

**Residential Workshop #2**  
**February 26, 2015**  
**9:00 AM – 12:30 PM**  
**Division of Fisheries and Wildlife Field Headquarters**  
**1 Rabbit Hill Road, Westborough, Massachusetts**

**Meeting Summary**

35 people attended this workshop (see Attachment A for the participant list). The background documents and presentation slides can be found on EEAC website: <http://ma-eeac.org/february-26-residential-workshop-2-meeting-materials/>

**INTRODUCTION, CONTEXT SUMMARY, AND WORKSHOP OVERVIEW**

Ian Finlayson, Department of Energy Resources (DOER) and Dr. Jonathan Raab, facilitator from Raab Associates, welcomed the group to the second workshop focused on Residential initiatives and reviewed the agenda. The workshop objectives were to review and discuss options in the Home Energy Services (HES) initiative, the New Construction initiative, and the Behavior initiative. During the final third workshop, the voting Councilors will finalize recommendations to be reviewed and considered by the full Energy Efficiency Advisory Council (EEAC) for packaging into resolutions that will be distributed to the Program Administrators (PAs) to clarify the EEAC's priorities for the next three year plan.

**Home Energy Services (HES) Initiative**

Presentation

Courtney Moriarta, SRA, provided the HES initiative overview. See the presentation slides on the website.

Clarifying Questions

Councilors asked the following clarifying questions and provided the following comments about the HES initiative overview. *Responses are in italics.*

- Is the certification level under the program the only difference between home performance contractors and independent insulation contractors?
  - *Yes, they self-select into the role they play and they must meet minimum qualifications for that role.*
- What is the conversion rate on the chart (on slide nine)
  - *Conversion rate in this chart is defined as conversion from assessment to installation of weatherization measures.*
- What is Unitil doing differently to have such high numbers?
  - *Unitil served as its own only vendor for many years, but this year they contracted with a lead vendor due to higher activity level. Historically, Unitil only did audits*

*and were not implementing measures at the site visit. The Home Performance Contractors (HPCs) we worked with in 2013 were aggressive and in a position to serve the customer turn-key, which led to that high conversion rate percentage, although it seems higher than I would have expected.*

- Is this chart (slide 9) saying that about 30% of those who get an assessment actually implement one of the recommended measures?
  - *This graph is only showing the conversion rate from an audit to installation of weatherization measures. It doesn't include other measures like heating equipment. The nuance is in the difference of how it is measured: audit to installation conversion rate versus recommendations to installation conversion rate. There would be a different, likely higher conversion rate, if you looked at customers who received a recommendation for weatherization and then implemented weatherization measures. But, not all customers receive the recommendation for weatherization and this chart only shows those who completed the audit then implemented weatherization measures.*
- How many people have had weatherization or audits completed in each service territory?
  - *We would need to take a historical look at how many homes were weatherized over the past 20 years.*
- What is the magnitude of people that have been audited over the decades?
  - *The Cape Light Compact recently did a penetration study and it was easier—yet still an expensive analysis—for us to determine because we only started in 2001.*
- The DOER is interested in understanding the customer base and how much work has been done, similar to the 5 year census that is completed in the Pacific Northwest to determine which customers were served by specific programs over time. Are we arriving at a point where we need to determine where our customers have or have not been served?
  - *It is big undertaking but we cannot assume there is an unlimited customer base. We need to be thoughtful about how we find those customers.*
- National Grid is looking into this but we did not anticipate going back to the inception of the program because, on the one hand you could say X number of people participated but on the other, due to improvements in technology, you might determine that some customers could come back for more assistance. It is tough to determine.
- Regarding the question about percentage of people touched in each service territory, the Mass Save Data website displays the total number of customers who received weatherization measures last year. It is roughly 1% of overall households in Massachusetts per year, not just 1-4 unit buildings.
  - *The difficulty of teasing out these numbers is getting the baseline right.*
- You noted that multifamily is included in Efficient Neighborhoods+ (EN+) and Renew Boston, but I thought these programs were for 1-4 units?
  - *They are for 1-4 units. Moderate income customers and renters are, in general, served in both HES and Multi-Family Retrofit but specifically targeted in EN+ and Renew Boston.*

- Has there been any consideration given to identifying best practices from, or comparing and contrasting the similar or different elements of the EN+ and Renew Boston programs to figure out which version worked better?
  - *The PAs consistently talk about this. The programs are very similar but also very different. A specific discussion about this would be useful.*
- Is income qualification determined based on the resident or on the unit? For example in Vermont, if the monthly cost of the apartment is within the affordability range for a moderate income resident, then it qualifies the unit for weatherization as opposed to assessing the residents income to determine the qualification.
  - *Discount rates are included in the utility rate structure in Massachusetts and the CAP/low income agencies perform income verification. Income verification is closely linked to fuel assistance so if a consumer is eligible for fuel assistance, the PAs receive this information and the customer is placed on a discounted rate. This is what currently allows the classification between discount rate and market rates.*
- It was disappointing to see the briefing papers only addressed the weatherization assistance program coordination issues in conjunction with multifamily (five units and above) when this is a serious issue for 1-4 unit buildings. The complications of trying to do a whole building retrofit when we are talking about income qualification and fuel assistance combined with tenants who are under the weatherization assistance program is a main concern for improving whole building 2-4 unit work in Boston. We need to address the weatherization systems coordination question in 2-4 unit buildings.
- What is the status of the RCS regulations?
  - *They are currently drafted, out for public review and under review by the new administration. The main goal was to revisit the old statute for provision of services to all residential buildings, which has implications for buildings defined as multi-family, and to clarify and open the market for fuel conversions or fuel switching. The regulations are expected to be finished by summer.*

## Discussion

Dr. Raab posed specific questions about various topics related to the HES initiative. The questions and councilor discussion in response to each question is organized below by topic area.

### *Deeper Savings*

What approaches to achieving deeper savings offer the best opportunities for increasing depth of savings in a cost efficient manner while providing a high quality experience for the customer? For example, deep energy retrofits, improving rate at which recommended measures are installed, testing a comprehensive/customized approach to savings, or other.

- Two suggestions, monitoring recommendations and targeting high-energy users. First, monitor home performance contractors to ensure the recommendations they make

actually lead to substantial home energy reductions. This would help us understand differences in the results of PAs and how differences in contractors influence the results. Second, target and engage high-energy users in discussions of how to reduce their energy use because they are the best opportunity for deep savings.

- Building on the targeting of high-energy users, Renew Boston and utility partners are conducting outreach with electric resistance heat users in Boston to identify and engage high-energy users.
- We cannot expect people to know they are high-energy users unless they receive the information in a clear, non-judgmental way. DOER scorecards from the Home MPG pilot, which looked at the house rather than the user and predicts the energy (in mmbtus) a typical family would use, seem to be a good way to convey the information. The scorecard ties into the audit program and recommends measures that would help reduce energy use to levels on par with average energy users.
- Several suggestions: First, collect data to understand where projects might not be getting deeper savings. Second, forge partnerships between utilities and trust-worthy community groups that work with specific residents or housing types on financial literacy. The community partners could encourage the community members to utilize utility programs and could incorporate—and in turn give credible endorsements for—energy efficiency recommendations while delivering programs on financial coaching, tax return completion, etc. Third, leverage touch points such as financial transactions or building upgrade processes to gain access and make energy efficiency recommendations. For example, a financial group funding a building retrofit could be a partner to promote measures while completing the retrofit. Fourth, consider how to get deeper savings at one time (as opposed to multiple touches with one customer) with the \$2000 insulation incentive in the 1-4 unit market rate program.
- The rate of double-dipping for insulation in the market rate program occurs in less than 5%. We also have seen approximately the same close rates between people whose jobs are under \$2,000 and those whose jobs are over \$2,000. Regarding high-energy users, we use behavioral programs to target them to get the most savings and generate leads into other programs. Cross marketing of the programs led to a noticeable increase in participation in the programs—the behavior program vendor claims 20 percent, though that seems high to me. In terms of monitoring HPCs, we have performance based savings for HPCs which helps to close sales and drive savings by giving them more bonus money for installing measures at the time of the audit and increasing the closure rate. We expect this to improve over the next three years.
- I am in favor of improving shallow savings before attempting deeper energy retrofits. In terms of benchmarking, we need to understand the cost of customer acquisition in terms of actual cost, cost per therm saved, cost per bulb installed, etc. And we need to look at the cost of the HES program and all the different parameters. The close rate is the key thing and I think we are targeting the wrong customer. We need to figure out how to target the right customer with the right product. Next Step Living is losing three million dollars a year on the audits; there is no money in the audits.

- Renters comprise 68% percent of the Boston population—as a general observation, figuring out how to reach renters seems more important than how to drive deeper savings. All these issues are interrelated; it is hard to decide how to parse them out individually. Concerning deep energy retrofits, the Boston population lives in duplexes and triple-deckers, not in single-family homes that are easier to weatherize. This leads us to focus on whole building approaches; but the major challenge is coordinating the programs available to people living in 2-3 unit buildings. Renew Boston has a dedicated landlord coordinator whose charge is to figure out how to deal with duplex or triple-deckers where one tenant is served by the weatherization assistance program, and therefore served by Low income Energy Affordability Network (LEAN) and Action for Boston Community Development (ABCD). Where and when can program design at the level of a three-year plan recognize and address this challenge?
- Regarding (utility bill based) scorecards, they can send the wrong message when benchmarking is done randomly and many homes are vacant for several months of the year (e.g. in Western Massachusetts or on Cape Cod). Opower is not the silver bullet.
- The people who are trying to sell weatherization are technicians, not sales people. We need to track and see who is dropping the ball to be able to increase close rates.

Dr. Raab summarized the areas of suggestions made by the group to drive deeper savings.

- Focus on increasing the closure rate on weatherization—e.g., analyze why jobs are not closing and improve contractor monitoring and other methods of increasing performance
- Integrate a scorecard to communicate “home energy performance” pre and post cost-effective recommendations, and to compare to other homes
- Reassess the insulation incentive (75% up to \$2,000), including considering whether to adjust both the \$2000 limit and the 75%, and two tiers for market rate vs. moderate income
- Collect more information to enable the targeting of customers such as high-users or those with electric resistance heat
- Improve program coordination by tracking measures at the household level where possible (i.e HEHE and HES, MF and Low-income but not retail lighting)

#### *Moderate income customers and renters*

Two questions were posed. First, how could/should efforts to serve moderate income customers be revised and expanded to a larger scale in the 2016-2018 Plan? How can renters in particular be more effectively reached and served?

- Two suggestions, better coordination and finding ways to better serve renters. Better coordination is needed between the low income and general Mass Save programs, particularly in communities with a high number of the population between 60 and 100% of median income. To better target weatherization for these customers, we could learn from LEAN’s method for determining where an applicant falls in the median income.

Regarding the challenge of serving renters, we may need to redesign the Mass Save 1-4 unit program or create a special program for renters, potentially deploying trucks to target rental neighborhoods for a door to door approach to complete assessments, make recommendations, and provide incentives. Then, after gaining access for the assessment, the program would focus on working with the renters and landlords on insulation and heating system replacements.

- I support the aforementioned ideas and add that the suggestion of trucks in the neighborhoods is too expensive for the home energy assessment to be the only entrée into understanding the context in the rental units. The best way we have found to provide weatherization to renters is to focus on the whole building, but there are many complications with this whole building approach. We have finally got the HPC contractor, Next Step Living, qualified to be an ABCD sub-contractor in order to be able to do all of the units in a duplex or triple-decker that have both a customer served by the Weatherization Assistance program and a customer served by the Mass Save program. It has taken years to get to this point. We are grateful for Eversource and National Grid for working with us on this challenge. This is a huge problem in the 2-4 family units, not just in those 5 and more unit buildings.
- I second the idea that if someone takes the time to apply for fuel assistance but is denied because they are slightly above the criteria to receive it (e.g. they are at 65% of median), then they should be eligible for no cost services because they will not have the resources for co-payments.
- I'm interested to better understand the conversion rates of renters that pay their own gas and electric bills to renters whose landlord pays the gas and electric bill and whether encouraging landlords to install unit specific meters would help.
- I support the step-by-step approach to address renters by gaining access, giving bulbs or other measures, then move to weather stripping and if all goes well, move to other weatherization. Cost is not the only reason why renters do not install these measures. Energy savings do not necessarily drive them. We need to understand the thinking process of low and middle-income people to better use the step-by-step approach. On-bill financing may help encourage renters or low-income people to adopt the measures.
- We could find a way to serve moderate income customers without having to income qualify them since income qualification is a deterrent and a significant cost. We could use zip codes to determine level of moderate-income customers in an area. Taking this same market segmentation approach, we need to find ways to serve the deep-energy retrofit market and claim those savings just like we need to serve the renters.
- Easing the entrance into a program makes sense given that many low and moderate income families do not prioritize home energy use over issues of neighborhood safety or children's education, etc. Income qualifying individuals is tedious; we should use census data, zip codes, or value of monthly rent to determine eligibility. The Energy Savers program in Chicago is a good example of how to market to and engage the moderate income market segment. The \$2000 limit on the insulation problem might not be a moderate-income problem in that they cannot afford to do much more than the \$2000.

- About 6,000 homes per year that apply for fuel assistance are determined to be over 60% of median income but less than 80% of median income. Even if we serve a fraction of that population every year we'll capture energy savings with people who are struggling financially. We also need to evaluate the HEAT loan program and consider building a loan loss reserve program built into the program so we can identify lenders who will loan to people who are being rejected by the program due to credit scores. We need more data on who the HEAT loan program is not serving. This would help us figure out who to serve in a more simple approach than on-bill financing.
- The Renew Boston program was offering a Recovery Act pilot that filled the rebate gap for those in the 60-120% state median income range. We could not give the program away because it requires busy people to be home for contractors on too many occasions. The nature of the work impedes participation. We also tried actual income qualification but it is too burdensome. We used an affidavit approach with minor checking. Finally, Renew Boston tries to meet people in their communities to reduce cultural challenges to the program.
- If we did the step-by-step approach, how do we get deeper savings by going back to make other offers when heating is the main economic burden?
- If we can provide someone a couple hundred dollars of annual savings then it creates opportunity to do more with both the tenant and the landlord in the long run. Air conditioning and refrigerators, or other older inefficient appliances, could be swapped out more easily without the landlord's permission/involvement.
- The program design would require the use of community groups to complete the first stage of door-to-door work.

Dr. Raab highlighted the key themes that emerged from the conversation.

Moderate income and rental populations are both difficult to reach sectors and more targeted efforts are needed. The approaches might not be identical, but may have some overlap.

- Given the on-going challenges of serving rental housing, a more renter specific initiative is needed. This could be a more step-wise program (e.g., start with LED lighting/appliances and expand to weatherization and other measures)
- A new statewide initiative for moderate income households (60-120% AMI, building on what was learned from EN+) should be implemented, but not rely on straight income qualification to qualify customers, and should instead look at alternatives (e.g. by zip code, rent costs, or other ways)
- Form partnerships with community groups to help market the HES program including coordination with municipal efforts

### *New measures and practices*

What revised or new measures or practices should be considered for inclusion in HES for 2016-2018?

- Coordination and alignment with Mass CEC programs and DOER programs would make it easier for people to understand the options and select options that best meet their goals.
- Create a one-stop-shop for the programs to reduce barriers. But this will create a challenge of deciding who controls the money. For example, should the renewable energy dollars go to the Cape Light Compact or to another PA?
- The Mass CEC will need to see a mature Mass Save program before they can get out of the business of rebates. Eventually Mass Save could take the lead on cold climate heat pumps and become the one-stop-shop; but it is harder for Mass Save to do this now due to cost effectiveness criteria. Cold climate heat pumps should be evaluated in addition to the early boiler and furnace replacement initiative. A cold climate heat-pump rollout in HES could be a useful addition.
- Agree with the above and have heard customers express interest for a net zero program. This type of program may make sense now due to alignment between Mass Save and Mass CEC incentives. Overall, in Massachusetts, our energy programs are segmented and it is hard to understand all the incentives one may be eligible to receive. This leads building owners to hire consultants to help walk them through the process. Maybe instead of adding another program or segmented thing we should look at a larger set of systems that provide information, funding, and technical assistance to a particular market segment, then use that as a vehicle for upstreaming programs.
- Cold climate heat pumps look likely in the state's future; but data needs to be collected and analyzed. We need a TRC score for the heat pumps measured against other measures that could be added to a home. If the score is good, then we should push them hard to oil, gas, and electric resistance heated homes. I don't see justification of the Cool Smart brand; the incentive should be in the Mass Save brand.
- Reduce the number of measures to reduce the confusion. We also must be willing to pay for the sale—we need to incentivize the person who is selling the measures to increase the number of measures implemented.
- Any new measures must be clear about when, how, and why customers hear about and are engaged about a measure, and what are the pricing motivations for sale. Connecting customers with the right information and reducing their confusion could be achieved with better coordination between PAs, utilities, Cape Light Compact, and the Mass CEC. It may also help to reduce business motivations for upselling profit-making new measures and practices.
- The full service heating oil dealers are doing a good job at working with the early boiler replacement program and suggesting additional energy efficiency measures but are not normally recognized for doing so. They are in touch with the customers and want to install the appropriate technology; but they would be opposed to changes in regulations that would encourage fuel switching. They encourage heat pumps if it is the right thing for the customer. With respect to the industry, we are moving toward a higher blend of biofuels that is more efficient, and to ultra low sulfur oil which will enable opportunities to install condensing equipment.

Dr. Raab summarized the themes that emerged from the conversation.

- Continue to identify promising energy saving technologies and practices and analyze the circumstances in which they make sense.

### *Home energy assessment*

Ian Finlayson introduced the home energy assessment segment. He said DOER recognizes that the elegant solution to simplify the delivery mechanism yet still provide a set of opportunities through the whole house program is a challenge that may present tradeoffs. DOER would like to help people understand their house in the context of their relative fuel use, and relative to others in their neighborhood (using a scorecard) and give homeowners the opportunity to switch fuels, if it makes sense to switch. Ensuring good recommendations will be critical for this to work.

The following question was proposed: How can we make the most of the home energy assessment opportunity while at the same time avoiding overburdening the auditor and the customer? For example, clean energy scorecards or fuel neutral heating system recommendations.

- An assessment takes a long time if it is done right. A typical auditor can do three a day yet it seems some are skipping portions, but this is a separate issue. First we need to identify the right customers and the right product. The right customers are those who want it but would not do it otherwise; the right product is weatherization. Maybe we should consider eliminating the bulbs and focus on other products. We also need the right people making the sale and maybe be willing to pay people or incentivize them to make the sales. Auditors are not sales people. We also need to launch pilot projects to find the right process that maximizes sales and minimizes costs.
- Scorecards seem like a good option. If we go toward fuel neutral heating recommendations, it raises the question of how will we manage the increasing cost of the audit. It also raises issues of facilitating a switch from oil to gas and how manage this switch. Switching from oil to gas is not the direction we need to proceed because it will not accomplish anything.
- When a program is designed with standards and requirements that motivate contractors to make sales that are beneficial to the program it helps the market to innovate. This is the balance we need to find. For example, in a market-based program, screening criteria could be applied to the package of proposed measures as opposed to the individual measures. This would allow more control of the overall offer to the homeowner but would not restrict the contractor to certain measures.
- For that type of approach, are they under a TRC cap and how significant is the EM&V framework?
- New York has operated under the TRC test at the program level and at the measure level during different times. They found that the TRC at a program level was more effective. They also have a fairly aggressive EM&V situation.

- Were the New York realization rates acceptable?
- The rates were poorer than desired and they learned that they needed to take audit information customized to the home and true it up to the energy bills of that particular home to achieve more accurate realization rates.

### *Delivery model*

Are there continued refinements to the contractor-based program delivery model that would be beneficial to the PAs, contractors and customers?

- Contractors indicated that the background checks on their workers impact how quickly they can employ people and get them on site. Perhaps there should be a feedback loop from contractors on best practices for hiring and for in home audits.
- Lead vendors should staff up a bit more and expand their auditor ranks since it is likely that high demand for residential audits will continue in the next three years. Another suggestion is to find ways to enable more training programs so that more vendors like Mass Energy Marketers Association can become energy auditors and do home energy assessments, but this might not be advisable if assessments cause them to lose money.
- Benchmarking is a good idea. We need a new cost effective screening tool. We need to prioritize the savings we want then pay the auditor to first not lose money on the audit and second, to go after the savings we want to see. We should pay them for the savings as opposed to the measure. We also need to track how well we are doing and identify why people drop out of the program, and encourage people on every step in the process to convince people to decide in favor of energy efficiency.
- The background check issue is specific to National Grid. We cannot change what is required for background checks but we are trying to improve waiting times for our customers. Regarding the feedback loop, we meet monthly with the best practices working group of contractors to negotiate and try to get the best outcomes for customers. Regarding compensation, everything we are moving toward is in a pay for performance model, so we are tracking everything done by the contractors, lead vendors, and marketing. We would be glad to share these findings. We have made many adjustments to also make it more profitable for the contractors.
- It is important to note that contractors are paid installation fees for all the measures they implement during a home energy assessment; these are in addition to the base energy audit rate. They also can make a margin if they sell weatherization. The earnings come from aligning savings, not from doing the audit and walking away. We typically pay \$273 dollars per audit and installation, which is more than is typically acknowledged in public. This doesn't include the recent bonus offered by National Grid and Eversource, which would if earned jump the figure to \$311.
- A major issue is the cost effectiveness of the audit when serving as the entrée to reach renters. In terms of delivery model and coordination, it is still very complicated to identify who is coming into the system via which entrée point but it is important for the City of Boston to know this information. I appreciate the review of how standards for background checks are applied; but from a policy perspective, we wish the standards

were more open and flexible to open the opportunity to a broader segment of the population. In the delivery model, we are missing a worker-training element.

- Need to include and address in the next three-year plan the challenges faced by residents living in towns with municipal electric companies.
- To clarify, the \$150 we figure we lose on an assessment includes the money from the bulbs. The best practices working group it is not helping in terms of saving the HPC program. Many people have left the HPC program because you cannot make a profit. HVAC and oil burner cleaners are the only people who can get by on the program because they are already in the home for other work. In terms of paying for the sale, the bonus we get is to pay for compliance with the rules. Marijuana is the major problem with the background check and the time it takes to get new people.
- Just to note, we are not losing HPC contractors quickly and in fact have increased participation. The brief provides information on contractor participation.
- Utilities that seek partnerships with community organizations might run into conflicts with the background checks. It makes sense to provide higher payments for contractors to encourage the sale of measures that lead to greater energy savings.

Dr. Raab summarized the salient points from the Home Energy Assessment and Delivery Model discussions as follows:

- Help people better understand how their house uses energy and what they can do to save energy and money through a combination of an assessment and some type of energy scorecard
- Provide all homeowners with the opportunity to switch fuels if they so decide [Note: Also mentioned under Products programs]
- Create more integrated one-stop shopping and provide more comprehensive information to the customer. Programs (including both Mass Save and non-Mass Save incentives/rebates; and Products and Whole House programs) are too segmented—and it's hard for the customer to figure out the best package
- Assess methods of streamlining the offer to the customer at the point of the home energy assessment and improving the sales process to secure greater participation

### *HEAT loans*

Are there further enhancements or modifications to the HEAT Loan offer that should be considered for 2016-2018? Comments are grouped by theme when applicable.

- Ninety-five percent of the funding for HEAT loans comes through the PA programs. But DOER chose to put some money into supplementing new measures that should be considered for rolling into the PA funded HEAT loan. These considerations include use of the HEAT loan by 2-4 unit buildings, which tries to get at landlord tenant situations and provides \$50,000 instead of \$25,000 if they do a whole house job. We are also subsidizing loans up to \$50,000 for deep energy retrofits that go through the PA DER program. DOER also added an incentive for clean biomass pellet boilers. Finally, we are using a large portion of the funding to overcome pre-weatherization barriers.

- People should have the opportunity to spend the \$25,000 over time instead of all at once. We should also add a way to track where and how errors are being made in the HEAT loan financing paperwork process.
- More flexible hours for the assessment would be useful too. Some people have completed paperwork but have waited two years to complete the assessment due to limited assessment appointments. We should also consider a version of the HEAT loan that works with multi-family building lenders such as State Housing Finance Agencies, MA Housing Partnership, MA Housing, MA Development, and the banks the multi-family building owners use so they can be blended into capital improvement or refinance loans or be stand alone options.
- Assess the loss of application rate if a 2% interest loan were offered in place of the 0% interest loan. A 2% rate could provide some savings.
- Rhode Island just assessed whether or not it is worth buying the loan down to 0% and are considering raising their loan to 2%. They are also considering how to make the loan more user friendly and applicable to moderate income families. We should also consider these options.
- The HEAT loan is a great idea but it is a lot of paperwork. Contractors should be paid \$25 dollars for processing the loan paperwork. Second, call it a line of credit instead of a loan since people don't want to take on more debt. But if it is a loan, make it easy to get. On-bill financing would make it easy or the loss loan fund would work. We need a central bank to cover all HEAT loans.
- Evaluate whether or not the benefits of the HEAT loan go more to upper income people who have the ability to pay. Connected to this, identify other mechanisms for evaluating the ability to repay such as consistency of bill payment. Finally, seek methods to streamline HEAT loan availability with other urban/residential improvement programs such as Community Development Block Grants and associated municipal grants.

Dr. Raab highlighted the themes emerging from the group discussion.

- Financing options including on-bill financing or modifying the HEAT loan through the establishment of a loan loss reserve for lower credit scores, would better serve low and moderate income households/zipcodes
- HEAT loan eligible measures currently funded by DOER should be considered for inclusion either statewide (DER and biomass) or as moderate income specific offerings (pre-weatherization incentives, landlord 2-3 unit loans)
- Maintain 0% loans for moderate-income households/zipcodes and consider modest (2%) loans for market rate households to improve cost-efficiency

### *Coordination with Products programs*

How can the Whole House and Products Programs be better coordinated to promote efficient products and encourage their proper installation in existing homes, including expanding early

replacement opportunities, and support a more complete accounting for achievement of deeper savings?

- After recounting the need for three inspections once her furnace had been installed, a participant suggested better coordination between the inspections would be useful.
- Instead of linking more and throwing more at the customer; maybe it is better to have one person doing bulbs, one person working on boilers, one person working on insulation, etc. We need to figure out what we want to sell, then target the right people.
- Some coordination needs to come from the city governments. As they increase capacity to use information technology systems for online permitting, they can coordinate constituent requests in the buildings so that when the permit is pulled the city can also provide full education about energy efficiency programs. Perhaps coordination could start through DOER's Green Communities program.
- The PAs recognize how overwhelming coordination can be and we contracted a third party to review and evaluate materials offered to customers and will use focus groups to determine how to make it more simple and easier.
- The National Oil Heat Research Alliance is an assessment on heating oil sold in the USA and provides money for training on oil burning installation codes. The Massachusetts Energy Marketers Association would be happy to partner with the PAs on this.
- Incentivize follow up calls after the information is provided to a customer.
- We should identify what the customer wants from the audit and deliver it to them, but also use the information to increase chances we can take credit for future actions. For example, many times a furnace will be placed in a house two years after the assessment; but the owner does it on their own so the PAs don't reap the benefits. We need to use the data in the audits to recognize that in a couple of years a furnace may be replaced.
- Follow up is key, but the utilities seem uncomfortable with calling people.
- Eversource and National Grid send emails at 15, 30, and 45 days after an energy assessment is completed. Periodic outreach is done for summer incentives.

### *Behavior initiative*

Margie Lynch briefly presented on the behavior initiative. The group then commented in response to the following questions: Should the specific opportunities outlined above be pursued? How might PA's behavior programs most effectively drive participation in their other programs?

- We need to explore behavior-based strategies by exploiting the data analysis capabilities of Opower.
- Research from a Denmark demand response program showed that people stayed engaged longer if they used smart technology, which shows good support for promotion of smart technologies.
- I would support home energy reports for all customers. On the technology side, I would support solutions that allow me to review my gas and electric use overtime.

- We should look ahead to when we might have time of use pricing and how technology and behavior would tie into it. Similarly, we could tie behavior efforts to winter peak demand goals if and when they are set.
- We are looking to integrate new technologies into behavioral aspects. We do direct install of Wi-Fi thermostats in homes and try to do upfront education with the homeowners so their participation does not drop off. We are also looking at behavioral demand response.

Dr. Raab highlighted the themes from the conversation.

- Expand savings from behavior programs including linking to home automation technology (such as learning thermostat)
- Movement in Massachusetts toward time varying rates could create an opportunity with technology to get greater energy savings and demand reductions from behavior programs.

Margie Lynch asked what challenges the smaller PAs have with bringing behavior changes to market.

- My territory has a total of 55,000 customers. We planned to do a behavioral program and searched for a vendor to provide those services but the cost was prohibitive. Our pool of customers is also too small to implement a study with both a control and a test population. We hope to find other ways to reach customers in a cost effective way in 2016-2018.
- We looked at Opower and their proposal was over \$500,000 for a three-year program with only 25,000 residential customers. We'll look at it again for the next three-year plan, but the one-year pay back for the savings isn't there at this time.
- The Cape Light Compact uses People Power, which requires placing a gadget on the meter. We'll propose demand response for the next three-year plan; but it may not be consistent with other PAs.
- Maybe the smaller PAs could piggy-back on a procurement done by a larger PA?

## **PUBLIC COMMENT**

Members of the public made the following comments:

- **Paul Eldrencap, Byggmeister, Inc.** We try to do green renovations and I recently looked at ice dams on a house. In the attic I saw new shiny duct work jammed into the eaves. It would have been a good Mass Save project but now was just out of reach. I look at maybe 80 to 100 homes per year and almost none of the homes I have seen have had significant benefits from Mass Save. But most would have had a significant benefit during a recent upgrade. The \$2000 over the lifecycle of a building, if used at specific points, can go a long way, but there are also long periods where that money isn't going to do much. I'm disappointed there was not more talk about the timing of Mass Save interventions. A few ideas I want to share: 1) We learned to collaborate with our Mass

Save contractor to take advantage of upselling, heat loans, equipment rebates, etc. to do a huge amount of work. You're missing a strategic partner in the remodeling industry. You're either ignoring them completely or alienating them by sending an assessor who doesn't understand how a house works like a remodeler understands it. 2) The state of Massachusetts is about to spend a lot of money fixing damages from ice dams. There is an opportunity for publicity here to get some low cost air sealing done. 3) I would love to see a pilot program to bring in good diagnostics like a blower door test or fog machine that would have tremendous spillover affect when the contractors see air leakage pathways and start to understand construction quality. Well-timed blower door and fog tests will have huge impact on contractors.

- Paul Johnson read a statement on behalf of **Manny Chaves, HVAC Contractor**. I would like to submit some comments for your consideration regarding some aspects of this program as it directly impacts the Home Performance Contractors. The current model was created when the Lead Vendor (CSG) had a monopoly on all the work which meant that the interests of the PAs, the Lead Vendor and the sub-contractors all aligned. Some modifications were made to accommodate the introduction of the HPC's but at the end these efforts were insufficient. The result is that Contractors like myself keep leaving the program after realizing that the rules are tilted in such a way that they cannot win. Please consider the following examples:
  - The fees that the Independent Installation Contractors (IICs) and the Home Performance Contractors (HPC's) charge are the same. The big difference is that while the IICs' overhead is mainly paid by the program, the HPCs have to provide their own leads, which means that they have to incur costs in marketing and hiring people to provide HEAs. On top of that, some customers end up going to the Mass Save website after learning about the program from us.
  - CSG has no incentives to change the rules as we truly are their competitors. Also the time that takes to implement changes hurts us but may benefit them. We are left with no voice and no viable means to bring about change.
  - Unlike the IICs, who are strictly sub-contractors to CSG, HPCs are independent contractors who sell an array of other services and products and for the most part bring their own customers into the program. The level of scrutiny imposed on them is not only misguided but also a financial drain to both the program and to the HPCs.
  - The Best Practices Group was instituted to resolve some of these issues. The participants are the PAs, the LV, the ICCs and the HPCs. Because the interests of the first three entities are basically the same, it leaves the HPCs with a much diluted influence.

I would like to suggest that if the current model is to be kept, a new way must be found that gives a voice to the concerns of the HPCs. Attempting to make them fit into the ICCs model is to condemn them to financial disaster.

## **NEXT STEPS/WRAP UP**

Dr. Raab and Mr. Finlayson thanked the participants for their participation.

### Appendix A: Attendance

<b>Last Name</b>	<b>First Name</b>	<b>Councilor?</b>	<b>Company</b>
Barnes	Anthony	No	Energy Savvy
Berry	Michael	No	ICFI
Boecke	Donald	Yes	MA Attorney General's Office
Bowen	Mark	No	Franklin Energy
Boyd	Amy	Yes	Acadia Center
Buno	Jessica	No	Keegan Werlin LLP
Cellucci	Elizabeth	Yes	CMA
Clifton	Amber	No	Just-A-Start
Duclos	Mike	No	DEAP Energy Group
Eckel	Bob	No	CSG
Eldrenkamp	Paul	No	Byggmeister, Inc.
Ferrante	Michael	Yes	MA Energy Marketers Assoc.
Finlayson	Ian	Yes	DOER
Harrington	Cheryl	No	Eversource Energy
Hastings	Riley	No	Eversource Energy
Kearney	Brian	No	RISE
Kimball	Derek	No	Unitil
Krantz	Gregory	No	National Grid
Lopez	Lourdes	No	City of Boston
Lynch	Margie	No	Consultant to EEAC
Masland	Lawrence	No	DOER
McCarthy	Mary	No	Eversource
Mermin	Naomi	No	Naomi Mermin Consulting
Moriarta	Courtney	No	Consultant to EEAC
Patton	Marlana	No	Peregrine Energy Group
Pereira	Laurie	No	Eversource Energy
Pfeiffer	Ellen	No	National Grid
Pike	Brenda	No	National Grid
Raab	Jonathan	No	Raab Associates
Song	Margaret	No	Cape Light Compact
Swing	Bradford	Yes	City of Boston
Underwood	Corey	No	Columbia Gas of Massachusetts

Vavak	Amy	No	National Grid
Walker	Trish	Yes	Liberty Utilities for Jim Carey
Weber	Sharon	Yes	MassDEP
Whiteman	Alissa	No	DOER