

**EEAC Commercial and Industrial Workshop #1
Advancing/Enhancing Existing Initiatives, Approaches, & Measures**

Tuesday October 3rd, 2017

9:00 AM – 1:15 PM

Saltonstall Building, 100 Cambridge Street, Boston

Facilitators: Dr. Jonathan Raab, Raab Associates & Toby Berkman, CBI

Draft Meeting Summary

There were 30 Councilors, consultants, program administrators, and DOER staff in attendance at this workshop. A list of these attendees is included in Appendix A. Numerous members of the public were also in attendance. The workshop background material and presentations can be found at <http://ma-eeac.org/october-3-ci-planning-workshop-1/>.

INTRODUCTION AND WORKSHOP OVERVIEW

Dr. Jonathan Raab, facilitator from Raab Associates, welcomed the group to the workshop. He offered congratulations to the group, noting the recent announcement that Massachusetts had retained its number one ranking nationwide in energy efficiency (this year, the state took sole position of first place). He explained that this workshop would be the first of two Commercial and Industrial (C&I) workshops in the EEAC's 2019-2021 strategic planning process. Today's workshop would focus on advancing and enhancing existing initiatives, approaches and measures, while the next C&I workshop would address opportunities for innovation. In both workshops, the Council would learn about and discuss a set of initiatives and decide on recommendations.

Dr. Raab then reviewed the agenda for the workshop. Following an initial background presentation on C&I savings, the workshop included the following topics of discussion:

- Combined heat and power (CHP)
- C&I Process Savings
- Data-Driven Customer Acquisition and Engagement Strategies; and Big Data
- Small Business
- New Construction

For each topic, there was a similar process:

- First, a member of the consultant team presented background on the topic and a suggested recommendation that was prepared by the EEAC Consultant team, and the PAs were given an opportunity to add additional pertinent information.

- The Councilors then met at small tables that held 4-5 Councilors to discuss questions they had about the topic, and then asked two of these questions (per table) to the consultants and PAs in front of the entire group.
- After this question and answer session, the Councilors again met with their small tables to discuss suggested revisions to the recommendation.
- Finally, the Councilors shared their suggested revisions to the recommendation to the entire group, and the group agreed on the revisions.

This same process was repeated for each of the five topics in the workshop.

C&I SAVINGS

George Lawrence, EEAC Consultant, provided some background on the drivers of C&I savings. Slides from his presentation are available on the workshop materials website (URL noted above). A Councilor asked the following question. *The response is in italics.*

- Does the slide on 2016 participation show a one-year snapshot of participation?
Yes.

COMBINED HEAT & POWER

Presentation

George Lawrence, EEAC Consultant, reviewed the topic of combined heat and power (CHP) and presented the consultants' suggested recommendation. Slides from his presentation are available on the workshop materials website.

Question & Answer Session

After meeting at their small tables to discuss what questions they wanted to ask the PAs and consultants about CHP, the Councilors asked the following questions. *Responses from either the PAs or EEAC Consultants are in italics.*

- How much CHP over last three or four years has been new construction and how much has been retrofit? *About 1-2 out of 20 have been new construction.*
- What is happening with National Grid's grid interconnection process and are other PAs also considering adopting it?¹
 - *It is a way to interplay with solar on a lot of feeders, for CHP systems greater the 500kw. It allows them to island and not attach to the grid.*
 - *We have not heard of other utilities considering this. Eversource intends to continue with its existing process.*

¹ Note that the National Grid Interconnection Process now requires any CHP or rotating mass generator over 500KW to install direct transfer trip capability that mitigates anti-islanding from occurring.

- Would a circuit-riding model be useful in small PA territories? *It might be useful but PAs would need to weigh the costs and benefits.*
- Is there enough data sharing to allow for cooperation between gas and electric PAs with large customers? *There was a 2009 analysis on matching electric and gas load that was shared with all the PAs. Gas and electric load don't change that much with large customers, so it is still a useful resource.*
- What kind of expertise do the PAs provide for customers, especially those considering smaller CHP systems? *PAs have in-house subject matter experts that act as project managers and consultants for CHP projects. These experts also interact across the PAs to share best practices.*
- What if any meaningful advances have there been in smaller CHP, for small or medium-sized customers? *We are now seeing smaller systems all the way down to 30kw, or even lower. Typically, smaller CHP systems are around 35kw. PAs are sponsoring trainings on these CHP systems for small business vendors, and see this as a significant area of opportunity.*
- Have technical advances helped with operations and maintenance issues for smaller CHP? *Even though these systems are smaller there are still complications. They are not just "plug and play" systems and each site needs to be thoroughly vetted. That said, new manufacturers are entering the market and the price is coming down.*
- A key barrier to increasing CHP savings is lack of outreach. Have the PAs increased the resources and budget dedicated to harvesting potential CHP customers?
 - *The PAs have multiple sales teams working CHP with customers all the way up and down the size continuum, and in targeted settings like nursing homes.*
 - *The PAs are working directly with the developers, manufactures, and vendors connected with the CHP industry, together with DOER and EPA, to provide them with data and advice. PAs are also working with end users to try to get them to meet with vendors, and assisting vendors in managing the interconnection process.*
 - *Overall, there are more people working in sales, additions to the website, and more trainings.*

Modifications to Recommendation

After meeting at their small tables and then discussing the issue as an entire group, the Councilors collectively agreed to amend the consultants' draft recommendation on CHP as shown below. Additions to the consultants draft recommendation **are shown in red**, and deletions ~~are shown as strikethroughs~~. A clean version of all the revised recommendations is included in Appendix B:

The PAs have had success with increasing CHP savings in each successive plan, and the Council would like to see the electric PAs continue to grow CHP savings by X% by:²

- Utilizing EM&V and Council feedback on streamlining the project process,
- **Test alternative outreach models, e.g. circuit riders with an emphasis on small/medium customers**
- ~~Increasing support and outreach by the PAs, and~~ Increasing collaboration with CHP vendors
- **Addressing potential for CHP in New Construction and ~~micro~~ small CHP systems**
- **Better integration of CHP into core offerings**
- **Continue to explore resiliency, (e.g. black start) and ownership innovations, e.g. third party or other**

C&I PROCESS SAVINGS

Presentation

George Lawrence, EEAC Consultant, reviewed the topic of C&I Process Savings and presented the consultants' suggested recommendation. Slides from his presentation are available on the workshop materials website.

Question & Answer Session

After meeting at their small tables to discuss what questions they wanted to ask the PAs and consultants about C&I Process Savings, the Councilors asked the following questions. *Responses are in italics.*

- Is a key barrier with industrial savings the need for businesses to slow down or stop operations? *Yes. Business risk or interruption—both real and perceived—is one of the PAs' most difficult challenges. Overcoming it takes trust and time.*
- In trying to build trust, do the PAs anticipate MOUs for medium-sized processes? And do they try with easier measures first, like lighting, and then move on to more complex processes?
 - *Yes, it is important to build relationships by starting with easier measures. However, barriers like quality control and business interruption are not reduced just by building trust. PAs also need to involve the right technical resources to address the customer's concerns. PAs also try to coordinate vendors and deal with challenges on the back end, so the customer interacts with only one vendor.*

² The X% would be provided by the PAs and reviewed by the Councilors as part of the next Three-Year Plan review.

- *PAs are exploring the value they bring to the MOU relationship, and how they can we translate that value down to their small- and medium-sized customers.*
- *Who is targeted for the programs? Do you target potential champions for efficiency, like CFOs? We work with decision-makers up and down the chain, including facility managers, process engineers, and CFOs for financial issues. We understand who the decision-maker is on different issues, and target them for our pitch.*
- *How much do the PAs learn from processes used in other states that might be directly transferable, like processes for ice rinks or snow guns?*
 - *We frequently engage with subject matter experts who work outside our state, and bring in techniques pioneered elsewhere.*
 - *We collaborate with experts around the country through our new technology innovation group. Many newer technologies, such as new measures for ice rinks, come to Massachusetts first before being implemented in other states.*
- *What areas of difference are there between what National Grid and Eversource are doing and what smaller PAs are doing in this area? Smaller PAs provide the same resources as Eversource and National Grid, even if they do not have the same large teams working on these issues. For example, with ice rinks, smaller PAs use the same vendor as National Grid, and this vendor installs the same technology.*
- *What is single most important barrier that could be overcome to enable the PAs to accomplish even more process savings?*
 - *There is no one single thing. We tackle the barriers and get more savings through a suite of approaches, such as applying what we learn from working with large customers to our work with smaller customers, increasing the number of credible experts we can partner with, designing more targeted and efficient programs, and conducting strategic initiatives.*

Modifications to Recommendation

After meeting at their small tables and then discussing the issue as a entire group, the Councilors collectively agreed to amend the consultants' draft recommendation on C&I Process Savings as shown below. Additions to the consultants draft recommendation **are shown in red**, and deletions ~~are shown as strikethroughs~~:

The PAs have been steadily increasing electric and gas savings from the process end use. The Council would like to see the PAs continue to increase process savings **goals (electric and gas)**, in addition to other end use savings from industrial customers

- **Consider increasing technical assistance and support to overcome barriers and increase savings**

- Sharing PA best practices and looking for statewide initiatives on common end uses
- Facilitate providing additional information to customers including EMIS, benchmarking of different processes, and best practices

DATA-DRIVEN CUSTOMER ACQUISITION AND ENGAGEMENT STRATEGIES; AND BIG DATA

Presentation

Jennifer Chiodo, EEAC Consultant, reviewed the topic of Data-Driven Customer Acquisition and Engagement Strategies, and Big Data, and presented the consultants' suggested recommendation. Slides from her presentation are available on the workshop materials website.

Question & Answer Session

After meeting at their small tables to discuss what questions they wanted to ask the PAs and consultants about Data-Driven Customer Acquisition and Engagement Strategies, and Big Data, the Councilors asked the following questions. *Responses are in italics.*

- What specifically do the consultants have in mind to increase the impact of data in the program? *The consultants intentionally framed their recommendation without specifics because we are not sure what approaches will be effective. The New York State Energy Research and Development Authority (NYSERDA) recently issued an RFP that could serve as an example of market stimulation on these issues. In addition, the PAs already doing quite a bit of "test and learn" initiatives on these issues.*
- How would the consultants evaluate whether the costs of these initiatives provide sufficient benefits? *We need to test and learn about how to account for savings that come from increased awareness. For example, an evaluation study on Energy Management Information Systems (EMIS) in Connecticut showed 3% savings, but it tracked a different system.*
- Since this might be a hard to measure category for savings, should we just put a small amount towards it and look at it over time?
 - *Maybe, but there are strategies and calculations to measure. If we can work with customers to obtain information demonstrating pre- and post-action conditions, then we can quantify savings.*
 - *In the past, PAs have been able to claim savings from monitoring situations. For this reason, it may be hard to argue to the Department of Public Utilities (DPU) that we can't measure these savings.*
- Could measurement and verification be burdensome, expensive, and risky for customers, and discourage them from participating? *It's possible. The PAs want*

- to support the customer in performing these measurement and verification actions, and we need to look at the costs associated with that.*
- Are the PAs providing incentives for Energy Management Information Systems (EMIS) and metering of individual equipment or end uses³ in retrofit and new construction? If the PAs are not providing incentives for these systems, what is preventing them from doing so and how could these barriers be addressed? *Where metering of individual equipment or end uses is required for a separate purpose, the PAs support their installation. However, the PAs do not support projects where the measure is just the measurement equipment itself, because installing this equipment does not provide any quantifiable energy savings in and of itself.*
 - If the Council wanted PAs to provide incentives for EMS and metering of individual equipment or end uses, what would be the barriers? *Savings and cost-effectiveness.*

Modifications to Recommendation

After meeting at their small tables and then discussing the issue as an entire group, the Councilors collectively agreed to amend the consultants' draft recommendation on Data-Driven Customer Acquisition and Engagement Strategies, and Big Data as shown below. Additions to the consultants draft recommendation **are shown in red**, and deletions ~~are shown as strikethroughs~~:

The Council would like to see the PAs create a framework **and incentives** to increase the presence and use of market-driven data acquisition, **including** software, **sub-metering**, and monitoring based commissioning services in the C&I ~~market~~ **section of the 2019-2021 Three-Year Plan, including adjustments to the M&V framework to facilitate this activity.**

SMALL BUSINESS

Roo Harcourt, EEAC Consultant, reviewed the topic of Small Business and presented the consultants' suggested recommendation. Slides from her presentation are available on the workshop materials website.

Question & Answer Session

After meeting at their small tables to discuss what questions they wanted to ask the PAs and consultants about Small Business, the Councilors asked the following questions. *Responses are in italics.*

- Given the differences among PA territories and among small businesses themselves, what are the benefits of pushing towards a statewide model?

³ Participants in the meeting referred to this idea as "sub-metering."

- *Although there is a wide range of small business types, that same range exists in every PA territory. Because the PAs are all wrestling with similar issues, it would be helpful to have consistency in the delivery of services around issues like checklists, what contractors are looking at, or a common contract for people delivering services.*
- *Another important benefit is marketing. We can make it easier to speak in different terms to different customers.*
- What motivates small businesses to move beyond lighting into something like HVAC? Is the split incentive a barrier to this move, and if so what can be done about it?
 - *Small businesses will look at their various options and their resources, and decide what to do. Lighting measures may pay them back sooner, and involve less investment of capital.*
 - *There is an upstream delivery pathway for lighting, HVAC, and water heaters. It is accomplished through distribution channels and marketing, not customer by customer. When the customer's equipment fails, they then have a choice to put in more efficient equipment.*
 - *HVAC is normally replaced on failure, and so the most the PAs can pay for it is the incremental cost. However, because lighting is a retrofit measure, we can pay up to 100% of the cost, meaning the customer pays much less.*
 - *We are providing training for our small business partners who work with these customers, so they can provide them with a wider range of options, such as CHP. For these customers, however, energy costs are typically not high on their lists of priorities.*
 - *Equipment replacement for HVAC is unlikely to help achieve significant savings.*
 - *The split incentive is a significant barrier for addressing things like HVAC.*
- To what extent have the PAs increased their efforts to engage small businesses, including through increasing their sales force and marketing efforts.
 - *The small business turnkey initiative is part of a portfolio with multiple pieces, which has both expensive and inexpensive savings. PAs have looked to expand offerings to small businesses, like through upstream delivery pathways, which deliver savings at less cost than turnkey initiatives. The PAs have also increased their marketing, and there are many different ways in which we reach out to small business customers.*
- How much more money are you spending on reaching out to customers?
 - *I am not sure. It is not always about the money.*
 - *We are making progress and customers see progress, but we do not have unlimited money.*

Modifications to Recommendation

After meeting at their small tables and then discussing the issue as an entire group, the Councilors collectively agreed to amend the consultants' draft recommendation on

Small Business as shown below. Additions to the consultants draft recommendation are shown in red, and deletions are shown as strikethroughs:

The Council would like to see the MA PAs increase savings in the Small Business Initiative by:

- ~~Continuing to move toward a consistent solution~~ Unify a SBI delivery model statewide (including statewide PA led marketing)
- Promote uptake of comprehensive measures
- Expanding outreach and committed resources to engage a wider range of small business customers.
- Create specific strategies to target owners of buildings occupied by small businesses
- Create specific strategies to target various types of small businesses
- Establish a position of small business ambassador

NEW CONSTRUCTION

Ezra McCarthy, from National Grid, reviewed the topic of New Construction. Dr. Raab reviewed the consultants' suggested recommendation with the Councilors. Slides from his presentation are available on the workshop materials website.

Question & Answer Session

After meeting at their small tables to discuss what questions they wanted to ask the PAs and consultants about New Construction, the Councilors asked the following questions. Responses are in italics.

- Are there any measures for new construction for buildings smaller than 20,000 square feet?
 - *Yes, there are such measures in prescriptive or upstream pathways. Generally, however, there are costs in business development and technical assistance that can be greater than the benefits.*
 - *Cape Light Compact has worked with savvy customers in this category. They will say, "It looks like we're eligible for these measures," and we work with them on the prescriptive packages.*
- Do you work at the national level with industry actors? *We're involved in conversations with industry actors on code and with manufacturers.*
- If the projection is that most new construction will be in Middlesex and Suffolk counties, then it would be helpful to see data on new construction broken down by community and PA. In addition, we should pay attention to those areas where there are different gas and electric PAs. In such cases it will likely be harder to influence the customer. How can we organize ourselves to target these customers so they maximize available savings?
 - *The data does not break down lower than the county level.*

- *When there are multiple PAs in an area, we've worked on MOUs to agree on common language, and to make it as easy as possible for customers, including developers and building owners, to come on board. MOU templates are available on the website.*
- *There is a lot of new cooperation among gas and electric PAs, and a lot of sharing of technical assistance and modeling.*
- *PAs have made tremendous strides addressing things like getting codes changed to help with coordination and consistency, and creating a seamless approach for new construction.*
- Are there currently any performance-based incentives for these buildings? Yes, they can participate in pay for performance just like anyone else.

Modifications to Recommendation

After meeting at their small tables and then discussing the issue as a large group, the Councilors collectively agreed to amend the consultants' draft recommendation on New Construction as shown below. Additions to the consultants draft recommendation **are shown in red**, and deletions ~~are shown as strikethroughs~~:

The Council recommendation is for the PAs to seek opportunities **and increase resources** to drive continuous improvement and effective feedback loops in the new construction market so that **a higher percentage of buildings are served and** low-energy use/~~low-GHG~~ buildings are measured, recognized, **promoted**, and emulated in the market.

WRAP UP AND NEXT STEPS

Dr. Raab asked the Councilors for feedback on the meeting process, in particular the decision to have multiple small table group conversations on each topic. A number of Councilors expressed support for a new "hybrid" approach, in which there would still be small group conversations on recommendations, but there would be no small group conversations before the question and answer sessions. Dr. Raab noted his intent to try this hybrid approach in the next residential workshop.

Dr. Raab also checked in with the PAs for feedback. A PA participant noted that the meeting had a collaborative feel. He also commented that some of the amended recommendations were approaching the "tactical level," which the PAs prefer to avoid, but overall the PAs appreciated having the Councilors' thoughts on paper. Another PA participant requested that there be more tables for PAs in future workshops.

PUBLIC COMMENT

Dr. Raab opened the meeting for public comment. Two members of the public offered comments.

Steve Cowell, E4TheFuture:

I'm here to talk about some work being done representing a small business ally group. I want to quickly run down some thoughts on small business strategy. First, split incentives: Figuring out a strategy by type of energy use is critical. For example, food service, retail, and manufacturing are all totally different. There is also a big difference between dealing with a franchise small business versus dealing with a standalone small business, or dealing with a separate franchise versus a collectively owned franchise.

The type of small business also matters. Manufacturing, commercial, and nonprofit small businesses are all organized very differently. At E4TheFuture, we are planning a statewide comprehensive survey to assess the challenges faced by small businesses and provide input on them. We hope the survey will be completed by November, so it can be a resource for the PAs and the EEAC.

There is also the issue of allies and collaboration. Towns, trade associations, and certain types of contractors are all important. Our chamber of commerce is critical.

The issue of marketing and outreach is very important as well. We need input on how to focus marketing and outreach by type of small business, how they make decisions, how much gets spent on that, and the success by category and type of small business. E for the Future is going to provide financial and resource support to help with this effort.

Finally, the multifamily initiative is both commercial and residential, so getting it serviced as a package not dealing with it separately is important. We're looking forward to providing input on that issue as well.

Kathryn Wright, Meister Consultants Group and Boston Green Ribbon Commission Representative:

I'm here representing the Boston Green Ribbon Commission, Commercial Real Estate Working Group. We keep hearing about plug load. I want to echo the comments on the importance of targeting owners of facilities in small business. We'd like to see that more widespread across the PAs. This is an issue that is continuing to emerge in importance.

In addition, we talked about operations and controls, particularly with respect to the high performance, low energy buildings in the New Construction program. I want to suggest that there are a lot of training needs within the commercial real estate sector on operations and controls. It is not just the manufacturing sector where training is needed.

Following these public comments, Dr. Raab thanked participants and adjourned the workshop.

Appendix A: Attendance

The following Councilors, consultants, program administrators, and DOER staff were in attendance.

Councilors

- Don Boecke (for Maura Healey)—AGO
- Larry Chretien—Mass Energy Alliance
- Paul Johnson—Small ESCOs (Greentek)
- Arah Schuur (for Judith Judson)—DOER
- Amy Boyd—Acadia Center
- Charlie Harak—NCLC
- Bob Rio—Associated Industries of MA
- Deirdre Manning
- Rick Malmstrom—Dana Farber
- Michael McDonagh—Realtors Association

Council Consultants

- George Lawrence
- Jennifer Chiodo
- Roo Harcourt
- Eric Belliveau

Program Administrators

- Ezra McCarthy (National Grid)
- Thomas Palma (Unitil)
- Sam Alpert (Columbia Gas)
- Paul Gromer (Energy Efficiency Business)
- Audrey Penna (Berkshire Gas)
- Nelson Medeiros (Eversource)
- Stephanie Terach (Liberty Utilities)
- Jeremy Newberger (National Grid)
- Victoria Rojo (ISO-NE)
- Maggie Downey (Cape Light)

DOER Staff

- Alex Pollard
- Emily Powers
- Ian Finlayson
- Lyn Huckabee
- Rachel Evans
- Matt Rusteika

Appendix B: Revised Recommendations

Combined Heat and Power:

The PAs have had success with increasing CHP savings in each successive plan, and the Council would like to see the electric PAs continue to grow CHP savings by X% by:

- Utilizing EM&V and Council feedback on streamlining the project process,
- Test alternative outreach models, e.g. circuit riders with an emphasis on small/medium customers, and
- Increasing collaboration with CHP vendors.
- Addressing potential for CHP in NC and small CHP systems
- Better integration of CHP into core offerings
- Continue to explore resiliency, (e.g. black start) and ownership innovations, e.g. third party or other

C&I Process Savings:

The PAs have been steadily increasing electric and gas savings from the process end use. The Council would like to see the PAs continue to increase process savings goals (electric and gas), in addition to other end use savings from industrial customers

- Consider increasing technical assistance and support to overcome barriers and increase savings
- Sharing PA best practices and looking for statewide initiatives on common end uses
- Facilitate providing additional information to customers including EMIS, benchmarking of different processes, and best practices

Data-Driven Customer Acquisition and Engagement Strategies; and Big Data:

The Council would like to see the PAs create a framework and incentives to increase the presence and use of market-driven data acquisition including software, sub-metering, and monitoring based commissioning services in the C&I section of the 2019-2021 Three-Year Plan, including adjustments to the M&V framework to facilitate this activity.

Small Business:

The Council would like to see the MA PAs increase savings in the Small Business Initiative by:

- Unify a SBI delivery model statewide (including statewide PA led marketing)
- Promote uptake of comprehensive measures
- Expand outreach and committed resources to engage a wider range of small business customers.

- Create specific strategies to target owners of buildings occupied by small businesses
- Create specific strategies to target various types of small businesses
- Establish a position of small business ambassador

New Construction:

The Council recommendation is for the PAs to seek opportunities and increase resources to drive continuous improvement and effective feedback loops in the new construction market so that a higher percentage of buildings are served and low-energy use/low-GHG buildings are measured, recognized, promoted, and emulated in the market.