Programs and Strategies to Achieve All Available Cost-Effective Efficiency: Early Report on Bending the Curve in Massachusetts

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ABSTRACT

In 2008 Massachusetts enacted the Green Communities Act, which directs the electric and natural gas program administrators to submit three year energy efficiency plans to the Massachusetts DPU that "provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective." The plans submitted for Commission review and approved in January 2010, are expected to increase annual savings threefold over 2008 levels, to 2.4% annual savings in 2012, thereby resulting in bending the load curve downward toward state climate mitigation targets.

To accomplish these aggressive savings targets, all aspects of acquiring savings cost-effectively are being examined. Underlying strategies to acquiring these savings are 1) to reach deeper into facilities early on, to learn how best to get these savings, and then go broader overtime; 2) to incorporate a multi-year/multiple action approach to acquiring savings from a range of customer segments 3) to integrate fully electric and gas delivery of program offerings to customers; 3) to use financing and on-bill repayment mechanisms to facilitate and increase customer participation in the programs; 4) to use outside funds both to reduce the plans' cost impact on ratepayers and to support increased customer participation; and 5) to maintain a statewide marketing and education campaign.This paper will focus on these key strategies, describing how they are incorporated into the program designs and how implementing these in the early phases of the three year plans will set the stage for achieving the higher savings targets. Included will be a discussion of issues associated with each strategy and how they have been addressed in the plans.

Introduction

In 2008 the Massachusetts Legislature enacted the Green Communities Act ("GCA"), a broad piece of legislation which established the policy framework and institutional structures by which energy efficiency and clean energy resources would be deployed in the Commonwealth. The statute directed the five electric and seven gas energy efficiency program administrators to submit three year plans to the Massachusetts Department of Public Utilities ("DPU") that "provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply." The plans submitted for Commission review in late October 2009 and approved in January 2010 are expected to cost over $1.5 billion, produce over $6 billion in customer benefits, and produce energy savings equivalent to 2.4% of projected sales in 2012, which bend the load curve downward toward state climate mitigation targets.

These are daunting targets, which some observers believe are at the edge of what is achievable. This paper will provide a historical context for the new efficiency plans, discuss the strategies that have been adopted within the plans to achieve these savings targets, and offer some preliminary observations on their delivery to customers.

Background

1989 – 1997: Negotiated EE Budgets

Large scale deployment of energy efficiency programs is not new to Massachusetts. The then vertically-integrated electric utilities began offering programs to all their customers in 1989. Following an initial statewide process to establish template programs for all the utilities, the specific program content and associated budgets were developed within individual utility energy collaboratives with key stakeholders and their consultants. Because the products of these collaboratives were based on regulatory settlements among the parties, the budgets were the result of negotiations among those parties, and varied from year to year, as well as across the utilities in any given year. Statewide, the budgets generally ranged between $85 and $100 million. Planned annual program savings were developed based on, and limited by, the negotiated program budget and the cost of acquired savings ($/kWh).

Programs were offered to customers in all the sectors – residential, low income, commercial, and industrial, and generally consisted of direct incentive prescriptive programs, some without any customer contribution and others with the utility incentive and a customer co-pay, and site-specific custom projects with utility incentives and customer co-pay. Early programs focused on paying full costs for retrofit projects. Incremental cost-based incentives were introduced several years into the collaborative process, as a broader array of implementation strategies were introduced, responding to changing situations in the supply market, to address budget-constraints, and to a better recognition of market-oriented program design. In time the utilities became very proficient at delivering these programs to their customers, learning how to manage their programs to the budget.

1998 – 2009 System Benefit Charge as Budget

In 1997 the Legislature passed the Electric Utilities Restructuring Act, which while requiring the electric utilities to divest themselves of generating plants they owned also stabilized the level of energy efficiency funding. A Systems Benefit Charge ("SBC") was established, initially set at 3 mils per kilowatthour but in 2001 reduced by statute to 2.5 mils per kWh. This fixed charge reduced the uncertainty of available program monies – now only affected by changing electric sales from year-to-year – while maintaining annual limits on annual acquisition of energy savings by the amount of SBC revenues and the unit cost to obtain the savings. In 2006 and 2008 two additional sources of monies grew the program budgets. ISO-New England initiated a forward capacity auction mechanism to ensure available capacity to meet the region's electrical needs, and in the process opened the auction to full participation by providers of electrical capacity inherent in energy efficiency programs; the program administrators in the Commonwealth[1] have each participated in these auctions, placing the proceeds into their

[1] The Restructuring Act had also enabled non-utility aggregators to offer energy efficiency programs to customers. To date only the Cape Light Compact has taken advantage of this statutory opportunity. The term "program

efficiency budgets. With the 2008 Green Communities Act the state's energy office, Department of Energy Resources ("DOER") was directed to allocate at least 80 percent of the revenues from the Regional Greenhouse Gas Initiative allowance auction to the PAs' efficiency budgets. The result of these multiple actions led to stable electric energy efficiency program budgets of approximately $125 million year.

Over the years savings have varied, but on average have been in the range of 450 annual GWh and 60 MW. Considering the annual electric energy sales, Massachusetts' electrical energy efficiency program savings have provided approximately 0.8 percent of the total annual electric load (generation plus efficiency).Gas efficiency programs were more modest in past years, both due to the smaller size of the gas service territories and to the more limited number of measures offered to customers. A modest gas collaborative had been established under the auspices of the state energy office, focusing initially on providing services to low income customers. This expanded in time, serving residential and C&I customers as well, with 5 year efficiency plans submitted for review and approval with the DPU. By 2007 the gas utilities were spending $25 million annually on their efficiency programs.

2010 – 2012 and Beyond: All Available Cost-Effective Efficiency

The Green Communities Act language requires the electric and gas program administrators to plan for and acquire all available energy efficiency and demand reduction that are cost effective or less expensive than supply. With this mandate the entire way of goal setting for efficiency programs was turned upside down. No longer was a budget amount specified as the starting point for program planning, from which the program savings were estimated. Now, the PAs have an obligation to identify and acquire all cost-effective efficiency, limited only by the extent to which the DPU is willing to approve any necessary charge on distribution rates to support programs above and beyond budgets derived from the existing funding sources. The GCA specified a number of other key elements to its efficiency strategy:

- Both electric and gas program administrators were directed to prepare three year (2010-2012) draft statewide efficiency plans by April 1, 2009;
- An Energy Efficiency Advisory Council ("EEAC" or "Council") was established, consisting of a wide range of stakeholders appointed by the DPU and chaired by DOER, with 11 voting members and several non-voting members including the electric and gas program administrators;
- The Council was authorized to retain consultants to support their activities, and was directed to review and comment on the draft statewide plans and by no later than July 30, 2009;
- The PAs were then to submit the statewide and their individual plans to the DPU for review by October 30, 2009;
- The DPU had to render its decisions on the plans within 90 days after receipt of the plans.

Aside from the requirement that the EEAC comment on the program administrators' efficiency plans, the Green Communities Act provides little guidance on the scope of the

administrator" or "PA" has become the common term used in Massachusetts for the entities who deliver programs across defined territories in the state.

Council's responsibilities. The only additional direction was that the Council "seek to maximize net economic benefits through energy efficiency and load management resources and to achieve energy, capacity, climate and environmental goals through a sustained and integrated statewide energy efficiency effort."[2] The EEAC hired a consultant team to support its activities in late February 2009. During the program administrators' preparation of the efficiency plans, the Council took an active role in providing the PAs with its priorities for the plans, in negotiating with the PAs for aggressive savings targets to be included in the plans, and in providing detailed comments on the plans as they were prepared by the PAs. The GCA had also mandated that an assessment of all-available efficiency be submitted to the DPU in the PAs' plans. The type of assessment was unspecified.

Given the limited time available, the Council consultants conducted a meta-analysis of recent and current technical potential and related studies from neighboring states as a basis to establish an estimate for the maximum amount of cost-effective efficiency. This Assessment, approved by the Council in a formal resolution[3], was later used as the basis of negotiations between the Council and the PAs on annual savings targets (in absolute energy units), and associated annual performance (financial) incentives. Those targets established the underlying basis for the development of all the planning data in the plans – program savings, costs, benefits, net benefits, benefit-cost ratios. Table 1 shows the savings targets that formed the basis of the PAs' efficiency plans.

Table 1. Electric and Gas Savings and Budget Targets 2010-2012

	2010 Target	2011 Target	2012 Target
Electric			
Savings Target as % of Retail Energy Sales	1.4	2.0	2.4
Annual Energy Savings (GWh)	630	910	1109
Annual Budget (total electric PAs, $million)	302.1	451.1	584.0
Gas			
Savings Target as % of Retail Energy Sales	0.60	0.90	1.15
Annual Energy Savings (therms)	12,510,000	19,000,000	24,500,000
Annual Budget (total gas PAs, $million)	86.5	114.4	143.4

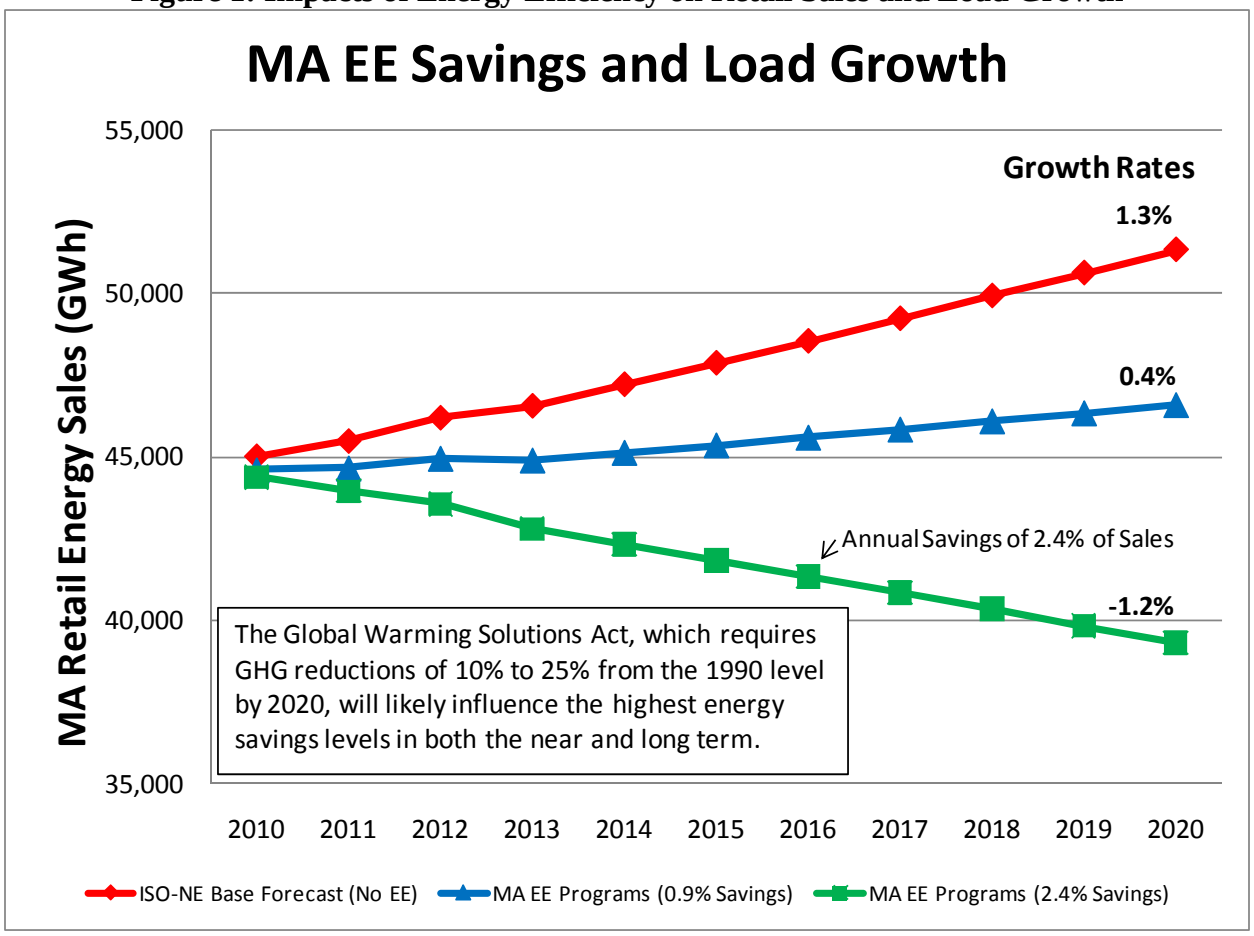
From data tables submitted to the Massachusetts DPU by the program administrators during the proceedings on the PAs' 2010-2012 Energy Efficiency Plans.

Figure 1 below shows the significance of the electric targets in terms of their impact on retail sales and load growth. The curve that continues the "business as usual" level of efficiency from past years, with annual energy savings at 0.9 percent of total retail sales, reduces the sales forecast from an average annual growth rate of 1.3% for the "no EE" scenario to 0.4%. The curve that shows the 2010-2012 plans and the achievement of 2.4% annual savings going forward reduces sales growth still more, from approximately 0.4 percent growth per year to more than a 1.2% decline in projected sales, a result of the impact of the aggressive energy efficiency programs. In 2008 the Massachusetts Legislature also passed the Global Warming Solutions Act, which directs the state to establish goals for GHG reductions between 10% and 25% below 1990 GHG levels by 2020 and 80% by 2050. The largest, and least expensive, opportunity for GHG reductions is energy efficiency in existing and new buildings. The electric savings targets

[2] GCA Section 22. (b).
[3] For Council documents and meeting materials, see www.ma-eeac.org.

agreed to by the PAs, if attained, will be in the middle of the range for the 2020 GHG target defined by the statute.

Figure 1: Impacts of Energy Efficiency on Retail Sales and Load Growth



Prepared by the EEAC Consultants based on the ISO-NE forecast, historical data on MA programs, the 2010-2012 plans, and 2.4% annual savings for 2012-2020.

Expanding the level of energy efficiency from historic levels, when annual energy savings were approximately 0.8-1.0 percent of the retail sales, to 2.4 percent by 2012, is a considerable stretch, even for highly experienced program administrators. This ramp rate and the level of savings in 2012 (2.4% annually) are unprecedented across an entire state plan portfolio.

Issues and Strategies to Reaching the Savings Targets

Cost Considerations As the Driver to Strategies for Attaining Greater Savings

The cost of efficiency programs and its impact on ratepayers has been an influencing factor on program design and program implementation strategies, from the level of customer incentives for measures to the level of marketing that is undertaken to attract program participation. Traditionally a budget is established and all the elements of a program plan are developed with the budget in mind. The passage of the GCA removed program budgets as the primary driver in the development of the three year plans, shifting the emphasis to the acquisition

of all available cost-effective savings. Not ignoring the need to consider the impact of obtaining these savings, the GCA mandated that the programs should be delivered at the lowest possible cost and directed the DPU to consider the bill impacts of the incremental ratepayer costs associated with the program portfolios in its deliberations[4].

During the program planning process, a number of parties had expressed concerns about the potential bill and rate impacts that might result from program design and program scale. There was thus considerable interest among all parties to limit the need for additional funds from ratepayers beyond those available from the system benefits charge and revenues resulting from the RGGI and ISO-NE forward capacity market auctions. The challenge for the PAs was to design program plans and strategies to acquire these savings while mitigating the need to seek large additional funding from ratepayers.

The Council, its consultants, and the Program Administrators recognized that acquiring these savings would take more than just expanding delivery of the existing programs to more customers. The 2010 goals might be attainable simply by expanding the programs to serve more customers. It was clear, however, that additional program approaches and strategies would be needed to reach the 2011 and 2012 savings goals, as the anticipated costs to achieve those savings levels were more than the PAs and Councilors seemed willing to support. The challenge was to develop ways to balance competing objectives in the context of acquiring large levels of savings. These included minimizing the need for additional ratepayer funding, keeping the savings unit cost as low as possible, maintaining quality control, and serving all sectors. The approach discussed among the parties and adopted by the program administrators in their Plans was to use an array of strategies, each with its own challenges, but when combined into the appropriate program, sector, and portfolio combinations, would create the synergies that would lead to successful attainment of the savings targets, while seeking to maximize the value of those savings. These are listed and discussed below.

- Deeper savings
- Multi-year and multi-actions
- Electric and gas integration
- Financing and on-bill repayment
- Other funding
- Statewide marketing and education campaign

These program design and strategic building blocks would need to be put in place during 2010 to influence program participation, to test the approaches, and to set the stage for attaining the high savings levels in the next years.

Deeper Savings

The treatment of facilities in ways that lead to greater savings than have been acquired in the past is a core element of the way savings will need to be sought. The theme “deeper, then

[4]To facilitate its consideration of bill impacts during its review of the efficiency plans, the DPU initiated a bill impact working group to develop a common methodology and prescribed a number of criteria that needed to be addressed in the methodology. Among these was a presentation of the stream of benefits (bill reductions) that program participants would continue to receive beyond the three year plan horizon.

broader" became an early mantram in discussions with the Councilors, as it was recognized that "going broader" first would postpone learning how to get deeper savings from customers, likely lead to more expensive energy savings than might be necessary, and make it more difficult if not unlikely that the PAs would meet the three-year savings goals. To repeat the mantram, however, does not create the savings, and because the body of information about delivered cost-effective deeper savings is not large, much of the work that PAs will be undertaking will be in the context of "do and learn." This approach applies equally to residential, multi-family, and C&I retrofits. While the bulk of savings will come from existing buildings, new construction projects will also be targeted, as whatever savings are embedded in those facilities as they are built will remain for the buildings' entire lives.

Through modeling and in-field projects of residential homes, the PAs will gain insights into the savings and cost associated with different measure packages, as well as how cost-effectively they can be delivered. In the residential retrofit program, a fuel-blind program, savings in recent years have averaged around 7 percent across all projects (from those just involving an audit and CFL bulbs to more extensive projects yielding greater savings through treatment of the building envelope and/or mechanicals). The latter projects yielded savings in the 15 percent range. With the inclusion of blower door testing and air sealing for all eligible participants, modifications of the delivery structure, use of other strategic building blocks, and an increased campaign to encourage deeper facility treatments, the 2010-2012 program is expected to achieve much higher total savings. Program plans anticipate achieving 20 to 30+ percent savings in served projects, while also reaching many more homes annually than in previous years. Several program administrators have been involved in a number of residential retrofit pilot projects, exploring multiple combinations of measure packages, collecting information about the measures and the packages, and identifying issues related to deeper savings projects. At this time it is too early to share specific information or to draw any substantive lessons from the experience, although anecdotally the PAs are indicating that the three completed projects attained over 50 percent savings and have received on average over $32,000 in incentives. Final data analysis has not been conducted, so the cost-effectiveness of measure packages is not available.

The PAs' efficiency plans call for the largest portion of the overall portfolio savings to come from their large C&I retrofit programs. Acquiring deep retrofit savings across a large array of commercial buildings, especially larger facilities, is a challenge from several perspectives. In past years commercial retrofit projects have most often involved the replacement of one end use, measure or system (lighting systems in a defined building area, chiller systems, etc.). Going deeper will entail obtaining savings from a multiple number of such retrofits within each participating project, even if the savings are acquired over several years instead of all at once. To accomplish this it will be important that the PAs' project management systems track customer participation rather than continuing past practice of maintaining project records by unique account number. This will enable the PAs to know which large C&I customers have participated over time and what opportunities may remain with that customer's facility.

The PAs will need to undertake more complex analyses and collect existing research to understand these buildings. Over time one would anticipate that specific decision rules about how to approach these facilities will be able to be established, so that not every commercial facility is treated fully as a custom project. Of comparable importance in the acquisition of commercial retrofit savings is the initial process of getting a large number of building owners and other key decision-makers to participate in the efficiency programs. Getting these

individuals and entities to agree to a multi-year stream of efficiency projects will involve a larger commitment than most have made to date, and may require that the PAs increase their marketing efforts and provide greater information about the savings opportunities and other benefits that can come from such participation in the efficiency programs. This is discussed further below.

Multi-Year and Multi-Actions in Facilities

The mandate to acquire all cost effective efficiency within the scope of each three year plan changes at least two significant aspects of the Program Administrators' goals and operations. First, as noted above, simply meeting the goals in the second and third years of the plan requires that Program Administrators impact customers more comprehensively and more deeply. That means Program Administrators must move from program and widget-centered offerings to customer-centered approaches that harmonize with customer perceptions of need and pathways to action. Customer-centered offerings consider that any class of customer may not be willing or able to address all efficiency needs at one go. Customers need roadmaps that describe their efficiency needs and provide sign posts for what projects should be taken at each point, often over multi-year periods. Just as a homeowner may plan to replace a roof one year and paint the house the next, efficiency work, especially deeper more costly measures, can be planned and implemented on a schedule. This is not the way most efficiency programs have done business in the past with the limited resources they had available. The PAs' will need to treat customers as customers with whom they have relationships, not as one-time participants in a prescriptive rebate program who may or may not participate in other disconnected prescriptive programs.

Second, regulation and program oversight need to recognize the multi-year nature of goals and accomplishment recognition. Although the Massachusetts plans are three years in duration, there are annual goals for each year and performance incentives tied to those annual goals. There is a danger of a conflict in which the need to achieve annual goals perversely rewards concentration on the easy to achieve prescriptive goals, minimizing the comprehensive, deeper approaches needed to truly achieve the long term objectives of this first plan and succeeding plans. This is not a trivial risk. It requires not only the Program Administrators to change their thinking and operations, it requires the oversight agency, DOER, and the regulatory body, the Department of Public Utilities, to change their perspectives and approaches to assessing achievement to appreciate this longer term mode of operation. This is particularly important for C&I retrofit projects, which are expected to deliver over 80 percent of the overall portfolio lifetime savings and over 65 percent of net benefits, and whose project costs will need to absorb multiple customer visits and remain cost-effective. The PAs will need to develop new internal tracking systems for their customers, including reviewing past services provided, so that they will know the status of each customer. In communications with customers the PAs will need to develop mutually agreed to implementation plans so that the facility(ies) will be fully treated over time by the available efficiency programs with cost-effective measures and services.

Status. The ability of each PA to carry out successfully this multi-year, multiple project approach to treating customers depends in part on the ability of the project tracking systems to follow individual customers. Typically projects are recorded by project number and account number, and are not tied directly to a customer name. The first step, being undertaken by one of the larger program administrators, is to develop the mapping of account numbers back to specific customers, so that the multi-visit process can grow from previously treated customer projects.

Other PAs are expected to modify their tracking systems in ways to enable following an individual customer over time. PA field representatives will be expected to include this information as they continue project outreach and as they respond to requests for facility treatment.

Electric and Gas Integration

The electric and gas program administrators have for a number of years offered services in conjunction with each other in the fuel-blind residential retrofit program, MassSave. The delivery strategy incorporated into the efficiency plans extends this approach across all programs other than straightforward prescriptive measure programs. The intention is to implement a delivery model that simplifies the experience the customer has both in learning about savings opportunities and options and in obtaining the savings measures from the efficiency programs. In addition, it is intended to ensure that all cost-effective measures are considered by the customer. On the PA side, increased integration and coordination of gas and electric programs[5] is expected to lead to a variety of benefits, including:

- Enhanced customer service, including fuel-blind recommendations and priorities for energy savings and simplified application process.
- Simplified consistent messaging to customers and other market actors.
- Economies and efficiency in program delivery.
- Capturing more comprehensive savings at participating facilities.
- Improved cost-effectiveness analysis that ensures all energy and non-energy benefits are identified and accounted for.
- Improved benefit cost ratios that reflect benefits of both gas and electric measures.

The electric and gas PAs have begun developing the organizational approaches that will provide "one-stop shopping" to customers – a single contact through whom all electric and gas information and services will be delivered to the customer. Regardless of whether the customer initiates the contact with their electric or gas provider, the opportunities for savings from both fuels will be addressed at the same time.

Status. Gas and electric measures continue to be offered together as part of the residential retrofit program. Work continues on integrating the residential electric and gas HVAC offerings. A newly designed multifamily program includes gas/electric integrated services as a core feature of the outreach and services provided to customers. The primary C&I sector programs are in the latter stages of development, and are also focusing on integrating the delivery of gas and electric services to customers, while addressing the range of data tracking, vendor education and training necessitated by this integration. Over the past year PA staff have increasingly accepted and adopted integration of gas and electric delivery as a core theme, although challenges remain to ensure that all PAs have adopted this new program approach and are successfully implementing it with customers and between themselves.

[5] 2010-2012 Massachusetts Joint Statewide Three-year Electric Energy Efficiency Plan, October 29, 2009, p. 43 and 2010-2012 Massachusetts Joint Statewide Three-year Gas Energy Efficiency Plan, October 29, 2009, pp. 49-50.

Financing and On-Bill Repayment

Retrofit and new construction efficiency projects are typically supported by a PA incentive and a customer co-pay. These co-pays may increase in future years as the PAs encourage customers to contribute a greater proportion of project costs than previously. However, the co-pay is often a significant barrier to customers in all classes. The seeming contradiction is that the costs for the measure or project are all up-front, while the bill savings associated with the measures are spread out over the life of the measure, generally seven years or longer. With program strategies related to encouraging deeper savings, and thus greater customer costs, this dichotomy between the timing of cost and bill savings becomes even further accentuated and creates a potential greater barrier to program participation, and thus PA success in achieving its savings goals.

To overcome this barrier, program administrators have for a limited number of efficiency programs adopted the concept of financing and on-bill repayment. In Massachusetts this has been used for a number of years in the small business retrofit programs, to enable customers with limited funds to benefit from the installation of high efficiency lighting products, refrigeration, and occasionally HVAC equipment, at little or no upfront cost to the customer. Program funds are lent to participating customers, who repay their share of the project cost through an additional charge on their electric bill, over a period of time usually designed to ensure a positive or near positive cash flow. For program administrators whose billing systems are not capable of adding lines onto the electric bill a separate (sundry) bill is created. For the historic small business programs, in which the bill pay-off period is two years or less, the default rates have typically been in the 1-2 percent range, an acceptable rate to the PAs.

Status. The PAs are exploring approaches to expand the financing and repayment options to other customer classes and segments including municipalities, residential participants in the residential retrofit program, the multifamily program, and other areas where such a mechanism may be of value to customers and the programs. A working group of interested stakeholders has been working for several months to identify, discuss, and propose solutions to a range of issues related to these types of loans – how or whether to establish credit worthiness, service shut-off rules in the event of non-repayment, income limits, issues associated with landlord and renters, whether the loan (and thus the repayment) is tied to the customer or to the meter, etc.

While issues related to financing and on-bill repayment for residential and business owners are not trivial, it is clear that the most difficult aspects of this strategy are those related to residential and commercial rented and leased property. With the majority of tenants – rather than the property owners – paying the utility bills, there is little incentive for the landlords to make capital equipment investments without receiving some compensating benefits. At the same time tenants must be protected in their homes and businesses from unethical property owner practices (e.g., raising rents beyond that needed to recover costs). The balances will be difficult to achieve but crucial for success. Thirty five percent of Massachusetts residents live in rented properties, as does the great majority of small businesses. The working group recently submitted its report to the Council, focused on recommendations addressing the owner opportunities; discussions continue on the rental property issues. Recommendations for regulatory consideration of the appropriate elements of these issues are included in the report. Once the remaining issues are

resolved and guidance from the DPU provided, financing and on-bill repayment will become a valuable option for customers, as the PAs continue to encourage deeper savings in customer premise.

Other Funding

As the savings targets were being discussed during 2009, the Council and PAs recognized that the associated budget levels could not be supported if the incremental costs above the historical funding sources[6] all came from ratepayers as increased electric or gas charges. The electric PAs committed to seek and obtain $100 million from other funding sources in 2011 and $200 million in 2012; the gas PAs committed to seeking $20 million in 2011 and $40 million in 2012. These monies could come from any number of sources, from revenues derived from federal climate change legislation; foundations; grants; or investments from the financial community.

The PAs also understood that reaching the 2011 and 2012 savings targets would require that an increased number of program participants achieve deeper savings in their facilities, and that for each of these projects the customer costs would be large. It would not be possible to support financing and on-bill repayment of customer costs by relying solely on the existing efficiency funds as the lending pool: their use for this purpose would impinge on the PAs' ability to continue to deliver other program elements to customers and to serve other customers. The PAs proposed that 40 percent of the other funding be used to support one or more revolving load funds or other lending mechanisms which would provide loans to ratepayers, repaid through the on-bill repayment mechanism. The remaining 60 percent of the other funds would be used directly in programs, offsetting the need to seek additional monies from ratepayers. Successfully locating sources of funds at these planning levels will boost the PAs' ability to reach their targets without placing undue pressures on the approved rate increases for these plans.

Status. Acquiring these funds will not be an easy task. A number of funding mechanisms are being explored, to learn what the opportunities might be, to understand the program-related and other criteria that affect the offered lending rate, and to learn what program or customer data the lenders may expect in order to support these efforts. The PAs are actively communicating with the financial community, as is DOER, which on behalf of the Council has committed to supporting the effort to find and obtain such funds. At this stage the activities remain exploratory, but enough common information is being obtained that the PAs and the Council are now able to begin considering what specific proposals to make to lenders, so that the trade-offs between risk to the lenders and interest costs to the program can begin to be examined, and decisions made.

Statewide Marketing and Education Campaign

For years individual PAs have included marketing strategies as a part of their campaigns to inform their customers of the benefits of participating in the efficiency programs. Individual programs have also used marketing to inform and seek to entice customers to participate in the

[6] For the electric PAs these included a system benefits charge for energy efficiency, funds from the periodic RGGI allowance auctions, and revenues from the ISO-NE Forward Capacity Market auctions; for the gas PAs this included a conservation charge within the gas bill.

program. With the focus on statewide efficiency plans, common programs across the Commonwealth, and a state perspective on the savings targets, their costs, and the environmental benefits that are expected to accrue from these actions, it was also natural to expect that marketing and educational campaigns become more unified and oriented to a common message across the state. This effort is intended both to educate customers about the opportunities and to provide information about the benefits of participation in the programs and to encourage their participation. With a well planned and coordinated marketing and educational effort the general themes discussed above can be reinforced with customers and may influence the extent of their participation.

Status. Soon after the three year plans were approved by the DPU in late January 2010 the program administrators moved to establish, with guidance from DOER, a common statewide website. Its intent is to provide information to customers in all sectors, which both educates them about the benefits of participating in the efficiency programs and helps them determine which programs would provide them with appropriate efficiency measures and services[7]. In addition, the PAs have collectively hired a marketing firm to support the statewide efforts to inform and encourage program participation. Over the coming months and years the firm will work with the PAs and DOER to identify and carry out strategic marketing campaigns intended to support both particular near term targeted efficiency efforts and the broader campaign to encourage all customers to participate in the programs and to "go deep" in the process.

Summary and Conclusion

The Commonwealth of Massachusetts has embarked on a challenging yet exciting path to dramatically ramp up energy efficiency delivery over the next three years, driven by a statutory mandate to capture all available cost-effective energy efficiency. To succeed in acquiring the savings inherent in that mandate, the five electric and seven gas program administrators will need to deliver their programs with care, thought, and vision. The savings targets in 2011 and 2012 cannot be attained by repeating the program designs of 2009. Additional program themes and elements – building blocks – are going to be needed to encourage customers to participate aggressively and to make that participation accessible. These building blocks include 1) attending to customers so they participate multiple times and/or implement many efficiency activities at the time of visit; 2) learning how to acquire deeper savings before going broader in the marketplace; 3) integration of gas and electric delivery into a single pathway to efficiency services; 4) expanded use of financing and on-bill repayment; 5) active and successful acquisition of other funding to support program funding and loan opportunities for customers; and 6) development and deployment of an intelligent and exciting marketing and educational campaign to spur customer interest and participation in the efficiency programs. Lots of disparate elements will need to come together over the three years to successfully meet the savings targets and at the same time support the Commonwealth's climate change mitigation strategies.

[7] See www.MassSave.com