Commercial and Industrial Meeting Three: Additional Topics
Tuesday March 3rd, 2015
9:00 AM – 1:00 PM
District Hall
District Hall: 75 Northern Avenue, Boston

Draft Meeting Summary

34 attended this workshop (see attachment #1). The background material and the presentations can be found at http://ma-eeac.org/march-3-ci-workshop-3-meeting-materials/

INTRODUCTION, CONTEXT SUMMARY, AND WORKSHOP OVERVIEW

Alex Pollard, Energy Efficiency Commercial Programs Manager at Massachusetts Department of Energy Resources (DOER), offered some opening remarks. Mr. Pollard welcomed participants to the meeting and thanked those who compiled the briefing materials for the workshop and the City of Boston for providing the meeting space. Mr. Pollard then reviewed the proposed resolution process and schedule, explaining that the councilors' recommendations would be drafted into a single resolution to present to the Executive Committee. There will be an hour at the full Council meeting to discuss the workshop recommendations March 10, and the finalized resolution will be voted on March 31st.

The group provided the following clarifying question and comments about the proposed resolution process and schedule. *Responses are in italics.*

- When will the group be able to view the EEAC recommendations?
    - *The discussion is currently being compiled into potential recommendations. All of the information, including the recommendations and the summaries from the first two C&I workshops, will be posted on March 5th.*

Following Mr. Pollard's remarks, Dr. Jonathan Raab, facilitator from Raab Associates, reviewed the meeting agenda. He began by listing the additional topics to be covered during the meeting: demand reduction, market segmentation and customer specific approaches, delivered fuels, C&I reporting, and C&I topics not covered. He noted that the approach to each topic would include a brief presentation of the topic, time for clarifying questions, a discussion of the material, and councilor recommendations/next steps. Dr. Raab then briefly outlined the ground rules for the meeting.

DEMAND REDUCTION

Presentation

David Gibbons from National Grid reviewed demand reduction, providing background on the program and laying out potential energy efficiency advancement opportunities for the Commonwealth.

Clarifying Questions

The group provided the following clarifying questions and comments about the demand reduction. *Responses are in italics.*

- What would an efficiency and demand response offer?

- *The programs are no more complicated than those offered by other multi-product companies. Both programs should be presented concurrently in terms of their relative benefits. The relative economics of the measures should be considered when there are combinations of both approaches.*
- *For example, there are studies on retrocommissioning in California in which controls set temperatures. The researchers then used sub-metering to observe the effectiveness of demand response and the demand response signal.*

- Are ISO values used, do these values differ for summer and winter, and how often are these values updated?
  - *It is a 12-month market, so there is one consistent price for kW months throughout the year. The demand charge is buried within the energy charge. Avoided costs are associated with summer peak reduction, but avoided costs are currently zero for winter peak reduction [for EE cost-effectiveness analysis purposes].*
- *Is there a method to obtain more up-to-date values for the demand response peak?*
  - *The group should focus more on reducing peak demand. The cost of the peak should be valued in terms of both money and associated pollution.*
- Do the briefing materials indicate that expanding demand response may diminish the role of third party providers?
  - *The briefing materials framed the recommendations broadly, as the Council is still learning about the demand reduction topic. Additionally, the demand response market is in a period of change with grid modernization potentially enabling demand response outside of third party providers.*
- What is the minimum size of a C&I facility to have its own peak demand charge assignment as opposed to a class assignment?
  - *As these facilities are likely G3 customers, it would mean they would have a 200 kW or greater demand for three consecutive months (for National Grid). [NOTE: in the workshop, the demand threshold was cited as 300 kW, however it is in fact 200 kW.]*
- Do C&I customers have demand meters to allow for the tracking of benefits?
  - *National Grid customers over 200 kW have demand meters, which amounts to 400 to 500 accounts and 1 to 4 four percent of total customers. However, these customers use a disproportionate amount of energy.*
  - *An annual study includes customer profiles and includes tables that break down the load. In 2013, there were 6,700 customers in Massachusetts with a load greater than 300 kW.*
  - *There is a question of when a customer is large enough to benefit from demand reduction alone. Smaller customers that reduce demand can also realize saving benefits as a combined class.*
- What are the drivers of capacity cost, and how large are these drivers?
  - *The annual seasonal peak is part of a complicated process to determine future installed capacity. This installed capacity establishes what the auction will procure and affects the monthly kW value price as well as the individual charges to large C&I customers. This charge is adjusted in six-month periods. Large C&I customers have peak demands that drive peak costs. Thus, pricing and costs are complicated and related to available supply to serve installed capacity requirements. In the recent auction, PAs had certain amounts of existing generation capacity as well as some demand response resources, but at the start of the auction, there was no additional new capacity to serve installed capacity requirements for certain zones. If there are many new resources, the demand curve is sloped, with an abundance of supply leading to purchases at lower prices. Therefore, reducing the demand peak impacts the peak forecast and ICR (installed capacity reserve), which affects cost. Currently, there is a shortage of new entries*

[of supply], and ICR has varied. Measures that reduce peak load also reduce ICR, which result in additional reduced capacity charges. The last auction went up to $4 billion (from $1.8 billion at the previous auction) due to significant retirements, including Vermont Yankee and the Brayton Point Plant. These tripled costs could have a large impact on ratepayers. It is uncertain how utilities will split these charges.

- How can time varying pricing feed into the plan? What are the opportunities for programming that were presented? It would also be helpful to have additional information on peak demand reduction benefits, as the Council should consider how programming could reduce peak demand before next December. In addition, National Grid in Rhode Island has a set goal for winter peak demand reduction. Could the Massachusetts energy efficiency Program Administrators (PAs) set a similar goal?
    - *PAs do track winter peak reduction, but as the avoided cost is zero, there are no goals.*
    - *While there may be no financial benefits to gas companies or customers, there might be benefits to electric customers. The monetary benefit of demand may be underrated. The Council needs to properly gauge and quantify these benefits that are not realized by customers and PAs in the next three-year plan.*
- It could be helpful for the Council to receive the ICR capacity information tracked by the ISO in the six to eight state zones in addition to pricing implications for each zone. A primer on the relationship between the six to eight state zones and pricing, as it affects C&I customers in the Southeast Massachusetts (SEMA), zone could also prove useful.
    - *ISO study the system and determine availability from area to area to decide on capacity based off of load zones, for example, combining Rhode Island and SEMA in the last auction. The auction did not run for SEMA which then has an administratively set price, while the rest of New England cleared at a lower single price.*

Discussion

After reviewing possible next steps, Dr. Raab presented the following six questions for discussion on the demand reduction topic:

- Should the methodology for the summer and winter peak demand savings benefits be revised?
- How could we make annual savings, lifetime savings, demand savings (peak or otherwise), and benefits goals fungible?
- What would the impacts be on efficiency savings and the PAs' performance incentives if the Council were to place greater emphasis on demand savings?
- What would be the most effective way to capture demand savings with minimal impact on other efficiency plan goals (focusing on measures w/coincident peak savings, geo-targeting, direct load control, or linking with demand response programs)?
- How can the Council and PAs prepare for advanced metering functionality and time varying rates and their impacts on the efficiency programs?
- Do you support the potential next steps outlined above? What if anything would you like to add?

The Councilors and PAs made the following comments and asked the following additional questions about demand reduction, organized by sub-topic. *Responses are in italics*:

General comments

- Geo-targeting may not work rapidly enough to have major impacts on capacity clearing prices. The ISO conducts a market resource alternative process each year to find ways to augment transmission

system upgrades with measures like distributed generation or energy efficiency. To date, the load reductions found do not satisfy the considered restraints. Geo-targeting is difficult. There are reports on geo-targeting by the planning advisory committee that could be shared - http://www.iso-ne.com/static-assets/documents/2015/01/a2_sema_ri_mra_non_ceii_version.pdf

- In supporting public policy around climate change, the Council needs to consider the tradeoff between energy efficiency and demand reduction. It also needs to look at the emissions of the operated fleet [of electric generating units], as more demand reduction measures need to focus on reducing the dependency on fossil fuels.
- Demand reduction and response may not be energy efficiency issues that reside within the Council's purview to resolve.
    - *While this point is taken, reducing peak demand, even slightly, reduces costs for everyone.*

Legal and Regulatory Issues

- A customer burning large amounts of natural gas wanted to switch to oil on days with high natural gas prices and held a DEP permit to do so, but could not switch as the supply was not legally interruptible. In such a case, more natural gas could be made available to reduce system strain without requiring rebates, but this is not currently legal.
- It is uncertain if demand response measures could be implemented at the retail level through tariffs or wholesale market. At the moment, the district court ruled that FERC does not have the authority to approve tariffs compensating demand response measures. Thus, it unclear whether demand response can be included in wholesale markets. This provides an opportunity to consider if efficiency programs have a place for ensuring reliability at the retail level and to determine the value of this approach. Managing peak demand is a beneficial policy that could reduce costs if it shuts down peak loads. The three-year plan could bring demand response into retail programs. In addition, existing infrastructure and grid modernization will allow for additional enabling technologies.
    - *There are many uncertainties at the edge of the issue at the moment. Much of this will be resolved during the course of this three-year plan, but the group will not fully have a handle on the issue until after the creation of the forthcoming three-year plan.*
    - *Given the uncertainties, this three-year plan should include flexibility to allow it to adapt to demand reduction and response opportunities.*

Winter Peak

- There is potential to address issues associated with the winter peak demand. During this time, gas availability is a central issue, and reducing the electricity demand would reduce gas demand. Energy efficiency measures in the winter can reduce electric demand, thus mitigating some of the volatility in gas prices. Cost savings from winter peak demand reduction and associated gas availability could be partially realized through a winter reliability program that mitigates cost associated with duel fuel availability. This could dampen the volatility of prices for electricity and gas and normalize winter peaks.
    - *The Council should consider evaluating winter peak demand.*

Pricing

- The C&I sector present a potential opportunity to expose costumers to a real time pricing structure for electricity. Market elasticity affects how generators bid into the market. Better understanding of elasticity through real time pricing might allow generators to bid lower in the day-ahead market to help them reduce costs.
- Demand reduction and response are complicated topics, and the Council is not ready to make judgments yet. The Council should form a subcommittee to work through these topics.

    - A workgroup, similar to the one for the roles and responsibilities topic, could be created, as that proved to be an effective model.
    - *A demand pricing expert could be brought in to explain demand reduction and response issues to the Council.*
- The Council must consider the potential for unintended impacts of demand reduction and demand response programs on energy efficiency programs and on the costs for implementing costumers. Some energy efficiency measures, such as adjustable ballasts in lighting systems and smart thermostats, should be implemented.
    - *In regards to targeted demand reduction programs, a Marshfield Pilot program in 2008 tried to utilize energy efficacy as resource to impact circuit restraints in the area. The project had little impact on that circuit at a very high cost and effort.*
    - *Information on the Marshfield Pilot would be helpful.*

Phrasing of Recommendations

- The next steps should include action oriented, "doing" verbs rather than passive verbs, like "evaluate."
- The "capacity restraints" goal in the mission statement may not relate to the goal of the Council.
    - *This wording reflects the outcome of the geo-targeting discussions.*

Pilot Programs

- Demand reduction and response presents the state with an opportunity to use a new, potentially effective tool after cost-effectiveness testing.
    - *Demand reduction programs could be piloted with losses in energy efficiency programs credited during the testing period.*
    - *Demand reduction may not always affect energy efficiency programs negatively.*
    - *While there are concerns about funding demand reduction at the cost of energy efficiency, the overall cost to achieve demand reduction through energy efficiency is less than through generation.*
    - *Pilot programs should be created.*
    - *The recommendations should include designing, implementing, and evaluating pilot programs to reevaluate demand.*
    - *Reevaluating demand would apply to all programs and measures.*
- Each PA should propose one pilot program in a targeted area with a plan behind it that would allow an outside evaluator to measure its impact.
    - *The Council will discuss this further on Tuesday, March 10th.*
- The PAs should implement pilots that make use of automated metering infrastructure (AMI).
- The group should consider promoting pilots that use specific components of applied energy efficiency technology that lead to demand reduction and are also controllable through remote systems, including Wi-Fi controlled heat pumps and thermostats. This presents an easy opportunity to leverage investment and receive a price response.

<u>Demand Reduction and Demand Response Recommendations</u>

The Voting Councilors agreed on the following recommendations and next steps related to demand reduction and demand response:

- Continue to educate Councilors on demand reduction, and consider creating an EEAC work group on demand reduction and demand response.

- Evaluate including benefits for reducing demand during winter peak periods in addition to summer peak periods (in cost effectiveness analysis and PAs performance incentives). Include emissions in evaluation.
- Evaluate demand reduction and demand response opportunities using same cost effectiveness framework as other energy efficiency measures.
- Investigate what impact there would be on efficiency savings if the Council were to place greater emphasis on demand savings or peak demand savings.
- Investigate where there may be current or anticipated capacity constraints in the system (if this is determined to be the Council's role).
- Explore the added potential benefits of, and impacts upon, the efficiency programs of the planned advanced metering functionality and time varying rates changes by the electric utilities.
- As the uncertainties around wholesale demand response, the trajectory of advanced metering functionality, and time varying rates in the Commonwealth will likely won't be resolved before the filing of the three-year plan, these topics might need to be reevaluated during the three-year plan.
- Design, implement, and evaluate a demand reduction and/or demand response pilot in each PA's service territory.

MARKET SEGMENTATION AND CUSTOMER SPECIFIC APPROACHES

Presentation

George Lawrence, EEAC Consultant, reviewed market segmentation and customer specific approaches, providing a background on the issue. Dave Gibbons covered information on specific segmentation approaches, and Mr. Pollard outlined potential next steps and related recommendations from EM&V studies.

Clarifying Questions

The group provided no following clarifying questions and comments about market segmentation and customer specific approaches.

Discussion

Dr. Raab presented the following four questions for discussion on the segmentation topic:

- What attributes make a segment a more likely/appropriate candidate for targeting?
- What are the common elements of a successful segment-specific approach?
- What are the key metrics for determining how well a market segment is served?
- Do you support the potential next steps outlined above? What if anything would you like to add?

The Councilors and PAs made the following comments and asked the following additional questions about market segmentation and customer specific approaches, organized by sub-topic. *Responses are in italics*:

General Comment

- Cities and towns, including Boston, increasingly run whole building reporting programs. It is important for municipalities to track progress in healthcare, education, commercial real estate, and government buildings to meet a variety of goals, including tracking the progress of the Climate Action Plan. Gas and

electric PAs use different nomenclature, which complicates these efforts. It would be helpful if PAs standardized these nomenclature categories.
    - *It would be useful to classify tracks to facilitate reporting for major C&I subsectors.*
- While market segmentation is important, it is not an area in which the Council should push PAs, as they are sufficiently implementing their own methods. The Council should prioritize where best to devote its attention.
- Smaller PAs have different considerations than larger PAs. A small percentage of customers account for a large percentage of small PAs' load. Serving other customers will entail high costs and may not be cost-effective. Smaller PAs also piggyback off the segmentation efforts of larger PAs and collaborate with them on segmentation issues, as smaller PAs do not have the staff or financial resources to conduct these efforts alone.
- While segmentation presents opportunities, financial considerations present a barrier. The language within the Green Communities Act comes at a cost. PAs need to find an appropriate cost-effective balance.

Mid-Sized Customers

- Mid-sized customers (MSCs) are underserved. They require substantial service but do not have the internal staffing resources to implement energy efficiency measures on their own. PAs should engage and focus more on this segment.
    - *While there is anecdotal evidence that PAs underserve MSCs, there is no gap between electrical usage and savings in the sector when compared to other segments. Is this segment underserved to a point that would actually justify concern?*
    - *The EM&V study highlighted this issue for MSCs in its recommendations. However, the PAs can decide that serving this segment is not cost-effective and put the issue aside. It is still an open question.*
    - *The evaluation contractors presented a graph of the percentage of savings achieved by sector. MSCs achieved 1.5% savings while large customers achieved 1.6-3.6% load savings. This suggests that MSCs merit more sophisticated treatment.*
- PAs should liaison with the trade associations and affinity groups of MSCs to target broader groups of businesses.
    - *This should be included as a recommendation. Many PAs work with these associations but could expand this engagement.*

PA Staffing for MSCs

- PAs need more staffing resources to deal with MSCs
    - *The Council should encourage PAs to devote more resources to MSCs. While MSCs may be 20% of the market and have achieved 24% of savings, many customers in the sector could still be underserved. The PAs could designate a utility liaison for almost every customer. The Council needs more information on the percentage of MSCs participating in savings programs and the percentage of PA resources targeted towards MSCs.*
    - *MSCs are underserved due to limited resources targeted at them. PAs should add additional staff to focus on MSCs.*
    - *There is a large amount of data about customer involvement in PA programs, including participation rate and savings achieved, that can be found on masssavedata.com. This site has data for the past three years.*
    - *Eversource would like to have more staff, but staffing is not a barrier to implementing MSC electrical efficiency opportunities. Eversource has a dedicated team of sector-based account*

executives, including hospital and government teams. These teams serve sectors throughout size ranges above 300 kW. This model has proven effective over the last five years and facilitates the transfer of technology from larger to smaller customers. Some account managers, especially in Western Massachusetts, are organized by geography due to lower densities of customers. There is a MSC team solely dedicated to this sector. The key to the MSC sector is developing reach and targeting multiple customers.

- *It could be helpful if the PAs produced a semi-annual report on staffing activities.*
- *It would also be useful to have annual information on PAs' staffing structures for serving customers.*
- *The Council should avoid placing too great of an emphasis on differences among PA staffing models. External sales forces are critical for all PAs, and all PAs share the same goal of ensuring their external business partners are equipped to implement the programs requested by the PAs.*

MSC Sectors to Target

- PAs should focus MSC efforts on nonprofits, a crosscutting sector, and devote additional resources to MSCs in general.
- The PAs have implemented great programs with large-sized hospitals, and there might be opportunities to focus more on mid-sized hospitals. PAs could evaluate and implement the best practices from the healthcare best practices study released this year.
  - *Do PAs have the staffing capacity to work with mid-sized hospitals, particularly on CHP?*
  - *There is a dedicated CHP program manager who works with account managers from particular sectors, including hospitals.*
  - *PAs should continue to focus on the healthcare industry to maintain and extend the savings already achieved in the sector. Hospitals use large amounts of energy but, traditionally, also champion energy efficiency programs.*
- Could the PAs share additional information about the grocery store segmentation program that achieved 30% savings? It seems like a positive program, and it would be interesting to determine if this design could flow down from larger grocers to smaller ones.

PA Outreach

- PAs should build on their past outreach success by sharing the materials used by their teams with one another. There may be proprietary issues, but maximizing sharing would be beneficial when possible.
  - *The PAs actively communicate with one another about targeted marketing, and the PAs would like to further improve their collaborative efforts.*
  - *The PAs have shared marketing materials online and conduct joint, statewide marketing initiatives.*
- External sales forces most effectively reach customers. PAs have run sales training for their vendors. Investment in external sales forces is critical to reaching customers.

<u>Market Segmentation Recommendations</u>

The Voting Councilors agreed on the following recommendations and next steps for market segmentation and customer specific approaches:

- Classify, track, report on, and customize approaches to major C&I sub-sectors (e.g., municipal, health care, commercial real estate, education, and non-profits); mid-size and small C&I are both particularly challenging and may need more staffing resources.

- Create more targeted communications to different market segments, explaining the benefits from, and availability of, energy savings opportunities to drive participation.
- Provide increased access to segment-specific marketing (including using trade associations) information and educational opportunities on the Mass Save site.
- Share marketing and sales materials among PAs
- Ensure EM&V study, where applicable, and market research results are used to inform program design (e.g., hospital study).
- Provide twice yearly feedback to the Council regarding how sector specific strategies are being implemented across the state, what kind of sector specific materials are being used by the PAs, and how market research and/or EM&V lessons learned are implemented.
- Questions:
    - PAs have been doing market segmentation for a long time, does Council need to push them further on segmentation?
    - Can we get org chart from Pas to know how many people are working in each program area/market segment?

DELIVERED FUELS: OILS, PROPANE, AND BIO FUELS

Presentation

George Lawrence reviewed delivered fuels, defining the subject, providing a background on the issue in Massachusetts, and noting potential opportunities in the sector. Dr. Raab then provided an overview of possible next steps for delivered fuel.

Clarifying Questions

The group provided the following clarifying questions and comments about the delivered fuels. *Responses are in italics.*

- Three sources fund the energy efficiency programs: the line item on the energy efficiency surcharge (also called the System Benefit Charge, or SBC), income from the forward capacity markets (FCM), and Regional Greenhouse Gas Initiative (RGGI) funding. Do any of these rules allow for funding energy efficiency measures related to delivered fuels?
    - *The Green Communities Act allows use of these funding sources for the energy efficiency programs.*
    - *RGGI funding flows into the general energy efficiency fund.*
    - *Currently, PA budgets first rely on SBC funds, then the RGGI allocation, then FCM funds, and finally the energy efficiency surcharge acts as a backfill. FCM may or may not prohibit using these funds for delivered fuels. The wording of the RGGI legislation would need to be studied to determine the usability of these funds.*
    - *There is likely no restriction on RGGI funds for delivered oil.*
    - *The wording of the RGGI legislation states that the funds can be used for energy efficiency purposes, including demand side reduction, so it appears it would not prohibit energy efficiency measures targeted at delivered oil.*
    - *Drafting a short report on funding mechanisms for energy efficiency programs could help the Council.*
    - *The current Three Year Plan includes a summary of funding sources.*

    - *The Council should focus on legislative changes that would ensure a portion of RGGI funds could be used for broader greenhouse gas reduction programs, outside of the normal scope of energy efficiency programs. The Council should focus on actions that increase flexibility without increasing costs to allow for innovate initiatives.*
    - *The Council could support the formation of a workgroup to consider legislative changes.*
    - *A small, less official focus group might prove more effective.*
    - *Evaluating and considering promoting regulatory changes to support businesses using unregulated fuels will be added to the recommendations.*
- What is the legal basis for the differential treatment of funding sources for C&I and residential programs? i.e., why can the PAs provide incentives for efficiency measures for residential customers with delivered fuels, but not for C&I customers with delivered fuels?
    - *This answer is not entirely clear, although the 1980 Residential Conservation Services law enables delivery of efficiency services for residential customers using delivered fuels. There is funding for oil-related programs built into some residential sector programs..*
- Does DOER currently provide funding for oil switching?
    - *Yes, DOER has several current programs available for fuel switching for the residential sector from delivered fuels to air and ground source heat pumps and wood pellet stoves. These programs are administered through the Massachusetts Clean Energy Center. Historic renewable thermal programs also include solar thermal and wood stoves.*
- How can the integration between electrical and gas programs be improved? It is possible that certain customers are not conducting actions they are entitled to because they are not receiving correct rebates. Is this a significant problem for a share of the market?
    - *There are at least 30,000 to 50,000 customers in the state that are in municipalities with incomplete natural gas coverage.*
    - *PAs want to serve customers by offering solutions that allow customers to implement energy efficiency measures. There is not a barrier to implementation in this space per se, but PAs simply have nothing to offer C&I customers who receive delivered fuels and often cannot help customers using oil. Some PAs have experts that advise customers who use delivered fuels at the customers' own costs, but PAs cannot provide incentives to offset the cost.*

Discussion

Dr. Raab presented the following six questions for delivered fuels:

- What services should the PAs provide to C&I customers using delivered fuels? Would providing these services improve the integration between electric and gas efficiency programs and result in the identification of more gas measures?
- Should the PAs incentivize fuel switching from oil or propane to natural gas and/or electric heat pumps? If yes, under what circumstances?
- Should the Council work to explore and/or remove legislative barriers to serving C&I customers using delivered fuels?
- Should the Council explore a market assessment of the thermal efficiency potential for all non-gas C&I customers?
- Should the Council promote natural gas markets alternatives such as biogas and methane production and/or trucked compressed natural gas to increase the market for natural gas and possibly relieve pipe constraints?

- Do you support the potential next steps outlined above? What if anything would you like to add?
- The Councilors and PAs made the following comments and asked the following additional questions about the small business program, organized by sub-topic. *PA responses are in italics*:

The Councilors and PAs made the following comments and asked the following additional questions about delivered fuels, organized by sub-topic. *Responses are in italics*:

General comments

- The next steps do not need to include that the "Council will work with DOER," as that is its overall stated mission.
- The delivered fuels issue is analogous to residents installing solar energy panels on their homes. How can and should the state serve citizens with net meters of zero who are not paying any money into state funds? However, energy should be used efficiently no matter how it is received. Thus, the Council will miss an opportunity if it only serves electrical customers but not those receiving delivered fuels.
- The next steps section should be revised to note that high efficiency heat pumps receive incentives for cooling, not heating.
- Achieving energy efficiency for delivered fuels needs to be cost-effective.

Improvements to Delivered Fuels Programs

- When PAs cannot assist facilities with delivered fuels, DOER programs should fill in this gap to help customers. A portion of the $85 million ACP funds could be directed towards this DOER programming.
- Rather than promoting switching from oil to natural gas, energy efficiency programs should focus on achieving deep energy savings for businesses regardless of fuel type by using cost effective energy efficiency measures, such as renewable thermal. Furthermore, switching to natural gas is not always a better alternative. Switching to natural gas raises issues of methane leakage and leads to more oil combustion at power plants for electricity if no natural gas pipeline is eventually constructed in the area.

<u>Delivered Fuels Recommendations</u>

The Voting Councilors provided the following recommendations and next steps for delivered fuels:

- Seek ways to provide integrated thermal services, with or without incentives, to all C&I customers, regardless of delivered fuel status.
- Evaluate and consider promoting legislative and/or regulatory changes if need be to support energy efficiency in C&I buildings that use unregulated fuels (similar to 1-4 residential buildings); [Possible need for work group on all potential legislative/regulatory changes—across all programs.]
- Prioritize switching to renewable sources and high efficiency cold climate heat pumps over switching to natural gas.
- [Get one page briefing on funding sources/uses for all Residential/Low Income and C/I efficiency and specifically how measures funded in houses using unregulated fuels.]

C&I REPORTING

Jennifer Chiodo, Cx Associates, provided a background presentation on C&I reporting and listed opportunities for advancing energy efficiency savings

Clarifying Questions

The group provided the following clarifying questions and comments about C&I reporting. *Responses are in italics.*

- On page 16 in the briefing materials, the chart lists metrics reported by New England States. Which metrics does Vermont report that Massachusetts does not?
    - *End use by measure type is included in Vermont annual reports. Program websites are the source of most of the data from the annual reports. Efficiency Vermont operates on a contract basis and to ensure equity, funding is spread throughout all the counties, and there is also a minimum requirement for low income spending. This prevents the contractor from spending the majority of its funds on the most densely populated county.*
- Should end use by measure type be included in Massachusetts' reports?
    - *PAs do receive some of this information from customer profiles, but the profiles are only available up to 2013, so there is a lag time for this information. The group does need to determine how to obtain better reporting metrics.*

Discussion

Dr. Raab presented the following three questions for discussion on the C&I reporting topic:

- Does the Council see value in disaggregating and tracking data at a more granular level? If so, then what should be tracked?
- Should separate goals be set for any newly tracked metric?
- Do you support the potential next steps outlined above? What if anything would you like to add?

The Councilors and PAs made the following comments and asked the following additional questions about C&I reporting by sub-topic. *Responses are in italics*:

General comments

- I approve of all of the suggested next steps.

Specific Data Needs

- Customers, such as grocery stores, are implementing energy efficiency pilot projects. If these pilot programs produced more data, it would help determine if energy efficiency goals are being achieved and whether these pilots should be replicated, allowing Councilors to better track progress and collaborate with PAs.
    - *More information would certainly help the Councilors.*
- It is important to have information about the breakdown of the cost to achieve savings versus the cost of customer acquisition.
- There should be information identifying the largest areas of progress and lack thereof and accompanying analysis explaining the performance of different segments.
    - *This could be helpful, especially if this information included a qualitative analysis.*
    - *National Grid releases this type of information.*

- As CHP can compose a large percentage of energy efficiency goals and also be variable between years, it would be useful for Councilors to have information specially highlighting the status of this program.
- The PA presentation at the EEAC meeting included a graphic showing percent saving and penetration information, which was informative. It could help the Council to have this information more than once a year.
    - *Quarterly reports on percent saving and penetration information could prove useful.*
- Municipalities and utilities are more deeply partnering on customer targeting and outreach efforts. Information on these efforts would be useful. Boston is conducting a citywide energy study in which it is looking at demand, hypothetical CHP locations, and district energy zones. Information from the PAs would help inform the city's efforts.

Granularity of Data

- What costs are associated with increased reporting granularity, and what is the PA response to this concept?
    - *The PAs do track many of the noted metrics. Increased granularity adds an additional large layer of reporting on top of what PAs already conduct. PAs are already planning on implementing more reporting measures, but there are questions of how much ratepayer money should be directed towards reporting and what actions should be taken with more detailed reports.*
    - *More detailed reports would encourage the PAs to account for the information by collecting it. It would also identify sectors that are not meeting energy efficiency targets and identify the programming in the area, allowing the Council and others to provide input on improving the sector.*
    - *The Council exists as a resource for the PAs to provide access to expertise and customer contacts and to potentially help eliminate legislative barriers.*
    - *Access to more information could also help DEP support energy efficiency measures. For CHP, it would help DEP ensure customers have the correct permits and quantify the role of CHP in the 2020 climate plan. More data could also help inform DEP projects targeting organics at groceries and its collaborative projects with municipalities.*

<u>C&I Reporting Recommendations</u>

The Councilors provided the following recommendations and next steps for C&I reporting:

- The PAs should seek to split the New Construction C&I program into separate initiatives for new construction, end of life replacement and upstream
- For the C&I retrofit program, the PAs should seek to increase the number of initiatives to correspond to the Council's interest in more detailed reporting data, such as:
    - CHP
    - Retrofit Programs
    - Control systems (including retrocommissioning, control upgrades, sub-metering and performance metrics)
    - Engagement programs (continuous energy improvement, strategic energy management, behavioral programs)
- Goals should be set at the Program level, so PAs have the flexibility to expand programs if they are more effective at providing savings. However, there should still be initiative level targets provided by the PAs
- Provide break-down annually (or quarterly) by end use/segment

- Provide information on cost of customer acquisition across programs and segments; identify where being most successful and what areas most challenging

C&I TOPICS NOT COVERED/NEXT STEPS/ WRAP UP

Dr. Raab noted that there were three topics related to energy efficiency that the EEAC did not have time to discuss in detail. DOER created succinct summaries and brief recommendations for these issues.

COMMERCIAL ZERO NET ENERGY BUILDINGS PROGRAM

Spencer Lawrence, DOER Zero Net Energy (ZNE) Building Program Manager, reviewed the ZNE program, providing background on the initiative and laying out potential recommendations.

The Councilors and PAs made the following comments and asked the following additional questions about the ZNE program. *Responses are in italics*:

- ZNE buildings do not pay into social programs (e.g., EE SBC) but rely on the electric system when the sun is not shining, which could place a burden on other customers.
    - *To avoid ZNE buildings socializing costs to others, the program needs to consider energy storage systems to ensure that ZNE buildings do not need to use energy from the grid.*
- There might not be a need for a new ZNE program. This program could be folded into the new construction program. ZNE buildings also reduce incremental costs and are proven to use similar amounts of energy as Leadership in Energy and Environmental Design (LEED)-certified buildings.
- The Council should look at how to better incentivize ZNE buildings to ensure they have broad marketability by 2020. There may need to be a specialized ZNE track.
- While I approve of ZNE buildings, the difference between a new energy efficient building and a ZNE building may not fall into the jurisdiction of the energy efficiency program.

Dr. Raab asked the Councilors how many would support creating an official ZNE program either as a stand-alone program or within the new construction program. Three Councilors supported this action, three did not support the action, and one Councilor abstained.

STREAMLINED, LOW-COST AUDITING

Mr. Pollard reviewed streamlined, low-cost auditing, providing background on the approach and laying out potential recommendations.

The Councilors and PAs made the following comments and asked the following additional questions about streamlined, low-cost auditing. *Responses are in italics*:

- Are these audits effective and accurate?
    - *Yes.*
- This seems like a great approach.
- I approve of this concept as well and support reducing the cost of audits. This type of audit should also be offered for homeowners and could help solve issues with delivered fuel. The audit should avoid a rating system, which can become political.
- I also approve of this type of audit. Self-audits should also be promoted to draw in additional people.
    - *PAs are evaluating such programs, but self-service audits are another issue. The proposed streamlined, low-cost auditing program would include comprehensive, whole building audits.*

- Streamlined, low-cost audits seem like a great approach. Boston, through the Boston Energy Reporting and Disclosure Ordinance (BERDO), is also trying to implement a similar type of auditing program.
- The Building Asset Rating (BAR) pilot funded through a U.S. Department of Energy grant and administered by DOER and the Northeast Energy Efficiency Partnership (NEEP), is designed to test the accuracy and cost-effectiveness of streamlined energy audits.
- ASHRAE auditing standards do not cover only energy efficiency measures. It involves other measures as well.
    - *ASHRAE is also based on the complexity of the job as well as the needs of the customer.*
    - *The costs of audits depend on the complexity of the job. Most audits cost less than $10,000, but CHP audits are more expensive.*
    - *ASHRAE will not be a universal solution.*
- Do energy efficiency audits evaluate fewer measures than ASHRAE?
    - *There are many overlaps between the two, but they are not the same. ASHRAE does technical efficiency studies to understand customer needs and then decide what engineering analysis is appropriate.*
    - *Yes, there is substantial overlap between energy efficiency audits and ASHRAE. ASHRAE is a quality standard.*

Dr. Raab asked the Councilors how many would support a streamlined, low-cost auditing program. All the Councilors supported the proposal.

STREET LIGHTING

Aimee Powelka, MA DOER, reviewed LED street lighting providing background on the program and laying out potential recommendations.

The Councilors and PAs made the following comments and asked the following additional questions about street lighting. *Responses are in italics*:

- When utilities own streetlights, do they own the poles?
    - *Yes, the utilities generally own the poles, and the municipalities pay for the electricity costs. The lights are not metered but have a fixed monthly charger per light/pole.*
- Are streetlights eligible for SBC funding?
    - *As of now, there are barriers by technology type.*
    - *It seems like the DPU could eliminate these barriers. Are three additional barriers to changing the tariff structure? We should require utilities to install LEDs as soon as possible.*
    - *I support this program. The PAs and DOER could make the recommendations on how to change the incentive structure and tariffs.*
- After the removal of the tariff, the split incentive model would still impose a barrier, as utilities cannot receive incentives.
    - *This could also be revised.*
    - *PAs should receive incentives for saving electricity on their streetlights.*
- A map showing the locations of LED programs and potential markets for new programs would be useful. As the benefits of a LED street lighting program are public, it should be implemented quickly, by 2018, and the progress should be reported in this three-year plan. The C&I program could spend unused money on this initiative.
    - *Yes, the stated 2020 goal seems too distant.*
    - *The mentioned map should be distributed.*

- An LED installation program will still entail upfront capital costs.
    - *Given the brightness of LED lights, it is possible that there could be fewer lit streetlights.*
- This program should be implemented as soon as possible. What are the costs to achieve the LED lighting goal?
    - *Municipalities often purchase most of the lights, and given the high cost of LED lights, monthly charges for ratepayers can increase.*
    - *These accounts may not be charged for SBC or the energy efficiency surcharge.*
- *The Cape Light Compact achieved 63% savings in kW hours and realized savings after seven years, though the lights were fully amortized when purchased. There will be residents that think LEDs cause health issues. It can take substantial work to conduct outreach and education with concerned groups.*
- *In the Boston region, the PA's customers own most streetlights, but the PA has converted most of them to LEDs. The PA has worked with Boston during this process, but it can take time to switch the lights as many of the streetlights require redesign of the light systems due to differences in bulb lumens. The PA is also testing control systems.*
- The Council should also consider LED controls that allow for light sensing, dimming, and timed shutdowns late at night. Rhode Island passed legislation for LED controls.
    - *Rhode Island's legislation does not require dimming but allows for it.*
- What is the absolute value in load reduction for each light?
    - *The load reduction is about 50%*
    - *The load reduction also depends on the lighting technology currently in place.*
    - *There is a relevant NEEP study [1]that examines the potential of LED lights for member states.*
- A DPU proceeding should address the LED street lighting topic to catalyze acceptance.

Dr. Raab asked the Councilors how many would support a LED street lighting program. Five Councilors supported this action, and one Councilor abstained.

Mr. Pollard briefly reviewed several topics that were not covered in the EEAC workshops. He noted that, while these issues may be revisited, the group has succeeded in crafting next steps on multiple central issues. He will also post on the EEAC website comments collected through the DOER Green Communities Divisions' Request for Information for municipal and public entity recommendations for their own efficiency services as well as on services to their businesses and residents.

The Councilors and PAs provided the following closing comments and questions. *Responses are in italics*:

- The group has accomplished a good deal and decided on the main topics.
- Yes, the EEAC has covered substantial ground. Can the Councilors send in additional feedback?
    - *There will be a chance for the Councilors to provide input during the meeting on Tuesday, March 10th. The Councilors may also send in any additional input.*

Mr. Pollard closed the workshop, thanking the group for its informative and productive feedback.

ACTION ITEMS

[1] http://www.neep.org/sites/default/files/resources/DOE_LED%20Street%20Lighting%20Assessment%20and%20Strategies%20for%20the%20Northeast%20and%20Mid-Atlantic_1-27-15.pdf

The following action items were captured during the meeting:

DOER, PAs, and EEAC Consultants

- Distribute link to the whole group of PA website recommended by Dave Gibbons that contains MSC data
    - [MassSaveData.com]
- Send out the Green Community recommendations
    - [Posted on EEAC website under 3/10/15 meeting materials]
- Share reports on geo-targeting developed by the ISO-NE planning advisory committee
    - [Links: http://www.ct.gov/deep/lib/deep/energy/irp/renewables/transmission_and_ntas.pdf, http://www.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/mtrls/2011/dec142011/mra.pdf; http://www.nescoe.com/uploads/MRA_to_ISO_May_31_2013.pdf]
- Provide a map of areas in Massachusetts that already use LED streetlights
    - [Note: DOER has outdated information to create such a map, however to be truly useful, updated street lighting inventory data must be provided by the PAs]

Raab Associates (with CBI)

- Prepare the meeting summary for this workshop

EEAC Councilors

- Review meeting summary and other material distributed by DOER

Attachment A
Attendance

Attendance - 3.3.15, EEAC C&I Policy Workshop **District Hall, 75 Northern Avenue, Boston, MA**			
Last Name	**First Name**	**Company**	**EEAC Councilor**
Baston	Douglas	NAEA	No
Boecke	Donald	Attorney General's Office	Yes
Bowen	Mark	Franklin Energy	No
Boyd	Amy	Acadia Center	Yes
Breslow	Marc	Climate XChange	No
Brougher	Whitney	National Grid	No
Buchler	Derek	FirstFuel Software	No
Buno	Jessica	Keegan Werlin LLP	No
Camell	David	FirstFuel Software	No
Chiodo	Jennifer	Cx Associates	No
Chretien	Larry	Mass Energy Consumers Alliance	Yes
Downey	Maggie	Cape Light Compact	Yes
Dragoo	Kimberly	ICF International	No
Gibbons	David	National Grid	No
Gibbons	Eugenia	Mass Energy Consumers Alliance	No
Gromer	Paul	Peregrine Energy Group	Yes
Gyurian	Robert	Berkshire Gas	No
Hanover	Jodi	Rich May, P.C.	No
Harak	Charlie	National Consumer Law Center	Yes
Jacobson	Elliott	Action Energy/Lean	Yes
Johnson	Paul	Greentek	Yes
Lawrence	George	Optimal Energy	No
Lipke	Paul	Health Care Without Harm	No
Malmstrom	Rick	DFCI	Yes
McCarey	Maggie	DOER	No
McCarthy	Ezra	National Grid	No
Medeiros	Nelson	Northeast Utilities	No
Mellen	Erik	Eversource	No
Miller	Meredith B	Cape Light Compact	No
Palma	Thomas	Unitil	No
Pollard	Alex	DOER	No
Powelka	Aimee	DOER	No
Raab	Jonathan	Raab Associates	No
Rio	Robert	AIM	Yes
Seidman	Nancy	MassDEP	Yes
Winkler	Eric	ISO New England	Yes