



C&I PLANNING WORKSHOP #3

Presented by DOER, The Massachusetts PAs, Raab Associates, and the EEAC Consultants

March 3, 2015

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RESOLUTION SCHEDULE

Proposed Resolution Process and Schedule

2-Mar	ExCom meeting - Discuss resolution timeline/process, review example of workshop recommendations and resolution language (C&I), consultant presentation on assessment report and initial discussion of goals, next steps for cross-cutting topics, EEAC Agenda planning
5-Mar	EEAC materials to Council- draft assessment report, draft workshop recommendations to Council
10-Mar	EEAC Meeting - assessment report presentation, council review and feedback on C&I and residential workshop recommendations
3/4-3/13	Continue drafting resolution language on goals and workshop recommendations, and updating based on 3/10 council input
13-Mar	Full resolution to ExCom
18-Mar	ExCom reviews full draft resolution
23-Mar	Full resolution to EEAC
31-Mar	EEAC Meeting to finalize and vote on resolution

C&I 3/3 WORKSHOP AGENDA

- ▶ 9:00 Introduction and Workshop Overview
- ▶ 9:10 Demand Reduction
- ▶ 10:05 Market Segmentation and Customer Segment Specific Approaches
- ▶ 11:00 Break
- ▶ 11:15 Delivered Fuels, Oil, Propane, and Bio fuels
- ▶ 12:00 C&I Reporting
- ▶ 12:40 C&I Topics Not Covered/Next Steps/Wrap Up

APPROACH TO EACH TOPIC

- ▶ Brief presentation/clarifying questions (10 minutes)
- ▶ Discussion (2-4 questions) (30 minutes)
- ▶ Next steps/recommendations (10 minutes)
- ▶ Important Notes:
 1. Discussion among Councilors (will not likely have time to include non-Councilors)
 2. Next steps/recommendations are to the full EEAC, who will in turn endorse, modify, or reject—and forward to PAs
 3. As such, next steps/recommendations primarily from voting Councilors, but note in meeting summary if consensus, or, if not list alternatives (including non-voting Councilor alternatives)

GROUND RULES

- ▶ Participate/Weigh-In (indicate w/table tent when want to speak)
- ▶ But Stay on Topic
- ▶ Be Succinct, Share Air Time
- ▶ Be Respectful/Civil
- ▶ Minimize Electronic Distractions
- ▶ If Can't Support Next Steps/Recommendations, Explain Why Can't and Try to Offer Alternative
- ▶ Note: Facilitator May Need to Establish and Enforce Per Person Time Limits and/or other ground rules as needed



DEMAND REDUCTION

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DEMAND REDUCTION BACKGROUND

- ▶ Demand reduction is the lessening of the instantaneous maximum amount of energy used (i.e., peak demand)
- ▶ Demand response involves reducing peak usage or shifting usage from peak to off-peak periods in response to economic incentives.
- ▶ Both summer and winter experience peaks in demand with the summer peak being considerably larger. Winter peak is driven by lighting and heating while summer peak is driven by air conditioning.
- ▶ The value of demand reductions are included in the PAs benefit calculations and kW reductions are recorded and reported within the current energy efficiency program structure.
- ▶ The grid infrastructure for demand response action by customers – meters capable of tracking and signaling time of use and price – is only available to a very small number of customers.
- ▶ The utilities will be filing 10 year Grid Modernization plans with the DPU this summer.

DEMAND REDUCTION OPPORTUNITIES

- ▶ Targeted marketing emphasizing importance and value of demand reductions associated with those end uses that contribute most to peak demand
- ▶ Geo-targeted approaches aimed at raising awareness and promoting demand reductions via EE and DR in the most infrastructure constrained areas.
- ▶ Coordinate EE and DR via
 - A. Combining offerings to include both EE and DR based demand reduction under an umbrella program delivered by PAs
 - B. Program marketing and education to simultaneously promote both demand reduction via EE and DR in a closely coordinated way

DEMAND REDUCTION NEXT STEPS

- Continue to educate Councilors on this whole area, and consider 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. (Is this 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.
- Given uncertainty around wholesale demand response and trajectory of advanced metering functionality and time varying rates in MA, likely won't be resolved before 3 year plan filed—and likely need to be reevaluated during three-year plan
- Design, implement, and evaluate a demand reduction and/or demand response pilot in each Pas service territory

DEMAND REDUCTION

KEY QUESTIONS

1. What would the impacts be on efficiency savings and the PAs' performance incentives if the Council were to place greater emphasis on demand savings or peak demand savings?
2. 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 program)?
3. How can the Council and PAs prepare for advanced metering functionality and time varying rates and their impacts on the efficiency programs?
4. Do you support the potential next steps outlined above?
 - What, if anything, would you like to add?



MARKET SEGMENTATION AND CUSTOMER SEGMENT SPECIFIC APPROACHES

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SEGMENT SPECIFIC APPROACHES

DEFINITION

- ▶ Segmentation is the process of dividing target markets into similar groups based on defined criteria
 1. Type, geography, energy use, or function
 2. Examples: Manufacturing, K-12 schools, hospitals, grocery, office, commercial real estate
- ▶ The purpose is to develop an effective approach designed for each customer segment
- ▶ The level of segmentation should reflect the ability to serve the segments
- ▶ Segmentation and approaches should constantly evolve

SEGMENT SPECIFIC APPROACHES

BACKGROUND

- ▶ There are roughly 350,000 C&I electric and 154,000 C&I gas customer accounts in MA
- ▶ Each PA territory has a unique mix of C&I customers spanning many industry types and size ranges of customers
- ▶ In order to serve this diverse and large customer base, the PAs have designed and implemented a number strategies targeted to specific sub-segments of C&I customers.
- ▶ These strategies are often developed collaboratively by the PAs working with organizations which have established relationships with particular segments of customers.
- ▶ Notable examples of these kinds of strategies include those involving municipalities, manufacturers, grocers, and small business customers.

SEGMENT SPECIFIC APPROACHES OPPORTUNITIES

- ▶ EM&V Recommendations and Program Design
 1. Mid-Size Customer Needs Assessment
 2. Market Sector Profile: Small and Medium-Sized Food Stores
- ▶ Common themes to successfully engage a market segment
- ▶ Key points of communication
 1. Advanced Manufacturing Collaborative
 2. For Council – how are EM&V results applied

SEGMENT SPECIFIC APPROACHES

NEXT STEPS

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

SEGMENT SPECIFIC APPROACHES

NEXT STEPS (CONTINUED)

- ▶ Ensure EM&V study, where applicable, and market research results are used to inform program design (e.g., hospital study).
- ▶ 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:
 1. Pas have been doing market segmentation for along time, does Council need to push them further on segmentation?
 2. Can we get org chart from Pas to know how many people are working in each program area/market segment?

SEGMENT SPECIFIC APPROACHES

KEY QUESTIONS

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



DELIVERED FUELS, OIL, PROPANE, AND BIO FUELS

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DELIVERED FUELS DEFINITIONS

- ▶ Delivered fuels are those that are delivered to the site by truck (unregulated), as opposed to by pipe or wire
- ▶ Fuel switching is the practice of changing from one fuel to another to achieve the same result
 1. Oil to natural gas for space heat
 2. Oil to electricity (heat pumps) for space heat
- ▶ Renewable energy is traditionally solar thermal, solar photovoltaic, or wind
- ▶ Biofuels can include methane from landfills or wastewater plants

DELIVERED FUELS BACKGROUND

- ▶ The System Benefits Charge (SBC) only applies to regulated fuels – natural gas and electricity
- ▶ PAs cannot help delivered fuels customers identify opportunities or provide incentives for non-electric and/or non-gas efficiency measures in commercial buildings
- ▶ PAs cannot help customers with fuel switching, only with efficiency measures associated with new equipment
- ▶ Gas system constraints are preventing fuel switching in Berkshires and the Cape

DELIVERED FUELS OPPORTUNITIES

- ▶ PAs could publicize their ability to split the costs of assessments/TA studies with delivered fuels customers
- ▶ Compressed natural gas delivered by truck is becoming more common, but is not subject to SBC
- ▶ Methane produced on site is becoming more common, and there is potential in Massachusetts, but is not subject to SBC
- ▶ Fuel switches from delivered fuel to natural gas or to heat pumps can help with greenhouse gas reduction goals

DELIVERED FUELS

NEXT STEPS

- ▶ 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); [Do we need 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.]

DELIVERED FUELS

KEY QUESTIONS

1. 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?
2. Should the PAs incentivize fuel switching from oil or propane to natural gas and/or electric heat pumps? If yes, under what circumstances?
3. Should the Council work to explore and/or remove legislative barriers to serving C&I customers using delivered fuels?
4. Should the Council explore a market assessment of the thermal efficiency potential for all non-gas C&I customers?
5. 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?
6. Do you support the potential next steps outlined above? What, if anything, would you like to add?



REPORTING

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REPORTING BACKGROUND

- ▶ Reporting includes PA data
 1. Quarterly and Annual Reports to Council
 2. DPU Filings
- ▶ Current MA C&I Reporting Structure
 1. Program: Retrofit
 - ▶ Initiatives: Large Retrofit (LR), Small Business
 2. Program: New Construction (NC)
- ▶ Budgets and Goals at Program Level
 1. 20% or more change in Program budget or goals requires DPU approval
- ▶ Measure/End-Use subcategories currently aggregated in reporting:
 1. Combined Heat and Power and custom Controls/Retrocommissioning primarily under Large Retrofit
 2. Upstream, “true” new construction, and end-of-life equipment replacement aggregated under New Construction

REPORTING OPPORTUNITIES

- ▶ Increase granularity of Retrofit information by adding initiatives in areas of Council interest such as:
 1. CHP
 2. Controls, RCx, metering and performance metrics
 3. Engagement programs
 4. Mid-sized customers
 5. Market segments
- ▶ Disaggregate different program offerings:
 1. Upstream \$\$ to distributors and manufacturers
 2. True New Construction – potential and timing highly variable depending on construction market
 3. End-of-Life Equipment Replacement

REPORTING NEXT STEPS

- ▶ 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:
 1. CHP
 2. Retrofit Programs
 3. Control systems (including retrocommissioning, control upgrades, sub-metering and performance metrics)
 4. 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

REPORTING KEY QUESTIONS

- ▶ 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?
- ▶ *What would be the direct & indirect costs associated with reporting in any greater frequency/granularity?*
- ▶ *Will increased reporting lead to greater savings achievement?*



QUICK TOPICS

COMMERCIAL ZERO NET ENERGY BUILDINGS PROGRAM

- ▶ ZNEB: A building that, over the course of a year, produces as much energy as it through on-site renewable energy.
- ▶ In 2014, DOER launched the Pathways to Zero program.
 - ▶ \$3.5 million initiative for demonstration projects and market support.
 - ▶ 20 C&I projects submitted, representing \$270 million and 2 million square feet in ZNE development.
- ▶ DOER is working with PAs on ZNEB challenges.
- ▶ DOER recommends that PAs create an official ZNEB program or separate track in new construction.
 1. Be mindful that ZNEB customers may not be pay into EE funds
 2. Consider including storage in definition
 3. What's difference between
 4. Council split on recommendation

STREAMLINED, LOW-COST AUDITING

- ▶ “Can we improve building analysis to provide credible, investment-grade information in less time and with decreased cost?”
- ▶ This was a guiding question of the Building Asset Rating (BAR) program, seeking to test innovative new energy audit methodologies.
- ▶ Findings:
 - ▶ \$25,000 – ASHRAE Level 2, traditional methods
 - ▶ \$6,000-8,000 – ASHRAE Level 2, new methods
- ▶ DOER recommends that the PAs incorporate streamlined energy audit methodologies into their 2016 – 2018 programs and processes
 1. If truly streamlined and lower cost, makes sense
 2. Can we go further?
 3. All voting councilors present support

STREET LIGHTING

- ▶ 370,000 street lights in MA, mostly HPS. Includes both municipally-owned and utility-owned.
- ▶ LED savings potential:
 - ▶ 105,239,000 kWh per year
 - ▶ \$5,100,000 per year
- ▶ Barriers: (1) Ownership structure, (2) Upfront capital requirements, (3) Tariff structure
- ▶ DOER recommends that PAs create a plan to install LEDs in all utility-owned street lights by 2020.
 1. Require utilities to do as soon as possible and not later than 2018, and change tariff if need be
 2. What's break-down utility and municipal-owned streetlights, and map of where HPS and where LED' exist
 3. know where all the customers are
 4. What's relative c/e of this compared to other measures
 5. Now dimming controls on LED streetlights; RI has legislation allows dimming
 6. Monthly charge might go up
 7. Some communities may not want to do this...
 8. Voting Councilors support a streetlight program

OTHER TOPICS NOT DISCUSSED IN THE WORKSHOPS

- ▶ Green Communities RFI
- ▶ Segments:
 1. Mid-size customers
 2. Healthcare
 3. Hospitality
- ▶ Energy Management and Project Management Support Services
- ▶ Enhanced comprehensiveness – Metrics for multiple-measures installed
- ▶ C&I financing
- ▶ Performance contracting
- ▶ Expanded upstream programs



**THANK YOU FOR
PARTICIPATING!**