.<br><br>• In Massachusetts, another barrier to improved efficiency is the common practice in which HVAC contractors install "efficient" outdoor condensing equipment but fail to replace the existing indoor equipment with a high efficiency indoor evaporator coil. Additionally, other cases involve use of non matched non-AHRI rated indoor coils, which do not reach the ENERGY STAR® standards. At each stage, customers are not well informed of the consequences and also do not benefit directly from the demand savings that are important to the program and the region.<br><br>The PAs plan to:<br><br>• Host strategic discussions to promote the expanded HVAC program which may include a significant number of new and emerging technologies and quality installation practices.<br><br>• Strive to identify and support gas and electric integration opportunities where appropriate as a means to increase consumer participation, gain economies of scale, create consumer-focused transparency across programs, and achieve broader and deeper energy savings.<br><br>• Increase the focus of the program towards marketing and targeting opportunities for early retirement of existing equipment.<br><br>• Strive to develop a more detailed way to track and differentiate early retirement systems from |

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| | replacement of units at the end of their useful life. |
| **Special Notes** | The PAs note that there is a discount to the Non-Resource Benefits in the D.P.U. 08-50 tables. While the PAs continue to explore the correct factors for the NEIs, the PAs have conservatively lowered the overall benefits to account for the potential impact of replacement on failure based upon implementation experience. In this plan, the PAs plan to target early retirement of heating and cooling systems and explore better ways to track replacement on failure versus early retirement. |

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
|---|---|---|---|---|---|
| **RESIDENTIAL** | **RESIDENTIAL PRODUCTS** | **RESIDENTIAL HEATING & HOT WATER** | **GAS PAs** | • | **JOINT** |
| | | | | | **PA - SPECIFIC** |
| **Core Initiative Overview** | **Key Objectives:**<br><br>The primary objective of the Residential Heating and Water Heating core initiative is to increase market awareness and penetration of high efficiency gas heating (forced hot water boilers, electrically efficient gas warm air furnaces) water heating equipment and associated controls. The initiative provides ongoing support to enhance and maintain Program Administrators' strategic partnerships with equipment manufacturers and distributors who assist in conducting aggressive outreach, education and training of our trade allies and contractors on the latest technologies, high efficiency equipment and installation techniques. | | | | |
| | **New Enhancements:**<br><br>The PAs anticipate the following initiative enhancements for the three year planning period of 2013-2015:<br><br>• Expand trade ally awareness and strengthening existing partnerships by implementing seasonal or year-round contractor incentive promotions and new technology training initiatives. While these efforts will likely be ongoing throughout the Three-year plan, the PAs plan to develop an initial incentive promotion by Q2 2013.<br><br>• PAs will closely monitor the results the 2012 seasonal initiative - Early Boiler Replacement - and implement successes based on evaluated results. Gas PAs will consider expanding early replacement promotion to furnaces, in conjunction with the Residential Cooling Core Initiative. The gas and electric PAs plan to work jointly with the evaluation team to propose an integrated HVAC / Heating equipment early retirement incentive by Q2 2013. | | | | |

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| | • Enhance integration efforts with Residential Heating and Cooling Heating, Ventilation and Air Conditioning ("HVAC") training. This will allow the ability to develop "packaged" incentive offerings to drive consumer participation, allow for deeper energy savings and the adoption of new high efficiency technologies. Ongoing throughout program years 2013-2015.<br>• Implement cross promotions with HES core initiative (e.g., messaging on rebate checks). The PAs plan to research messaging/insert potential with vendor and if feasible roll-out by Q2 2013.<br>• Explore the feasibility of targeted upstream promotions on new heating, hot water or controls equipment. Ongoing effort throughout program years 2013-2015 to explore new technologies in collaboration with evaluation team. Regarding the feasibility of an upstream heating promotion, the PAs plan to coordinate with electric HVAC and C&I teams to identify potential approaches by Q2 2013.<br>• Provide further opportunities on joint-trainings for trade allies on gas and electric HVAC and high efficiency equipment, including brushless fan retrofits. Ongoing review throughout program years 2013-2015.<br>• Simplify customer and contractor transactions, such as online rebate fulfillment. PAs plan to conduct a review of an online rebate application offered by current rebate processing vendor, as well as online applications offered by other PAs from across the country (e.g., PG&E) by Q4 2013. If deemed practical, PAs plan an expected roll-out by Q3 2014. |
| **Core Initiative Design** | **Description:**<br><br>The GasNetworks® high efficiency heating and water heating core initiative is designed to offer customer rebates to offset the higher cost of purchasing qualifying gas heating, hot water equipment and controls in the new construction and replacement market. In collaboration with the CoolSmart electric efficiency core initiative, GasNetworks also offers a dual electric/natural gas rebate incentive for high-efficiency furnaces equipped with Electronically Commutated Motor ("ECM") or equivalent advanced furnace fan systems. The high efficiency water heating core initiative offers customer incentives for energy efficient indirect, on-demand, and stand-alone water heating equipment<br><br>In addition to heating and water heating equipment, customer incentives are also offered for select heating s |

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| | controls, such as programmable thermostats, boiler reset controls and heat recovery ventilator units.<br><br>In 2012, the initiative introduced an early replacement boiler promotion, integrated with the HES core initiative providing an incentive to replace old, inefficient, but still operating, heating equipment with new high efficiency equipment.<br><br>Gas PAs consistently monitor this initiative and evaluate free-ridership in order to drive customers to go deeper and achieve the highest level of efficiency available. |
| **Marketing Overview** | **Target Market:**<br><br>Residential Target Market includes all 1-4 family residential non-low income and residentially metered condominiums<br>• New construction<br>• Existing homes<br><br>Residential Market Actors include :<br><br>• Plumbing and HVAC contractors and technicians<br>• Suppliers of high efficiency heating and water heating equipment and related parts/accessories<br>• Manufacturers and distributors of high efficiency heating and water heating equipment<br>• New home builders and remodeling contractors<br>• Residential home owners with natural gas heating and water heating equipment<br>• Multi-Family property owners (residentially metered)<br>• Home designers and architects<br>• Massachusetts Building Inspectors, *i.e.*, Southeastern Massachusetts Building Officials Association ("SEMBOA")<br>• Plumbing, Heating and Cooling Contractors of MA ("PHCC of MA")<br>• International Association of Plumbing and Mechanical Officials ("IAPMO")<br>• Engineers |

**Strategy:**

The initiative will be promoted through a variety of marketing and educational campaigns including, but not limited to: upstream outreach, direct mail, bill inserts, sponsorships and trade ally circuit-rider visits and other training events. The initiative has been particularly successful utilizing a direct vendor outreach marketing approach to gas equipment suppliers and installation contractors and the PAs will continue to implement this approach in 2013-2015. The PAs will continue to enhance their outreach to customers in collaboration with the other PA working groups. PAs will also enhance awareness through successful targeted techniques involving website and email. For example, PAs have approximately fifteen hundred trade allies and recipients signed up to receive the GasNetworks e-newsletter on a quarterly basis since its launch in 2007.

In addition to direct rebate offers to customers, PAs will evaluate and offer strategic seasonal or year-round incentives to contractors to further encourage the installation of high efficiency heating equipment.

PAs will also market and leverage all available federal tax credits where applicable and other consumer incentives as a means to increase consumer adoption of high efficiency heating and water heating equipment.

**Technologies/ Incentives**

The following is a detailed list of targeted end uses, recommended technologies, and incentives offered within the Residential Heating and Water Heating core initiative:

| Targeted End Use | Technology | Incentive |
|---|---|---|
| Heating | >= 95% Furnace w/Electronically Commutated Motor (ECM) or equivalent | $200 (+$100 Electric) |
| Heating | >= 97% Furnace w/ECM or equivalent | $350 (+$100 Electric) |
| Heating | >= 90% Forced Hot Water Boiler | $1000 |
| Heating | >= 96% Forced Hot Water Boiler | $1500 |
| Heating | Heat Recovery Ventilator | $500 |
| Heating/Water Heating | Integrated water heater/condensing boiler | $1200 |
| Water Heating | Indirect Water Heater | $400 |

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<tr><td>Water Heating</td><td>Condensing Gas Water Heater (T.E*. 95)</td><td>$500</td></tr>
<tr><td>Water Heating</td><td>On-demand Water Heaters (.94)</td><td>$800</td></tr>
<tr><td>Water Heating</td><td>On-demand Water Heaters (.82)</td><td>$500</td></tr>
<tr><td>Water Heating</td><td>Stand Alone Storage Water Heaters (.67)**</td><td>$100</td></tr>
<tr><td>Controls</td><td>After Market Boiler Reset Controls</td><td>$225</td></tr>
<tr><td>Controls</td><td>Programmable Thermostats</td><td>$25</td></tr>
<tr><td>Controls</td><td>Smart Thermostats</td><td>$100</td></tr>
</table>
<br>*Thermal Efficiency<br>** 2013 and 2014 only<br><br>Additionally, PAs will continue to explore cost-effective offerings, such as seasonal incentives to contractors or special promotion resources to trade allies and other market actors that assist with the stocking, sales and installation of high efficiency heating and water heating equipment.<br><br>In addition to the incentives listed above, gas customers who have participated in the HES core initiative and purchase and install select high efficiency heating equipment may be eligible for 0% financing through participating lenders.</td></tr>
<tr><td>Delivery Mechanism</td><td>The initiative is administered by each gas PA and strategically coordinated regionally through the GasNetworks collaborative. The PAs utilize three vendors secured through a competitive bid process to assist in implementation to its customers:<br><br>• Administrative – Integrated with Residential Heating & Cooling Equipment, Residential Lighting and Consumer Products core initiatives, this vendor is secured to review, process, and deliver valid rebate claims to customers. This vendor is also responsible for tracking and reporting program activity to gas and electric PAs as well as providing verification of a percentage of installed qualified equipment across PAs.<br><br>• Outreach – Integrated with Residential Lighting and Consumer Products core initiatives, this vendor is secured to provide field visits and sales training through the distribution of point-of-purchase rebate materials to big box stores and other applicable retail outlets.<br><br>• Outreach/Training – Integrated in part with Residential Heating & Cooling Equipment core</td></tr>
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| | initiative, this third-party vendor is responsible for direct communication and education of all key trade allies, in particular manufacturers, distributors, supply houses, heating and water heating contractors and vocational school faculty members.<br><br>In 2012, the PAs collaborated with the HES core initiative to deliver a seasonal Early Boiler Replacement (enhanced) rebate initiative to qualifying participants in order to encourage the proactive replacement of aging and inefficient steam and forced hot water boilers. This "whole house" approach will allow for "packaged" incentive opportunities for qualifying participants and allow for broader and deeper energy savings. |
| **Three-Year Deployment Strategy/Roadmap** | The PAs will review the results from the Early Boiler Replacement rebate offer for inclusion into the 2013-2015 Plan. The PAs will work to enhance integration and cross-promotion efforts with the Residential Heating & Cooling Equipment and the HES Core Initiatives. In addition, PAs will review emerging technologies for cost-effectiveness and will continue to explore an upstream program model.<br><br>The PAs plan to:<br>• Increase the focus of the program towards marketing and targeting opportunities for early retirement of existing equipment.<br>• Strive to develop a more detailed way to track and differentiate early retirement systems from replacement of units at the end of their useful life. |
| **Special Notes** | The PAs note that there is a discount to the Non-Resource Benefits in the D.P.U. 08-50 tables. While the PAs continue to explore the correct factors for the NEIs, the PAs have conservatively lowered the overall benefits to account for the potential impact of replacement on failure based upon implementation experience. In this plan, the PAs plan to target early retirement of heating and cooling systems and explore better ways to track replacement on failure versus early retirement. |

| SECTOR | STATEWIDE MARKETING | ADMINISTERED BY |
|---|---|---|
| **ALL** | **SUMMARY OVERVIEW** | **ELECTRIC & GAS PAs** |
| **Key Objectives** | The overarching goal of Statewide Marketing is educating customers about the PA-sponsored programs available under the umbrella of the Mass Save mark. Please also see Section III.H.1 for additional information regarding PA marketing activities.<br><br>The PAs' priority is creating 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 PAs available energy efficiency programs. These efforts will build on the awareness of the energy efficiency programs that are offered to Massachusetts customers by the PAs under the Mass Save® umbrella and establish the PAs as the recognized, reliable sources for all things about energy efficiency in the Commonwealth. | |
| **Strategies** | 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, it is expected that the campaign strategy will identify the most effective touch points for residential and non-residential customer targets, sectors and motivations in order to move consumers from awareness to action. In addition, the different tactics used for these sectors will be measurable so that feedback will inform changes to deployment of the marketing and communication campaigns.<br><br>The core goals of any campaign put forth by the PAs will attempt to: reach the maximum level of residential and business customers possible; provide messages that are not overly technical and that clearly describe the benefits of energy efficiency; utilize diverse media (*e.g.*, internet, bill inserts, television, radio, billboards, public transit) to disseminate consistent and clear messages; ensure that the various strategies work together to ultimately achieve deeper and broader savings.<br><br>In order to realize their public education, community outreach, and marketing potential, the PAs have | |

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| | identified the following goals to guide strategy and campaign planning:<br>• Prioritize public education.<br>• Broaden awareness of available resources and actions to all potential audiences, including residential and business customers.<br>• Identify and understanding the barriers to action, and developing potential motivators to bridge the gap between awareness and action.<br>• Communicate with the general public and with targeted audiences in the most effective ways possible to reach those audiences.<br>• Provide an good mechanism for customers to respond to marketing and outreach strategies (*e.g.*, website)<br>• Maximize the number of individuals, organizations, and businesses that take action to reduce their energy consumption.<br>• Encourage behavioral change to conserve energy, save money, and reduce greenhouse gas emissions.<br><br>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 case studies. In addition to the overall message, the PAs will also develop messaging at the program level in order to engage varied customers and other important market actors (contractors, equipment suppliers, opinion leaders) with differing motivations. The strategies and messages developed for statewide energy efficiency education, outreach and marketing will augment the efforts thus far across the Commonwealth and will attempt complement and leverage program-specific marketing and individual PA efforts wherever possible.<br><br>Further, the PAs will apply evaluation results and findings from the Statewide EM&V framework 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 |

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| | deliver messaging accordingly.<br><br>The ultimate goal of these educational, 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 PAs 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. |
| **Special Notes** | Please also see Section III.H.1 for additional information regarding PA marketing activities. |

*b. Residential General Initiatives*

i. Efficient Neighborhoods+

## Overview

Building on the successful Community Engagement efforts and Low-Income programs, the Efficient Neighborhoods+ initiative will target lower to moderate-income energy consumers in designated communities and neighborhoods. As an extension of the Mass Save® HES initiative, this initiative is intended to provide significant energy saving benefits to customers who live in urban neighborhoods with older housing stock and are often financially constrained from making energy efficiency investments. In addition to the benefits provided by the HES initiative, Efficient Neighborhoods+ will include an enhanced incentive structure designed to make energy efficient improvements more affordable for consumers living in these sometimes harder to reach neighborhoods. It is also expected that these targeted neighborhoods will include low-income qualified/eligible consumers thus the Program Administrators plan to work with LEAN on the initiative design and implementation phases to ensure a fully integrated cross-sector approach. Further, given the predisposition of pre-weatherization barriers in this housing stock, it is important to consider introducing limited pre-weatherization incentive offers into the overall initiative design.

## Key Strategies

1. **Eligibility**

While the specifics of eligibility have yet to be determined, the premise is to target neighborhood/community "areas" that meet certain demographic criteria versus individual consumers, thus these areas would be designated as "Target Communities". The following is the minimum guidelines proposed for eligibility:

- All customers in the target areas will be offered the incentives thus eliminating the arduous individual income verification screening process. However, similar to current HES protocols, customers will be educated on Low-Income eligibility requirements and will be referred to appropriate Low-Income Agency to receive eligible energy efficiency services. It is also expected that these targeted neighborhoods will include low-income qualified/eligible consumers. Thus the Program Administrators plan to include LEAN in the initiative design and implementation phases, as well as reporting and assessment to ensure a fully integrated cross-sector approach. Further, the Program Administrators will consider LEAN's Network infrastructure as a delivery mechanism for implementation services.
- Only 1– 4 unit existing buildings are eligible for the enhanced incentives.
- 5 + units will be referred to the Mass Save Multi-Family Retrofit core initiative, and low-income-eligible multi-family building owners will be referred to the Low-Income Multi-Family Retrofit initiative or to the appropriate low-income agency to receive comprehensive eligible energy efficiency services without co-payment, where applicable.

## 2. Target Areas

Determining specific target areas based on pre-determined demographic and housing stock criteria is a key component as well as a key challenge of this effort. Prospective areas of focus may include but are not limited to Green Communities that have also been designated as Gateway Communities or Environmental Justice communities with a focus on best addressing low- to moderate- income consumers. Although the best methodology for employing eligibility identification has yet to be determined, one potential for consideration is using the 2010 census to identify those census tracts that met the following criteria:

1. Lower to moderate income customers based on the state's median income
2. Greater than 70% penetration of 1-4 unit existing buildings (those eligible for HES)
3. Target census tracts may then be 'fitted' to Zip+4 groups based on some or all of the Zip +4 being in the tract. The Zip+4 residences might then, subject to personal data privacy protection laws, be able to link to PA customer data to develop lists of eligible customers
4. These customers/addresses may then be fed into mapping software to generate a map of the target neighborhoods.

Only people in the designated areas will be eligible for the Efficient Neighborhoods+ initiative.

## 3. Marketing-Outreach Strategies

As previously mentioned, the overall goal of this effort is to identify and target selective neighborhood areas where consumers meet a certain demographic criteria. Once the areas have been identified, the PAs will deploy a variety of marketing outreach efforts that includes using traditional marketing methods and market segmentation activities in combination with coordinated outreach activities. Examples of this include:

- **Community Engagement** (refer to Section III.H.2) – this marketing outreach initiative provides a great opportunity to engage local community leaders as well as community-based advocate organizations committed to aiding in the delivery of energy efficiency services. As such, Efficient Neighborhoods+ serves to be a logical extension of our future Community Engagement plan where a "pay for performance" approach for local organizations is expected to deliver results.
- **Low-Income -** Coordination with the low-income programs and the community agencies that deliver them is another key component. It is very important that we maximize opportunities for weatherization and energy efficiency upgrades for existing low-income customers as well as those who may be low-income but have not been identified as such and are not receiving services under existing low-income utility rates or public programs.

  Procedures for handling low-income customers will be coordinated with the Community Action Program ("CAP") agencies. Low-income discount rate customers will be screened out of initial targeted efforts, such as direct mail, to avoid large numbers of customers being directed to an initiative that may not be the optimum vehicle for meeting

their needs. A joint strategy will be developed with local agencies to insure that customers get the appropriate level of service.

- **Cross-Promotion Outreach** - As a direct sub-component of the HES core initiative, the PAs plan to utilize existing marketing tools and opportunities to create awareness and educate consumers about this initiative. However, due to the community-based nature of this initiative, it also affords the PAs the opportunity to cross promote electric and gas initiatives as a means to drive deeper savings and participation diversity.

**Projected Milestones**

1. PAs intend to define target neighborhoods and finalize initiative design (including incentive structure) by the end of Q1 2013.
2. PAs plan to test this initiative in May-August, 2013. This timeline will serve the secondary goal of maintaining a steady work flow for IICs and HPCs.
3. Monthly reporting of the uptake will be submitted by the Lead Vendors to the PAs.
4. PAs will assess results and report to EEAC in Q1 2014.

*c. Low-Income Program Descriptions*

**Overview**

During 2013-2015, the Program Administrators look forward to expanding upon the success of their historic partnership with LEAN, whose pioneering efforts in providing energy efficiency services to the low-income sector have positively influenced both best practices and program development across sectors and have served as a national model among low-income professionals.

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
|---|---|---|---|---|---|
| LOW-INCOME | WHOLE HOUSE | LOW-INCOME NEW CONSTRUCTION | ELECTRIC PAs | • | JOINT |
| | | | | | PA - SPECIFIC |
| **Core Initiative Overview** | **Key Objectives:**<br><br>The Low-Income New Construction ("LINC") Core Initiative strives to increase the efficiency of low-income homes at the time of construction. To address the challenges of rising energy codes and more competition for funding for low-income housing, the Program Administrators will look to incorporate the lessons learned from the past three years to increase participation and energy savings.<br>The PAs will continue working with HERS infrastructure and provide ongoing training to the construction industry. The initiative is a proud participant of the national ENERGY STAR® Homes Program and benefits from the regional, as well as national, advertising efforts that ENERGY STAR® Homes implements. This also dovetails with many of the requirements of funding agencies and foundations that also support low-income new construction. | | | | |
| | **New Enhancements:**<br><br>• The PAs plan to incorporate the multi-family new construction pilots mentioned above by Q1 2013.<br><br>• The initiative will transition to add prescriptive offerings for homes exceeding the Massachusetts User Defined Reference Home ("UDRH") by Q1 2013.<br><br>• As a means to maintain high performance builders and attract new builder participation:<br>o PAs to work with Evaluation to explore an alternative method to calculate savings for the Performance Path<br>o Streamline and simplify builder participation path through prescriptive package offerings | | | | |

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| | These additional initiative enhancements, will build on the current initiative structure to help broaden participation and overall market penetration and gain additional energy savings. The prescriptive offerings are detailed in the "Core Initiative Design" section below. |
| **Core Initiative Design** | The PAs continue their strong commitment to a whole-house approach for low-income new construction. The initiative is committed to achieving both a broader market penetration of energy-efficient homes as well as moving builders toward deeper energy savings where possible. The PAs will strive to both retain existing participating builders and recruit additional homebuilders and contractors. The PAs will train builders on EPA ENERGY STAR® Version 3 in support of the 2012 Massachusetts Stretch Energy Code.<br><br>The initiative will provide incentives for projects exceeding the UDRH:<br><br>• Prescriptive Option 1 – a bundle of prescriptive measures that address heating, cooling, and hot water equipment, lighting, water use reduction, efficient appliances, and enhanced envelope air tightness and duct tightness.<br><br>• Prescriptive Option 2 - a bundle of prescriptive measures that include all Option 1 measures as well as enhanced envelope thermal performance<br><br>• Performance Tier 1 - 15% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist<br><br>• Performance Tier 2 - 30% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist<br><br>• Performance Tier 3 - 45% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist<br><br>Builders are encouraged to improve a building's energy usage through enhanced envelope measures, energy efficient space and water heating, appropriately sized cooling equipment, programmable thermostats, ENERGY STAR® qualified appliances, Water Sense® plumbing fixtures, efficient lighting and controls, and proper ventilation. Builders are also encouraged to properly orient homes to take advantage of passive heating and cooling.<br><br>All homes participating in the initiative are required to install efficient lighting products in appropriate |

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| | hard wired sockets and pass a final verification inspection. As energy codes become more stringent, the PAs will continue to encourage proper lighting design and the installation of new, cutting edge, lighting products and controls. A single family home is defined as a single family detached house, while a multi-family home is defined as two or more attached units. All low-income new construction projects in the Commonwealth are encouraged to participate in the initiative. Mixed-use and large buildings are addressed on a custom basis in cooperation with the commercial initiatives.<br><br>The Multi-Family New Construction ("MFNC") core initiative offers incentives to eligible 4+ story multi-family facilities that are located in participating PA territories. The goal of the MFNC core initiative is to provide a seamless transition from the current multi-family pilot to a fully integrated initiative. This initiative will take the lessons learned from the three year pilot and continue to provide a single point-of-contact for the participants and service for all fuel sources and meter configurations. A suite of offerings will include a comprehensive list of measures to maximize energy savings above Massachusetts energy code. |
| **Marketing Overview** | **Target Market:**<br><br>Homebuilders/Developers<br>Contractors<br>Architects/Designers<br>Trade allies<br>HERS raters<br>Homebuyers<br>Realtors<br>Code Officials<br>Appraisers/Mortgage bankers |
| | **Strategy:**<br><br>The initiative will use a combination of the following to reach the target markets:<br>Trade shows, builder training (on-site and lecture), lumber yard outreach, strategic partnerships such as Home Builders Associations ("HBA"), geo-specific targeting based on construction activity. |

**Technologies/Incentives**

**The following is a list of packages, recommended technologies, and incentives offered:**

| **Package** | **Requirements** | **Incentive** | | | |
|---|---|---|---|---|---|
| Performance Path | | Single Family | Multi Family | | |
| | | | 2-99 units | 100-199 units | 200+ units |
| Tier 1 | 15% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist | $750 | $650 | $500 | $350 |
| Tier 2 | 30% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist | $1,250 | $1,150 | $850 | $550 |
| Tier 3 | 45% improvement or better over the UDRH and compliance with sections 3 and 5 of the ENERGY STAR Thermal Enclosure System Rater Checklist | $7,000 | $4,000 | $3,000 | $2,000 |
| Prescriptive Path | | | | | |
| Prescriptive Option 1 | heating, cooling, and hot water equipment, lighting, water use reduction, efficient appliances, and enhanced envelope air | $1,250 | $1,150 | $850 | $550 |

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| | tightness and duct tightness | | | | |
| Prescriptive Option 2 | a bundle of prescriptive measures that include all Option 1 measures as well as enhanced envelope thermal performance | $7,000 | $4,000 | $3,000 | $2,000 |
| All Packages | ENERGY STAR® qualified refrigerator | $50.00 | | | |

Single Family is defined as a detached unit. Two or more attached units are classified as Multi-family. A Multi-family project must be three stories or below and residentially permitted to qualify.

Multi-family Buildings with Four or More Stories

| Package | Requirements | Incentives |
|---|---|---|
| Prescriptive In-unit | Efficient heating, cooling, and ventilation equipment, efficient hot water equipment, lighting power reduction, water use reduction, and efficient appliances | Up to $250 per unit |
| Whole building & prescriptive in-unit | Same as in unit prescriptive incentive. Whole building measures include enhanced envelope, efficient central heating, cooling, and ventilation equipment, efficient central laundry equipment, and efficient lighting and controls in common areas | Prescriptive whole building incentives to be determined |
| Whole Building Custom | Commercially metered projects are eligible for the same instant savings measures and will be referred to the vendor to evaluate applicable custom improvements. | Custom incentives |

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| | The PAs will work with the MTAC to include new measures or technologies as appropriate. |
| **Delivery Mechanism** | The initiative is administered statewide by the PAs (both gas and electric).Through a competitive bid process, the PAs chose a statewide implementation vendor to oversee the day-to-day operations. The vendor is responsible for tracking and reporting program activity to each PA. Throughout the planned timeframe, the PAs will continue to work with the market-based network of trained raters who offer energy-efficiency and rating services to homebuilders.<br><br>The PAs will deliver in-depth trainings to the target market in the fundamentals of building science, energy codes, and the latest emerging technologies to promote the initiative, as well as support workforce development efforts through the Green Jobs Act. |
| **Three-Year Deployment Strategy/Roadmap** | For low-income new construction, the efforts to achieve both deeper savings and gain broader market penetration will continue through multiple channels of participation, each of which continues to push homes closer to net zero energy. The initiative is dedicated to promoting energy efficient new construction by supporting the target market.<br><br>For the three-year deployment, the PAs will focus on the following:<br>• Streamline and simplify initiative offerings to reduce complexity and increase participation<br>• Support target market in achieving deeper levels of energy savings with relevant trainings<br>• Expansion of the base of participating low-income builders/homeowners<br>• Continued coordination with existing and new market allies<br>• Continue to promote consumer awareness through statewide marketing |
| **Special Notes** | |

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
|---|---|---|---|---|---|
| LOW-INCOME | WHOLE HOUSE | LOW-INCOME SINGLE FAMILY | ELECTRIC & GAS PAs | • | JOINT |
| | | | | | PA - SPECIFIC |
| **Core Initiative Overview** | **Key Objectives:**<br><br>The Low-Income Single Family Core Initiative implements cost-effective, energy efficiency products and services directly for residential customers living in 1 to 4 unit dwellings in which at least 50 percent of the occupants are at or below 60 percent of the state median income level. The initiative leverages all applicable revenue streams and piggybacks on the current Department of Housing and Community Development ("DHCD") Weatherization Assistance Program ("WAP"), consistent with a comprehensive, whole house approach generally with no co-payment required from participating customers. | | | | |
| | **New Enhancements:**<br><br>• The PAs will continue to work with the Best Practices Working Group to identify new cost-effective energy efficiency services, measures and technologies that are appropriate to offer to income-eligible customers. LED lighting is one of the primary new measures that has been and will continue to be examined as the technology evolves and pricing declines. The Heat Pump Water Heater (50 gallon and 80 gallon tank) is also a new measure for the initiative as it was deemed cost-effective for use when replacing an electric water heater of equivalent size. While this measure provides excellent savings potential, installations are required to meet manufacturer recommended temperature and space specifications as well as condensation removal criteria. Ongoing throughout program years 2013-2015.<br><br>• PAs will work with the Low-Income Energy Affordability Network ("LEAN"), state organizations such as the DHCD, lead vendor, and Community Action Program ("CAP") | | | | |

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| | agencies to increase qualified contractor participation in the initiative through training and workforce development. The PAs also plan to continue to support contractor and auditor training as needed. Ongoing throughout program years 2013-2015.<br><br>• PAs will work with LEAN in the design of the Efficient Neighborhoods + initiative and its implementation phases. It is expected that the targeted neighborhoods in this initiative will include low-income qualified/eligible consumers; thus the Program Administrators plan to work with LEAN to ensure a fully integrated cross-sector approach. Efforts will be prioritized during program year 2013 but ongoing throughout 3-year filing. |
| **Core Initiative Design** | The PAs will work in collaboration with the Best Practices Working Group, including LEAN, DHCD, lead vendor (where applicable), and CAP agencies to coordinate statewide on all aspects of the Low-Income Single Family Core Initiative, including but not limited to planning, delivery, implementation, education, marketing, training, cost-effectiveness, evaluation, and quality assurance.<br><br>Once customers are deemed eligible, they will receive an in-home energy assessment from their local CAP agency. The assessment evaluates the building shell, efficiency and appliance conditions (for electric PAs only), as well as home health and safety. The CAP agency will then arrange for all applicable measures and services to be installed by a qualified contractor. Savings will be deepened by installing additional efficiency measures; to the extent the overall initiative remains cost-effective.<br><br>The initiative piggybacks on the current DHCD WAP. All applicable revenue streams available are leveraged to enhance services consistent with a whole-house approach. PA funding will primarily be used to address more items on the cost-effective priority list, including approved weatherization related repairs. Federal money will primarily be used to address health and safety issues, as well as repairs, to allow for cost-effective energy efficient measures to be installed.<br><br>As mandated by DHCD for all projects that receive Department of Energy (“DOE”) funding, the CAP agencies perform 100 percent post-installation quality assurance inspection of projects to ensure that all work is performed to the program guidelines. The CAP agencies also perform a minimum of 50 percent in-process inspection of projects. Because the PA initiative piggybacks on the DHCD program, many jobs are multi-funded therefore, quality control is completed for both DOE and PA funded projects at the same time. DHCD performs another level of visual inspection for 20 percent of all DOE-funded projects. |

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| | During these inspections, DHCD reviews both DOE and PA funded work. Additionally, the PAs have an independent third-party vendor perform quality assurance inspections for an additional level of quality control. PAs require a specified percentage of all jobs exclusively funded by the PAs to be inspected.<br><br>Energy efficiency education and information is provided to all participating customers. The primary form of energy education is verbal communication between the auditor and the client along with leave-behind materials. The Low-Income Single Family Core Initiative plans to review the opportunity of developing common education materials with the Best Practices Working Group. |
| **Marketing Overview** | **Target Market:**<br><br>Residential customers living in 1 to 4 unit dwellings who are at 60 percent of the state median income level or who are qualified to receive fuel assistance and/or utility (or municipal aggregator) discount rates. For 2 to 4 unit dwellings, 50 percent of the occupants must qualify as low-income in order to be served by the Low-Income Single Family Core Initiative.<br><br>Any changes to eligibility criteria will be addressed collectively between the PAs, LEAN, DHCD, lead vendor (where applicable) and CAP agencies. |
| | **Strategy:**<br><br>Marketing outreach designed to reach more income-eligible customers and maximize energy savings opportunities will continue to expand through the 2013 – 2015 Low-Income Single Family Core Initiative (where applicable). PAs, in collaboration with lead vendor (where applicable) and CAP agencies, will continue to engage in targeted, localized outreach efforts to notify customers of the availability and value of energy efficiency services. Marketing consists of contacting qualified income-eligible customers subscribing to the discount rate who have not received prior energy efficiency services. Telemarketing, direct mail, bill inserts, and literature distributed through social services agencies, government offices, and other networks are also used to market the initiative. In addition, PAs are participating in statewide marketing efforts to encourage all customers to participate in energy efficiency initiatives. Those efforts will assist in driving income-eligible customers to take advantage of not only energy efficiency programs but also discount rates, fuel assistance and other social programs. Awareness of the initiative is also gained through participation in local community events such as job fairs, senior centers, and employee |

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<tr><td></td><td>presentations, which may include case studies.<br><br>Outreach and marketing efforts as well as PA collaboration will be expanded as needed. Approaches may include building relationships with unemployment centers, medical service providers, and other venues that could reach potential income-eligible customers. PAs will continue to examine other potential service providers and venues such as community-based outreach that could reach income-eligible customers.</td></tr>
<tr><td>Technologies/Incentives</td><td>The following is a list of targeted end uses, recommended technologies, and incentives (not meant to be limiting) offered where qualified:
<table>
<tr><th>Targeted End Use</th><th>Technology</th><th>Incentive</th></tr>
<tr><td>Building Shell</td><td>Insulation (Attic, Wall, Pipe, & Duct)</td><td rowspan="15">No cost to customer with established caps (where applicable)</td></tr>
<tr><td>Building Shell</td><td>Air Sealing / Duct Sealing</td></tr>
<tr><td>Heating</td><td>Heating System Repair & Replacement</td></tr>
<tr><td>Domestic Water Heating</td><td>DHW Measures (Low Flow Showerhead, Faucet Aerator, & Pipe Wrap)</td></tr>
<tr><td>Domestic Water Heating</td><td>50 and 80 gallon Heat Pump Water Heater (Electric)</td></tr>
<tr><td>Comprehensive, Whole House Approach</td><td>Weatherization Repairs (electrical repairs, roofs, etc.)</td></tr>
<tr><td>Comprehensive, Whole House Approach</td><td>Health and Safety</td></tr>
<tr><td>Lighting and Appliances</td><td>LEDs</td></tr>
<tr><td>Lighting and Appliances</td><td>CFLs</td></tr>
<tr><td>Lighting and Appliances</td><td>Lighting Fixtures</td></tr>
<tr><td>Lighting and Appliances</td><td>Torchieres</td></tr>
<tr><td>Lighting and Appliances</td><td>Refrigerator Replacement</td></tr>
<tr><td>Lighting and Appliances</td><td>2nd Refrigerator Removal</td></tr>
<tr><td>Lighting and Appliances</td><td>Freezer Replacement</td></tr>
<tr><td>Lighting and Appliances</td><td>“Smart” power strips</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Window Air Conditioner Replacement</td></tr>
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| | In coordination with LEAN, the PAs will work with the MTAC to include new measures or technologies as appropriate. |
| **Delivery Mechanism** | PAs, when appropriate, use a lead vendor to administer the initiative. The PAs work closely with their lead vendor and/or respective CAP agencies on all aspects of the initiative design and implementation. The lead vendor/CAP agencies are responsible for providing coordination of energy efficiency services to the customer. The lead vendor/CAP agencies work with installation contractors to ensure that the proper initiative guidelines are enforced. These agencies are also responsible for ensuring that the customer meets the eligibility requirements for initiative participation and providing the lead vendor and/or PA with the required documentation of all work performed. Quality assurance is completed by the CAP agencies, DHCD, as well as by a PA funded independent third party vendor. |
| **Three-Year Deployment Strategy/Roadmap** | The PAs will coordinate efforts through the existing low-income weatherization and fuel assistance program via LEAN to ensure consistent implementation throughout the state and retain the advantages of the existing infrastructure of central coordination while avoiding the creation of a new or central entity. Training and workforce development will be accomplished by the PAs working with LEAN, DHCD, lead vendors and CAP agencies to increase the number of qualified contractors, energy auditors, and administrative staff. The PAs in conjunction with LEAN, the lead vendors and the CAP agencies will continually review and evaluate new measures and technologies. All applicable revenue streams available will be leveraged to enhance services. Through marketing and outreach efforts, the PAs will attempt to broaden initiative participation. PAs will attempt to deepen efficiency penetration consistent with a comprehensive, whole house approach. |
| **Special Notes** | |

| SECTOR | PROGRAM | CORE INITIATIVE | ADMINISTERED BY | | |
|---|---|---|---|---|---|
| LOW-INCOME | WHOLE HOUSE | LOW-INCOME MULTI-FAMILY | ELECTRIC & GAS PAs | • | JOINT |
| | | | | | PA - SPECIFIC |
| **Core Initiative Overview** | **Key Objectives:**<br><br>The Low-Income Multi-Family Retrofit Core Initiative leverages all applicable revenue streams and provides cost-effective, residential energy efficiency improvements that benefit income-eligible occupants and owners of multi-family buildings. Energy efficiency products and services are implemented directly in the dwellings of residential, income eligible customers living in multi-family facilities (with 5 or more attached units), in which at least 50 percent of the occupants are at or below 60 percent of the state median income level. The Program Administrators will provide up to 100 percent of the cost-effective project with established caps based on projected savings. | | | | |
| | **New Enhancements:**<br><br>• In 2012, the funding of the Low-Income Multi-Family Core Initiative and Low-Income Single Family Core Initiative was proposed to be combined. The PAs continue to combine funding for the Low-Income Multi-Family and Single Family Core Initiatives in 2013-2015 to offer more flexibility in servicing the greatest potential number of income-eligible customers if demand for one initiative surpasses the other. Additionally, the PAs and LEAN will explore ways to address the disproportionate electric and gas Multi-Family budgets. Ongoing throughout program years 2013-2015.<br><br>• The PAs will continue to work with the Best Practices Working Group to identify new cost-effective energy efficiency services, measures and technologies that are appropriate to offer to income-eligible customers. Common area lighting controls provide an excellent opportunity to reduce wasted lighting energy in common-area applications such as stairwells and hallways when the area is unoccupied. All PAs will include best practices within the 2013-2015 Low-Income | | | | |

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| | Multi-Family Core Initiative. LED lighting is a new measure that has been and will continue to be examined as the technology evolves and pricing declines. The Heat Pump Water Heater (50 gallon and 80 gallon tank) is another new measure for the initiative as it was deemed cost-effective for use when replacing an electric water heater of equivalent size. While this measure provides excellent savings potential, installations are required to meet manufacturer recommended temperature and space specifications as well as condensation removal criteria. Ongoing throughout the program years 2013-2015.<br><br>• As a new initiative in 2010, the Low-Income Multi-Family Core Initiative focused on multi-family properties that were non-institutional dwellings owned or operated by non-profit entities or public housing authorities. In 2012, based upon available funding, some PAs also served "for profit" properties under the same guidelines in which at least 50 percent of the occupants were at or below 60 percent of the state median income level. With better data and more experience in this sector, the Low-Income Multi-Family Core Initiative for 2013 – 2015 will broaden participation and plans to serve "for profit" multi-family properties in addition to "non-profit" multi-family properties based upon an individual PA's budget constraints with prioritization for the "non-profit" properties by Q1 2013.<br><br>• PAs will work with the Low-Income Energy Affordability Network ("LEAN"), the Low-Income Multi-Family Advisory Committee, state organizations such as the Department of Housing and Community Development ("DHCD"), and Community Action Program ("CAP") agencies to increase qualified contractor participation in the initiative through training and workforce development. The PAs also plan to continue to support contractor and auditor training as needed. Ongoing throughout program years 2013-2015.<br><br>• Currently, the Low-Income Multi-Family Core Initiative serves properties that are heated by gas and electricity; however, facilities heated by deliverable fuels are excluded from participating in all of the available energy efficiency measures that are offered within the initiative, specifically weatherization improvements and heating system repairs and replacements. The 2013-2015 Multi-Family Core Initiative plans to explore the potential of offering all available measures and incentives to any eligible multi-family facility regardless of fuel type. Efforts will be prioritized during program year 2013. |

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| **Core Initiative Design** | The Low-Income Multi-Family Core Initiative services properties that have five or more units in which at least 50 percent of the occupants are at or below 60 percent of the state median income level. Eligibility for the initiative measures and services will be based on the established cost-effectiveness test, which includes agreed upon non-energy benefits, and will not be restricted, to the greatest extent possible, by rate class associated with the meter(s) for the facility. Eligible projects involve efficiency upgrades for buildings with currently high energy consumption and require that applicants participate in benchmarking their building's energy usage post-improvements. The Low-Income Multi-Family building inventory has been an innovative component of this initiative to both help identify potential participants and help determine usage patterns in this sector.<br><br>The PAs will work in collaboration with the Best Practices Working Group including LEAN, the Multi-Family Advisory Committee, DHCD, lead vendors, and CAP agencies to collaborate and coordinate statewide on all aspects of the Low-Income Multi-Family Core Initiative, including but not limited to planning, delivery, implementation, education, marketing, training, cost-effectiveness, evaluation, and quality assurance. When topics to be discussed apply to both market-rate customers and low-income customers, PAs will further coordinate between initiatives as needed.<br><br>The initiative will be structured to ensure that participants are provided with a "whole building"; fully integrated offering that targets both gas and electric end users. Once a property is deemed eligible, it will receive an energy assessment through a lead vendor or local CAP agency. The assessment evaluates the building shell, efficiency and appliance conditions (for electric PAs only), as well as home health and safety. The CAP agency will then arrange for all applicable measures and services to be installed by a qualified contractor. Savings will be deepened by installing additional efficiency measures; to the extent the overall project remains cost-effective.<br><br>The initiative piggybacks on the current DHCD low-income energy efficiency programs and all other eligible funding sources (*i.e.*, federal and state) to enhance services consistent with a whole-building approach. PAs will use a lead vendor or local CAP agency to administer the initiative. Sub-contracting will be appropriate to the complexity of the work required and will be based on a similar audit tool as in the Multi-Family Retrofit Core Initiative. Low-income customer inquiries will be referred to the lead vendor/CAP agency, the Multi-Family Advisory Committee, or PA by the Multi-Family Market Integrator ("MMI"), as defined in the Multi-Family Retrofit Core Initiative. Low-income customers may also apply directly to the initiative via their PA and/or local CAP agency. An essential element of this initiative is |

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| | that interested customers also have the option, at their discretion; of electing to participate in the Multi-Family Retrofit Core Initiative. This approach helps ensure that there are multiple paths to participation in energy efficiency initiatives in this unique market sector that 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 Multi-Family Retrofit Core Initiative (and its terms and conditions) and, where qualified, as providers for the Low-Income Multi-Family Core Initiative under the terms and conditions of this initiative.<br><br><u>Customer Education</u><br>Energy efficiency education and information are included in all PAs' energy efficiency initiatives. The primary forms of energy education are benchmarking building inventories and verbal communication between the auditor and the participants. The Low-Income Multi-Family Core Initiative plans to develop/improve education materials and material distribution which will include education for landlords, property managers, building occupants, and property management personnel as well as development of case studies. |
| **Marketing Overview** | **Target Market:**<br><br>Residential customers on the discount rate and/or customers living in multi-family facilities with five or more dwelling units in which at least 50 percent of the occupants are at or below 60 percent of the state median income level in addition to the landlords and property managers of these buildings.<br><br>Any changes to eligibility criteria will be addressed collectively between the PAs, LEAN, lead agencies and CAP agencies. |
| | **Strategy:**<br><br>Demand for the Low-Income Multi-Family Core Initiative will be managed jointly by the PAs and the Multi-Family Advisory Committee.<br><br>The PAs will engage in outreach efforts to notify customers of the availability and value of energy efficiency services to stimulate interest in the initiative and operate within budgets. Marketing will consist of contacting landlords or property managers of income-eligible tenants. Direct mail, bill inserts, case |

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<tr><td></td><td>studies and literature distributed through social service agencies, housing funders, government offices, community outreach, and other networks are also used to market the initiative. PAs will use their relationship with PHAs, CDCs, community based outreach and other income-eligible property managers to market the benefits of the initiative.<br><br>In addition, PAs are participating in statewide marketing efforts to encourage all customers to participate in energy efficiency initiatives. Those efforts will assist in driving income-eligible customers to take advantage of not only energy efficiency programs but also discount rates, fuel assistance, and other social programs when appropriate.</td></tr>
<tr><td>Technologies/Incentives</td><td>The following is a list of targeted end uses, recommended technologies, and incentives (not meant to be limited) offered:
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<tr><td>Building Shell</td><td>Insulation (Attic, Wall, Pipe, & Duct)</td><td rowspan="15">PAs will pay up to 100 percent of the project cost with established dollar caps where applicable. Larger capital investment projects will be screened for cost-effectiveness (with the Multi-Family Advisory Group.</td></tr>
<tr><td>Building Shell</td><td>Air Sealing</td></tr>
<tr><td>Heating</td><td>Heating System Repair & Replacement</td></tr>
<tr><td>General Waste Heat</td><td>Programmable Thermostat</td></tr>
<tr><td>Domestic Water Heating</td><td>DHW Measures (Low Flow Showerhead, Faucet Aerator, Pipe Wrap, & Tank Wrap)</td></tr>
<tr><td>Domestic Water Heating</td><td>Water Heating Equipment</td></tr>
<tr><td>Domestic Water Heating</td><td>Heat Pump Water Heater (Electric)</td></tr>
<tr><td>Lighting and Appliances</td><td>LEDs</td></tr>
<tr><td>Lighting and Appliances</td><td>CFLs</td></tr>
<tr><td>Lighting and Appliances</td><td>Lighting Fixtures</td></tr>
<tr><td>Lighting and Appliances</td><td>Common Area (Interior & Exterior) Lighting Upgrades & Controls</td></tr>
<tr><td>Lighting and Appliances</td><td>Torchieres</td></tr>
<tr><td>Lighting and Appliances</td><td>Refrigerator Replacement</td></tr>
<tr><td>Lighting and Appliances</td><td>Freezer Replacement</td></tr>
<tr><td>Lighting and Appliances</td><td>ENERGY STAR® Clothes Washer</td></tr>
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<tr><td></td><td>
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<tr><td>Lighting and Appliances</td><td>Power Smart Strips</td><td rowspan="15"></td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Window Air Conditioner Replacement</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Energy Management System (EMS)</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Motors and drives</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Chillers</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Air Compressors</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Ventilation system repair, adjustment, replacement</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Heat Recovery Ventilation/Energy Recovery Ventilation</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Redistribution systems</td></tr>
<tr><td>HVAC/Mechanical Systems</td><td>Temperature Building Controls</td></tr>
<tr><td>Comprehensive, Whole House Approach</td><td>Weatherization Repairs (electrical repairs, roofs, etc.)</td></tr>
<tr><td>Comprehensive, Whole House Approach</td><td>Health and Safety</td></tr>
</table>
<br>The PAs will work with the MTAC to include new measures or technologies, as appropriate, and in coordination with LEAN’s other efforts.
</td></tr>
<tr><td>Delivery Mechanism</td><td>The initiative will be administered cooperatively by the gas and the electric PAs in conjunction with interested stakeholders.<br><br><u>Enrollment</u><br>Participants for this initiative may enroll through a local CAP agency, statewide website, the multi-family statewide toll free number, PA(s), the Low-Income Multi-Family website or other venue (use of the low-income multi-family website is required in most cases).<br><br><u>Participant Screening</u><br>Currently, the Multi-Family Advisory Committee comprised of LEAN, Community Development Corporations (“CDCs”), other non-profit owners of low-income non-institutional multi-family housing, and Public Housing Authorities (“PHAs”) are tasked with prioritizing low-income multi-family projects</td></tr>
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| | for each PA. The Advisory Committee integrates flexibility into their planning to handle unique needs of PAs and their customers or potential participants. The Multi-Family Advisory Committee may include representatives of other sectors.<br><br>Due to the nature of this market segment, most leads will be generated through the Multi-Family Advisory Committee; however, leads coming in via other venues will be screened by the MMI and forwarded to the Multi-Family Advisory Committee for eligibility confirmation.<br><br>Upon confirmation of a project, the lead vendor or CAP agency is responsible for coordinating the appropriate parties to address the project needs based on protocols agreed to by the specific PA(s) and in consultation with the specific PA(s) to move the project forward.<br><br><u>Whole Building Assessment</u><br>Based on the outcome of the screening process, the appropriate technical resources will be assigned to conduct a whole building, (fuel blind) assessment. The lead vendor or local CAP agency will attempt, through the screening process, to identify all resources required for the assessment; however, there may be instances where additional expertise is required and therefore more than one site visit is necessary. Technical assessments and engineering studies will be conducted as needed. At the time of the assessment, education will be provided to participants and instant saving measures will be installed, as appropriate and authorized by the customer.<br><br><u>Integrated Proposal for Energy Efficiency Services</u><br>Using the findings from the site-specific assessment, the appropriate parties will draft a project proposal that will include gas and electric cost-effective measure opportunities and other available services where applicable. Where appropriate, the project proposal will be forwarded to the appropriate PA(s) for approval. Once the comprehensive offer has received PA approval (if necessary), it will be presented to the participant by the parties required to help the customer fully understand the offering.<br><br><u>Delivery of Measures and Services</u><br>The lead vendor or CAP agency will coordinate the delivery of the measures and services. The installation contractors will strive to have all dwelling unit measures installed in a single visit to minimize disruption for the tenants; however, multiple visits may be required for the installation of common area measures. All installations are coordinated with the owners, property managers and the tenants. |

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| | Quality Assurance/Quality Control<br>Quality assurance will be performed in support of this initiative. Quality assurance is completed by the CAP agencies, as well as by a PA funded independent third party vendor.<br><br>The delivery mechanism serves to minimize lost opportunities and encourage deeper savings in the following ways:<br><br>• The increased incentive amounts may allow for achieving energy savings that would not be possible if this population had to provide a significant co-payment.<br>• Having the PHAs and CDCs and other owners of non-institutional low-income multi-family housing involved in the process helps facilitate access to the tenant spaces, which has been traditionally cited as a potential barrier in the multi-family market. |
| **Three-Year Deployment Strategy/Roadmap** | The PAs will coordinate efforts via LEAN to ensure consistent implementation throughout the state and retain the advantages of the existing infrastructure of central coordination while avoiding the creation of a new or central entity. Participants may inquire for enrollment through a CAP agency, statewide website, low-income multi-family website, multi-family statewide toll free number, PAs or other venue. Many leads will be generated through the Multi-Family Advisory Committee; however, leads coming in via other venues will be screened by the MMI and/or the PAs and forwarded to the lead vendor/CAP agency for eligibility confirmation. Once eligibility has been confirmed, the Multi-Family Advisory Committee prioritizes the low-income multi-family projects for each PA. Training and workforce development will be accomplished by the PAs working with LEAN, DHCD, and CAP agencies to increase the number of qualified contractors, energy auditors, and administrative staff. The PAs in conjunction with LEAN and the CAP agencies will continually review and evaluate new measures and technologies. All applicable revenue streams available will be leveraged to enhance services. Through marketing and outreach efforts, the PAs will attempt to broaden participation. PAs will attempt to deepen efficiency penetration consistent with a comprehensive, whole building approach. |
| **Special Notes** | |

*d. C&I Program Descriptions*

## Overview of C&I Efforts

## Lessons Learned

Over the past three-year program delivery period , the Program Administrators achieved success by both expanding and accelerating existing program "through put" , and by targeting new initiatives and strategies to identifiable market pockets where a local market assessment or the experiences of other programs indicated that unrealized efficiency potential could be captured. The PAs actively sought out examples of program or initiative success from other jurisdictions and incorporated promising models into local program design and delivery. For example, the PAs moved some lighting incentives upstream to capture a demonstrable share of the new construction/equipment replacement opportunities not being captured by the established program.

The PAs were also quick to exploit new opportunities as they appeared, and pioneered program delivery models that are now being emulated elsewhere. One example is in the dynamic and rapidly-changing lighting market, where the PAs must balance marketplace enthusiasm for LEDs with the need to ensure product reliability and appropriate incentives as a percentage of product price. For example, the convergence of a reliable and appropriate product and a suddenly very competitive market price allowed the PAs to rapidly deploy a targeted initiative to a niche market - LED replacements into sockets in the hospitality industry.

In addition, the Massachusetts PAs pioneered some delivery concepts, such as creating multi-year agreements with the largest customers, which are now being examined for application in other parts of the country. At a higher level, the PA model for managing the multi-entity delivery of a dual-fuel statewide program has drawn inquiries from other emerging statewide efforts around the country.

ARRA funding created a time-specific stimulus and unique opportunities to forge creative partnerships with municipalities and there are expected to be some continuing effects of this program that can be applied to "second generation" partnership efforts. The collaborative working relationship established with state and federal agencies (e.g., Mass Energy Leaders, DOER, DCAM, DEP, Green Communities Division, EPA) during the ARRA stimulus period has created lasting improvements in mission alignments and process efficiencies benefiting multiple stakeholders. These efforts will continue to be enhanced and leveraged going forward.

Financing was also a focus of PA efforts over the past several years as lack of financing was identified as a potential barrier to increased participation. As a result, a financing offering was developed in collaboration with the Massachusetts Bankers Association ("MBA"). The financing design was well-researched, drawing on the lessons learned from the myriad of financing approaches put forth in Massachusetts and in other states over the last twenty years. The Massachusetts offering provides a very streamlined process. Additional concepts of "off-

balance sheet" financing have been discussed; however, these concepts can prove challenging under GAAP (Generally Accepted Accounting Principles).[27]

Moving forward, the PAs will increase efforts to highlight the favorable investment attributes of efficiency and promote the MBA offering, as well as Performance Contracting and other financing vehicles, for the minority of customers for whom lack of capital is an obstacle to engagement. In addition, the PAs will develop tools to provide customers with additional financial perspectives to evaluate efficiency investments which can be used by account managers as well as third parties.

One of the benefits of having multiple Program Administrators is the ability to test different models and to share best practices. Two recent examples include NSTAR's Municipal Program to test a direct-install model tailored to the specific needs of municipal customers and National Grid's test of a comprehensiveness initiative that increases their multiple measure bonus from 10% to 25% for a limited time during the summer of 2012 – this enhanced incentive is intended to both to encourage greater comprehensiveness and to smooth out participation during the year. Each company shares the progress of these efforts with the C&I Management Committee, and will formally report results in the fourth quarter of 2012. Depending on the success of this effort, the other PAs may adopt similar approaches in 2013.

The PAs have also largely succeeded in moving from separate, siloed electric and gas delivery to an integrated gas/electric delivery model. Cross training has been conducted for both internal and external personnel. Post audits have been conducted to confirm Direct Install vendor compliance and customer satisfaction. Multiple-PA, multi-year duel fuel MOUs have been signed, and a number of co-funded technical assistance ("TA") studies and projects have been implemented. As the effects of this integration become recognized, the marketplace has responded – with vendors hiring new technical staff and partnering and merging in order to acquire integrated delivery capabilities. The PAs continue to focus on expanding the pool of technical assistance vendors and program expediters ("PEXs") who have the ability to pursue comprehensive electric and gas opportunities for the participating customer. Integration is an ongoing and dynamic process, and the C&I Management Committee, as well as MTAC and the various specialized working groups and subcommittees, all include representatives from both electric and gas PAs and they all continue to focus on opportunities to further streamline efforts for customers, enhance comprehensiveness, and to move forward with enhancements in the integration effort.

**Structural Changes**

PAs will be consolidating the former freestanding Direct Install program as an initiative under the Retrofit program. The purpose of this change is to provide improved clarity for customers. Post-consolidation, non-residential customers will have two clear umbrella options to participate: a Retrofit Program or a New Construction Program. This clarification also helps stakeholders distinguish the different characteristics (*e.g.*, incentive basis, decision makers,

[27] National Grid and WMECO will continue to offer on-bill repayment to small businesses and other non-residential electric customers as a tool for addressing this barrier to participation. A portion of National Grid's budget includes funding for this purpose.

barriers, market actors, and project timeframes) of these two large programs and direct go-to-market strategies for each.

## Moving Forward

In order to both sustain current program activity levels, and ramp up to new levels of savings, the PAs will continue to expand current efforts while focusing on several new initiatives that are described in detail below. The intent is not to add new "programs", which best practice research concludes only lends to customer confusion, but rather to increase customer participation within the existing framework by identifying, understanding and developing strategies to overcome barriers to participation. The PA strategy is to promote broader and easier adoption of appropriate efficiency services and solutions, not specific programs.

<table>
<tr><th>SECTOR</th><th>PROGRAM</th><th colspan="3">ADMINISTERED BY</th></tr>
<tr><td rowspan="2">COMMERCIAL & INDUSTRIAL</td><td rowspan="2">RETROFIT</td><td rowspan="2">ELECTRIC & GAS PAs</td><td>•</td><td>JOINT</td></tr>
<tr><td></td><td>PA - SPECIFIC</td></tr>
<tr><td>Program Overview</td><td colspan="4">Key Objectives:<br><br>This program increasingly will focus on comprehensive gas and electric energy efficiency opportunities associated with mechanical, electrical, and thermal systems in existing commercial, industrial, governmental and institutional buildings. The Retrofit program provides technical assistance and incentives to encourage the retrofitting of equipment that continues to function, but is outdated and inefficient, and can be replaced with a premium efficient product. The program includes both prescriptive and custom measures.<br><br>The program provides technical assistance (to identify and quantify opportunities) and financial incentives based on a percentage of project costs (both material and labor) to make equipment removal and replacement attractive to building and business owners in terms of conventional business payback requirements. Given the current low cost of gas, this will likely require an increase in incentives currently offered for gas energy efficiency measures.<br><br>The program can also help participants identify specific peak load management opportunities that enable participants to maximize other time-based incentives – such as those available from the ISO – to manage their electric and thermal loads, and assists occupants in improving their ongoing operation and maintenance practices. While the primary focus of efforts is on energy savings opportunities, the PAs recognize the value of creating demand savings that can be bid into the FCM, providing enhanced funding for efforts.</td></tr>
<tr><td></td><td colspan="4">New Enhancements:<br><br><u>Program Definition</u> - Move the Small Business Retrofit Program (Direct Install (“DI”) into the overall C&I Retrofit Program, as a sub-program/initiative targeted toward smaller C&I customers with combined</td></tr>
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| | peak demand of 300 kW or less<br><br>**Financing/Energy Efficiency Investment:** Provide additional financial tools for use starting in Q1 2013 for improved customer evaluation of financial benefits and continually assess additional opportunities to address competition for internal customer resources for energy efficiency investments in 2013 – 2015.<br><br>**Municipalities:** Review and adopt, as appropriate, a focused turn-key Municipal Track model in which contracted vendors will be dedicated to serve Municipal customers.<br><br>**Expanded Service Offerings**: Improve customer experience and broadening service offerings by exploring new streamlined and lower cost delivery pathways for both small and medium sized customers, as well as for larger customers who choose a more limited engagement in energy efficiency. The new delivery pathways may potentially include:<br>• A web based portal to provide one-stop-shopping for customer efficiency opportunities;<br>• Self-assessment through an internet portal that provides an interactive response to customer submitted data;<br>• Personal assistance via web-based (chat) or telephone support services that would screen potential customers/facilities for services that best address their specific needs; and<br>• Fee-Based on-site assessment to evaluate energy efficiency opportunities when savings potential appears limited and/or customer commitment to implementation is uncertain.<br><br>**Community Based Implementation Campaigns:** Expand on pilot "Main Street" models to overcome challenges to cost-effective service to some of the smallest customers by targeting geographical areas with high densities of small customers for highly focused, time-limited delivery of program services in order to achieve economies of scale in implementation cost.<br><br>**LED Street Lighting**: Continuation or launching of major retrofit initiatives for municipally-owned streetlights by several PAs, and evaluation by others. New PA working group to focus on addressing and overcoming the regulatory and technical issues surrounding the implementation of efficiency options for utility-owned street lighting. |

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| | **Market Segmentation**: Continued analysis and adoption of industry-segmented marketing approaches, delivery systems, value propositions and offerings to better meet the needs and interests of those segments. Initial examples include Healthcare and Commercial Real Estate which have been described above.<br><br>**Five Largest Gas and Electric Customers Accelerated Rebate Pilot:** The PAs are committed to implementing a voluntary accelerated rebate pilot program for their five largest gas and electric customers, in accordance with Sections 5 and 54 of An Act Relative to Competitively Priced Electricity in the Commonwealth, St. 2012, c.209, approved August 3, 2012. |
| **Program Design** | Key strategies of the Retrofit Program as planned for 2013-2015 include:<br><br>**Technical Assistance Services**:<br><br>Solid, professional, unbiased, and independent technical advisory services will continue to provide the foundation for the achievement of deep and broad savings in existing buildings. The Technical Assistance ("TA") Services component of the program provides technical support matched to the specific needs and capabilities of each commercial or industrial customer. Services include walk-through audits, detailed energy-efficiency studies for buildings or building components, and specialized technical studies, such as studies of industrial process improvements and compressed air projects.<br><br>Study proposals are typically assigned to and performed by TA consultants who have been selected as preferred vendors through a competitive procurement process by the PAs. TA consultants will be assigned based on an assessment of their expertise with the technology area under consideration. Customers can also elect to use a TA provider of their own choosing as long as the co-funding PA approves the firm's qualifications and cost-estimate. Non-preferred vendors must comply with the same level of detail and quality as preferred vendors.<br><br>In many instances, commercial and industrial customers may have both gas and electric equipment options for a particular end-use. In order to (a) encourage more comprehensive, integrated, and balanced consideration of all the energy efficiency options available, and (b) ensure that customers have open choices, the gas and electric PAs delivering the statewide program will continue to provide coordinated TA studies. In addition, starting in 2013, PAs will *require* the consideration of both gas and electric |

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| | opportunities in order for customers to be eligible for TA funds. In general, as previously, the study costs will be shared between gas and electric PAs according to the proportionate share of the analysis and/or opportunities found through the analysis. Study opportunities are likely to appear in larger complex buildings and industrial facilities.<br><br>**Municipalities**: Municipalities often have unique barriers and the Program Administrators recognize an integral role they can play to helping to overcome such barriers. These barriers can include capital and staff limitations and procurement processes which were not designed to easily accommodate the vendor-driven process of energy efficiency. Municipalities may lack the technical resources to become familiar with complex energy efficiency options, and requirements for governing body approval of all capital budget items can make it difficult for municipal officials to act on opportunities to reduce energy costs. Also, many cities and towns have old public facilities with outdated systems. Local government structures also delegate responsibility for energy upgrades to the individual department level, while payment of bills often resides at a central finance office. Thus, there is little incentive for departments to upgrade the energy efficiency of their buildings because the reward for reduced energy bills may simply be a reduced operating budget in the subsequent year.<br><br>The cumulative consequence is that municipal customers often have very outdated and inefficient energy systems. Because savings per building may be low and the transaction costs of public procurements are high, energy service companies have little or no incentive to market to these customers.<br><br>The GCA provides a new streamlined contracting process that allows cities and towns to sole-source efficiency projects to a PA, or the PA's delivery contractors, if the total work is less than $100,000. By providing upfront competitive bidding, enhanced financial incentives, and PA financing options, including on-bill payment, some PAs have been able to provide a turnkey service with incentives structured to create positive cash flow and to encourage comprehensive projects. This addresses many of the implementation barriers cited above. The Program Administrators are committed to supporting the Green Communities Initiative and assisting new communities in entering the process. We will continue to assist prospective communities by offering a high level assessment of their apparent energy savings potential based upon a walk through of their facilities. Support is also committed in providing data to the community's hired assessment vendor to support the municipalities more detailed audit.<br><br>The Program Administrators will continue their successful and highly productive working relationship |

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| | with the DOER Green Communities Division by sharing municipal efficiency data on a quarterly basis and meeting with DOER staff to discuss municipal specific issues on an established quarterly meeting schedule. In addition to working closely with the Green Communities Division, the PAs will expand their direct, targeted outreach to municipalities to ensure that each city and town is aware of all energy services and customized assistance available to them to facilitate and expedite their participation. The PAs are committed to make every effort to simplify transaction and administrative burdens for this key customer segment. To aid in this effort, the Program Administrators have agreed to a common direct install municipal initiative starting in Q1 2013, which will identify both immediately actionable measures and those requiring further study, as part of a uniform municipal statewide offering.[28] All PAs will offer financing to municipalities. Utilities will advise and assist municipalities in working with Section 44 of the GCA to navigate the exemption authority they have to expedite procurement of efficiency services. The sections below on Wastewater and Water Treatment Segment and Street Lighting contain additional information on these initiatives.<br><br>**Wastewater and Water Treatment Segment:** The PAs will build on the success of our on-going partnership with the DEP to achieve implementation of additional efficiency measures among the 120 municipal / district wastewater treatment plants and 250 municipal / district drinking water treatment plants. The PAs previously provided comprehensive energy assessments at many of these facilities in this partnership under the Energy Action Program and the Energy Leaders Program. A major success of this partnership included a PA efficiency study completed under the Energy Action Program being used as the major documentation to leverage the award of a multi-million dollar ARRA grant resulting in the Pittsfield waste water treatment plant now self-producing 80% of its annual electric energy. This was achieved through the installation of aggressive efficiency upgrades to their aeration system, CHP utilizing waste methane gas, and a large photovoltaic system, all of which were analyzed in the PA study.<br><br>The PAs and DEP have targeted efficiency opportunities in wastewater aeration and pumping, as well as, drinking water pumping as area of enhanced focus efficiency. The PAs will work with DEP and DOER to conduct equipment screening of facilities aeration and pumping system assets in order to identify potential energy-saving opportunities in high electric use areas. Once screened, facilities with opportunities will receive incentive offers under the current Mass Save Efficiency program. DEP very recently informed the PAs that they were trying to develop a Sustainable Financial Assistance Model for this specific market |

[28] Cape Light Compact incentive levels will continue to differ.

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| | segment that would include Mass Save efficiency incentives. The agreed upon timeline includes an interagency/PA workgroup being held in the last quarter of 2012, and development of recommendations by the second quarter of 2013. It is also recognized that early engagement of municipal/district key decision makers is a key to achieving implementation and leveraging the existing permitting process to include efficiency.<br><br>**Multifamily Commercial:** It is not uncommon for large multifamily properties to be classified as commercial customers. Even if individual condo or apartment rental units have residential electric or gas accounts, common areas, and in some cases, the entire building, may be on a commercial rate class even if the individual units are residential in nature. To classify these mixed use sites as either Residential or Commercial can lead to numerous lost opportunities and an under-served customer base. In order to alleviate these concerns, the PAs created the Multifamily Working Group in 2010 (Note: See additional description in the Residential Program section) and launched the concept of using a Multifamily Market Integrator ("MMI"). The MMI is the vendor, selected through a competitive procurement process that takes leads for multi-family sites and determines how to best serve the customer given the various program options.<br><br>While this process has been working increasingly well since its launch in 2010, a recent evaluation conducted by The Cadmus Group indicated that some commercial-type opportunities remained unaddressed. In order to address this in the 2013-2015 Plan, the commercial program managers are increasing their commitment to working jointly with residential program managers, and are increasing their active representation on the Multi-Family Working Group. The Multi-Family Working Group is redoubling its efforts to review protocols and procedures, particularly for lead processing, to ensure that every cost-effective opportunity for energy savings is addressed. The C&I Management Committee places a priority on continuing cross-sector efforts to ensure that this important customer sector is effectively served.<br><br>**Compressed Air**: Significant energy savings can be achieved from optimizing compressed air systems in industrial facilities (over 100 HP). The focus is on the efficiency of the compressor system elements and recovery of waste heat generated by these systems.<br><br>**Industrial**: Small and large industrial customers will be targeted with a combined gas and electric delivery model. Industrial energy savings opportunities will be viewed comprehensively and all the potential cost |

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| | and savings streams will be quantified. To support deeper savings with industrial processes, the PAs will seek out specific TA vendors with expertise in certain target industrial processes and customer segments commonly found within PA service territories. The approach will incorporate measures like heat recovery and process improvements, as well as the DOE Steam Assessment and Savings program. Non-gas/electric energy benefits or additional costs related to improvements will be quantified to the extent possible. Examples of additional benefits will include but will not be limited to: raw material, scrap and increased through-put. The PAs will target industrial opportunities aggressively and will endeavor to more routinely quantify the non-energy benefits of efficiency measures and educate customers about them. This effort will also take into account best practices experience from other PAs across the country.<br><br>**Retro-Commissioning**: Deferred maintenance, piecemeal upgrades, "sensor drift" and other factors affect, and degrade, building operation over time. Retro-commissioning allows a thorough evaluation of all building systems to ensure they are operating as designed. Remedial actions resulting from these studies are usually low cost or no cost and have an immediate impact on the energy use and quality of the building's operation. Typically, these studies require a significant time investment by a higher level engineer and are may not be not cost-effective. In order to look for ways to reduce such study costs, PAs will examine best practice approaches of other utilities in the US and consider adoption of more cost-effective approaches in Massachusetts in the first quarter of 2014.<br><br>**Lighting Retrofit Redesign:** Most spaces have lighting that was installed without benefit of a customized lighting design matched to the work requirements in the space or with limited or no consideration for comprehensive energy performance. By combining better fixtures, lamps and controls, and altering layout where cost-effective, there is often significant opportunity for both greater energy savings and an improved visual and working environment. Although lighting redesign provides a significant opportunity for deeper savings in many facilities, the costs to achieve them are several orders of magnitude greater than the standard equipment replacement retrofit alternative. The PAs will research and experiment with new delivery models that match lighting design expertise with lighting retrofit opportunities in an attempt to identify lower cost delivery models that would allow this opportunity to be scaled. This will be offered on a limited basis to begin in Q4 2013, and projects will be evaluated through the custom path to determine the potential for a broader customer application and cost effectiveness in 2014.<br><br>**CHP**: The Program Administrators have had substantial success with the Combined Heat and Power ("CHP") Program during implementation of the first Three-Year Plan making Massachusetts' CHP |

Program the most successful in the country to date. The PAs attribute that success to our screening process that has allowed customers to make informed decisions regarding CHP and energy efficiency investments and the CHP Guidebook that delineates the process for achieving a successful CHP project and qualifying for an energy efficiency incentive.

Individual CHP projects can produce dramatic savings at a single site and have the potential to significantly impact overall PA savings results with a low cost per kWh. As such, good CHP installations are highly desired. At the same time, CHP systems typically have BCRs between 1.0 and 1.5, which means that deliberate care needs to be taken in identifying appropriate opportunities and in proper engineering of installations, which makes them hard to plan for with any accuracy. A number of key lessons have emerged from the PAs' experience to date to guide CHP program efforts during implementation of this 2nd Three Year Plan. These include:

1. Focusing on CHP candidates that have a thermal load requirement that is year-round and in excess of 5,000 hours per year is necessary to ensure cost-effective systems. Such candidates include facilities with significant daily laundry requirements like hospitals, nursing homes and some hotels, as well as others with thermal process requirements like food processors and other manufacturers.

2. Understanding that CHP projects require significant investment by the customer in time, engineering planning, and capital costs, and as such, often require greater sustained customer commitment and involvement than other EE projects and programs. PA account executives play a key role in enabling CHP projects to be successful, with involvement through several stages of the customer's CHP process: a) in the initial identification of CHP opportunities; b) in the active advocacy for appropriate CHP projects with the customer; and c) in the overall shepherding of customers through the process to successful conclusion.[29] PA involvement has been designed to assist the customer throughout the process (see below).

3. Proper sizing of CHP systems is essential to their being cost-effective, so that virtually all thermal output is used by the facility. Key to correct sizing is making sure any significant opportunities to reduce load through energy efficiency are pursued prior to final sizing of the CHP system. Otherwise, the customer can be left with an oversized system producing excess heat, which will not

[29] At least one PA provides account management staff with significant incentive to identify and complete CHP installations in their assigned territory.

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| | be cost-effective. The PAs, therefore, will continue to educate customers that the first step to take prior to conducting a CHP engineering study, is to implement electric and thermal energy efficiency measures as their first priority. "Energy Efficiency First or Simultaneously" continues to be our professional recommendation because efficiency is by far the more cost-effective savings opportunity and has the potential to reduce the required size of the CHP system.<br><br>Based on this experience, the CHP Program process has evolved to ensure more successful identification and completion of CHP installations. The PAs survey customers for CHP potential and offer significant technical assistance where appropriate. This begins with an initial scoping assessment of electric and thermal loads, and where this initial scoping indicates that a reasonable potential exists, an offer is made to co-fund an in depth engineering analysis. PAs provide continuous active assistance with the objective of providing customers an unbiased partner in evaluating their CHP potential. This includes clearly communicating about CHP incentive eligibility requirements very early in the process, identifying qualified consulting engineers for the customer to select for the analysis, reviewing the analysis for accuracy, and providing a professional opinion of the feasibility of the CHP opportunity indicated by the analysis.<br><br>In addition, in Q2 of 2013, the CHP Working Group will fully vet and refine the results of the KEMA CHP Market Characterization study, which identified an initial list of potential CHP prospects. A small number of customers were deemed to be appropriate leads and are being aggressively pursued. The PAs have added to the list based on marketing the program to other potential CHP candidates.<br><br>**Street Lighting:** A key component of the PA role for street lighting is to provide stakeholders with knowledge and guidance on the appropriate replacement of older street lighting technologies with more efficient street lighting technology. The Program Administrators will continue to promote efficient street lighting technologies to private and municipal entities. Program Administrators will expand and accelerate the current collaboration with all stakeholders to address barriers, such as regulatory tariffs, which impede implementation of efficient LED and induction street lighting technology.<br><br>The streetlight market is divided into customer-owned and utility-owned sub-markets. For customer-owned street lights, the current program offers technical assistance to address equipment selection and site considerations and both custom and prescriptive incentive options. The first cost of LED technology was a barrier to achieving cost-effective product eligibility in the initial period of the first Three Year Plan, |

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| | however, the price of LED street light technology has fallen dramatically in 2012, making broader application of this technology more feasible. In response, several PAs have embarked on major retrofit initiatives for municipalities in their territories and others are evaluating similar efforts.<br><br>The utility-owned street lighting market has the additional challenge of addressing regulated street lighting rate tariffs. A PA Street Lighting Efficiency Working Group will be convened in Q4 2012 with PA-specific follow up with relevant areas of each organization taking place to collaboratively address regulatory and technical issues. Upon a successful resolution of the tariff issues involving utility owned streetlights, the PAs plan to have a formalized program rolled out across the state within six months. The PAs plan to provide a status update to the Council in Q4 2012.<br><br>**Expanded Service Offerings**: The Program Administrators place a high priority on bringing offerings to customers that are timely, uncomplicated, cost-effective, consistent, and tailored to their needs and investment criteria. The Program Administrators currently provide dedicated customer account management for their largest customers and Direct Install ("DI") services for small businesses where the opportunities are cost effective. The intent of the expanded service offerings initiative is to improve the customer experience and broaden service offerings by exploring new delivery pathways for both small and medium sized customers, as well as for larger customers who choose a more limited engagement in energy efficiency. The hope is that this will lead to greater and deeper program participation, while managing costs. The new delivery pathways may include:<br><br>• A web based portal to provide one-stop-shopping for customer efficiency opportunities including information on energy efficiency measures targeted to specific segments. A requirements document will be developed by the fourth quarter of 2012, with initial implementation targeted for the end of Q2 2013.<br><br>• Self-assessment through the internet portal to provide a more interactive experience where a customer can be guided to independently assess their individual operations, benchmark themselves against similar businesses, and learn about energy efficiency opportunities available to them without requiring an on-site visit. A requirements document is planned for Q2 2013 with rollout anticipated for early 2014.<br><br>• Personal assistance via web-based (chat) or telephone support services that would screen potential customers/facilities to identify services that best address their specific needs. This screening may lead |

to a referral back to the self-service portal, or lead to more interaction in advance of scheduling additional individualized services. This additional level of service will benefit from earlier experiential learning from the customer portal. Writing of a requirements document is targeted to commence by the Q3 2014 with an anticipated roll out in 2015.

- Fee-Based On-site assessment will be developed to evaluate energy efficiency opportunities when savings potential appears limited and/or customer commitment to implementation is uncertain. The fee structure will be designed to ensure that it is not a barrier to participation, but engages the customer to encourage implementation. This on-site assessment may lead to a DI vendor visit or the provision of other services available through the C&I Retrofit Program. Development of the fee structure will commence in the fourth quarter of 2012 with roll out anticipated for the first quarter of 2013.

**Community-Based Implementation**: For the smallest customers, challenges exist for both the customer and the Program Administrators given limited incremental savings opportunities relative to the cost of acquisition. For the customer, there is often insufficient economic motivation to take part in available energy efficiency services. For the Program Administrators, the implementation costs are relatively large compared to the potential savings. Although the intent is to serve a broad base of customers through the self-service portal, there are opportunities to scale efforts through a version of the tested Main Streets or community-based campaign model. This model targets geographical areas with high densities of small customers in order to achieve economies of scale in implementation cost. Typically such models include roll-out for a predetermined campaign period, during which customers in the defined area are offered a limited suite of services at little or no charge. These measures might include lamp and ballast retrofit, spray valves, exit sign retrofits and other energy efficiency measures that lend themselves to simple, rapid bulk delivery in a small to medium retail corridor. Larger opportunities are identified and referred to the traditional DI initiative for follow-up. Customers not able to participate during the promotion are also referred back to the traditional program offerings for later participation.

Several field tests have been conducted using this model with variations in delivery and demographic location. To date, third-party promotion and delivery field tests have produced dramatically lower participation and customer satisfaction rates than PA-based delivery models. Given these results, the PAs intend to pursue the PA-driven model for the next phase of community-based campaigns. It should also be noted that although streamlined delivery in these field tests did reduce the impacts of a higher incentive, costs were approximately 15% higher than the traditional Direct Install program. Fully scaled,

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| | expectations are that this effort could have about a 5% increase in savings for the customer class serviced under DI.<br><br>By Q1 of 2013, a list of suitable geographical areas will be identified for each PA service territory for community-based campaign delivery. Sequencing will be determined based on several factors including soft roll-out, ramp up and integration into overall marketing/promotional activities. Milestones and success indicators will also be established and included in the plan. In Q2 of 2013, a Request For Proposal for services will be created and released. Rollout is targeted for Q4 of 2013 and continuing through 2015. Although this effort has been field tested, measurements of customer satisfaction, customer acquisition rates, costs and other program impacts will be reviewed at various milestones and appropriate corrections will be implemented.<br><br>**Market Segmentation**: In order to achieve greater participation and savings, the Program Administrators will increasingly use market segmentation to inform go-to-market strategies. Customers will be divided into meaningful segments according to a variety of characteristics including usage and demand and industry classification. Based on the specific characteristics of defined segments, marketing approaches, delivery systems, value propositions and offerings can be customized to better meet the needs and interests of individual companies in those segments.<br><br>The healthcare sector is a specific market segment in which the PAs have already initiated an analysis of efficiency opportunities. The Massachusetts Technical Advisory Committee ("MTAC") has engaged the Fraunhofer Center for Sustainable Energy Systems to identify efficiency opportunities in the healthcare industry with a specific focus on large medical equipment. A contract has been signed between MTAC and Fraunhofer for analysis to be completed in the first quarter of 2013. After completion of this analysis, sharing with key stakeholders, and appropriate implementation action, MTAC will determine the next area of healthcare efficiency to be analyzed with a focus on opportunities common to small and large healthcare facilities.<br><br>Segmentation by size, as measured by energy usage and/or demand, plays a dominant role in determining the appropriate delivery model, with the largest customers supported by dedicated account executives while smaller customers are supported by a network of direct install vendors. An increasingly important tool available to account executives managing the largest C&I customers is the Memorandum of Understanding ("MOU")/Strategic Energy Management Plan ("SEMP"). An MOU offers a way to |

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| | document a commitment between the customer and PA to work together to achieve mutually stated goals through specific actions that are tailored to the customer's facilities over a multi-year planning horizon. As such, an MOU can set the stage for achieving deeper and more comprehensive energy efficiency savings, and is more likely to succeed than a "one measure" or "one year" approach. Typically, MOUs include participation by upper management, the establishment of specific, very aggressive energy efficiency saving targets, and measurement and verification strategies to document savings throughout the target facilities.<br><br>Segmentation by industry classification, which enables greater insight into the mix of end uses, energy intensity and decision making criteria is invaluable for developing value propositions and offerings and creating marketing materials and messaging. For example, hospital facilities have much different operating characteristics and business drivers than grocery stores. Urban hospitals tend to be large, campus-like operations with large energy loads and a wide range of end uses. They have a relatively high level of in-house energy and engineering expertise, and longer-term planning horizons. By comparison, grocery facilities are considerably smaller, operate in a single building, and their energy usage is dominated by refrigeration and lighting They have little or no on-site energy and engineering expertise, and they operate in an industry with very small margins and thus have much shorter planning horizons and tighter requirements for making financial investments in energy efficiency. As a result, approaching hospitals and grocery stores in the same way, with the same energy efficiency message and project offer <u>is not</u> likely to lead to equally successful results.<br><br>As mentioned previously, the results of the Point 380 analysis have been and will continue to be used to inform PAs "go-to-market" strategies by identifying industries, building types and end uses representing significant efficiency opportunities and thus warranting relatively greater attention. Additionally, some PAs are exploring strategic outreach to specific segments of their customer base in collaboration with industry partners who have demonstrated success in the identification of comprehensive energy efficiency opportunities leading to greater depth and comprehensiveness of savings in specific segments. By way of example, some PAs are currently developing go-to-market approaches that combine elements of prescriptive, custom and upstream offerings for the grocery segment. The PAs plan to have these approaches in the market before year-end 2013.<br><br>Lessons learned from these and related efforts will continue to be shared with view toward identifying best practices that can be adopted by the broader PA team. |

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| | **Property Management/Real Estate Segmentation:** The PAs have identified several barriers that have limited full participation in energy efficiency opportunities in the property management/real estate segment. These barriers include but are not limited to:<br>• Identifying individual tenants (and associated decision makers) in buildings with multiple tenants<br>• Cost effectively engaging multiple, sometimes small, tenants leasing space in a single building<br>• Identifying decision makers in buildings with one property management entity and a different ownership entity<br>• Split incentives between the customer paying the bill and the entity actually using the energy<br>• Identifying single building LLCs that may be part of larger ownership entity<br><br>The PAs are exploring tactics to overcome these barriers, working within the C&I Management Committee in development of a project plan to be presented to the Council in Q2 of 2013.<br><br>**Gas and Electric Integration**: The Program Administrators have made a tremendous amount of progress in their efforts to integrate electric and gas energy efficiency services with a view toward enhancing the customer participation experience, focusing on increased comprehensiveness (i.e., going deeper), and also reaching more customers (broader). Efforts to date have included program design modifications, a clear focus on integration in both the Commercial and Industrial Management Committee and working groups, the development of express tools and custom screening tools that facilitate joint consideration of both electric and gas opportunities, annual training for PA staff and the vendors that support efforts, and stakeholder engagement that has included, but was not limited to, vendor open houses, energy expos, and the Appreciative Inquiry Summit that took place in May 2012. These efforts have fostered a strong and dynamic culture where a focus on integrated facility-wide energy efficiency opportunities has replaced the electric or gas measure driven approach that was previously more prevalent in the field. The PAs are now addressing their customer's total energy needs. This includes gas, electric, oil, propane and other non energy impacts such as water and sewer savings.<br><br>The PAs are committed to further integration of their gas and electric energy efficiency services for commercial and industrial customers. In support of these efforts, the PAs are continuing to focus on |

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| | training for both PA staff and for the trade allies that support efforts. Ongoing training will focus on knowledge regarding both electric and gas energy efficiency technologies and practices, skills to identify appropriate sites where an energy efficiency investment is appropriate, and training on the process for coordinating across PA organizations. The PAs anticipate that this focus on training will further enhance their seamless delivery of services and will promote deeper and broader acquisition of energy savings.<br><br>**Gas Savings:** Given historically low natural gas prices (currently 30 percent below 2011 levels and 80 percent below 2008 levels), customer motivation to reduce natural gas usage has diminished significantly. As a result, the PAs are focusing on identifying new strategies that will support the achievement of savings goals proposed in this Plan by overcoming this barrier to participation. In July of 2012, the Gas Subcommittee of the C&I Management Committee convened a strategy session to explore new and improved approaches to increasing gas savings both in the near-term and over the course of the next three years. In addition to these ongoing efforts to improve and streamline cross-PA collaboration in overlapping service territories, the PAs are planning the addition of gas technologies to the upstream delivery model in late 2012/early 2013. With the possible inclusion of additional gas measures in the DI program, and the proposal to restrict access to technical assistance funding unless gas technologies are considered, the Gas Subcommittee intends to develop additional recommendations for PA-wide consideration and implementation, including such strategies as the introduction of enhanced incentives for customers to make gas energy efficiency investments a more attractive investment.<br><br>The PAs C&I programs will continue to support and assist their customers who operate steam boilers for both space heating and for process steam. The PAs promote custom solutions for boiler replacement or burner upgrade when they are shown to be cost effective. Comprehensive steam trap surveys are also encouraged with the cost of surveys co-funded when appropriate. Depending on the number of traps, steam system operating pressure, or the customers need for a rapid repair, the customer can follow either the custom incentive option or the prescriptive rebate option. Boiler controls, boiler room upgrades and heating pipe insulation are also part of this measure offering.<br><br>**Program Consistency and Best Practice Sharing:** The Program Administrators recognize statewide consistency to be an important priority. Likewise, it is important that innovation be encouraged by individual PAs so that costs and results can be evaluated in a limited, low-risk environment, with the results then shared and scaled up statewide as appropriate and practicable. The C&I Management Committee serves as the central forum for sharing of individual innovation proposals and results and for |

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| | determining how to best propagate successful approaches consistently statewide. The C&I Management Committee regularly reviews its processes and operations in order to continuously optimize the balance between innovation and consistency and will continue these efforts over 2013-2015.<br><br>**Five Largest Gas and Electric Customers Accelerated Rebate Pilot:** Sections 5 and 54 of An Act Relative to Competitively Priced Electricity in the Commonwealth, St. 2012, c.209, approved August 3, 2012, requires the PAs to implement a pilot program for their five largest gas and electric customers based upon specific customer locations in their respective service territories known as the voluntary accelerated rebate pilot program. Customers electing to participate shall be eligible for financial support of up to 100 per cent of the cost for qualified energy efficiency measures, as determined by the Program Administrator, using criteria included in the Three Year Plan. In addition, up to 15% of any accelerated rebate may be used for other improvements that support energy efficiency improvements made under a program approved by the department or emission reductions, including, but not limited to, infrastructure improvements, metering, circuit level technology and software. Total rebate levels for participating customers in any year of the pilot program shall not exceed 90 per cent of the amount the customer was charged for energy efficiency programs during calendar year 2012. The Program Administrator will retain at least 10 per cent of the customer's energy efficiency funding contributions for administration costs. The five largest customers of a PA for these purposes will be determined based on their 2011 usage.<br><br>A customer that elects to participate in the voluntary accelerated rebate pilot program in 2013 may aggregate rebates in amounts not to exceed 270 per cent of the amount charged to that customer for energy efficiency programs in calendar year 2012. A customer that elects to participate after January 31, 2013 but before January 31, 2014 may aggregate rebates in amounts not to exceed 180 per cent of the amount charged to that customer for energy efficiency programs for calendar year 2012. Participants in this pilot will not be eligible to receive incentives through any other energy efficiency program beginning in the years they participate in the pilot through 2015.<br><br>Each PA will determine the amount of funding available to each eligible customer and will determine the effect the pilot will have on the funding for other customers. The PAs have budgeted accordingly prior to for this Plan. Since participating customers may receive 100% of the cost of approved projects, the cost of savings in each PA's portfolio of programs will rise compared to what it would be without the pilot. This effect is likely to be more pronounce for smaller PAs than for larger PAs. |

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| | Projects funded through this pilot, including funding for "other improvements" described above, will be screened for cost-effectiveness using the TRC Test as required by the Department of Public Utilities. Approved projects will be required to have a projected benefit cost ratio of at least 1.0.<br><br>The application process for pilot participants will be the same as for all other retrofit program participants. Customers will not be required to make a copayment but may choose to if their project is more costly than their available funding in the pilot. Customers seeking a technical assistance study will need to fund those assessments themselves without efficiency funds.<br><br>The PAs must reserve the right to revisit overall savings goals and costs in the event of participation in the Rebate Pilot by large customers. Specifically, and as provided in the Term Sheets, pursuant to An Act Relating to Competitively Priced Electricity in the Commonwealth (2012), the PAs will be offering a new Accelerated Rebate Pilot Program for the first time. In the event of impact from this pilot program or a new municipal aggregator program, the applicable PA shall have the opportunity to make appropriate adjustments to its costs and savings goals based upon the nature of its customers' participation, subject to the Council review under G.L. c. 25, Sec. 21(c) and the approval of the Department. |
| **Marketing Overview** | **Target Market:**<br><br>The target market is all non-residential customers - commercial, industrial, governmental, and institutional. Multi-Family (residential) customers will be channeled through the separate residential Retrofit program described separately in this filing. |
| | **Strategy:**<br><br>While a variety of marketing approaches will be employed, the consistent experience of the Massachusetts PAs, and their counterparts nationwide, is that the most successful avenue to reach non-residential customers is through one-on-one communication through account executives (in partnership with trade allies), who can both identify gas and electric opportunities and gauge customer interest in pursuing these opportunities, based on the individual PAs knowledge of their customers' business requirements and investment criteria and horizon. The PA account managers leverage their intimate, long-term relationships with customers and their knowledge and analysis of customer data (energy use, demand, sector analysis, |

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| | etc.). Trade allies such as equipment vendors, consulting engineers and energy service companies, or "channel partners" are additional key actors in promoting, identifying, and delivering services to customers. Account managers conduct dual sales calls, open houses, training, and new product and service demos with trade allies. All Mass Save programs are "open", allowing significant flexibility to vendors and customers in determining the optimal implementation strategy and partners for their particular project. The Program Administrator experience with non-residential customers has established that this kind of one-on-one "relationship marketing" is most successful in moving businesses and institutional/government customers to action.<br><br>In addition to channel partners, Program Administrators will also leverage closer alliances with turnkey installation contractors. These are firms that have been chosen through a formal bid solicitation and act as agents to the Program Administrators in performing specific program functions. Program Administrators use these firms to strategically market to specific customers, sectors and/or technologies. While channel partners provide marketing and maintain customer flexibility, turnkey installation contractors allow for targeted, coordinated sales along with pre-approved turn-key solutions to customers.<br><br>In 2013 the Program Administrators plan to expand the statewide website and statewide media marketing. Additional marketing approaches may be used by one or more Program Administrators to increase participation and capture deeper, broader savings with their customers. These could include: direct mail, seminars and training sessions, breakfast meetings, webinars, participation in trade shows and conferences, co-marketing through trade industry, public interest and civic groups that represent the target market and have extensive outreach capabilities, "earned media" articles in professional and trade publications, and informational meetings with energy service companies ("ESCO") and other contractors and potential trade allies.<br><br>In addition, Program Administrators expect to supplement these strategies with broad-based radio, print and email outreach. Email alerts and other low-cost means to reach customers will also be used to advance customer participation. Program Administrators are currently using on-line communications to bring new and emerging technologies to the attention of their customers. Other social marketing techniques will be used to increase customer awareness of program services and the means to access these services. All these strategies will be integrated into a common marketing plan that will identify key drivers, objectives, strategies, and tactics to increase customer participation. |

**Technologies/Incentives**

**The following is a list of targeted end uses, recommended technologies, and incentives offered:**

| Targeted End Use | Technology | Incentive |
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| Lighting & Lighting Controls | Efficient lamp technologies | Financial incentives cover a portion of the total installed project costs, typically by providing up to 50% of labor and equipment costs, or by incentivizing the installed costs down to the equivalent of a fixed payback period. Financial incentives may also include co-funded engineering and commissioning studies and/or design incentives covering a portion of incremental architectural and design costs for efficiency improvements. Each PA retains the ability to adjust incentives to address unique barriers encountered when working with customers.<br><br>Smaller non-residential customers (up to 300 kW) will continue to be served through the DI initiative where turnkey services are available for the identification and installation of cost-effective measures, primarily lighting, refrigeration, spray valves, faucet aerators, thermostats, shower heads and some pipe insulation. Incentives for DI participant tend to be higher than for other Retrofit participants, typically 70% of installed cost on average. |
| Lighting & Lighting Controls | Efficient Lighting Fixtures | |
| Lighting & Lighting Controls | Lighting Controls | |
| Motors & Drives | Efficient Motor Drive Systems | |
| HVAC Equipment | Efficient HVAC systems | |
| Energy Management Systems | Energy Management Systems | |
| Compressed Air & Unique Industrial Processes | Compressed Air systems | |
| Furnaces & Boilers | Advanced Gas Technologies | |
| Steam Opportunities | Steam Traps, Boiler Control Upgrades, Burners, Boiler Room Optimization | |
| CHP | CHP | |

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<tr><td></td><td>
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<tr><td>Site Specific Custom Measures</td><td>Energy Recovery Ventilation Units (ERVs)</td><td rowspan="2"></td></tr>
<tr><td>Site Specific Custom Measures</td><td>Dehumidification and Humidification</td></tr>
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<br>Additionally:<br><br>Additional custom measures are supported after evaluation through MTAC and internal PA engineering analysis. The Program Administrators anticipate that some incentives will be adjusted higher to support emerging or underutilized technologies in order to accelerate market acceptance and sales volume. Over time, this strategy is intended to bring down the cost of these measures, and thus the incentive requirements. Incentives for more accepted efficient electric and gas end use technologies may also be increased when they are used in combination with other measures to promote broader and deeper savings. This is the so-called “Multi-Measure Incentive.”</td></tr>
<tr><td>Delivery Mechanism</td><td>Program Administrator staff, trade allies and project administrators perform most sales, marketing, program administration, and implementation functions. In some cases, internal staff is supplemented by external trade allies. In addition, outside contractors are retained for technical review of applications, on-site energy analysis, technical and design assistance for comprehensive projects, project commissioning services, and the actual installation of measures and, where appropriate, turn-key services.</td></tr>
<tr><td>Special Notes</td><td></td></tr>
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| SECTOR | PROGRAM | ADMINISTERED BY | | |
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| **COMMERCIAL & INDUSTRIAL** | **NEW CONSTRUCTION** | **ELECTRIC & GAS PAs** | • | **JOINT** |
| | | | | **PA - SPECIFIC** |
| **Program Overview** | The C&I New Construction program is designed to optimize the efficiency of new equipment, building design and systems in new construction and major renovation of commercial, industrial, institutional and government facilities. Other energy efficiency opportunities are also addressed through this program, including the initial purchase of equipment and equipment replacement upon failure. This program focuses on offering a comprehensive set of electric and gas efficiency options that are specific to the needs of each unique facility. The program also addresses the limited window of opportunity available to install premium grade replacements when equipment fails or is near the end of its useful life. The Program Administrators partner with advocates, building scientists, and regulators to ensure that the best practices in building design and equipment specifications are introduced and used, resulting in the beneficial evolution of building requirements. | | | |
| | **New Enhancements:**<br><br>**Expanding Upstream Initiatives:** The upstream model leverages existing distributor networks and infrastructure to influence thousands of customers and contractors, cost-effectively accelerating the introduction and sale of more efficient equipment, helping to transform markets. This streamlined approach accelerates the adoption of more efficient technologies by removing or reducing the initial cost hurdle at the point of sale without the need for the end user to submit paperwork or rebate forms. It complements the traditional downstream approach in which Program Administrators work directly with customers and installers but, importantly, is able to reach a broader pool of savings opportunities at a much lower cost than would be possible through the traditional downstream approach.<br><br>Additionally, influencing the replacement-on-failure market through traditional marketing approaches can be very costly. Using an upstream approach in which marketing is focused primarily on distributors can be a much less costly alternative in cases where deemed savings can be applied to discrete equipment purchases. In addition, it virtually eliminates the need for educating downstream market actors. | | | |

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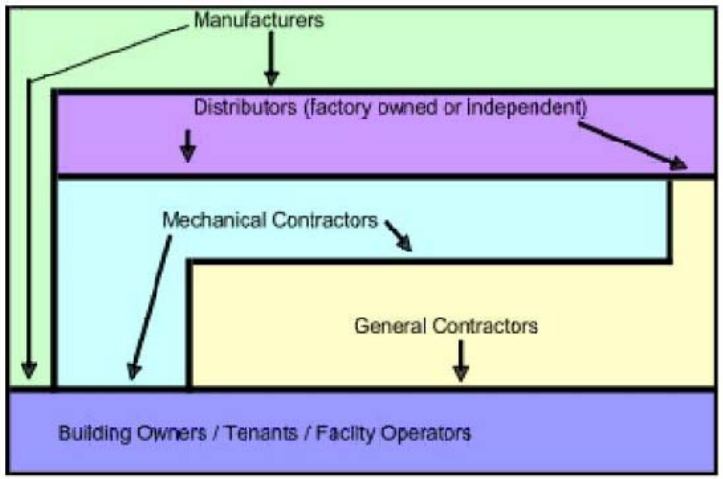
| | The Program Administrators began the new upstream approach in November 2011, focused specifically on LED screw-in and both compact and linear fluorescent lamps. Using this model, the PAs have partnered with electrical distributors and lighting manufacturers to offer LED and reduced wattage linear fluorescent lamps to Massachusetts non-residential facilities. The goal is to transform the market from less efficient standard lighting technology to more efficient technologies such as reduced wattage linear fluorescent and LEDs.<br><br>The Program Administrators plan to expand this model with other technologies within the replacement-on-failure market. Current plans call for an assessment of appropriate gas technologies to offer through an upstream approach that will be undertaken during the summer of 2012. Additionally, the selection of a partner to provide support in gas upstream efforts will take place in the fall of 2012, with program rollout in Q1 2013.<br><br>  <br><br><br>**Property Management/Real Estate Segmentation:** The Program Administrators are developing a comprehensive "go-to-market" strategy for the commercial office market with the goal of achieving higher savings in this segment. |
| **Program Design** | In 2013-2015, the Program Administrators will continue to expand and improve upon current suite of |

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| | services offered within the New Construction Program:<br><br>**Technical Assistance ("TA") Services**: The provision of timely, high-quality, independent technical advisory services to design teams is central to the achievement of comprehensive savings in new construction. The TA Services component of the program provides technical support matched to the specific requirements of each project and the needs of each design team. Services may include detailed energy modeling of the performance of the proposed building using various configurations of design and equipment, targeted studies and recommendations for specific building components or systems, or specialized technical studies, such as proposed industrial process improvements and compressed air projects.<br><br>In general, study proposals will be assigned to, and performed by TA consultants who have been selected as preferred vendors through a competitive procurement process by the Program Administrators. TA consultants will be assigned by the PA based on an assessment of their expertise with the technology under consideration. Customers can also elect to use a TA provider of their own choosing, as long as the co-funding Program Administrator approves the firm's qualifications and cost-estimate. Non-preferred vendors must comply with the same level of detail and quality as preferred vendors.<br><br>In many instances, customers may have both gas and electric equipment options for a particular end-use. In order to (a) encourage more comprehensive, integrated, and balanced consideration of all the energy efficiency options available, and (b) ensure that customers have open choices, the gas and electric Program Administrators delivering the statewide program will provide coordinated TA studies. In general, the study costs will be cost-shared between the gas and electric Program Administrators according to the proportionate share of the analysis and/or opportunities found through the analysis regarding each form of energy.<br><br>**Advanced Buildings Core Performance** is a comprehensive, prescriptive program for small commercial new construction built around delivering the New Building Institute's national Advanced Buildings Program.<br><br>The Advanced Buildings *Core Performance Guide* applies proven and available energy efficient technology and building science to the design of commercial and institutional buildings in the 10,000–100,000 square foot range. The Core Performance criteria address better performance characteristics in the building envelope, dedicated mechanical heating, cooling and lighting systems, multiple demand control ventilation practices, indoor air quality improvements, and domestic hot water system efficiency. These criteria are |

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| | based on the results of 30,000 energy modeling evaluations of three major building prototypes (retail, office, and school), with four high-efficiency thermal and HVAC system permutations for each prototype. That analysis identified a package of consistent strategies (the "core" in Core Performance) leading to predictable energy savings across all climate zones. In Massachusetts, application of all Core Performance criteria will result in buildings with energy savings that exceed the Massachusetts Energy Code by 20-30 percent. In addition, peak energy reduction techniques will be employed to allow participants with either third-party energy supplier time sensitive rate offerings or those enrolled in the ISO-NE Price Response Program additional savings opportunities. Core Performance is accepted by the US Green Buildings Council as an alternative pathway to achieve the energy and environment points required to qualify a smaller building for Leadership in Energy and Environmental Design ("LEED") certification.<br><br>Program Administrators may provide: technical assistance consultants to assist customer design teams to incorporate all the Core Performance features in their buildings, incentives (presented to the customer in easy-to-comprehend $ per square foot (sift) terms), independent third party verification of Core Performance compliance, and recognition via certification of the building as an "Advanced Building" as well as ancillary publicity as jointly agreed to by the Program Administrator and the client.<br><br>The Core Performance model is best applied in small office, retail, public assembly, and school/preschool applications. (The benefits diminish in lodging, large multi-family and assisted living circumstances.) The economics are based on buildings with central mechanical cooling systems. Building owners and their design teams must agree to comply with all of the essential requirements of the program (the "core") in order to participate, and they may select other features ("Enhanced Performance Strategies") to exceed the base savings potential.<br><br>In the second half of 2012 the cost-effectiveness of the New Buildings Institute program brand will be reviewed and compared to alternatives. By the end of 2012 a recommendation for best practice will be presented to the C&IMC for implementation in 2013.<br><br>**Performance Lighting:** The Program Administrators promote high performance lighting technologies and design practices that are either more efficient than standard practice and/or the requirements of the Massachusetts Building Code through incentives for better lighting design. The Performance Lighting option promotes the thoughtful combinations of energy efficient lighting fixtures and lighting controls in |

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| | site-specific lighting designs that produce quality lighting using lower watts per square foot than the current commercial Massachusetts building code.<br><br>**Gas Technology and Application:** The Program Administrators will continue to jointly deliver state-wide initiatives that target high efficiency heating, water heating, and kitchen equipment and control systems. Program Administrators will continue to identify and evaluate high efficiency gas technologies, as well as energy saving electric technologies, as joint offerings to customers.<br><br>**Property Management/Real Estate Segmentation:** The Program Administrators are developing a comprehensive "go-to-market" strategy for the commercial office market with the goal of achieving higher savings in this segment. This effort includes working with leading real estate consulting firms to understand building stock, key industry actors, and market characteristics, in order to better sub-segment the market and identify strategies to target these sub-segments with offerings that address specific needs. These efforts are being targeted comprehensively through an MOU strategy. In order to achieve persistence, multi-year corporate engagement is critical. NSTAR and National Grid have been working with several large commercial property owners/operators and are currently testing some of these concepts. By second quarter of 2013, progress will be reviewed and actions adjusted in response to lessons learned.<br><br>In parallel, National Grid and NSTAR are also progressing on the Office of the Future effort. National collaboration has provided several initial technical projects focused on system integration techniques to provide deeper savings. Although cost effective, these projects were several orders of magnitude more costly than traditional approaches. Opportunities to fine tune the balance between budgets and savings exist. NSTAR and National Grid are in talks with several commercial property owners to implement up to 12 projects which will guide efforts forward. An external project manager and consultant team has been retained. With buy-in from property owners, implementation will be targeted for 2013 and results available for review and presentation to the council in 2014.<br><br>**Codes and Standards:** The PAs plan to pursue a codes and standards initiative in the C&I New Construction Program. Activities under this initiative will be tracked by the PAs so there is better understanding of budgets for future funding cycles.<br><br>The theory behind a codes and standards effort is that the PAs can provide support to improve compliance |

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| | with building energy codes and appliance standards. As codes become increasingly stringent, the building community (owners, developers, contractors, architects, engineers) is struggling to interpret requirements and to comply with building codes. The recently completed Massachusetts commercial code compliance study highlighted that on average, commercial buildings met only 80% of the energy code requirements. The C&I New Construction program has had successful history of promoting, educating, and delivering energy efficient measures in the past. For these reasons, the PAs are in an advantageous position to support code compliance and code enhancement through energy codes training and education as they work closely with policy makers and trade allies. The PAs' efforts could supplement the efforts of code enforcement officials who may be challenged to fully enforce the energy use provisions, where their focus is more on health and safety related aspects of the code. Existing infrastructure could also be leveraged to provide the research and advocacy required to promote increased codes and standards. The PAs plan to act as a conduit to influence and recommend increases and improvements to new stretch codes and appliance standards. Through their relationship with contractors, developers and the design community, the PAs will be able to support the implementation of those improvements going forward. This should result in the realization of the energy savings that are lost when newly constructed buildings are not 100 percent compliant with the locally applicable building code. The PAs could expand upon existing incentive-based new construction program outreach efforts to target various stakeholders.<br><br>The Program Administrators plan to introduce efforts to assist in encouraging the adoption of and compliance with more stringent building energy codes and appliance efficiency standards during the 2013-2015 program cycle. The intent is to claim the additional savings generated through the unique efforts attributable to PA actions. The potential paths to achieving savings through codes and standards efforts by the PAs include:<br><br>1. Compliance Support for Base and Stretch Code: The PAs would work with local builders, contractors and building enforcement officials to increase the number of homes complying with the locally applicable energy code, generally either the IRC (International Residential Code) version adopted statewide, or the Stretch Code. Activities may include targeted trainings, outreach and technical support in the form of code ambassadors and circuit riders, compliance documentation tool development, and review support. Looking ahead, additional infrastructure needs to be developed to support the next iteration of requirements for residential new construction. Starting in 2013, the PAs plan to begin the strategic identification of jurisdictions that would benefit from code compliance support. |

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| | 2. Stretch Code Development Support: The PAs will support the DOER's development of a stretch code that exceeds statewide minimum requirements and is adopted by local governments. A coordinated approach by the PAs will provide technical support for the DOER's development of the next round of stretch code (potentially 2015 version) to avoid duplicative efforts and costs.<br>3. Appliance Standards Advocacy: The objective here would be to accelerate the development and adoption of targeted new residential appliance standards as the selected appliances and their advanced levels of efficiency start to become established as current good practice in the marketplace. PAs would provide support, which may include the technical resources necessary for assessment of potential appliance standards and advocacy either at the state or regional/federal level. Market and technical potential studies (in coordination with NEEP and ASAP) for a handful of commercial appliances will begin in 2013 and may include outdoor lighting and circulation pumps for boilers.<br><br>Evaluation, Savings, Attribution of Codes and Standards: The PAs will collaborate with the stakeholders on development of an evaluation plan that will enable the measurement and attribution of savings from these efforts to the PAs for the 2013-2015 program cycle. A detailed evaluation plan, along with an appropriate attribution methodology, will be developed in 2013. Qualitative as well as quantitative research would be planned for in 2013 and 2014 to evaluate ongoing initiative efforts and will be used for savings projections that can potentially be claimed within this three year cycle and future cycles. |
| **Marketing Overview** | **Target Market:**<br><br>The target market is all time-dependent gas and electric energy efficiency opportunities in the C&I sector – commercial, industrial, institutional, and government customers. Key market actors are architects, engineers, commissioning agents and owners/ developers of new buildings, and manufacturers and distributors of energy efficiency gas and electric technologies. |
| | **Strategy:**<br><br>Projects involving new construction have significantly different dynamics than retrofit projects. New construction typically requires longer lead-times and involves more decision makers and influencers than retrofit projects. In addition, while retrofit projects typically involve turn-key vendors selling a project specifically on efficiency attributes, a parallel market actor does not exist in new construction. Products are |

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<tr><td></td><td>usually specified, not sold.<br><br>While the customer is still a key decision maker, it is critical that all stakeholders are included and are informed and influenced toward a common goal of energy efficiency. Although this process starts with the customer and the architect, the final design/product may be changed (value-engineered/alternate specification) by the design engineer or general contractor. To address these dynamics, specific outreach strategies are designed for each of these stakeholder groups. Extensive one-on-one communication is the primary outreach strategy – building relationships by partnering on successful projects and adding value ensures commitment to energy efficiency. This direct marketing is supported through other channels including brown bag educational seminars, formal training such as Labs21, newsletters, and open houses. Direct marketing pieces have been developed to pursue new construction leads identified through such publications as the REED Construction Database and New England Construction News. Additional marketing approaches used by one or more Program Administrators include direct contact with customers identified through trade publications and advertising in local trade publications, seminars and training sessions. The statewide website and statewide media marketing will continue to build overall awareness of the program.<br><br>For time-dependent projects involving replacement of failed or end-of-life equipment, marketing efforts focus on customers and equipment vendors rather than on developers and designers. Program Administrators market the equipment replacement track to customers and vendors through extensive one-on-one communication. Supplemental marketing efforts include distribution of promotional material (such as case studies), attendance at trade shows and conferences, breakfast meetings, and other customer and vendor focused training seminars. Program Administrators are exploring innovative ways to work with equipment distributors and installers to help them in promoting energy-efficient equipment and systems to their customers.</td></tr>
<tr><td>Technologies/Incentives</td><td>The following is a list of targeted end uses, recommended technologies, and incentives offered:<br><br>
<table>
<tr><th>Targeted End Use</th><th>Technology</th><th>Incentive</th></tr>
<tr><td>Lighting Equipment & Lighting Controls</td><td>Efficient Lamp Technologies</td><td>All Program Administrators’ financial incentives structures will be consistent. Both prescriptive incentives (fixed amounts for</td></tr>
</table>
</td></tr>
</table>

| | | | |
|---|---|---|---|
| Lighting Equipment & Lighting Controls | Direct/Indirect Lighting Fixtures | specific measures) and custom incentives (based on the unique energy savings criteria of a project) are available. Financial incentives typically cover up to 75 percent of incremental labor and equipment costs. Prescriptive financial incentives are offered for selected lighting, motor, variable frequency drive, HVAC measures, heating and water heating, controls and commercial kitchen equipment. Other cost effective measures are promoted with custom incentives based on the incremental equipment and installation labor costs of installing high efficiency equipment compared to standard efficiency equipment, or brought down to an equivalent of a fixed payback period. |
| Lighting Equipment & Lighting Controls | Lighting Controls | |
| Motors & Variable Speed Drives | Efficient Motors and Motor Drive Systems | |
| HVAC Equipment | Efficient Cooling Systems | |
| HVAC Equipment | Efficient Chillers and Controls | |
| HVAC Equipment | Dehumidification | |
| HVAC Equipment | ERVs | |
| HVAC Equipment | Refrigeration Systems | |
| Energy Management Systems | Energy Management Systems | |
| Compressed Air & Unique Industrial Processes | Compressed Air | |
| Compressed Air & Unique Industrial Processes | Process Improvements | |
| Furnaces & Boilers | Advanced Gas Technologies | |
| Building Envelope | Building Envelope Measures | |

**Additionally:**

Additional custom measures are supported only after evaluation through MTAC and internal PA engineering analysis. Design incentives covering a significant portion of incremental architectural and design costs

| | |
|---|---|
| | associated with comprehensive energy efficient designs are promoted to encourage comprehensive participation. Program Administrators also combine efforts and co-fund targeted engineering and commissioning studies. |
| **Delivery Mechanism** | Program Administrators will work together to market and implement the program through a unified and cohesive 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. |
| **Special Notes** | |

## G. Pilots & Hard-to-Measure Efforts

### 1. Pilots

The Program Administrators will continue to explore new efforts during the 2013-2015 Plan to determine if a pilot would be a useful tool for studying a new effort. A key goal of any pilot is that pilots yield data that assist in determining if the approach explored in the pilot should be implemented on a larger, statewide scale, as a full program, or an element of a program.

### 2. Hard-to-Measure Efforts

#### *a. Residential Research and Development ("R&D")*

In the continued efforts to explore new technologies and measures through the MTAC, as well as proactive research and development into areas of interest, the PAs propose a consolidated R&D effort to (a) support the work of the MTAC, and (b) pursue technologies of interest in order to remain at the top of the "innovation curve." The hard-to-measure efforts described below are envisioned to be allocated specifically to the R&D budget line items (see 08-50 tables). For residential innovations/enhancements within a planned initiative, please refer to the initiative enhancement sections within each Program.

From 2013-2015, the PAs have an interest in supporting the following as well as new technologies that may present themselves during the three-year cycle:

- Residential Lighting Controls – Although many evaluations have affirmed the value of lighting controls in commercial settings (including multi-family), there is a national interest in assessing the level of savings in lighting controls. The National Electric Manufacturers Association ("NEMA") in association with the Consortium for Energy Efficiency ("CEE") has started to explore this work. This effort provides PAs the opportunity to test measures such as dimmers, occupancy sensors, and vacancy sensors in an effort to include this technology in the residential programs. This effort will also assist with compatibility issues of lighting controls with efficient lighting such as CFLs and LEDs.
- Clothes Dryers – Residential "white goods" have historically provided consumers and PAs significant opportunities for energy savings. These savings are directly attributed to the technological advancements and testing procedures introduced into the appliance marketplace, such as refrigerators and clothes washers, over the last decade. Yet, during this same time period clothes dryer energy usage testing procedures remained inadequate and outdated. However, the Department of Energy has recently introduced new clothes dryer testing procedures affording the PAs a new opportunity to test the potential energy savings in residential electric and gas clothes dryers. While the Energy Factor ("EF")[30] has been developed for different tier levels by technology (including heat pumps), the PAs would like to affirm the level of savings as well as applicability in the market in a limited number of homes before launching the Residential Consumer Products Initiative.

[30] Energy Factor is a measure of the overall energy efficiency of an appliance or equipment.

- Smart Thermostats – Home controls such as smart thermostats have recently been highlighted in the news and technology publications. Some of these home controls can be accessed through smart phones and other mobile devices, thus enabling end-users greater control of their major appliances and the potential of achieving energy savings while away from their home. While some efforts have taken place on specific products, there are new entrants into the market such as the "Nest" that have been lauded with great public interest. Determining criteria as well as testing multiple models may help the PAs to garner more savings while engaging with consumers at a new level.

## H. Public Education and Marketing Activities

The Program Administrators plan to focus on creating a culture of sustainability within the Commonwealth using public education and marketing as key tools in this effort. The focus will be on creating powerful, engaging, and motivating education and marketing strategies that will increase awareness of the benefits of energy efficiency and drive increased participation in the available energy efficiency programs and services. Proposed public education and marketing strategies will take into account the unique motivational differences between residential and non-residential customers.

Support of the Mass Save mark and statewide brand is an important priority. The PAs commit to statewide marketing efforts that include the prominent integration and placement of the Mass Save mark as the statewide brand. PAs will include the Mass Save mark on statewide program, outreach and marketing materials and will include a link to the Mass Save website on the portion of their Company websites that is focused on energy efficiency services in Massachusetts, except where expressly limited by internal corporate website policies. PAs, in collaboration with DOER and the Council, will conduct an evaluation of the effectiveness of all joint statewide branding efforts to ensure that such brands support clear and recognizable messages that help promote program awareness. Such an evaluation will be completed by the end of 2013 and submitted to the Council.

The strategies and messages developed for statewide energy efficiency education, outreach and marketing will augment the efforts already in use and will attempt to complement and leverage program-specific marketing and individual PA efforts across the Commonwealth.

### 1. Marketing Plan Overview

*Introduction*

In order to achieve the aggressive goals set forth in this Plan, the Program Administrators will continue to 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 key elements of the Program Administrators' marketing plan for 2013 -2015 are set forth below. As part of this discussion, the Program Administrators also note efforts that they undertook during 2010-2012. It is worthwhile to remember that as the first plan kicked off there was no statewide PA brand or integrated PA statewide website in existence. Reviewing the marketing activities for 2010-2012 illustrates how rapidly the marketing of energy efficiency programs has expanded in a short time and provides a basis for comparison and possible improvement by understanding what marketing efforts have worked well.

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 commit to engaging with a large portion of the population to assist in delivering value to residential and business customers and to assist in obtaining the aggressive energy efficiency goals set forth in this Plan.

*Mass Save®*

In 2010, the PAs joined together to bring energy efficiency programs to the Commonwealth through a statewide PA brand. As sponsors of the Mass Save® service mark, the intent of the PAs was to complement their individual PA brands when communicating with residential and C&I customers about energy efficiency programs.

The Program Administrators are the owners of the Mass Save® word service mark. The purpose of a trademark or service mark is to identify goods and services as originating from a single source. Trademarks, in effect, represent the goodwill that a business has built up through its history of offering quality goods and services. A word mark is the most common form of trademark and simply consists of a word or group of words. The Program Administrators have rights to the word mark Mass Save, having obtained federal registration of it on August 29, 2006.

In addition, the PAs developed and registered a design mark. A design mark consists of a pictorial or geometric representation that is used to identify goods or services. It can also be combined with words or phrases. In the PAs' design mark, the words "Mass Save" appear under an image of buildings with the sun in the background. The PAs obtained two separate federal trademark registrations for the new design in 2011. One registration was obtained for the design mark with a tagline "Savings though Energy Efficiency." The other registration was for the design mark without this tagline. For examples of these marks, please refer to the cover page of this Plan.

Under trademark law, the PAs must monitor and control the use of their marks in order to maintain them and to prevent inferior energy efficiency services from diminishing them. Throughout the three-year period of the initial plan, the PAs' have overseen significant monitoring efforts with respect to the Mass Save mark to identify unauthorized uses of the

service mark. Legal measures have been successful to stop such unauthorized uses and thus the integrity of the mark has been protected.

*Highlights from 2010-2012*

During the initial three-year plan, the PAs made great strides forward in statewide marketing and consistency. In 2010, the PAs joined together to market energy efficiency services on a statewide basis through use of the Mass Save service and design marks. Since 2010, the PAs have been educating and communicating with their customers as to: (1) who and what Mass Save is; and (2) what it means for the customer.

In addition, a single website was created as a central repository to educate customers and provide access to energy efficiency program information and participation. The launch of this statewide website devoted to the PAs' energy efficiency efforts is almost easily taken for granted now, but it was a major and unprecedented undertaking and satisfied a core Council priority. The existence and operation of this website demonstrates the commitment of the PAs to working together for the benefit of customers throughout the Commonwealth. A marketing contractor was also hired to prepare communications through creative material development, media planning and buying as well as execution, to educate customers about energy efficiency and to help the PAs successfully convey who and what Mass Save is.

- The Statewide Marketing Working Group, which is discussed in Section III.A.4.b above, leveraged the information learned from independent research to create effective communications for the launch of the first Mass Save campaign.
- The communications plan included Red Sox Radio-WEEI and HGTV Green Home in Plymouth in addition to various statewide media outlets. The WEEI Mass Savers contest was launched with winners selected based on how they implemented energy saving measures in their home. A separate web portal was also

## Mass Save® & Program Administrators' Logos Appeared Throughout Massachusetts Regardless of Service Territory


In 2012, the Program Administrators executed a statewide awareness campaign to educate customers about the many ways they can save.

developed in support of the Mass Savers contest through WEEI.

- The Mass Savers contest was also extended to the business community with each PA selecting customers who achieved energy savings. These businesses were honored at an awards event at Fenway Park. These case studies were later showcases of PA efforts.
- Public Relations included: Mass Saver stories, which were circulated through various local papers, and community outreach at a number of local events throughout Massachusetts.
- The 2010 Campaign was a 2011 AESP Winner for Outstanding Marketing and Communications.
- C&I Sector Sheets were created and posted on MassSave.com following the identification of some key target markets.
- C&I Case Studies were created and posted on MassSave.com showing true collaboration among the PAs, in that no matter which PA generated the case study, all PAs brands were included in the piece.
- C&I advertising was added to the marketing mix featuring selected customer testimonials from the 2011 Mass Savers Awards.
- E-Source Award Winner for C&I advertising.
- Multi-language communications were in the market for the first time under this initiative in Portuguese.
- Social Media efforts were implemented for both sectors including: a dedicated LinkedIn page targeted at businesses and a Facebook page.
- Google paid search to refine key words in communications.
- Online campaign activities included paid search and online banner advertising.
- Creative for Residential and C&I had a consistent look, feel and messaging to optimize the PAs' exposure and media dollars in the market.
- Through the EM&V team, and with councilors, the PAs executed a Pre-Campaign Awareness study in January/February/March with a post campaign study scheduled for August when the campaign concludes so the PAs can benchmark and evaluate the effectiveness of their messaging and media planning. Initial findings show that the PAs are beginning to have an impact and it suggests that consistent use of the PA and Mass Save marks add clarity to the customers' understanding of the Mass Save mark. In the Statewide Marketing Campaign, the PAs and Mass Save marks consistently appear together throughout the Commonwealth regardless of service territory. This EM&V effort demonstrates the PAs' commitment to using EM&V as a tool – at appropriate intervals and with independent expert assistance – to hone and enhance marketing efforts.
- MassSave.com has been refreshed to include elements from the advertising campaign to provide consistent messaging for the customer and to increase the positive experience customers will have when entering the website. The Appreciative Inquiry Summit content is posted and will be updated periodically and new case studies will continue to

be added. The PAs plan to re-energize the C&I portion of the website this year and will address other enhancements after a Request For Proposal (" RFP") is completed.

- Mass Save Style Guidelines were created and executed in an effort to create consistency and control of the marks' uses in the market, to support our objective to educate customers about who and what Mass Save is and to protect against unauthorized/deceptive use of the PAs' intellectual property and brands.

For additional marketing information, see Appendix I, including a Campaign Calendar and creative material.

EM&V Results from Massachusetts Umbrella Marketing Evaluation Report (June 19, 2012)

In developing their marketing campaign for the 2013-2105 energy efficiency investment plan, the PAs will take into consideration the results of Massachusetts Umbrella Marketing Evaluation Report conducted by Opinion Dynamics Corporation. In this report, Opinion Dynamics Corporation presents findings from its evaluation team's 2011 evaluation activities, which were designed to establish baseline Mass Save campaign awareness in advance of the 2012 marketing campaign. Umbrella Marketing Report at 8. Opinion Dynamics reports that "[t]he ultimate goal of the Massachusetts Umbrella Marketing Campaign is to raise customer awareness of energy efficiency programs and energy saving opportunities so that they install energy efficient equipment through PA programs and/or change behaviors." Id. Opinion Dynamics explains that "the specific goals of this program are (1) to educate audiences about the need for and benefits of energy efficiency, (2) to increase awareness of Mass Save, and (3) to drive Massachusetts residents to participate in sponsored energy efficiency programs." Id. Opinion Dynamics observes that "[t]his program does not have explicit energy saving goals." Id. Opinion Dynamics reports that the "campaign is designed and implemented by a team of stakeholders including representatives from each of the PAs," and that DOER has served in an advisory role since 2010, with the PAs keeping DOER informed of Mass Save statewide marketing activities. Id.

Based on its research, Opinion Dynamics established several baselines, including:

- Over one-third (39%) of residential customers have seen or heard the term Mass Save.
- Awareness of general utility and energy efficiency service provider programs was significantly higher than awareness of Mass Save among the residential population (74% vs. 39%).
- Both residential and commercial customers aware of Mass Save overwhelmingly think of it as a utility or energy efficiency service provider effort (52% among residential and 53% among commercial).
- More than half of residential customers who are aware of Mass Save think of it as a PA effort.
- Residential customers primarily think of Mass Save as a resource for energy efficiency information (46%), or associate it with rebates for equipment (20%).
- Overall, commercial customers had a lower level of Mass Save awareness.

- Those commercial customers who were aware of Mass Save were also more likely to know about the MassSave.com website. A similar percentage of commercial and residential customers are aware of the website (17%).

See Umbrella Marketing Report at 5-7, 16, Appendix D.

*Marketing for 2013-2015*

The key themes for the Statewide Marketing efforts for the 2013-2015 planning cycle are as follows:

- Statewide Marketing's role is to define who and what Mass Save is and what it means to the customer.
- Statewide Marketing will take a strategic approach to message and graphically tie in the PA Brand Logos with the Mass Save mark to create a strong association and clarity of message.
- Statewide Marketing will utilize the segmentation work identified by the RMC and C&IMC so we can better an more consistently target customers from a program and statewide awareness level.

*2013-2015 Planning:*

After selecting an advertising agency for the next two years, the PAs will undergo a complete review of how they intend to meet their objectives, which include:

- Educate customers as to who/what Mass Save is and what it means for them.
- Create awareness and understanding of Mass Save as a trusted statewide resource for all customers' energy efficiency needs.
- Educate customers about the opportunities to save energy and motivate them to take action.

For 2013-2015, the PAs expect the following:

- An RFP was issued in July for 2013-2015, which was driven by the Statewide Sub-Committee and executed by one PA on behalf of the team. A document outlining the PAs' needs/requirements, agency list and schedule was developed and approved by the team, with the evaluation kick-off slated for August. Interviews of RFP finalists are scheduled for October 2012. The goal is to hire an advertising agency that can manage all aspects of the communications plans.
- Key deliverable date: lead agency hired in Q4 2012.
- The Statewide Marketing Committee will continue to meet monthly and will continue to keep DOER informed of developments and continue informal discussions concerning the PAs' statewide marketing efforts.
- The PAs' communications strategy by sector will be more diverse and targeted and yield an improvement in awareness.

- From a market research perspective, the PAs will work with the EM&V team to do a pre/post campaign study. Through the PAs' advertising agency, they will implement copy testing for all advertising materials before going into market to ensure that their messaging is meaningful to the target and that the channels the PAs elect to use are appropriate. There are applicable EM&V studies underway. The Phase II Umbrella Marketing study, which was conducted in 2012, will be included in the 2011 Annual Report. A follow-up study, which will include post-campaign analysis, is planned for 2012. For additional discussion see Section I.G.3.
- Mass Save Style Guidelines will be re-evaluated by the PAs with the agency to determine their effectiveness and usability and will be re-issued following this refinement.
- MassSave.com will be evaluated for content and usability and improvements made and a team established to maintain its integrity.
- The PAs will continue to feature all the PAs' brands in conjunction with the Mass Save marks per the findings from the Umbrella study and consistent with their goal to convey who and what Mass Save is.
- The PAs will continue to track their campaign effectiveness in terms of driving customers to the website and refreshing content.

*Maintenance of Complementary Individual Efforts*

While working diligently on the statewide public education efforts, the PAs will also continue to maintain customer awareness, satisfaction, and participation goals and accordingly the PAs will also continue outreach efforts utilizing customer representatives and account executives (who enjoy one-on-one/person-to-person relationships that are especially important in the C&I sector) and PA-specific efforts that complement and are consistent with statewide efforts and the findings of the 2012 Umbrella Marketing Report.

2. Community Engagement

Over the course of the 2010-2012 Three-Year Plan, the Program Administrators worked on a variety of community-based outreach and marketing initiatives throughout the Commonwealth. These efforts were primarily driven by local community advocates and leaders from various communities, in collaboration with PAs, who provided project management and technical support. While the overall results and successes of these outreach activities varied, it became evident that community engagement is an important component to enhancing the PAs' ability to achieve greater program participation and energy savings. Additionally, community engagement may help the PAs reach hard-to-reach and hard-to-serve customers, as well as additional multi-family customers. The PAs express their appreciation of the efforts of their dedicated colleagues in community engagement initiatives and of their commitment to working together to find the best ways to serve harder to serve constituencies.

The PAs also recognized over the last three years there is no "one size fits all" outreach model, but rather there is a need to employ a variety of creative engagement mechanisms. Some examples of these include:

- development of customized engagement plans with consideration of actual demographic and sector mixes unique to that particular community/municipality
- inclusion of performance based savings goals
- more holistic approaches that include city or town governing officials being the voice and driver for municipal buildings, local business, and residential participation
- engaging community-based organizations committed to aiding in the delivery of energy efficiency services in what might be considered traditionally harder to serve and/or ethnically diverse neighborhoods
- continued focus on addressing barriers to participation that have been identified by community-based organizations
- multi-lingual outreach strategies

While there are still many details and challenges that lie ahead in rolling out specific engagement plans over the course of the next three years, the PAs are committed to the evolution of community-based engagement activities as an integrated component of our overall marketing and outreach strategies.

Successful community-based engagement is based on development of key strategies to address the specific needs and goals of a particular community and/or community outreach group. Ideally, these strategies should include an outreach model whereby all sectors of the community are included and a holistic "A to Z" approach is taken. An "A to Z" approach encompasses the entire city or town whereby partnerships are established with various governing officials and community groups to promote broad-based participation including local businesses, municipal buildings, and residential consumers. Examples of this approach include:

- Establishing energy saving goals and priorities specifically tailored for an individual community that includes measurable and achievable results.

- Partnering with community-based organizations to develop effective outreach and program delivery strategies that incorporate a performance-based incentive mechanism.

- Using existing PA educational and schools programs to support community messaging to parents, local businesses, and city/town officials.

- Partnering with local officials to identify/target high-use municipal buildings and schools for energy efficiency upgrades as well as to showcase completed projects.

- Partnering with local businesses, equipment suppliers, and industry related contractors to promote program participation and energy savings opportunities including use of local workforce when and where appropriate.

- Partnering with local city/town media outlets as a vehicle for messaging and maintaining community relations.

However, the PAs recognize that while engaging the entire community would be ideal, there are other opportunities to engage at a smaller scale based on the particular needs of a local municipality. This may involve working with local community outreach advocates to target specific areas of opportunity. Examples of this include demographically based efforts related to the following characteristics: known hard to serve customers, ethnically diverse neighborhoods that may be at a disadvantage for participation due to housing stock, predisposition to having pre-weatherization barriers, income constrained customers, and renter status. Recent partnerships with organizations such as the Green Justice Coalition, the City of Boston aka Renew Boston, Chelsea Collaborative, Chinese Progressive Association, and the Marion Institute & P.O.W.E.R of New Bedford proved to be an effective means of engaging ethnically diverse populations.

Community-based pilots developed during the last three-year plan provided valuable lessons and were instrumental in profiling outreach challenges and barriers to participation that exist in certain communities. Over the course of the next three years, the PAs plan to continue working closely with community organizations and advocates to enhance outreach experiences as a means to increase program participation levels. These efforts will include developing creative solutions to aid in minimizing known barriers. Some examples of these may include but are not limited to pre-weatherization incentives, equity based incentive structures, non-owner occupied multi-unit building incentives, and measure packaging incentives to promote deeper savings.

While the PAs acknowledge there are varying sizes and scopes for community-based engagement efforts, there is also acknowledgement that there are basic core components necessary to be effective and successful for any community outreach endeavor. The following is an outline of these core components.

- Partnerships – establishing partnerships with key community-based organizations, advocates, and municipal officials is one of the most important components to any community engagement effort. Though there were many lessons learned with previous community pilots, one thing that did stand out was without strong partnerships there cannot be successful community-based campaigns. The “boots on the ground” approach by community advocates is essential to building the necessary relationships within a community to encourage and support program participation.

- Market Segmentation – although not widely used for marketing and outreach efforts during the last three-year plan, market segmentation will be a critical component for future marketing and outreach efforts. Identifying and defining customer segments provides significant opportunities to target consumers/communities based on key analytical and demographic data. Once defined, market segmentation can be used as both a marketing and outreach tool to help identify and target based on certain criteria, such as traditionally hard-to-serve/diverse neighborhoods, housing type, property/ownership type, and energy use.

- Participation Barriers – one of the key lessons from previous community-based pilots was that, while there are common barriers across all sectors and market segments,

there tends to be a greater concentration of barriers in urban areas. Some examples of these barriers include:

- housing stock - pre-weatherization based barriers
- income based
- language
- renter/landlord

Over the course of the next three years, the PAs plan to develop and implement key strategies to help minimize these barriers with a common goal of increasing program participation and achieving greater energy savings for our consumers.

- Performance-Based Goal Setting - is also an important component of future organized community-based outreach efforts. It is common practice to gauge the success of any marketing or outreach campaign based on actual participation rates and attributed energy savings. Therefore, setting priorities and savings/measure goals for these community-based efforts is one of the best ways to achieve and measure overall success. The PAs plan to develop and implement a performance-based goal structure as a driver for successful community-based outreach efforts.

In summary, the PAs consider community engagement an integral component of our various program delivery models over the course of the next three years. The PAs recognize the value that community-based outreach plays in driving program participation and helping our consumers achieve deeper savings. The PAs also recognize, as noted, there is no "one size that fits all" community engagement model. However, despite differences in size and scope the PAs are committed to working with various community organizations and partners over the course of the next three years to further these marketing and outreach endeavors. Ultimately, the success of these community-based activities will be measured on delivered energy savings. Thus the PAs believe incorporating a performance-based incentive mechanism is one of the best ways to achieve and measure success.

3. Schools/Education Program

Although residential education efforts have varied by Program Administrators over the years, the PAs believe that a more collaborative approach on education would enhance all of our efforts in increasing consumer awareness of the importance of energy efficiency as the next Three-Year Plan is implemented. The key objective of the Residential Education initiative will be to offer an array of school-aged education programs and enhanced consumer education.

Efforts for consumer education will focus on educating customers on the benefits of investing in energy efficiency products and services and the multitude of energy efficiency initiatives available to them. The PAs plan to work with DOER, educational institutions, the statewide marketing working group, and PA marketing departments to develop educational and promotional strategies. Efforts for school-aged education will initially focus on expansion of existing PA, and in many cases, award winning school programs. As PAs have the opportunity to review the recommendations from the Appreciative Inquiry Summit, those recommendations will help shape the residential education initiative.

**Strategies**

While some of the PAs have established educational initiatives, the following provides examples where the PAs may collaborate in delivering educational outreach strategies including, but not limited to:

- Sponsor energy efficiency related classroom presentations and activities to schools K-12.
- Direct educators and children to educational resources available online to help educate children about energy safety and conservation.
- Participate in the youth awards programs and sponsor science fairs and other elementary and secondary educational curriculum in collaboration with DOER, Massachusetts Department of Education, and schools throughout the Commonwealth. These efforts could include teacher and community workshops such as the NEED Project.
- Encourage school administrators and parent/teacher organizations to participate in available fundraising activities such as the "Change a Light, Change the World" fundraiser – an educational program where students learn the benefits of efficient lighting and other technologies and are encouraged to sell these products as a way to raise funds for their school.
- Explore the development of programs for youth group summer camps promoting energy conservation and behavioral change.
- Partner with community-based organizations to educate and promote energy efficiency through energy fairs, sponsorships, and community specific outreach.
- Participate in various external energy efficiency employee awareness events.
- Direct customers to on-line calculators and web tools to learn more about home energy usage and to offer energy saving recommendations including information on available initiative incentive offers.

**Targeted Marketing**

The Program Administrators will work to develop energy efficiency marketing messages aimed at residential customers, educators, students, parent/teacher organizations and community groups. Proposed collateral will highlight the many benefits of investing in energy efficiency, savings that can be generated by individual efficiency measure upgrades, behavioral changes, and testimonials from past program participants. The PAs will employ a variety of media sources for messaging such as bill inserts, bill messages, customer newsletters, www.masssave.com, direct mail, employee and business partnerships, newspapers, social media outlets and educator workshops.

The Residential Education Initiative will also focus on developing curricula encouraging students to work within their communities on energy conservation issues. The PAs believe educating school-aged children about energy saving benefits is paramount in making today's students the responsible citizens of tomorrow.

# I. Evaluation, Monitoring & Verification

## 1. Introduction

This section proposes a framework for evaluation and monitoring for the three-year plan period, 2013-2015. The section begins by outlining the enhancements from the initial three-year plan and then discusses the EM&V regulatory framework and research areas, the PAs' evaluation and monitoring strategies, and high-level evaluation budget levels. Finally, there is a discussion of the Program Administrators' specific evaluation and monitoring priorities and activities planned for each research area.

## 2. EM&V Enhancements

For the 2013-2015 Plans, the Program Administrators and the Council's Consultants have identified several enhancements to the current EM&V framework. These enhancements are intended to improve the framework and make evaluation efforts more streamlined and transparent with the goal of improving the precision and usefulness of the studies.

The Program Administrators and the Council's Consultants agree that these enhancements to the evaluation framework will help streamline the EM&V process and increase administrative efficiencies, while also creating added flexibility to better address stakeholder research priorities and resource constraints in a timely manner. The specific enhancements proposed include:

- **Evaluation Management Committee**: In 2012, the Program Administrators and the Council's Consultants created an Evaluation Management Committee ("EMC") similar to the C&I and Residential Management Committees. The EMC serves as a steering committee for statewide evaluation issues, providing guidance and direction to each of the evaluation research areas. The EMC will also help plan, prioritize and delineate the research studies to be undertaken over the three-year plan period. For additional information on the EMC, see Section III.A.4.b.
- **Research Areas**: The PAs, Council Consultants and the EMC worked collaboratively to determine that the range of evaluation activities for 2013-2105 should be divided into three statewide research areas as follows: (1) Residential; (2) Commercial & Industrial; and (3) Special and Cross Cutting. This change collapses the current six research areas into three broader categories. The research areas will continue to be organized primarily by target markets, which will help to maximize the statewide effectiveness of EM&V while at the same time presenting minimal overlap among research areas.
- **Contracting**: The Program Administrators propose that the contracts in any research area may be awarded to one or more evaluation contractor, depending on the needs of the Program Administrators and the expertise and qualifications of the evaluation contractors available. This structure will maintain both a continuity of evaluation contractor presence in each research area, where appropriate, while still fostering creativity and competition among evaluation contractors.

3. EM&V Resolution

On September 8, 2009, the Council approved its EM&V Resolution, which is quoted in full below:

> The Energy Efficiency Advisory Council recognizes that the deployment of the energy efficiency programs by the electric and gas Program Administrators ("PAs"), in support of the mandates of the Green Communities Act, is expected to produce energy savings and related benefits to the Commonwealth that involve the expenditures of unprecedented levels of customer and public monies. It is therefore critical that the programs be evaluated, measured, and verified in a way that provides confidence to the public at large that the savings are real and in a way that enables the Program Administrators to report those savings to the Department of Public Utilities with full confidence. There is a need to ensure both the reality and the perception of the independence and objectivity of EM&V activities, as well as the need to help ensure consistency, timeliness, and credibility of the results.
>
> The Council also recognizes that the evolution of more uniform statewide programs necessarily leads to greater use of statewide evaluation studies as well as other organizing principles.
>
> Accordingly, the Council adopts the following principles and policies -- divided into the topics of policy /authority and implementation -- regarding the evaluation, measurement, and verification of energy efficiency programs:
>
> **POLICY/AUTHORITY**
>
> **Decision Making:**
>
> - The EEAC will assume an oversight role over the EM&V activities of the Program Administrators to ensure the objectivity and independence of those activities, and the perception of such, and to help ensure consistency, timeliness, and credibility. While 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.
> - **Appeals:** To enable the Program Administrators to fulfill their responsibility to report program savings to the DPU with full confidence, an appeals process shall be established, through which the PAs may bring decisions made by the Council or its Designee for review and resolution. This process will be implemented through the formation of a standing evaluation committee ("Standing Committee") of the Council, whose responsibility in this area will be to hear the matter under dispute and rule so that the study may proceed in a

timely way. In general, it is expected that this review process will be completed within 72 hours once an issue is elevated to the Standing Committee.[31]

- **Resolution of Disputes:** This Standing Committee will consist of three voting members of the Council, including DOER. Consistent with general Council proceedings, the Standing Committee will include and consult with, in both deliberations and decision-making, a representative of both the PAs and the EEAC consultant team, neither of whom shall have a vote in the standing committee. The Committee will review the issues related to the disputed matter, hear from the PA evaluation staff and EEAC Evaluation Consultant (the "principals"), and make a determination on the outcome of the matter. The decision will be recorded, along with a description of the applicable issues. The participants in the appeal will sign the record of the decision, indicating their acceptance of, the representation of the issues and of the decision. In exceptional cases, where the PAs perceive there to be significant risk to their ability to manage the energy efficiency programs in the near term, the PAs will note their disagreement with the decision of the Standing Committee on the record of the decision and reserve the right to immediately petition the DPU on the Standing Committee's decision. The PAs shall be able to submit any such documents to the DPU in conjunction with the filing of the Energy Efficiency Plans and Annual Reports. The DPU will be able to review the record of this decision in its review of Plans and Annual Reports.

**IMPLEMENTATION**

- **A. Statewide Focus:** Impact evaluations, and other studies, should be performed at a statewide rather than an individual Program Administrator level to the maximum extent possible, while enabling to the extent necessary results at the Program Administrator level. It is recognized that circumstances could occur where a service territory specific or non-statewide evaluation or study would be appropriate. Such EM&V activities should only be undertaken following an assessment of the need and value of a non-statewide study and agreement between the PA evaluation staff and EEAC Evaluation Consultant.

- **B. Research Areas:** The range of evaluation activities should be divided into 5 to 7 semi-permanent statewide research areas, each oriented primarily to specific target markets (e.g., residential retrofit, large C&I), each with a long-term research and contract manager from the PAs, an independent evaluation contractor to conduct the studies under a long-term contract, and the EEAC Evaluation Consultant. The PAs and the EEAC Evaluation Consultant shall jointly prepare a statewide research management plan to carry this out. The EEAC Evaluation Consultant shall have the opportunity to comment on the

[31] The establishment of this process is still an open action item. A proposal for a Standing Committee was an agenda item discussed at the Council's March 13, 2012 meeting. To date, however, there has been no need for an appeals process as any disputes have been amicably resolved.

proposed assignments of the PA research area managers. The EEAC will have the authority to remove assigned research area managers if they do not perform effectively in accordance with pre-established objective standards for research area managers. Those standards will be developed jointly by the EEAC Consultant and the PAs.

- **C. Evaluation Planning:** The research area managers and EEAC Evaluation Consultant will jointly prepare a proposed statewide evaluation plan and illustrative budget and submit it to the EEAC for approval.[32] We expect that this plan will be reviewed and updated annually. Consideration will be given to regional EM&V activities and FCM requirements, and will be responsive to DPU directives about EM&V in the development of the evaluation plan.
- **D. Coordination of Studies:** All studies[33] in which Massachusetts PAs participate should be included in the statewide evaluation plan for the purposes of coordination of evaluation and promotion of consistent methods, and conducted by the research area independent evaluation contractors. Some studies, however, may be excluded from the statewide research area contracts. The EEAC Consultant and PAs will develop guidelines for assessing which studies may be excluded from the statewide research contracts and will apply them as necessary to identify mutually agreed upon studies that will be conducted outside of the statewide evaluation contracts. Research area managers, the PAs, and the EEAC Consultant should make every effort over time to determine if these studies may be included in research area contracts. Under the circumstances where a study is not included in a research area contract, the appropriate research area manager shall manage the study and represent Massachusetts statewide evaluation interests in the execution of the study. The EEAC Evaluation Consultant may participate in regional evaluation projects directly, upon the direction of the EEAC.
- **E. Integration:** Electric and gas evaluation efforts should be fully integrated to the maximum extent possible. Each of the statewide research areas should cover both electric and gas evaluation efforts.
- **F. Contracting:** The Program Administrators will be the main mechanism for contracting with the independent evaluation contractors.
- **G. Implementation:** As is current practice, statewide evaluation studies will be coordinated by staff from Program Administrators, with a lead from one of them (the "Study Manager"), and an EEAC Evaluation Consultant. This will enable Program Administrators and the EEAC to collaboratively provide their expertise in the planning, scoping, management, review of methods and draft

[32] The DPU has the ultimate authority to review and approve each PA's energy efficiency plan, including its evaluation plan and budget.

[33] Some Massachusetts PAs are multi-jurisdiction utilities and may propose expanding some Massachusetts studies to include those other jurisdictions, where appropriate. If mutually agreed-to by the research area manager and the Council Consultant, these cross-jurisdictional efforts will proceed.

protocols, and review, acceptance, and application of results of the individual studies. In many cases the Study Manager and the statewide research area manager will be the same individual. The Study Manager shall manage study efforts so that the approved evaluation study budgets are not exceeded.[34] The EEAC Evaluation Consultant should have the authority to recommend to the EEAC removal of the assigned Study Manager if they do not perform effectively in accordance with pre-established objective standards for Study Managers. Those standards will be developed jointly by the EEAC Consultant and the PAs.

- **H. Communication and Documentation**: The Study Manager will communicate regularly with the EEAC Evaluation Consultant about issues related to study execution. The Study Manager will document decisions made in the course of a study, for potential review by the EEAC, DOER, the DPU, and/or any other party.

We expect and encourage the PAs to perform the evaluation roles assigned to them in this framework in an effective and timely way.

We recognize that there are details that remain to be worked out under this framework and that the framework may evolve over time. We encourage the EEAC Consultant and PAs to continue discussions on these topics to establish an effective process that leads to high quality and useful evaluation results, mindful of the need to maintain public confidence in the overall conduct of these programs. The process, roles and responsibilities should be reviewed and modified, as necessary, after twelve months first, and bi-annually thereafter.

4. Descriptions of Research Areas

Consistent with the EM&V Resolution and experience over the last two plus years implementing the initial three-year plan, the Program Administrators, Council's Consultants and EMC worked collaboratively to develop and refine three market research areas. These research areas are organized primarily by target markets, which design is intended to help maximize the statewide effectiveness of EM&V, while presenting minimal overlap among areas. The research areas identified are as follows:

a) **Residential**

Originally, this research area consisted of three separate categories: Residential Retrofit and Low Income, Residential Retail Products, and Residential New Construction Residential Retrofit and Low Income. Residential still includes these categories, but as a single overarching research area. As currently defined, the residential research area would include residential

[34] At times, the scope of an evaluation study is modified for good reasons. The Study Manager and the EEAC Consultant agree to review proposed changes in scope with the Standing Committee when the change in scope is likely to lead to an increase in study cost of more than 10% or to adversely affect the study timeline.

cooling and heating equipment, residential heating and water heating, residential and low income retrofit 1-4 including weatherization, and residential and low-income retrofit (and new construction) multi-family programs; residential lighting and appliance programs; and residential and low income new construction and major renovations programs.

b) **Commercial & Industrial**

This research area previously consisted of two separate categories: Non-Residential Large Retrofit and New Construction and Non-Residential Small Retrofit. Commercial & Industrial still includes these categories, but as a single overarching research area. As currently defined, the C&I research area would include C&I small retrofit, direct install initiatives, future programs that may target small non-residential customers, C&I new construction (small and large) and major renovations, as well as large C&I retrofit programs and initiatives.

c) **Special and Cross-Sector Studies**

This research area reflects the fact that not all studies will fall into the two market categories above, and some studies may be cross-sector in nature. Some types of studies in this research area could include: cross-sector free ridership and spillover studies, non-energy impacts, behavioral programs, community-based pilots, and marketing, public education, and outreach activities.

5. Transition to Statewide Plan

The Program Administrators overcame many obstacles during the last three-year plan to transition from individual evaluation efforts to the current statewide approach.

Although some research was already being evaluated on a statewide basis, most was not and some had never before been conducted. The PAs successfully implemented an evaluation plan to transition to a statewide framework and build the platform for the robust evaluation framework that exists today in Massachusetts. In making this transition, the PAs overcame challenges related to (a) conducting the necessary studies to evaluate the 2009-2011 calendar year programs; (b) working with individual Program Administrators' procurement departments to adjust to the new framework that required large multi-year umbrella RFPs covering all studies in a given research area on a much larger dollar scale then employed before (*e.g.*, some RFPs may involve $5 million - $10 million of work over a three year period); (c) increased coordination between Program Administrators; (d) coordinating the old and new evaluation efforts; (e) differences in program tracking systems; (f) long-standing differences in evaluation methodologies and approach; and (g) hiring additional staff to manage the increased focus on EM&V. Some challenges still remain, but experience has informed the PAs about how to better coordinate planned studies with those being conducted by Program Administrators in other states, as well as studies being performed regionally under the NEEP EM&V Forum, and thus avoid unnecessarily duplicating studies.

6. Evaluation Budgets

As set forth in the Term Sheets, by agreement with the Council's consultants, DOER, and the Attorney General, the Program Administrators will allocate at least $69.2 million for combined electric and gas evaluation and market research over the three years of the Plan. This Plan calls for three-year EM&V budgets of nearly $70 million, somewhat over the base level called for in the Term Sheets. The evaluation and market research budget was based on several factors, including historical evaluation costs and an expected higher cost of evaluation activities for codes and standards initiatives and the quantification of market effects. Although historical evaluation costs may have been less than evaluation budgets for some programs, the natural lag of evaluation costs needs to be taken into account when developing the evaluation budget for the three-year plan. Since evaluation activities typically occur after program implementation activities, evaluation costs can lag up to several years.

7. Types of Evaluation Functions

EM&V refers to the systematic collection and analysis of information to document the impacts of energy efficiency programs and improve the effectiveness of these programs. EM&V includes the following types of studies:

- *Measurement and Verification* refers to the measurement of gross savings achieved in individual buildings.
- *Impact Evaluation* refers to the measurement of net or gross savings achieved within overall program populations.
- *Market Evaluation* refers to the measurement of the effects that programs have on the structure and functioning of their target markets.
- *Process Evaluation* refers to the systematic assessment of programs for the purpose of documenting their operations and developing recommendations to improve their effectiveness.
- *Market Characterization or Assessment* refers to the systematic assessment of energy efficiency markets for the purpose of improving the effectiveness of programs targeting those markets.
- *Evaluation of Pilots* refers to EM&V activities intended to assess the effectiveness of pilot programs, determine their potential for full-scale implementation, and develop recommendations for any changes in program approach. Under the new framework, evaluation of pilots will occur under the research area most closely related to the market being targeted.

8. Specific Evaluation and Monitoring Activities for 2013-2015

In consultation with the Consultants and the EMC, the Program Administrators will explore a wide range of topics over the next planning phase to address the EM&V needs of all stakeholders as well as any policy and planning initiatives of the Commonwealth that will require EM&V support.

The Program Administrators and Consultants recognize the need for a strategic long-term EM&V plan for the Three-Year Plan period. In order to achieve this, it is the intention of the EMC to hold planning summits in early 2013 for each of the three research areas. Doing so will enable the Program Administrators and Consultants to strategically identify evaluation needs for the coming Three Year Plan. This will also allow the Program Administrators and Consultants to plan future evaluation efforts subject to the Department's direction in D.P.U. 11-120.

In addition to the strategic planning process outlined above, the Program Administrators have committed to evaluating the following specific projects over the course of the Three-Year Plan:

- **Codes and Standards**: It is the intent of the Program Administrators to support the proposed Residential and Commercial & Industrial Codes & Standards initiatives with appropriate, timely evaluation. Codes & Standards evaluation plans will be developed after program planning is complete.
- **Behavioral & Outreach Initiatives**: The Program Administrators will continue to support behavioral and outreach initiatives, assessing the program effects on both electric and gas customers.
- **Quantification of Market Effects**: Subject to the Department's direction in D.P.U. 11-120, the Program Administrators propose to undertake studies to quantify market effects and naturally occurring energy efficiency, as well as identifying baseline and program-induced market changes.[35]

The first round of approximately 45 statewide EM&V studies was completed between 2010 and 2011. The second round of approximately 30 statewide EM&V studies has been completed and included in the 2011 Annual Report filed in August 2012 (D.P.U. 12-51 through D.P.U. 12-61). It is expected that the results of the second round of studies will inform the third round of EM&V studies, to take place between 2012 and 2013.

In addition to the statewide EM&V studies that were included in each PA's 2011 Annual Report, a list of impact evaluation results that were finalized by the date of this Plan (but not included in the 2011 Annual Reports) follows. Please see Appendix P for the full studies.

[35] As explained in the PAs' comments on net savings, which were filed jointly with other stakeholders, naturally occurring energy efficiency refers to customers who took action, but would have taken the action without an energy efficiency program. In-program naturally occurring energy efficiency corresponds to free ridership. See Joint Savings Comments, Exh. A, D.P.U. 11-120, Phase I (May 7, 2012).

| Study # | Residential Studies |
|---|---|
| 1. | Massachusetts 2011 Baseline Study of Single-family Residential New Construction |
| 2. | Home Energy Services: Contractor Charettes in Support of Lost Opportunity Metric |
| 3. | Home Energy Services Impact Evaluation |
| 4. | Results of the Massachusetts Onsite Compact Fluorescent Lamp Surveys |
| 5. | Massachusetts Residential Retail Products: Consumer Electronics Saturation |
| 6. | Massachusetts Consumer Electronics Potential Qualitative Research Study |
| | **Residential Pilot Studies** |
| 7. | Wi Fi Programmable Controllable Thermostat Pilot Program Evaluation |
| 8. | Impact Evaluation of the 2011-2012 ECM Circulator Pump Pilot Program |
| 9. | Impact Evaluation of the 2011-2012 Boiler Reset Control Pilot Program |
| | **Commercial & Industrial Studies** |
| 10. | Small Business Direct Install Program: Pre/Post Lighting Occupancy Sensor Study |
| 11. | Code Compliance Baseline Study |
| | **Special & Cross-Cutting Studies** |
| 12. | Commercial and Industrial Non-Energy Impacts Study |
| 13. | K - 12 Energy Efficient Education Program Literature Review Findings |
| 14. | Post-Secondary Energy Efficient Education Program Literature Review Findings |
| 15. | Detailed Findings from CLC Smart Home Energy Monitoring Pilot Interim Impacts Evaluation |
| 16. | An Estimate of Direct Full Time Equivalent (FTE) Employment in 2011 Supported by Mass Save Energy Efficiency Programs |

The Program Administrators are continuing to determine the proposed studies for the next three years. The below table includes studies that are in progress or have been planned. These studies and schedules are tentative and subject to change based, among other things, on the results of in-progress evaluation studies. The current list of proposed studies is as follows:

| Proposed Studies | Status |
|---|---|
| **Residential Studies** | |
| Residential New Construction - Net Impact Study | In Progress |
| Residential New Construction - Incremental Cost Study | In Progress |
| Residential Cooling & Heating Equipment (Cool Smart) - Net to Gross Study | In Progress |
| Residential High Efficiency Heating Equipment (HEHE) - Net to Gross Study | In Progress |
| Residential Lighting - Shelf Stocking Survey | Planned |
| Residential Lighting - Supplier Interviews | In Progress |
| Residential Lighting - Regional Operating Hours Study | Planned |
| Residential Retrofit - Preweatherization Barrier Initiative Pilot | In Progress |
| Residential Retrofit - Focused Potential Study | In Progress |
| Residential Retrofit - Realization Rate Calibration | Planned |

| | |
|---|---|
| Low Income - Programmable Thermostat and Lighting Operating Hours Study | In Progress |
| **Residential Pilot Studies** | |
| 2012 Lighting Controls Pilot | In Progress |
| **Commercial & Industrial Studies** | |
| Small C&I - Billing Analysis | In Progress |
| Large C&I - Prescriptive Measure Impact Evaluation (VSDs) | In Progress |
| Large C&I - Study to assess the mid-sized C&I customers | Detailed Planning Phase |
| Large C&I - 2011 CHP Impact Evaluation | In Progress |
| Large C&I - Custom Electric Impact Evaluation (Refrigeration, Motor, Other) | In Progress |
| Large C&I - 2011 Custom Gas Impact Evaluation | Detailed Planning Phase |
| Large C&I - 2011 Prescriptive Gas Impact Evaluation | Detailed Planning Phase |
| Large C&I - Upstream Lighting Impact & Process Evaluation | In Progress |
| Large C&I - C&I Customer Profile | Detailed Planning Phase |
| Large C&I - Existing Building Market Characterization | Planned |
| Large C&I - Lighting Controls Scoping Study | Planned |
| Large C&I - Whole System Approach Assessment | Detailed Planning Phase |
| Large C&I - New Construction Market Characterization | Planned |
| Large C&I - Prescriptive Measure Impact Evaluation (Lighting)* | In Progress |
| Large C&I - Boiler Baseline Study | Detailed Planning Phase |
| **Special & Cross-Cutting Studies** | |
| Community-Based Initiative - Study of Northampton/Pittsfield pilot | In Progress |
| Residential Smart Energy Monitoring Pilot - Impact Evaluation (CLC) | In Progress |
| Umbrella Marketing - Post-Campaign Study | In Progress |
| C&I - Net to Gross (Gas) | Planned |

## J. Technical Reference Manual

The Massachusetts Technical Reference Manual for Estimating Savings from Energy Efficiency Measures ("TRM") documents how the energy efficiency Program Administrators consistently, reliably, and transparently calculate savings resulting from the installation of prescriptive energy efficiency measures. The TRM provides methods, formulas, and default assumptions for estimating energy, peak demand, and other resource impacts from energy efficiency measures. The TRM, which did not exist until the PAs developed the initial three-year plan, is an excellent example of how the PAs work together, share data and best practices and work to develop common assumptions that reflect state-of the-art EM&V results.

Building on the important new practices developed in the 2010-2012 plans, the Program Administrators have developed a statewide Plan TRM, which contains planning assumptions for each program year. The Plan TRM will be submitted along with each Program Administrator's three-year plan. This Plan Version TRM incorporates updates from all of the most recent evaluation study results, as well as updates to baseline standards and new measures. The Plan TRM is the basis for savings set forth in this Plan. The development and use of the TRM reflects an important success of the Program Administrators' ongoing 2010-2012 effort. Revised versions of Plan Version TRM for 2013-2015 would be shared with the Consultants and LEAN.

## K. Performance Incentives

On January 28, 2010, the Department issued the Orders on the three-year energy efficiency plans, which included the Electric Order in dockets D.P.U. 09-116 – D.P.U. 09-120 and the Gas Order in D.P.U. 09-121 – D.P.U. 09-128. The Orders approved most aspects of the performance incentive mechanism proposed by the Program Administrators in their 2010-2012 Plans.[36] However, for certain aspects of the proposal regarding the allocation method of the statewide pool and performance metrics, the Department ordered the Program Administrators to work further with the Council and re-file these components with the Department for its review and approval. For 2011, the Program Administrators worked closely with the Council in order to update the allocation method in compliance with the Orders, as well as to propose updated performance metrics. As a result of this effort, a comprehensive settlement was achieved on this and other matters, which was filed on April 15, 2011, and is currently pending before the Department (See D.P.U. 10-141 – 10-150). Similarly, for 2012, the Program Administrators used the extensively reviewed 2011 method and performance incentive model as a basis for 2012 performance incentive allocations and updated performance metrics. Performance incentive proposals applicable to 2012 efforts were filed with the Department on October 28, 2011 and are also pending (See D.P.U. 11-106 through D.P.U. 11-116). For 2013-2015, the Program Administrators have retained the performance incentive model that has been effective and fully reviewed related to efforts in the initial three-year plan, with the incentive pool comparatively reduced in accordance with the Term Sheet, which sets forth an integrated approach to savings, budgets, and incentives.[37] In this discussion, the Program Administrators also summarize the 2013-2015 performance incentive amounts in the following manners: statewide; by component; and by Program Administrator.

### I. Summary of the Orders on Performance Incentives in the Initial Three-Year Plan.

In the Electric Order and the Gas Order, the Department noted its support of the following elements of the proposed incentive design:

1. The proposed statewide incentive pool.
    a. The electric statewide incentive pool goals equal $22 million in 2011 and $25.5 million in 2012, assuming that goals on a statewide basis are equal to the goals established by the Council. Electric Order at 93. The actual incentive pool can be

[36] See Electric Order, at 93-125, 165, and 168-169; Gas Order at 79-115, 168-169, and 172-173.

[37] If savings or budgets are materially altered, the PAs necessarily reserve their right to adjust incentive approaches.

adjusted up or down according to actual goals. Id. at 111. The Department approved the statewide goals. Id. at 112.

b. The gas statewide incentive pool goals equal $4.5 million in 2011 and $5.5 million in 2012, assuming that goals on a statewide basis are equal to the goals established by the Council. The actual incentive pool can be adjusted up or down according to actual goals. Gas Order at 100. The Department approved the statewide goals. Id. at 101.

2. The structure of the proposed incentive mechanism includes three components: the Savings Mechanism (focusing on the dollar value of benefits); the Value Mechanism (focusing on the dollar value of net benefits); and Other Performance Metrics.

   a. The three-pronged structure of the incentive mechanism was approved in the Electric Order at 113, 124 and the Gas Order at 101-102, 114. The Department noted that similar mechanisms have been approved in the past.

3. Common payout amounts under both the Savings and Value Mechanisms.

   a. The approval for common payout rates in the Electric Order is found on pages 113-114 with reference to Table D at 96.

   b. The approval for common payout rates in the Gas Order is found on pages 102-103 with reference to Table C at 83.

4. The proposed allocation of the statewide incentive pool to each Program Administrator (excluding Cape Light Compact ("CLC")) for 2010 but not for 2011 or 2012.

   a. The allocation of the statewide electric incentive pool to each Program Administrator was based on that Program Administrator's contribution to the statewide savings goals as expressed in MWh. However, the allocation for each of the three components was not consistent among the Program Administrators; the savings component amount was allocated on the basis of the dollar value of savings, the value component amount was allocated on the basis of the dollar value of net benefits, and the performance metrics component was derived to total the overall allocation method based on savings goals. Although the Department approved the allocation of the components for 2010, the Program Administrators were directed to revise the allocation method for 2011 and 2012 so that, to the extent possible, the revised allocation method would result in (1) uniform statewide payout rates for the savings and value components, and (2) an allocation of incentive dollars across the three components for each Program Administrator that, on a percentage basis, approximates the statewide allocation across the three components, as endorsed by the Council and approved by the Department. See Electric Order at 114-116.

   b. The allocation of the statewide gas incentive pool to each Program Administrator was based on a similar methodology. This methodology produced some anomalous results for certain Program Administrators that required special adjustments. Similar to the electric side, the Department approved the gas Program Administrators' component allocation for 2010, but the Program Administrators were ordered to revise the allocation methodology in 2011 and 2012. See Gas Order at 103-105.

c. A revised allocation methodology was proposed in the 2011 mid-term modification filings settlement proposal. The revised methodology was created following extensive discussions with the Council, and addresses the concerns of the Department, as noted in the Orders.

5. Specific limitations on how EM&V results would be used to determine performance for both the electric and gas Program Administrators. Electric Order at 124; Gas Order at 114.

However, the Department did not accept: (1) the proposed allocation method for 2011 and 2012 as mentioned above; or (2) the proposed performance metrics for 2010, stating that it did not accept an EM&V "Omnibus Metric," and directed the Program Administrators to include a financing and funding metric.[38] The Department further ordered that a cap on the earned incentive mechanism apply both in total and by component. The cap by component and overall has been set at 125% of Design level performance.[39]

## II. Allocation Proposal for 2013 – 2015

The Program Administrators propose the following allocation method for 2013-2015, based directly on the method set forth in each Program Administrator's 2011 and 2012 mid-term modification. Similar to the 2011 and 2012 allocation methodology, in 2013-2015, the statewide incentives for the savings component of the incentive pool are allocated on the basis of the dollar value of benefits using common payout rates as approved by the Department. The statewide incentives for the value component of the incentive pool are allocated on the basis of the dollar value of net benefits using common payout rates as approved by the Department. The statewide incentives for the performance metric component of the incentive pool are allocated on the basis of the forecasted[40] amount of net benefits. The total incentive is the sum of the three components. This methodology was followed for allocating the incentive dollars among Program Administrators, as well as to each sector and to each program.

This proposed allocation model results in a similar distribution of each Program Administrator's incentives among the three components. The proposed payout rates for 2013-2015 remain constant for all Program Administrators[41] and for each year in the Plan.

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[38] In response to the Electric Order and the Gas Order, the Program Administrators filed a revised performance metric proposal on March 12, 2010. The Department subsequently approved the revised performance metrics on August 10, 2010 with the exception of the Deeper Savings metric. On September 14, 2010 the Program Administrators filed a compliance filing in regard to changing the baseline year of that metric.

[39] The Program Administrator proposals had thresholds for the savings and value incentive mechanisms of 75% of design or target level performance.

[40] Once approved, these target amounts are to remain constant regardless of the actual net benefits achieved. In other words the performance metric target does not change once the program year has started. This allows for certainty in planning and forecasting for the Program Administrators as they are aware of the value of the metrics and the work involved.

[41] Except CLC, which does not participate in performance incentives.

Distribution of Performance Incentive for Electric Program Administrators in 2013 – 2015:

**Percent of Total Incentive**

| **State** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 14.0% | 2.5% | 39.5% | 56.0% |
| Value | 8.1% | 1.1% | 25.7% | 35.0% |
| Metrics | 3.2% | 2.5% | 3.2% | 9.0% |
| Total | 25.4% | 6.2% | 68.4% | 100.0% |

| **National Grid** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 13.5% | 2.5% | 39.4% | 55.5% |
| Value | 7.8% | 1.1% | 26.5% | 35.4% |
| Metrics | 3.3% | 2.6% | 3.3% | 9.1% |
| Total | 24.6% | 6.2% | 69.2% | 100.0% |

| **NU** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 14.5% | 2.5% | 39.4% | 56.5% |
| Value | 8.6% | 1.1% | 24.9% | 34.6% |
| Metrics | 3.2% | 2.5% | 3.2% | 8.9% |
| Total | 26.3% | 6.1% | 67.6% | 100.0% |

| **Unitil** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 10.1% | 3.5% | 45.6% | 59.2% |
| Value | 4.7% | 1.2% | 26.7% | 32.5% |
| Metrics | 3.0% | 2.3% | 3.0% | 8.3% |
| Total | 17.8% | 7.0% | 75.3% | 100.0% |

Distribution of Performance Incentive for Gas Program Administrators in 2013 – 2015:

**Percent of Total Incentive**

| **State** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 25.1% | 7.8% | 23.1% | 56.0% |
| Value | 12.5% | 4.3% | 18.2% | 35.0% |
| Metrics | 3.2% | 2.5% | 3.2% | 9.0% |
| Total | 40.8% | 14.6% | 44.6% | 100.0% |

| **National Grid** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 24.8% | 9.2% | 22.8% | 56.8% |
| Value | 10.1% | 6.1% | 18.2% | 34.4% |
| Metrics | 3.2% | 2.5% | 3.2% | 8.8% |
| Total | 38.1% | 17.7% | 44.2% | 100.0% |

| **NSTAR** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 21.8% | 6.6% | 28.0% | 56.5% |
| Value | 11.0% | 2.8% | 20.8% | 34.6% |
| Metrics | 3.2% | 2.5% | 3.2% | 8.9% |
| Total | 36.1% | 12.0% | 52.0% | 100.0% |

| **Columbia** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 30.4% | 5.5% | 18.0% | 53.9% |
| Value | 20.6% | 1.8% | 14.2% | 36.7% |
| Metrics | 3.4% | 2.6% | 3.4% | 9.4% |
| Total | 54.4% | 10.0% | 35.6% | 100.0% |

| **Unitil** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 14.4% | 7.7% | 35.5% | 57.6% |
| Value | 4.7% | 0.3% | 28.7% | 33.7% |
| Metrics | 3.2% | 2.5% | 3.2% | 8.8% |
| Total | 22.2% | 10.4% | 67.4% | 100.0% |

| **Berkshire** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 21.9% | 7.4% | 23.5% | 52.8% |
| Value | 9.5% | 4.8% | 23.3% | 37.5% |
| Metrics | 3.5% | 2.7% | 3.5% | 9.7% |
| Total | 34.9% | 14.9% | 50.2% | 100.0% |

| **NEG NA &FR** | Residential | Low Income | C&I | Total |
|---|---|---|---|---|
| Savings | 26.1% | 8.7% | 20.7% | 55.5% |
| Value | 14.2% | 3.9% | 17.3% | 35.5% |
| Metrics | 3.3% | 2.5% | 3.3% | 9.0% |
| Total | 43.6% | 15.2% | 41.3% | 100.0% |

## III. 2013 - 2015 Performance Metrics

The Program Administrators continue to include performance metrics as a component of the incentive mechanism based on a desire by the Council to retain metrics and set forth as an element of the Term Sheets supported by DOER, the Attorney General, and the PAs in the context of a negotiated, integrated agreement. The Council and the Program Administrators have not yet come to an agreement on either the performance metrics or the number of performance metrics. Accordingly, the percentages among the components of the incentive mechanism (Savings, Value, and Performance Metrics) may change slightly to reflect the final number and meaningfulness of the performance metrics.

The Program Administrators plan to work collaboratively with the Council to develop a limited number of performance metrics applicable to efforts in 2013-2015. A supplemental filing to include the agreed-to performance metrics along with an update to the performance incentive models if necessary will be submitted to the Department upon completion of that effort.

If the Department does not approve performance metrics as a component of the incentive mechanism, the Program Administrators will reallocate the incentive dollars for performance metrics to the Savings and Value mechanisms. Disapproval of a specific performance metric by the Department will not result in a reduction in the statewide incentive pool.

## IV. Statewide Incentive Pool for 2013-2015

Statewide, the design level incentive is set at $80,000,000 for electric efforts and at $16,000,000 for gas efforts (the design level incentive pool can vary up or down from these amounts based on the relative level of annual energy savings, statewide, in the Three Year Plan compared to the annual savings goal set for design purposes). These amounts flow from discussions with the Council and the Term Sheets and are tied to agreed-to annual energy savings targets, budgets, and expectations about the expected cost of annual savings statewide. The statewide incentive pool will not change as a result of changes to avoided costs that may occur during the term of this Plan.

## IV. Summary of 2013-2015 Incentives

The models set forth as Exhibit 1, Appendix J-1 (Electric) and Exhibit 1, Appendix J-2 (Gas) provide calculations of the 2013-2015 incentives based on the three-year Plan proposals of each of the Program Administrators for electric and gas, respectively. For the electric Program Administrators this is a 24 page exhibit and for the gas Program Administrators this is a 36 page exhibit. The calculations are described briefly below. Additionally, a summary of the 2013-2015 incentives is provided below.

### A. Calculation Exhibits

Exhibit 1, Appendix J-1 (Electric) provides the derivation of the 2013-2015 electric incentives at the Design level of performance. Similarly, Exhibit 1, Appendix J-2 (Gas) provides the derivation of the 2013-2015 gas incentives at the Design level of performance.

Pages 1 and 2 of both Appendices J-1 and J-2 are input pages that summarize each Program Administrator's 2013-2015 goals, benefits and costs (excluding performance incentives). The common payout rates used to derive projected Design level incentives under the savings and value components are also noted on this page. The Program Administrators note that if avoided costs change compared to what has been used here, either as a result of orders issued by the Department in D.P.U. 11-120 or due to a study where avoided costs are updated, the common payout rates applicable under the savings and value components will need to be updated. However, those changes will not impact the size of the incentive pool or Program Administrator-specific design level incentives.

Page 3 derives the value of the performance metric pool. As described above, the 2013-2015 statewide performance incentives are adjusted by the percentage of the actual targets to the Council recommended statewide targets. At a statewide level for both electric and gas, 56% of the incentive has been allocated to the Savings Mechanism, 35% to the Value Mechanism, and 9% has been allocated to performance metrics, all in accordance with the Term Sheets. To determine the payout rate under the Savings Mechanism, the adjusted statewide incentive pool is multiplied by 56%, the portion of the statewide performance incentives allocated to the savings component, and then that amount is divided by the projected dollar value of benefits statewide from proposed efforts. Similarly, to determine the payout rate under the Value Mechanism, the adjusted statewide incentive pool is multiplied by 35%, the portion of the statewide performance incentives allocated to the value component, and then that amount is divided by the projected dollar value of net benefits statewide from proposed efforts. The remainder of the adjusted statewide incentive pool, 9%, is allocated to performance metrics.

Similar to 2011 and 2012, the Program Administrators are proposing to allocate the statewide funding for performance metrics to each Program Administrator on the basis of forecasted net benefits. Through negotiations in 2011, the Program Administrators further allocated the performance metrics to each sector as follows: 36% to residential, 28% to low-income and 36% to Commercial & Industrial. These sector allocations were maintained in 2012 and in this Plan but may be adjusted when specific performance metrics are developed as noted above.

Page 4 derives adjusted thresholds for performance percentages under the savings and value mechanisms for Program Administrators who have agreed to goals in excess of the targets recommended by the Council in a given year. For those Program Administrators, the threshold level of performance is based on achieving 75% of the savings that correspond to the percent of sales goal for the Program Administrator in the year in 2013 or 2014 and 80% of the savings that correspond to the percent of sales goal for the Program Administrator in 2015. For Program Administrators with savings goals at or below the Council recommendations, the threshold for performance in 2013 and 2014 is 75% of Design and in 2015 is 80% of Design.

Pages 5 to 20 of the electric appendix and Pages 5 to 32 of the gas appendix provide the calculation of potential Design level incentives under the savings mechanism, the value mechanism, and performance metrics on a statewide basis (excluding CLC) and for each individual Program Administrator. Lines 1 through 3 determine the savings amount by multiplying the dollar value of benefits by the savings mechanism payout rate. Lines 4 through 6 determine potential Design level incentives under the value mechanism by multiplying the dollar value of net benefits by the value mechanism payout rate. Lines 7 through 9 provide the derivation of potential Design level incentives for the performance metrics by using the forecasted amount of net benefits multiplied by the factor derived on page 2. Line 10 provides the total performance incentive. Lines 11 through 16 provide the derivation of potential Design level incentives for hypothetical performance metrics in each sector. This information is provided for illustrative purposes only as actual performance metrics, including the number of metrics in each sector, have not yet been determined.

Pages 17 - 24 of the electric appendix and pages 30 - 36 of the gas appendix provide summary information about performance incentives by sector and by component of the incentive mechanism.

Exhibit 1, Appendix J-1 (Electric) and Exhibit 1, Appendix J-2 (Gas) do not show how the performance incentives are further allocated to specific programs for benefit/cost screening purposes. The program allocation assumptions are summarized below:

- The savings component amount is allocated to programs on the basis of program dollar of benefits.
- The value component amount is allocated to programs on the basis of program dollar of net benefits.
- On a preliminary basis, the sector level performance metric funds have been allocated to all programs in the sector based on net benefits. Once specific performance metrics proposals are developed, the allocation will be updated to take into account the focus of the specific metrics.
- Any programs with negative allocations (efforts with projected costs without identified projected savings) are reallocated to other programs within the sector.

**B. Summary**

A summary of the threshold, design, and exemplary performance incentive amounts by component of the proposed incentive mechanism for 2013-2015 is provided for each electric and gas Program Administrator, below.

## Electric:

Summary of 2013 - 2015 Performance Incentives by Program Administrator

| **National Grid** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 16,689,790 | 22,054,750 | 27,568,438 |
| Value | 10,654,464 | 14,077,039 | 17,596,299 |
| Metrics | 2,768,721 | 3,625,276 | 4,531,594 |
| Total | 30,112,975 | 39,757,065 | 49,696,331 |

| **NU** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 16,927,569 | 22,360,686 | 27,950,858 |
| Value | 10,383,791 | 13,713,847 | 17,142,309 |
| Metrics | 2,689,823 | 3,521,303 | 4,401,629 |
| Total | 30,001,183 | 39,595,836 | 49,494,795 |

| **Unitil** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 319,330 | 416,074 | 520,092 |
| Value | 175,726 | 228,808 | 286,010 |
| Metrics | 44,693 | 58,485 | 73,107 |
| Total | 539,750 | 703,367 | 879,209 |

Note: (1) For National Grid and NU, the threshold amount under the Savings and Value mechanisms is equal to 75% of the EEAC recommended goal for the Company in 2013 and 2014 and to 80% of the EEAC recommended goal for the Company in 2015. For Unitil, the Threshold amount under all components is equal to 75% of Design in 2013 and 2014 and to 80% of Design in 2015. The Thresholds for Metrics are set at 75% of Design in 2013 and 2014 and at 80% in 2015 for all Program Administrators.

## Gas:

Summary of 2013 - 2015 Performance Incentives by Program Administrator

| **National Grid** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 3,437,954 | 4,614,457 | 5,768,071 |
| Value | 2,082,114 | 2,793,101 | 3,491,377 |
| Metrics | 551,820 | 718,770 | 898,462 |
| Total | 6,071,888 | 8,126,328 | 10,157,911 |

| **NSTAR** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 1,580,561 | 2,091,624 | 2,614,530 |
| Value | 968,849 | 1,281,783 | 1,602,228 |
| Metrics | 253,214 | 329,830 | 412,287 |
| Total | 2,802,624 | 3,703,237 | 4,629,046 |

| **Columbia** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 1,357,432 | 1,771,089 | 2,213,862 |
| Value | 923,630 | 1,204,643 | 1,505,803 |
| Metrics | 236,751 | 308,793 | 385,991 |
| Total | 2,517,813 | 3,284,525 | 4,105,656 |

| **Unitil** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 69,688 | 90,665 | 113,331 |
| Value | 40,853 | 53,019 | 66,274 |
| Metrics | 10,626 | 13,797 | 17,246 |
| Total | 121,167 | 157,481 | 196,851 |

| **Berkshire** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 179,830 | 234,156 | 292,695 |
| Value | 128,048 | 166,533 | 208,167 |
| Metrics | 33,128 | 43,096 | 53,870 |
| Total | 341,005 | 443,785 | 554,731 |

| **NEG NA &FR** | Threshold(1) | Design | Exemplary |
|---|---|---|---|
| Savings | 122,255 | 159,401 | 199,251 |
| Value | 78,081 | 101,790 | 127,238 |
| Metrics | 19,898 | 25,938 | 32,422 |
| Total | 220,234 | 287,129 | 358,911 |

Note: (1) The threshold level of performance for Savings and Value is equal to 75% in 2013 and 2014 and 80% in 2015 of Design unless goals for the Program Administrator exceed EEAC recommendations in the year. If goals for the Program Administrator exceed those recommendations, the threshold level is equal to the adjusted threshold percentage of Design as shown on Pef Met Pool Lines 44 - 49. The threshold level of performance for Metrics for all Program Administrators is 75% in 2013 and 2014 and 80% in 2015.

## L. Cost Recovery

### 1. Overview

The Program Administrators emphasize that cost recovery, including the recovery of a performance incentive, and, for those PAs without a Department-approved decoupling mechanism, LBR, is a critical element of this Plan. In order for the Program Administrators to pursue the aggressive goals set forth in this Plan, it is essential that the cost-recovery process provide a full and fair opportunity for the Program Administrators to be made economically whole for aggressively pursuing sales-reducing energy efficiency efforts and to earn a reasonable return on this investment based upon their performance and achievement. While Department approval of the proposed Plan should ensure cost-recovery of Plan related costs, LBR, and performance incentives, the details related to cost-recovery mechanisms will be addressed in separate proceedings and may be affected by orders to be issued by the Department in D.P.U. 11-120.

Pursuant to the GCA, the Department must approve a fully reconciling funding mechanism if, after reviewing a Program Administrator's proposed Plan, it determines that the Plan ensures that the PA has identified and shall capture all energy efficiency and demand reduction resources that are cost effective or less expensive than supply. G.L. c. 25, § 21(d)(2). As part of this determination, the Department must approve recovery of all expenditures for the Program Administrator's energy efficiency measures that are screened through the cost-effectiveness test described herein in Section III.A.3. G.L. c. 25, § 21(d)(2). In the event that program costs exceed available revenue sources, the Department must approve a fully reconciling funding mechanism to ensure that the costs for all cost-effective energy efficiency measures are recovered from customers. G.L. c. 25, § 21(b)(3). The funding sources available for electric energy efficiency programming are discussed in Section III.C. See G.L. c. 25, § 19; G.L. c. 25, §§ 21(b)(2)(vii) and 21(d)(2); D.P.U. 08-50-B Guidelines §§ 3.2.1 and 3.2.2.

Therefore, in reviewing a Program Administrator's proposed Plan, the Department must assure that the Program Administrator is able to implement all Plan offerings that are found to be cost-effective, even if the costs associated with providing those offerings are in excess of the established funding sources provided for in the statutorily-authorized energy efficiency charge (equal to 0.250¢ per kilowatt hour for electric Program Administrators) and through other sources. G.L. c. 25, § 19.

#### *a. Mechanisms Specific to Electric Program Administrators*

In this context, the electric distribution companies have each filed with the Department proposed tariffs or modifications to their respective energy efficiency charge tariffs that include an EERF factor to recover and reconcile their respective energy efficiency costs in a particular program year with the revenue it receives through: (1) the statutorily-authorized energy efficiency charge; (2) participation in the FCM; (3) proceeds from participation in cap-and-trade programs such as the RGGI; (4) for electric PAs without a Department-approved decoupling mechanism, LBR; and (5) proceeds available from other private or public funds that may be available for energy efficiency or demand resources, as appropriate. This is consistent with the Legislature's mandates established in G.L. c. 25, §§ 19 and 21. In addition to costs associated

with program implementation and performance incentives, and consistent with Department directives, each electric Program Administrator's respective energy efficiency tariffs will also include, for those Program Administrators without an approved decoupling mechanism, recovery of LBR. The factor is calculated as the sum of a Program Administrator's energy efficiency costs, net of that Program Administrator's energy efficiency revenues (from sources outlined above), divided by the forecasted kilowatt-hour sales for the previous calendar year. [42]

The electric Program Administrators will submit new EERFs annually for calendar years 2013, 2014, and 2015 during the course of the implementation of this Three-Year Plan.[43]

*b. Mechanisms Specific to Gas Program Administrators*

In Revenue Decoupling, D.P.U. 07-50-A, at 83-84 (2008), the Department determined that allowance of LBR recovery for gas companies through the term of the initial three-year energy efficiency plans is consistent with the Department's expectation that, with limited exceptions, distribution companies will be operating under decoupling plans by year-end 2012. However, those distribution companies that are subject to Performance-Based Ratemaking or rate plans that extend past 2012, and that do not voluntarily terminate such plans before their expiration, will be allowed to recover LBR through the remainder of their existing rate plans. D.P.U. 07-50-A at 83-84. In this context, and consistent with the standard that governs the calculations for and recovery of LBR, those gas Program Administrators' respective energy efficiency tariffs will also include recovery of LBR.[44] For gas companies, LBR is defined as the non-gas portion of a gas utility's base rates that is lost between rate cases as a result of reduced sales cause by the implementation of demand-side management programs. Boston Gas Company, D.P.U. 90-17/18/55, at 139 (1990).

The costs associated with LBR, for gas Program Administrators for whom an approved revenue decoupling mechanism is not in effect, will continue to be reconciled through the energy efficiency surcharge ("EES") calculation included in each Program Administrator's local distribution adjustment clause ("LDAC"). The EES is applied to therm sales of a particular company to recover from firm ratepayers any demand side management program costs and associated expenditures. Included in that calculation is a determination of the Program Administrator's lost margins, determined by multiplying the rate category therm savings by the respective rate category recovery rate. Where applicable, the gas Program Administrators will include their LBR calculations for calendar year 2013 in their respective PA-specific Plan filings

[42] LBR recovery with respect to NSTAR Electric will be consistent with the terms and conditions of the Settlement Agreement among NSTAR Electric, Northeast Utilities, DOER and the Attorney General dated February 15, 2012 and filed in docket D.P.U. 10-170.

[43] The DPU is investigating potential changes related to how the EERF is set in DPU 11-120. If changes are enacted, the PAs will comply with those directives.

[44] The base year measurement dates for LBR (and related recovery logistics) vary by PA.

with the Department, and will submit new LBR calculations annually for calendar years 2014 and 2015 during the course of the implementation of this three-year statewide Plan.[45]

2. Calculation of EERF[46]

The electric Program Administrators calculate their EERF estimates in the following manner; as directed in the Department's orders on the Program Administrators' 2009 energy efficiency programs (*see, e.g.*, Cape Light Compact, D.P.U. 08-113; Fitchburg Gas & Electric Light Company, D.P.U. 08-116; National Grid, D.P.U. 08-129; NSTAR Electric Company, D.P.U. 08-117; Western Massachusetts Electric Company, D.P.U. 08-118).

- Funds collected through the SBC, FCM, and RGGI are allocated to each customer sector in proportion to the sector's kWh consumption. However, consistent with G.L. c. 25 § 19(c), at least 10 percent of the amount expended for electric energy efficiency programs shall be spent on low-income energy efficiency efforts;

- The EERF charged to low-income customers is calculated by dividing (1) the amount of EERF revenue required to fund the low income programs, by (2) total company-wide (*i.e.*, the sum of all customer sectors) kWh sales;

- The EERF charged to residential customers is calculated as the sum of (1) the amount of EERF revenue required to fund residential programs divided by total residential kWh sales and (2) the low-income EERF, as described above; and

- The EERF charged to C&I customers is calculated as the sum of (1) the amount of EERF revenue required to fund C&I programs divided by total C&I kWh sales and (2) the low-income EERF, as described above.

3. Department Proceedings in D.P.U. 11-120 (Phase II)

The Department's review of certain energy efficiency matters, including simplifying cost recovery approaches is ongoing, with the Department having put forward a straw proposal in D.P.U. 11-120 (Phase II) and revised energy efficiency guidelines on September 21, 2012. The final results of the Department's ongoing efforts in D.P.U. 11-120 (Phase II) may create enhancements in cost recovery approaches which would be implemented by the Program Administrators on a prospective basis. The Program Administrators note their appreciation of the effective technical sessions that had been convened and led by the Department in D.P.U. 11-120 (Phase II).

[45] LBR recovery with respect to NSTAR Gas will be consistent with the terms and conditions of the Settlement Agreement among NSTAR Gas, Northeast Utilities, DOER and the Attorney General dated February 15, 2012 and filed in docket D.P.U. 10-170.

[46] The Program Administrators note that this Plan is not establishing the details of the EERF or LBR recovery. Details of the EERF formula and amount have been determined in separate Department proceeding(s).

4. Residential Conservation Services Surcharge

Gas PAs currently collect their Residential Conservation Services ("RCS") surcharge in annual filings pursuant to G.L. c. 164 App. §§ 2-1 through 2-10, 220 C.M.R. §§ 7.00 et seq. As enacted on August 3, 2012, section 32 of an Act Relative to Competitively Priced Electricity in the Commonwealth, St. 2012, c. 209, ("Energy Act of 2012"), states that if a utility includes RCS as part of an energy efficiency investment plan filed pursuant to G.L. c. 25, § 21, the utility shall have satisfied the requirements of subsection (b) of section 7 of chapter 465 of the acts of 1980, as most recently amended by chapter 164 of the acts of 1997. Accordingly, this Plan includes proposed operating budgets for the RCS program, having been combined with the Home Energy Services core initiative in the Whole House program. Consequently, the gas Program Administrators propose to eliminate the separate gas RCS surcharge and allow recovery of RCS funds through their respective energy efficiency surcharges, consistent with how the electric PAs currently recover their RCS charges.

## M. Mid-Term Modifications

The Program Administrators continue to view the three-year planning and review process as an opportunity to anticipate and analyze a wide range of possibilities in developing the Plan. The Program Administrators, however, have also recognized that planning flexibility during the three-year term (the "Term") is critical. It is during the Term that Program Administrators monitor and evaluate the effectiveness of various programs and make determinations that certain enhancements, reallocations, or modifications may be appropriate to best achieve the Plan's energy efficiency goals. Having planning flexibility allows ongoing revisions and enhancements to the Plan in order to reflect in-the-field conditions, actual achievements, technological advances and state-of-the-art techniques without unduly inhibiting Program Administrators with the need to seek advance regulatory review and approval (with accompanying administration costs and implementation delays).

While the Program Administrators welcome flexibility to make ongoing revisions and refinements, the Program Administrators also appreciate the importance of transparency and oversight. The Department has balanced these interests in formulating the governing guidelines for Plan modifications, as set forth in its Order in D.P.U. 08-50-A. Indeed, the Department expects that Program Administrators will make minor modifications as a matter of course but that significant modifications will require Department review and approval. D.P.U. 08-50-A at 61. More specifically, D.P.U. 08-50-A expressly authorizes the Program Administrators to make modifications, reallocations and enhancements to their individual plans during the term of those plans (including, without limitation, budgetary reallocations and additions or subtractions of program measures). However, any such modification, reallocation or enhancement shall be submitted to the Department (with a copy to the Council) for the Department's review and approval (with the advance opportunity for the Council to comment and work with the Program Administrators) if the contemplated modification, reallocation or enhancement meets any of the following prescribed conditions:

> (1) the addition of a new program or the termination of an existing program; (2) a change in a program budget of greater than 20 percent; (3) a program modification that leads to an adjustment in savings goals that is greater than 20

percent; or (4) a program modification that leads to a change in performance incentives of greater than 20 percent.

D.P.U. 08-50-A at 64; D.P.U. 08-50-B Guidelines § 3.8.2.[47]

Subsequent to D.P.U. 08-50-A, the Department provided further guidance regarding the need for Department approval of proposed mid-term program modifications. Specifically, in D.P.U. 10-106, the Department addressed the implementation of the modification thresholds contained in the D.P.U. 08-50-B Guidelines, noting that "the Department implemented Guidelines § 3.8.2 with the intent that Program Administrators are required to seek Department approval for a program budget modification that is 20 percent greater than the program's **three-year** budget." D.P.U. 10-106, at 6-9, emphasis added.

As the Department expressly recognizes, it was the intent of the Legislature to establish a three-year cycle for budgeting, planning, and regulatory review of energy efficiency programs. *Id.* As such, the Program Administrators propose to apply the D.P.U. 08-50-B Guidelines, as clarified by the Department in D.P.U. 10-106, *supra*, to program modifications that lead to savings adjustments during the three-year term of the Plan. This will allow Program Administrators continued flexibility to make adjustments to programs that are necessary to promote innovation and efficiency without being unduly burdened by the administrative process. Indeed, retaining the flexibility to make changes and reallocations within the 20 percent bandwidth over the three-year term of the Plan is critical. Having flexibility with budgets without having the same flexibility for program modifications over the three-years of the Plan is counterproductive. Requiring annual review for program modifications will come at a substantial administrative cost and could have the unfortunate effect of inhibiting valuable innovation. The Program Administrators propose that the interpretation of the D.P.U. 08-50-B Guidelines, as expressed by the Department in D.P.U. 10-106, should be broadly construed to apply to both budget and program modifications that adjust savings goals. Such an application will ensure regulatory oversight but permit the Program Administrators to remain agile and responsive in implementing state-of-the-art energy efficiency programs for the benefit of customers during the three-year term of the Plan.[48]

The Program Administrators are pleased that the Department recently initiated an investigation in D.P.U. 11-120 to consider specific revisions to the D.P.U. 08-50-B Guidelines addressing the mid-term modification process, which is discussed in more detail below. It is the goal of the Program Administrators to balance the need for flexibility with respect to program implementation, budgeting and savings over the three-year term of the Plan with the need for regulatory review of modifications. The Program Administrators are encouraged that through

[47] While D.P.U. 08-50-B Guideline § 3.8.1 contemplates the requests for plan modifications to accompany a Program Administrators' annual report filing, the Program Administrators, during the 2010-2012 Term, have filed modification requests through a separate subsequent filing.

[48] The Program Administrators note that, in adopting the appropriate flexibility provided by the Department in D.P.U. 10-106, they are not proposing that such flexibility apply to any of the mandatory low-income program funding levels established in G.L. c. 25, § 19(c). Any modification of such levels would only be undertaken with advance approval from the Department after an opportunity for Council participation and after discussions with LEAN.

this stakeholder process adjustments to the mid-term modification process will result to better accomplish this balance. The Program Administrators anticipate utilizing any enhanced MTM process that is ultimately developed in D.P.U. 11-120 (Phase II) on a prospective basis.

## N. Database Issues

The Council has identified defining and encouraging better data analytics and access as a priority. See Council Resolution Concerning its Priorities for 2012 (February 14, 2012); Council Resolution Concerning its Priorities for 2012 (July 23, 2012). One of the Council's action plan items is "Enablement for statewide data management and statewide data reporting in a consistent and timely manner." With respect to statewide data management and analytics priorities, the Program Administrators will continue to collaborate with the Council to explore and develop options that are timely, appropriate and efficient for all users. As discussed below, there are ongoing discussions on database issues with the DOER and other interested parties. The PAs look forward to continuing to work with DOER and other interested parties on these challenging issues.

Moreover, it is important to understand and acknowledge that presently there are several ongoing key data activities. First, the PAs are currently reporting statewide data in a consistent and timely manner (see Appendix L at 2-3). Over the course of the initial three-year plan (2010-2012), the PAs have provided, ten quarterly reports (through the second quarter of 2012) with statewide (or "rolled up") data and data from individual PAs,[49] seven monthly "data dashboards" which provide key snapshots of core metrics in a timely basis,[50] and detailed annual reports filed by each PA for 2010 and 2011. In general, each PA's Annual Report contains over 20 tables and is over 600 pages, with detailed EM&V attachments. The PAs have also provided numerous statewide/rolled up D.P.U. 08-50 data tables, which provide information on both an individual PA and statewide basis. The D.P.U. 08-50 tables contain numerous separate tabs, each developed through a public process and designed to provide detailed information on all key aspects of energy efficiency program delivery by the PAs. All information and data as noted above is filed with the Council and Department, is publicly available and benefits customers, regulators, researchers, academics and other entities interested in seeking to understand and emulate Massachusetts' success in energy efficiency.

Further, DOER currently maintains the PARIS statewide database. In addition to the data reporting noted above, each PA provides extensive information for inclusion in the PARIS database. The PAs devoted substantial time and resources working cooperatively with DOER in populating and maintaining the PARIS database throughout the initial three-year plan term and will continue to do so. In particular, the PAs provide program, end use and measure level detail, annual and lifetime savings, budgets and benefits for annual plans and annual reports each year. There are nevertheless limitations to DOER's use of the current PARIS system.

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[49] The quarterly reports contain a narrative summary of activities undertaken by the Program Administrators in the relevant quarter ("qualitative report"), along with quantitative quarterly report information attached to the report as Attachment A (pertaining to electric Program Administrators) and Attachment B (pertaining to gas Program Administrators). For 2012, the filing of the qualitative and quantitative reports was consolidated. Prior to 2012, these reports were filed in separate months.

[50] The data dashboards are filed in months when there is no quarterly report due.

Additionally, with this Plan filing, the PAs are also providing additional summary tables in a user-friendly format that provide key data on a statewide and PA-specific basis for 2013-2015, including savings, costs, and BCR information.

With respect to the possibility of establishing a uniform tracking system for energy efficiency data, the Department has encouraged the parties to determine if it is practicable to establish a uniform system that is efficient, reliable, and useful to all parties. Massachusetts Electric Company, D.P.U. 10-98, at 16 (2011); Western Massachusetts Electric Company, D.P.U. 10-90, at 21 (2011); Fitchburg Gas and Electric Light Company, d/b/a Unitil, D.P.U. 10-89 at 17 (2011). The PAs have worked collaboratively and proactively with DOER to address its database concerns, both before and since the Department's Orders. The PAs remain committed to working with DOER to develop an enhanced database that is efficient, reliable, and useful.[51] Some of the relevant dates and forums include:

| DATE | FORUM | ISSUES |
|---|---|---|
| November 8, 2011 | Database Symposium convened by DOER | PAs attended a database symposium at the request of DOER, along with many other stakeholders, which focused on the type of data stakeholders would like to get from PAs. The PAs discussed the type of information that is available, including PARIS and D.P.U. 08-50 tables, and constraints with regard to providing certain information. |
| November 28, 2011 | DPU 10-98, DPU 10-90, DPU 10-89 (2011) | DPU stated that it "encourages the parties to develop a uniform energy efficiency program data tracking system that is efficient, reliable, and useful to all parties, to the extent practicable." |
| January 5, 2012 | DOER/PA meeting | DOER explained its proposal for a new statewide database ("PARIS 2.0"), which was not intended to build off the current PARIS database. |
| January 31, 2012 | PA Feedback | PAs provided a response to DOER's proposal (*see* Appendix L at 8-13). Among other issues, the PAs emphasized the need to clearly identify the data that is sought (and the reasons why that data is sought). The PAs stated that any approach should leverage the deep wealth of data already tracked and available; be mindful of cost, privacy issues, and individual PA tracking systems (in which the PAs have made significant financial investments); and identify a means of funding such a project. |
| February 27, 2012 | Executive Committee Meeting | At an executive committee meeting of the Council, DOER clarified that it is not necessarily committed to PARIS 2.0 and is instead looking for the PAs to consider other paths forward. |
| April 3, 2012 | DOER/PA meeting | Small PA group met with DOER to better understand DOER's purpose for a database and discuss the best approach to moving forward. The meeting was productive and may lead to a collaborative solution to the Commonwealth's near-and-long- |

[51] The PAs have collectively included $500,000 of funding for a statewide database in their annual budgets for each of the next three years. See Section III.D and Appendix A.

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| | | term data requirements. |
| April 6, 2012 | PA Reply Comments, 2010 Annual Reports | PAs describe their good faith efforts to address database issues. |
| May 1, 2012 | Executive Committee Meeting | Discussion about database issues in which DOER states its intention to host a webinar to provide information on available database platforms. The AG questioned whether the purpose and content of the database had been clarified as those issues would drive the platform that would be needed. |
| May 3, 2012 | PA Feedback | PAs provide a power point to DOER to clarify the problem to be solved and identify the next best steps with database issues (see Appendix L at 1-7). |
| May 18, 2012 | Executive Committee Meeting | DOER discusses possible webinar on database issues. AG offered to bring in folks from Teradata to explain data integration, data quality and data granulation but not as a pitch. |
| June 22, 2012 | Executive Committee Meeting | The Council will likely convene a webinar on database matters (very broad overview of what databases can effectively do) on either July 25 or July 26. [to be rescheduled] |

To develop an effective/optimal data system that is efficient, reliable, and useful to a variety of entities, all interested parties need to clearly identify (1) the data to be collected, (2) the purposes for which the data are needed, and (3) by whom the data would be used. Understanding and defining these requirements is critical to considering appropriate solutions. Failure to conduct this critical scoping exercise will unnecessarily increase costs and potentially result in the development of a database incompatible with existing PA database infrastructure and is not useful to interested parties. The PAs have made significant financial investments in their database infrastructure, the costs of which have been borne by their customers. The costs of a new database/tracking system need to be determined, discussed and optimized. The funding, function and purpose for such a database needs to be clearly identified, and all efforts should be taken to minimize costs, while ensuring quality and utility of the new system. This discussion should consider the deep wealth of data already tracked and available and must be mindful of cost, privacy issues, and differences in individual PA tracking systems. If the objectives, funding sources, cost estimates, privacy protections and necessary data have been clarified, the discussion on a uniform database could proceed to identify possible cost-effective solutions.

In sum, the PAs have compiled and shared on a timely and coordinated basis extensive energy efficiency data. The process to address additional data collection will continue to benefit from further thought and discussion. No party should minimize the level of work, resources and costs that will be entailed in this effort. The PAs remain active participants in this ongoing effort.

## O. Effect of Investigation D.P.U. 11-120 on Three-Year Plans

As discussed in Section II.G, the Department has opened up an investigation to examine issues associated with the Program Administrators' three-year energy efficiency plans.

D.P.U. 11-120, Phases I and II. Phase I is examining issues related to reasonably anticipated $CO_2$ compliance costs and net savings. Phase II is investigating issues related to MTMs, Annual Reports, and energy efficiency surcharges ("EES"). For the reasons discussed below, the outcome of these investigations may affect the PAs' final Plan.

1. Phase I

*a. CO2 Compliance Costs*

The Department is considering whether or not reasonably anticipated carbon compliance costs have been incorporated into the avoided costs used to value energy efficiency program savings. On August 10, 2012, the Department declined "to adopt an interim proxy value for carbon dioxide to be used in the cost-effectiveness determination of energy efficiency programs," but stated that its investigation is ongoing and will not conclude until after Department review of the Plan is complete. D.P.U. 11-120-A at 18. The Department's ultimate assessment of this issue could lead to changes in the avoided costs that are used to assess the value of projected savings from Plan efforts. As a result, changes in the Plan may be needed to comply with the Department's ultimate direction on this issue.

*b. Savings*

The Department is considering changes to the way in which net savings are estimated. The Department recently held that, in determining net savings, the PAs must continue "retroactive" application of updated gross savings impact factors, but that updated net savings impact factors would be applied prospectively. D.P.U. 11-120-A at 15-16. The current Plan incorporates this application of evaluation study results. In addition, the Department supports alternative "approaches to determining net savings that look at effects that occur over multi-year periods and across programs" and intends to convene a working group to explore a market-based approach. D.P.U. 11-120-A at 13. The current Plan incorporates savings estimates that reflect current practice. If an alternative approach is adopted by the Department, then projected savings from Plan efforts may need to be updated.

2. Phase II

Phase II contemplates changes to reporting requirements, the criteria for an MTM filing, EES filings and the incentive mechanism. On September 21, 2012, the Department issued and, invited all interested persons to file comments on, its proposed revisions to the energy efficiency guidelines ("Revised Guidelines"), which the Department explained are based on the discussions at the technical sessions and in the initial comments. Interested parties filed initial comments on the Revised Guidelines on October 15, 2012. The Program Administrators filed joint comments generally in support of the Revised Guidelines.

The current Plan does not factor in any of the changes currently under consideration. If the Department ultimately adopts changes in any of these areas, elements of the Plan may need to be updated.

## P. All Cost-Effective Energy Efficiency and GHG Emissions Reductions

### 1. Summary

Three-year energy efficiency plans in Massachusetts are governed by the statutory framework set out in the Green Communities Act. As discussed more below, the GCA requires the PAs to acquire all cost-effective energy efficiency, with consideration of sustainability, and it is this mandate that frames the Department's regulatory review of energy efficiency plans. G.L. c. 25, §§ 19(a), 21(a), 21(b)(1), 21(b)(2).

Energy efficiency is also a key strategy within the Massachusetts Clean Energy and Climate Plan for 2020 ("CECP"). Pursuant to the Global Warming Solutions Act ("GWSA"), the Commonwealth of Massachusetts has set a goal of reducing greenhouse gas emissions from the 1990 business as usual level by 25% by 2020 and 80% by 2050. All cost-effective energy efficiency delivered through the three-year energy efficiency plans accounts for 7.1% of these reductions, as part of a suite of policies set forth in the CECP. In support of both the mandate of all cost-effective energy efficiency provided for in the GCA and the greenhouse gas reduction goals established by the GWSA, the PAs will utilize full and diligent effort to meet their established savings goals as set forth in this Plan and participate in developing strategies to assist the Commonwealth of Massachusetts in meeting its CECP goals.

While the Program Administrators are committed to achieving GHG reductions in a manner consistent with the Commonwealth's climate plan goals, they must do so within the confines of the regulatory requirements of the GCA and other laws governing the Department's protection of electric and gas customers. For example, the Department does not allow the Program Administrators to include environmental externalities as a benefit when determining cost-effectiveness. Only reasonably anticipated compliance costs can be included in the avoided costs used to value energy savings. Even so, while the calculations are preliminary and need to be reviewed with DEP, the PAs believe that they are on track to meet or exceed the GHG reductions that are scheduled to take effect in 2020. See Table in Section III.P.3 below.

In acquiring all available energy efficiency, the PAs must implement both cost-effective and sustained efforts that take into account customer bill impacts and the CECP does not supersede or abrogate the Department's regulatory authority or the Council's role with respect to three year plans under the GCA.

### 2. GCA

The Green Communities Act was signed into law on July 2, 2008, and requires the 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." G.L. c. 25, §§ 19(a), 21(a), 21(b)(1), 21(b)(2). Similarly, the GCA charges the Department with ensuring that electric and natural gas resource needs are first met through all cost-effective energy efficiency resources as a means to reduce costs to all customers.

G.L. c. 25, § 21(a);[52] G.L. c. 25, § 21(d)(2).[53] The GCA specifically requires cost-effectiveness screening for energy efficiency programs. G.L. c. 25, §§ 19(c), 21(b)(3).[54] The GCA also specifically requires "a sustained and integrated statewide energy efficiency effort." GL c. 25, § 22(b).

Although the requirement to provide for the acquisition of all available cost-effective energy efficiency resources is not discretionary, the Department has recognized that the Green Communities Act requires sustainability of effort and affords discretion regarding the rate at which Program Administrators must acquire these resources. Gas Order, D.P.U. 09-121 through D.P.U. 09-128, at 71 and Electric Order, D.P.U. 09-116 through D.P.U. 09-120, at 85. According to the Department, the Green Communities Act states that such acquisition should be achieved through a sustained effort. Id. citing G.L. c. 25, § 22(b).

> Determining a reasonable pace for a sustained acquisition requires the Program Administrators and the Council (in developing the Three-Year Plans) and the Department (in reviewing the Three-Year Plans) to strike an appropriate balance between several factors, including: (1) identifying the potential level of cost-effective resource currently available; (2) exploring ways in which this level can be increased; (3) assessing the capability of the energy efficiency vendor and contractor industry to support increased program activity; and (4) assessing the capacity of the Program Administrators to administer increases in program activity efficiently and effectively. The Department must take into consideration an additional factor: the rate and bill impacts that result from increased program activity.

Gas Order at 71-72 and Electric Order at 85-86.

3. GWSA/CECP

The Global Warming Solutions Act ("GWSA")[55] took effect in August 2008 and mandates certain reductions in GHG emissions in the Commonwealth. G.L. c. 21N, § 4(a).[56] To implement these reductions, the GWSA requires the Secretary of the Executive Office of Energy

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52 The GCA states: "To mitigate capacity and energy costs for all customers, the [D]epartment shall ensure that…electric and natural gas resource needs shall first be met through all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply." G.L. c. 25, § 21(a)(emphasis added).

53 Likewise, the GCA also requires the Department, in approving the PAs' three-year energy efficiency plans, to ensure that the PAs "have identified and shall capture all energy efficiency and demand reduction resources *that are cost effective or less expensive than supply*." G. L. c. 25, § 21(d)(2) (emphasis added).

54 The GCA requires energy efficiency programs included in PAs' three-year plans to "be screened through cost effectiveness testing *which compares the [economic] value of program benefits to the program costs to ensure that the program is designed to obtain energy savings and system benefits with value greater than the costs of the program*." G.L. c. 25, 21(b)(3) (emphasis added).

55 Global Warming Solutions Act of 2008, Acts of 2008, chapter 298, and as codified at G.L. c. 21N.

56 The GWSA requires GHG emissions reductions in the amount of: (1) ten to 25 percent from 1990 levels by 2020; and (2) at least 80 percent of 1990 levels by 2050. G.L. c. 21N, § 4(a).

and Environmental Affairs ("EEA") to establish the CECP. G.L. c. 21N, §§ 3(b), 4(a). Pursuant to the GWSA, the Secretary of EEA established a limit on GHG emissions for the year 2020 at 25 percent below 1990 levels (CECP at ES-7; Secretary of EEA Determination of Greenhouse Gas Emission Limit for 2020 (December 28, 2010)).[57]

The CECP anticipates that an integrated portfolio of existing and proposed policies[58] will reduce carbon dioxide emissions below 1990 levels. See CECP at ES-5 & ES-7, Figure ES-5.[59] For each policy, the CECP projects estimated GHG reductions below 1990 levels (CECP at ES-6). Neither the GWSA nor the CECP imposes on industries or sectors exact numeric targets that they must achieve to contribute to the stated emissions reduction goals.

[57] This limit is based on an analysis of: (1) 1990 GHG emissions and projected 2020 business-as-usual emissions; (2) estimated GHG reductions from state and federal policies enacted since 2007; and (3) estimated GHG reductions from the implementation of additional cost-effective policies through 2020 (CECP at 88-92).

[58] The policies include five categories: buildings, electricity supply, transportation, non-energy emissions, and cross-cutting (CECP at ES-6).

[59] In a mid-range scenario, the CECP expects to reduce carbon dioxide emissions 27% below 1990 levels. See CECP at ES-5 & ES-7, Figure ES-5. The CECP projects that policies enacted during the Patrick Administration, including the Green Communities Act, will alone reduce GHG emissions 18% below 1990 levels. See CECP at ES-5 & ES-7, Figure ES-5.

The CECP projects that energy efficiency policy, existing as of 2010, will reduce GHG emissions approximately 7.1 percent below 1990 levels (i.e., five percent from electric energy efficiency programs and 2.1 percent from gas and oil energy efficiency programs) (CECP at ES-6, 18). As one tool, the energy efficiency goal is expressed in terms of millions of metric tons of carbon dioxide emissions ("MMTCO2E") avoided for a total anticipated reduction of 6.7 MMTCO2E in 2020 (CECP at ES-6, Table ES-2, 18-19). As reflected in the preliminary table below, the PAs submit that the savings targets embodied in their energy efficiency plans for 2013 – 2015 support CECP goals related to energy efficiency.[60]

| | **2012 (2012 MTM)** | **2013 (Nov 2 Plan)** | **2014 (Nov 2 Plan)** | **2015 (Nov 2 Plan)** | **2020 (CECP Goal)[61]** |
|---|---|---|---|---|---|
| **MMTCO2E *Electric*** | 5.28 | 6.10 | 6.17 | 6.46 | 6.7 |
| **MMTCO2E *Gas*** | 1.52 | 1.10 | 1.76 | 1.61 | 6.7 |
| **MMTCO2E *Combined*** | 6.8 | 7.21 | 7.94 | 8.07 | 6.7 |

The PAs note that GHG calculations are complex and reflect multiple data points and input assumptions. The PAs have benefitted from discussion of CECP matters with DEP and emphasize that all calculations regarding CECP compliance are preliminary and subject to

[60] GHG reductions in this table can be found in the Master PA Summary tab of the related D.P.U. 08-50 tables, measured in short tons. The 08-50 tables are based on net savings. However, the PAs believe that adjusted gross savings, which have not been adjusted for free-ridership or spillover rates, better reflect actual GHG reductions and are more appropriate for CECP purposes. Savings are still being achieved even though PAs cannot claim them for GCA and energy efficiency purposes as being a result of Plan activities. The PAs report adjusted gross savings to ISO-NE for all planning and reliability purposes related to competitive wholesale energy markets.

[61] Combined Gas/Electric Goal.

review with DEP, which has not checked these calculations. Last, and as noted above, while the PAs are proud to be material actors in helping the Commonwealth achieve goals under the CECP, and to be proposing higher savings goals and incrementally higher savings trajectories for each of 2013, 2014 and 2015 as requested by the Council. While the CECP does not control or usurp the goal setting process of the GCA, the PAs will participate in developing strategies to assist Massachusetts in meeting its CECP goals.

**Q. An Integrated NSTAR Electric /WMECo Three-Year Energy Efficiency Plan**

For the 2013-2015 term, NSTAR Electric Company ("NSTAR Electric") and Western Massachusetts Electric Company ("WMECo") (together, the "Companies") are seeking approval of a single Three-Year Plan. Given that each company's Three-Year Plan are consistent with the Statewide Three-Year Plan currently in development, separate plans would have been substantially similar in any event. However, the Companies are confident that implementing energy efficiency programs through a single plan will not only fulfill each company's energy efficiency obligations, but also provide the potential for administrative and regulatory efficiencies over time, while imposing no adverse impacts on the customers of either company.

Below is a brief overview of the NSTAR Electric/WMECo energy efficiency plan integrating key aspects of energy efficiency program implementation including: Savings Goals; Program/Pilot Design and Implementation; Program Budgets/Spending; Cost Effectiveness; Funding; Performance Incentives; EM&V; and MTMs.

1. Savings Goals

The Settlement Agreement between NSTAR Electric, NSTAR Gas Company, WMECo and the DOER approved by the Department in D.P.U. 10-170 requires NSTAR Electric and WMECo to increase their aggregate energy efficiency savings target as of January 1, 2013 to at least 2.5% of retail sales annually through energy efficiency, so long as there is no material change in the framework for assessing the success of the program and associated incentives, or providing for program funding. NSTAR/NU Merger, (NSTAR/WMECo/DOER Settlement Agreement at Article 2.3, NSTAR/WMECo/DOER/AG Settlement Agreement at Articles 2(3)(Base Rate Freeze) and 2.7 (Lost Base Revenues)). This annual commitment will remain in place until the expiration of the Base-Rate Freeze period (i.e., through January 1, 2016). Accordingly, pursuing these savings goals through a single plan is consistent with these goals.

2. Program/Pilot Design and Implementation

The 2013-2015 Three-Year Plan contemplates uniform electric energy efficiency programs across Massachusetts. The PAs "will continue to explore new efforts during the 2013-2015 Plan to determine if a pilot would be a useful tool for studying a new effort. A key goal of any pilot is that pilots yield data that assist in determining if the approach explored in the pilot should be implemented on a larger, statewide scale, as a full program, or an element of a program." Statewide 2013-2015 Energy Efficiency Plan at 219. Consequently, pursuit of these goals through separate energy efficiency plans presents unnecessary administrative and regulatory burdens on the Companies that could be eliminated through a single plan and streamlined regulatory review.

3. Program Budgets/Spending

The NSTAR Electric and WMECo energy efficiency budgets are structurally identical as prior differences have been addressed over the 2010-2012 period. Accordingly, maintaining separate budgets through separate energy efficiency plans presents unnecessary administrative and regulatory burdens on the Companies that could be eliminated through an integrated budget and plan and streamlined regulatory review. Spending for each operating company for the 2013-2015 term will continue to be tracked separately in each operating company's respective accounting systems. The costs for common resources will be allocated according to planned net benefits.

Moreover, implementing common programs through a common budget may create opportunities for cost savings through reduced PP&A, integrated marketing and evaluation, while preserving proportionate spending among the service areas. With respect to low-income energy efficiency programs, the Companies will maintain their spending on such programs at a minimum of 10 percent of the integrated budget, as required by law. Operational differences in the low-income programs will be reconciled in cooperation with LEAN.

4. Program Cost-Effectiveness

The Companies' respective energy efficiency programs are designed to be cost-effective, as measured by the Department's Total Resource Cost test. The Companies will demonstrate in their Three Year Plan filing with the Department that the programs will also be cost effective if integrated, and present cost effectiveness analyses under both scenarios to support this conclusion.

5. Funding/Cost Recovery

a. Funding

Given that the GCA makes funding sources for energy efficiency programs uniform for electric PAs, an integrated plan should not present any issues with respect to the structure and sources of program funding. First, a statewide formula exists for allocating RGGI proceeds to individual PAs. Second, forward capacity auctions from 2013-2015 have already occurred, and the proceeds from such auctions are based on the individual PA's energy efficiency assets and how they are bid into forward capacity auctions. Finally, although the carryover amounts for NSTAR Electric and WMECo differ, as noted previously, the Companies will track and allocate funds appropriately.

b. Cost Recovery

Although the Companies' plan will integrate key aspects of energy efficiency goals outlined above, the Companies are not proposing at this time to consolidate energy efficiency cost recovery tariffs. LBR recovery with respect to NSTAR Electric is governed by the terms and conditions of the Settlement Agreement among NSTAR Electric, NSTAR Gas, NSTAR,

WMECo, Northeast Utilities, DOER and the Attorney General dated February 15, 2012 and approved by the Department in D.P.U. 10-170 (April 4, 2012). Lost revenues associated with WMECo's energy efficiency programs are recovered through WMECo's decoupling mechanism.

6. Bill Impacts

In recognition of the fact that the acquisition of all cost-effective energy efficiency could require funding above that provided through existing funding sources (i.e., the SBC, FCM, and RGGI), the GCA provides that PAs may collect additional revenue from ratepayers through a mechanism such as the EES. G.L. c. 25, § 19(a). Given that the energy efficiency cost recovery tariffs for the Companies are not proposed to be integrated, the Companies do not anticipate adverse bill impact issues arising in the context of plan integration. To the extent that plan integration results in cost savings over time, bill impacts collectively could decrease.

7. Performance Incentives

The GCA provides that the Statewide Plan shall include a proposed mechanism that provides incentives to PAs based on their success in meeting or exceeding the goals in the plan. G.L. c. 25, § 21(b)(2). The Companies will follow the performance incentive mechanism addressed in the electric Term Sheet developed in collaboration between the Program Administrators, the Attorney General and the DOER, which is substantially similar to the mechanism addressed in the Memorandum of Agreement executed by the Program Administrators and other settling parties in D.P.U. 10-146. The total dollars available for incentives which would fund the statewide incentive pool will not be affected by an integrated plan, assuming no changes in savings, nor would the percentage allocation of the statewide incentive pool to the savings, value and metrics components, or the statewide payout rates, given that these incentive components are negotiated on a statewide basis. Performance incentives would be calculated based on the performance of the integrated plan, with any performance metric incentive allocated to individual operating companies according to planned net benefits.

8. EM&V

The Department's Guidelines require each Three-Year Plan to include an evaluation plan describing how the PA will evaluate the energy efficiency programs during the course of its plan. Guidelines § 3.5. The Department's Guidelines are intended to create a collaboratively-developed (between the EEAC and the PAs), statewide EM&V strategy. The Companies will use the same EM&V strategy and apply EM&V results similarly during the 2013-2015 period. Accordingly, EM&V strategy and application will not be affected by plan integration.

9. MTMs

In D.P.U. 08-50-A and the D.P.U. 08-50-B Guidelines, the Department directed the PAs to seek Department approval for certain specified MTMs, including adding or terminating a program, and changes in a program budget, savings goals, or performance incentives of greater than 20 percent. D.P.U. 08-50-A at 64; D.P.U. 08-50-B Guidelines at § 3.8.2. Subsequent to D.P.U. 08-50-A and B, the Department provided further guidance regarding the need for

Department approval of proposed mid-term program modifications. Specifically, in Cape Light Compact, D.P.U. 10-106 (2011), the Department clarified that PAs are required to seek Department approval only for a program budget modification that is 20 percent greater than the program's three-year budget.

The Department is currently considering modifications to the D.P.U. 08-50 Guidelines with respect to MTM filings. See D.P.U. 11-120 (Phase II). Under an integrated plan, the Companies intend to apply the Department's MTM Guidelines to the integrated budgets, savings and performance incentives of the two Companies, and with respect to the addition or termination of an integrated program.

## R. The Special Inclusion of Blackstone

Blackstone Gas Company ("Blackstone") is a natural gas distribution company currently serving approximately 1,415 residential and 157 C&I customers in Blackstone and a portion of Bellingham and Wrentham, Massachusetts. Because of the very small size of its customer base, Blackstone will participate in a subset of the programs discussed in this Plan based upon customer needs. Blackstone's budgets, savings, benefits, and other data have not been included in the statewide D.P.U. 08-50 tables or anywhere else in this Plan. For 2013 to 2015, Blackstone has a total budget of $215,060 and total annual savings of 72,167 therms, and total lifetime savings of 1,043,627 therms. Blackstone will not be seeking performance incentives. Currently, Blackstone provides energy efficiency services related to RCS, which programs have been incorporated into the Home Energy Services core initiative in this Plan pursuant to the Energy Act of 2012, as well as certain customer equipment rebates. In 2013-2015, Blackstone will work with its local CAP agency pursuant to an MOU to deliver low-income programming, and has a budget for C&I projects if they arise. Although Blackstone has a very small customer base, the special inclusion of Blackstone in the statewide plan reflects the spirit of the Green Communities act to expand energy efficiency efforts.

## A. Glossary

| GLOSSARY OF TERMS AND ABBREVIATIONS | |
|---|---|
| **AB** | Advanced Buildings |
| **ABCD** | Action for Boston Community Development |
| **ACEEE** | American Council for an Energy-Efficient Economy |
| **AE** | Account Executive |
| **AESC** | Avoided Energy Supply Costs |
| **AESP** | Association of Energy Service Professionals |
| **AFUE** | Annual Fuel Utilization Efficiency |
| **AIA** | American Institute of Architects |
| **ARRA** | American Recovery and Reinvestment Act |
| **BBRS** | Board of Building Regulations and Standards |
| **BCR** | Benefit/Cost Ratio |
| **BPI** | Building Performance Institute |
| **C&F** | Chain & Franchise |
| **C&I** | Commercial and Industrial |
| **C&IMC** | Commercial and Industrial Management Committee |
| **CAP** | Community Action Program |
| **CDA** | Comprehensive Design Approach |
| **CFL** | Compact Fluorescent Lightbulb |
| **CHP** | Combined Heat and Power |
| **CMI** | Community Mobilization Initiatives |
| **Consultants** | Consultants employed by the Energy Efficiency Advisory Council |
| **Council** | Energy Efficiency Advisory Council |
| **Department** | Massachusetts Department of Public Utilities |
| **DER** | Deep Energy Retrofit |
| **DHCD** | Massachusetts Department of Housing and Community Development |
| **DOE** | Department of Energy |
| **DOER** | Massachusetts Department of Energy Resources |
| **DPU** | Massachusetts Department of Public Utilities |
| **DSM** | Demand-Side Management |
| **ECM** | Electronically Commutated Motor |
| **EEAC** | Energy Efficiency Advisory Council |
| **EMC** | Evaluation Management Committee |
| **EM&V** | Evaluation, Monitoring, and Verification |

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| **ENERGY STAR®** | Brand name for the voluntary energy efficiency labeling initiative sponsored by the U.S. Environmental Protection Agency and Department of Energy. |
| **EPA** | U.S. Environmental Protection Agency |
| **FR** | Free Rider |
| **Free Riders** | 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. |
| **Free-Ridership Rate** | The percent of savings attributable to Free Riders. |
| **FTE** | Full-Time Equivalent. |
| **Gas and Electric Orders** | Orders of the Department dated January 28, 2010 in D.P.U. 09-116 through 09-127 approving the Program Administrators' Three-Year Plans |
| **GCA** | Green Communities Act. |
| **GHGs** | Greenhouse Gas Emissions |
| **Green Communities Act** | An Act Relative to Green Communities, Chapter 169 of the Acts of 2008. Signed into law on July 2, 2008. |
| **HEHE** | High Efficiency Heating and Water Heating |
| **HERS** | Home Energy Rating System |
| **HPCs** | Home Performance Contractors |
| **HVAC** | Heating, Ventilation, and Air Conditioning |
| **IECC** | International Energy Conservation Code |
| **IIC** | Independent Installation Contractors |
| **Impact Factor** | 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. |
| **ISO-NE** | Independent System Operation – New England |
| **JMC** | Joint Management Committee of PA and non-PA parties that manages the Residential and Low-Income New Construction Core Initiatives |
| **LEAN** | The Low-Income Energy Affordability Network |
| **LED** | Light Emitting Diode |
| **LBR** | 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) |
| **LCIEC** | Large Commercial & Industrial Evaluation Contractor |
| **Lifetime** | The expected length of time, in years, that an installed measure will be in service and producing savings. |

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| **Measure** | Specific technology or practice that produces energy and/or demand savings for which the Company provides financial incentives. |
| **MFNC** | Multi-Family New Construction |
| **MMI** | Multi-Family Market Integrator |
| **MOU** | Memorandum of Understanding |
| **MTAC** | Massachusetts Technical Assessment Committee |
| **MTM** | Mid-Term Modification |
| **NBI** | New Building Institute |
| **NCP** | Negotiated Cooperative Promotions |
| **NEEP** | Northeast Energy Efficiency Partnerships |
| **Net to Gross Ratio or NTGR** | 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. |
| **Network** | Low-Income Weatherization and Fuel Assistance Program Network |
| **NPS** | Non Participant Spillover |
| **NTG** | Net-to-Gross |
| **PAs or Program Administrators** | Utilities and municipal aggregators that offer energy efficiency programs. |
| **Participant Cost** | The total cost of a project or measure less the customer incentive. |
| **Performance Incentive (PI)** | Compensation for the Company's successful execution of the energy efficiency programs during the program year as determined by Massachusetts Department of Public Utilities. |
| **PEx** | Program Expediter |
| **Plan** | Three-Year Energy Efficiency Plan approved by the Department by its Orders, dated January 28, 2010, in dockets D.P.U. 09-121 to D.P.U. 09-128 and D.P.U. 09-116 to D.P.U. 09-120. |
| **PP&A** | Program Planning and Administration |
| **QA/QC** | Quality Assurance/Quality Control |
| **RCS** | Residential Conservation Services |
| **RFP** | Request For Proposal |
| **RGGI** | Regional Greenhouse Gas Initiative |
| **RMC** | Residential Management Committee |
| **RNC** | Residential New Construction |
| **SO** | Participant Spillover |

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| **Spillover** | 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. |
| **Spillover Rate** | Estimate of energy savings attributable to spillover effects expressed as a percent of savings installed by participants through an energy efficiency program. |
| **T&D** | Transmission and Distribution |
| **Term** | Three-year term of the energy efficiency plan |
| **Three-Year Plans** | Three-Year Energy Efficiency Plans approved by the Department by its Orders, dated January 28, 2010, in dockets D.P.U. 09-121 to D.P.U. 09-128 and D.P.U. 09-116 to D.P.U. 09-120. |
| **TRC** | Total Resource Cost |
| **TRM** | Technical Reference Manual |
| **WAP** | Weatherization Assistance Program |

## B. Narrative Overview of D.P.U. 08-50 Tables

This section provides a brief narrative overview of the D.P.U. 08-50 tables. The content and format of the tables were collaboratively developed through the course of many productive sessions convened by the 08-50 Working Group, and the tables are intended to serve as a quantitative anchor for review of the ambitious programs set forth in this Plan.

IV.C Program Budgets

This Plan includes three tables relating to the magnitude and composition of budgets for the energy efficiency programs. The Budget Summary Table provides a detailed break-down of the budgeted costs, by program, for each of the three years of the Plan, as well as for the entire 2013-2015 term. In addition to reflecting the total costs attributable to each sector and each individual program, the table identifies the costs associated with the following categories of budgeted expenditures: Program Planning and Administration; Marketing and Advertising; Sales, Technical Assistance and Training; and Evaluation and Market Research. The final column for "Total Budget" reflects the sum of the total program costs, plus the performance incentive and Lost Base Revenue (LBR) associated with the sector. Costs listed on this table are those used by the Program Administrators in determining cost-effectiveness, as included in the Total Resource Costs (TRC) Test.

IV.D. Cost Effectiveness

The Summary Table calculates the cost-effectiveness of the programs, by sector and, more specifically, by individual program. Cost-effectiveness, as reflected in the Benefit/Cost Ratio, is determined by reference to the Total Resource Cost Test.

The Cost Summary Table breaks down the Total Resource Costs associated with each particular program, which is the sum of program costs as well as any applicable performance incentive and/or participant costs.

The Benefits Summary Table represents the total benefits of each individual program, by year, and also provides an opportunity to reflect any associated benefits flowing from the programs derived from non-gas resources, as well as non-resource benefits. The benefits on the table are reflected in terms of dollar savings.

The Savings Summary Table analyzes the annual savings associated with each program, both in terms of gas savings and non-gas resources (measured in kW, MWh, MMBTU, or gallons, depending on the specific resource).

IV.H Performance Incentives

The Summary Table breaks down pre-tax and post-tax performance incentives as a percentage of the total program costs associated with each sector. The table reflects these percentages for each of the three years, and for the entire 2013-2015 period.

IV.I. Cost Recovery

This table includes the Lost Base Revenue (LBR) that the Company expects to collect in each year of the Plan.

V.B. Low-Income Minimum

Pursuant to the Green Communities Act, "energy efficiency program funds shall be allocated to customer classes, including the low-income residential subclass, in proportion to their contributions to those funds; provided, however, that at least 10 per cent of the amount expended for electric energy efficiency programs and at least 20 per cent of the amount expended for gas energy efficiency programs shall be spent on comprehensive low-income residential demand side management and education programs." G.L. c. 25, § 19(c). This table shows the program costs that will be dedicated to low-income programs, both in dollar terms and as a percentage of total program costs.

V.C Minimization of Administrative Costs

The Historical Administrative Cost table provides information from 2010-2015 by program, by sector, and more specifically by budgeted categories including: Program Planning and Administration; Marketing and Advertising; Sales, Technical Assistance and Training; and Evaluation and Market Research

V.D Competitive Procurement

The Program Administrators are committed to utilizing competitive procurement practices to the fullest extent throughout the implementation of this Plan. The Outsourced Service table reflects the extent to which activities will be outsourced. The Competitive Procurement table breaks down the degree to which activities are subject to competitive procurement (though the issuance of Requests for Proposals).

VII. Appendix

These tables will aggregate data from all of the gas/electric Program Administrators on certain key factors—including costs, benefits and savings--after all data filed on November 2, 2012 is compiled by Program Administrators. Please note that the Program Administrators intend to provide tables on or about November 14, 2012 as contemplated in the development of this table in the DPU 08-50 Working Group and as noted in the Department's Order in DPU 08-50-B.

## C. Statewide D.P.U. 08-50 Tables

IV.B. Statewide Electric PA Funding Sources

1. Summary Table

| Allocation of Funding Sources, 2013 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **SBC (1)** | **FCM (2)** | **RGGI (3)** | **Other (4)** | **Carryover (5)** | **EERF (6)** | **TOTAL (7)** |
| **Residential** | $38,747,597 | $4,396,292 | $9,891,636 | $0 | ($9,951,051) | $146,393,244 | **$189,477,718** |
| % of Residential | 20% | 2% | 5% | 0% | -5% | 77% | **100%** |
| **Low-Income** | $5,391,099 | $579,091 | $1,389,217 | $0 | ($22,952,821) | $3,152,059 | **($12,441,355)** |
| % of Low Income | -43% | -5% | -11% | 0% | 184% | -25% | **100%** |
| **Commercial & Industrial** | $75,127,764 | $8,655,468 | $19,130,089 | $0 | $33,511,991 | $133,780,937 | **$270,206,250** |
| % of Commercial & Industrial | 28% | 3% | 7% | 0% | 12% | 50% | **100%** |
| **TOTAL** | **$119,266,461** | **$13,630,850** | **$30,410,941** | **$0** | **$608,120** | **$283,326,240** | **$447,242,613** |
| **% of Total** | **27%** | **3%** | **7%** | **0%** | **0%** | **63%** | **100%** |

| Allocation of Funding Sources, 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **SBC (1)** | **FCM (2)** | **RGGI (3)** | **Other (4)** | **Carryover (5)** | **EERF (6)** | **TOTAL (7)** |
| **Residential** | $38,879,261 | $5,608,001 | $9,963,034 | $0 | $0 | $136,339,864 | **$190,790,161** |
| % of Residential | 20% | 3% | 5% | 0% | n/a | 71% | **100%** |
| **Low-Income** | $5,641,643 | $787,353 | $1,456,925 | $0 | $0 | $2,205,650 | **$10,091,570** |
| % of Low Income | 56% | 8% | 14% | 0% | n/a | 22% | **100%** |
| **Commercial & Industrial** | $76,495,356 | $11,136,247 | $19,608,463 | $0 | $0 | $235,094,445 | **$342,334,512** |
| % of Commercial & Industrial | 22% | 3% | 6% | 0% | n/a | 69% | **100%** |
| **TOTAL** | **$121,016,260** | **$17,531,601** | **$31,028,422** | **$0** | **n/a** | **$373,639,959** | **$543,216,243** |
| **% of Total** | **22%** | **3%** | **6%** | **0%** | **n/a** | **69%** | **100%** |

| Allocation of Funding Sources, 2015 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **SBC (1)** | **FCM (2)** | **RGGI (3)** | **Other (4)** | **Carryover (5)** | **EERF (6)** | **TOTAL (7)** |
| **Residential** | $38,941,848 | $7,750,252 | $9,360,844 | $0 | $0 | $148,805,998 | **$204,858,942** |
| % of Residential | 19% | 4% | 5% | 0% | n/a | 73% | **100%** |
| **Low-Income** | $5,915,863 | $1,162,436 | $1,432,629 | $0 | $0 | $2,338,050 | **$10,848,978** |
| % of Low Income | 55% | 11% | 13% | 0% | n/a | 22% | **100%** |
| **Commercial & Industrial** | $77,415,364 | $15,315,951 | $18,647,098 | $0 | $0 | $257,190,875 | **$368,569,288** |
| % of Commercial & Industrial | 21% | 4% | 5% | 0% | n/a | 70% | **100%** |
| **TOTAL** | **$122,273,075** | **$24,228,639** | **$29,440,572** | **$0** | **n/a** | **$408,334,922** | **$584,277,208** |
| **% of Total** | **21%** | **4%** | **5%** | **0%** | **n/a** | **70%** | **100%** |

| Allocation of Funding Sources, 2013-2015 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **SBC (1)** | **FCM (2)** | **RGGI (3)** | **Other (4)** | **Carryover (5)** | **EERF (6)** | **TOTAL (7)** |
| **Residential** | $116,568,707 | $17,754,545 | $29,215,515 | $0 | ($9,951,051) | $431,539,106 | **$585,126,821** |
| % of Residential | 20% | 3% | 5% | 0% | -2% | 74% | **100%** |
| **Low-Income** | $16,948,605 | $2,528,879 | $4,278,770 | $0 | ($22,952,821) | $7,695,758 | **$8,499,192** |
| % of Low Income | 199% | 30% | 50% | 0% | -270% | 91% | **100%** |
| **Commercial & Industrial** | $229,038,484 | $35,107,666 | $57,385,650 | $0 | $33,511,991 | $626,066,257 | **$981,110,049** |
| % of Commercial & Industrial | 23% | 4% | 6% | 0% | 3% | 64% | **100%** |
| **TOTAL** | **$362,555,796** | **$55,391,091** | **$90,879,935** | **$0** | **$608,120** | **$1,065,301,122** | **$1,574,736,063** |
| **% of Total** | **23%** | **4%** | **6%** | **0%** | **0%** | **68%** | **100%** |

**Notes:**

(1) See Table IV.B.3.1
(2) See Table IV.B.3.2
(3) See Table IV.B.3.3
(4) See Table IV.B.3.4
(5) See Table IV.B.3.5
(6) See Table IV.B.3.6
(7) Where not otherwise indicated, budgets for each year are represented in nominal dollars (2013$, 2014$, 2015$)

## IV.B. Statewide Electric PA Funding Sources

3.1. System Benefit Charge Funds

| SBC Funds, 2013 | | | | | | |
|---|---|---|---|---|---|---|
| **Sector** | **kWh Sales** | **Energy Efficiency Charge** | **Collections** | **% Collections of Total** | **Allocation** | **% Allocation of Total** |
| Residential (1) | 15,499,038,965 | 0.0025 | $38,747,597 | 32.5% | $38,747,597 | 32.5% |
| Low-Income (2) | 2,156,439,693 | 0.0025 | $5,391,099 | 4.5% | $5,391,099 | 4.5% |
| Commercial & Industrial (3) | 30,051,105,740 | 0.0025 | $75,127,764 | 63.0% | $75,127,764 | 63.0% |
| **TOTAL** | 47,706,584,398 | | $119,266,461 | 100% | $119,266,461 | 100% |

| SBC Collections, 2014 | | | | | | |
|---|---|---|---|---|---|---|
| **Sector** | **kWh Sales** | **Energy Efficiency Charge** | **Collections** | **% Collections of Total** | **Allocation** | **% Allocation of Total** |
| Residential (1) | 15,551,704,579 | 0.0025 | $38,879,261 | 32.1% | $38,879,261 | 32.1% |
| Low-Income (2) | 2,256,657,061 | 0.0025 | $5,641,643 | 4.7% | $5,641,643 | 4.7% |
| Commercial & Industrial (3) | 30,598,142,543 | 0.0025 | $76,495,356 | 63.2% | $76,495,356 | 63.2% |
| **TOTAL** | 48,406,504,183 | | $121,016,260 | 100% | $121,016,260 | 100% |

| SBC Collections, 2015 | | | | | | |
|---|---|---|---|---|---|---|
| **Sector** | **kWh Sales** | **Energy Efficiency Charge** | **Collections** | **% Collections of Total** | **Allocation** | **% Allocation of Total** |
| Residential (1) | 15,576,739,258 | 0.0025 | $38,941,848 | 31.8% | $38,941,848 | 31.8% |
| Low-Income (2) | 2,366,345,264 | 0.0025 | $5,915,863 | 4.8% | $5,915,863 | 4.8% |
| Commercial & Industrial (3) | 30,966,145,474 | 0.0025 | $77,415,364 | 63.3% | $77,415,364 | 63.3% |
| **TOTAL** | 48,909,229,996 | | $122,273,075 | 100% | $122,273,075 | 100% |

| SBC Collections, 2013-2015 | | | | | | |
|---|---|---|---|---|---|---|
| **Sector** | **kWh Sales** | **Energy Efficiency Charge** | **Collections** | **% Collections of Total** | **Allocation** | **% Allocation of Total** |
| Residential (1) | 46,627,482,802 | 0.0025 | $116,568,707 | 32.2% | $116,568,707 | 32.2% |
| Low-Income (2) | 6,779,442,017 | 0.0025 | $16,948,605 | 4.7% | $16,948,605 | 4.7% |
| Commercial & Industrial (3) | 91,615,393,757 | 0.0025 | $229,038,484 | 63.2% | $229,038,484 | 63.2% |
| **TOTAL** | 145,022,318,576 | | $362,555,796 | 100% | $362,555,796 | 100% |

IV.B. Statewide Electric PA Funding Sources

3.2. Forward Capacity Market Proceeds

| Forward Capacity Market Revenue, 2013 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Portfolio | Jan 2013 - May 2013 (1) | | | June 2013 - Dec 2013 (1) | | | TOTAL 2013 Revenue |
| | kW | FCM Clearing Price | Revenue | kW | FCM Clearing Price | Revenue | |
| | 376,016 | $ 2.95 | $5,547,007 | 391,407 | $ 2.95 | $8,083,843 | $13,630,850 |

| Forward Capacity Market Revenue, 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Portfolio | Jan 2014 - May 2014 (1) | | | June 2014 - Dec 2014 (1) | | | TOTAL 2014 Revenue |
| | kW | FCM Clearing Price | Revenue | kW | FCM Clearing Price | Revenue | |
| | 391,407 | $ 2.95 | $5,774,174 | 523,332 | $ 2.95 | $11,757,427 | $17,531,601 |

| Forward Capacity Market Revenue, 2015 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Portfolio | Jan 2015 - May 2015 (1) | | | June 2015 - Dec 2015 (1) | | | TOTAL 2015 Revenue |
| | kW | FCM Clearing Price | Revenue | kW | FCM Clearing Price | Revenue | |
| | 523,332 | $ 2.95 | $8,398,162 | 658,636 | $ 2.95 | $15,830,477 | $24,228,639 |

| Allocation of 2013-2015 FCM Revenue | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sector | 2013 | | 2014 | | 2015 | | TOTAL | |
| | FCM Revenue | % of Total FCM Revenue (2) | FCM Revenue | % of Total FCM Revenue (2) | FCM Revenue | % of Total FCM Revenue (2) | FCM Revenue | % of Total FCM Revenue (2) |
| Residential | $4,396,292 | 32.3% | $5,608,001 | 32.0% | $7,750,252 | 32.0% | $17,754,545 | 32.1% |
| Low-Income | $579,091 | 4.2% | $787,353 | 4.5% | $1,162,436 | 4.8% | $2,528,879 | 4.6% |
| C&I | $8,655,468 | 63.5% | $11,136,247 | 63.5% | $15,315,951 | 63.2% | $35,107,666 | 63.4% |
| **TOTAL** | $13,630,850 | 100.0% | $17,531,601 | 100.0% | $24,228,639 | 100.0% | $55,391,091 | 100.0% |

**Notes:**

(1) Revenue is allocated across customer sector based on percentage allocation of kWh sales. See Table IV.B.3.1

IV.B. Statewide Electric PA Funding Sources

3.3. RGGI Proceeds

| Total Compliance Period Sales (million allowances) (1) (2) | | | | | | |
|---|---|---|---|---|---|---|
| | Allowance Demand | New Banking | Pre-Sold Allowances | Banked Allowances | Auction 15 & 16 | Net Demand |
| **RGGI Total** | | | | | | |
| Period 2 (2012-2014) | 338.3 | 20.6 | 17.9 | 22.9 | 42.5 | 275.6 |
| Period 3 (2015-2017) | 351.5 | 21.4 | 18.6 | 20.6 | - | 333.7 |
| **MA Share** | | | | | | |
| Period 2 (2012-2014) | 54.6 | 3.3 | 2.9 | 3.7 | 6.9 | 44.5 |
| Period 3 (2015-2017) | 56.7 | 3.5 | 3.0 | 3.3 | - | 53.9 |

| Regional Greenhouse Gas Initiative Proceeds, 2013 (1) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Auction Projections | Auction 1 (2) | | Auction 2 (2) | | Auction 3 (2) | | Auction 4 (2) | | TOTAL |
| | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | |
| **MA Proceeds (4)** | | | | | | | | | |
| MA Allowances Sold | 4,448,488 | 375,582 | 4,448,488 | 375,582 | 4,448,488 | 375,582 | 4,448,488 | 375,582 | 0 |
| Auction Clearing Price | $1.97 | $1.97 | $1.97 | $1.97 | $1.97 | $1.97 | $1.97 | $1.97 | $0.00 |
| Total Proceeds to MA | $8,763,522 | $739,897 | $8,763,522 | $739,897 | $8,763,522 | $739,897 | $8,763,522 | $739,897 | $38,013,676 |
| **Proceeds to MA EE Plan (4)** | | | | | | | | | |
| Percent of MA Funds to EE Plans (e.g., >=80%) | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | |
| Total $ to MA Energy Efficiency Plans | $7,010,817 | $591,918 | $7,010,817 | $591,918 | $7,010,817 | $591,918 | $7,010,817 | $591,918 | $30,410,941 |
| **Allocation to PA** | | | | | | | | | |
| Total MA kWh (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PA kWh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % PA kWh of State | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| **TOTAL $ to PA** | **$7,010,817** | **$591,918** | **$7,010,817** | **$591,918** | **$7,010,817** | **$591,918** | **$7,010,817** | **$591,918** | **$30,410,941** |

| Regional Greenhouse Gas Initiative Proceeds, 2014 (1) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Auction Projections | Auction 1 (2) | | Auction 2 (2) | | Auction 3 (2) | | Auction 4 (2) | | TOTAL |
| | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | |
| **MA Proceeds (4)** | | | | | | | | | |
| MA Allowances Sold | 4,448,488 | 375,582 | 4,448,488 | 375,582 | 4,448,488 | 375,582 | 4,448,488 | 375,582 | 0 |
| Auction Clearing Price | $2.01 | $2.01 | $2.01 | $2.01 | $2.01 | $2.01 | $2.01 | $2.01 | $0.00 |
| Total Proceeds to MA | $8,941,461 | $754,921 | $8,941,461 | $754,921 | $8,941,461 | $754,921 | $8,941,461 | $754,921 | $38,785,528 |
| **Proceeds to MA EE Plan (4)** | | | | | | | | | |
| Percent of MA Funds to EE Plans (e.g., >=80%) | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | |
| Total $ to MA Energy Efficiency Plans | $7,153,169 | $603,936 | $7,153,169 | $603,936 | $7,153,169 | $603,936 | $7,153,169 | $603,936 | $31,028,422 |
| **Allocation to PA** | | | | | | | | | |
| Total MA kWh (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PA kWh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % PA kWh of State | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| **TOTAL $ to PA** | **$7,153,169** | **$603,936** | **$7,153,169** | **$603,936** | **$7,153,169** | **$603,936** | **$7,153,169** | **$603,936** | **$31,028,422** |

| Regional Greenhouse Gas Initiative Proceeds, 2015 (1) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Auction Projections | Auction 1 (2) | | Auction 2 (2) | | Auction 3 (2) | | Auction 4 (2) | | TOTAL |
| | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | Compliance Period 1 (3) | Compliance Period 2 (3) | |
| **MA Proceeds (4)** | | | | | | | | | |
| MA Allowances Sold | 0 | 4,487,892 | 0 | 4,487,892 | 0 | 4,487,892 | 0 | 4,487,892 | 17,450,468 |
| Auction Clearing Price | $0.00 | $2.05 | $0.00 | $2.05 | $0.00 | $2.05 | $0.00 | $2.05 | $0.00 |
| Total Proceeds to MA | $0 | $9,200,179 | $0 | $9,200,179 | $0 | $9,200,179 | $0 | $9,200,179 | $36,800,715 |
| **Proceeds to MA EE Plan (4)** | | | | | | | | | |
| Percent of MA Funds to EE Plans (e.g., >=80%) | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | |
| Total $ to MA Energy Efficiency Plans | $0 | $7,360,143 | $0 | $7,360,143 | $0 | $7,360,143 | $0 | $7,360,143 | $29,440,572 |
| **Allocation to PA** | | | | | | | | | |
| Total MA kWh (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PA kWh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % PA kWh of State | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | |
| **TOTAL $ to PA** | **$0** | **$7,360,143** | **$0** | **$7,360,143** | **$0** | **$7,360,143** | **$0** | **$7,360,143** | **$29,440,572** |

| Allocation of RGGI Proceeds | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sector (5) | 2013 | | 2014 | | 2015 | | TOTAL | |
| | RGGI Funds | % of Total RGGI Funds | RGGI Funds | % of Total RGGI Funds | RGGI Funds | % of Total RGGI Funds | RGGI Funds | % of Total RGGI Funds |
| Residential | $9,891,636 | 32.5% | $9,963,034 | 32.1% | $9,360,844 | 31.8% | $29,215,515 | 32.1% |
| Low-Income | $1,389,217 | 4.6% | $1,456,925 | 4.7% | $1,432,629 | 4.9% | $4,278,770 | 4.7% |
| Commercial & Industrial | $19,130,089 | 62.9% | $19,608,463 | 63.2% | $18,647,098 | 63.3% | $57,385,650 | 63.1% |
| **TOTAL** | $30,410,941 | 100.0% | $31,028,422 | 100.0% | $29,440,572 | 100.0% | $90,879,935 | 100.0% |

**Notes:**

(1) RGGI Sales estimate from 2012 Intergrated Planning Model results; MA sales assumed equal to 16.1% of total, based on MA share of total emissions budget (excluding NJ)

(2) 17.9 million of allowance sales reported prior to beginning of compliance period 2 (5.2% of projected demand); First control period auction purchases exceed emissions by 22.9 million and were banked for future compliance. Early allowance sales and banking are projected to be proportionaly the same for 2nd and 3rd compliance periods.

(3) Distribution of Allowances: Remaining demand net of pre-sold allowances projected to be procured evenly over 12 auctions within compliance period; Pre-sales projected to occur evenly over 8 auctions preceding start of compliance period

(4) Clearing price projected to remain at inflation adjusted reserve price through compliance period 3. 2012 IPM projects control area emmissions below current budget through forecast period

(5) Revenue is allocated across customer sector based on SBC % allocation of total. See Table IV.B.3.1

IV.B. Statewide Electric PA Funding Sources

3.6. EERF

| Calculation of Energy Efficiency Reconciliation Factor Funds, 2013 (1) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **Total Budget (2)** | **Lost Base Revenue (3)** | **SBC + FCM + RGGI + Other Funds + Carryover** | **EERF Funding Required (4)** | **% of Total Company kWh (5)** | **Low Income Allocation (6)** | **EERF Funding Allocation (7)** |
| Residential | $160,007,869 | $1,803,613 | $43,084,474 | $123,006,271 | 32.5% | $23,386,973 | $146,393,244 |
| Low-Income | $56,065,767 | $17,488 | ($15,593,414) | $67,824,918 | 4.5% | $3,152,059 | $3,152,059 |
| Commercial & Industrial | $291,051,047 | $2,770,595 | $136,425,312 | $92,495,051 | 63.0% | $41,285,886 | $133,780,937 |
| **TOTAL** | $507,124,683 | $4,591,695 | $163,916,372 | $283,326,240 | 100.0% | $67,824,918 | $283,326,240 |

| Calculation of Energy Efficiency Reconciliation Factor Funds, 2014 (1) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **Total Budget (2)** | **Lost Base Revenue (3)** | **SBC + FCM + RGGI + Other Funds** | **EERF Funding Required (4)** | **% of Total Company kWh (5)** | **Low Income Allocation (6)** | **EERF Funding Allocation (7)** |
| Residential | $169,100,946 | $5,901,854 | $54,450,297 | $120,552,205 | 32.1% | $15,787,659 | $136,339,864 |
| Low-Income | $56,397,914 | $73,838 | $7,885,920 | $48,585,705 | 4.7% | $2,205,650 | $2,205,650 |
| Commercial & Industrial | $296,868,249 | $14,873,085 | $107,240,067 | $204,502,050 | 63.2% | $30,592,396 | $235,094,445 |
| **TOTAL** | $522,367,109 | $20,848,777 | $169,576,284 | $373,639,959 | 100.0% | $48,585,705 | $373,639,959 |

| Calculation of Energy Efficiency Reconciliation Factor Funds, 2015 (1) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **Total Budget (2)** | **Lost Base Revenue (3)** | **SBC + FCM + RGGI + Other Funds** | **EERF Funding Required (4)** | **% of Total Company kWh (5)** | **Low Income Allocation (6)** | **EERF Funding Allocation (7)** |
| Residential | $177,889,819 | $10,806,554 | $56,052,945 | $132,643,124 | 31.8% | $16,162,874 | $148,805,998 |
| Low-Income | $58,454,206 | $117,923 | $8,510,928 | $50,061,072 | 4.8% | $2,338,050 | $2,338,050 |
| Commercial & Industrial | $309,918,784 | $27,089,569 | $111,378,413 | $225,630,727 | 63.3% | $31,560,148 | $257,190,875 |
| **TOTAL** | $546,262,809 | $38,014,045 | $175,942,286 | $408,334,922 | 100.0% | $50,061,072 | $408,334,922 |

| Calculation of Energy Efficiency Reconciliation Factor Funds, 2013-2015 (1) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sector** | **Total Budget (2)** | **Lost Base Revenue (3)** | **SBC + FCM + RGGI + Other Funds** | **EERF Funding Required (4)** | **% of Total Company kWh (5)** | **Low Income Allocation (6)** | **EERF Funding Allocation (7)** |
| Residential | $506,998,634 | $0 | $153,587,715 | $376,201,599 | 32.2% | $55,337,507 | $431,539,106 |
| Low-Income | $170,917,887 | $0 | $803,434 | $166,471,695 | 4.7% | $7,695,758 | $7,695,758 |
| Commercial & Industrial | $897,838,080 | $0 | $355,043,792 | $522,627,828 | 63.2% | $103,438,430 | $626,066,257 |
| **TOTAL** | $1,575,754,600 | $0 | $509,434,942 | $1,065,301,122 | 100.0% | $166,471,695 | $1,065,301,122 |

**Notes:**

(1) See Section IV.I.2 Calculation of EERF and V.E. Energy Efficiency Reconciliation Factor for more information
(2) Budget - See Budget Summary Table IV.C.1.
(3) Some companies have a decoupling mechanism and do not estimate for LBR while other companies continue to estimate for LBR.
(4) EERF Revenue Required = (Total Budget + LBR) - (SBC + FCM + RGGI + Other Funds + Carryover Funds)
(5) See Elec - SBC Table IV.B. 3.1
(6) Column F x Low Income EERF Funding Required
(7) Residetial = EERF Funding Required for Residential + Low Income Allocation for Residential; Low Income = Low Income Allocation; Commercial & Industrial = EERF Funding Required for C&I + Low Income Allocation for C&I

IV.C. Statewide Electric PA Budgets

1. Summary Table

**Program Administrator Budget, 2013 (1)**

| Program | PA Costs (3) | | | | | | Lost Base Revenue (2) | Performance Incentive | TOTAL PA Budget (4) |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | **$6,171,061** | **$10,620,060** | **$102,636,309** | **$28,766,149** | **$5,044,626** | **$153,238,206** | **$5,901,854** | **$6,769,663** | **$165,909,723** |
| 1. Residential Whole House | $ 3,272,843 | $ 3,590,686 | $ 67,798,580 | $ 20,519,988 | $ 3,555,781 | $ 98,737,878 | | $ 4,674,668 | $ 103,412,546 |
| 2. Residential Products | $ 1,526,393 | $ 4,055,215 | $ 26,425,174 | $ 6,124,044 | $ 1,344,578 | $ 39,475,405 | | $ 2,094,995 | $ 41,570,400 |
| 3. Residential Hard-to-Measure | $ 1,371,824 | $ 2,974,159 | $ 8,412,556 | $ 2,122,117 | $ 144,267 | $ 15,024,923 | | $ - | $ 15,024,923 |
| Residential Statewide Marketing | $ - | $ 1,993,756 | $ - | $ - | $ - | $ 1,993,756 | | $ - | $ 1,993,756 |
| Residential DOER Assessment | $ 868,219 | $ - | $ - | $ 89,134 | $ 117,748 | $ 1,075,102 | | $ - | $ 1,075,102 |
| Residential EEAC Consultants | $ - | $ - | $ - | $ - | $ - | $ - | | $ - | $ - |
| Residential Sponsorships & Subscriptions | $ 381,564 | $ - | $ - | $ - | $ - | $ 381,564 | | $ - | $ 381,564 |
| Residential HEAT Loan | $ 7,250 | $ 5,295 | $ 8,165,056 | $ 393,823 | $ - | $ 8,571,424 | | $ - | $ 8,571,424 |
| Residential Workforce Development | $ 15,767 | $ - | $ - | $ 410,407 | $ 15,000 | $ 441,174 | | $ - | $ 441,174 |
| Residential R&D and Demonstration | $ 19,992 | $ 37,226 | $ 247,500 | $ 251,630 | $ 11,519 | $ 567,867 | | $ - | $ 567,867 |
| Residential Education | $ 79,032 | $ 937,882 | $ - | $ 977,123 | $ - | $ 1,994,037 | | $ - | $ 1,994,037 |
| **Low-Income (total)** | **$3,176,272** | **$616,728** | **$39,131,176** | **$9,455,908** | **$1,756,128** | **$54,136,213** | **$73,838** | **$1,929,554** | **$56,139,605** |
| 4. Low-Income Whole House | $ 1,823,866 | $ 347,465 | $ 39,131,176 | $ 9,384,421 | $ 1,715,890 | $ 52,402,819 | | $ 1,929,554 | $ 54,332,373 |
| 5. Low-Income Hard-to-Measure | $ 1,352,406 | $ 269,263 | $ - | $ 71,487 | $ 40,238 | $ 1,733,394 | | $ - | $ 1,733,394 |
| Low-Income Statewide Marketing | $ - | $ 245,966 | $ - | $ - | $ - | $ 245,966 | | $ - | $ 245,966 |
| Low-Income DOER Assessment | $ 307,770 | $ - | $ - | $ 18,258 | $ 40,238 | $ 366,266 | | $ - | $ 366,266 |
| Low-Income Energy Affordability Network | $ 1,044,636 | $ 23,297 | $ - | $ 53,229 | $ - | $ 1,121,163 | | $ - | $ 1,121,163 |
| **Commercial & Industrial (total)** | **$18,420,081** | **$6,370,803** | **$209,443,520** | **$31,021,195** | **$8,685,908** | **$273,941,506** | **$14,873,085** | **$17,109,540** | **$305,924,132** |
| 6. C&I New Construction | $ 3,973,158 | $ 1,467,874 | $ 43,714,516 | $ 8,153,201 | $ 2,126,508 | $ 59,435,257 | | $ 4,470,860 | $ 63,906,117 |
| 7. C&I Retrofit | $ 11,763,246 | $ 3,735,474 | $ 165,729,003 | $ 22,817,458 | $ 6,348,963 | $ 210,394,144 | | $ 12,638,680 | $ 223,032,824 |
| 8. C&I Hard-to-Measure | $ 2,683,677 | $ 1,167,455 | $ - | $ 50,537 | $ 210,436 | $ 4,112,106 | | $ - | $ 4,112,106 |
| C&I Statewide Marketing | $ - | $ 1,167,455 | $ - | $ - | $ - | $ 1,167,455 | | $ - | $ 1,167,455 |
| C&I DOER Assessment | $ 1,638,037 | $ - | $ - | $ 50,537 | $ 210,436 | $ 1,899,011 | | $ - | $ 1,899,011 |
| C&I EEAC Consultants | $ - | $ - | $ - | $ - | $ - | $ - | | $ - | $ - |
| C&I Sponsorships & Subscriptions | $ 1,045,640 | $ - | $ - | $ - | $ - | $ 1,045,640 | | $ - | $ 1,045,640 |
| **GRAND TOTAL** | **$27,767,414** | **$17,607,591** | **$351,211,005** | **$69,243,253** | **$15,486,663** | **$481,315,926** | **$20,848,777** | **$25,808,757** | **$527,973,460** |

**Program Administrator Budget, 2014 (1)**

| Program | PA Costs (3) | | | | | | Lost Base Revenue (2) | Performance Incentive | TOTAL PA Budget (4) |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | **$6,313,044** | **$11,012,957** | **$109,802,725** | **$30,017,937** | **$5,347,394** | **$162,494,057** | **$10,806,554** | **$6,606,888** | **$179,907,499** |
| 1. Residential Whole House | $ 3,367,006 | $ 3,759,570 | $ 73,023,795 | $ 21,601,933 | $ 3,776,351 | $ 105,528,656 | | $ 4,557,907 | $ 110,086,563 |
| 2. Residential Products | $ 1,567,305 | $ 4,315,142 | $ 28,065,128 | $ 6,192,181 | $ 1,426,453 | $ 41,566,209 | | $ 2,048,982 | $ 43,615,191 |
| 3. Residential Hard-to-Measure | $ 1,378,733 | $ 2,938,245 | $ 8,713,802 | $ 2,223,822 | $ 144,590 | $ 15,399,192 | | $ - | $ 15,399,192 |
| Residential Statewide Marketing | $ - | $ 1,915,332 | $ - | $ - | $ - | $ 1,915,332 | | $ - | $ 1,915,332 |
| Residential DOER Assessment | $ 866,268 | $ - | $ - | $ 89,134 | $ 117,522 | $ 1,072,924 | | $ - | $ 1,072,924 |
| Residential EEAC Consultants | $ - | $ - | $ - | $ - | $ - | $ - | | $ - | $ - |
| Residential Sponsorships & Subscriptions | $ 386,947 | $ - | $ - | $ - | $ - | $ 386,947 | | $ - | $ 386,947 |
| Residential HEAT Loan | $ 7,909 | $ 5,018 | $ 8,452,177 | $ 397,494 | $ - | $ 8,862,598 | | $ - | $ 8,862,598 |
| Residential Workforce Development | $ 15,917 | $ - | $ - | $ 462,283 | $ 15,000 | $ 493,200 | | $ - | $ 493,200 |
| Residential R&D and Demonstration | $ 20,621 | $ 39,060 | $ 261,625 | $ 257,788 | $ 12,068 | $ 591,162 | | $ - | $ 591,162 |
| Residential Education | $ 81,070 | $ 978,835 | $ - | $ 1,017,123 | $ - | $ 2,077,028 | | $ - | $ 2,077,028 |
| **Low-Income (total)** | **$3,178,178** | **$666,259** | **$39,695,582** | **$9,553,206** | **$1,829,828** | **$54,923,052** | **$117,923** | **$1,474,862** | **$56,515,837** |
| 4. Low-Income Whole House | $ 1,863,490 | $ 407,060 | $ 39,695,582 | $ 9,483,582 | $ 1,790,111 | $ 53,239,825 | | $ 1,474,862 | $ 54,714,687 |
| 5. Low-Income Hard-to-Measure | $ 1,314,688 | $ 259,199 | $ - | $ 69,623 | $ 39,716 | $ 1,683,227 | | $ - | $ 1,683,227 |
| Low-Income Statewide Marketing | $ - | $ 237,019 | $ - | $ - | $ - | $ 237,019 | | $ - | $ 237,019 |
| Low-Income DOER Assessment | $ 303,265 | $ - | $ - | $ 18,258 | $ 39,716 | $ 361,239 | | $ - | $ 361,239 |
| Low-Income Energy Affordability Network | $ 1,011,424 | $ 22,179 | $ - | $ 51,365 | $ - | $ 1,084,968 | | $ - | $ 1,084,968 |
| **Commercial & Industrial (total)** | **$18,408,718** | **$6,376,091** | **$213,119,818** | **$31,612,368** | **$8,723,076** | **$278,240,071** | **$27,089,569** | **$18,628,177** | **$323,957,817** |
| 6. C&I New Construction | $ 3,797,003 | $ 1,468,440 | $ 38,456,766 | $ 8,185,850 | $ 2,053,311 | $ 53,961,371 | | $ 4,185,705 | $ 58,147,075 |
| 7. C&I Retrofit | $ 11,907,319 | $ 3,768,845 | $ 174,663,051 | $ 23,375,981 | $ 6,458,581 | $ 220,173,776 | | $ 14,442,473 | $ 234,616,249 |
| 8. C&I Hard-to-Measure | $ 2,704,396 | $ 1,138,807 | $ - | $ 50,537 | $ 211,185 | $ 4,104,924 | | $ - | $ 4,104,924 |
| C&I Statewide Marketing | $ - | $ 1,138,807 | $ - | $ - | $ - | $ 1,138,807 | | $ - | $ 1,138,807 |
| C&I DOER Assessment | $ 1,644,493 | $ - | $ - | $ 50,537 | $ 211,185 | $ 1,906,215 | | $ - | $ 1,906,215 |
| C&I EEAC Consultants | $ - | $ - | $ - | $ - | $ - | $ - | | $ - | $ - |
| C&I Sponsorships & Subscriptions | $ 1,059,903 | $ - | $ - | $ - | $ - | $ 1,059,903 | | $ - | $ 1,059,903 |
| **GRAND TOTAL** | **$27,899,940** | **$18,055,307** | **$362,618,125** | **$71,183,511** | **$15,900,298** | **$495,657,181** | **$38,014,045** | **$26,709,928** | **$560,381,154** |

**Program Administrator Budget, 2015 (1)**

| Program | PA Costs (3) | | | | | | Lost Base Revenue (2) | Performance Incentive | TOTAL PA Budget (4) |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | **$6,209,580** | **$11,422,840** | **$116,763,207** | **$30,937,833** | **$5,623,203** | **$170,956,663** | **$15,969,992** | **$6,933,156** | **$193,859,811** |
| 1. Residential Whole House | $ 3,305,718 | $ 3,927,211 | $ 78,540,347 | $ 22,423,032 | $ 3,988,033 | $ 112,184,340 | | $ 4,848,930 | $ 117,033,271 |
| 2. Residential Products | $ 1,527,233 | $ 4,581,193 | $ 29,214,214 | $ 6,265,354 | $ 1,490,436 | $ 43,078,429 | | $ 2,084,225 | $ 45,162,654 |
| 3. Residential Hard-to-Measure | $ 1,376,630 | $ 2,914,435 | $ 9,008,647 | $ 2,249,448 | $ 144,734 | $ 15,693,894 | | $ - | $ 15,693,894 |
| Residential Statewide Marketing | $ - | $ 1,919,009 | $ - | $ - | $ - | $ 1,919,009 | | $ - | $ 1,919,009 |
| Residential DOER Assessment | $ 862,538 | $ - | $ - | $ 89,134 | $ 117,090 | $ 1,068,762 | | $ - | $ 1,068,762 |
| Residential EEAC Consultants | $ - | $ - | $ - | $ - | $ - | $ - | | $ - | $ - |
| Residential Sponsorships & Subscriptions | $ 392,091 | $ - | $ - | $ - | $ - | $ 392,091 | | $ - | $ 392,091 |
| Residential HEAT Loan | $ 7,909 | $ 5,072 | $ 8,732,441 | $ 399,573 | $ - | $ 9,144,995 | | $ - | $ 9,144,995 |
| Residential Workforce Development | $ 15,153 | $ - | $ - | $ 464,366 | $ 15,000 | $ 494,519 | | $ - | $ 494,519 |
| Residential R&D and Demonstration | $ 21,023 | $ 40,985 | $ 276,206 | $ 264,252 | $ 12,644 | $ 615,111 | | $ - | $ 615,111 |
| Residential Education | $ 77,915 | $ 949,368 | $ - | $ 1,032,123 | $ - | $ 2,059,406 | | $ - | $ 2,059,406 |
| **Low-Income (total)** | **$3,175,271** | **$1,088,461** | **$40,927,999** | **$9,711,359** | **$2,009,354** | **$56,912,443** | **$159,920** | **$1,541,763** | **$58,614,125** |
| 4. Low-Income Whole House | $ 1,824,722 | $ 823,949 | $ 40,927,999 | $ 9,633,604 | $ 1,970,022 | $ 55,180,296 | | $ 1,541,763 | $ 56,722,059 |
| 5. Low-Income Hard-to-Measure | $ 1,350,549 | $ 264,512 | $ - | $ 77,755 | $ 39,331 | $ 1,732,147 | | $ - | $ 1,732,147 |
| Low-Income Statewide Marketing | $ - | $ 237,724 | $ - | $ - | $ - | $ 237,724 | | $ - | $ 237,724 |
| Low-Income DOER Assessment | $ 299,943 | $ - | $ - | $ 18,258 | $ 39,331 | $ 357,532 | | $ - | $ 357,532 |
| Low-Income Energy Affordability Network | $ 1,050,606 | $ 26,788 | $ - | $ 59,497 | $ - | $ 1,136,891 | | $ - | $ 1,136,891 |
| **Commercial & Industrial (total)** | **$18,187,337** | **$6,021,586** | **$225,320,980** | **$32,425,070** | **$8,901,146** | **$290,856,118** | **$39,437,538** | **$19,062,666** | **$349,356,322** |
| 6. C&I New Construction | $ 3,635,284 | $ 1,374,106 | $ 39,048,392 | $ 8,235,127 | $ 2,019,504 | $ 54,312,413 | | $ 4,272,196 | $ 58,584,610 |
| 7. C&I Retrofit | $ 11,825,503 | $ 3,503,380 | $ 186,272,588 | $ 24,139,405 | $ 6,669,640 | $ 232,410,515 | | $ 14,790,470 | $ 247,200,985 |
| 8. C&I Hard-to-Measure | $ 2,726,550 | $ 1,144,100 | $ - | $ 50,537 | $ 212,002 | $ 4,133,190 | | $ - | $ 4,133,190 |
| C&I Statewide Marketing | $ - | $ 1,144,100 | $ - | $ - | $ - | $ 1,144,100 | | $ - | $ 1,144,100 |
| C&I DOER Assessment | $ 1,651,545 | $ - | $ - | $ 50,537 | $ 212,002 | $ 1,914,084 | | $ - | $ 1,914,084 |
| C&I EEAC Consultants | $ - | $ - | $ - | $ - | $ - | $ - | | $ - | $ - |
| C&I Sponsorships & Subscriptions | $ 1,075,005 | $ - | $ - | $ - | $ - | $ 1,075,005 | | $ - | $ 1,075,005 |
| **GRAND TOTAL** | **$27,572,188** | **$18,532,886** | **$383,012,186** | **$73,074,261** | **$16,533,703** | **$518,725,224** | **$55,567,450** | **$27,537,585** | **$601,830,259** |

IV.C. Statewide Electric PA Budgets

1. Summary Table

**Program Administrator Budget, 2013-2015 (1)**

| Program | PA Costs (3) | | | | | | Lost Base Revenue (2) | Performance Incentive | TOTAL PA Budget (4) |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | **$18,693,685** | **$33,055,857** | **$329,202,242** | **$89,721,919** | **$16,015,223** | **$486,688,926** | **$32,678,400** | **$20,309,707** | **$539,677,034** |
| 1. Residential Whole House | $ 9,945,568 | $ 11,277,468 | $ 219,362,721 | $ 64,544,953 | $ 11,320,165 | $ 316,450,875 | $ - | $ 14,081,506 | $ 330,532,380 |
| 2. Residential Products | $ 4,620,931 | $ 12,951,551 | $ 83,704,515 | $ 18,581,579 | $ 4,261,467 | $ 124,120,043 | $ - | $ 6,228,202 | $ 130,348,244 |
| 3. Residential Hard-to-Measure | $ 4,127,186 | $ 8,826,839 | $ 26,135,005 | $ 6,595,387 | $ 433,592 | $ 46,118,009 | $ - | $ - | $ 46,118,009 |
| Residential Statewide Marketing | $ - | $ 5,828,098 | $ - | $ - | $ - | $ 5,828,098 | $ - | $ - | $ 5,828,098 |
| Residential DOER Assessment | $ 2,597,026 | $ - | $ - | $ 267,402 | $ 352,361 | $ 3,216,788 | $ - | $ - | $ 3,216,788 |
| Residential EEAC Consultants (5) | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Sponsorships & Subscriptions | $ 1,160,602 | $ - | $ - | $ - | $ - | $ 1,160,602 | $ - | $ - | $ 1,160,602 |
| Residential HEAT Loan | $ 23,068 | $ 15,385 | $ 25,349,673 | $ 1,190,890 | $ - | $ 26,579,017 | $ - | $ - | $ 26,579,017 |
| Residential Workforce Development | $ 46,837 | $ - | $ - | $ 1,337,056 | $ 45,000 | $ 1,428,893 | $ - | $ - | $ 1,428,893 |
| Residential R&D and Demonstration | $ 61,637 | $ 117,271 | $ 785,331 | $ 773,669 | $ 36,231 | $ 1,774,140 | $ - | $ - | $ 1,774,140 |
| Residential Education | $ 238,016 | $ 2,866,085 | $ - | $ 3,026,370 | $ - | $ 6,130,471 | $ - | $ - | $ 6,130,471 |
| **Low-Income (total)** | **$9,529,721** | **$2,371,448** | **$119,754,757** | **$28,720,472** | **$5,595,310** | **$165,971,708** | **$351,681** | **$4,946,178** | **$171,269,567** |
| 4. Low-Income Whole House | $ 5,512,078 | $ 1,578,475 | $ 119,754,757 | $ 28,501,607 | $ 5,476,024 | $ 160,822,941 | $ - | $ 4,946,178 | $ 165,769,119 |
| 5. Low-Income Hard-to-Measure | $ 4,017,643 | $ 792,973 | $ - | $ 218,865 | $ 119,286 | $ 5,148,768 | $ - | $ - | $ 5,148,768 |
| Low-Income Statewide Marketing | $ - | $ 720,708 | $ - | $ - | $ - | $ 720,708 | $ - | $ - | $ 720,708 |
| Low-Income DOER Assessment | $ 910,977 | $ - | $ - | $ 54,774 | $ 119,286 | $ 1,085,037 | $ - | $ - | $ 1,085,037 |
| Low-Income Energy Affordability Network | $ 3,106,666 | $ 72,265 | $ - | $ 164,091 | $ - | $ 3,343,022 | $ - | $ - | $ 3,343,022 |
| **Commercial & Industrial (total)** | **$55,016,136** | **$18,768,480** | **$647,884,317** | **$95,058,634** | **$26,310,131** | **$843,037,696** | **$81,400,192** | **$54,800,384** | **$979,238,272** |
| 6. C&I New Construction | $ 11,405,445 | $ 4,310,420 | $ 121,219,675 | $ 24,574,178 | $ 6,199,324 | $ 167,709,041 | $ - | $ 12,928,761 | $ 180,637,802 |
| 7. C&I Retrofit | $ 35,496,068 | $ 11,007,698 | $ 526,664,642 | $ 70,332,844 | $ 19,477,184 | $ 662,978,435 | $ - | $ 41,871,623 | $ 704,850,058 |
| 8. C&I Hard-to-Measure | $ 8,114,623 | $ 3,450,362 | $ - | $ 151,612 | $ 633,623 | $ 12,350,220 | $ - | $ - | $ 12,350,220 |
| C&I Statewide Marketing | $ - | $ 3,450,362 | $ - | $ - | $ - | $ 3,450,362 | $ - | $ - | $ 3,450,362 |
| C&I DOER Assessment | $ 4,934,075 | $ - | $ - | $ 151,612 | $ 633,623 | $ 5,719,310 | $ - | $ - | $ 5,719,310 |
| C&I EEAC Consultants (5) | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Sponsorships & Subscriptions | $ 3,180,548 | $ - | $ - | $ - | $ - | $ 3,180,548 | $ - | $ - | $ 3,180,548 |
| **GRAND TOTAL** | **$83,239,542** | **$54,195,785** | **############** | **$213,501,025** | **$47,920,664** | **$1,495,698,331** | **$114,430,273** | **$80,056,269** | **$1,690,184,873** |

**Notes:**

(1) Where not otherwise indicated, budgets for each year are represented in nominal dollars (2013$, 2014$, 2015$)

(2) Some companies have a decoupling mechanism and do not estimate LBR. Other companies continue to estimate LBR.

(3) Refer to common definitions for allocation of costs.

(4) The Total PA Budget is the sum of Total PA Costs, LBR and Performance Incentives

(5) EEAC Consultant fees on the electric side do not get paid out of the PA's budgets, but are instead paid by the DOER out of the RGGI proceeds.

IV.D. Cost Effectiveness

1. Statewide Summary Table

| Total Resource Cost Test, 2013 (In 2013 $) | | | | |
|---|---|---|---|---|
| **Customer Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs** |
| **Residential (total)** | **3.12** | **$428,278,062** | **$630,276,894** | **$201,998,832** |
| 1. Residential Whole House | 3.41 | $313,321,112 | $443,441,082 | $130,119,969 |
| 2. Residential Products | 3.29 | $129,981,872 | $186,835,812 | $56,853,940 |
| 3. Residential Hard-to-Measure | - | -$15,024,923 | $0 | $15,024,923 |
| Residential Statewide Marketing | - | -$1,993,756 | $0 | $1,993,756 |
| Residential DOER Assessment | - | -$1,075,102 | $0 | $1,075,102 |
| Residential EEAC Consultants | - | $0 | $0 | $0 |
| Residential Sponsorship & Subscriptions | - | -$381,564 | $0 | $381,564 |
| Residential HEAT Loan | - | -$8,571,424 | $0 | $8,571,424 |
| Residential Workforce Development | - | -$441,174 | $0 | $441,174 |
| Residential R&D and Demonstration | - | -$567,867 | $0 | $567,867 |
| Residential Education | - | -$1,994,037 | $0 | $1,994,037 |
| **Low-Income (total)** | **2.08** | **$62,101,714** | **$119,649,869** | **$57,548,156** |
| 4. Low-Income Whole House | 2.14 | $63,835,108 | $119,649,869 | $55,814,761 |
| 5. Low-Income Hard-to-Measure | - | -$1,733,394 | $0 | $1,733,394 |
| Low-Income Statewide Marketing | - | -$245,966 | $0 | $245,966 |
| Low-Income DOER Assessment | - | -$366,266 | $0 | $366,266 |
| Low-Income Energy Affordability Network | - | -$1,121,163 | $0 | $1,121,163 |
| **Commercial & Industrial (total)** | **3.88** | **$1,194,880,282** | **$1,609,497,918** | **$414,617,636** |
| 6. C&I New Construction | 4.97 | $327,371,533 | $409,832,370 | $82,460,837 |
| 7. C&I Retrofit | 3.66 | $871,620,854 | $1,199,665,548 | $328,044,693 |
| 8. C&I Hard-to-Measure | - | -$4,112,106 | $0 | $4,112,106 |
| C&I Statewide Marketing | - | -$1,167,455 | $0 | $1,167,455 |
| C&I DOER Assessment | - | -$1,899,011 | $0 | $1,899,011 |
| C&I EEAC Consultants | - | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | - | -$1,045,640 | $0 | $1,045,640 |
| **GRAND TOTAL** | **3.50** | **$1,685,260,057** | **$2,359,424,681** | **$674,164,624** |

| Total Resource Cost Test, 2014 (In 2013$) | | | | |
|---|---|---|---|---|
| **Customer Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs** |
| **Residential (total)** | **3.21** | **$472,396,861** | **$686,562,530** | **$214,165,668** |
| 1. Residential Whole House | 3.45 | $343,602,820 | $483,688,701 | $140,085,881 |
| 2. Residential Products | 3.43 | $143,780,967 | $202,873,828 | $59,092,862 |
| 3. Residential Hard-to-Measure | - | -$14,986,926 | $0 | $14,986,926 |
| Residential Statewide Marketing | - | -$1,864,433 | $0 | $1,864,433 |
| Residential DOER Assessment | - | -$1,044,120 | $0 | $1,044,120 |
| Residential EEAC Consultants | - | $0 | $0 | $0 |
| Residential Sponsorship & Subscriptions | - | -$376,481 | $0 | $376,481 |
| Residential HEAT Loan | - | -$8,625,471 | $0 | $8,625,471 |
| Residential Workforce Development | - | -$480,184 | $0 | $480,184 |
| Residential R&D and Demonstration | - | -$575,215 | $0 | $575,215 |
| Residential Education | - | -$2,021,021 | $0 | $2,021,021 |
| **Low-Income (total)** | **2.16** | **$65,534,479** | **$122,215,676** | **$56,681,197** |
| 4. Low-Income Whole House | 2.22 | $67,172,957 | $122,215,676 | $55,042,719 |
| 5. Low-Income Hard-to-Measure | - | -$1,638,478 | $0 | $1,638,478 |
| Low-Income Statewide Marketing | - | -$230,932 | $0 | $230,932 |
| Low-Income DOER Assessment | - | -$351,579 | $0 | $351,579 |
| Low-Income Energy Affordability Network | - | -$1,055,967 | $0 | $1,055,967 |
| **Commercial & Industrial (total)** | **4.27** | **$1,379,530,008** | **$1,801,908,673** | **$422,378,665** |
| 6. C&I New Construction | 5.46 | $325,433,020 | $398,372,279 | $72,939,259 |
| 7. C&I Retrofit | 4.06 | $1,058,091,934 | $1,403,536,394 | $345,444,460 |
| 8. C&I Hard-to-Measure | - | -$3,994,946 | $0 | $3,994,946 |
| C&I Statewide Marketing | - | -$1,108,651 | $0 | $1,108,651 |
| C&I DOER Assessment | - | -$1,855,061 | $0 | $1,855,061 |
| C&I EEAC Consultants | - | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | - | -$1,031,234 | $0 | $1,031,234 |
| **GRAND TOTAL** | **3.77** | **$1,917,461,349** | **$2,610,686,879** | **$693,225,530** |

IV.D. Cost Effectiveness

1. Statewide Summary Table

| Total Resource Cost Test, 2015 (In 2013 $) | | | | |
|---|---|---|---|---|
| **Customer Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs** |
| **Residential (total)** | **3.27** | **$494,348,179** | **$712,396,495** | **$218,048,315** |
| 1. Residential Whole House | 3.54 | $364,805,690 | $508,688,909 | $143,883,219 |
| 2. Residential Products | 3.44 | $144,407,251 | $203,707,585 | $59,300,334 |
| 3. Residential Hard-to-Measure | - | -$14,864,762 | $0 | $14,864,762 |
| Residential Statewide Marketing | - | -$1,818,385 | $0 | $1,818,385 |
| Residential DOER Assessment | - | -$1,012,155 | $0 | $1,012,155 |
| Residential EEAC Consultants | - | $0 | $0 | $0 |
| Residential Sponsorship & Subscriptions | - | -$371,167 | $0 | $371,167 |
| Residential HEAT Loan | - | -$8,662,071 | $0 | $8,662,071 |
| Residential Workforce Development | - | -$468,766 | $0 | $468,766 |
| Residential R&D and Demonstration | - | -$582,371 | $0 | $582,371 |
| Residential Education | - | -$1,949,847 | $0 | $1,949,847 |
| **Low-Income (total)** | **2.16** | **$66,224,440** | **$123,284,674** | **$57,060,235** |
| 4. Low-Income Whole House | 2.22 | $67,865,706 | $123,284,674 | $55,418,968 |
| 5. Low-Income Hard-to-Measure | - | -$1,641,267 | $0 | $1,641,267 |
| Low-Income Statewide Marketing | - | -$225,674 | $0 | $225,674 |
| Low-Income DOER Assessment | - | -$338,670 | $0 | $338,670 |
| Low-Income Energy Affordability Network | - | -$1,076,922 | $0 | $1,076,922 |
| **Commercial & Industrial (total)** | **4.27** | **$1,403,454,064** | **$1,832,252,644** | **$428,798,580** |
| 6. C&I New Construction | 5.60 | $330,692,244 | $402,598,963 | $71,906,719 |
| 7. C&I Retrofit | 4.05 | $1,076,676,513 | $1,429,653,681 | $352,977,168 |
| 8. C&I Hard-to-Measure | - | -$3,914,694 | $0 | $3,914,694 |
| C&I Statewide Marketing | - | -$1,084,319 | $0 | $1,084,319 |
| C&I DOER Assessment | - | -$1,812,736 | $0 | $1,812,736 |
| C&I EEAC Consultants | - | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | - | -$1,017,638 | $0 | $1,017,638 |
| **GRAND TOTAL** | **3.79** | **$1,964,026,683** | **$2,667,933,813** | **$703,907,130** |

| Total Resource Cost Test, 2013-2015 (In 2013$) | | | | |
|---|---|---|---|---|
| **Customer Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs** |
| **Residential (total)** | **3.20** | **$1,395,023,102** | **$2,029,235,918** | **$634,212,816** |
| 1. Residential Whole House | 3.47 | $1,021,729,623 | $1,435,818,693 | $414,089,070 |
| 2. Residential Products | 3.39 | $418,170,090 | $593,417,226 | $175,247,136 |
| 3. Residential Hard-to-Measure | - | -$44,876,611 | $0 | $44,876,611 |
| Residential Statewide Marketing | - | -$5,676,574 | $0 | $5,676,574 |
| Residential DOER Assessment | - | -$3,131,377 | $0 | $3,131,377 |
| Residential EEAC Consultants | - | $0 | $0 | $0 |
| Residential Sponsorship & Subscriptions | - | -$1,129,212 | $0 | $1,129,212 |
| Residential HEAT Loan | - | -$25,858,966 | $0 | $25,858,966 |
| Residential Workforce Development | - | -$1,390,124 | $0 | $1,390,124 |
| Residential R&D and Demonstration | - | -$1,725,453 | $0 | $1,725,453 |
| Residential Education | - | -$5,964,905 | $0 | $5,964,905 |
| **Low-Income (total)** | **2.13** | **$193,860,633** | **$365,150,220** | **$171,289,587** |
| 4. Low-Income Whole House | 2.20 | $198,873,772 | $365,150,220 | $166,276,448 |
| 5. Low-Income Hard-to-Measure | - | -$5,013,139 | $0 | $5,013,139 |
| Low-Income Statewide Marketing | - | -$702,572 | $0 | $702,572 |
| Low-Income DOER Assessment | - | -$1,056,515 | $0 | $1,056,515 |
| Low-Income Energy Affordability Network | - | -$3,254,052 | $0 | $3,254,052 |
| **Commercial & Industrial (total)** | **4.14** | **$3,977,864,354** | **$5,243,659,235** | **$1,265,794,881** |
| 6. C&I New Construction | 5.33 | $983,496,798 | $1,210,803,613 | $227,306,815 |
| 7. C&I Retrofit | 3.93 | $3,006,389,302 | $4,032,855,623 | $1,026,466,321 |
| 8. C&I Hard-to-Measure | - | -$12,021,746 | $0 | $12,021,746 |
| C&I Statewide Marketing | - | -$3,360,426 | $0 | $3,360,426 |
| C&I DOER Assessment | - | -$5,566,807 | $0 | $5,566,807 |
| C&I EEAC Consultants | - | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | - | -$3,094,513 | $0 | $3,094,513 |
| **GRAND TOTAL** | **3.69** | **$5,566,748,089** | **$7,638,045,373** | **$2,071,297,284** |

IV.D. Statewide Elec Cost Effectiveness

2.1. Cost Summary Table

| 2013 (in 2013 $) | | | | |
|---|---|---|---|---|
| Programs | PA Costs | | Participant Costs | Total TRC Test Costs (2) |
| | Program Costs (1) | Performance Incentive (2) | | |
| **Residential (total)** | **$153,238,206** | **$6,769,663** | **$41,990,963** | **$201,998,832** |
| 1. Residential Whole House | $98,737,878 | $4,674,668 | $26,707,423 | $130,119,969 |
| 2. Residential Products | $39,475,405 | $2,094,995 | $15,283,540 | $56,853,940 |
| 3. Residential Hard-to-Measure | $15,024,923 | $0 | $0 | $15,024,923 |
| Residential Statewide Marketing | $1,993,756 | $0 | $0 | $1,993,756 |
| Residential DOER Assessment | $1,075,102 | $0 | $0 | $1,075,102 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $381,564 | $0 | $0 | $381,564 |
| Residential HEAT Loan | $8,571,424 | $0 | $0 | $8,571,424 |
| Residential Workforce Development | $441,174 | $0 | $0 | $441,174 |
| Residential R&D and Demonstration | $567,867 | $0 | $0 | $567,867 |
| Residential Education | $1,994,037 | $0 | $0 | $1,994,037 |
| **Low-Income (total)** | **$54,136,213** | **$1,929,554** | **$1,482,389** | **$57,548,156** |
| 4. Low-Income Whole House | $52,402,819 | $1,929,554 | $1,482,389 | $55,814,761 |
| 5. Low-Income Hard-to-Measure | $1,733,394 | $0 | $0 | $1,733,394 |
| Low-Income Statewide Marketing | $245,966 | $0 | $0 | $245,966 |
| Low-Income DOER Assessment | $366,266 | $0 | $0 | $366,266 |
| Low-Income Energy Affordability Network | $1,121,163 | $0 | $0 | $1,121,163 |
| **Commercial & Industrial (total)** | **$273,941,506** | **$17,109,540** | **$123,566,589** | **$414,617,636** |
| 6. C&I New Construction | $59,435,257 | $4,470,860 | $18,554,721 | $82,460,837 |
| 7. C&I Retrofit | $210,394,144 | $12,638,680 | $105,011,869 | $328,044,693 |
| 8. C&I Hard-to-Measure | $4,112,106 | $0 | $0 | $4,112,106 |
| C&I Statewide Marketing | $1,167,455 | $0 | $0 | $1,167,455 |
| C&I DOER Assessment | $1,899,011 | $0 | $0 | $1,899,011 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $1,045,640 | $0 | $0 | $1,045,640 |
| **GRAND TOTAL** | **$481,315,926** | **$25,808,757** | **$167,039,941** | **$674,164,624** |

| 2014 (in 2013 $) | | | | |
|---|---|---|---|---|
| Programs | PA Costs | | Participant Costs | Total TRC Test Costs (2) |
| | Program Costs (1) | Performance Incentive (2) | | |
| **Residential (total)** | **$158,137,973** | **$6,516,522** | **$49,520,969** | **$214,175,463** |
| 1. Residential Whole House | $102,695,063 | $4,493,849 | $32,902,574 | $140,091,486 |
| 2. Residential Products | $40,454,907 | $2,022,672 | $16,618,394 | $59,095,973 |
| 3. Residential Hard-to-Measure | $14,988,003 | $0 | $0 | $14,988,003 |
| Residential Statewide Marketing | $1,864,662 | $0 | $0 | $1,864,662 |
| Residential DOER Assessment | $1,044,175 | $0 | $0 | $1,044,175 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $376,481 | $0 | $0 | $376,481 |
| Residential HEAT Loan | $8,626,128 | $0 | $0 | $8,626,128 |
| Residential Workforce Development | $480,266 | $0 | $0 | $480,266 |
| Residential R&D and Demonstration | $575,226 | $0 | $0 | $575,226 |
| Residential Education | $2,021,065 | $0 | $0 | $2,021,065 |
| **Low-Income (total)** | **$53,456,872** | **$1,455,254** | **$1,773,501** | **$56,685,627** |
| 4. Low-Income Whole House | $51,818,196 | $1,455,254 | $1,773,501 | $55,046,952 |
| 5. Low-Income Hard-to-Measure | $1,638,676 | $0 | $0 | $1,638,676 |
| Low-Income Statewide Marketing | $231,014 | $0 | $0 | $231,014 |
| Low-Income DOER Assessment | $351,607 | $0 | $0 | $351,607 |
| Low-Income Energy Affordability Network | $1,056,055 | $0 | $0 | $1,056,055 |
| **Commercial & Industrial (total)** | **$270,796,402** | **$18,380,135** | **$133,231,342** | **$422,407,879** |
| 6. C&I New Construction | $52,515,344 | $4,133,235 | $16,293,860 | $72,942,439 |
| 7. C&I Retrofit | $214,285,844 | $14,246,900 | $116,937,482 | $345,470,227 |
| 8. C&I Hard-to-Measure | $3,995,213 | $0 | $0 | $3,995,213 |
| C&I Statewide Marketing | $1,108,815 | $0 | $0 | $1,108,815 |
| C&I DOER Assessment | $1,855,163 | $0 | $0 | $1,855,163 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $1,031,234 | $0 | $0 | $1,031,234 |
| **GRAND TOTAL** | **$482,391,246** | **$26,351,911** | **$184,525,811** | **$693,268,969** |

IV.D. Statewide Elec Cost Effectiveness

2.1. Cost Summary Table

| 2015 (in 2013 $) | | | | |
|---|---|---|---|---|
| Programs | PA Costs | | Participant Costs | Total TRC Test Costs (2) |
| | Program Costs (1) | Performance Incentive (2) | | |
| **Residential (total)** | **$161,911,971** | **$6,736,798** | **$49,419,358** | **$218,068,128** |
| 1. Residential Whole House | $106,239,236 | $4,708,424 | $32,946,936 | $143,894,595 |
| 2. Residential Products | $40,805,824 | $2,028,375 | $16,472,422 | $59,306,621 |
| 3. Residential Hard-to-Measure | $14,866,912 | $0 | $0 | $14,866,912 |
| Residential Statewide Marketing | $1,818,844 | $0 | $0 | $1,818,844 |
| Residential DOER Assessment | $1,012,265 | $0 | $0 | $1,012,265 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $371,167 | $0 | $0 | $371,167 |
| Residential HEAT Loan | $8,663,380 | $0 | $0 | $8,663,380 |
| Residential Workforce Development | $468,930 | $0 | $0 | $468,930 |
| Residential R&D and Demonstration | $582,392 | $0 | $0 | $582,392 |
| Residential Education | $1,949,934 | $0 | $0 | $1,949,934 |
| **Low-Income (total)** | **$53,914,427** | **$1,501,433** | **$1,653,237** | **$57,069,097** |
| 4. Low-Income Whole House | $52,272,760 | $1,501,433 | $1,653,237 | $55,427,431 |
| 5. Low-Income Hard-to-Measure | $1,641,666 | $0 | $0 | $1,641,666 |
| Low-Income Statewide Marketing | $225,838 | $0 | $0 | $225,838 |
| Low-Income DOER Assessment | $338,726 | $0 | $0 | $338,726 |
| Low-Income Energy Affordability Network | $1,077,102 | $0 | $0 | $1,077,102 |
| **Commercial & Industrial (total)** | **$275,499,538** | **$18,570,247** | **$134,788,838** | **$428,858,623** |
| 6. C&I New Construction | $51,440,739 | $4,155,146 | $16,317,157 | $71,913,042 |
| 7. C&I Retrofit | $220,143,573 | $14,415,102 | $118,471,681 | $353,030,356 |
| 8. C&I Hard-to-Measure | $3,915,225 | $0 | $0 | $3,915,225 |
| C&I Statewide Marketing | $1,084,647 | $0 | $0 | $1,084,647 |
| C&I DOER Assessment | $1,812,940 | $0 | $0 | $1,812,940 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $1,017,638 | $0 | $0 | $1,017,638 |
| **GRAND TOTAL** | **$491,325,936** | **$26,808,478** | **$185,861,433** | **$703,995,848** |

| 2013-2015 (in 2013 $) | | | | |
|---|---|---|---|---|
| Programs | PA Costs | | Participant Costs | Total TRC Test Costs |
| | Program Costs (1) | Performance Incentive (2) | | |
| **Residential (total)** | **$473,288,150** | **$20,022,983** | **$140,931,290** | **$634,242,423** |
| 1. Residential Whole House | $307,672,177 | $13,876,941 | $92,556,933 | $414,106,051 |
| 2. Residential Products | $120,736,135 | $6,146,042 | $48,374,357 | $175,256,534 |
| 3. Residential Hard-to-Measure | $44,879,838 | $0 | $0 | $44,879,838 |
| Residential Statewide Marketing | $5,677,262 | $0 | $0 | $5,677,262 |
| Residential DOER Assessment | $3,131,541 | $0 | $0 | $3,131,541 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $1,129,212 | $0 | $0 | $1,129,212 |
| Residential HEAT Loan | $25,860,932 | $0 | $0 | $25,860,932 |
| Residential Workforce Development | $1,390,370 | $0 | $0 | $1,390,370 |
| Residential R&D and Demonstration | $1,725,486 | $0 | $0 | $1,725,486 |
| Residential Education | $5,965,036 | $0 | $0 | $5,965,036 |
| **Low-Income (total)** | **$161,507,512** | **$4,886,241** | **$4,909,127** | **$171,302,880** |
| 4. Low-Income Whole House | $156,493,775 | $4,886,241 | $4,909,127 | $166,289,144 |
| 5. Low-Income Hard-to-Measure | $5,013,737 | $0 | $0 | $5,013,737 |
| Low-Income Statewide Marketing | $702,818 | $0 | $0 | $702,818 |
| Low-Income DOER Assessment | $1,056,599 | $0 | $0 | $1,056,599 |
| Low-Income Energy Affordability Network | $3,254,320 | $0 | $0 | $3,254,320 |
| **Commercial & Industrial (total)** | **$820,237,446** | **$54,059,923** | **$391,586,769** | **$1,265,884,138** |
| 6. C&I New Construction | $163,391,340 | $12,759,241 | $51,165,737 | $227,316,318 |
| 7. C&I Retrofit | $644,823,562 | $41,300,682 | $340,421,032 | $1,026,545,276 |
| 8. C&I Hard-to-Measure | $12,022,544 | $0 | $0 | $12,022,544 |
| C&I Statewide Marketing | $3,360,917 | $0 | $0 | $3,360,917 |
| C&I DOER Assessment | $5,567,114 | $0 | $0 | $5,567,114 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $3,094,513 | $0 | $0 | $3,094,513 |
| **GRAND TOTAL** | **$1,455,033,108** | **$78,969,147** | **$537,427,186** | **$2,071,429,441** |

**Notes:**

(1) Program Costs include Program Planning and Administration, Marketing and Advertising, Program Incentive, Sales, Technical Assistance & Training, Evaluation and Market Research (See Table IV.C.1, Budget Summary)

(2) This represents the total TRC Test costs, which does not include LBR.

IV.D Cost Effectiveness
3.1.i. Statewide Benefits Summary Table

**Electric Benefits, 2013 (in 2013 $)**

| Program | Capacity | | | | | | Energy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Generation | | Trans. | Distrib. | DRIPE | TOTAL | Winter | | Summer | | DRIPE | TOTAL |
| | Summer | Winter | | | | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **$13,503,519** | **$0** | **$6,355,304** | **$27,487,065** | **$14,014,646** | **$61,360,534** | **$53,789,746** | **$47,479,167** | **$26,292,723** | **$19,823,656** | **$50,504,642** | **$197,889,933** |
| 1. Residential Whole House | $7,008,304 | $0 | $2,389,216 | $10,467,602 | $4,115,798 | $23,980,920 | $16,712,734 | $15,489,505 | $8,842,437 | $6,194,579 | $14,215,946 | $61,455,202 |
| 2. Residential Products | $6,495,215 | $0 | $3,966,088 | $17,019,463 | $9,898,847 | $37,379,613 | $37,077,011 | $31,989,662 | $17,450,286 | $13,629,077 | $36,288,696 | $136,434,731 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$1,873,704** | **$0** | **$838,089** | **$3,637,784** | **$2,176,816** | **$8,526,393** | **$7,483,660** | **$7,271,998** | **$3,423,691** | **$2,831,979** | **$6,596,298** | **$27,607,625** |
| 4. Low-Income Whole House | $1,873,704 | $0 | $838,089 | $3,637,784 | $2,176,816 | $8,526,393 | $7,483,660 | $7,271,998 | $3,423,691 | $2,831,979 | $6,596,298 | $27,607,625 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **$90,250,676** | **$0** | **$36,336,275** | **$159,018,972** | **$116,014,258** | **$401,620,182** | **$353,826,173** | **$174,911,754** | **$298,706,693** | **$104,706,530** | **$258,824,872** | **$1,190,976,021** |
| 6. C&I New Construction | $25,477,648 | $0 | $10,274,820 | $44,733,674 | $31,471,460 | $111,957,603 | $78,367,300 | $33,584,644 | $96,145,774 | $25,716,013 | $64,931,388 | $298,745,120 |
| 7. C&I Retrofit | $64,773,028 | $0 | $26,061,455 | $114,285,299 | $84,542,798 | $289,662,579 | $275,458,872 | $141,327,109 | $202,560,919 | $78,990,517 | $193,893,484 | $892,230,901 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **$105,627,899** | **$0** | **$43,529,668** | **$190,143,822** | **$132,205,720** | **$471,507,109** | **$415,099,578** | **$229,662,918** | **$328,423,107** | **$127,362,164** | **$315,925,812** | **$1,416,473,579** |

**Electric Benefits, 2014 (In 2013 $)**

| Program | Capacity | | | | | | Energy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Generation | | Trans. | Distrib. | DRIPE | TOTAL | Winter | | Summer | | DRIPE | TOTAL |
| | Summer | Winter | | | | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **$15,294,525** | **$0** | **$6,504,679** | **$28,178,580** | **$16,526,781** | **$66,504,565** | **$57,626,295** | **$50,972,421** | **$28,072,838** | **$21,157,346** | **$65,828,674** | **$223,657,574** |
| 1. Residential Whole House | $7,809,220 | $0 | $2,573,514 | $11,294,988 | $4,662,496 | $26,340,218 | $19,278,705 | $17,764,930 | $10,036,047 | $7,055,425 | $20,251,629 | $74,386,736 |
| 2. Residential Products | $7,485,305 | $0 | $3,931,166 | $16,883,592 | $11,864,285 | $40,164,347 | $38,347,590 | $33,207,491 | $18,036,791 | $14,101,921 | $45,577,045 | $149,270,839 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$2,032,038** | **$0** | **$817,477** | **$3,581,461** | **$2,514,642** | **$8,945,618** | **$7,656,865** | **$7,454,863** | **$3,430,597** | **$2,858,259** | **$8,244,992** | **$29,645,576** |
| 4. Low-Income Whole House | $2,032,038 | $0 | $817,477 | $3,581,461 | $2,514,642 | $8,945,618 | $7,656,865 | $7,454,863 | $3,430,597 | $2,858,259 | $8,244,992 | $29,645,576 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **$103,133,292** | **$0** | **$36,868,116** | **$163,080,269** | **$126,647,990** | **$429,729,667** | **$360,165,264** | **$174,384,100** | **$323,298,502** | **$110,465,310** | **$331,503,334** | **$1,299,816,509** |
| 6. C&I New Construction | $26,921,904 | $0 | $9,510,683 | $42,291,617 | $31,664,433 | $110,388,637 | $71,909,464 | $30,967,240 | $88,874,694 | $23,945,571 | $73,106,819 | $288,803,788 |
| 7. C&I Retrofit | $76,211,388 | $0 | $27,357,433 | $120,788,652 | $94,983,557 | $319,341,030 | $288,255,800 | $143,416,859 | $234,423,809 | $86,519,739 | $258,396,515 | $1,011,012,721 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **$120,459,855** | **$0** | **$44,190,272** | **$194,840,309** | **$145,689,413** | **$505,179,850** | **$425,448,424** | **$232,811,384** | **$354,801,937** | **$134,480,915** | **$405,577,000** | **$1,553,119,660** |

**Electric Benefits, 2015 (In 2013 $)**

| Program | Capacity | | | | | | Energy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Generation | | Trans. | Distrib. | DRIPE | TOTAL | Winter | | Summer | | DRIPE | TOTAL |
| | Summer | Winter | | | | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **$15,389,727** | **$0** | **$6,221,756** | **$26,388,840** | **$16,800,028** | **$64,800,351** | **$60,987,224** | **$53,725,218** | **$29,651,759** | **$22,461,801** | **$56,562,897** | **$223,388,900** |
| 1. Residential Whole House | $6,495,538 | $0 | $2,208,047 | $9,272,140 | $3,876,893 | $21,852,618 | $20,970,301 | $19,219,159 | $10,843,517 | $7,674,650 | $17,682,432 | $76,390,058 |
| 2. Residential Products | $8,894,189 | $0 | $4,013,709 | $17,116,700 | $12,923,134 | $42,947,733 | $40,016,923 | $34,506,060 | $18,808,242 | $14,787,151 | $38,880,465 | $146,998,842 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$2,388,349** | **$0** | **$829,067** | **$3,612,358** | **$2,697,904** | **$9,527,677** | **$7,707,907** | **$7,544,912** | **$3,451,847** | **$2,894,418** | **$6,672,464** | **$28,271,547** |
| 4. Low-Income Whole House | $2,388,349 | $0 | $829,067 | $3,612,358 | $2,697,904 | $9,527,677 | $7,707,907 | $7,544,912 | $3,451,847 | $2,894,418 | $6,672,464 | $28,271,547 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **$120,561,842** | **$0** | **$37,762,884** | **$168,344,905** | **$128,426,554** | **$455,096,186** | **$385,303,128** | **$185,965,903** | **$360,113,574** | **$120,894,601** | **$289,934,634** | **$1,342,211,840** |
| 6. C&I New Construction | $29,722,421 | $0 | $9,108,676 | $40,335,758 | $29,717,930 | $108,884,785 | $71,777,554 | $31,069,879 | $103,585,595 | $27,090,018 | $60,434,942 | $293,957,988 |
| 7. C&I Retrofit | $90,839,422 | $0 | $28,654,208 | $128,009,147 | $98,708,624 | $346,211,401 | $313,525,574 | $154,896,024 | $256,527,979 | $93,804,583 | $229,499,692 | $1,048,253,852 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **$138,339,918** | **$0** | **$44,813,707** | **$198,346,103** | **$147,924,486** | **$529,424,215** | **$453,998,258** | **$247,236,033** | **$393,217,181** | **$146,250,820** | **$353,169,995** | **$1,593,872,287** |

**Electric Benefits, 2013-2015 (In 2013 $)**

| Program | Capacity | | | | | | Energy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Generation | | Trans. | Distrib. | DRIPE | TOTAL | Winter | | Summer | | DRIPE | TOTAL |
| | Summer | Winter | | | | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **$44,187,771** | **$0** | **$19,081,740** | **$82,054,485** | **$47,341,454** | **$192,665,450** | **$172,403,265** | **$152,176,806** | **$84,017,320** | **$63,442,803** | **$172,896,213** | **$644,936,407** |
| 1. Residential Whole House | $21,313,062 | $0 | $7,170,777 | $31,034,730 | $12,655,188 | $72,173,757 | $56,961,740 | $52,473,594 | $29,722,001 | $20,924,654 | $52,150,007 | $212,231,995 |
| 2. Residential Products | $22,874,709 | $0 | $11,910,963 | $51,019,755 | $34,686,266 | $120,491,693 | $115,441,525 | $99,703,213 | $54,295,319 | $42,518,149 | $120,746,206 | $432,704,412 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$6,294,091** | **$0** | **$2,484,633** | **$10,831,603** | **$7,389,362** | **$26,999,689** | **$22,848,431** | **$22,271,773** | **$10,306,134** | **$8,584,656** | **$21,513,754** | **$85,524,749** |
| 4. Low-Income Whole House | $6,294,091 | $0 | $2,484,633 | $10,831,603 | $7,389,362 | $26,999,689 | $22,848,431 | $22,271,773 | $10,306,134 | $8,584,656 | $21,513,754 | $85,524,749 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **$313,945,811** | **$0** | **$110,967,275** | **$490,444,146** | **$371,088,803** | **$1,286,446,035** | **$1,099,294,565** | **$535,261,756** | **$982,118,770** | **$336,066,441** | **$880,262,839** | **$3,833,004,370** |
| 6. C&I New Construction | $82,121,973 | $0 | $28,894,179 | $127,361,049 | $92,853,824 | $331,231,025 | $222,054,319 | $95,621,764 | $288,606,063 | $76,751,601 | $198,473,149 | $881,506,896 |
| 7. C&I Retrofit | $231,823,838 | $0 | $82,073,096 | $363,083,098 | $278,234,979 | $955,215,010 | $877,240,246 | $439,639,993 | $693,512,706 | $259,314,839 | $681,789,690 | $2,951,497,474 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **$364,427,672** | **$0** | **$132,533,648** | **$583,330,235** | **$425,819,619** | **$1,506,111,174** | **$1,294,546,261** | **$709,710,335** | **$1,076,442,224** | **$408,093,900** | **$1,074,672,806** | **$4,563,465,526** |

**Notes:**
(1) See Table IV.D.3.2.i Savings Summary for information on the savings used to determine the benefits in these tables.
(2) See Table IV.D.3.3.i for the Avoided Cost Factors used to determine the benefits in these tables

(3) The Non-Resource Benefits for the Residential Heating & Cooling Equipment initiative within the Residential Products program are reduced by 10% from the values included in the Technical Resource Manual. Please refer to Section III F.6.a of the Joint Statewide Three-Year Plan for details.

IV.D Cost Effectiveness
3.1.i. Statewide Benefits Summary Table

| Program | Non-Electric Benefits, 2013 (In 2013 $) | | | | | | | | | TOTAL BENEFITS |
|---|---|---|---|---|---|---|---|---|---|---|
| | Resource Benefits | | | | | | | Non- Resource Benefits (1) | TOTAL | |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$3,537,975** | **$167,890,660** | **$0** | **$18,892,943** | **$0** | **$2,122,860** | **$0** | **$178,581,990** | **$371,026,427** | **$630,276,894** |
| 1. Residential Whole House | $3,746,572 | $167,890,660 | $0 | $18,892,943 | $0 | $2,122,860 | $0 | $165,351,926 | $358,004,960 | $443,441,082 |
| 2. Residential Products | -$208,597 | $0 | $0 | $0 | $0 | $0 | $0 | $13,230,065 | $13,021,467 | $186,835,812 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$1,282,362** | **$36,617,866** | **$0** | **$1,235,431** | **$0** | **$1,091,296** | **$0** | **$43,288,896** | **$83,515,851** | **$119,649,869** |
| 4. Low-Income Whole House | $1,282,362 | $36,617,866 | $0 | $1,235,431 | $0 | $1,091,296 | $0 | $43,288,896 | $83,515,851 | $119,649,869 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **-$124,345,641** | **-$2,419,310** | **$0** | **$99,248** | **$0** | **$0** | **$0** | **$143,567,419** | **$16,901,715** | **$1,609,497,918** |
| 6. C&I New Construction | -$1,937,820 | $0 | $0 | $17,902 | $0 | $0 | $0 | $1,049,565 | -$870,352 | $409,832,370 |
| 7. C&I Retrofit | -$122,407,822 | -$2,419,310 | $0 | $81,346 | $0 | $0 | $0 | $142,517,854 | $17,772,068 | $1,199,665,548 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **-$119,525,305** | **$202,089,216** | **$0** | **$20,227,621** | **$0** | **$3,214,155** | **$0** | **$365,438,305** | **$471,443,993** | **$2,359,424,681** |

| Program | Non-Electric Benefits, 2014 (In 2013 $) | | | | | | | | | TOTAL BENEFITS |
|---|---|---|---|---|---|---|---|---|---|---|
| | Resource Benefits | | | | | | | Non- Resource Benefits (1) | TOTAL | |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$4,191,909** | **$178,356,293** | **$0** | **$20,049,463** | **$0** | **$2,311,281** | **$0** | **$191,491,444** | **$396,400,390** | **$686,562,530** |
| 1. Residential Whole House | $4,414,377 | $178,356,293 | $0 | $20,049,463 | $0 | $2,311,281 | $0 | $177,830,332 | $382,961,748 | $483,688,701 |
| 2. Residential Products | -$222,469 | $0 | $0 | $0 | $0 | $0 | $0 | $13,661,112 | $13,438,643 | $202,873,828 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$1,156,860** | **$36,638,009** | **$0** | **$1,362,737** | **$0** | **$1,092,361** | **$0** | **$43,374,514** | **$83,624,482** | **$122,215,676** |
| 4. Low-Income Whole House | $1,156,860 | $36,638,009 | $0 | $1,362,737 | $0 | $1,092,361 | $0 | $43,374,514 | $83,624,482 | $122,215,676 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **-$109,800,636** | **-$2,635,029** | **$0** | **$98,788** | **$0** | **$142,531** | **$0** | **$184,556,843** | **$72,362,497** | **$1,801,908,673** |
| 6. C&I New Construction | -$1,993,178 | $0 | $0 | $17,880 | $0 | $142,531 | $0 | $1,012,621 | -$820,146 | $398,372,279 |
| 7. C&I Retrofit | -$107,807,458 | -$2,635,029 | $0 | $80,908 | $0 | $0 | $0 | $183,544,222 | $73,182,643 | $1,403,536,394 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **-$104,451,868** | **$212,359,273** | **$0** | **$21,510,989** | **$0** | **$3,546,173** | **$0** | **$419,422,802** | **$552,387,370** | **$2,610,686,879** |

| Program | Non-Electric Benefits, 2015 (In 2013 $) | | | | | | | | | TOTAL BENEFITS |
|---|---|---|---|---|---|---|---|---|---|---|
| | Resource Benefits | | | | | | | Non- Resource Benefits (1) | TOTAL | |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$4,606,527** | **$191,031,129** | **$0** | **$21,838,286** | **$0** | **$2,403,575** | **$0** | **$204,327,727** | **$424,207,243** | **$712,396,495** |
| 1. Residential Whole House | $4,832,608 | $191,031,129 | $0 | $21,838,286 | $0 | $2,403,575 | $0 | $190,340,636 | $410,446,233 | $508,688,909 |
| 2. Residential Products | -$226,081 | $0 | $0 | $0 | $0 | $0 | $0 | $13,987,091 | $13,761,010 | $203,707,585 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$991,593** | **$38,495,832** | **$0** | **$1,489,631** | **$0** | **$1,088,633** | **$0** | **$43,419,762** | **$85,485,450** | **$123,284,674** |
| 4. Low-Income Whole House | $991,593 | $38,495,832 | $0 | $1,489,631 | $0 | $1,088,633 | $0 | $43,419,762 | $85,485,450 | $123,284,674 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **-$126,642,674** | **-$2,883,550** | **$0** | **$98,729** | **$0** | **$746,471** | **$0** | **$163,625,642** | **$34,944,618** | **$1,832,252,644** |
| 6. C&I New Construction | -$1,986,062 | $0 | $0 | $17,911 | $0 | $746,471 | $0 | $977,870 | -$243,810 | $402,598,963 |
| 7. C&I Retrofit | -$124,656,613 | -$2,883,550 | $0 | $80,819 | $0 | $0 | $0 | $162,647,772 | $35,188,428 | $1,429,653,681 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **-$121,044,554** | **$226,643,411** | **$0** | **$23,426,645** | **$0** | **$4,238,679** | **$0** | **$411,373,130** | **$544,637,311** | **$2,667,933,813** |

| Program | Non-Electric Benefits, 2013-2015 (In 2013 $) | | | | | | | | | TOTAL BENEFITS |
|---|---|---|---|---|---|---|---|---|---|---|
| | Resource Benefits | | | | | | | Non- Resource Benefits (1) | TOTAL | |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$12,336,410** | **$537,278,082** | **$0** | **$60,780,692** | **$0** | **$6,837,716** | **$0** | **$574,401,161** | **$1,191,634,061** | **$2,029,235,918** |
| 1. Residential Whole House | $12,993,557 | $537,278,082 | $0 | $60,780,692 | $0 | $6,837,716 | $0 | $533,522,894 | $1,151,412,940 | $1,435,818,693 |
| 2. Residential Products | -$657,147 | $0 | $0 | $0 | $0 | $0 | $0 | $40,878,267 | $40,221,120 | $593,417,226 |
| 3. Residential Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential HEAT Loan | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Workforce Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential R&D and Demonstration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Residential Education | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Low-Income (total)** | **$3,430,815** | **$111,751,708** | **$0** | **$4,087,798** | **$0** | **$3,272,289** | **$0** | **$130,083,172** | **$252,625,783** | **$365,150,220** |
| 4. Low-Income Whole House | $3,430,815 | $111,751,708 | $0 | $4,087,798 | $0 | $3,272,289 | $0 | $130,083,172 | $252,625,783 | $365,150,220 |
| 5. Low-Income Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Low-Income Energy Affordability Network | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Commercial & Industrial (total)** | **-$360,788,952** | **-$7,937,889** | **$0** | **$296,765** | **$0** | **$889,002** | **$0** | **$491,749,904** | **$124,208,830** | **$5,243,659,235** |
| 6. C&I New Construction | -$5,917,060 | $0 | $0 | $53,693 | $0 | $889,002 | $0 | $3,040,057 | -$1,934,308 | $1,210,803,613 |
| 7. C&I Retrofit | -$354,871,892 | -$7,937,889 | $0 | $243,072 | $0 | $0 | $0 | $488,709,848 | $126,143,138 | $4,032,855,623 |
| 8. C&I Hard-to-Measure | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Statewide Marketing | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I DOER Assessment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I EEAC Consultants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| C&I Sponsorships & Subscriptions | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **GRAND TOTAL** | **-$345,021,726** | **$641,091,900** | **$0** | **$65,165,255** | **$0** | **$10,999,007** | **$0** | **$1,196,234,237** | **$1,568,468,673** | **$7,638,045,373** |

IV.D. Cost Effectiveness

3.2.i. Statewide Savings Summary Table

| Program | # of Participants | Electric Savings, 2013 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Capacity (kW) | | | Energy (MWh) | | | | | |
| | | Annual | | Lifetime | Summer | | Winter (Annual) | | Total Annual MWh | Lifetime |
| | | Summer | Winter | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **2,165,453** | **42,996** | **76,250** | **275,797** | **46,470** | **50,910** | **117,415** | **114,421** | **329,216** | **1,890,890** |
| 1. Residential Whole House | 915,457 | 21,061 | 35,159 | 105,204 | 22,842 | 23,666 | 54,373 | 51,727 | 152,608 | 594,878 |
| 2. Residential Products | 1,249,996 | 21,936 | 41,092 | 170,593 | 23,628 | 27,244 | 63,042 | 62,694 | 176,608 | 1,296,012 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **27,879** | **3,321** | **7,779** | **36,163** | **3,805** | **4,675** | **9,483** | **10,816** | **28,782** | **264,621** |
| 4. Low-Income Whole House | 27,879 | 3,321 | 7,779 | 36,163 | 3,805 | 4,675 | 9,483 | 10,816 | 28,782 | 264,621 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **13,900** | **127,046** | **97,258** | **1,623,262** | **222,690** | **109,695** | **323,789** | **180,385** | **836,559** | **10,989,232** |
| 6. C&I New Construction | 4,908 | 35,895 | 23,369 | 456,967 | 64,558 | 26,151 | 76,694 | 38,366 | 205,768 | 2,700,683 |
| 7. C&I Retrofit | 8,992 | 91,151 | 73,888 | 1,166,295 | 158,132 | 83,545 | 247,095 | 142,019 | 630,790 | 8,288,549 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **2,207,232** | **173,363** | **181,287** | **1,935,221** | **272,965** | **165,280** | **450,687** | **305,622** | **1,194,556** | **13,144,743** |

| Program | # of Participants | Electric Savings, 2014 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Capacity (kW) | | | Energy (MWh) | | | | | |
| | | Annual | | Lifetime | Summer | | Winter (Annual) | | Total Annual MWh | Lifetime |
| | | Summer | Winter | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **2,259,817** | **45,617** | **82,398** | **282,402** | **52,120** | **56,460** | **129,929** | **125,735** | **364,244** | **1,948,146** |
| 1. Residential Whole House | 929,641 | 24,364 | 42,847 | 113,066 | 29,204 | 30,082 | 68,965 | 65,078 | 193,327 | 661,215 |
| 2. Residential Products | 1,330,176 | 21,253 | 39,551 | 169,336 | 22,916 | 26,378 | 60,964 | 60,658 | 170,917 | 1,286,930 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **27,488** | **3,242** | **7,593** | **35,228** | **3,646** | **4,496** | **9,131** | **10,481** | **27,756** | **259,958** |
| 4. Low-Income Whole House | 27,488 | 3,242 | 7,593 | 35,228 | 3,646 | 4,496 | 9,131 | 10,481 | 27,756 | 259,958 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **16,355** | **128,866** | **97,471** | **1,645,078** | **236,451** | **113,340** | **318,890** | **175,586** | **844,268** | **11,056,228** |
| 6. C&I New Construction | 4,036 | 32,756 | 21,773 | 423,022 | 56,445 | 22,846 | 65,616 | 33,051 | 177,958 | 2,409,045 |
| 7. C&I Retrofit | 12,319 | 96,110 | 75,697 | 1,222,056 | 180,006 | 90,494 | 253,275 | 142,535 | 666,310 | 8,647,183 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **2,303,660** | **177,725** | **187,462** | **1,962,708** | **292,217** | **174,296** | **457,950** | **311,803** | **1,236,268** | **13,264,331** |

IV.D. Cost Effectiveness

3.2.i. Statewide Savings Summary Table

| Program | # of Participants | Electric Savings, 2015 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Capacity (kW) | | | Energy (MWh) | | | | | |
| | | Annual | | Lifetime | Summer | | Winter (Annual) | | Total Annual MWh | Lifetime |
| | | Summer | Winter | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **2,306,349** | **47,375** | **85,239** | **269,377** | **54,748** | **59,055** | **135,660** | **130,880** | **380,343** | **1,984,491** |
| 1. Residential Whole House | 942,277 | 25,872 | 45,451 | 96,450 | 31,725 | 32,588 | 74,584 | 70,195 | 209,092 | 686,996 |
| 2. Residential Products | 1,364,072 | 21,503 | 39,788 | 172,927 | 23,022 | 26,467 | 61,076 | 60,685 | 171,251 | 1,297,495 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **27,106** | **3,241** | **7,545** | **36,051** | **3,515** | **4,351** | **8,765** | **10,160** | **26,795** | **254,194** |
| 4. Low-Income Whole House | 27,106 | 3,241 | 7,545 | 36,051 | 3,515 | 4,351 | 8,765 | 10,160 | 26,795 | 254,194 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **16,590** | **129,015** | **97,708** | **1,686,061** | **251,371** | **117,664** | **321,474** | **176,897** | **867,405** | **11,623,911** |
| 6. C&I New Construction | 3,416 | 30,005 | 19,527 | 405,901 | 60,377 | 23,644 | 60,042 | 30,781 | 174,844 | 2,502,291 |
| 7. C&I Retrofit | 13,174 | 99,010 | 78,181 | 1,280,160 | 190,994 | 94,020 | 261,432 | 146,116 | 692,562 | 9,121,619 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **2,350,045** | **179,631** | **190,492** | **1,991,489** | **309,634** | **181,070** | **465,899** | **317,937** | **1,274,544** | **13,862,596** |

| Program | # of Participants | Electric Savings, 2013-2015 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Capacity (kW) | | | Energy (MWh) | | | | | |
| | | Annual | | Lifetime | Summer | | Winter (Annual) | | Total Annual MWh | Lifetime |
| | | Summer | Winter | | Peak | Off Peak | Peak | Off Peak | | |
| **Residential (total)** | **6,731,619** | **135,989** | **243,888** | **827,576** | **153,337** | **166,425** | **383,004** | **371,036** | **1,073,804** | **5,823,526** |
| 1. Residential Whole House | 2,787,375 | 71,296 | 123,456 | 314,720 | 83,771 | 86,336 | 197,922 | 187,000 | 555,028 | 1,943,089 |
| 2. Residential Products | 3,944,243 | 64,692 | 120,431 | 512,856 | 69,567 | 80,089 | 185,081 | 184,036 | 518,776 | 3,880,437 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **82,473** | **9,804** | **22,916** | **107,441** | **10,967** | **13,522** | **27,379** | **31,457** | **83,332** | **778,773** |
| 4. Low-Income Whole House | 82,473 | 9,804 | 22,916 | 107,441 | 10,967 | 13,522 | 27,379 | 31,457 | 83,332 | 778,773 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **46,845** | **384,927** | **292,436** | **4,954,401** | **710,512** | **340,700** | **964,153** | **532,868** | **2,548,232** | **33,669,371** |
| 6. C&I New Construction | 12,360 | 98,656 | 64,670 | 1,285,889 | 181,379 | 72,640 | 202,351 | 102,199 | 558,569 | 7,612,020 |
| 7. C&I Retrofit | 34,485 | 286,271 | 227,766 | 3,668,511 | 529,132 | 268,059 | 761,802 | 430,670 | 1,989,662 | 26,057,351 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **6,860,937** | **530,719** | **559,240** | **5,889,418** | **874,815** | **520,647** | **#######** | **935,362** | **3,705,368** | **40,271,670** |

IV.D. Cost Effectiveness

3.2.i. Statewide Savings Summary Table

| Program | Non Electric Resources, 2013 | | | | | | |
|---|---|---|---|---|---|---|---|
| | MMBTU | | | | | | Gallons |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Kerosene | Water |
| **Residential (total)** | **16,662** | **325,607** | **0** | **26,827** | **0** | **0** | **27,925,467** |
| 1. Residential Whole House | 18,754 | 325,607 | 0 | 26,827 | 0 | 0 | 27,925,467 |
| 2. Residential Products | -2,093 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **6,324** | **74,981** | **0** | **1,609** | **0** | **0** | **14,279,128** |
| 4. Low-Income Whole House | 6,324 | 74,981 | 0 | 1,609 | 0 | 0 | 14,279,128 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **-820,222** | **5,737** | **0** | **259** | **0** | **0** | **0** |
| 6. C&I New Construction | -16,053 | 0 | 0 | 33 | 0 | 0 | 0 |
| 7. C&I Retrofit | -804,169 | 5,737 | 0 | 226 | 0 | 0 | 0 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **-797,237** | **406,325** | **0** | **28,694** | **0** | **0** | **42,204,594** |

| Program | Non Electric Resources, 2014 | | | | | | |
|---|---|---|---|---|---|---|---|
| | MMBTU | | | | | | Gallons |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Kerosene | Water |
| **Residential (total)** | **19,764** | **343,273** | **0** | **28,861** | **0** | **0** | **30,052,932** |
| 1. Residential Whole House | 21,958 | 343,273 | 0 | 28,861 | 0 | 0 | 30,052,932 |
| 2. Residential Products | -2,194 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **5,681** | **74,638** | **0** | **1,787** | **0** | **0** | **14,257,005** |
| 4. Low-Income Whole House | 5,681 | 74,638 | 0 | 1,787 | 0 | 0 | 14,257,005 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **-722,497** | **5,942** | **0** | **259** | **0** | **0** | **2,115,449** |
| 6. C&I New Construction | -15,972 | 0 | 0 | 33 | 0 | 0 | 2,115,449 |
| 7. C&I Retrofit | -706,525 | 5,942 | 0 | 226 | 0 | 0 | 0 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **-697,052** | **423,853** | **0** | **30,907** | **0** | **0** | **46,425,386** |

IV.D. Cost Effectiveness

3.2.i. Statewide Savings Summary Table

| Program | Non Electric Resources, 2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| | MMBTU | | | | | | Gallons |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Kerosene | Water |
| **Residential (total)** | **21,200** | **364,348** | **0** | **31,206** | **0** | **0** | **31,307,273** |
| 1. Residential Whole House | 23,527 | 364,348 | 0 | 31,206 | 0 | 0 | 31,307,273 |
| 2. Residential Products | -2,327 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **4,882** | **77,729** | **0** | **1,970** | **0** | **0** | **14,261,072** |
| 4. Low-Income Whole House | 4,882 | 77,729 | 0 | 1,970 | 0 | 0 | 14,261,072 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **-803,156** | **6,227** | **0** | **259** | **0** | **0** | **11,016,315** |
| 6. C&I New Construction | -15,364 | 0 | 0 | 33 | 0 | 0 | 11,016,315 |
| 7. C&I Retrofit | -787,791 | 6,227 | 0 | 226 | 0 | 0 | 0 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **-777,073** | **448,304** | **0** | **33,434** | **0** | **0** | **56,584,660** |

| Program | Non Electric Resources, 2013-2015 | | | | | | |
|---|---|---|---|---|---|---|---|
| | MMBTU | | | | | | Gallons |
| | Avoided Natural Gas | No. 2 Distillate | No. 4 Fuel Oil | Propane | Wood | Kerosene | Water |
| **Residential (total)** | **57,626** | **1,033,227** | **0** | **86,893** | **0** | **0** | **89,285,672** |
| 1. Residential Whole House | 64,239 | 1,033,227 | 0 | 86,893 | 0 | 0 | 89,285,672 |
| 2. Residential Products | -6,613 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3. Residential Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential HEAT Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Workforce Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential R&D and Demonstration | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Residential Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Low-Income (total)** | **16,887** | **227,348** | **0** | **5,366** | **0** | **0** | **42,797,204** |
| 4. Low-Income Whole House | 16,887 | 227,348 | 0 | 5,366 | 0 | 0 | 42,797,204 |
| 5. Low-Income Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Low-Income Energy Affordability Network | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Commercial & Industrial (total)** | **########** | **17,907** | **0** | **776** | **0** | **0** | **13,131,765** |
| 6. C&I New Construction | -47,390 | 0 | 0 | 100 | 0 | 0 | 13,131,765 |
| 7. C&I Retrofit | -2,298,485 | 17,907 | 0 | 677 | 0 | 0 | 0 |
| 8. C&I Hard-to-Measure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Statewide Marketing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I DOER Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I EEAC Consultants | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C&I Sponsorships & Subscriptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **GRAND TOTAL** | **########** | **1,278,482** | **0** | **93,035** | **0** | **0** | **#########** |

IV.H. Statewide Elec Performance Incentive

1. Summary Table

| 2013 | | | | |
|---|---|---|---|---|
| **Sector** | **After-Tax Performance Incentives** | **% of PA Costs** | **Pre-Tax Performance Incentives** | **% of PA Costs** |
| Residential | $4,114,634 | 2.7% | $6,769,663 | 4.4% |
| Low-Income | $1,172,848 | 2.2% | $1,929,554 | 3.6% |
| Commercial & Industrial | $10,399,811 | 3.8% | $17,109,540 | 6.2% |
| **TOTAL** | **$15,687,293** | **3.3%** | **$25,808,757** | **5.4%** |

| 2014 | | | | |
|---|---|---|---|---|
| **Sector** | **After-Tax Performance Incentives** | **% of PA Costs** | **Pre-Tax Performance Incentives** | **% of PA Costs** |
| Residential | $4,015,707 | 2.5% | $6,606,888 | 4.1% |
| Low-Income | $896,479 | 1.6% | $1,474,862 | 2.7% |
| Commercial & Industrial | $11,322,859 | 4.1% | $18,628,177 | 6.7% |
| **TOTAL** | **$16,235,045** | **3.3%** | **$26,709,928** | **5.4%** |

| 2015 | | | | |
|---|---|---|---|---|
| **Sector** | **After-Tax Performance Incentives** | **% of PA Costs** | **Pre-Tax Performance Incentives** | **% of PA Costs** |
| Residential | $4,214,001 | 2.5% | $6,933,156 | 4.1% |
| Low-Income | $937,152 | 1.6% | $1,541,763 | 2.7% |
| Commercial & Industrial | $11,587,002 | 4.0% | $19,062,666 | 6.6% |
| **TOTAL** | **$16,738,155** | **3.2%** | **$27,537,585** | **5.3%** |

| 2013-2015 | | | | |
|---|---|---|---|---|
| **Sector** | **After-Tax Performance Incentives** | **% of PA Costs** | **Pre-Tax Performance Incentives** | **% of PA Costs** |
| Residential | $12,344,343 | 2.5% | $20,309,707 | 4.2% |
| Low-Income | $3,006,479 | 1.8% | $4,946,178 | 3.0% |
| Commercial & Industrial | $33,309,672 | 4.0% | $54,800,384 | 6.5% |
| **TOTAL** | **$48,660,493** | **3.3%** | **$80,056,269** | **5.4%** |

IV.I. Statewide Electric Cost Recovery

1. Lost Base Revenue

| Calculation of Lost Base Revenue, 2012(1) | | | | |
|---|---|---|---|---|
| **Program** | **2012 Monthly as Installed Savings (kWh)(6)** | **Total Savings (kWh)** | **LBR Rate (¢/kWh) (5)** | **Lost Base Revenue ($)** |
| Residential (total) | 38,879,353 | 38,879,353 | 0.04639 | 1,803,613 |
| Low-Income (total) | 3,818,232 | 3,818,232 | 0.00458 | 17,488 |
| Commercial & Industrial (total) | 86,581,083 | 86,581,083 | 0.03200 | 2,770,595 |
| **GRAND TOTAL** | **129,278,668** | **129,278,668** | | **$4,591,695** |

| Calculation of Lost Base Revenue, 2013(2) | | | | | |
|---|---|---|---|---|---|
| **Program** | **2012 Full Year Savings (kWh)** | **2013 Monthly as Installed Savings (kWh)(6)** | **Total Savings (kWh)** | **LBR Rate (¢/kWh) (5)** | **Lost Base Revenue ($)** |
| Residential (total) | 73,430,000 | 53,792,547 | 127,222,547 | 0.04639 | $5,901,854 |
| Low-Income (total) | 13,325,000 | 2,796,849 | 16,121,849 | 0.00458 | $73,838 |
| Commercial & Industrial (total) | 377,394,000 | 87,389,920 | 464,783,920 | 0.03200 | $14,873,085 |
| **GRAND TOTAL** | **464,149,000** | **143,979,316** | **608,128,316** | | **$20,848,777** |

| Calculation of Lost Base Revenue, 2014(3) | | | | | | |
|---|---|---|---|---|---|---|
| **Program** | **2012 Full Year Savings (kWh)** | **2013 Full Year Savings (kWh)** | **2014 Monthly as Installed Savings (kWh)(6)** | **Total Savings (kWh)** | **LBR Rate (¢/kWh) (5)** | **Lost Base Revenue ($)** |
| Residential (total) | 73,430,000 | 101,596,000 | 57,924,066 | 232,950,066 | 0.04639 | $10,806,554 |
| Low-Income (total) | 13,325,000 | 9,760,541 | 2,661,815 | 25,747,356 | 0.00458 | $117,923 |
| Commercial & Industrial (total) | 377,394,000 | 380,919,600 | 88,235,418 | 846,549,018 | 0.03200 | $27,089,569 |
| **GRAND TOTAL** | **464,149,000** | **492,276,141** | **148,821,299** | **1,105,246,440** | | **$38,014,045** |

| Calculation of Lost Base Revenue, 2015(4) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Program** | **2012 Full Year Savings (kWh)** | **2013 Full Year Savings (kWh)** | **2014 Full Year Savings (kWh)** | **2015 Monthly as Installed Savings (kWh)(6)** | **Total Savings (kWh)** | **LBR Rate (¢/kWh) (5)** | **Lost Base Revenue ($)** |
| Residential (total) | 73,430,000 | 101,596,000 | 109,399,047 | 59,830,015 | 344,255,063 | 0.04639 | $15,969,992 |
| Low-Income (total) | 13,325,000 | 9,760,541 | 9,289,293 | 2,542,099 | 34,916,933 | 0.00458 | $159,920 |
| Commercial & Industrial (total) | 377,394,000 | 380,919,600 | 384,605,000 | 89,504,468 | 1,232,423,068 | 0.03200 | $39,437,538 |
| **GRAND TOTAL** | **464,149,000** | **492,276,141** | **503,293,341** | **151,876,582** | **1,611,595,064** | | **$55,567,450** |

**Notes:**
(1) 2012 LBR is collected in the 2013 EERF rates effective July 1, 2013 to June 30, 2014.
(2) 2013 LBR is collected in the 2014 EERF rates effective July 1, 2014 to June 30, 2015.
(3) 2014 LBR is collected in the 2015 EERF rates effective July 1, 2015 to June 30, 2016.
(4) 2015 LBR is collected in the 2015 EERF rates effective July 1, 2016 to June 30, 2017.
(5) Estimated rates per 2011 actuals filed in D.P.U. 12-34 Exhibit NSTAR-HCL-1.
(6) Annual savings have been annualized based on 2011 preliminary savings data.

## IV.I. Statewide Cost Recovery

2. Energy Efficiency Reconciliation Factor

| Calculation of the Energy Efficiency Reconciliation Factor, 2013 | | | |
|---|---|---|---|
| **Sector** | **EERF Revenue Requirement (1)** | **Annual kWh** | **EERF ($/kWh)** |
| Residential | $146,393,244 | 15,499,038,965 | 0.00945 |
| Low-Income | $3,152,059 | 2,156,439,693 | 0.00146 |
| Commercial & Industrial | $133,780,937 | 30,051,105,740 | 0.00445 |
| **TOTAL** | $283,326,240 | 47,706,584,398 | 0.00594 |

| Calculation of the Energy Efficiency Reconciliation Factor, 2014 | | | |
|---|---|---|---|
| **Sector** | **EERF Revenue Requirement (1)** | **Annual kWh** | **EERF ($/kWh)** |
| Residential | $136,339,864 | 15,551,704,579 | 0.00877 |
| Low-Income | $2,205,650 | 2,256,657,061 | 0.00098 |
| Commercial & Industrial | $235,094,445 | 30,598,142,543 | 0.00768 |
| **TOTAL** | $373,639,959 | 48,406,504,183 | 0.00772 |

| Calculation of the Energy Efficiency Reconciliation Factor, 2015 | | | |
|---|---|---|---|
| **Sector** | **EERF Revenue Requirement (1)** | **Annual kWh** | **EERF ($/kWh)** |
| Residential | $148,805,998 | 15,576,739,258 | 0.00955 |
| Low-Income | $2,338,050 | 2,366,345,264 | 0.00099 |
| Commercial & Industrial | $257,190,875 | 30,966,145,474 | 0.00831 |
| **TOTAL** | $408,334,922 | 48,909,229,996 | 0.00835 |

**Notes:**
(1) See Table IV.B.3.6. EERF Funding
(2) See Table IV.B.3.1. Systems Benefit Charge Funds, kWh Sales
(3) EERF = EERF Revenue Requirement / Annual kWh

## V.B. Statewide Elec Allocation of Funds

1. Low Income Minimum

| Electric Minimum Allocation to Low Income for 2013 | | | | |
|---|---|---|---|---|
| **Sector** | **SBC Collections** | **% of Total SBC Collections** | **Budget** | **% of Total Budget** |
| Residential | $38,747,597 | 32.5% | $153,238,206 | 31.8% |
| Low-Income (1) | $5,391,099 | 4.5% | $54,136,213 | 11.2% |
| Commercial & Industrial | $75,127,764 | 63.0% | $273,941,506 | 56.9% |
| **TOTAL** | **$119,266,461** | **100.0%** | **$481,315,926** | **100.0%** |

| Electric Minimum Allocation to Low Income for 2014 | | | | |
|---|---|---|---|---|
| **Sector** | **SBC Collections** | **% of Total SBC Collections** | **Budget** | **% of Total Budget** |
| Residential | $38,879,261 | 32.1% | $162,494,057 | 32.8% |
| Low-Income (1) | $5,641,643 | 4.7% | $54,923,052 | 11.1% |
| Commercial & Industrial | $76,495,356 | 63.2% | $278,240,071 | 56.1% |
| **TOTAL** | **$121,016,260** | **100.0%** | **$495,657,181** | **100.0%** |

| Electric Minimum Allocation to Low Income for 2015 | | | | |
|---|---|---|---|---|
| **Sector** | **SBC Collections** | **% of Total SBC Collections** | **Budget** | **% of Total Budget** |
| Residential | $38,941,848 | 31.8% | $170,956,663 | 33.0% |
| Low-Income (1) | $5,915,863 | 4.8% | $56,912,443 | 11.0% |
| Commercial & Industrial | $77,415,364 | 63.3% | $290,856,118 | 56.1% |
| **TOTAL** | **$122,273,075** | **100.0%** | **$518,725,224** | **100.0%** |

| Electric Minimum Allocation to Low Income for 2013-2015 | | | | |
|---|---|---|---|---|
| **Sector** | **SBC Collections** | **% of Total SBC Collections** | **Budget** | **% of Total Budget** |
| Residential | $116,568,707 | 32.2% | $486,688,926 | 32.5% |
| Low-Income (1) | $16,948,605 | 4.7% | $165,971,708 | 11.1% |
| Commercial & Industrial | $229,038,484 | 63.2% | $843,037,696 | 56.4% |
| **TOTAL** | **$362,555,796** | **100.0%** | **$1,495,698,331** | **100.0%** |

**Notes:**
(1)"% of Total Budget" for the Low Income sector needs to be at least 10%, or the percentage that is collected from Low Income customers through the SBC.

VII. Statewide Electric Appendix

B.2. Master EE Activities

**Electric PA's EE Activities**

| Year | Sector | Benefits ($) | | | | | | TRC Costs ($) | | | TRC B/C Ratio | Net Benefits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Capacity | Energy | DRIPE (Capacity & Energy) | Non-Elec. Resource | Non-Resource | Total Benefits | PA | Customer | TOTAL | | |
| | Residential | $61,360,534 | $197,889,933 | $64,519,287 | $192,444,437 | $178,581,990 | $630,276,894 | $160,034,539 | $41,990,963 | $202,025,502 | 3.12 | $428,278,062 |
| | Low-Income | $8,526,393 | $27,607,625 | $8,773,115 | $40,226,955 | $43,288,896 | $119,649,869 | $56,072,915 | $1,482,389 | $57,555,304 | 2.08 | $62,101,714 |
| | Commercial & | $401,620,182 | $1,190,976,021 | $374,839,130 | -$126,665,704 | $143,567,419 | $1,609,497,918 | $291,032,453 | $123,566,589 | $414,599,042 | 3.88 | $1,194,880,282 |
| **2013** | **Total** | **$471,507,109** | **$1,416,473,579** | **$448,131,532** | **$106,005,688** | **$365,438,305** | **$2,359,424,681** | **$507,139,907** | **$167,039,941** | **$674,179,848** | **3.50** | **$1,685,260,057** |
| | Residential | $66,504,565 | $223,657,574 | $82,355,455 | $204,908,946 | $191,491,444 | $686,562,530 | $164,668,192 | $49,519,420 | $214,187,612 | 3.21 | $472,396,861 |
| | Low-Income | $8,945,618 | $29,645,576 | $10,759,634 | $40,249,968 | $43,374,514 | $122,215,676 | $54,916,122 | $1,773,115 | $56,689,237 | 2.16 | $65,534,479 |
| | Commercial & | $429,729,667 | $1,299,816,509 | $458,151,324 | -$112,194,346 | $184,556,843 | $1,801,908,673 | $289,136,180 | $133,219,591 | $422,355,771 | 4.27 | $1,379,530,008 |
| **2014** | **Total** | **$505,179,850** | **$1,553,119,660** | **$551,266,413** | **$132,964,568** | **$419,422,802** | **$2,610,686,879** | **$508,720,494** | **$184,512,126** | **$693,232,620** | **3.77** | **$1,917,461,349** |
| | Residential | $64,800,351 | $223,388,900 | $73,362,925 | $219,879,517 | $204,327,727 | $712,396,495 | $168,654,722 | $49,416,265 | $218,070,988 | 3.27 | $494,348,179 |
| | Low-Income | $9,527,677 | $28,271,547 | $9,370,368 | $42,065,688 | $43,419,762 | $123,284,674 | $55,413,893 | $1,652,612 | $57,066,506 | 2.16 | $66,224,440 |
| | Commercial & | $455,096,186 | $1,342,211,840 | $418,361,188 | -$128,681,024 | $163,625,642 | $1,832,252,644 | $294,007,830 | $134,764,233 | $428,772,063 | 4.27 | $1,403,454,064 |
| **2015** | **Total** | **$529,424,215** | **$1,593,872,287** | **$501,094,481** | **$133,264,181** | **$411,373,130** | **$2,667,933,813** | **$518,076,446** | **$185,833,111** | **$703,909,557** | **3.79** | **$1,964,026,683** |
| | Residential | $192,665,450 | $644,936,407 | $220,237,667 | $617,232,900 | $574,401,161 | $2,029,235,918 | $493,357,453 | $140,926,649 | $634,284,102 | 3.20 | $1,395,023,102 |
| | Low-Income | $26,999,689 | $85,524,749 | $28,903,116 | $122,542,611 | $130,083,172 | $365,150,220 | $166,402,931 | $4,908,116 | $171,311,047 | 2.13 | $193,860,633 |
| | Commercial & | $1,286,446,035 | $3,833,004,370 | $1,251,351,642 | -$367,541,074 | $491,749,904 | $5,243,659,235 | $874,176,463 | $391,550,413 | $1,265,726,876 | 4.14 | $3,977,864,354 |
| **GRAND TOTAL** | | **$1,506,111,174** | **$4,563,465,526** | **$1,500,492,425** | **$372,234,436** | **$1,196,234,237** | **$7,638,045,373** | **$1,533,936,847** | **$537,385,178** | **$2,071,322,025** | **3.69** | **$5,566,748,089** |

**Notes:**

(1) Benefits and TRC Costs for all three years are represented in 2013 $

(2) GHG for information purposes only; it is not included in TRC test

VII. Statewide Electr
B.2. Master EE Acti

**Electric PA's EE Activities**

| Year | Savings | | | | | | | | Avg Measure Life (yrs.) | TR Summer Demand Cost ($/Lifetime kW) | TR Energy Cost ($/Lifetime-mWh saved) | GHG Reductions (Short Tons) (2) | | | | Participants |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Capacity (kW) | | Energy (mWh) | | Gas (Therms) | | Other Fuels (MMBTU) | | | | | Nox | SO2 | GHG (MA BASED) | GHG (Regional Based) | |
| | Annual (Summer) | Lifetime | Annual | Lifetime | Annual | Lifetime | Annual | Lifetime | | | | | | | | |
| | 42,996 | 275,797 | 329,216 | 1,890,890 | 53,679 | 366,628 | 352,434 | 2,084,033 | 5.7 | $733 | $107 | 488 | 1,382 | 1,084,530 | 977,672 | 2,165,453 |
| | 3,321 | 36,163 | 28,782 | 264,621 | 63,227 | 612,950 | 76,589 | 691,048 | 9.2 | $1,592 | $218 | 68 | 193 | 187,233 | 173,203 | 27,879 |
| | 127,046 | 1,623,262 | 836,559 | 10,989,232 | -8,153,720 | -112,042,374 | 5,996 | 72,885 | 13.1 | $255 | $38 | 2,835 | 8,033 | 4,741,343 | 4,115,073 | 13,900 |
| **2013** | 173,363 | 1,935,221 | 1,194,556 | 13,144,743 | **(10,093,068)** | -111,062,796 | 435,019 | 2,847,966 | **11.0** | **$348** | **$51** | **3,391** | **9,609** | **6,013,106** | **5,265,949** | **2,207,232** |
| | 45,617 | 282,402 | 364,244 | 1,948,146 | 74,146 | 493,748 | 372,134 | 2,109,340 | 5.3 | $758 | $110 | 503 | 1,424 | 1,114,254 | 1,004,382 | 2,259,817 |
| | 3,242 | 35,228 | 27,756 | 259,958 | 56,796 | 551,192 | 76,426 | 704,672 | 9.4 | $1,609 | $218 | 67 | 190 | 185,558 | 171,752 | 27,488 |
| | 128,866 | 1,645,078 | 844,268 | 11,056,228 | -7,181,853 | -96,739,405 | 6,201 | 75,543 | 13.1 | $257 | $38 | 2,853 | 8,082 | 4,863,828 | 4,233,741 | 16,355 |
| **2014** | 177,725 | 1,962,708 | 1,236,268 | 13,264,331 | **(8,918,954)** | -95,694,465 | 454,760 | 2,889,554 | **10.7** | **$353** | **$52** | **3,422** | **9,696** | **6,163,640** | **5,409,875** | **2,303,660** |
| | 47,375 | 269,377 | 380,343 | 1,984,491 | 84,274 | 563,531 | 395,553 | 2,227,369 | 5.2 | $810 | $110 | 512 | 1,451 | 1,141,036 | 1,029,037 | 2,306,349 |
| | 3,241 | 36,051 | 26,795 | 254,194 | 48,807 | 480,579 | 79,699 | 744,500 | 9.5 | $1,583 | $224 | 66 | 186 | 185,346 | 171,899 | 27,106 |
| | 129,015 | 1,686,061 | 867,405 | 11,623,911 | -7,990,126 | -111,761,674 | 6,486 | 79,884 | 13.4 | $254 | $37 | 2,999 | 8,497 | 5,054,866 | 4,392,427 | 16,590 |
| **2015** | 179,631 | 1,991,489 | 1,274,544 | 13,862,596 | **(10,179,505)** | -110,717,564 | 481,738 | 3,051,753 | **10.9** | **$353** | **$51** | **3,577** | **10,134** | **6,381,248** | **5,593,364** | **2,350,045** |
| | 135,989 | 827,576 | 1,073,804 | 5,823,526 | 212,099 | 1,423,907 | 1,120,120 | 6,420,741 | 5.4 | $766 | $109 | 1,502 | 4,257 | 3,339,821 | 3,011,092 | 6,731,619 |
| | 9,804 | 107,441 | 83,332 | 778,773 | 168,829 | 1,644,721 | 232,714 | 2,140,220 | 9.3 | $1,594 | $220 | 201 | 569 | 558,137 | 516,854 | 82,473 |
| | 384,927 | 4,954,401 | 2,548,232 | 33,669,371 | (23,325,700) | -320,543,453 | 18,683 | 228,312 | 13.2 | $255 | $38 | 8,687 | 24,612 | 14,660,037 | 12,741,241 | 46,845 |
| **GRAND TOTAL** | 530,719 | 5,889,418 | 3,705,368 | 40,271,670 | **(22,944,772)** | -317,474,825 | **1,371,517** | 8,789,273 | **10.9** | **$352** | **$51** | **10,390** | **29,439** | **18,557,994** | **16,269,188** | **6,860,937** |

IV.C. Gas PA Budgets
1. Summary Table

**Program Administrator Budget, 2013**

| Program | PA Costs (1) | | | | | | Lost Base Revenue (3) | Performance Incentive (2) | TOTAL PA Budget |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | $ 4,186,964 | $ 4,284,177 | $ 57,990,210 | $ 14,767,677 | $ 3,543,929 | $ 84,772,958 | $ 2,192,417 | $ 2,103,176 | $ 89,068,551 |
| **1. Residential Whole House** | $ 2,354,491 | $ 1,444,166 | $ 37,775,161 | $ 12,523,264 | $ 2,359,334 | $ 56,456,415 | $ - | $ 1,235,991 | $ 57,692,406 |
| **2. Residential Products** | $ 1,001,762 | $ 1,945,855 | $ 19,110,340 | $ 1,936,168 | $ 1,068,255 | $ 25,062,380 | $ - | $ 867,185 | $ 25,929,565 |
| **3. Residential Hard-to-Measure** | $ 830,711 | $ 894,156 | $ 1,104,709 | $ 308,246 | $ 116,341 | $ 3,254,163 | $ - | $ - | $ 3,254,163 |
| Residential Statewide Marketing | $ 12,607 | $ 584,785 | $ - | $ - | $ 8,520 | $ 605,912 | $ - | $ - | $ 605,912 |
| Residential DOER Assessment | $ 366,652 | $ - | $ - | $ - | $ 86,616 | $ 453,268 | $ - | $ - | $ 453,268 |
| Residential EEAC Consultants | $ 261,282 | $ - | $ - | $ - | $ - | $ 261,282 | $ - | $ - | $ 261,282 |
| Residential Sponsorships & Subscriptions | $ 124,130 | $ - | $ - | $ - | $ - | $ 124,130 | $ - | $ - | $ 124,130 |
| Residential Workforce Development | $ 14,441 | $ 1,804 | $ - | $ 185,317 | $ 1,609 | $ 203,171 | $ - | $ - | $ 203,171 |
| Residential Education | $ 1,156 | $ 258,212 | $ - | $ 15,000 | $ 710 | $ 275,077 | $ - | $ - | $ 275,077 |
| Residential HEAT Loan | $ 4,350 | $ 3,141 | $ 971,209 | $ 2,176 | $ 3,091 | $ 983,967 | $ - | $ - | $ 983,967 |
| Residential R&D and Demonstration | $ 46,095 | $ 46,215 | $ 133,500 | $ 105,753 | $ 15,794 | $ 347,357 | $ - | $ - | $ 347,357 |
| **Low-Income (total)** | $ 2,141,761 | $ 1,091,048 | $ 23,801,877 | $ 5,954,338 | $ 1,420,344 | $ 34,409,368 | $ 19,611 | $ 730,741 | $ 35,159,720 |
| **4. Low-Income Whole House** | $ 1,382,945 | $ 915,398 | $ 23,801,877 | $ 5,943,365 | $ 1,384,474 | $ 33,428,059 | $ - | $ 730,741 | $ 34,158,800 |
| **5. Low-Income Hard-to-Measure** | $ 758,816 | $ 175,650 | $ - | $ 10,973 | $ 35,870 | $ 981,309 | $ - | $ - | $ 981,309 |
| Low-Income Statewide Marketing & Education | $ 2,680 | $ 175,650 | $ - | $ - | $ 1,445 | $ 179,776 | $ - | $ - | $ 179,776 |
| Low-Income DOER Assessment | $ 159,305 | $ - | $ - | $ - | $ 34,425 | $ 193,730 | $ - | $ - | $ 193,730 |
| Low-Income Energy Affordability Network | $ 596,831 | $ - | $ - | $ 10,973 | $ - | $ 607,803 | $ - | $ - | $ 607,803 |
| **Commercial & Industrial (total)** | $ 2,424,177 | $ 2,517,420 | $ 36,181,594 | $ 6,053,129 | $ 2,071,154 | $ 49,247,475 | $ 1,903,023 | $ 2,201,869 | $ 53,352,367 |
| **6. C&I New Construction** | $ 790,544 | $ 942,076 | $ 13,280,523 | $ 1,716,280 | $ 719,245 | $ 17,448,667 | $ - | $ 871,479 | $ 18,320,146 |
| **7. C&I Retrofit** | $ 1,253,179 | $ 1,074,078 | $ 22,901,071 | $ 4,297,739 | $ 1,293,488 | $ 30,819,555 | $ - | $ 1,330,389 | $ 32,149,945 |
| **8. C&I Hard-to-Measure** | $ 380,455 | $ 501,267 | $ - | $ 39,110 | $ 58,420 | $ 979,253 | $ - | $ - | $ 979,253 |
| C&I Statewide Marketing & Education | $ 13,434 | $ 499,934 | $ - | $ - | $ 5,124 | $ 518,492 | $ - | $ - | $ 518,492 |
| C&I DOER Assessment | $ 192,944 | $ - | $ - | $ - | $ 51,857 | $ 244,801 | $ - | $ - | $ 244,801 |
| C&I EEAC Consultants | $ 111,132 | $ - | $ - | $ - | $ - | $ 111,132 | $ - | $ - | $ 111,132 |
| C&I Sponsorships & Subscriptions | $ 56,416 | $ - | $ - | $ - | $ - | $ 56,416 | $ - | $ - | $ 56,416 |
| C&I Workforce Development | $ 6,530 | $ 1,333 | $ - | $ 39,110 | $ 1,439 | $ 48,412 | $ - | $ - | $ 48,412 |
| **GRAND TOTAL** | $ 8,752,903 | $ 7,892,645 | $ 117,973,681 | $ 26,775,144 | $ 7,035,427 | $ 168,429,800 | $ 4,115,052 | $ 5,035,786 | $ 177,580,638 |

**Program Administrator Budget, 2014**

| Program | PA Costs (1) | | | | | | Lost Base Revenue (3) | Performance Incentive (2) | TOTAL PA Budget |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | $ 4,297,863 | $ 4,612,570 | $ 59,287,082 | $ 15,083,060 | $ 3,593,762 | $ 86,874,337 | $ 2,646,558 | $ 2,235,024 | $ 91,755,918 |
| **1. Residential Whole House** | $ 2,417,192 | $ 1,607,919 | $ 38,771,296 | $ 12,764,109 | $ 2,400,723 | $ 57,961,238 | $ - | $ 1,319,969 | $ 59,281,207 |
| **2. Residential Products** | $ 1,030,984 | $ 2,095,188 | $ 19,384,415 | $ 2,006,068 | $ 1,075,155 | $ 25,591,811 | $ - | $ 915,055 | $ 26,506,866 |
| **3. Residential Hard-to-Measure** | $ 849,687 | $ 909,463 | $ 1,131,371 | $ 312,883 | $ 117,884 | $ 3,321,288 | $ - | $ - | $ 3,321,288 |
| Residential Statewide Marketing | $ 14,240 | $ 585,035 | $ - | $ - | $ 8,894 | $ 608,168 | $ - | $ - | $ 608,168 |
| Residential DOER Assessment | $ 371,637 | $ - | $ - | $ - | $ 87,340 | $ 458,977 | $ - | $ - | $ 458,977 |
| Residential EEAC Consultants | $ 267,397 | $ - | $ - | $ - | $ - | $ 267,397 | $ - | $ - | $ 267,397 |
| Residential Sponsorships & Subscriptions | $ 128,361 | $ - | $ - | $ - | $ - | $ 128,361 | $ - | $ - | $ 128,361 |
| Residential Workforce Development | $ 14,711 | $ 1,777 | $ - | $ 186,625 | $ 1,531 | $ 204,643 | $ - | $ - | $ 204,643 |
| Residential Education | $ 1,178 | $ 271,075 | $ - | $ 15,000 | $ 674 | $ 287,926 | $ - | $ - | $ 287,926 |
| Residential HEAT Loan | $ 4,710 | $ 3,218 | $ 991,196 | $ 2,220 | $ 3,080 | $ 1,004,424 | $ - | $ - | $ 1,004,424 |
| Residential R&D and Demonstration | $ 47,454 | $ 48,360 | $ 140,175 | $ 109,038 | $ 16,366 | $ 361,393 | $ - | $ - | $ 361,393 |
| **Low-Income (total)** | $ 2,212,536 | $ 1,575,034 | $ 24,559,473 | $ 6,101,245 | $ 1,480,508 | $ 35,928,797 | $ 21,547 | $ 803,562 | $ 36,753,905 |
| **4. Low-Income Whole House** | $ 1,422,891 | $ 1,403,852 | $ 24,559,473 | $ 6,090,273 | $ 1,444,980 | $ 34,921,470 | $ - | $ 803,562 | $ 35,725,032 |
| **5. Low-Income Hard-to-Measure** | $ 789,645 | $ 171,182 | $ - | $ 10,973 | $ 35,528 | $ 1,007,327 | $ - | $ - | $ 1,007,327 |
| Low-Income Statewide Marketing & Education | $ 2,727 | $ 171,182 | $ - | $ - | $ 1,582 | $ 175,490 | $ - | $ - | $ 175,490 |
| Low-Income DOER Assessment | $ 163,077 | $ - | $ - | $ - | $ 33,946 | $ 197,023 | $ - | $ - | $ 197,023 |
| Low-Income Energy Affordability Network | $ 623,841 | $ - | $ - | $ 10,973 | $ - | $ 634,814 | $ - | $ - | $ 634,814 |
| **Commercial & Industrial (total)** | $ 2,479,529 | $ 2,505,607 | $ 38,369,882 | $ 6,232,297 | $ 2,172,943 | $ 51,760,258 | $ 2,442,165 | $ 2,383,890 | $ 56,586,314 |
| **6. C&I New Construction** | $ 804,123 | $ 941,387 | $ 15,139,664 | $ 1,801,108 | $ 778,995 | $ 19,465,277 | $ - | $ 945,023 | $ 20,410,300 |
| **7. C&I Retrofit** | $ 1,289,667 | $ 1,076,380 | $ 23,230,218 | $ 4,388,503 | $ 1,335,235 | $ 31,320,003 | $ - | $ 1,438,867 | $ 32,758,870 |
| **8. C&I Hard-to-Measure** | $ 385,739 | $ 487,840 | $ - | $ 42,686 | $ 58,713 | $ 974,978 | $ - | $ - | $ 974,978 |
| C&I Statewide Marketing & Education | $ 14,539 | $ 486,513 | $ - | $ - | $ 5,622 | $ 506,674 | $ - | $ - | $ 506,674 |
| C&I DOER Assessment | $ 193,095 | $ - | $ - | $ - | $ 51,612 | $ 244,708 | $ - | $ - | $ 244,708 |
| C&I EEAC Consultants | $ 114,055 | $ - | $ - | $ - | $ - | $ 114,055 | $ - | $ - | $ 114,055 |
| C&I Sponsorships & Subscriptions | $ 57,600 | $ - | $ - | $ - | $ - | $ 57,600 | $ - | $ - | $ 57,600 |
| C&I Workforce Development | $ 6,450 | $ 1,327 | $ - | $ 42,686 | $ 1,478 | $ 51,941 | $ - | $ - | $ 51,941 |
| **GRAND TOTAL** | $ 8,989,928 | $ 8,693,211 | $ 122,216,437 | $ 27,416,602 | $ 7,247,214 | $ 174,563,392 | $ 5,110,270 | $ 5,422,476 | $ 185,096,137 |

**Program Administrator Budget, 2015**

| Program | PA Costs (1) | | | | | | Lost Base Revenue (3) | Performance Incentive (2) | TOTAL PA Budget |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | $ 4,430,667 | $ 4,966,214 | $ 60,372,476 | $ 15,314,751 | $ 3,674,400 | $ 88,758,509 | $ 3,011,883 | $ 2,188,668 | $ 93,959,060 |
| **1. Residential Whole House** | $ 2,496,872 | $ 1,775,562 | $ 39,658,983 | $ 12,914,404 | $ 2,453,828 | $ 59,299,649 | $ - | $ 1,334,472 | $ 60,634,121 |
| **2. Residential Products** | $ 1,064,668 | $ 2,269,317 | $ 19,554,963 | $ 2,082,224 | $ 1,100,481 | $ 26,071,653 | $ - | $ 854,196 | $ 26,925,849 |
| **3. Residential Hard-to-Measure** | $ 869,127 | $ 921,335 | $ 1,158,530 | $ 318,123 | $ 120,091 | $ 3,387,207 | $ - | $ - | $ 3,387,207 |
| Residential Statewide Marketing | $ 16,021 | $ 607,478 | $ - | $ - | $ 9,792 | $ 633,290 | $ - | $ - | $ 633,290 |
| Residential DOER Assessment | $ 376,194 | $ - | $ - | $ - | $ 87,861 | $ 464,055 | $ - | $ - | $ 464,055 |
| Residential EEAC Consultants | $ 274,257 | $ - | $ - | $ - | $ - | $ 274,257 | $ - | $ - | $ 274,257 |
| Residential Sponsorships & Subscriptions | $ 132,511 | $ - | $ - | $ - | $ - | $ 132,511 | $ - | $ - | $ 132,511 |
| Residential Workforce Development | $ 15,016 | $ 1,765 | $ - | $ 188,372 | $ 1,550 | $ 206,704 | $ - | $ - | $ 206,704 |
| Residential Education | $ 1,200 | $ 258,189 | $ - | $ 15,000 | $ 674 | $ 275,064 | $ - | $ - | $ 275,064 |
| Residential HEAT Loan | $ 5,068 | $ 3,295 | $ 1,011,346 | $ 2,267 | $ 3,237 | $ 1,025,214 | $ - | $ - | $ 1,025,214 |
| Residential R&D and Demonstration | $ 48,859 | $ 50,608 | $ 147,184 | $ 112,484 | $ 16,977 | $ 376,112 | $ - | $ - | $ 376,112 |
| **Low-Income (total)** | $ 2,302,594 | $ 2,100,431 | $ 25,375,585 | $ 6,510,895 | $ 1,554,956 | $ 37,844,460 | $ 23,482 | $ 801,808 | $ 38,669,751 |
| **4. Low-Income Whole House** | $ 1,474,950 | $ 1,924,474 | $ 25,375,585 | $ 6,499,923 | $ 1,519,674 | $ 36,794,606 | $ - | $ 801,808 | $ 37,596,415 |
| **5. Low-Income Hard-to-Measure** | $ 827,644 | $ 175,956 | $ - | $ 10,973 | $ 35,281 | $ 1,049,854 | $ - | $ - | $ 1,049,854 |
| Low-Income Statewide Marketing & Education | $ 2,796 | $ 175,956 | $ - | $ - | $ 1,732 | $ 180,485 | $ - | $ - | $ 180,485 |
| Low-Income DOER Assessment | $ 167,799 | $ - | $ - | $ - | $ 33,549 | $ 201,349 | $ - | $ - | $ 201,349 |
| Low-Income Energy Affordability Network | $ 657,049 | $ - | $ - | $ 10,973 | $ - | $ 668,021 | $ - | $ - | $ 668,021 |
| **Commercial & Industrial (total)** | $ 2,556,903 | $ 2,528,538 | $ 39,771,883 | $ 6,392,572 | $ 2,239,743 | $ 53,489,638 | $ 3,032,375 | $ 2,553,748 | $ 59,075,761 |
| **6. C&I New Construction** | $ 826,240 | $ 944,714 | $ 15,537,829 | $ 1,871,609 | $ 819,822 | $ 20,000,213 | $ - | $ 1,040,196 | $ 21,040,409 |
| **7. C&I Retrofit** | $ 1,337,797 | $ 1,081,395 | $ 24,234,053 | $ 4,477,000 | $ 1,360,738 | $ 32,490,983 | $ - | $ 1,513,552 | $ 34,004,536 |
| **8. C&I Hard-to-Measure** | $ 392,867 | $ 502,428 | $ - | $ 43,963 | $ 59,183 | $ 998,441 | $ - | $ - | $ 998,441 |
| C&I Statewide Marketing & Education | $ 15,704 | $ 501,096 | $ - | $ - | $ 6,169 | $ 522,970 | $ - | $ - | $ 522,970 |
| C&I DOER Assessment | $ 193,958 | $ - | $ - | $ - | $ 51,488 | $ 245,446 | $ - | $ - | $ 245,446 |
| C&I EEAC Consultants | $ 117,758 | $ - | $ - | $ - | $ - | $ 117,758 | $ - | $ - | $ 117,758 |
| C&I Sponsorships & Subscriptions | $ 59,029 | $ - | $ - | $ - | $ - | $ 59,029 | $ - | $ - | $ 59,029 |
| C&I Workforce Development | $ 6,417 | $ 1,332 | $ - | $ 43,963 | $ 1,527 | $ 53,238 | $ - | $ - | $ 53,238 |
| **GRAND TOTAL** | $ 9,290,163 | $ 9,595,183 | $ 125,519,944 | $ 28,218,218 | $ 7,469,099 | $ 180,092,607 | $ 6,067,740 | $ 5,544,225 | $ 191,704,572 |

**Program Administrator Budget, 2013-2015**

| Program | PA Costs (1) | | | | | | Lost Base Revenue (3) | Performance Incentive (2) | TOTAL PA Budget |
|---|---|---|---|---|---|---|---|---|---|
| | Program Planning and Administration | Marketing and Advertising | Participant Incentive | Sales, Technical Assistance & Training | Evaluation and Market Research | Total PA Costs | | | |
| **Residential (total)** | $ 12,915,494 | $ 13,862,961 | $ 177,649,767 | $ 45,165,489 | $ 10,812,092 | $ 260,405,804 | $ 7,850,857 | $ 6,526,868 | $ 274,783,529 |
| **1. Residential Whole House** | $ 7,268,554 | $ 4,827,646 | $ 116,205,440 | $ 38,201,776 | $ 7,213,885 | $ 173,717,302 | $ - | $ 3,890,432 | $ 177,607,734 |
| **2. Residential Products** | $ 3,097,414 | $ 6,310,360 | $ 58,049,718 | $ 6,024,460 | $ 3,243,891 | $ 76,725,844 | $ - | $ 2,636,435 | $ 79,362,279 |
| **3. Residential Hard-to-Measure** | $ 2,549,525 | $ 2,724,955 | $ 3,394,610 | $ 939,253 | $ 354,316 | $ 9,962,658 | $ - | $ - | $ 9,962,658 |
| Residential Statewide Marketing | $ 42,868 | $ 1,777,297 | $ - | $ - | $ 27,206 | $ 1,847,371 | $ - | $ - | $ 1,847,371 |
| Residential DOER Assessment | $ 1,114,483 | $ - | $ - | $ - | $ 261,817 | $ 1,376,300 | $ - | $ - | $ 1,376,300 |
| Residential EEAC Consultants | $ 802,936 | $ - | $ - | $ - | $ - | $ 802,936 | $ - | $ - | $ 802,936 |
| Residential Sponsorships & Subscriptions | $ 385,002 | $ - | $ - | $ - | $ - | $ 385,002 | $ - | $ - | $ 385,002 |
| Residential Workforce Development | $ 44,167 | $ 5,346 | $ - | $ 560,314 | $ 4,690 | $ 614,517 | $ - | $ - | $ 614,517 |
| Residential Education | $ 3,533 | $ 787,476 | $ - | $ 45,000 | $ 2,058 | $ 838,067 | $ - | $ - | $ 838,067 |
| Residential HEAT Loan | $ 14,128 | $ 9,653 | $ 2,973,751 | $ 6,663 | $ 9,409 | $ 3,013,604 | $ - | $ - | $ 3,013,604 |
| Residential Building Practices & Demonstration | $ 142,409 | $ 145,183 | $ 420,859 | $ 327,275 | $ 49,136 | $ 1,084,861 | $ - | $ - | $ 1,084,861 |
| **Low-Income (total)** | $ 6,656,891 | $ 4,766,512 | $ 73,736,936 | $ 18,566,478 | $ 4,455,808 | $ 108,182,625 | $ 64,640 | $ 2,336,112 | $ 110,583,376 |
| **4. Low-Income Whole House** | $ 4,280,786 | $ 4,243,724 | $ 73,736,936 | $ 18,533,560 | $ 4,349,128 | $ 105,144,135 | $ - | $ 2,336,112 | $ 107,480,247 |
| **5. Low-Income Hard-to-Measure** | $ 2,376,105 | $ 522,788 | $ - | $ 32,918 | $ 106,679 | $ 3,038,490 | $ - | $ - | $ 3,038,490 |
| Low-Income Statewide Marketing & Education | $ 8,203 | $ 522,788 | $ - | $ - | $ 4,759 | $ 535,750 | $ - | $ - | $ 535,750 |
| Low-Income DOER Assessment | $ 490,181 | $ - | $ - | $ - | $ 101,920 | $ 592,102 | $ - | $ - | $ 592,102 |
| Low-Income Energy Affordability Network | $ 1,877,720 | $ - | $ - | $ 32,918 | $ - | $ 1,910,638 | $ - | $ - | $ 1,910,638 |
| **Commercial & Industrial (total)** | $ 7,460,609 | $ 7,551,564 | $ 114,323,359 | $ 18,677,998 | $ 6,483,840 | $ 154,497,371 | $ 7,377,564 | $ 7,139,507 | $ 169,014,442 |
| **6. C&I New Construction** | $ 2,420,906 | $ 2,828,177 | $ 43,958,016 | $ 5,388,996 | $ 2,318,062 | $ 56,914,157 | $ - | $ 2,856,698 | $ 59,770,856 |
| **7. C&I Retrofit** | $ 3,880,643 | $ 3,231,853 | $ 70,365,343 | $ 13,163,242 | $ 3,989,462 | $ 94,630,542 | $ - | $ 4,282,809 | $ 98,913,351 |
| **8. C&I Hard-to-Measure** | $ 1,159,061 | $ 1,491,535 | $ - | $ 125,760 | $ 176,316 | $ 2,952,672 | $ - | $ - | $ 2,952,672 |
| C&I Statewide Marketing & Education | $ 43,677 | $ 1,487,544 | $ - | $ - | $ 16,915 | $ 1,548,136 | $ - | $ - | $ 1,548,136 |
| C&I DOER Assessment | $ 579,997 | $ - | $ - | $ - | $ 154,957 | $ 734,955 | $ - | $ - | $ 734,955 |
| C&I EEAC Consultants | $ 342,945 | $ - | $ - | $ - | $ - | $ 342,945 | $ - | $ - | $ 342,945 |
| C&I Sponsorships & Subscriptions | $ 173,045 | $ - | $ - | $ - | $ - | $ 173,045 | $ - | $ - | $ 173,045 |
| C&I Workforce Development | $ 19,396 | $ 3,991 | $ - | $ 125,760 | $ 4,444 | $ 153,591 | $ - | $ - | $ 153,591 |
| **GRAND TOTAL** | $ 27,032,994 | $ 26,181,038 | $ 365,710,062 | $ 82,409,965 | $ 21,751,740 | $ 523,085,799 | $ 15,293,061 | $ 16,002,487 | $ 554,381,347 |

**Notes**

(1) Where not otherwise indicated, budgets for each year are represented in nominal dollars (2013$, 2014$, 2015$)

(2) The Company has a revenue decoupling mechanism in place and does not estimate LBR

(3) Refer to common definitions for allocation of costs.

(4) The Total PA Budget is the sum of Total PA Costs, LBR and Performance Incentives

IV.B. Funding Sources

1. Summary Table

| Gas PA Funding Allocation, 2013 | | | | | |
|---|---|---|---|---|---|
| Sector | Rate Payer Funds ($) | | | Other | Total |
| | Program Budget (1) | Performance Incentives | LBR (2) | | |
| Residential | 84,772,958 | 2,103,176 | 2,192,417 | 0 | 89,068,551 |
| Low Income | 34,409,368 | 730,741 | 19,611 | 0 | 35,159,720 |
| Commercial & Industrial | 49,247,475 | 2,201,869 | 1,903,023 | 0 | 53,352,367 |
| **TOTAL** | **168,429,800** | **5,035,786** | **4,115,052** | **0** | **177,580,638** |

| Gas PA Funding Allocation, 2014 | | | | | |
|---|---|---|---|---|---|
| Sector | Rate Payer Funds ($) | | | Other | Total |
| | Program Budget (1) | Performance Incentives | LBR (2) | | |
| Residential | 86,874,337 | 2,235,024 | 2,646,558 | 0 | 91,755,918 |
| Low Income | 35,928,797 | 803,562 | 21,547 | 0 | 36,753,905 |
| Commercial & Industrial | 51,760,258 | 2,383,890 | 2,442,165 | 0 | 56,586,314 |
| **TOTAL** | **174,563,392** | **5,422,476** | **5,110,270** | **0** | **185,096,137** |

| Gas PA Funding Allocation, 2015 | | | | | |
|---|---|---|---|---|---|
| Sector | Rate Payer Funds ($) | | | Other | Total |
| | Program Budget (1) | Performance Incentives | LBR (2) | | |
| Residential | 88,758,509 | 2,188,668 | 3,011,883 | 0 | 93,959,060 |
| Low Income | 37,844,460 | 801,808 | 23,482 | 0 | 38,669,751 |
| Commercial & Industrial | 53,489,638 | 2,553,748 | 3,032,375 | 0 | 59,075,761 |
| **TOTAL** | **180,092,607** | **5,544,225** | **6,067,740** | **0** | **191,704,572** |

| Gas PA Funding Allocation, 2013-2015 | | | | | |
|---|---|---|---|---|---|
| Sector | Rate Payer Funds ($) | | | Other | Total |
| | Program Budget (1) | Performance Incentives | LBR (2) | | |
| Residential | 260,405,804 | 6,526,868 | 7,850,857 | 0 | 274,783,529 |
| Low Income | 108,182,625 | 2,336,112 | 64,640 | 0 | 110,583,376 |
| Commercial & Industrial | 154,497,371 | 7,139,507 | 7,377,564 | 0 | 169,014,442 |
| **TOTAL** | **523,085,799** | **16,002,487** | **15,293,061** | **0** | **554,381,347** |

**Notes:**

Customers are qualified to participate in low income programs if their annual income is at or below 60 percent of the state's median income or or up to 200 percent of the federal poverty level. Please note that low income as defined for the purposes of program participation is different than low income as defined for the purposes of funding collections.
(1) Where not otherwise indicated, budgets for each year are represented in nominal dollars (2013$, 2014$, 2015$)
(2) LBR may not be applicable to all companies

IV.D. Cost Effectiveness
1. Summary Table

| Total Resource Cost Test, 2013 | | | | |
|---|---|---|---|---|
| **Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs (1)** |
| **Residential (total)** | **1.53** | **$ 65,983,997** | **$ 190,646,393** | **$ 124,662,396** |
| **1. Residential Whole House** | **1.55** | **$ 39,973,631** | **$ 113,203,301** | **$ 73,229,669** |
| **2. Residential Products** | **1.61** | **$ 29,264,528** | **$ 77,443,092** | **$ 48,178,564** |
| **3. Residential Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 3,254,163** |
| Residential Statewide Marketing | - | n/a | $ - | $ 605,912 |
| Residential DOER Assessment | - | n/a | $ - | $ 453,268 |
| Residential EEAC Consultants | - | n/a | $ - | $ 261,282 |
| Residential Sponsorships & Subscriptions | - | n/a | $ - | $ 124,130 |
| Residential Workforce Development | - | n/a | $ - | $ 203,171 |
| Residential Education | - | n/a | $ - | $ 275,077 |
| Residential HEAT Loan | - | n/a | $ - | $ 983,967 |
| Residential R&D and Demonstration | - | n/a | $ - | $ 347,357 |
| **Low-Income (total)** | **1.65** | **$ 22,938,773** | **$ 58,078,882** | **$ 35,140,109** |
| **4. Low-Income Whole House** | **1.70** | **$ 23,920,081** | **$ 58,078,882** | **$ 34,158,800** |
| **5. Low-Income Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 981,309** |
| Low-Income Statewide Marketing & Educ | - | n/a | $ - | $ 179,776 |
| Low-Income DOER Assessment | - | n/a | $ - | $ 193,730 |
| Low-Income Energy Affordability Network | - | n/a | $ - | $ 607,803 |
| **Commercial & Industrial (total)** | **2.24** | **$ 92,777,904** | **$ 167,676,684** | **$ 74,898,780** |
| **6. C&I New Construction** | **2.48** | **$ 38,392,870** | **$ 64,274,500** | **$ 25,881,630** |
| **7. C&I Retrofit** | **2.15** | **$ 55,364,287** | **$ 103,402,184** | **$ 48,037,897** |
| **8. C&I Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 979,253** |
| C&I Statewide Marketing & Education | - | n/a | $ - | $ 518,492 |
| C&I DOER Assessment | - | n/a | $ - | $ 244,801 |
| C&I EEAC Consultants | - | n/a | $ - | $ 111,132 |
| C&I Sponsorships & Subscriptions | - | n/a | $ - | $ 56,416 |
| C&I Workforce Development | - | n/a | $ - | $ 48,412 |
| **GRAND TOTAL** | **1.77** | **$ 181,700,674** | **$ 416,401,958** | **$ 234,701,285** |

| Total Resource Cost Test, 2014 | | | | |
|---|---|---|---|---|
| **Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs (1)** |
| **Residential (total)** | **1.55** | **$ 69,002,914** | **$ 194,283,532** | **$ 125,280,619** |
| **1. Residential Whole House** | **1.56** | **$ 41,842,935** | **$ 116,088,126** | **$ 74,245,191** |
| **2. Residential Products** | **1.64** | **$ 30,391,806** | **$ 78,195,406** | **$ 47,803,600** |
| **3. Residential Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 3,231,828** |
| Residential Statewide Marketing | - | n/a | $ - | $ 591,880 |
| Residential DOER Assessment | - | n/a | $ - | $ 446,606 |
| Residential EEAC Consultants | - | n/a | $ - | $ 260,182 |
| Residential Sponsorships & Subscriptions | - | n/a | $ - | $ 124,890 |
| Residential Workforce Development | - | n/a | $ - | $ 199,216 |
| Residential Education | - | n/a | $ - | $ 280,138 |
| Residential HEAT Loan | - | n/a | $ - | $ 977,256 |
| Residential R&D and Demonstration | - | n/a | $ - | $ 351,661 |
| **Low-Income (total)** | **1.66** | **$ 23,446,945** | **$ 59,211,343** | **$ 35,764,398** |
| **4. Low-Income Whole House** | **1.70** | **$ 24,427,320** | **$ 59,211,343** | **$ 34,784,023** |
| **5. Low-Income Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 980,375** |
| Low-Income Statewide Marketing & Educ | - | n/a | $ - | $ 170,776 |
| Low-Income DOER Assessment | - | n/a | $ - | $ 191,710 |
| Low-Income Energy Affordability Network | - | n/a | $ - | $ 617,890 |
| **Commercial & Industrial (total)** | **2.28** | **$ 98,259,814** | **$ 175,072,864** | **$ 76,813,050** |
| **6. C&I New Construction** | **2.42** | **$ 39,950,689** | **$ 68,049,478** | **$ 28,098,788** |
| **7. C&I Retrofit** | **2.24** | **$ 59,258,255** | **$ 107,023,387** | **$ 47,765,132** |
| **8. C&I Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 949,130** |
| C&I Statewide Marketing & Education | - | n/a | $ - | $ 493,163 |
| C&I DOER Assessment | - | n/a | $ - | $ 238,170 |
| C&I EEAC Consultants | - | n/a | $ - | $ 111,004 |
| C&I Sponsorships & Subscriptions | - | n/a | $ - | $ 56,042 |
| C&I Workforce Development | - | n/a | $ - | $ 50,752 |
| **GRAND TOTAL** | **1.80** | **$ 190,709,672** | **$ 428,567,739** | **$ 237,858,067** |

| Total Resource Cost Test, 2015 | | | | |
|---|---|---|---|---|
| **Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs (1)** |
| **Residential (total)** | **1.57** | **$ 69,182,736** | **$ 191,047,468** | **$ 121,864,733** |
| **1. Residential Whole House** | **1.62** | **$ 44,446,122** | **$ 115,944,422** | **$ 71,498,299** |
| **2. Residential Products** | **1.59** | **$ 27,943,797** | **$ 75,103,047** | **$ 47,159,250** |
| **3. Residential Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 3,207,183** |
| Residential Statewide Marketing | - | n/a | $ - | $ 599,813 |
| Residential DOER Assessment | - | n/a | $ - | $ 439,375 |
| Residential EEAC Consultants | - | n/a | $ - | $ 259,657 |
| Residential Sponsorships & Subscriptions | - | n/a | $ - | $ 125,440 |
| Residential Workforce Development | - | n/a | $ - | $ 195,885 |
| Residential Education | - | n/a | $ - | $ 260,385 |
| Residential HEAT Loan | - | n/a | $ - | $ 970,504 |
| Residential R&D and Demonstration | - | n/a | $ - | $ 356,126 |
| **Low-Income (total)** | **1.66** | **$ 24,147,308** | **$ 60,783,199** | **$ 36,635,891** |
| **4. Low-Income Whole House** | **1.71** | **$ 25,141,747** | **$ 60,783,199** | **$ 35,641,452** |
| **5. Low-Income Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 994,439** |
| Low-Income Statewide Marketing & Educ | - | n/a | $ - | $ 170,917 |
| Low-Income DOER Assessment | - | n/a | $ - | $ 190,635 |
| Low-Income Energy Affordability Network | - | n/a | $ - | $ 632,887 |
| **Commercial & Industrial (total)** | **2.42** | **$ 109,747,452** | **$ 187,120,420** | **$ 77,372,968** |
| **6. C&I New Construction** | **2.63** | **$ 46,064,208** | **$ 74,261,019** | **$ 28,196,811** |
| **7. C&I Retrofit** | **2.34** | **$ 64,629,436** | **$ 112,859,402** | **$ 48,229,966** |
| **8. C&I Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 946,192** |
| C&I Statewide Marketing & Education | - | n/a | $ - | $ 495,443 |
| C&I DOER Assessment | - | n/a | $ - | $ 232,508 |
| C&I EEAC Consultants | - | n/a | $ - | $ 111,540 |
| C&I Sponsorships & Subscriptions | - | n/a | $ - | $ 55,879 |
| C&I Workforce Development | - | n/a | $ - | $ 50,821 |
| **GRAND TOTAL** | **1.86** | **$ 203,077,496** | **$ 438,951,088** | **$ 235,873,592** |

| Total Resource Cost Test, 2013-2015 | | | | |
|---|---|---|---|---|
| **Sector** | **B/C Ratio** | **Net Benefits** | **Benefits** | **Costs (1)** |
| **Residential (total)** | **1.55** | **$ 204,169,646** | **$ 575,977,393** | **$ 371,807,747** |
| **1. Residential Whole House** | **1.58** | **$ 126,262,689** | **$ 345,235,848** | **$ 218,973,159** |
| **2. Residential Products** | **1.61** | **$ 87,600,131** | **$ 230,741,545** | **$ 143,141,414** |
| **3. Residential Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 9,693,174** |
| Residential Statewide Marketing | - | n/a | $ - | $ 1,797,605 |
| Residential DOER Assessment | - | n/a | $ - | $ 1,339,249 |
| Residential EEAC Consultants | - | n/a | $ - | $ 781,120 |
| Residential Sponsorships & Subscriptions | - | n/a | $ - | $ 374,459 |
| Residential Workforce Development | - | n/a | $ - | $ 598,271 |
| Residential Education | - | n/a | $ - | $ 815,600 |
| Residential HEAT Loan | - | n/a | $ - | $ 2,931,727 |
| Residential R&D and Demonstration | - | n/a | $ - | $ 1,055,143 |
| **Low-Income (total)** | **1.66** | **$ 70,533,026** | **$ 178,073,424** | **$ 107,540,398** |
| **4. Low-Income Whole House** | **1.70** | **$ 73,489,149** | **$ 178,073,424** | **$ 104,584,275** |
| **5. Low-Income Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 2,956,123** |
| Low-Income Statewide Marketing & Educ | - | n/a | $ - | $ 521,468 |
| Low-Income DOER Assessment | - | n/a | $ - | $ 576,075 |
| Low-Income Energy Affordability Network | - | n/a | $ - | $ 1,858,581 |
| **Commercial & Industrial (total)** | **2.31** | **$ 300,785,170** | **$ 529,869,969** | **$ 229,084,798** |
| **6. C&I New Construction** | **2.51** | **$ 124,407,767** | **$ 206,584,996** | **$ 82,177,229** |
| **7. C&I Retrofit** | **2.24** | **$ 179,251,978** | **$ 323,284,972** | **$ 144,032,994** |
| **8. C&I Hard-to-Measure** | **-** | **n/a** | **$ -** | **$ 2,874,575** |
| C&I Statewide Marketing & Education | - | n/a | $ - | $ 1,507,098 |
| C&I DOER Assessment | - | n/a | $ - | $ 715,479 |
| C&I EEAC Consultants | - | n/a | $ - | $ 333,675 |
| C&I Sponsorships & Subscriptions | - | n/a | $ - | $ 168,337 |
| C&I Workforce Development | - | n/a | $ - | $ 149,985 |
| **GRAND TOTAL** | **1.81** | **$ 575,487,842** | **$ 1,283,920,785** | **$ 708,432,944** |

**Notes:**
(1) See Table IV.D.2.1

IV.D. PA Gas Cost Effectiveness
2.1. Cost Summary Table

| 2013 (In 2013 $) | | | | |
|---|---|---|---|---|
| **Programs** | **Program Costs (1)** | **Performance Incentive (2)** | **Participant Costs** | **Total Resource Costs (3)** |
| **Residential (total)** | **$84,772,958** | **$2,103,176** | **$37,786,262** | **$124,662,396** |
| **1. Residential Whole House** | **56,456,415** | **1,235,991** | **15,537,263** | **73,229,669** |
| **2. Residential Products** | **25,062,380** | **867,185** | **22,248,999** | **48,178,564** |
| **3. Residential Hard-to-Measure** | **3,254,163** | **0** | **0** | **3,254,163** |
| Residential Statewide Marketing | 605,912 | 0 | 0 | 605,912 |
| Residential DOER Assessment | 453,268 | 0 | 0 | 453,268 |
| Residential EEAC Consultants | 261,282 | 0 | 0 | 261,282 |
| Residential Sponsorship & Subscriptions | 124,130 | 0 | 0 | 124,130 |
| Residential Workforce Development | 203,171 | 0 | 0 | 203,171 |
| Residential Education | 275,077 | 0 | 0 | 275,077 |
| Residential HEAT Loan | 983,967 | 0 | 0 | 983,967 |
| Residential R&D and Demonstration | 347,357 | 0 | 0 | 347,357 |
| **Low-Income (total)** | **$34,409,368** | **$730,741** | **$0** | **$35,140,109** |
| **4. Low-Income Whole House** | **33,428,059** | **730,741** | **0** | **34,158,800** |
| **5. Low-Income Hard-to-Measure** | **981,309** | **0** | **0** | **981,309** |
| Low-Income Statewide Marketing & Education | 179,776 | 0 | 0 | 179,776 |
| Low-Income DOER Assessment | 193,730 | 0 | 0 | 193,730 |
| Low-Income Energy Affordability Network | 607,803 | 0 | 0 | 607,803 |
| **Commercial & Industrial (total)** | **$49,247,475** | **$2,201,869** | **$23,449,436** | **$74,898,780** |
| **6. C&I New Construction** | **17,448,667** | **871,479** | **7,561,484** | **25,881,630** |
| **7. C&I Retrofit** | **30,819,555** | **1,330,389** | **15,887,952** | **48,037,897** |
| **8. C&I Hard-to-Measure** | **979,253** | **0** | **0** | **979,253** |
| C&I Statewide Marketing & Education | 518,492 | 0 | 0 | 518,492 |
| C&I DOER Assessment | 244,801 | 0 | 0 | 244,801 |
| C&I EEAC Consultants | 111,132 | 0 | 0 | 111,132 |
| C&I Sponsorships & Subscriptions | 56,416 | 0 | 0 | 56,416 |
| C&I Workforce Development | 48,412 | 0 | 0 | 48,412 |
| **GRAND TOTAL** | $168,429,800 | $5,035,786 | $61,235,698 | $234,701,285 |

| 2014 (In 2013 $) | | | | |
|---|---|---|---|---|
| **Programs** | **Program Costs (1)** | **Performance Incentive (2)** | **Participant Costs** | **Total Resource Costs (3)** |
| **Residential (total)** | **$84,538,033** | **$2,203,676** | **$38,543,483** | **$125,285,191** |
| **1. Residential Whole House** | **56,401,115** | **1,302,789** | **16,543,476** | **74,247,380** |
| **2. Residential Products** | **24,904,995** | **900,887** | **22,000,007** | **47,805,889** |
| **3. Residential Hard-to-Measure** | **3,231,923** | **0** | **0** | **3,231,923** |
| Residential Statewide Marketing | 591,921 | 0 | 0 | 591,921 |
| Residential DOER Assessment | 446,617 | 0 | 0 | 446,617 |
| Residential EEAC Consultants | 260,187 | 0 | 0 | 260,187 |
| Residential Sponsorship & Subscriptions | 124,890 | 0 | 0 | 124,890 |
| Residential Workforce Development | 199,243 | 0 | 0 | 199,243 |
| Residential Education | 280,138 | 0 | 0 | 280,138 |
| Residential HEAT Loan | 977,256 | 0 | 0 | 977,256 |
| Residential R&D and Demonstration | 351,672 | 0 | 0 | 351,672 |
| **Low-Income (total)** | **$34,972,241** | **$795,275** | **$0** | **$35,767,516** |
| **4. Low-Income Whole House** | **33,991,791** | **795,275** | **0** | **34,787,066** |
| **5. Low-Income Hard-to-Measure** | **980,450** | **0** | **0** | **980,450** |
| Low-Income Statewide Marketing & Education | 170,784 | 0 | 0 | 170,784 |
| Low-Income DOER Assessment | 191,714 | 0 | 0 | 191,714 |
| Low-Income Energy Affordability Network | 617,952 | 0 | 0 | 617,952 |
| **Commercial & Industrial (total)** | **$50,377,554** | **$2,352,630** | **$24,089,407** | **$76,819,591** |
| **6. C&I New Construction** | **18,945,264** | **931,376** | **8,224,081** | **28,100,721** |
| **7. C&I Retrofit** | **30,483,026** | **1,421,255** | **15,865,326** | **47,769,606** |
| **8. C&I Hard-to-Measure** | **949,263** | **0** | **0** | **949,263** |
| C&I Statewide Marketing & Education | 493,213 | 0 | 0 | 493,213 |
| C&I DOER Assessment | 238,190 | 0 | 0 | 238,190 |
| C&I EEAC Consultants | 111,012 | 0 | 0 | 111,012 |
| C&I Sponsorships & Subscriptions | 56,042 | 0 | 0 | 56,042 |
| C&I Workforce Development | 50,806 | 0 | 0 | 50,806 |
| **GRAND TOTAL** | $169,887,828 | $5,351,581 | $62,632,889 | $237,872,298 |

| 2015 (In 2013 $) | | | | |
|---|---|---|---|---|
| **Programs** | **Program Costs (1)** | **Performance Incentive (2)** | **Participant Costs** | **Total Resource Costs (3)** |
| **Residential (total)** | **$84,050,324** | **$2,128,259** | **$35,696,018** | **$121,874,602** |
| **1. Residential Whole House** | **56,151,160** | **1,300,802** | **14,051,191** | **71,503,153** |
| **2. Residential Products** | **24,691,792** | **827,457** | **21,644,827** | **47,164,076** |
| **3. Residential Hard-to-Measure** | **3,207,372** | **0** | **0** | **3,207,372** |
| Residential Statewide Marketing | 599,894 | 0 | 0 | 599,894 |
| Residential DOER Assessment | 439,397 | 0 | 0 | 439,397 |
| Residential EEAC Consultants | 259,665 | 0 | 0 | 259,665 |
| Residential Sponsorship & Subscriptions | 125,440 | 0 | 0 | 125,440 |
| Residential Workforce Development | 195,939 | 0 | 0 | 195,939 |
| Residential Education | 260,385 | 0 | 0 | 260,385 |
| Residential HEAT Loan | 970,504 | 0 | 0 | 970,504 |
| Residential R&D and Demonstration | 356,147 | 0 | 0 | 356,147 |
| **Low-Income (total)** | **$35,857,327** | **$785,265** | **$0** | **$36,642,591** |
| **4. Low-Income Whole House** | **34,862,730** | **785,265** | **0** | **35,647,995** |
| **5. Low-Income Hard-to-Measure** | **994,596** | **0** | **0** | **994,596** |
| Low-Income Statewide Marketing & Education | 170,933 | 0 | 0 | 170,933 |
| Low-Income DOER Assessment | 190,643 | 0 | 0 | 190,643 |
| Low-Income Energy Affordability Network | 633,020 | 0 | 0 | 633,020 |
| **Commercial & Industrial (total)** | **$50,671,600** | **$2,489,167** | **$24,224,336** | **$77,385,104** |
| **6. C&I New Construction** | **18,946,774** | **1,012,808** | **8,241,011** | **28,200,593** |
| **7. C&I Retrofit** | **30,778,369** | **1,476,360** | **15,983,325** | **48,238,054** |
| **8. C&I Hard-to-Measure** | **946,457** | **0** | **0** | **946,457** |
| C&I Statewide Marketing & Education | 495,541 | 0 | 0 | 495,541 |
| C&I DOER Assessment | 232,550 | 0 | 0 | 232,550 |
| C&I EEAC Consultants | 111,557 | 0 | 0 | 111,557 |
| C&I Sponsorships & Subscriptions | 55,879 | 0 | 0 | 55,879 |
| C&I Workforce Development | 50,930 | 0 | 0 | 50,930 |
| **GRAND TOTAL** | $170,579,251 | $5,402,692 | $59,920,354 | $235,902,297 |

| 2013-2015 (In 2013 $) | | | | |
|---|---|---|---|---|
| **Programs** | **Program Costs (1)** | **Performance Incentive (2)** | **Participant Costs** | **Total Resource Costs (3)** |
| **Residential (total)** | **$253,361,315** | **$6,435,111** | **$112,025,763** | **$371,822,189** |
| **1. Residential Whole House** | **169,008,690** | **3,839,582** | **46,131,930** | **218,980,202** |
| **2. Residential Products** | **74,659,166** | **2,595,529** | **65,893,833** | **143,148,529** |
| **3. Residential Hard-to-Measure** | **9,693,458** | **0** | **0** | **9,693,458** |
| Residential Statewide Marketing | 1,797,727 | 0 | 0 | 1,797,727 |
| Residential DOER Assessment | 1,339,283 | 0 | 0 | 1,339,283 |
| Residential EEAC Consultants | 781,134 | 0 | 0 | 781,134 |
| Residential Sponsorship & Subscriptions | 374,459 | 0 | 0 | 374,459 |
| Residential Workforce Development | 598,353 | 0 | 0 | 598,353 |
| Residential Education | 815,600 | 0 | 0 | 815,600 |
| Residential HEAT Loan | 2,931,727 | 0 | 0 | 2,931,727 |
| Residential Building Practices & Demonstration | 1,055,176 | 0 | 0 | 1,055,176 |
| **Low-Income (total)** | **$105,238,935** | **$2,311,281** | **$0** | **$107,550,216** |
| **4. Low-Income Whole House** | **102,282,581** | **2,311,281** | **0** | **104,593,862** |
| **5. Low-Income Hard-to-Measure** | **2,956,355** | **0** | **0** | **2,956,355** |
| Low-Income Statewide Marketing & Education | 521,492 | 0 | 0 | 521,492 |
| Low-Income DOER Assessment | 576,087 | 0 | 0 | 576,087 |
| Low-Income Energy Affordability Network | 1,858,776 | 0 | 0 | 1,858,776 |
| **Commercial & Industrial (total)** | **$150,296,628** | **$7,043,667** | **$71,763,179** | **$229,103,474** |
| **6. C&I New Construction** | **55,340,704** | **2,815,663** | **24,026,576** | **82,182,943** |
| **7. C&I Retrofit** | **92,080,951** | **4,228,004** | **47,736,603** | **144,045,557** |
| **8. C&I Hard-to-Measure** | **2,874,973** | **0** | **0** | **2,874,973** |
| C&I Statewide Marketing & Education | 1,507,246 | 0 | 0 | 1,507,246 |
| C&I DOER Assessment | 715,541 | 0 | 0 | 715,541 |
| C&I EEAC Consultants | 333,701 | 0 | 0 | 333,701 |
| C&I Sponsorships & Subscriptions | 168,337 | 0 | 0 | 168,337 |
| C&I Workforce Development | 150,149 | 0 | 0 | 150,149 |
| **GRAND TOTAL** | $508,896,878 | $15,790,059 | $183,788,942 | $708,475,879 |

**Notes:**
(1) Program Costs include Program Planning and Administration, Marketing and Advertising, Program Incentive, Sales, Technical Assistance & Training, Evaluation and Market Research (See Table IV.C.1, Budget Summary).
(2) See Table IV.H for more information regarding Performance Incentives.
(3) This represents the total resource costs, which do not include LBR.

IV.D. Cost Effectiveness

3.1. Benefits Summary Table

**Gas Benefits, 2013 (Lifetime $)**

| Program | Gas | Electric | | | Non-Gas Non-Electric* | | | | | | | Non-Resource | TOTAL | TOTAL TRC Benefits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Resource | | | | | | | | | |
| | | Summer Capacity | Winter Capacity | Energy | No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$ 107,112,330** | **$ 2,688,663** | **$ -** | **$ 919,018** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 4,002,582** | **$ -** | **$ 75,923,800** | **$ 79,926,382** | **$ 190,646,393** |
| 1. Residential Whole House | $ 71,356,936 | $ 1,308,287 | $ - | $ 662,962 | $ - | $ - | $ - | $ - | $ - | $ 4,002,582 | $ - | $ 35,872,533 | $ 39,875,115 | $ 113,203,301 |
| 2. Residential Products | $ 35,755,393 | $ 1,380,376 | $ - | $ 256,056 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 40,051,267 | $ 40,051,267 | $ 77,443,092 |
| **Low-Income (total)** | **$ 25,641,567** | **$ 2,713,826** | **$ -** | **$ 1,473,826** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 521,393** | **$ -** | **$ 27,728,270** | **$ 28,249,663** | **$ 58,078,882** |
| 4. Low-Income Whole House | $ 25,641,567 | $ 2,713,826 | $ - | $ 1,473,826 | $ - | $ - | $ - | $ - | $ - | $ 521,393 | $ - | $ 27,728,270 | $ 28,249,663 | $ 58,078,882 |
| **Commercial & Industrial (total)** | **$ 139,611,700** | **$ 6,060** | **$ -** | **$ 114,374** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 6,746,510** | **$ -** | **$ 21,198,040** | **$ 27,944,550** | **$ 167,676,684** |
| 6. C&I New Construction | $ 63,698,830 | $ 5,473 | $ - | $ 112,168 | $ - | $ - | $ - | $ - | $ - | $ 451,273 | $ - | $ 6,756 | $ 458,029 | $ 64,274,500 |
| 7. C&I Retrofit | $ 75,912,870 | $ 587 | $ - | $ 2,206 | $ - | $ - | $ - | $ - | $ - | $ 6,295,237 | $ - | $ 21,191,284 | $ 27,486,521 | $ 103,402,184 |
| **GRAND TOTAL** | **$ 272,365,596** | **$ 5,408,549** | **$ -** | **$ 2,507,218** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 11,270,485** | **$ -** | **$ 124,850,110** | **$ 136,120,596** | **$ 416,401,958** |

**Gas Benefits, 2014 (Lifetime $)**

| Program | Gas | Electric | | | Non-Gas Non-Electric* | | | | | | | Non-Resource | TOTAL | TOTAL TRC Benefits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Resource | | | | | | | | | |
| | | Summer Capacity | Winter Capacity | Energy | No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$ 110,697,849** | **$ 2,635,234** | **$ -** | **$ 998,772** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 4,158,037** | **$ -** | **$ 75,793,640** | **$ 79,951,677** | **$ 194,283,532** |
| 1. Residential Whole House | $ 74,165,272 | $ 1,206,188 | $ - | $ 677,123 | $ - | $ - | $ - | $ - | $ - | $ 4,158,037 | $ - | $ 35,881,505 | $ 40,039,542 | $ 116,088,126 |
| 2. Residential Products | $ 36,532,577 | $ 1,429,046 | $ - | $ 321,649 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 39,912,135 | $ 39,912,135 | $ 78,195,406 |
| **Low-Income (total)** | **$ 26,760,163** | **$ 2,767,150** | **$ -** | **$ 1,190,586** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 521,455** | **$ -** | **$ 27,971,988** | **$ 28,493,443** | **$ 59,211,343** |
| 4. Low-Income Whole House | $ 26,760,163 | $ 2,767,150 | $ - | $ 1,190,586 | $ - | $ - | $ - | $ - | $ - | $ 521,455 | $ - | $ 27,971,988 | $ 28,493,443 | $ 59,211,343 |
| **Commercial & Industrial (total)** | **$ 146,895,381** | **$ 5,221** | **$ -** | **$ 117,106** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 6,880,489** | **$ -** | **$ 21,174,668** | **$ 28,055,156** | **$ 175,072,864** |
| 6. C&I New Construction | $ 67,465,027 | $ 4,618 | $ - | $ 114,607 | $ - | $ - | $ - | $ - | $ - | $ 457,454 | $ - | $ 7,773 | $ 465,227 | $ 68,049,478 |
| 7. C&I Retrofit | $ 79,430,354 | $ 603 | $ - | $ 2,499 | $ - | $ - | $ - | $ - | $ - | $ 6,423,035 | $ - | $ 21,166,895 | $ 27,589,930 | $ 107,023,387 |
| **GRAND TOTAL** | **$ 284,353,393** | **$ 5,407,606** | **$ -** | **$ 2,306,464** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 11,559,981** | **$ -** | **$ 124,940,296** | **$ 136,500,276** | **$ 428,567,739** |

**Gas Benefits, 2015 (Lifetime $)**

| Program | Gas | Electric | | | Non-Gas Non-Electric* | | | | | | | Non-Resource | TOTAL | TOTAL TRC Benefits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Resource | | | | | | | | | |
| | | Summer Capacity | Winter Capacity | Energy | No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$ 109,671,232** | **$ 2,533,721** | **$ -** | **$ 834,062** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 4,230,342** | **$ -** | **$ 73,778,111** | **$ 78,008,453** | **$ 191,047,468** |
| 1. Residential Whole House | $ 76,124,789 | $ 1,059,668 | $ - | $ 567,736 | $ - | $ - | $ - | $ - | $ - | $ 4,230,342 | $ - | $ 33,961,887 | $ 38,192,229 | $ 115,944,422 |
| 2. Residential Products | $ 33,546,444 | $ 1,474,053 | $ - | $ 266,326 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 39,816,224 | $ 39,816,224 | $ 75,103,047 |
| **Low-Income (total)** | **$ 27,985,601** | **$ 2,820,294** | **$ -** | **$ 1,129,188** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 521,523** | **$ -** | **$ 28,326,593** | **$ 28,848,116** | **$ 60,783,199** |
| 4. Low-Income Whole House | $ 27,985,601 | $ 2,820,294 | $ - | $ 1,129,188 | $ - | $ - | $ - | $ - | $ - | $ 521,523 | $ - | $ 28,326,593 | $ 28,848,116 | $ 60,783,199 |
| **Commercial & Industrial (total)** | **$ 158,680,180** | **$ 5,213** | **$ -** | **$ 119,857** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 6,872,789** | **$ -** | **$ 21,442,382** | **$ 28,315,170** | **$ 187,120,420** |
| 6. C&I New Construction | $ 73,680,215 | $ 4,593 | $ - | $ 117,508 | $ - | $ - | $ - | $ - | $ - | $ 449,940 | $ - | $ 8,762 | $ 458,702 | $ 74,261,019 |
| 7. C&I Retrofit | $ 84,999,965 | $ 620 | $ - | $ 2,349 | $ - | $ - | $ - | $ - | $ - | $ 6,422,849 | $ - | $ 21,433,619 | $ 27,856,468 | $ 112,859,402 |
| **GRAND TOTAL** | **$ 296,337,014** | **$ 5,359,228** | **$ -** | **$ 2,083,107** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 11,624,653** | **$ -** | **$ 123,547,086** | **$ 135,171,739** | **$ 438,951,088** |

**Gas Benefits, 2013-2015 (Lifetime $)**

| Program | Gas | Electric | | | Non-Gas Non-Electric* | | | | | | | Non-Resource | TOTAL | TOTAL TRC Benefits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Resource | | | | | | | | | |
| | | Summer Capacity | Winter Capacity | Energy | No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Water | Kerosene | | | |
| **Residential (total)** | **$ 327,481,411** | **$ 7,857,618** | **$ -** | **$ 2,751,852** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 12,390,961** | **$ -** | **$ 225,495,551** | **$ 237,886,513** | **$ 575,977,393** |
| 1. Residential Whole House | $ 221,646,997 | $ 3,574,143 | $ - | $ 1,907,821 | $ - | $ - | $ - | $ - | $ - | $ 12,390,961 | $ - | $ 105,715,925 | $ 118,106,886 | $ 345,235,848 |
| 2. Residential Products | $ 105,834,413 | $ 4,283,475 | $ - | $ 844,031 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 119,779,626 | $ 119,779,626 | $ 230,741,545 |
| Low-Income (total) | **$ 80,387,331** | **$ 8,301,270** | **$ -** | **$ 3,793,601** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 1,564,370** | **$ -** | **$ 84,026,852** | **$ 85,591,222** | **$ 178,073,424** |
| 4. Low-Income Whole House | $ 80,387,331 | $ 8,301,270 | $ - | $ 3,793,601 | $ - | $ - | $ - | $ - | $ - | $ 1,564,370 | $ - | $ 84,026,852 | $ 85,591,222 | $ 178,073,424 |
| **Commercial & Industrial (total)** | **$ 445,187,261** | **$ 16,494** | **$ -** | **$ 351,337** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 20,499,787** | **$ -** | **$ 63,815,089** | **$ 84,314,877** | **$ 529,869,969** |
| 6. C&I New Construction | $ 204,844,071 | $ 14,684 | $ - | $ 344,283 | $ - | $ - | $ - | $ - | $ - | $ 1,358,667 | $ - | $ 23,291 | $ 1,381,958 | $ 206,584,996 |
| 7. C&I Retrofit | $ 240,343,190 | $ 1,810 | $ - | $ 7,054 | $ - | $ - | $ - | $ - | $ - | $ 19,141,120 | $ - | $ 63,791,798 | $ 82,932,918 | $ 323,284,972 |
| **GRAND TOTAL** | **$ 853,056,002** | **$ 16,175,383** | **$ -** | **$ 6,896,789** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 34,455,119** | **$ -** | **$ 373,337,492** | **$ 407,792,611** | **$ 1,283,920,785** |

**Notes**

Benefits for 2013-2015 on this and other tables where they appear are in 2013 dollars

(1) The Non-Resource Benefits for the Residential Heating & Water Heating initiative within the Residential Products program are reduced by 10% from the values included in the Technical Resource Manual. Please refer to Section F.6.a of the Joint Statewide Three-Year Plan for details.

IV.D. Cost Effectiveness
3.2. Savings Summary Table

**Gas Savings, 2013**

| Program | # of Participants | Gas (MMBTU) | Gas (Annual Therms) | Gas (LifetimeTherms) | Electric | | |
|---|---|---|---|---|---|---|---|
| | | | | | Summer Capacity (kW) | Winter Capacity (kW) | Energy (kWh) |
| **Residential (total)** | **537,690** | **1,029,114** | **10,291,144** | **117,101,911** | **581** | **99** | **630,933** |
| 1. Residential Whole House | 509,451 | 813,850 | 8,138,496 | 76,571,966 | 229 | 102 | 480,736 |
| 2. Residential Products | 28,238 | 215,265 | 2,152,649 | 40,529,945 | 352 | (4) | 150,197 |
| **Low-Income (total)** | **6,645** | **139,774** | **1,397,743** | **27,514,929** | **492** | **311** | **747,187** |
| 4. Low-Income Whole House | 6,645 | 139,774 | 1,397,743 | 27,514,929 | 492 | 311 | 747,187 |
| **Commercial & Industrial (total)** | **5,839** | **1,097,215** | **10,972,151** | **159,357,540** | **0** | **11** | **65,681** |
| 6. C&I New Construction | 1,599 | 372,633 | 3,726,329 | 70,881,812 | - | 11 | 64,241 |
| 7. C&I Retrofit | 4,240 | 724,582 | 7,245,822 | 88,475,728 | 0 | 0 | 1,440 |
| **GRAND TOTAL** | **550,173** | **2,266,104** | **22,661,039** | **303,974,380** | **1,073** | **420** | **1,443,801** |

**Gas Savings (Annual), 2014**

| Program | # of Participants | Gas (MMBTU) | Gas (Annual Therms) | Gas (LifetimeTherms) | Electric | | |
|---|---|---|---|---|---|---|---|
| | | | | | Summer Capacity (kW) | Winter Capacity (kW) | Energy (kWh) |
| **Residential (total)** | **549,030** | **1,160,819** | **11,608,186** | **119,419,923** | **556** | **88** | **563,826** |
| 1. Residential Whole House | 520,561 | 943,935 | 9,439,355 | 78,558,488 | 204 | 92 | 413,762 |
| 2. Residential Products | 28,468 | 216,883 | 2,168,831 | 40,861,435 | 352 | (4) | 150,064 |
| **Low-Income (total)** | **6,840** | **143,899** | **1,438,993** | **28,353,158** | **492** | **311** | **551,326** |
| 4. Low-Income Whole House | 6,840 | 143,899 | 1,438,993 | 28,353,158 | 492 | 311 | 551,326 |
| **Commercial & Industrial (total)** | **6,046** | **1,135,395** | **11,353,951** | **165,248,442** | **0** | **7** | **65,946** |
| 6. C&I New Construction | 1,715 | 389,251 | 3,892,511 | 74,115,841 | - | 7 | 64,506 |
| 7. C&I Retrofit | 4,331 | 746,144 | 7,461,440 | 91,132,600 | 0 | 0 | 1,440 |
| **GRAND TOTAL** | **561,915** | **2,440,113** | **24,401,130** | **313,021,522** | **1,049** | **406** | **1,181,098** |

**Gas Savings (Annual), 2015**

| Program | # of Participants | Gas (MMBTU) | Gas (Annual Therms) | Gas (LifetimeTherms) | Electric | | |
|---|---|---|---|---|---|---|---|
| | | | | | Summer Capacity (kW) | Winter Capacity (kW) | Energy (kWh) |
| **Residential (total)** | **560,562** | **1,160,593** | **11,605,934** | **116,138,323** | **530** | **82** | **520,422** |
| 1. Residential Whole House | 531,812 | 964,956 | 9,649,564 | 79,513,425 | 178 | 86 | 370,491 |
| 2. Residential Products | 28,749 | 195,637 | 1,956,370 | 36,624,898 | 352 | (4) | 149,931 |
| **Low-Income (total)** | **7,009** | **148,602** | **1,486,017** | **29,325,641** | **492** | **311** | **551,344** |
| 4. Low-Income Whole House | 7,009 | 148,602 | 1,486,017 | 29,325,641 | 492 | 311 | 551,344 |
| **Commercial & Industrial (total)** | **6,219** | **1,185,706** | **11,857,063** | **175,854,213** | **0** | **11** | **65,681** |
| 6. C&I New Construction | 1,790 | 396,977 | 3,969,768 | 79,553,616 | - | 11 | 64,241 |
| 7. C&I Retrofit | 4,429 | 788,730 | 7,887,295 | 96,300,597 | 0 | 0 | 1,440 |
| **GRAND TOTAL** | **573,790** | **2,494,901** | **24,949,014** | **321,318,178** | **1,023** | **403** | **1,137,447** |

**Gas Savings (Annual), 2013-2015**

| Program | # of Participants | Gas (MMBTU) | Gas (Annual Therms) | Gas (LifetimeTherms) | Electric | | |
|---|---|---|---|---|---|---|---|
| | | | | | Summer Capacity (kW) | Winter Capacity (kW) | Energy (kWh) |
| **Residential (total)** | **1,647,281** | **3,350,526** | **33,505,264** | **352,660,157** | **1,667** | **269** | **1,715,181** |
| 1. Residential Whole House | 1,561,825 | 2,722,741 | 27,227,415 | 234,643,879 | 611 | 281 | 1,264,989 |
| 2. Residential Products | 85,456 | 627,785 | 6,277,849 | 118,016,278 | 1,056 | (12) | 450,191 |
| **Low-Income (total)** | **20,494** | **432,275** | **4,322,753** | **85,193,728** | **1,477** | **932** | **1,849,856** |
| 4. Low-Income Whole House | 20,494 | 432,275 | 4,322,753 | 85,193,728 | 1,477 | 932 | 1,849,856 |
| **Commercial & Industrial (total)** | **18,104** | **3,418,317** | **34,183,165** | **500,460,194** | **0** | **29** | **197,308** |
| 6. C&I New Construction | 5,103 | 1,158,861 | 11,588,609 | 224,551,269 | - | 28 | 192,988 |
| 7. C&I Retrofit | 13,001 | 2,259,456 | 22,594,557 | 275,908,925 | 0 | 1 | 4,320 |
| **GRAND TOTAL** | **1,685,879** | **7,201,118** | **72,011,183** | **938,314,079** | **3,145** | **1,230** | **3,762,346** |

| Non-Gas Non-Electric* | | | | | | | |
|---|---|---|---|---|---|---|---|
| Resource | | | | | | | Non-Resource (1) |
| MMBTU | | | | | | Gallons | |
| No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Kerosene | Water | |
| - | - | - | - | - | - | **87,516,980** | **320,481** |
| - | - | - | - | - | - | 87,516,980 | 75,540 |
| - | - | - | - | - | - | - | 244,941 |
| - | - | - | - | - | - | **7,129,906** | **134,606** |
| - | - | - | - | - | - | 7,129,906 | 134,606 |
| - | - | - | - | - | - | **262,061,522** | **12,954** |
| - | - | - | - | - | - | 16,956,526 | 6,756 |
| - | - | - | - | - | - | 245,104,996 | 6,198 |
| - | - | - | - | - | - | **356,708,408** | **468,041** |

| Non-Gas Non-Electric* | | | | | | | |
|---|---|---|---|---|---|---|---|
| Resource | | | | | | | Non-Resource (1) |
| MMBTU | | | | | | Gallons | |
| No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Kerosene | Water | |
| - | - | - | - | - | - | **90,679,711** | **372,111** |
| - | - | - | - | - | - | 90,679,711 | 121,479 |
| - | - | - | - | - | - | - | 250,633 |
| - | - | - | - | - | - | **7,133,781** | **143,217** |
| - | - | - | - | - | - | 7,133,781 | 143,217 |
| - | - | - | - | - | - | **269,436,337** | **16,009** |
| - | - | - | - | - | - | 16,457,061 | 7,773 |
| - | - | - | - | - | - | 252,979,276 | 8,237 |
| - | - | - | - | - | - | **367,249,829** | **531,337** |

| Non-Gas Non-Electric* | | | | | | | |
|---|---|---|---|---|---|---|---|
| Resource | | | | | | | Non-Resource (1) |
| MMBTU | | | | | | Gallons | |
| No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Kerosene | Water | |
| - | - | - | - | - | - | **94,125,958** | **417,243** |
| - | - | - | - | - | - | 94,125,958 | 151,005 |
| - | - | - | - | - | - | - | 266,237 |
| - | - | - | - | - | - | **7,129,845** | **156,878** |
| - | - | - | - | - | - | 7,129,845 | 156,878 |
| - | - | - | - | - | - | **279,203,523** | **10,407** |
| - | - | - | - | - | - | 16,957,711 | 8,762 |
| - | - | - | - | - | - | 262,245,812 | 1,644 |
| - | - | - | - | - | - | **380,459,326** | **584,528** |

| Non-Gas Non-Electric* | | | | | | | |
|---|---|---|---|---|---|---|---|
| Resource | | | | | | | Non-Resource (1) |
| MMBTU | | | | | | Gallons | |
| No. 2 Distillate | No. 4 Fuel Oil | No. 6 Fuel Oil | Propane | Wood | Kerosene | Water | |
| - | - | - | - | - | - | **272,322,648** | **1,109,835** |
| - | - | - | - | - | - | 272,322,648 | 348,024 |
| - | - | - | - | - | - | - | 761,811 |
| - | - | - | - | - | - | **21,393,532** | **434,700** |
| - | - | - | - | - | - | 21,393,532 | 434,700 |
| - | - | - | - | - | - | **810,701,382** | **39,370** |
| - | - | - | - | - | - | 50,371,298 | 23,291 |
| - | - | - | - | - | - | 760,330,084 | 16,079 |
| - | - | - | - | - | - | **1,104,417,563** | **1,583,905** |

IV. H. Performance Incentives **STATEWIDE**
1. Performance Incentives Summary Table

**Performance Incentives, 2013**

| Program | Total Program Costs (1) | After-Tax Performance Incentives | % of Program Costs (2) | Pre-Tax Performance Incentives | % of Program Costs |
|---|---|---|---|---|---|
| **Residential** | 84,765,458 | 1,278,289 | 2% | 2,103,176 | 2% |
| **Low Income** | 34,409,368 | 444,149 | 1% | 730,741 | 2% |
| **C&I** | 49,247,475 | 1,338,442 | 3% | 2,201,869 | 4% |
| **GRAND TOTAL** | **$168,422,300** | **$3,060,880** | **2%** | **$5,035,786** | **3%** |

**Performance Incentives, 2014**

| Program | Total Program Costs (1) | After-Tax Performance Incentives | % of Program Costs (2) | Pre-Tax Performance Incentives | % of Program Costs |
|---|---|---|---|---|---|
| **Residential** | 86,866,837 | 1,358,438 | 2% | 2,235,024 | 3% |
| **Low Income** | 35,928,797 | 488,416 | 1% | 803,562 | 2% |
| **C&I** | 51,760,258 | 1,449,137 | 3% | 2,383,890 | 5% |
| **GRAND TOTAL** | **$174,555,892** | **$3,295,991** | **2%** | **$5,422,476** | **3%** |

**Performance Incentives, 2015**

| Program | Total Program Costs (1) | After-Tax Performance Incentives | % of Program Costs (2) | Pre-Tax Performance Incentives | % of Program Costs |
|---|---|---|---|---|---|
| **Residential** | 88,751,009 | 1,330,290 | 1% | 2,188,668 | 2% |
| **Low Income** | 37,844,460 | 487,353 | 1% | 801,808 | 2% |
| **C&I** | 53,489,638 | 1,552,407 | 3% | 2,553,748 | 5% |
| **GRAND TOTAL** | **$180,085,107** | **$3,370,050** | **2%** | **$5,544,225** | **3%** |

**Performance Incentives, 2013-2015**

| Program | Total Program Costs (1) | After-Tax Performance Incentives | % of Program Costs (2) | Pre-Tax Performance Incentives | % of Program Costs |
|---|---|---|---|---|---|
| **Residential** | 260,383,304 | 3,967,017 | 2% | 6,526,868 | 3% |
| **Low Income** | 108,182,625 | 1,419,918 | 1% | 2,336,112 | 2% |
| **C&I** | 154,497,371 | 4,339,985 | 3% | 7,139,507 | 5% |
| **GRAND TOTAL** | **$523,063,299** | **$9,726,921** | **2%** | **$16,002,487** | **3%** |

IV. I. Cost Recovery **STATEWIDE**
1. Calculation of LBR

| Lost Base Revenue, 2013-2015 (1) | | | | |
|---|---|---|---|---|
| **Program** | **2013 (2)** | **2014 (2)** | **2015 (2)** | **Total LBR for 2013-2015** |
| **Residential** | $2,192,417 | $2,646,558 | $3,011,883 | $7,850,857 |
| **Low Income** | $19,611 | $21,547 | $23,482 | $64,640 |
| **Commercial & Industrial** | $1,903,023 | $2,442,165 | $3,032,375 | $7,377,564 |
| **GRAND TOTAL** | **$4,115,052** | **$5,110,270** | **$6,067,740** | **$15,293,061** |

**Notes:**

(1) Gas Companies should footnote this table to emphasize that these numbers are estimates, with the knowledge that the Department's review of the exact LBR being collected by the Company will occur at the time the Companies file their respective GAF/LDAF

(2) Total LBR being collected using the Rolling Period Methodology established in D.T.E. 97-112. LBR may not be applicable

V.B. Allocation of Funds **STATEWIDE**

1. Low Income Minimum for GAS Companies

| Gas Minimum Allocation to Low Income, 2013 | | | | |
|---|---|---|---|---|
| **Sector** | **Program Costs** | **% of Program Costs** | **Customer Contribution (1)** | **% of Total Contribution** |
| Residential | $84,765,458 | 50% | $11,875,845 | 33% |
| Low Income* | $34,409,368 | 20% | $9,565,879 | 27% |
| Commercial & Industrial | $49,247,475 | 29% | $14,589,974 | 40% |
| **TOTAL** | **$168,422,300** | 100% | **$36,031,698** | 100% |

| Gas Minimum Allocation to Low Income, 2014 | | | | |
|---|---|---|---|---|
| **Sector** | **Program Costs** | **% of Program Costs** | **Customer Contribution (1)** | **% of Total Contribution** |
| Residential | $86,866,837 | 50% | $12,589,285 | 34% |
| Low Income* | $35,928,797 | 21% | $9,728,128 | 26% |
| Commercial & Industrial | $51,760,258 | 30% | $14,735,701 | 40% |
| **TOTAL** | **$174,555,892** | 100% | **$37,053,114** | 100% |

| Gas Minimum Allocation to Low Income, 2015 | | | | |
|---|---|---|---|---|
| **Sector** | **Program Costs** | **% of Program Costs** | **Customer Contribution (1)** | **% of Total Contribution** |
| Residential | $88,751,009 | 49% | $13,469,282 | 35% |
| Low Income* | $37,844,460 | 21% | $9,810,629 | 25% |
| Commercial & Industrial | $53,489,638 | 30% | $15,328,521 | 40% |
| **TOTAL** | **$180,085,107** | 100% | **$38,608,432** | 100% |

| Gas Minimum Allocation to Low Income, 2013-2015 | | | | |
|---|---|---|---|---|
| **Sector** | **Program Costs** | **% of Program Costs** | **Customer Contribution (1)** | **% of Total Contribution** |
| Residential | $260,383,304 | 50% | $37,934,412 | 34% |
| Low Income* | $108,182,625 | 21% | $29,104,636 | 26% |
| Commercial & Industrial | $154,497,371 | 30% | $44,654,196 | 40% |
| **TOTAL** | **$523,063,299** | 100% | **$111,693,244** | 100% |

(1) Customer Contribution are collected through the following rate classes:

| | |
|---|---|
| Residential | R-1, R-3 |
| Low Income | R-2. R-4 |
| Comm. & Ind. | G-41, G-42, G-43, G-51, G-52 |

*"% of Total Budget" for the Low Income sector needs to be at least 20%, or the percentage that is collected from Low

Low Income Customer Contributions are those collections from rate classes R-4. Please note that for the purposes of collections, low income is defined differently than it is for the purposes of participation in low income programs.

VII. Appendix
B.2. Master EE Activities

**Statewide Gas PA's M**

| Program Administrator | Sector | TRC Benefits ($) | | | | | | TRC Costs ($) | | | | TRC B/C Ratio | Net Benefits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Gas | Electric | | Non-gas Non-elec Resource | Non-Resource | TOTAL BENEFITS | PA | Performance Incentive | Customer | TOTAL | | |
| | | | Capacity | Energy | | | | | | | | | |
| **National Grid** | **Total** | **$426,299,696** | **$12,940,963** | **$5,047,210** | **$28,595,481** | ########## | **$661,124,714** | **$274,987,636** | **$8,126,328** | **$91,229,428** | **$374,343,392** | **1.77** | **$286,781,322** |
| | Residential | $168,618,339 | $5,606,663 | $1,610,092 | $10,199,409 | ########## | $289,130,403 | $139,553,829 | $3,089,689 | $63,026,053 | $205,669,571 | 1.41 | $83,460,832 |
| | Low Income | $41,810,112 | $7,332,490 | $3,112,407 | $1,530,606 | $53,251,433 | $107,037,049 | $55,080,630 | $1,440,350 | $0 | $56,520,980 | 1.89 | $50,516,069 |
| | C&I | $215,871,245 | $1,810 | $324,711 | $16,865,466 | $31,894,030 | $264,957,262 | $80,353,177 | $3,596,289 | $28,203,375 | $112,152,841 | 2.36 | $152,804,421 |
| **NSTAR** | **Total** | **$207,800,958** | **$1,559,480** | **$1,292,921** | **$3,194,858** | **$85,823,974** | **$299,672,191** | **$118,661,077** | **$3,599,798** | **$45,674,998** | **$167,935,873** | **1.78** | **$131,736,318** |
| | Residential | $62,800,927 | $577,724 | $600,386 | $1,101,509 | $50,663,970 | $115,744,516 | $53,206,241 | $1,298,054 | $19,413,261 | $73,917,556 | 1.57 | $41,826,960 |
| | Low Income | $15,850,195 | $968,780 | $669,417 | $0 | $17,771,371 | $35,259,763 | $24,239,775 | $430,474 | $0 | $24,670,249 | 1.43 | $10,589,514 |
| | C&I | $129,149,836 | $12,976 | $23,118 | $2,093,349 | $17,388,633 | $148,667,912 | $41,215,061 | $1,871,270 | $26,261,737 | $69,348,069 | 2.14 | $79,319,843 |
| **CMA** | **Total** | **$168,659,928** | **$1,342,941** | **$400,448** | **$1,983,213** | **$81,361,827** | **$253,748,357** | **$89,446,134** | **$3,196,126** | **$37,196,675** | **$129,838,935** | **1.95** | **$123,909,421** |
| | Residential | $80,255,935 | $1,342,941 | $400,448 | $996,342 | $60,190,774 | $143,186,440 | $47,874,385 | $1,740,123 | $23,913,023 | $73,527,532 | 1.95 | $69,658,908 |
| | Low Income | $16,440,080 | $0 | $0 | $2,173 | $9,345,373 | $25,787,627 | $19,404,121 | $317,611 | $0 | $19,721,731 | 1.31 | $6,065,895 |
| | C&I | $71,963,912 | $0 | $0 | $984,698 | $11,825,679 | $84,774,290 | $22,167,629 | $1,138,392 | $13,283,652 | $36,589,672 | 2.32 | $48,184,618 |
| **Unitil** | **Total** | **$10,848,899** | **$36,604** | **$55,595** | **$464,754** | **$1,583,905** | **$12,989,757** | **$5,069,103** | **$196,733** | **$2,323,791** | **$7,589,626** | **1.71** | **$5,440,344** |
| | Residential | $2,054,277 | $36,604 | $43,336 | $0 | $1,109,835 | $3,244,053 | $1,485,534 | $50,290 | $976,903 | $2,512,727 | 1.29 | $746,818 |
| | Low Income | $1,247,995 | $0 | $11,776 | $31,591 | $434,700 | $1,726,063 | $1,680,018 | $45,719 | $0 | $1,725,737 | 1.00 | $29,793 |
| | C&I | $7,546,626 | $0 | $483 | $433,162 | $39,370 | $8,019,642 | $1,903,551 | $100,723 | $1,346,888 | $3,351,162 | 2.39 | $4,663,732 |
| **Berkshire** | **Total** | **$24,766,347** | **$90,527** | **$27,871** | **$21,713** | **$8,641,596** | **$33,548,054** | **$11,382,175** | **$430,972** | **$4,582,571** | **$16,395,718** | **2.05** | **$17,152,336** |
| | Residential | $7,513,007 | $90,527 | $27,871 | $2,267 | $6,314,524 | $13,948,197 | $6,563,005 | $150,619 | $2,951,880 | $9,665,503 | 1.44 | $4,282,693 |
| | Low Income | $2,831,459 | $0 | $0 | $0 | $1,842,728 | $4,674,187 | $2,428,151 | $64,080 | $0 | $2,492,232 | 1.88 | $2,181,955 |
| | C&I | $14,421,881 | $0 | $0 | $19,446 | $484,344 | $14,925,670 | $2,391,018 | $216,273 | $1,630,691 | $4,237,983 | 3.52 | $10,687,688 |
| **NEG** | **Total** | **$14,680,175** | **$204,867** | **$72,744** | **$195,100** | **$7,684,827** | **$22,837,712** | **$9,321,526** | **$279,354** | **$2,768,732** | **$12,369,611** | **1.85** | **$10,468,101** |
| | Residential | $6,238,925 | $203,159 | $69,719 | $91,434 | $4,120,548 | $10,723,785 | $4,669,769 | $121,612 | $1,738,970 | $6,530,351 | 1.64 | $4,193,434 |
| | Low Income | $2,207,489 | $0 | $0 | $0 | $1,381,246 | $3,588,735 | $2,396,519 | $42,417 | $0 | $2,438,936 | 1.47 | $1,149,799 |
| | C&I | $6,233,761 | $1,708 | $3,026 | $103,665 | $2,183,033 | $8,525,192 | $2,255,238 | $115,325 | $1,029,762 | $3,400,324 | 2.51 | $5,124,868 |
| **STATEWIDE TOTALS** | | **$853,056,002** | **$16,175,383** | **$6,896,789** | **$34,455,119** | ########## | **$1,283,920,785** | **$508,867,651** | **$15,829,311** | **$183,776,195** | **$708,473,156** | **0.00** | **$575,487,842** |
| | Residential | $327,481,411 | $7,857,618 | $2,751,852 | $12,390,961 | ########## | $575,977,393 | $253,352,763 | $6,450,387 | $112,020,090 | $371,823,240 | 0.00 | 204,169,646 |
| | Low Income | $80,387,331 | $8,301,270 | $3,793,601 | $1,564,370 | $84,026,852 | $178,073,424 | $105,229,214 | $2,340,651 | $0 | $107,569,865 | 0.00 | 70,533,026 |
| | C&I | $445,187,261 | $16,494 | $351,337 | $20,499,787 | $63,815,089 | $529,869,969 | $150,285,674 | $7,038,273 | $71,756,105 | $229,080,052 | 0.00 | 300,785,170 |

**Notes:**
(1) Benefits and TRC Costs for all three years are represented in 2013 $.
(2) GHG for information purposes only; it is not included in TRC test.
(3) Statewide lifetime therms total does not equal the sum of each PA's filed lifetime therms due to different methods used to calculate this total.

VII. Appendix
B.2. Master EE Activities

**laster Summary for Three Years**

| Program Administrator | Sector | Savings | | | | | | | | Avg Measure Life (yrs.) | TR Energy Cost ($/Lifetime-Therm saved) | GHG Reductions (Short Tons) | | | | Participants |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Gas (Therms) | | Electric Energy (kWh) | | Electric Capacity (MW) | | Water (Gallons) | | | | Nox | SO2 | GHG (MA Based) | GHG (Regional Based) | |
| | | Annual | Lifetime (1) | Annual | Lifetime | Annual | Lifetime | Annual | Lifetime | | | | | | | |
| **National Grid** | **Total** | **39,653,037** | **465,867,841** | **2,795,946** | **41,093,879** | **2,489** | **35,582** | **714,523,434.60** | **9,764,170,275.85** | **11.7** | **$0.80** | **NA** | **NA** | **2,741,850** | **2,739,508** | **1,260,578** |
| | Residential | 21,060,609 | 181,834,303 | 1,144,153 | 10,012,294 | 1,180 | 10,281 | 139,156,918.00 | 1,206,243,107.81 | 8.6 | $1.13 | NA | NA | 1,067,223 | 1,066,653 | 1,242,384 |
| | Low Income | 2,277,771 | 44,021,046 | 1,469,864 | 28,406,205 | 1,309 | 25,294 | 20,978,150.40 | 405,431,577.45 | 19.3 | $1.28 | NA | NA | 271,113 | 269,494 | 11,732 |
| | C&I | 16,314,657 | 240,012,492 | 181,930 | 2,675,380 | 0 | 6 | 554,388,366.20 | 8,152,495,590.58 | 14.7 | $0.47 | NA | NA | 1,403,513 | 1,403,361 | 6,462 |
| **NSTAR** | **Total** | **16,721,896** | **231,312,849** | **740,880** | **11,074,189** | **276** | **4,289** | **348,462,545** | **4,753,528,142** | **13.8** | **$0.73** | **NA** | **NA** | **1,356,808** | **1,356,177** | **202,045** |
| | Residential | 5,723,705 | 67,350,316 | 351,666 | 4,144,279 | 108 | 1,266 | 119,680,388 | 1,408,389,226 | 11.8 | $1.10 | NA | NA | 395,507 | 395,271 | 194,161 |
| | Low Income | 941,740 | 16,886,725 | 374,100 | 6,708,730 | 169 | 3,024 | - | - | 17.9 | $1.46 | NA | NA | 101,946 | 101,564 | 4,870 |
| | C&I | 10,056,451 | 147,075,808 | 15,114 | 221,180 | - | - | 228,782,157 | 3,345,138,916 | 14.6 | $0.47 | NA | NA | 859,355 | 859,342 | 3,014 |
| **CMA** | **Total** | **12,347,212** | **186,570,686** | **191,019** | **3,959,070** | **352** | **7,389** | **28,235,868** | **225,271,493** | **15.1** | **$0.70** | **NA** | **NA** | **1,091,925** | **1,091,700** | **178,603** |
| | Residential | 5,417,783 | 86,366,581 | 191,019 | 3,959,070 | 352 | 7,389 | 13,485,342 | 113,454,497 | 15.9 | $0.85 | NA | NA | 506,513 | 506,287 | 170,589 |
| | Low Income | 811,370 | 17,687,870 | - | - | - | - | 11,717 | 255,426 | 21.8 | $1.11 | NA | NA | 103,336 | 103,336 | 2,545 |
| | C&I | 6,118,059 | 82,516,235 | - | - | - | - | 14,738,809 | 111,561,569 | 13.5 | $0.44 | NA | NA | 482,076 | 482,076 | 5,469 |
| **Unitil** | **Total** | **592,320** | **11,574,339** | **21,538** | **463,505** | **5** | **95** | **13,195,715** | **248,546,841** | **19.5** | **$0.66** | **NA** | **NA** | **67,847** | **67,821** | **2,045** |
| | Residential | 105,556 | 2,208,963 | 15,381 | 321,631 | 5 | 95 | - | - | 20.9 | $1.14 | NA | NA | 13,063 | 13,045 | 1,025 |
| | Low Income | 55,609 | 1,290,312 | 5,893 | 136,741 | - | - | 403,665 | 9,369,045 | 23.2 | $1.34 | NA | NA | 7,605 | 7,598 | 268 |
| | C&I | 431,155 | 8,075,064 | 265 | 5,133 | - | - | 12,792,051 | 239,177,796 | 18.7 | $0.42 | NA | NA | 47,179 | 47,178 | 752 |
| **Berkshire** | **Total** | **1,440,528** | **26,856,595** | **12,962** | **183,672** | **23** | **333** | **-** | **-** | **18.6** | **$0.61** | **NA** | **NA** | **156,992** | **156,981** | **16,030** |
| | Residential | 573,220 | 8,122,407 | 12,962 | 183,672 | 23 | 333 | - | - | 14.2 | $1.19 | NA | NA | 47,543 | 47,532 | 14,722 |
| | Low Income | 140,522 | 3,013,588 | - | - | - | - | - | - | 21.4 | $0.83 | NA | NA | 17,606 | 17,606 | 748 |
| | C&I | 726,786 | 15,720,600 | - | - | - | - | - | - | 21.6 | $0.27 | NA | NA | 91,843 | 91,843 | 560 |
| **NEG** | **Total** | **1,256,191** | **16,131,769** | **-** | **0** | **-** | **0** | **-** | **-** | **12.8** | **$0.77** | **NA** | **NA** | **94,245** | **94,245** | **26,577** |
| | Residential | 624,390 | 6,777,587 | - | - | - | - | - | - | 10.9 | $0.96 | NA | NA | 39,596 | 39,596 | 24,400 |
| | Low Income | 95,742 | 2,294,187 | - | - | - | - | - | - | 24.0 | $1.06 | NA | NA | 13,403 | 13,403 | 330 |
| | C&I | 536,059 | 7,059,995 | - | - | - | - | - | - | 13.2 | $0.48 | NA | NA | 41,246 | 41,246 | 1,847 |
| **STATEWIDE TOTALS** | | **72,011,183** | **938,314,079** | **3,762,346** | **56,774,315** | **3,145** | **47,687** | **1,104,417,563** | **14,991,516,752** | **0.0** | **0** | **NA** | **NA** | **5,509,666** | **5,506,431** | **1,685,879** |
| | Residential | 33,505,264 | 352,660,157 | 1,715,181 | 18,620,947 | 1,667 | 19,363 | 272,322,648 | $2,728,086,831 | 0.0 | 0 | 0 | 0 | 2,069,445 | 2,068,384 | 1,647,281 |
| | Low Income | 4,322,753 | 85,193,728 | 1,849,856 | 35,251,675 | 1,477 | 28,318 | 21,393,532 | $415,056,048 | 0.0 | 0 | 0 | 0 | 515,010 | 513,001 | 20,494 |
| | C&I | 34,183,165 | 500,460,194 | 197,308 | 2,901,694 | 0 | 6 | 810,701,382 | $11,848,373,872 | 0.0 | 0 | 0 | 0 | 2,925,212 | 2,925,046 | 18,104 |

**Notes:**
(1) Benefits and TRC Costs for a
(2) GHG for information purpose
(3) Statewide lifetime therms tota **Lifetimes will not Match**

## D. State by State Comparison of Energy Efficiency Savings Requirements

**2011's Top Ten States**

| Rank | State | Aprox. Annual Savings Target (Electric) [1] | Aprox. Annual Savings Target (Natural Gas) [1] | Are Changes to Deemed Values Applied Prospectively or Retrospectively? [2] | Report Gross or Net Program Savings or Both? [2] | Adjust for the Effects of Free-Riders? [2] | Adjust for the Effects of Free-Drivers/Spillover? [2] |
|---|---|---|---|---|---|---|---|
| 1 | Massachusetts | 2.0% in 2011; 2.4% in 2012 | 0.83% in 2011; 1.15% in 2012 | Retrospectively | Both | Yes | Yes |
| 2 | California | ~ 1% annual savings through 2020 | 150 gross MMTh by 2012 | Prospectively | Both | Yes | No |
| 3 | New York | 15% Cumulative savings by 2015 | ~ 14.7% Cumulative savings by 2020 | Prospectively | Net | Yes | Yes |
| 4 | Oregon | ~ 0.8% of 2009 electric sales in 2010, ramping up to 1% in 2013 and 2014 | 0.2% of sales in 2010 ramping up to 0.4% in 2014 | Retrospectively | Net | Yes | Yes |
| 5 (tie) | Vermont | ~ 6.75% cumulative savings from 2009 to 2011 | n/a | Prospectively | Both | Yes | Yes |
| 5 (tie) | Washington | Biennial and Ten-Year Goals vary by utility. Law requires savings targets to be based on the Northwest Power Plan, which estimates potential savings of about 1.5% savings annually through 2030 for Washington utilities. | | Prospectively | Gross | No | No |
| 5 (tie) | Rhode Island | 1.5% in 2011; 1.7% in 2012, 2.1% in 2013, and 2.5% in 2014 | ~0.4% of sales in 2011; 0.6% in 2012, 0.8% in 2013, and 1.0% in 2014 | Prospectively | Net | Yes | Yes |

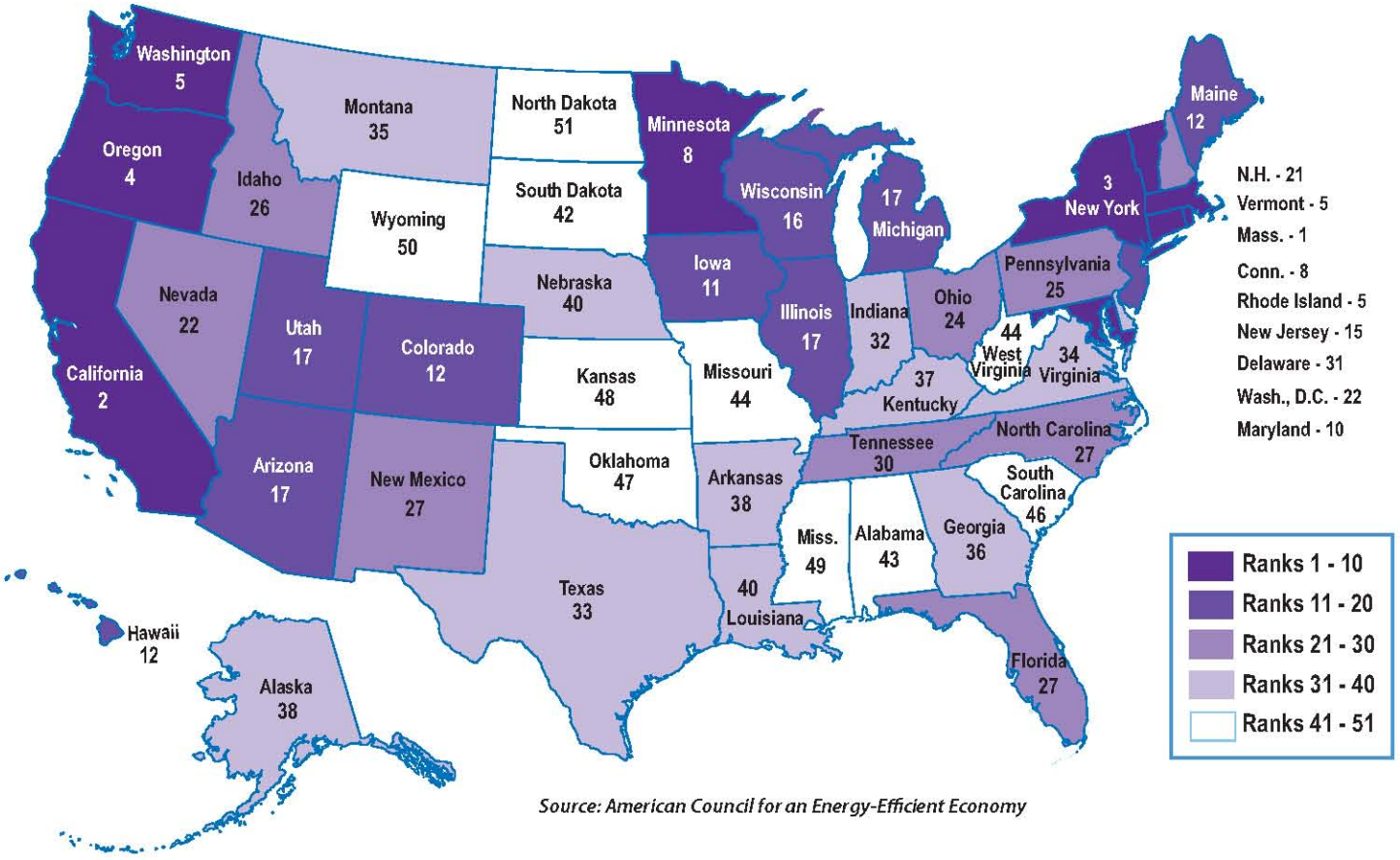
[1] American Council for an Energy-Efficient Economy. *The 2011 State Energy Efficiency Scorecard* , October 2011.

[2] American Council for an Energy-Efficient Economy. *A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded EE Programs* , February 2012.

American Council for an Energy-Efficient Economy

Fact Sheet

# Key Findings From ACEEE's *2011 State Energy Efficiency Scorecard*




*Source: American Council for an Energy-Efficient Economy*

Earning the #1 ranking, Massachusetts has overtaken California, which had placed atop the rankings the last four years. Central to Massachusetts' success is the continued implementation of the 2008 Green Communities Act, which laid the foundation for greater investment in energy efficiency programs.

Not far behind Massachusetts and California, a group of states including New York, Vermont, Oregon, Washington, Connecticut, Minnesota, and Rhode Island remain in the top ten and continue to lead the nation in energy efficiency policy and program implementation across all economic sectors.

| 2011's Top Ten States | |
|---|---|
| 1 | Massachusetts |
| 2 | California |
| 3 | New York |
| 4 | Oregon |
| 5 (tie) | Vermont |
| 5 (tie) | Washington |
| 5 (tie) | Rhode Island |
| 8 (tie) | Minnesota |
| 8 (tie) | Connecticut |
| 10 | Maryland |

## POLICY TRENDS

Facing uncertain economic times, states are continuing to use energy efficiency as a key strategy to generate cost-savings, promote technological innovation, and stimulate growth. Energy efficiency is also a pragmatic, bipartisan solution that political leaders from both sides of the aisle have supported over the past year.

Total budgets for electricity efficiency programs increased to $4.5 billion in 2010, up from $3.4 billion in 2009. Combined with natural gas program budgets of about $1 billion, total energy efficiency budgets in 2010 equal about 5.5 billion dollars. Given the increasing regulatory commitments to energy efficiency, this growth will likely continue over the next decade.

Twenty-four states have adopted Energy Efficiency Resource Standards, which set long-term energy savings targets and drives utility-sector investments in energy efficiency programs. States that adopted EERS policies in 2007 and 2008 are realizing significant energy savings and moving ahead in the Scorecard rankings.

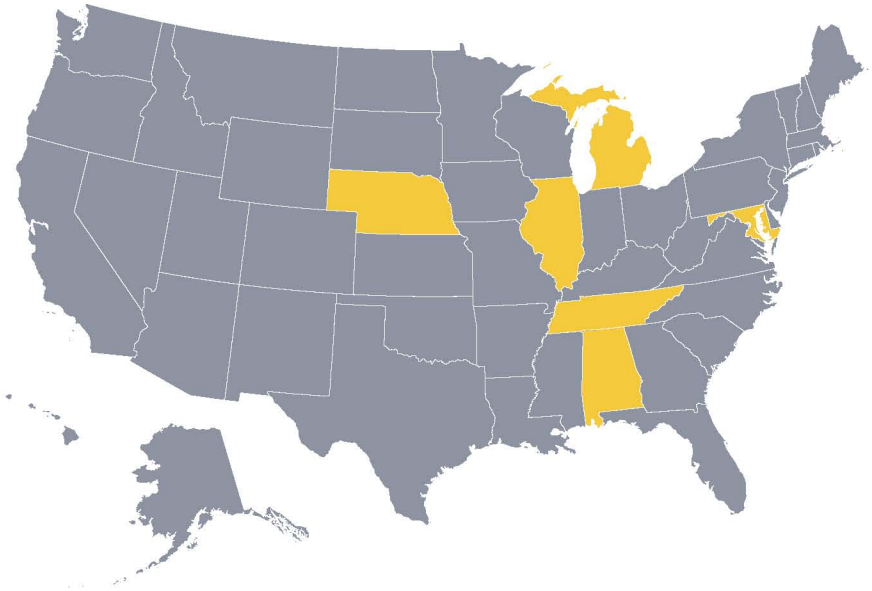
States continue to improve policies to reduce financial, technical, and regulatory barriers to adoption and deployment of combined heat and power (CHP) systems, which generate electricity and thermal energy in an integrated system. Tremendous potential remains for CHP, particularly in states with heavy industrial and manufacturing bases.

Twenty-nine states have either adopted or have made significant progress toward the adoption of the latest energy-saving building codes for homes and commercial properties — up from twenty in 2010 and ten in 2009.

A group of leading states remains ahead of the curve in adopting policies to reduce vehicle miles traveled and promote the purchase and manufacture of efficient vehicles. A major gap exists, however, as over half the states have minimal or no policies to encourage efficiency in the transportation sector.

## MOST IMPROVED

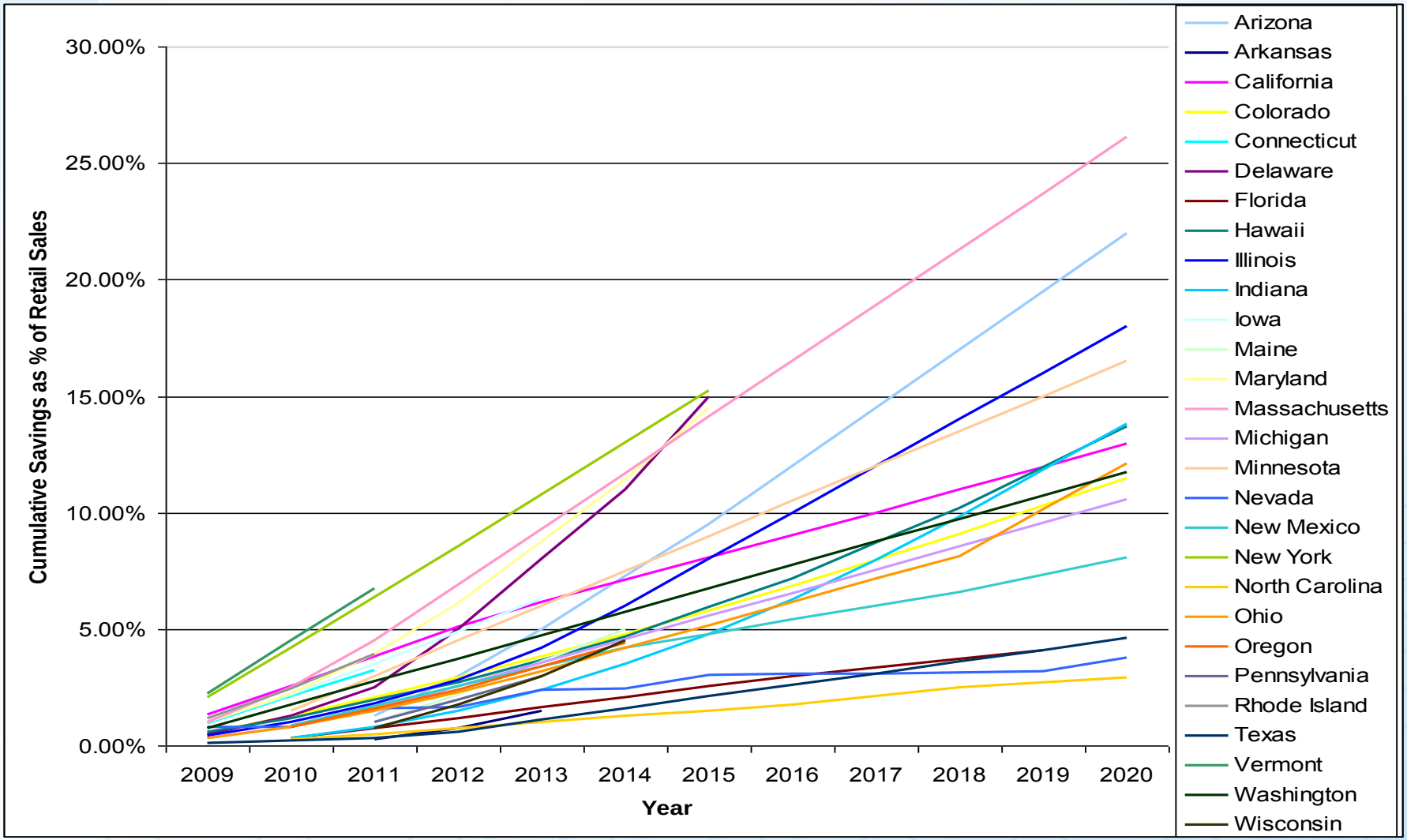
This year's most improved states include Michigan, Illinois, Nebraska, Tennessee, Alabama, and Maryland. Michigan, Illinois, and Maryland have significantly increased utility-sector energy efficiency efforts in order to meet energy savings targets established in Energy Efficiency Resource Standards (EERS) passed in 2008. Illinois and Maryland also recently adopted energy-efficient transportation policies and Michigan has become a leader in the research and development of energy-efficient technologies. Tennessee, Nebraska, and Alabama saw improvements across categories, particularly in the adoption of stringent building codes.



**2011's Most Improved States**

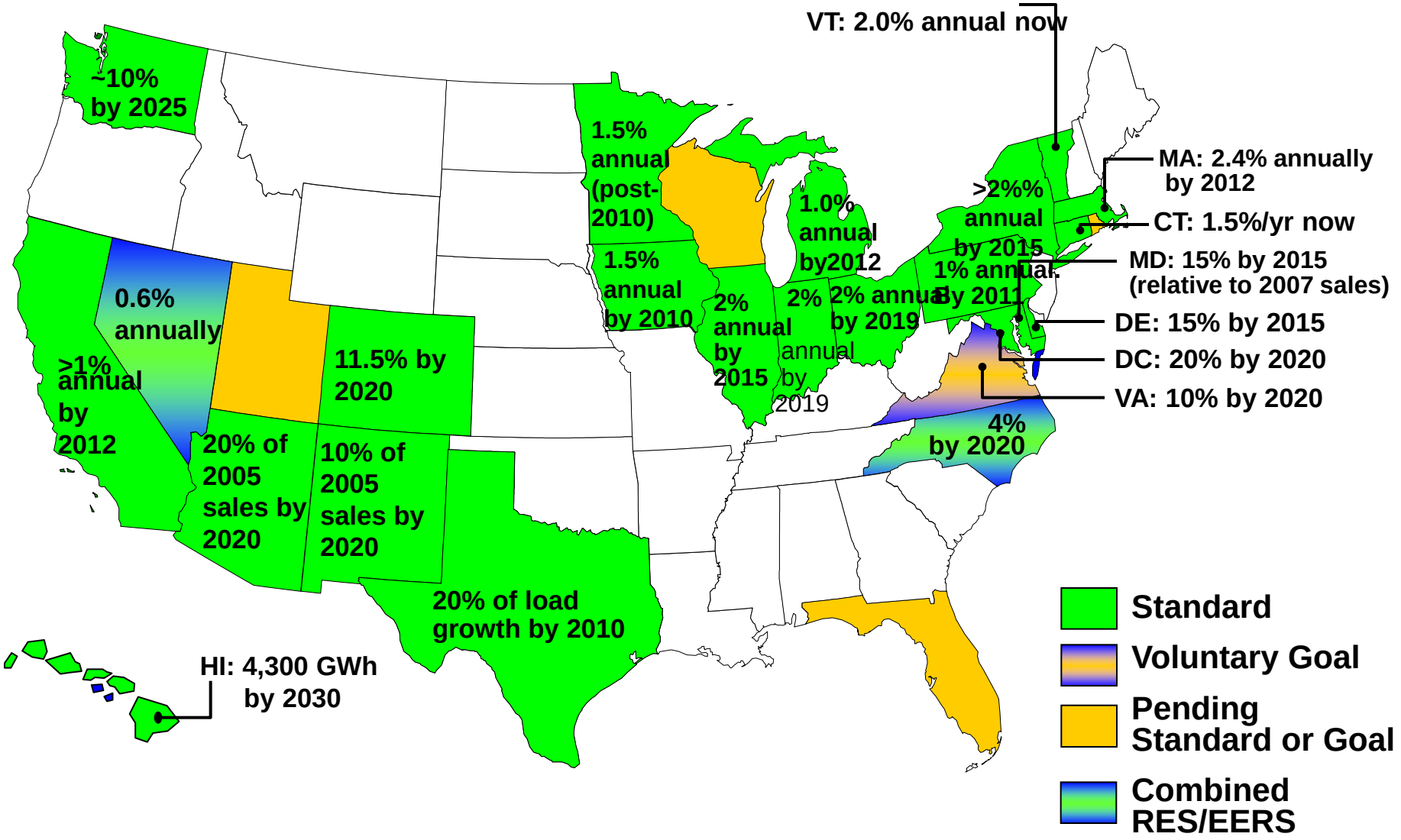
| State | 2011 Rank | 2010 Rank | Change in Rank (from 2010) |
|---|---|---|---|
| Michigan | 17 | 27 | ^10 |
| Illinois | 17 | 25 | ^8 |
| Nebraska | 40 | 47 | ^7 |
| Alabama | 43 | 49 | ^6 |
| Maryland | 10 | 16 | ^6 |
| Tennessee | 30 | 35 | ^5 |

# State EERS Policies



# Energy Efficiency Resource Standards

➢22 States –February 2010



## E. Counselor Comment Matrix

# QUESTIONS/COMMENTS ON THE APRIL 30TH DRAFT OF THE THREE-YEAR PLAN

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| General | Lack of clarity on specific commitments; it is unclear precisely what the PAs are committing to do (e.g., street lighting, codes & standards, new financing products, gas-electric integration) | ENE | |
| General | PAs should be clear and consistent that the overall statutorily mandated goal is to have a plan that "provide[s] for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply"- NOT "realistically achievable." | ENE | |
| General | PAs must offer concrete details as to hope-for outcome, additional savings, participation, budget, EM&V, for any efforts noted. | AG | |
| General | Seek update from the RMC on program design enhancements and ways to capture deeper savings and share PA best practices – update to include a progress report, explanation of differences of opinion, timeline, etc. | AG | |
| Savings Goals | How do the goals contribute to the sustainability of EE in Massachusetts, while still remaining aggressive? | AG | |
| Savings Goals | Seek narrative re: how the PAs reached the goals. Describe "review process" noted on p. 18 (how it was conducted, what factors were relied upon to build both the individual and statewide goals, and what weight the factors were given in determining the goals.) | AG | |
| Savings Goals | Gas goals appear to be essentially the same/lower than 2012 MTM levels and significantly lower than the consultant recommendations in their most recent assessment. Plan is not aggressive (Loh). | ENE, Loh, GJC | |
| Savings Goals | Electric and gas savings levels could be increased slightly to mirror the EEAC consultant recommendations in their April 10, 2012 presentation to the EEAC. The proposed savings goals are at or below the low end of savings ranges put forth by the EEAC consultants in March. | ENE, Loh, GJC | |
| Savings Goals | Savings goals fall below the trajectory envisioned in the state's Clean Energy and Climate Plan (2.6% electricity savings and 1.6% gas savings by 2015). | Loh, GJC | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Savings Goals | Considerable variance in savings targets among individual PAs – seeks:<br>• greater consistency where possible<br>• more detailed explanation of unique circumstances that could conceivably necessitate lower savings targets. | ENE | |
| Savings Goals | It is not clear what portion of savings will be achieved through scaling up current programs and making them more efficient and what portion will require more innovation and investment in capacity to acquire savings from harder to reach/serve segments and underserved markets. | Loh | |
| Savings Goals | Benefit cost ratios for electric sector are very high (residential is at 3.75); could significantly more savings be achieved with greater expenditures? | Loh | |
| Savings Goals | Goals should be set high enough so that performance incentives do not accrue for doing more of the same; should be a reward. | GJC | |
| Savings Goals | Suggests thinking of savings goals "comfort zone" as analogous to 75% threshold, such that the probability of achieving over 75% of goal should be less than 100% | GJC | |
| Savings Goals (NSTAR) | Why does NSTAR's annual savings for electricity decline in 2014 from 2013? | Loh | |
| Costs/Budgets | Costs per unit of energy are considerably higher than actual costs reported in 2010 and 2011, and the Draft Plan does not contain enough explanation about how the PAs determined the overall costs. Overall costs should be considerably lower than proposed in the Draft Plan. | ENE | |
| Costs/Budgets | Identify ways to reduce overall program costs while maintaining and even enhancing the savings goals. | ENE | |
| Costs/Budgets | Seek further explanation of the "economies" that were realized through prior efforts. How will PAs continue to increase these economies and develop new economies to achieve better cost-efficiency for the programs? | ENE, AG | |
| Costs/Budgets | Why are the gas budgets significantly higher for 2013-2015 than 2012, while the savings are roughly the same? | Loh | |
| Costs/Budgets | Are increased incentives the sole driver of the increased gas budgets? If not, what else was driving them? | AG | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Costs/Budgets | Seek detailed reasons for large cost difference other than just "service territory differences." | | |
| Costs/Budgets | How much of large cost increases over 2011 are related to CHP? | AG | |
| Benefits | Overall net benefits could be improved by reducing program costs to make them more consistent with actual performance in past years. | ENE | |
| Benefits | Seek to understand how and why the PAs are "placing an increased focus on benefits". | ENE | |
| BCRs | Why do electric BCRs vary so much across PAs (from 2.77 to 6.5)? | Loh | |
| Non-Electricity Energy Savings | Seek targets for non-electricity energy savings, namely for oil heat. The state Clean Energy and Climate Plan does set savings for heating oil (.97% by 2015), need detail on heating oil savings (since savings are embedded in the electric program benefits.) | Loh, GJC | |
| Non-Electricity Energy Savings/Performance Incentives | Tie performance incentives more close to $ per MMBTu and $ per ton of carbon avoided (to take oil savings into account). | GJC | |
| Performance Incentives | Performance incentives are warranted to help spur innovation and building the infrastructure necessary to acquire all cost-effective energy efficiency, but should not be offered merely to keep operating programs as they are. Without progressing further up the overall savings curve and without explanation of what infrastructure and innovation they are undertaking, these incentives are not justified. | Loh | |
| Performance Incentives | Discussion should wait until we have much more information on Plan. | AG | |
| Participation/Customer Incentives | If, to compensate for the low cost of gas, the PAs intend to increase customer incentives, how did PAs reach this determination, what other avenues were explored in an effort to increase participation in the gas programs, and what are the new incentive amounts PAs are proposing, and how did PAs arrive at those amounts. | AG | |
| Participation | Seek concrete details as to how the PAs intend to bring customers into the programs beyond the traditional routes taken in the past. This is particularly important as we move through successive three year plans. | AG | |
| Customer Incentives | Seeks information about potential packaging of initiatives. | AG | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Assessment | Seek information on how the PAs will use the Point 380 study to approach customers. | AG | |
| Assessment | Seek discussion of the Synapse economic conditions study and its findings- how PAs used/will use the information in the study to develop C&I goals and reach out to customers/market the programs. | AG | |
| Assessment | Seek information as to how the PAs reviewed the different types of potential, their relationship to the GCA, GWSA and the Council Priorities and how, in the end, their findings related to potential were used to develop the savings goals and budgets. | AG | |
| Consolidation/Data Reporting | How will consolidation be done, and how will PAs track and report spending, savings, and participation among "initiatives" and the proposed consolidated programs, and what will be public? For sake of transparency, all of that data should be publicly available in a timely fashion (or at least available when aggregate reports are submitted) (Loh). | ENE, Loh, AG | |
| Consolidation | What, if any, effect will consolidation have on cost-effectiveness and cost-efficiency, how will PAs plan EM&V to determine success of consolidation versus the current programs' success, what if any changes need to be made in terms of marketing the programs to customers, how PAs plan to track and analyze customer feedback regarding their experience with consolidated programs. | AG | |
| Consolidation | Why did the PAs consolidate the LI programs without DPU approval. | AG | |
| Gas/Electric Integration | What specific activities will the PAs engage in over the course of the next three years to accomplish gas-electric integration? Seek concrete plans, timeline to fully seamless program designs and delivery strategies (full integration). It is particularly important on the C&I side to present customers (who have a wide variety of issues competing for their attention and effort) with simultaneous and coordinated EE plans for their business (AG). | ENE, AG | |
| Statewide Consistency | Seek details on "long-term goal" of providing consistent programs and strategies state-wide – how to achieve and how to demonstrate achievement. Timeframe for consistency? | ENE | |
| Administrative Efficiencies/Enhancements | Expect uniform treatment among all PAs by the end of this three year period. | ENE | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Administrative Efficiencies/Enhancements | Continued need for excellence in PA program and administrative staff. | ENE | |
| Data Management/Analytics | Seek specific details of data management and analytics. Seek to use to streamline administrative costs and developing targets and program offerings for hard-to-reach/serve segments. PAs should include detail on which programs and activities may use more data management and analytics. | Loh | |
| Data Management/Analytics | Seeks data analytics and reporting to carry out mandates of GCA and council priorities. Seeks information on participants served and geographic distribution of EE participants (timely reported geo-coded data, central data management system at census tract or zip code level). Seeks specific targets (report by census tract or zip code by 2012 AR, develop statewide database by 2014), naming conventions, common methodology, timely reporting, web-based query, and assurance that consolidation does not diminish quality of data. | GJC | |
| Efforts Remain Challenging | "Efforts Remain Challenging" section not clear- should be explained or removed | ENE | |
| Hard-to-reach / Hard-to-Serve / Hard-to-Measure | Seek details regarding how the PAs intend to target and reach hard to reach/hard to serve customers. Aspects to serving these customer segments to address include messaging/marketing and leveraging the positive experiences of the CMIs to create a permanent platform within the Plan to address the needs of this customer segment. Seek an update on tier incentives- what is happening, how the PAs are progressing, what is under discussion. | AG | |
| Hard-to-reach / Hard-to-Serve / Hard-to-Measure | How are PAs planning to serve condo owners given identified barriers? | AG | |
| Hard-to-reach / Hard-to-Serve / Hard-to-Measure | For all of the areas in the Plan where the PAs have not been able to develop a solution, such as landlord-tenant, outside funding/financing, seek a progress report on PA actions, proposed plans to address the issues, timelines, and hoped-for goals. | AG | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Hard-to-reach / Hard-to-Serve / Hard-to-Measure | A number of customer segments will require significant investment and innovation in order to effectively be reached and served, most notably renters, moderate-income (60-120%), non-English speaking, and oil-heated homes. Plan doesn't set targets set or propose program designs. Seek detail about what staffing, expertise, and partnerships will need to be built in order to develop effective programs. Set major milestones to achieve. | Loh | |
| Hard-to-reach / Hard-to-Serve / Hard-to-Measure | Seek to set targets and develop program offerings for hard-to-reach/serve beyond marketing and education.<br>• Pre-weatherization – project potential savings and expenses if 2012 offering were in place entire 3-year period.<br>• Tiered incentives for hard-to-reach/serve – project potential savings and expenses of geographically-targeted and possibly time limited offerings for various hard-to-reach/serve segments. The C&I Main Streets initiative (p. 49) proposes this method for small businesses.<br>• Renters – though tenants-landlords are mentioned a number of times in the plan, there are no details about specific program offerings or how these may be developed. Targets should be set for reaching renters in 1-4 unit and 5+ unit buildings.<br>• Oil heat homes - Can PAs set targets for serving oil-heated homes? Is Mass Save already "fuel blind" as is being explored for low income multifamily (p. 46)? | Loh | |
| Hard-to-reach / Hard-to-Serve / Hard-to-Measure | Seek more detail on programs and infrastructure to serve tenants (commit to working group, test program offerings, customer service, statewide goal for renters). | GJC | |
| Hard-to-reach / Hard-to-Serve / Hard-to-Measure | On bottom of page 50, the subsection title refers to "Hard-to-Measure", but in the text, it refers to "hard-to-reach". Is this a typo? If this is correct, then I am concerned about the commitment to develop methods for reaching and serving "hard-to-reach". | Loh | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Pilots/Hard-to-Measure | AG is concerned that the PAs have not yet finalized what is to be done with these efforts, some of which have been running for 2+ years. AG suggests attaching time limits to pilots and hard to measure efforts. | AG | |
| Moderate Income (60-120) | Seeks ways to overcome financial barriers for 60-120% of state median income (lighting, appliance and HVAC programs in addition to weatherization, testing 4-6 geo-targeted incentives, target "Environmental Justice Communities," establish goal to serve this group, pilot no-cost weatherization, build loan loss reserve for HEAT loan). | GJC | |
| Pre-Weatherization | Seeks additional details on pre-weatherization proposal. | ENE | |
| Pre-Weatherization | Set specific targets and budget; give priority to customers who received CMI audit, increase limit per household, increase total pre-weatherization budget, track and report conversion rate from audit to work. | GJC | |
| Community Engagement | Seek additional details on how the PAs will engage communities. | ENE | |
| Community Engagement | Seeks specific targets and budgets (25% Mass Save marketing budget to community outreach; 12-15 community based initiatives per year, earmarked funds for translating materials). | GJC | |
| Community Engagement/Marketing | Seek more details on how community based outreach and marketing will be integrated. How much do PAs anticipate budgeting? Which methods will be applied where? Who will be involved in shaping the evolution of these approaches? | Loh | |
| Marketing | Have PAs already started developing tailored marketing campaigns for certain industries? What are the plans? How is Point 380 being used? | AG | |
| Education | Seek an education program to create energy literacy, with specific budget (priority for funds to Title I schools or schools in Environmental Justice Communities). | GJC | |
| Education | Support any-age education, such as carbon class offered by community based and faith based organizations. | GJC | |
| January Public Comments Meeting | Seek meaningful treatment of the ideas shared at the public comment session (e.g., health care sector, large commercial office space). Seek seamless gas/electric integration as noted in public comments. | ENE, AG | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Market Barriers/Increased Penetration | What do the PAs plan to do to address/overcome the identified market barriers? (other than just increase incentives) What strategies will be used to increase awareness? What will PAs do to go deeper/broader? | ENE | |
| Regulatory Guidance | What is meant by the term "regulatory guidance" (p. 27)? | ENE | |
| Financing | What do the PAs expect to be the level of demand for financing over the next three years (p.32)? | ENE | |
| Financing | Seek additional details on which types of financing options the PAs are exploring (p.33). | ENE | |
| Financing | What is the level of consistency in financing offerings among the PAs? Among gas and electric? | ENE | |
| Financing | Seek details on the PAs' work regarding customer barriers to accessing capital. What are the identified barriers by segment and how are PAs planning to address them, including a timeline for resolution (partial or full). | AG | |
| Funding (FCM) | Regarding FCM, seek some discussion of the work the NE ISO is currently doing to forecast energy efficiency savings for its purposes, and the effect, if any, that work has on the savings goals contained in the Plan and how the ISO work will affect, if at all, the PAs FCM bids. | AG | |
| Funding (FCM) | What is PAs' perceived risk to program funding if PAs are unable to deliver on their FCM bids. | AG | |
| Funding (RGI) | Seek detail on potential delays in the receipt of RGGI funds; explain how PAs developed the assumptions in the RGGI table on page 31. | AG | |
| HEAT Loan | Proposal to expand HEAT loans to gas customers in municipal light districts is good. | ENE | |
| HEAT Loan | Isn't HEAT Loan already available to gas customers? | Loh | |
| HEAT Loan | Seek additional information on proposal for expanding HEAT loans to gas programs, including the budget for the interest pay-down, anticipated participation, how this will be marketed to gas customers, whether or not the potential for HEAT loans increasing participation in the gas programs was factored in to the gas savings goals. | AG | |
| EM&V | On page 33, the PAs discuss EM&V factors and trends relied on to develop the savings goals- what were they and how were they used in goal development? | AG | |
| EM&V | Seeks information on the basis for the 4% budget determination | AG | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Bill Impacts | When will EEAC see new bill impacts? | AG | |
| Bill Impacts | Consideration of bill impacts must be a priority, specifically since the priorities require sustainability which is difficult to achieve if we overburden ratepayers' bills. Additionally, the PAs must be mindful of bill impacts as the DPU is required to consider them when approving the Plan and the EERFs. | AG | |
| Carbon Compliance | PAs should produce a table of BCRs showing a range of values for avoided cost of compliance cost. | GJC | |
| HES Program | Seeks additional details. | Loh | |
| Residential LED Lighting | Seeks details on how PAs plan to promote residential LED. | Loh | |
| Residential HVAC | Does promotion of central a/c make sense? Do PAs have performance and cost-effectiveness data on heat pumps (for space or water heating)?<br>What budgets are proposed for residential gas and electric HVAC equipment? | Loh | |
| Multi-Family | Seek details on multi-family strategy; commit to working group, expand offerings for fuel-blind improvements. | GJC | |
| Lighting | What progress have the PAs made on mitigating program attribution issues related to lighting? How and when will PAs refine incentive levels? | AG | |
| HVAC Cool Smart | Seek more info on the early replacement package offer, including how PAs plan to address the loss of savings when changing from an efficient product (before the end of its useful life) to a more efficient product (Page 44-45). | AG | |
| LIMF | Pleased to see the proposed expansion of low-income multi-family program efforts to serve "for profit" properties | ENE | |
| LIMF | "For Profit Properties" – seek more information as to the additional budget dollars needed to do this, the increased savings, anticipated participation and how the PAs intend to reach and interact with this segment (Page 46). | AG | |
| C&I New Construction | How are the PAs intending to educate C&I customers about energy efficient equipment prior to equipment failure? When equipment fails, C&I customers need to act fast to get their business back on track – that's not really the time to be educating them about efficient equipment. | AG | |
| Upstream Initiatives | How are the PAs intending to expand upstream initiatives to the replacement-on-failure market? | AG | |

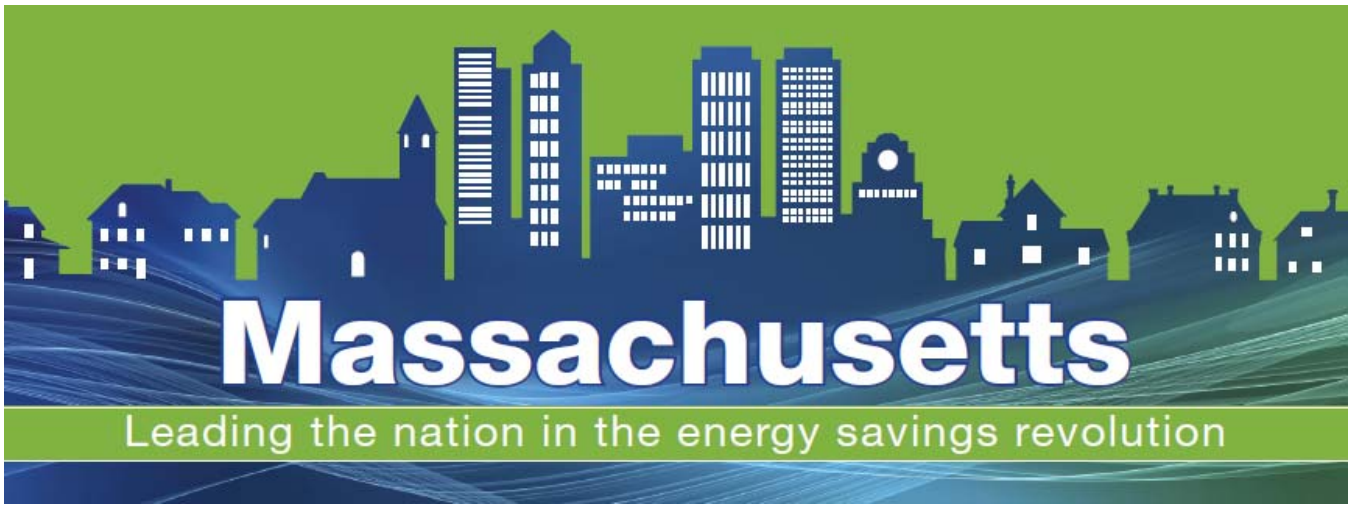
| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Property Management/Real Estate | What's the plan? Have PAs reached out to the real estate community? How are PAs going to address barriers like split incentives? When will this go to market strategy be finished and brought online? How will it be tracked with an eye towards gauging its success? | AG | |
| C&I Retrofit | When will PAs decide whether to increase incentives? What's the process for determining by how much they should be increased? What's the process for decreasing them if/when gas prices rise? | AG | |
| CHP | Are the PAs "shopping" CHP to customers or are they relying on customers to approach them? | AG | |
| Street Lighting | While understanding obstacles is necessary, finding ways to overcome those obstacles is the key to developing this initiative- more detail should be provided. What's the timeline? Who are the stakeholders the PAs are working with? | ENE, AG | |
| Expanded Service Offerings | Seek details, e.g., when these offerings will be online, how PAs intend to notify customers of these options, cost, anticipated participation through these options. | AG | |
| Main Street Implementation | Seek budgets, anticipated savings and participation and how PAs will track this initiative for success. | AG | |
| Market Segmentation | Are PAs intending to tailor MOUs for smaller customers or "chain" customers? | AG | |
| Behavior Feedback | Seek clarification on savings attributable to this program (consultants indicate large savings, National Grid indicated difficulty in savings attribution). | AG | |
| Workforce Training | What exactly are PAs looking to do? | ENE | |
| New Technologies | Pleased with focus on new technologies in MTAC. | ENE | |
| New Technologies | Explain how PAs will proactively pursue new technologies and incentive structures. | ENE | |
| New Technologies | What is the plan for reviewing emerging technologies for inclusion in the programs? | AG | |
| Codes & Standards | Need details on program. What value will the PAs will add to ongoing efforts related to building codes and appliance standards? Need more details about what the PA role is, proposed budgets, and formulas/methodology for attributing savings. PAs role needs to be well defined and clearly justified. | ENE, Loh, AG | |

| Category | Question/Comment | Councilor | ✓ |
|---|---|---|---|
| Codes & Standards | Seek information given that Codes and Standards are supposed to be such a huge driver of savings. Why are the PAs "considering" support of DOER's stretch code? Is this related to whether or not PAs can claim savings related to stretch codes (in AG's opinion, PAs cannot)? | AG | |
| TRM | When the TRM is updated in August/September, will the proposed 2013-2015 Plan be updated to reflect any changes? Will this be brought back before the Council for its review/approval if there are significant changes? | AG | |
| Smart Grid | Can anything be used from the pilots done on Smart Grid? Seeks some acknowledgement that some pilots have been done and where it may fit over the next few years. | AIM (Bob Rio) | |

## F. Report on Appreciative Inquiry Summit

# Massachusetts: Leading the Nation in the Energy Savings Revolution

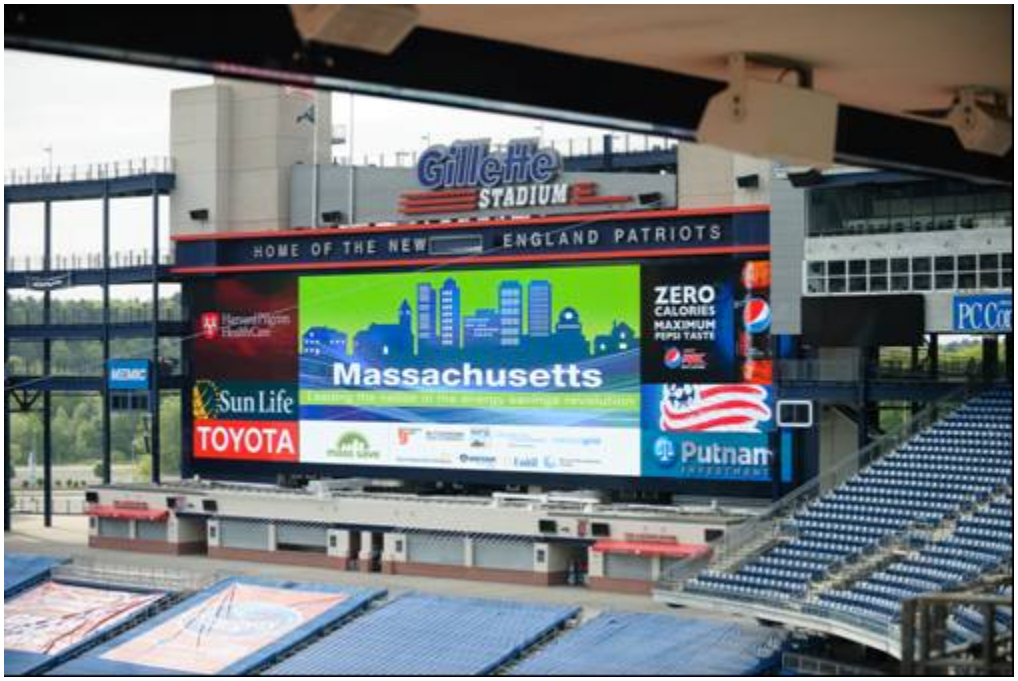
**Gillette Stadium, Foxborough, Massachusetts, May 15-16, 2012**



# Massachusetts: Leading the Nation in the Energy Savings Revolution

## An Appreciative Inquiry Summit
## May 15-16, 2012

## Final Report

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**please visit www.MAEESUMMIT.com**

## Contents



## Preface

We, the Massachusetts' Energy Efficiency Program Administrators were pleased to welcome a tremendously diverse group of over 250 business and civic leaders, policy makers, advocates, and residents who participated in "Massachusetts: Leading the Nation in the Energy Savings Revolution - Building a Better Tomorrow Through Energy Efficiency Today", an Appreciative Inquiry (AI) Summit held on May 15-16 at Gillette Stadium in Foxborough, MA. Massachusetts Governor Deval Patrick and Mr. John Fish, Chairman and CEO, of Suffolk Construction served as Keynote Speakers.

Specific goals for the Summit included:

- Solicit input, thoughts and ideas to shape Massachusetts' energy efficiency plan for 2013 - 2015 and beyond.
- Identify best practices and experiences and place 2013 - 2015 plans in the context of longer term aspirations and the vision of leading the nation in the energy savings revolution.
- Ensure access to energy efficiency programs for all and enhance the customer experience.
- Build stakeholder relationships and beginning a call to action for 2015 and beyond.

To accomplish these goals, the Summit was designed based on the simple notion that when it comes to system-wide innovation and integration, there is nothing that brings out the best – faster, more consistently and more effectively – than the power of "the whole".

Participants, chosen to participate because of their valuable contributions to the community, skills, expertise and experience, came together in this highly interactive session to generate ideas for shaping the next 3-year Energy Efficiency Plan, as well as longer-term plans, that will ultimately form a roadmap for Massachusetts' energy efficiency future.

This report is a summary of the wide-ranging discussions and debates take took place at the Summit and captures the special collaborative spirit that permeated the many sessions that took place over the course of two days.

# Steering Committee

**Paul Cantello**
National Grid

**James Carey**
New England Gas

**Elizabeth Cellucci**
Columbia Gas

**Robert Coates**
Western Massachusetts Electric

**Dr. David Cooperrider**
Case Western Reserve University

**Maggie Downey**
Cape Light Compact

**Gail Esbin**
National Grid

**David Gibbons**
National Grid

**Frank Gundal**
NSTAR Electric & Gas

**Christina Halfpenny**
MA Dept. of Energy Resources

**Elliott Jacobson**
Low Income Energy Affordability Network

**Emmett Lyne**
Rich May P.C.

**Cherie Miles**
National Grid

**John O'Dell**
City of Worcester

**Katie O'Rourke**
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**Thomas Palma**
Unitil Corporation

**Kristen Pomer**
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**Wendy Preston**
Columbia Gas

**Danielle Rathbun**
MA Office of the Attorney General

**Mike Sommer**
Berkshire Gas

**Tilak Subrahmanian**
NSTAR Electric & Gas

**Carol White**
National Grid

**Peter Wingate**
Community Action

**Matthew Zenni**
New England Gas

# Introduction

Today in Massachusetts we lead the nation in energy efficiency. We have made efficiency our "first fuel" to meet energy needs. The Green Communities Act made a fundamental change by requiring our utilities to "buy" energy efficiency whenever that is cheaper than building more power plants. Today, we are investing about five times more in energy efficiency annually than we were in 2008. As a result, the American Council for an Energy Efficient Economy ranked Massachusetts first in the nation for energy efficiency, the first time any state has surpassed the state of California in the rankings.

For the $2 billion in energy efficiency investments we are making over three years, we are generating $6 billion in benefits for industrial, commercial, and residential energy consumers. The challenge remaining is how to get every business and household to take advantage of these opportunities to reduce consumption, protect the environment, save money, become more sustainably competitive and live more comfortably.

Investments we make in energy efficiency lead to dollars being spent right here in Massachusetts which supports job creation. Jobs in energy efficiency grew by nearly 10% in 2011. Not only does energy efficiency improve the environment and help meet state goals for reducing greenhouse gas emissions by 25%, it's a big part of the reason why Massachusetts has rebounded from the global recession faster and stronger than our competitor states.

In order to maintain our leadership role in improving the efficiency of businesses and residences, the full spectrum of stakeholders will need to continually re-examine and improve upon existing approaches while remaining steadfast in our collective commitment to lead the energy savings revolution.

# Summary

Over the course of the Summit, participants discussed an incredible array of issues related to energy efficiency. Working in small, highly interactive groups, participants progressed through a series of exercises encompassing the 4-D appreciative inquiry cycle of Discovery-Dream-Design-Deploy.

Beginning with a Discovery phase, participants explored individual expectations and experiences and identified sources of innovation and success both in Massachusetts and beyond. Subsequent Discovery challenged participants, organized in stakeholder-specific subgroups, to identify and share with the broader group the strengths, motivations and capabilities that have supported the success of efficiency efforts to date and will serve as important underpinnings for the future.

On day two, the focus turned to Dreaming about the future – an exercise designed to stretch imaginations and expectations of what the world could look like in ten years and what changes would need to take place to make that future a reality. With visions of the future fresh in their minds, participants broke into small stakeholder-centric groups focused on the Design of the Future -- what has been done well and why, what could a better plan look like, and what deeper insights have surfaced as a result of sharing diverse perspectives and experiences.


*"The implementation and execution of the Green Communities Act, as everybody in this room is familiar with, has been a game changer."*
-- Massachusetts Governor, Deval Patrick

At the culmination of these sessions, the groups turned to Deployment, creating and sharing aspiration statements specific to each stakeholder subgroup. These aspiration statements created a unified sense of long-term focus and act as the "stretch" goals of the group.

Ultimately, participants left the Summit with a sense of pride in past accomplishments and a renewed determination to build upon those successes to continue leading the nation, and perhaps the world, in the energy savings revolution.

# Aspirations

Participants, organized in small, stakeholder specific groups were asked to consider what the future could hold if we were able to make our hopes a reality – what are the highest aspirations, what is the value, nature and quality of execution, the end result and impact, and the sense of purpose embodied in the aspiration. The following are the statements of aspirations developed by Summit participants – their *vision of the future*.

## 1. Education


Energy efficiency education in Massachusetts is universal and effects all ages and segments. Through innovative curriculum implementation Massachusetts has developed an energy literate society. Energy education is forever. And everyone needs to know.

## 2. Sustainability Culture

Sustainability is essential to the health of our earth, the economy, our communities, our businesses, our households, our wallets and each of us. We are stewards for future generations. Massachusetts is a leader in energy efficiency and exports its ideas around the world and invests in energy efficiency leaders. Massachusetts is implementing a broad reaching educational curriculum that is being adopted throughout the U.S. and abroad. Massachusetts is engaged in ongoing efforts to foster sustainability utilizing partnerships of diverse parties such as vendors, academics, business leaders, community groups, government and local representatives. We have created jobs, opportunities, increased participation, reduced energy costs, and successfully engaged communities to make Massachusetts the most efficient state in the nation and a worldwide model of sustainability.

*"The best way to predict the future is to create the future."*
-- Peter Drucker

## 3. Marketing & Outreach

Massachusetts will transform how its citizens, businesses and organizations and government talk about and use energy. The value in efficiency opportunities available are universally understood where every customer will be involved by 2015. Energy efficiency is what we do, how we think, act and share. It is an integral part of our lives, our schools, our communities and our work places. Customers learn about efficiency services and incentives through their networks, where they live and where they work and play from the people they trust. Massachusetts residents are part of

the clean energy revolution regardless of income, race or neighborhood. Massachusetts continues to lead the way delivering programs, jobs and environmental value that is the envy of the world.

## 4. Residential Retrofit

Participating homes will be saving an average of forty percent of their energy usage. Of said participants, five percent will be participating in deep energy retrofit. In addition, we will have a five hundred percent increase in the number of customers implementing deeper savings measures across all fuel categories. We will also be optimizing the incentive structure for maximum participation from all customers including hard to reach and hard to serve segments. We will be emphasizing whole building savings and projects. Moreover, the feedback from our customers will be that our program is simple and easy to navigate and worthy of investing their time and money. The next time we hold this Summit no one will comment that nobody has heard of our program. Finally, we will remove all barriers and disincentives to reducing oil consumption.

## 5. Residential New Construction

Massachusetts new homes and properties are built to be energy efficient. These are the most desirable homes in the state and nation. They have plentiful fresh air and inhabitants are healthy. Materials inside and out in new homes are durable, and sustainable and affordable. Inefficient modes are not accepted industry standards. And, these homes are smart and inexpensive.

## 6. Low Income

Comprehensive, all fuels, energy efficiency measures are installed in all low income housing units and agencies serving low income customers including health and safety, pre-weatherization measures at no cost to participants. Additionally, there are demonstration projects of innovative energy technologies in low income settings throughout the Commonwealth.

## 7. Multi-Family

Massachusetts has implemented the “yes we can” multifamily program. One hundred percent of multifamily new construction in the Commonwealth is enrolled. Multifamily building owners and tenants are engaged and participate in a single point of contact, fuel blind, flexible, and comprehensive program. The needs of renters and owners are being exceeded. Renters can now

see their energy rating on the Mass Save website. And they can use those ratings to select their property. Other states in the U.S. are looking to us for guidance.

## 8. Small Business

We have empowered our small business customers to be technically savvy energy users. They understand the value of continuously improving conservation and take responsibility for proactively continuing to control energy use in their businesses by staying engaged in energy efficiency education opportunities offered by their Program Administrators in conjunction with local business organizations and making use of their easily accessible real time data. Overall, this class of customers has reduced its energy usage significantly. Massachusetts small businesses now are recognized for their participation with large "I did my share" stickers which can be predominantly placed in their windows.

*"Labor was to the Industrial Revolution just as energy is to the Innovative Revolution."*
-- Mr. John Fish, Chairman and CEO, of Suffolk Construction

## 9. Large Business

Large business energy efficiency programs have created a customer driven culture of energy awareness that is driving sustained energy savings. Program success consistently occurs by taking all continuous improvement actions to achieve complete implementation and demonstrate proven, sustainable results. A streamlined approach continuously creates awareness and engagement that transform the paradigm from a utility driven program to a customer driven program. A fifty percent market penetration of customers is realizing a twenty percent reduction in energy intensity.

## 10. Health Care

Massachusetts has continued its best in the world healthcare programs lowering sector energy consumption by an average of twenty five percent statewide while improving patient outcomes and increasing staff satisfaction and safety. Key elements of this accomplishment include a focus on data availability, quality and management, targeting the right technologies at the right time and providing a broad sector wide focus on education and knowledge sharing. The Massachusetts healthcare industry looks forward to sharing their experience nationwide to both improve the

national landscape of healthcare and leverage the connection between energy efficiency and health in all sectors to improve overall health outcomes.

## 11. Finance

Massachusetts is back on the front cover of *Time* magazine, again, for the 5-5-15-50 plan. And we didn't mention financing because financing is no longer seen as a barrier to energy efficiency investments. But to explain the 5-5-15-50 plan, that's 5 billion a year going into funding 5 percent of the building stock, achieving on average of 50 percent energy savings in 2015. That change is driven by whole building performance based loans and also by record heat loan investments that have made it a national model. Pre-weatherization is also not really mentioned because it's either covered by upfront incentives or rolled into the heat loan. And, energy labels are standard for any building participating in any of the programs. But, various companies such as Google, Facebook and others are competing for market share on who has your energy tracking data for your home energy use.

# Participant Recommendations

In order to make strides toward achieving their aspirations, participants contributed to the development of the following specific recommendations regarding efforts that should be undertaken. These recommendations have been assigned to the appropriate stakeholder groups and have been woven into the 3 Year Energy Efficiency Plan being developed by the Program Administrators.

## 1. Education

Explore & implement a standardized K-12 energy education program, meeting Massachusetts Comprehensive Assessment System (MCAS) criteria, encompassing both the science and economics of energy generally and energy efficiency specifically.

## 2. Professional Development & Training

Explore and implement a curriculum or specific training and development programs designed to expand the number of qualified energy professionals/engineers capable of expertly servicing efficiency customers on a fuel blind basis.

## 3. Community Initiatives

Explore releasing Request for Proposals (RFP) or Request for Information (RFI) to organizations that can assist in engaging hard to reach/hard to serve populations.

## 4. Multi-Family / Commercial Office

Determine the best methodology to resolve and overcome the most commonly faced challenges facing multi-family and commercial office customers.

## 5. Marketing

Evaluate and determine how to improve awareness of availability and value of energy efficiency offerings.

*"We would literally astonish ourselves if we did everything we are capable of doing."*
-- Thomas Edison

## 6. Tenant / Landlord – Commercial & Industrial

Research and evaluate successful tenant/landlord programs for potential adoption in Massachusetts for master-metered buildings.

## 7. Tenant / Landlord – Residential

Research and evaluate successful tenant/landlord programs for potential adoption in Massachusetts for individually metered buildings.

## 8. Process Improvements

Conduct process review of programs to identify opportunities for streamlining and simplifying the customer experience.

## 9. Residential

Consider revised incentive structure or alternative program designs to increase accessibility to programs by low to moderate income customers and research incentive cap for other customers.

## 10. Low Income

Determine if incentive cap should be raised or waived in certain circumstances for Low Income customers.

## 11. Large, Corporate Campus Complexes

Evaluate challenges and complexities and develop strategies to comprehensively serve customers with large campus based facilities.

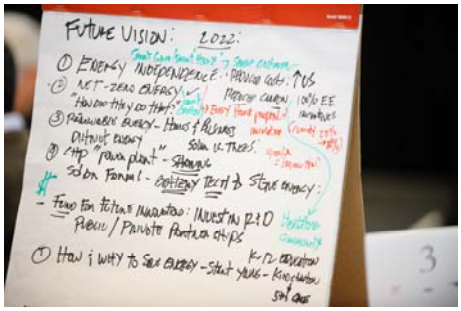
## 12. Financing

Investigate developing a mechanism for those that don't currently qualify for a loan.

## 13. "Train the Trainers"

Develop and implement a plan to engage AI Summit participants in an outreach communication and education campaign.

## 14. Small Commercial & Industrial




Develop a one-stop shopping program for all gas and electric technologies.

## 15. Health Care

Determine if energy efficient medical equipment exists and explore collaborative marketing opportunities.

## 16. Smart Grid

Determine feasibility and benefits of integrating Smart Grid enabled measures into energy efficiency programs.

## 17. Large Commercial & Industrial - ENERGY STAR® Benchmarking

Review ENERGY STAR® benchmarking as a possible statewide building labeling approach and coordinate where appropriate with the Massachusetts Dept. of Energy Resources.

# Conclusions

At its conclusion, the business and civic leaders, policy makers, advocates, and residents who came together in historic ways at the Summit, addressed common challenges and found common solutions and were able to produce a range of insights, recommendations and commitments to action that will form the foundation of the roadmap for Massachusetts' energy efficiency future.

With a deeper understanding of our collective venture, Summit participants came to broad consensus and reinvigorated commitments were made on a number of critical fronts. Major thematic recommendations related to:

- *Fostering Education* – Whether it relates to school aged children across the Commonwealth or working professionals, participants recognized that in order to meet our collective aspirations, both in the near- and long-term, it is critically important that we actively support the continued development of knowledgeable consumers and capable and competent service providers.

- *Improving the Customer Experience* – By increasing awareness, simplifying and streamlining processes, or providing offerings more specifically relevant to individual segments of customers, improving the customer experience was recognized widely as a key to expanding involvement by businesses, institutions, and residents in the various efficiency programs made available under the auspices of the Green Communities Act.

- *Creating a Culture of Sustainability* – Participants felt very strongly that truly making energy efficiency our 'first fuel' will require a fundamental shift from what to date has largely been the reactive involvement of a select minority of highly progressive and forward thinking stakeholders transforms into proactive involvement by a vast majority of all stakeholders.

- *Building Awareness through Marketing & Outreach* – Achieving widespread awareness of the availability and benefits of energy efficiency across the Commonwealth, using best in class marketing and communications practices, was considered by participants to be an essential precursor to significantly greater involvement by business and residents in making their buildings and homes more energy efficient.

Already, work has begun in each of these areas and the Massachusetts energy efficiency Program Administrators are codifying their commitments in the 2013-2015 Statewide Energy Efficiency Plan being developed in close collaboration with the full spectrum of stakeholders.

The opportunity to build a sustainably competitive future has never been greater. However, to reach our collective potential, we must intensify our efforts and remain steadfast in our commitment to the efficient use of energy in buildings and industry and homes, fostering economic development and innovation in the energy efficiency services and technology industries, saving money for consumers, and spurring growth in all sectors of our economy.

Much has been achieved, but much more needs yet to be done. In many important respects, the journey to capture all available cost-effective energy efficiency has just begun. Our collective experience since the passage of the Green Communities Act has shown conclusively that tremendous progress can produce tremendous benefits to the full spectrum of stakeholders in the Commonwealth. In order to continue and expand upon this progress, we must all – government, businesses, individuals – redouble our efforts to ensure Massachusetts continues to lead the energy savings revolution.

*"Massachusetts may lead the nation, but leading the world is where we can be and where we ought to be."*
-- Massachusetts Governor, Deval Patrick

# Acknowledgements

*The Program Administrators would also like to thank the following businesses and organizations for their valuable support of, and participation in, the Appreciative Inquiry Summit "**Massachusetts : Leading the Nation in the Energy Savings Revolution**".*

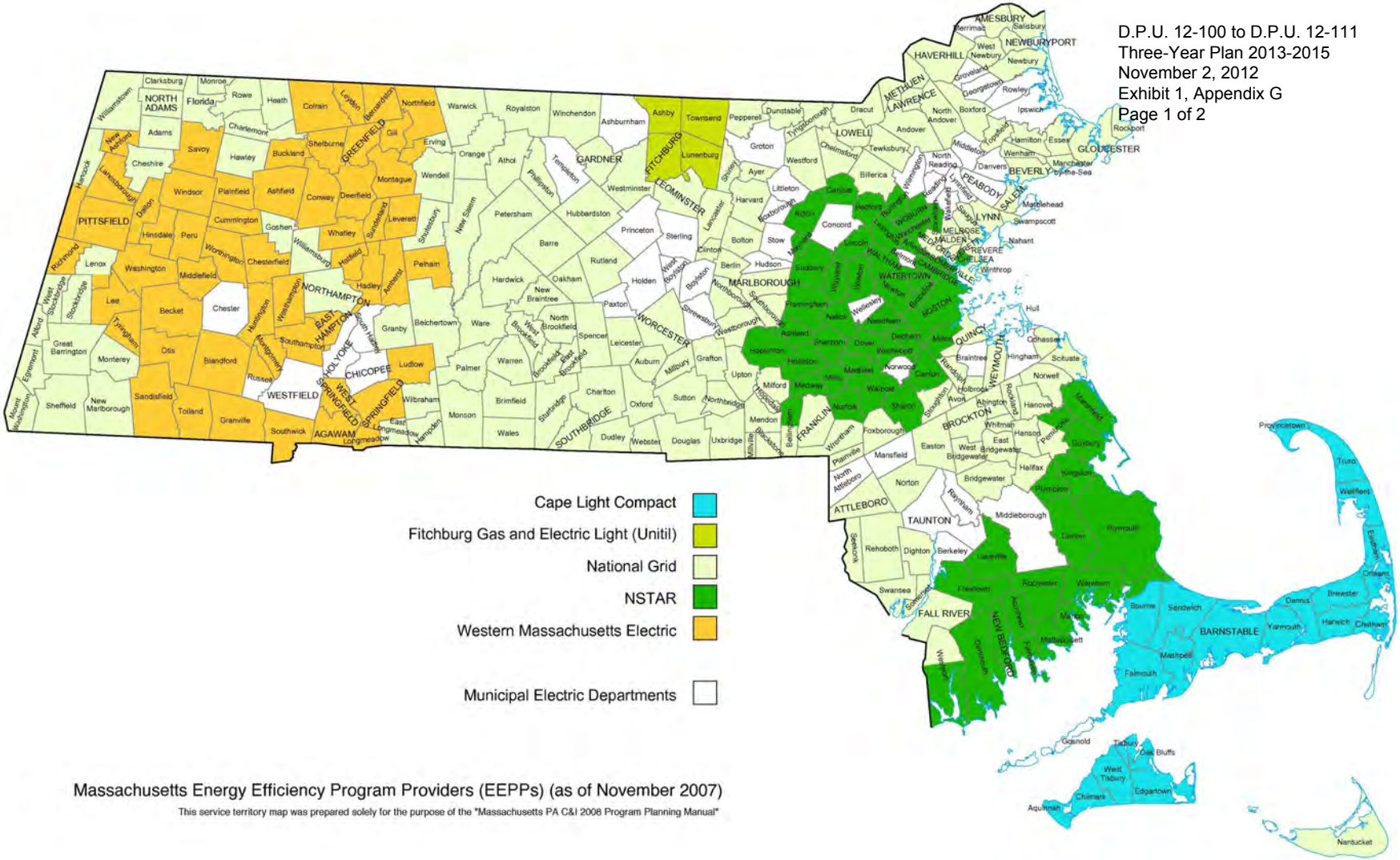
- A Better City
- Action for Boston Community Development, Inc.
- Action, Inc.
- Acton-Boxborough Regional School District
- AECOM
- Alternatives for Community & Environment
- Andelman & Lelek Engineering
- Baker Engineering & Controls, Inc.
- Barr Foundation
- Bell's Power Coating
- Berkshire Gas Company
- Best Buy Co., Inc.
- Bluestone Energy Services, LLC
- Boston Light Source
- Boston Medical Center
- Brandeis International Business School
- Brickstone Properties
- C3 Energy
- Cadmus Group
- Cambridge Energy Alliance
- Cape Air
- Cape Cod Insulation, Inc.
- Cape Cod Regional Technical High School
- Cape Light Compact
- Case Western Reserve University
- CBRE
- Cedar Mediterranean Foods
- Center for EcoTechnology
- Childrens Hospital Boston
- Citizens Bank
- Citizens for Citizens
- City of Boston
- City of Fall River
- City of Marlborough
- City of Medford
- City of Northampton
- City of Pittsfield
- City of Worcester
- Clark University
- Clean Water Action
- Columbia Gas of Massachusetts
- Community Action
- Community Action Programs Inter-City, Inc.
- Community Development Partnership
- Community Labor United
- Competitive Resources Inc.
- Conservation Law Foundation
- Conservation Services Group
- Consumer Assistance Council
- Co-op Power
- Cooperrider and Associates
- Cozy Home Performance, LLC
- Dave Legg Energy Associates
- Dean College
- Democracy and Regulation
- DNV KEMA Inc.
- Dolphin Insulation Inc.
- E Source
- e" inc."
- Eastern States Exposition
- ENERCON, Inc.
- Energy Conservation, Inc.
- Energy Consumers Alliance of New England
- Energy Federation, Incorporated
- Energy First LLC
- Energy Management Consultants inc
- Energy Source inc
- EnerNOC
- Environment Northeast
- Environmental League of Massachusetts
- EXL Group
- Exxel, Inc.
- Fall River Housing Authority
- FirstFuel Software
- Fitchburg State University
- GDS Associates, Inc.
- GE Lighting
- General Dynamics
- Genzyme
- Green Needham Collaborative
- Greening Greenfield Energy Committee
- Groom Energy Solutions LLC
- Hanover Insurance Group
- Heading Home
- Healthcare Without Harm
- Heywood Hospital
- Hologic
- Homeowners Rehab Inc
- HomeWorks Energy
- Honeywell
- Horizon Energy Services
- Horizon Solutions

- ICF International
- Independent consultant
- J&R Industrial Wiring/Plimoth Bay Controls, LLC
- Kelliher Samets Volk
- Livermore Energy Associates
- Local Initiatives Support Corporation
- Lockheed Martin
- Low-Income Energy Affordability Network
- Marion Institute
- Massachusetts Committee on Telecommunications, Utilities and Energy
- Massachusetts Department of Environmental Protection
- Massachusetts Department of Housing and Community Development
- Massachusetts Department of Public Utilities
- Massachusetts Division of Capital Asset Management (DCAM)
- Massachusetts Energy Consumers Alliance
- Massachusetts House of Representatives
- Massachusetts Institute of Technology
- Massachusetts Maritime Academy
- Massachusetts Office of the Attorney General
- McEachern Insulation Inc.
- McLaughlin Weatherization
- Meister Consultants Group, Inc.
- MOCA Systems
- Mount Holyoke College
- National Consumer Law Center
- National Grid
- Negawatt Systems LLC
- New Ecology, Inc
- New England Gas Company
- New England Patriots
- New England Patriots Stadium
- New Jersey Institute of Technology
- NiSource
- Northeast Energy Efficiency Partnerships
- Northern Energy Services
- NSTAR
- Ogden Martin Systems
- Omnilite
- Onyx Specialty Paper, Inc.
- Opower
- Optimal Energy
- Partners Healthcare
- Peabody Properties
- Portland Energy Conservation, Inc. (PECI)
- People Organizing for Wealth & Ecological Restoration
- Peregrine Energy Group
- Philips
- Power Options, Inc.
- PRISM Consulting, Inc.
- Prism Energy Services
- Raytheon
- Renewable Energy Design
- Rethinking Power Management
- Rich May, P.C.
- RISE Engineering
- River Energy Consultants
- Rouleau Consulting Group, LLC
- Save Home Energy, Inc
- Schneider Electric
- Schwank USA
- Serrafix
- Siemens Industry, Inc
- South Middlesex Opportunity Council
- South Mountain Company, Inc.
- Springfield College
- Structure Tone
- Sustainability Inspired
- Symmes Maini & McKee Associates
- TD Insurance
- The Kraft Group
- Town of Falmouth
- Town of Weymouth
- Tufts University
- UGL Services - Unicco Division
- UMassMemorial Health Care
- Unitil Service Corporation
- Upper Cape Cod Regional Technical School
- US Green Building Council MA
- Veolia ES Technical Solutions
- Western Massachusetts Electric Company
- Winn Development
- Worcester Community Action Council
- Worcester Energy Barnraisers
- WSP Flack + Kurtz
- Yale University
- Yankee Candle Company

# Massachusetts: Leading the Nation in the Energy Savings Revolution

**Gillette Stadium, Foxborough, Massachusetts, May 15-16, 2012**

## G. Maps of Service Areas




Massachusetts Energy Efficiency Program Providers (EEPPs) (as of November 2007)

This service territory map was prepared solely for the purpose of the "Massachusetts PA C&I 2008 Program Planning Manual"