

**Massachusetts Energy Efficiency Advisory Council
Residential/Multi-Family/Low-Income Combined Workshop
Thursday June 4th, 2015
9:30 AM – 4:00 PM
Saltonstall Building, Second Floor, Rooms C & D
100 Cambridge Street, Boston**

Meeting Summary

41 people attended this workshop (see attachment #1). The background material and the presentations can be found at <http://ma-eeac.org/event/residential-low-income-sector-workshop-2016-18-three-year-efficiency-plan/>

WELCOME, INTRODUCTIONS, CONTEXT SUMMARY, AND WORKSHOP OVERVIEW

Dr. Jonathan Raab, facilitator from Raab Associates, welcomed the participants to the meeting and reviewed the agenda for the day as well as the meeting's groundrules. Dr. Raab then explained the process to date and how this workshop fits into the overall Three Year Plan (3YP) process. The residential recommendations for the 2016-2018 3YP were developed during three workshops with the Energy Efficiency Advisory Councilors. The EEAC Executive Committee used the workshop recommendations (along with the Commercial/Industrial recommendations) to create a resolution that the full EEAC then approved. The PAs then developed a draft plan that responded to many of the resolutions. The objective of the workshop is to foster discussion between the PAs and Councilors on the residential section of the PAs' draft plan, and the subsequent matrix that more directly addressed the resolution topics. The results of the conversation will then be integrated into formal comments on the PAs' draft plan. These comments will be developed by the EEAC and then filed with the DPU in late July. Dr. Raab noted that the approach to each topic would include a brief summary of how the PAs addressed specific Council recommendation(s), a following discussion, and then development of comments/recommendations.

Following Dr. Raab's remarks, Ian Finlayson, DOER, offered some opening remarks, noting his excitement to have an opportunity to host a dialogue around nation-leading energy efficiency issues.

Amy Vavak, National Grid, and Laurie Pereira, Eversource, thanked Dr. Raab for his contribution to the process. They noted that the development of the 3YP is progressing rapidly, and the absence of a specific recommendation in the Plan does not indicate the PAs have permanently abandoned the issue or ignored the recommendation. They also pointed the Councilors to a packet created by the PAs to assist in the day's discussions which will be made available on the EEAC website.

Margie Lynch, EEAC Consultant, reviewed the meeting objectives to: Focus discussion on Council recommendations that are not fully addressed in draft Plan and develop recommendations regarding program-related issues to include in Council's July 30 comments to the PAs on the draft Plan. She explained that not all of the recommendations would be addressed during the workshop and encouraged participants to raise any issues important to them not included in the agenda. Ms. Lynch then reviewed the largely-residential related drivers (being discussed by PAs and EEAC Consultants) and noted that the lighting and behavioral topics should be addressed by the EEAC before the June 29th meeting with possible progress on all the issues by the end of July. She also clarified that the EEAC consultants are currently compiling residential data to share with the PAs to further inform the process.

WHOLE HOUSE

Moderate Income Strategy (#18)

Presentation and Discussion of PA Responses

Following Ms. Lynch's review of the PA responses to the moderate income strategy, the group provided the following questions and comments. *PA comments and responses are in italics (LEAN is not treated as a PA).*

- Though the conversation has focused on customers in the 61-80% of median income range, HUD uses 80% of median income as its low income standard. The question was asked whether it would be appropriate to assess customers in this range, though addressing the larger size of this demographic may present a challenge. LEAN has offered services to customers below the 80% level through outside grants.
- Explain the "quantification scale" income terminology.
 - The Council will recommend use of a statewide median income standard, rather than using an area median income.
- When will the Efficient Neighborhoods +[®] (EN+) evaluations be completed?
 - *The draft plan is currently receiving final comments. The PAs found that EN+ was expensive to implement at the census block level, so it may not be adapted due to the large marketing expenses.*
- From an energy justice perspective, it's positive that the PAs are looking at programs for moderate-income level customers. It would help the Council if the PAs provided more detail and context about the demographics of customers in the 61 to 80% range, including the number of customers in each PA's territory, and about the offer itself, since this will drive the rigor of income verification.
 - The 61-80% range represents approximately 250,000 households.
 - *The PAs can complete an analysis of the breakdown by utility and report back to the Council.*
 - *There is information in the PAs' packet on state median incomes by area. The PAs are recommending starting with the 61-80% range before*

expanding the program to establish how best to demonstrate designing and implementing the program for a smaller population before working with customers up to the 120% level. In addition, there are budget concerns for towns, like Fall River, where approximately 65% of the town will qualify for low or moderate income programs; the PAs further want to ensure that customers only fall within either the low or median income program to simplify customers' experiences and have recommended state median income to make sure that these scales align.

- This incremental approach seems positive. There may be an opportunity to connect the moderate income and HEAT loan/loan loss reserve programs. There should be more opportunities for opt-ins, possibly by location, so certain low income areas could qualify by location.
- It would help the Council to have more detail about the scope and details of proposed offers as well as on the coordination among the PAs.
 - *The PAs have not yet decided upon a specific offering, but it will be more than the standard program on weatherization.*
 - *The PAs honed in on weatherization, as it's a robust, cost-effective measure. The PAs will consider other measures. Opt-in income verification was intentionally included to avoid unnecessary administrative screening costs.*
 - *The PAs view the plan as a strategic document and have not developed all the specific details yet, which will be addressed at the implementation level.*
- The median income presented in the PA packet seems low.
 - *The number represents incomes for one-person households.*
 - It might be best to use a more normal household size.
- All customers paying into programs deserve to benefit from them from an energy justice perspective, but the purpose of energy efficiency programming is to achieve savings, so money could be targeted towards programs that result in more savings.
- Makes sense to focus on 61-80% of state median income customers first, and then assess expanding to 81-120% of state median income.

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Provide assessment of serving customers at 81-100% and 101-120% of state median income, after the 61-80% moderate income strategy is implemented**
 - **Specify date by which the moderate income offering will be available to qualifying customers (resolution said Q2 2016)**

- Provide date for plan to incorporate learnings from other pilots (e.g., EN+)
- Major
 - Include in final Plan more detailed implementation strategy, including dates and milestones
 - Include in Plan more comprehensive moderate income offering

Renters (#19)

Presentation and Discussion of PA Responses

Following Ms. Lynch's review of the PA responses on renters, the group provided the following questions and comments. *PA comments and responses are in italics.*

- Moderate income and renter strategies fit together. More detail on how best to address multi-family renters would be helpful, especially on landlord engagement strategies. The landlord-tenant split makes this a more difficult topic to target. In addition, the PAs should consider streamlining audits for RCS reporting.
 - *The PAs heard feedback from the Council that the current methods of serving renters need revision. The proposed renter visit will encourage subsequent landlord engagement for additional programs/measures. This proposal will also encourage home performance contractors to serve renters.*
 - *Part of the assessment for multi-family units will likely be a screening of the housing arrangement to facilitate the success in these units.*
- Serving renters is a priority. It would help the Council to have more detail about the offerings that could be made to renters, especially without buy-in from landlords.
 - *This class of offerings is mostly instant savings measures, such as LEDs, advanced power strips, power saving devices, and potentially wireless thermostats.*
 - *Installing WiFi (e.g., NEST) thermostats for renters would be a positive and allowable action. (PAs note that this may be challenging if thermostats are password controlled and tenants change)*
 - *PAs should ensure renters know about methods through which they can take immediate action without landlord approval.*
- What does the special renter visit offer over the home visit already in place? There should also be incentives specifically for renters, and landlords should be provided with a bonus for attending energy audits.
 - *Renters and landlords are often unaware of existing programs. It is important to have landlords present to demonstrate to them that the PAs are there to help them. It is also possible to make agreements that the landlords cannot raise rents due to energy efficiency improvements.*

- *The special renter visit would be a “foot in the door” that would allow for follow-up with the landlord, while providing the ability to “market” the audit to renters.*
- The City of Boston is excited about the proposed renter initiative and special home visits. These visits need to be short to accommodate people’s schedules. Boston is a diverse city, so the messaging behind the program needs to be clear to reach a large audience.
 - Trusted advisors also play a key role in program uptake.
- All of the recommendation text should be revised to “in the next Plan” as opposed to “in the Final Plan,” as Councilors need additional information quickly to assess the PAs’ plan.

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Specify date by which the renter specific initiative will be available to qualifying customers (resolution said Q2 2016)**
- **Major**
 - **Include more detailed implementation strategy that addresses split incentive issue—including dates and milestones—in next Plan (Short term measures, landlord strategy in next version of plan, and timeline)**

Deeper Energy Savings and Other Home Energy Services (#20)

Presentation and Discussion of PA Responses

Following Ms. Lynch’s review of the PA responses to deeper energy savings and other home energy services, the group provided the following questions and comments. *PA comments and responses are in italics.*

- Home performance contractors (HPCs) want representation on the Residential Management Committee (RMC) and an equitable opportunity against lead vendors.
- Achieving deeper savings is a priority. The PAs can decide on the specific implementation details.
- As this topic is the center of the residential programs, it is unfortunate that customer scorecards will not be considered in the review as a priority issue. Customer scorecards could improve closure rates and establish continued dialogues with participating households. It is not clear how these programs can be well managed until they are tracked at the household level.

- More data is necessary to achieve deeper savings and engage customers. Heat pumps are important, and the PAs should incorporate them into the Plan more fully.
- Item #20 includes a number of priority #3 and #4 issues, but by the end of this 3YP, Massachusetts will start to hit the limit on achieving savings through efficient light bulbs alone and will need to achieve deeper savings from other sources by the end of the plan.
 - *The PAs are willing to work with Council to explore different savings ideas. The PAs did not take on some of the recommendations as they have already unsuccessfully tested many of them. Voluntary savings programs require willing partners on the other side of the table.*
- The PAs should note programs they have piloted, which were unsuccessful, as well as identify where there are opportunities to implement more programs.
- [A Councilor stated that] 64% of customers who have audits conduct no follow-up actions beyond the installation of free light bulbs. This needs to be addressed. There also may be citizens in areas, like Dorchester, who are not being adequately served. The Council needs information at the zip code level about service levels to ensure equity and also needs more information on high-energy users. DPU does not need to authorize the release of this information.
 - *PAs also want to achieve more savings and are looking into providing geographic level data in Mass Save Data.*
- *Improving customers' experiences is a major PA priority. The PAs want to make it easier for customers to access programs to realize greater savings. PAs are also exploring the potential for new technologies to achieve savings, with multiple technologies on the cusp of being potentially ready for implementation, including renewable thermal.*
 - Cape Light Compact is committing to implementing renewable thermal as the technology evolves.
- The HEAT loan study is still a draft report and includes a small sample size, so the group should not rely on its findings at this stage.

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Provide customized approaches, technical assistance, and offerings to specific customer types/segments**
 - **Equity [equitable treatment of] HPCs and lead vendors**
- **Major**
 - **Include in next Plan plans for:**
 - **Tracking all measures implemented at the household level where technically feasible**

- **Providing additional information regarding plans to incorporate renewable thermal [evaluation expected to be complete in mid-July]**

HES – Optimizing Home Energy Assessment and Delivery (#21)

Presentation and Discussion of PA Responses

Following Ms. Lynch’s review of the PA responses to optimizing home energy assessment and delivery, the group provided the following questions and comments. *PA comments and responses are in italics.*

- The Cadmus draft HES/HEAT Loan evaluation study shows that the customer experience is 84% positive, so this no longer needs to be as much of a focus. Closure rates on weatherization, are still surprisingly low. The PAs should use accessible scorecards for energy audits.
 - *The PAs have piloted scorecards, and pilot program results were inconclusive. Closure rates increased for Home MPG, but some additional incentives were provided during the pilot. In addition, no other utilities at the national level have demonstrated savings from the use of scorecards. It is not yet appropriate to implement scorecards, which would also be expensive. The PAs do use the on-line Energy Savvy Tool that provides customers with tailored suggestions and offers from PAs on energy efficiency measures.*
 - The lessons learned from the Home MPG program in Western Massachusetts need to be retained. DOER needs to share what it learned from the pilot. DOER also found the cost of scorecard implementation to be low when integrated into the audit. Scorecards for audits would work similar to Opower, which allows customers to achieve savings by comparing their performance with their typical neighbors’ savings.
 - The effect of implementing an asset-based scorecard should be further studied.
 - There would be no additional expense to implementing a scorecard program as PAs have already paid for the tool.
 - *While Massachusetts does have a leadership role to play in the use of scorecards, one PA did not see greater closure rates when piloting scorecards through the DOE Home Score. In addition, not all PAs have the ability to calculate a score for the home. Eversource Connecticut is implementing a scorecard program and the initial data is showing that there are [not insignificant] costs to the program. This should provide valuable insight about the impact of scorecards within the New England region.*

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Include dates for completion of extensive review**
- **Major**
 - **Collaborate with DOER and EEAC consultants on a report that identifies actions needed to provide customers with an asset-based “home energy scorecard”**
 - **Provide details, dates, and milestones regarding improvement of the integrated “one-stop shop” customer experience, including providing customers with both Mass Save and non-Mass Save information regardless of heating fuel source**

Heat Loans and Financing (#23-25)

Presentation and Discussion of PA Responses

Following Ms. Lynch’s review of the PA responses to HEAT loans and financing, the group provided the following questions and comments. *PA comments and responses are in italics.*

- Some customers cannot receive HEAT loans due to low credit scores, so it does not seem to make sense to discard the loan loss reserve program. If HEAT loans drive customer energy efficiency investments, PAs should expand access to these loans. What is the challenge of running the loan loss program?
 - *Managing a loan loss reserve program has costs at the subprime service level. Customers with subprime FICO scores are receiving HEAT loans, so there may not be a problem. Massachusetts also provides a higher level of loan financing than other leading states in this area.*
- Massachusetts’ HEAT loan program is the leading residential program nationally. Thus, proposals should focus on fine-tuning an already well functioning program.
 - Massachusetts’ HEAT loan program is successful, but 13% of applicants are still rejected. It is worth investigating whether this percentage can be decreased.
- *There is an ongoing study evaluating the HEAT loan program.*
 - The evaluation should provide additional data to help clarify the current reality of the situation. Given the connection between HEAT loans and the banking sector, the evaluation should examine this relationship as well. It should also provide information on how an expanded HEAT loan program would operate.
 - If customers don’t need interest rate buy-downs, are there alternative ways to deliver savings using the funds that are more cost-effective?

- The evaluation recommended by the Council should study ways to serve customers who may not need buy-downs to support their participation in the program.
- Studying buy-downs is a valid policy proposal, but it is not a high priority issue.
- The additional study recommended by the Council should examine incidences and costs of free-ridership, since some customers may be using heat loans that do not need them.
- DOER has the ability to run pilot programs, such as a solar loan loss reserve, and should be able to inform future incentive programs through its findings.
- Some customers have high credit scores but too high of a debt-to-income ratios. Loan loss reserves are not useful in these cases, as burdening these customers with additional debt affects their ability to make payments.

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Include a timeline for decision on adopting additional measures**
- **Major**
 - **In the next Plan include plans to conduct a formal evaluation of**
 - **Assessing how moderate income customers are currently served and could be better served by the HEAT Loan program, including through a loan loss reserve**
- **NOTE: Councilors agreed to drop one of their original recommendations to evaluate higher non-zero percent interest rates (e.g., 2%) for those who could afford it.**

Multi-Family Retrofit (#28)

Presentation and Discussion of PA Responses

Following Ms. Lynch’s review of the PA responses to multi-family retrofit, the group provided the following questions and comments. *PA comments and responses are in italics.*

- It could be useful to coordinate moderate-income rehabilitation projects with housing agencies; this didn’t seem to be a goal in the PAs’ plan, though the PAs previously noted support for this approach.
 - Housing agencies work to create housing that span low income and market rates. When housing agencies are refinancing or rehabilitating units, there could be opportunities to work with them to add more

energy efficiency measures that are both residentially and commercially metered.

- It is difficult to effectively address the multi-family sector. Segmenting may make sense, but the PAs have the discretion to implement programs that are effective. Massachusetts should lead in innovation and pilot a combined pay-for-performance and benchmarking program. If PAs do not include these programs in the Plan, DOER will look for funding to test these approaches itself. There is a need for these demonstration projects.
 - Pay-for-performance programs can prove detrimental to low income customers.
 - The Council needs more information on the PAs' decision to not implement pay-for-performance and benchmarking programs.
 - *Multi-family units are composed of an array of structure types and use a variety of management structures. The PAs are trying to use a single point of contact for each building to focus on whole facility assessment, solicit customer opinion, and right size the approach.*
- There is interest in implementing a whole-building approach for multi-family units, which is facilitated through the use of meters. This strategy entails engagement with multiple stakeholders. The draft plan did not discuss this approach in great detail. The PAs should add additional information.
- The commercial/residential split is one of the core challenges of multi-family retrofit. Could all multi-family units be tracked together?
 - *The Council's recommendations appear to request the data be divided by commercial/residential.*
 - *The PAs discussed the challenges imposed by the split, which is exacerbated by rate codes that do not feed into a singular approach. The PAs will try to ease the experience for the customer by implementing the single point of contact and tracking the correct rate codes internally.*
 - Ignoring the rate codes in the same way that the low income programs do could increase flexibility.

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Provide additional information regarding new enhancements (improved single point of contact and tracking and reporting of both residential and C&I meter savings) in the Core Initiative Design section of the next Plan**
- **Major**
 - **Include in next Plan plans for:**
 - **Demonstrating a “pay for performance” approach to retrofits**
 - **Enhancing integration of efficiency into refinancing events**

- **Providing enhanced support for benchmarking by including plans to develop and implement a plan or initiative for benchmarking**
- **Providing targeted offerings to different segments of the multi-family building market**

Behavior (#27)

Presentation and Discussion of PA Responses

Following Ms. Lynch’s review of the PA responses to behavior, the group provided the following questions and comments. *PA comments and responses are in italics.*

- *Columbia Gas is exploring behavioral programs to identify cost-effective opportunities with lifetime savings.*
- *The PAs’ packet provides information on behavioral programming. Verifying the effectiveness of behavioral programs requires large experimental and control groups. In addition, behavioral programs target the most highly motivated savers first, so additional programming results in lower returns on investment.*
 - *National Grid has run out of customers to target in behavioral programs.*
 - *Even if the PAs reduce the size of the control groups, the cost to energy reductions ratio will increase, since the new customers targeted will not be as high of users.*
 - *Some utilities in other areas of the country have stopped using or shrunk the size of the control groups to expand their programming.*
- *Behavioral programs provide high annual savings. Utilities that show multi-year savings simply spread annual savings out through multiple years.*
- *It would help the Council to have detail on the exact programs the PAs are exploring and the timeline for implementing them. Opower also provides many useful technologies.*
- *Eversource is releasing a customer engagement tool that allows its customers to track their energy usage and compare it against their neighbors.*
 - *This program should be included in the next draft of the Plan.*
- *For many home automation technologies, PAs have not yet evaluated the savings per participant, which is typically necessary to justify the costs of a new measure.*
 - *Grid modernization could help pay for the adoption of new automation technologies.*

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **No minor option identified**
- **Major**

- **Include an expansion of behavior savings in the next Plan, with dates and milestones**

New Construction (#26)

Presentation and Discussion of PA Responses

Following Ms. Lynch's review of the PA responses to new construction, the group provided the following questions and comments. *PA comments and responses are in italics.*

- Zero Net Energy (ZNE) should be included more fully than currently outlined in the plan.
 - *There will be further ZNE education.*
 - *Feedback during the past workshops indicated there is no need for a ZNE incentive, but PAs should focus on ZNE training and outreach. There are low HERS scores for a number of homes that go through the program. And, for those customers that are already adopting ZNE, should the PAs direct further funds to the area?*
 - *PAs greatest value-added opportunity is through educating builders about the availability of existing incentive that can help their building become ZNE. There are complications with using energy efficiency funds for renewable energy activities.*
 - It is important to market ZNE buildings and maintain the percent savings over UDRH approach. It is possible that PAs are missing latent value of fully marketing ZNE buildings, since customers' value ZNE homes, and a DOER pilot showed that many builders are prepared to construct ZNE houses but noted that current PA programs did not encourage them to focus on ZNE construction.
 - Since ZNE is zero net energy, not zero net electricity, some customers, who are restricted from using solar, can't reach ZNE targets as they use gas, oil, or propane. What percentage of customers could qualify for ZNE?
 - A report should assess the impact of creating a ZNE top performance tier. The report could inform the implementation of a potential program.
 - *The Council should direct its own consultants to evaluate claiming credit for ZNE and renewables and the impact of implementing a ZNE top performance tier and quantify the potential savings.*
 - Connecticut is requiring a renewable ready requirement for its highest tier of new construction and is working under the presumption that these builders and homeowners are also good candidates for PV. They are realizing savings with no assumed incremental cost and offering no incentive.
- How can this be a priority #1 issue if all of the sub-recommendations are labeled as #3s or #4s? PAs should provide more details on why they will not pursue certain recommendations.

- *Enhancing the new construction program is a top priority through improved marketing, education, and home automation.*
- *PAs often do not obtain savings from new construction programs that they can count [e.g, renewable energy savings].*
- The state formula needs to be adjusted so PAs can claim savings.
- Long and short-term benefits are both important for new construction. Education is an important component, but there need to be additional programs established before 2018 to ramp up the sector and offer concrete approaches.
- *The PAs were previously asked to remove savings from solar and solar thermal. By maintaining this approach, there may be unclaimed savings.*
 - If PAs are using energy efficiency funds, they should be able to claim savings.
 - There should be less of a distinction between energy efficiency and renewables to integrate and count all savings and improve the customer experience.
 - Siloing energy efficiency and renewables makes less sense than it did previously, which is one reason why DOER is revisiting the RCS regulations. It is becoming cost effective to incentive renewables. There are opportunities to update state renewable incentives through the Clean Energy Center and establish corresponding efficiency side programs.
- *The Council has directed the PAs to write a number of reports on the recommendations, all due in the second quarter of 2016. The drafting of these reports could delay program implementation.*

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Explore how to get credit for ZNE and renewables in c/e analysis and performance incentives [perhaps directed at EEAC consultants]**
- **Major**
 - **Include Council recommendations as enhancements in next Plan to prepare a report assessing:**
 - **Creating a zero net energy incentive top performance tier**
 - **Implement a “renewable ready” requirement in the highest two performance-based tiers and the top prescriptive incentive tier**

Renewable Thermal (#3, #20)

Discussion of PA Responses

The councilors and PAs informally discussed renewable thermal. The group provided the following questions and comments. *PA comments and responses are in italics.*

- When will the evaluations for renewable thermal be completed?
 - *The evaluations for renewable thermal—specifically heat pumps—should be finished by mid-July.*
 - This timeline would allow a more detailed approach for renewable thermal to be outlined before the September draft of the Plan.
 - The evaluation may not answer all of the main questions, and further study may be required.
 - *Renewable thermal could potentially be incorporated in the HES programs. There is no software that models air source heat pumps, so it is difficult to inform customers on whether or not to install air source heat pumps.*
- While renewable thermal is an important topic, it is acceptable to see it listed as a priority #3, as there are still challenging implementation issues to resolve. DOER is interested in moving the technology forward when appropriate.
- The PAs should not be penalized for testing innovative programs that attempt to achieve savings and should inform the Council.
 - *The PAs need to be careful to not waste ratepayer funds as well.*
- What technologies are defined as renewable?
 - The DOER has regulations that define renewable technologies.
- **The major recommendation for the next Plan is to provide additional information to incorporate renewable thermal into HES recommendations.** (Note: there is also a cross-cutting recommendation on renewable thermal not addressed in this workshop)

PUBLIC COMMENT ON WHOLE HOUSE

The public provided the following comment:

- Maggie Downey, Cape Light Compact, provided an update on the activities of the Compact’s governing board. The Compact presented the recommendations to its Board for voting. The Compact is now compiling these results and soliciting community feedback. The Governing Board will subsequently approve the Compact’s plan, which may differ from that of other PA’s as the Compact is a municipal aggregator and thus operates under a different statute, which is not entirely reconciled within the Green Communities Act.

PRODUCTS

Lighting (#22)

Presentation and Discussion of PA Responses

Following Ms. Lynch's review of the PA responses to lighting, the group provided the following questions and comments. *PA comments and responses are in italics.*

- LEDs are still more expensive on a lifetime and annual basis than other lighting. Should this affect support for them?
- How many LEDs have PAs moved in prior years, and how many will be moved as costs decrease for all types of lighting? Can the PAs move more units?
 - *It is difficult to project future LED trends. Their efficiency will increase, but their price change is less certain. PAs will get more savings from an LED bulb in 2016 than 2018 [due to rising lighting baselines]. As of now, LEDs are not ideal in terms of savings per cost.*
 - *[In response to a data point presented by the EEAC Consultants] National Grid's data showed a 25% LED invoice level for 2014 and is projecting an upward trend for 2015.*
- How do LED and CLF trends compare?
 - *CLF and LEDs have different comparative baselines. While CFLs' baseline is incandescent bulbs, LED's baseline includes CFLs. It is harder to realize savings for LEDs than for CFLs.*
 - Should support for CFLs then be cut off to focus support towards LEDs?
 - *Regardless of the action, market adoption models project that CFLs will still be a component of the lighting mix.*
 - *New York ended its support for CFLs, and efficient lighting sales declined, since customers reverted to incandescent and halogen bulbs.*
- Could the reporting procedures and timeline for LEDs, especially for recommendation 22b, be clarified?
 - PAs need to report on recommendation 22a by the fourth quarter of 2016 unless pricing allows it earlier.
 - *The PAs are committed to sharing information and currently use the EM&V frameworks for reporting as well as the quarterly reports. Does the Council need additional reporting?*
 - It would be helpful if the PAs' quarterly reports showed the current number of LEDs.
 - *For 22b, the Council needs to consider whether it makes sense to include a recommendation for all LEDs in the Whole House Program. It doesn't make sense to install LEDs in closets--this would not achieve deeper savings.*
 - *The PAs are planning for 80%-90% LED in-home installation [through Whole House Programs].*
- There appears to be high market demand for LEDs. LEDs achieve deeper savings than CFLs, and the Commonwealth should work to achieve deeper savings through LED use. Light developers see CFLs as a dead end technology, but it's cheap for them to produce CFLs. LED pricing should drop significantly, but the current proposed CFL to LED conversion rate in the draft plan is disappointing.

- *LED manufacturers are starting to sacrifice lumens per watt to produce cheaper units; many of new bulbs are too low quality for the PAs to support.*
- *Phillips and other high quality manufacturers are divesting from LED lighting, since they're not earning profits. Thus, cheaper manufacturers are producing cheaper but lower quality LEDs. PAs want to use higher quality products to ensure good customer experiences. This is important to the long term adoption of LEDs. In addition, while LEDs achieve deeper savings now, the CFL/LED differential will be small by 2018.*
- The Council should provide direction to either support LEDs that either achieve lower cost per kilowatt-hour of savings or are higher quality.
- [One Councilor claimed that...] It is better to support low quality LEDs than high quality CFLs to encourage customers to install LEDs, as LED costs will be further reduced.
- The Council should support the market saturation of LEDs to limit the level of mercury in the environment, which CFLs contain and LEDs do not. Thus, the higher cost per kilowatt-hour of LEDs is a worthwhile investment given environmental considerations.

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **Support efforts by the consultants and PAs to resolve differences [on lighting assumptions and issues]**
 - **Report periodically (e.g., quarterly) on LED lighting progress**
- **Major**
 - **Include a higher and growing share of LEDs in Plan and higher lighting savings goals**

Reporting

Discussion of PA Responses

The Councilors and PAs informally discussed reporting. The group provided the following questions and comments. *PA comments and responses are in italics.*

- *The Council has requested many reports from the PAs. The PAs appreciate that the Council wants information, but the reports seem to be pushed off the meeting agendas. If the Council requests them, the PAs would like to ensure the Council makes time for them during its meetings.*
- It is important for the Council to read the PAs' reports. DOER appreciated the 2015 first quarter report and found it insightful.

- The Plan should include more specific details to better facilitate partnership between the Council and PAs

Heating and Hot Water (#22C)

Presentation and Discussion of PA Responses

Following Ms. Lynch's review of the PA responses to heating and hot water, the group provided the following questions and comments. *PA comments and responses are in italics.*

- Why don't upstream water heaters help PAs achieve savings and cost efficiencies?
 - *While the C&I upstream program has not yet launched, a prior upstream HVAC program has had some mixed results. Many measures are blended together as part of a cost effective program, but if the non-cost effective measures are the primary ones selling, they need to be pulled out of the program.*
 - *All new technologies are assessed for upstream or downstream incentives before they are rolled out.*
 - *There could be opportunities if HVAC programs could be separated from hot water programs. PAs tend to lose savings when moving upstream due to increased free ridership and loss of brand awareness. Before moving upstream, PAs need to evaluate potential market penetration. Some measures may be appropriate for an upstream program.*
 - Connecticut moved to an upstream model for gas and water heaters in 2013, which has shown promising results thus far, though the market could be different.
 - *The Connecticut market is different, since the program was immature with limited customer awareness. New programs should start upstream, but this should not be done in mature markets.*
 - *When exploring the upstream market for some HVAC equipment, the PAs were not confident that the savings and incentives were being applied to customers. In addition, HVAC contractors inform their customers about other PA programs due to the program's maturity. If this program went upstream, PAs could lose touch with the contractors.*
 - It seems reasonable to not upstream boilers and furnaces, but it could be possible to upstream domestic hot water. The PAs should report to the Council on this potential.
 - The PAs should create an upstream information document. It would not need to be a full report but simply list the technologies that have been considered and why they proved successful or unsuccessful. The PAs would not need to report on mature products.

- *The PAs responded to the wording of the recommendations. The PAs will probably find high market penetration for on-demand, direct hot water heaters but not freestanding units.*
- It may be worth talking about the potential upstreaming of other technologies, such as renewable thermal.
- Wireless smart thermostats could shave peak demand. They could drive heating programs and achieve savings, particularly for demand response. A report on their potential should be drafted.

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Minor**
 - **No minor option identified**
- **Major**
 - **Include Council recommendation, with dates and milestones, in next Plan**

PUBLIC COMMENT ON PRODUCTS

The public provided no additional question or comments on the products issues.

LOW INCOME

Presentation and Discussion of PA Responses

Following Ms. Lynch's review of the PA responses to low-income customers, the group provided the following questions and comments. *PA comments and responses are in italics.*

- Customers in the 61-80% of state median income range should continue to be recruited, and programs should be designed for this group.
 - Programs should be flexible about the exact income range served, since buildings with low-income residents can have high turnover rates, which can quickly change the average income range. Programs should emulate the Head Start delivery model and focus on buildings with low-income residents that lack access to capital.
 - This Head Start model approach is worth considering.
 - Flexibility is important to ensure buildings where most of the residents are in the 61-80% range can be served. Administrators of affordable housing programs also do not want to be held back by strict percent income regulations. Programs should determine the best approach from a whole building perspective.

- *The wording of the recommendations seems to include every building in which 50% of the tenants earn up to 80% of the median income as low income. PAs do not want to redefine the definition for low-income.*
 - The HUD guideline is 80% of median income, so it is not a redefinition but a choice of a different definition.
 - *DPU defines 60% of state median income as low income for the purposes of energy efficiency. It is not the Council's purview to redefine this definition.*
- Nonprofits should be included in the Plan. Are nonprofits served as commercial entities due to rate code issues?
 - *The PAs are constrained by rate constructs, since the majority of nonprofits are in the commercial rate classes. Since there is no low-income commercial rate, those customers cannot be served in the low-income [residential] programs.*
 - The low-income program should treat customers paying into the program.
 - Would LEAN by an appropriate vendor in this sector through the C/I programs?
 - *This should be further discussed during the C&I workshop.*
 - The Plan needs more detail about how to serve nonprofit customers who fall within the C&I sector.
 - Per the Green Communities Act, funding for low-income programs is set aside before the C&I/residential split, so there is a combined funding source.
 - *Residential and C&I accounts both pay for low-income programs. It is the prescribed method of funding.*
 - The C&I group does serve all commercial customers. PAs need to look for alternative service models to serve customers at the 100% level.
- Housing agencies are engaged in the refinancing of large low-income projects and want to ensure certainty around sources of project financing. They don't care whether it's C&I-related capital. Funding certainty needs to be built into programming.
- Incentives and deliveries both need to be considered in potential programs.
- Recommendation 29a, a priority #1 recommendation, needs to remain a focus following the RCS decision.
 - *The PAs are assuming the RCS regulations will pass.*

Revised Recommendations

Ms. Lynch presented potential recommendations and the voting Councilors approved the following adjusted recommendations after some discussion:

- **Explore better ways to flexibly serve low-income multi-family buildings with at least 50% of tenants earning up to 80% of state Median Income [under consideration by PAs]**

- Evaluate alternative incentives/service approaches for non-profit organizations that primarily serve low-income customers—
 - [NOTE: still under PA consideration; matrix notes that this will be addressed as a C&I issue; have conversation w/C/I Team; consider LEAN as a vendor]

PUBLIC COMMENT ON LOW-INCOME

The public provided no additional question or comments on the low-income issue.

WRAP-UP AND NEXT STEPS

Dr. Raab thanked the group for their participation and input. He noted he would produce a summary of the meeting and reminded participants of the C&I workshop on Tuesday, June 9.

Dr. Raab asked the group for feedback on improving the format of the workshop for future sessions. *PA comments and responses are in italics.*

- As of now, the Plan appears to be more of a program history. It would help the Council if the PAs would include additional details in the next Plan with explanations of why they chose to adopt or not adopt particular recommendations.
- *There was little time for the PAs to present data during the workshops. The Councilors should ask the PAs specific questions if they would like further detail. In addition, the Plan is written for submission to the DPU, which requires certain elements, including things like program descriptions.*

Appendix I: Attendance

EEAC Residential/Low Income/Multifamily Workshop, 6.4.15, 9:30-4 Saltonstall Building, 100 Cambridge St. 2nd Floor, Rooms B & C, Boston			
First Name	Last Name	Company	EEAC Councilor
Greg	Abbe	Cape Light Compact	No
Leah	Berger	Columbia Gas of Massachusetts	Yes
Donald	Boecke	MA Attorney General's Office	Yes
Emilie	Bolduc	Ecova	No
Amy	Boyd	Acadia Center	Yes
Rita	Carvalho	Action Inc.	No
James	Collins	ABCD, Inc	No
Shaela	Collins	Rich May	No
A.T.	Desta	Rich May	No
Maggie	Downey	Cape Light Compact	No
Erin	Engstrom	Eversource	No
Ian	Finlayson	MA DOER	Yes
Eugenia	Gibbons	Mass Energy Consumers Alliance	Yes
Betsy	Glynn	Boston LISC	Yes
Michael	Goldman	Eversource	No
Paul	Gromer	Peregrine Energy Group	Yes
Charles	Harak	National Consumer Law Center	Yes
John	Howat	National Consumer Law Center	No
Lyn	Huckabee	MA DOER	No
Elliott	Jacobson	Action	Yes
Paul	Johnson	Greentek/EEAC Small Business Rep	Yes
Brian	Kearney	RISE	No
Greg	Krantz	National Grid	No
Spencer	Lawrence	MA DOER	No
Lourdes	Lopez	City of Boston	Yes
Margie	Lynch	Core Energy Insights, Inc.	No
Maggie	McCarey	MA DOER	No
Sara	Merena	National Grid	No

Phil	Moffitt	Cape Light Compact	No
Courtney	Moriarta	SRA International	No
Alana	Murphy	MA DHCD	Yes
Thomas	Palma	Unitil	Yes
Laurie	Pereira	Eversource	Yes
Ellen	Pfeiffer	National Grid	No
Brenda	Pike	National Grid	No
Glenn	Reed	Energy Futures Group	No
Margaret	Song	Cape Light Compact	Yes
Amy	Vavak	National Grid	Yes
Sharon	Weber	MA DEP	Yes
John	Wells	ABCD, Inc	No
Alissa	Whiteman	MA DOER	No