MA ENERGY EFFICIENCY ADVISORY COUNCIL

DRAFT Report

Energy Efficiency Advisory Council Three-Year Plan Workshop

December 11, 2017

Facilitated by:
Raab Associates, Ltd.
with
Consensus Building Institute

RAAB ASSOCIATES

cbi Consensus Building Institute

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Section I: Introduction/Overview

In preparation for the development of the next Three-Year Energy Efficiency Plan (2019—2021) (Plan) by the Massachusetts Program Administrators (PAs), the Energy Efficiency Advisory Council ("EEAC") held six workshops between September 2017 and January 2018. The purpose of the workshops was to discuss current and foreseeable challenges and potential opportunities, and to develop recommendations from the Council for the PAs to consider in the development and implementation of their next Plan.

There were three workshops that focused exclusively on residential initiatives and issues, two workshops focused exclusively on commercial and industrial ("C&I") initiatives and issues, and a final workshop focused on a cross-cutting issue (demand management) and on fine-tuning and finalizing the recommendations. The participating Councilors' recommendations were then forwarded to the full Council for review, further refinement if needed, and adoption at the next regular EEAC meeting.

A table summarizing the dates and topics covered at each workshop is in Appendix C.

Raab Associates, Ltd., with the Consensus Building Institute, was retained to help design and then facilitate the workshops. The facilitation team also helped the Council Consultants ("Consultants"), PAs, and DOER to prepare for each workshop, and documented each workshop in a detailed meeting summary.

One of the major themes discussed in depth at the first residential workshop (which permeated many of the discussions at subsequent workshops) was the rising baseline efficiencies for lighting and other technologies that have come about due to the fact that many of the efficient technologies that the current programs support are becoming standard practice. The first workshop was spent discussing the challenging predicament that this situation is expected to cause, and exploring broad approaches to addressing the challenges. The first workshop was intentionally designed to focus on education and high-level strategic discussions, and not to involve discussion of specific recommendations.

For all the other workshops, the goal was to develop recommendations on a wide range of initiatives and topics. The approach to each initiative and topic was similar. The Consultants (or in some cases the PAs) developed a background document. Each document also included the Consultants' proposed topical strategic recommendations. This background document was then vetted by DOER, the PAs, and the facilitators, then finalized by the respective authors and posted for the Councilors to review ahead of the related workshop.[1] At the workshop, the Consultants, the PAs, LEAN or a combination would present background slides and the Consultants would then present their strategic

[1] The Low-Income background document was also vetted by LEAN.

recommendations. The Councilors would be given the opportunity to ask the Consultants and the PAs (and LEAN for the Low-Income Initiatives) questions about the background material and the strategic recommendations.

Following the Q&A period, the Councilors would break into two or three small groups to discuss the draft Consultant recommendations. They were given free rein to add, subtract, or fine-tune the draft recommendations. The full group, aided by the facilitators, would then compile the suggested additions, deletions, and edits from each of the small groups—and endeavor, as time allowed, to revise the recommendations to the satisfaction of all the participating Councilors. Where consensus could not be found among the participating Councilors, language was either highlighted in yellow or a comment was added for further consideration later (i.e., at the sixth and final workshop and, if necessary, at the full EEAC meeting following the sixth workshop).

The Consultants, facilitators, and DOER then consolidated all the recommendations from workshops 2-5 into a single draft recommendations document. In doing so, similar recommendations arising from separate workshops or in separate sectors were consolidated, and all the recommendations were checked for clarity and grammar. Both a redlined and clean version of the compilation was then presented to Councilors and other stakeholders ahead of the sixth and final workshop. At the sixth and final workshop, in addition to developing additional recommendations for active demand management, the participating Councilors also fine-tuned the overall package of recommendations…[2]

The remainder of this Report includes a section on each of the six workshops, delineating the topics covered and the participating Councilors' recommendations on those topics. The first part of Section 2 includes the final recommendations across all the workshops. The appendices include a list of the participating Councilors, Council Consultants, and lead PA participants present at each of the six workshops, as well as a list of workshop topics and agendas. All of the supporting materials, including the workshop agendas, background documents (including the Consultants' draft recommendations), presentation slides, and workshop meeting summaries, can be found on the EEAC website[3] under each of the six workshop dates.

[2] Note this paragraph describes the activities planned subsequent to publication of this preliminary (and incomplete) draft report.
[3] http://ma-eeac.org/latest-council-meetings-materials/

Section 2: Councilor Recommendations

This section includes the final EEAC Councilor recommendations developed in the workshops (see Appendix 1 for participating Councilors). The recommendations were initially drafted by the Consultants; vetted by the facilitators, DOER, and the PAs; refined at workshops two through five; and then finalized at workshop 6.

For now—we include here temporarily the DRAFT recommendations from workshops 2-5 (that can also be found separately in Sections 3-6). The Final Report will have the final workshop recommendations from Workshop #6.

C&I Workshop #1: Recommendations (10/3/17)

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic.

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%[4] 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 New Construction 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

[4] Councilors did not specify this percent but recommend that the PAs include such a percentage in their draft plan(s)

- 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.

EEAC C&I Workshop #2: Recommendations (10/31/17)

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic

The following language was agreed to by the Councilors attending the C&I #2 Workshop. Language on which the Councilors did not fully agree and wanted to further consider is highlighted in yellow. Outstanding questions (are in parentheses).

Lighting & Controls

The Council would like to see the PAs maximize C&I lighting savings, and incorporate active demand potential with an emphasis the linear lighting market. The council would like to see the PAs increase the percent of lighting opportunities used as lead generation for non-lighting projects. Methods to consider include:

- A new offering, including education and training, to increase the penetration and successful use of advanced controls
- A broad-based linear lighting delivery strategy
- Expanding lighting design service support, for customers and designers/engineers, through a lighting design initiative
- Increase participation in lighting initiatives (including upstream) by increasing marketing, outreach and technical support to customers, contractors, and trade associations
- Investor owned utilities will convert all company owned streetlights to LEDs by the end of the next three year plan

HVAC & Controls

The Council would like to see the PAs increase HVAC savings and build market capacity for future HVAC savings growth. The PAs should work toward transformation in the HVAC market to make right-sized energy efficient HVAC systems the norm and by taking a system optimization approach for existing and new systems in order to build a long term upward trajectory for the next two three year plans.

- The PAs should immediately conduct a market study to identify barriers and opportunities and establish existing conditions in the HVAC market. A follow up study will completed by September 2020 that would also include recommendations to increase HVAC savings in the 2022-2024 three year plan
- Change market practices so that optimally efficient and right sized HVAC equipment become the norm at the time of purchase for retrofit, upstream and new construction applications.
- Promote building automation systems that are designed for optimal function including retro-commissioning of existing systems and rigorous design review and commissioning of new control systems (for existing and new buildings).
- Address known market barriers to upfront investment in the engineering services necessary for system optimization through innovative program offerings.
- Substantially increase ongoing education and training programs for building operators, incentivize performance verification and ongoing system tuning so that providers and operators learn what works, identify new opportunities, and improve practices over time as a savings strategy.

- Build a strong and growing market capacity, including tapping existing national and industry efforts for high efficiency HVAC system design, purchase, installation, operation and management

(Council needs to decide whether or not all or some of the bullets remain)

New Demand Management Opportunities

The Council would like to see all electric PAs include cost effective demand management offerings, in the 2019-2021 plan, in addition to achieving passive demand reductions through efficiency.

(Councilors recommend this be revisited in the January stakeholder workshop after additional information is available.)

Fuel Switching

The Council recommends that the 2019-2021 Plan include support for some forms of greenhouse gas reducing fuel switching. The Council would like to see the PAs identify opportunities and support fuel switching where cost-effective, provided that the program impacts are consistent with Global Warming Solutions Act compliance. These include opportunities to strategically electrify energy uses, and to switch from inefficient equipment to more efficient fuel and/or equipment, where cost-effective. A customer should be able to choose energy efficiency services regardless of current fuel, as long as the equipment or upgrade is to efficient equipment and is cost-effective.

[Use of, and modifiers for, GHG need further discussion]

Residential Workshop #2: Recommendations (10/24/17)[5]

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic

The following language was agreed to by the Councilors attending the 2nd Residential Workshop. Language on which the Councilors did not fully agree and wanted to further consider is highlighted in yellow. Outstanding questions (are in parentheses).

[5] Note that there were no formal recommendations developed in Residential Workshop #1 (9/26/17)

Heating and Cooling Equipment:

- Emphasize an integrated, systems-based approach to HVAC equipment promotion and installation, particularly for heat pumps and condensing boilers
- Streamline the customer experience and ensure seamless and comprehensive delivery of all measures.
- Service providers should be broadly knowledgeable and compensated appropriately and/or targeted appropriately through prescreening
- Expand HVAC efforts by providing new active demand management and fuel switching measures along with the appropriate education of the consumer.
- Expand water heating and HVAC upstream offerings, leveraging best practices and lessons learned from the C&I sector
- Enhance connections between HVAC and whole house offerings, enabling customers to engage in more holistic improvements in a single transaction or over time. Weatherization should remain a high priority and focal point.
- [Should weatherization be the highest priority and should there be a minimum efficiency requirement?]

Serving Hard to Reach and Underserved Populations and Geographies

- Increase participation and savings for hard to reach populations by:
  - Implementing stakeholder engagement process to reassess program design and improve participation in renter and moderate income customer initiatives,
  - Identifying underserved demographic groups and developing new segmented approaches to serve them, and identifying best marketing and sales approaches to reach them and adequately funding and incentivizing them
  - Increasing outreach and partnerships with community based organizations and social networks, municipalities, employers, and other organizations specifically geo-targeting and identification of areas with linguistic barriers
  - Applying lessons learned from low income programs
  - Better use of data to better target customers
- Implement methods to increase access to and use of financing across all customer segments

Behavior Programs

- Broaden current behavioral program strategies to include cost-efficient new approaches for customers of all Massachusetts PAs for example: using a statewide procurement and integrating customer data for better customization; points or reward programs for saved energy

New Construction

- Offer specific low energy path(s) such as net zero energy and Passive House (multi-family) to better align with the stretch code and to drive construction of low energy buildings and market transformation
- Integrate active demand management measures that promote load shifting opportunities of solar photovoltaics, electric vehicles and chargers, and storage
- Explore opportunities to capture additional saving via major renovations

EEAC Residential Workshop #3: Recommendations (12/5/17)

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic

The following language was agreed to by the Councilors attending the Residential #3 Workshop. Language on which the Councilors did not fully agree and wanted to further consider is highlighted in yellow. Outstanding questions (are in parentheses).

Residential Sector

Increase participation levels and maintain strong program savings and benefits achievements for all residential homeowner and rental initiatives by providing a new integrated residential program design that:

1. **Increases customer capture**
    a. Leverage remotely accessible data, third-party sources, and real-time site data to segment, target, prioritize and customize marketing and offers to customers
    b. Increase the points of entry into the Mass Save program for customers during common home-related transactions, linked to incentives that meet a wider range of customer needs
    c. Cultivate, diversify, and expand market channel and community partnerships to inform, recruit, and enroll customers in the program
    d. Cultivate and expand an effective, motivated sales force
    e. Acquire and upgrade information about customers' decision-making processes regarding participation in energy efficiency

2. **Provides new methods of realizing savings**
    a. Promote cost-effective new fuel switching measures that advance state greenhouse gas reduction and cost-saving goals, including from delivered fuels to regulated energy sources
    b. Integrate new active demand management measures (e.g. EV charging) and storage into EE programs, in addition to achieving passive demand reductions through efficiency
    c. Co-deliver and coordinate electric vehicles/charging, distributed energy resources, and other related services with EE programs, while ensuring primacy of energy efficiency measures
3. **Increases conversion rates for existing measures** (especially weatherization, heating and cooling)
    a. Develop new audit approaches, including data-driven remote options
    b. Provide an easier path and reduce barriers for the customer: requiring fewer steps, automate and expedite approval processes, and improve access to financing
    c. Improve feedback loop and increase targeted reengagement to close on recommendations
    d. Cultivate and expand personal/trusted, long-term relationships with the customer
    e. Offer greater customization to customers: using single measure, comprehensive, incremental, and performance-based options
4. **Modernizes data management** to provide a more consistent statewide experience for customers and other stakeholders**,** to accomplish items 1-3 above.

<u>Multi-Family Program</u>

1. Establish a multi-family retrofit program framework that seamlessly integrates residential and commercial metered savings opportunities into whole building solutions and increases uptake of whole building measures
2. Enable program tracking and energy benchmarking by building/facility to support improved customer service and provide customizable levels of service appropriate to varying customer and building types (Is this an overarching recommendation and therefore could it be deleted?), including incremental paths to whole building improvements
3. Identify and present options to address market and regulatory barriers to serving multifamily properties, including a blended BCR for multifamily core initiative
4. Leverage key points in the building life cycle including refinancing
5. Reexamine a pay for performance program for market rate multifamily

Low income Programs

1. Identify and support new and enhanced electric and gas measures and innovative strategies
2. Review program model strategies to achieve additional cost efficiencies
3. Identify and implement continuous improvement opportunities and include information in the 2019-2021 Plan
4. Assess whether there are gaps in participation and take steps to deliver equivalent and proportional services regardless of geography if necessary
5. Develop and demonstrate alternative measure packages and service delivery models to serve a wider and diverse range of customer needs and interests
6. Ensure communication between the market rate and Low-Income Programs to identify and coordinate program innovations when applicable
7. Develop new delivery models to increase participation rate of households between 60 and 80 percent median income (Should we include this recommendation in another section because low-income = <60%? Some version might already be in the second workshop recommendations.)

Section 3: EEAC Residential Workshop #1 (September 26, 2017)

The focus of this first residential workshop was "*New Approaches in the Face of Rising Baselines and Other Trends: Challenges and Innovative Options*."

(Agenda, briefing document, slides, and meeting summary for this meeting can be found on the MA EEAC website here: http://ma-eeac.org/september-26-residential-planning-workshop-1/.)

EEAC Residential Workshop #1: Topics

The topics covered during the presentations and discussion during Residential Workshop #1 included:

1. Rising Baselines and Other Trends
2. Innovative Options
    a. Whole Home/Building Approaches
    b. New Measures/Strategies (Renewable Heating/Fuel Switching; Active Demand Management; Storage, Electric Vehicles, & Solar)
    c. Data-Driven Customer Acquisition and Engagement Strategies

EEAC Residential Workshop #1: Recommendations

Unlike the subsequent residential and C&I workshops, this workshop did not involve any formal recommendations. Rather the Councilors split up into two groups and first discussed the relative importance of each bucket of Options above, and then reflected on the various challenges and opportunities within each bucket described by the Consultants. The notes below are from the two break-out groups. [Note: included here in this draft for now but would be in an appendix in Final Report or not included at all].

The two groups were as follows:
Group 1 (with Mr. Berkman, facilitator): Amy Boyd, Rick Malmstrom, Joe Dorfler (for Don Boecke), Deirdre Manning, Eric Beaton, Elliott Jacobson, Arah Schuur

Group 2 (with Dr. Raab, facilitator): Lourdes Lopez (for Brad Swing), Larry Chretien, Paul Johnson, Charlie Harak, Bob Rio, Victoria Rojo, Fran Cummings (for Paul Gromer), Ian Finlayson

Importance of the three broad areas of potential innovative options

Members of Group 1 offered the following comments on the importance of the three areas of potential innovative options:

- All three areas are important.

- Home Energy Services (HES) is the core of program.
- Smart phones are key to meeting customers where they are.
- New measures are key to connecting our programs to GHGs and other programs.
- One issue with the HES program is that the customer's first contact has a financial incentive to encourage them to use the program. The customer might have more trust in the program if this person were impartial.
- Due to the history of the program, there are two models for the home auditor. Sometimes they have an incentive and provide additional services, and sometimes they do not. There is a tension between their impartiality and their ability to provide innovative, seamless service and not require the customer to bring in someone else.
- Quality control can be difficult. It might be better to have an online audit, and send few, higher quality people to perform the audit in person.
- It also might be helpful for the utility PA to serve in an advisory capacity in the audits.
- One challenge to these ideas is that PAs need to be very careful around issues of liability.

Members of Group 2 offered the following comments on the importance of the three areas of potential innovative options:

- All three areas are important (although some Councilors felt that data is more of a tool to serve the other two than co-equal).
- Data should drive measure selection, program designs, and customer segmentation strategies.
- We need to know a lot more and do customer segmentation.
- We need to move from a focus on kilowatt-therms to net benefits like carbon reduction. This could help open up new measures and program options.
- We cannot forget insulation and air sealing.

Innovative Options: Whole Home/Building Approaches

Members of Group 1 offered the following comments on innovative options related to Whole Home/Building Approaches:

- We should give customers a clear path and consistent rules. We should be able to tell them, "Here's the problem, and here's how to fix it."
- We should try to get these innovative options in the plan while maintaining flexibility for the PAs. The future is unknown, and we need PA expertise to adapt and implement the programs effectively.
- One challenge is that we're trying to move forward on two opposing impulses. On the one hand we want more simplicity in what we offer and to make it more streamlined, and on the other hand we want to offer more customized approaches and individual "hand holding." It may be difficult to do both these things.

- Regulations, procedures, laws may (or may not) create challenges to some of these options.
- We should think about how we can advocate for code changes, so we can have more of a "stick."
- We should get designers and builders at trainings.
- With the loss of lighting savings these measures may be less cost effective, but there may also be the potential for deeper savings.
- We need to balance the incentive to be innovative and the need to maintain customer trust. It would be helpful to have more information on the PAs' audit models and where they came from.

Members of Group 2 offered the following comments on innovative options related to Whole Home/Building Approaches:

- Councilors have concerns with the idea of HES audit as a "loss leader" for contractors. We want a program that works for contractors. We prefer thinking about how to integrate these programs with the contractors' business model and getting the incentives to contractors right.
- With better data, we should focus on high energy-user homes with more savings potential. We should also focus on communities — especially low-income communities — that have been overlooked.
- We should consider the possibility of a pay for performance savings in place of prescriptive programs.
- We should streamline the Heat Loan program and eliminate barriers to access. Heat Loans might also grow to include additional measures.
- We should provide serious new sales training. If the delivery model is changing then the people coming to customers' doors might be doing more selling.

Innovative Options: New Measures/Strategies

Members of Group 1 offered the following comments on innovative options related to New Measures/Strategies:

- Cyber-security issues need to be considered when thinking about many of the options related to active demand management, storage, EVs and solar.
- We might want to be measured on providing incentives for some of the options related to active demand management, storage, EVs and solar in our residential programs, and instead focus on providing incentives for commercial and industrial customers.
- Higher income residential customers may not need the incentives we might provide.
- If these kinds of incentives are cost-effective, we should still give the PAs flexibility in providing them.
- For peak demand management, because of the nature of the distribution network some savings are only available through residential customers

- Education, providing information, and promotion will be key for the options related to active demand management, storage, EVs and solar.
- Peak demand is a significant source of energy costs and should be a core focus.
- There are regulatory and legal questions for some of these options.
- In determining cost effectiveness, it matters how we bundle our programs. For some of these options that will be an important consideration.
- There is growing interest in the options related to active demand management, storage, EVs and solar, especially among young people.
- People want a one-stop shop for implementing these options.
- Overall, we really need these options to be part of the program. If they're not part of the program, they will be done badly. For example, wireless devices should be demand capable.

Members of Group 2 offered the following comments related to renewable hearing/fuel switching:

- We need data on the customer proposition, cost effectiveness, and GHG reductions related to each fuel switching option. We should look carefully at the relative cost-effectiveness and GHG analysis of conversion to gas and electric.
- Some Councilors oppose incentives for conversions to gas heat (because feel it's happening on own and don't need to use ratepayer dollars or because believe focus should be on lower GHG options like electrification or both).
- The new construction option is particularly promising, although the number of new buildings may be relatively small. Replacement at equipment failure may also be promising.
- Promoting load of any one fuel may not fit within the cost-effectiveness requirements of the law, although it may accord with the Global Warming Solutions Act.

Members of Group 2 offered the following comments related to active demand management, storage, EVs and solar:

- Active demand management is very important. We should focus on creating an automated demand response, for example by putting automation into smart appliances and battery systems.
- There may be legislative issues with some of the options, for example EVs. We may want to confront the issue of changing the legislation. In the meantime, however, there is no reason we can't find a way to educate customers, coordinate, and co-deliver around these different technologies. These EE programs are perhaps the best place to help customers understand all their options.
- The audit could be expanded to cover all these options and technologies. This could even open up the possibility to return to homes that are already fairly energy efficient with more options for them.

- We should consider paying customers for increased efficiency and savings rather than on a per measure basis.
- Innovative options related to Data-Driven Customer Acquisition and Engagement Strategies

Innovative Options: Data-Driven Customer Acquisition and Engagement Strategies

Members of Group 1 offered the following comments on innovative options related to Data-Driven Customer Acquisition and Engagement Strategies:

- There is no question we should be using data to better target customers, but we also need more information on the potential savings.
- We can use data both for outreach and for lowering costs.
- We should continue using data to address back-end cost issues. We can build off the existing Eversource and National Grid programs.
- Smaller PAs may have an advantage in managing their data, because they have less data to sort. On the other hand, they have different capabilities and resources than the larger PAs.
- We should consider whether to do a big overhaul of the system like TVA, or to aim for more incremental changes. Regardless of the approach, we need a larger vision for where we're going.

Group 2 did not discuss this question.

Additional information

Members of Group 1 offered the following comments, some of which addressed additional information that might be helpful in understanding or evaluating the various innovative options, and others which simply reflected on the group's conversation as a whole:

- We should not limit information on homes to energy efficiency. People want to know everything that's going on in their homes.
- Whatever we do, we should keep in mind the reality that there will be a transition period and savings may not be immediate.
- We should be unified on the goals but flexible in their implementation. These technologies hold a lot of promise but we don't know now which ones will be most fruitful.

Group 2 flagged places where additional information would be useful within responses to earlier questions (see above).

Section 4: EEAC C&I Workshop #1 (October 3, 2017)

The focus of this first commercial and industrial (C&I) workshop was "*Advancing/Enhancing Existing Initiatives, Approaches, & Measures*."

(Agenda, briefing document, slides, and meeting summary for this meeting can be found on the MA EEAC website here: http://ma-eeac.org/october-3-ci-planning-workshop-1/)

C&I Workshop #1: Topics

The following topics were each discussed at this workshop:

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

C&I Workshop #1: Recommendations

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic.

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%[6] 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 New Construction 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

[6] Councilors did not specify this percent but recommend that the PAs include such a percentage in their draft plan(s)

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.

Section 5: EEAC Residential Workshop #2 (October 24, 2017)

The focus of this second residential workshop was "*Advancing/Enhancing Existing Initiatives, Approaches, & Measures*."

(Agenda, briefing document, slides, and meeting summary for this meeting can be found on the MA EEAC website here: http://ma-eeac.org/october-24-residential-planning-workshop-2/)

Residential Workshop #2: Topics

The following topics were each discussed at this workshop:

- Heating and Cooling Equipment
- Serving Hard to Reach Populations
- Retail Lighting and Consumer Products
- Behavior Programs
- New Construction

Residential Workshop #2: Recommendations

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic

The following language was agreed to by the Councilors attending the 2nd Residential Workshop. Language on which the Councilors did not fully agree and wanted to further consider is highlighted in yellow. Outstanding questions (are in parentheses).

Heating and Cooling Equipment:

- Emphasize an integrated, systems-based approach to HVAC equipment promotion and installation, particularly for heat pumps and condensing boilers
- Streamline the customer experience and ensure seamless and comprehensive delivery of all measures.
- Service providers should be broadly knowledgeable and compensated appropriately and/or targeted appropriately through prescreening
- Expand HVAC efforts by providing new active demand management and fuel switching measures along with the appropriate education of the consumer.
- Expand water heating and HVAC upstream offerings, leveraging best practices and lessons learned from the C&I sector
- Enhance connections between HVAC and whole house offerings, enabling customers to engage in more holistic improvements in a single transaction or over time. Weatherization should remain a high priority and focal point.

- [Should weatherization be the highest priority and should there be a minimum efficiency requirement?]

Serving Hard to Reach and Underserved Populations and Geographies

- Increase participation and savings for hard to reach populations by:
  - Implementing stakeholder engagement process to reassess program design and improve participation in renter and moderate income customer initiatives,
  - Identifying underserved demographic groups and developing new segmented approaches to serve them, and identifying best marketing and sales approaches to reach them and adequately funding and incentivizing them
  - Increasing outreach and partnerships with community based organizations and social networks, municipalities, employers, and other organizations specifically geo-targeting and identification of areas with linguistic barriers
  - Applying lessons learned from low income programs
  - Better use of data to better target customers
- Implement methods to increase access to and use of financing across all customer segments

Behavior Programs

- Broaden current behavioral program strategies to include cost-efficient new approaches for customers of all Massachusetts PAs for example: using a statewide procurement and integrating customer data for better customization; points or reward programs for saved energy

New Construction

- Offer specific low energy path(s) such as net zero energy and Passive House (multi-family) to better align with the stretch code and to drive construction of low energy buildings and market transformation
- Integrate active demand management measures that promote load shifting opportunities of solar photovoltaics, electric vehicles and chargers, and storage
- Explore opportunities to capture additional saving via major renovations

Section #6: EEAC C&I Workshop #2 (October 31, 2017)

The focus of this second C&I workshop was "*Opportunities for Innovation in C&I.*"

(Agenda, briefing document, slides, and meeting summary for this meeting can be found on the MA EEAC website here: http://ma-eeac.org/october-31-ci-planning-workshop-2/)

EEAC C&I Workshop #2: Topics

The following topics were each discussed at this workshop:

- Lighting & Controls
- HVAC & Controls
- New Demand Management Opportunities
- Fuel Switching

EEAC C&I Workshop #2: Recommendations

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic

The following language was agreed to by the Councilors attending the C&I #2 Workshop. Language on which the Councilors did not fully agree and wanted to further consider is highlighted in yellow. Outstanding questions (are in parentheses).

Lighting & Controls

The Council would like to see the PAs maximize C&I lighting savings, and incorporate active demand potential with an emphasis the linear lighting market. The council would like to see the PAs increase the percent of lighting opportunities used as lead generation for non-lighting projects. Methods to consider include:

- A new offering, including education and training, to increase the penetration and successful use of advanced controls
- A broad-based linear lighting delivery strategy
- Expanding lighting design service support, for customers and designers/engineers, through a lighting design initiative
- Increase participation in lighting initiatives (including upstream) by increasing marketing, outreach and technical support to customers, contractors, and trade associations
- Investor owned utilities will convert all company owned streetlights to LEDs by the end of the next three year plan

HVAC & Controls

The Council would like to see the PAs increase HVAC savings and build market capacity for future HVAC savings growth. The PAs should work toward transformation in the HVAC market to make right-sized energy efficient HVAC systems the norm and by taking a system optimization approach for existing and new systems in order to build a long term upward trajectory for the next two three year plans.

- The PAs should immediately conduct a market study to identify barriers and opportunities and establish existing conditions in the HVAC market. A follow up study will completed by September 2020 that would also include recommendations to increase HVAC savings in the 2022-2024 three year plan
- Change market practices so that optimally efficient and right sized HVAC equipment become the norm at the time of purchase for retrofit, upstream and new construction applications.
- Promote building automation systems that are designed for optimal function including retro-commissioning of existing systems and rigorous design review and commissioning of new control systems (for existing and new buildings).
- Address known market barriers to upfront investment in the engineering services necessary for system optimization through innovative program offerings.
- Substantially increase ongoing education and training programs for building operators, incentivize performance verification and ongoing system tuning so that providers and operators learn what works, identify new opportunities, and improve practices over time as a savings strategy.
- Build a strong and growing market capacity, including tapping existing national and industry efforts for high efficiency HVAC system design, purchase, installation, operation and management

(Council needs to decide whether or not all or some of the bullets remain)

New Demand Management Opportunities

The Council would like to see all electric PAs include cost effective demand management offerings, in the 2019-2021 plan, in addition to achieving passive demand reductions through efficiency.

(Councilors recommend this be revisited in the January stakeholder workshop after additional information is available.)

Fuel Switching

The Council recommends that the 2019-2021 Plan include support for some forms of greenhouse gas reducing fuel switching. The Council would like to see the PAs identify

opportunities and support fuel switching where cost-effective, provided that the program impacts are consistent with Global Warming Solutions Act compliance. These include opportunities to strategically electrify energy uses, and to switch from inefficient equipment to more efficient fuel and/or equipment, where cost-effective. A customer should be able to choose energy efficiency services regardless of current fuel, as long as the equipment or upgrade is to efficient equipment and is cost-effective.

[Use of, and modifiers for, GHG need further discussion]

Section 7: EEAC Residential Workshop #3 (December 5, 2017)

The focus of this first residential workshop was "*New Approaches in the Face of Rising Baselines and Other Trends: Challenges and Innovative Options*."

(Agenda, briefing document, slides, and meeting summary for this meeting can be found on the MA EEAC website here: http://ma-eeac.org/december-5-residential-planning-workshop-3/)

EEAC Residential Workshop #3: Topics

The topics covered during the presentations and discussion during Residential Workshop #3 included:

1. Developing an Updated Residential Program Vision for 2019-2021
    a. Whole Home/Building Approaches
    b. New Measures/Strategies (Renewable Heating/Fuel Switching; Active Demand Management; Storage, Electric Vehicles, & Solar)
    c. Data-Driven Customer Acquisition and Engagement Strategies
2. Multi-Family Program
3. Low income Programs

EEAC Residential Workshop #3: Recommendations

Following presentations and Q&A with the Consultants and PAs, and using draft recommendations developed by the Consultants, the participating Councilors refined and then agreed on the following recommendations for each topic

The following language was agreed to by the Councilors attending the Residential #3 Workshop. Language on which the Councilors did not fully agree and wanted to further consider is highlighted in yellow. Outstanding questions (are in parentheses).

<u>Residential Sector</u>

Increase participation levels and maintain strong program savings and benefits achievements for all residential homeowner and rental initiatives by providing a new integrated residential program design that:

1. **Increases customer capture**
    a. Leverage remotely accessible data, third-party sources, and real-time site data to segment, target, prioritize and customize marketing and offers to customers

b. Increase the points of entry into the Mass Save program for customers during common home-related transactions, linked to incentives that meet a wider range of customer needs
c. Cultivate, diversify, and expand market channel and community partnerships to inform, recruit, and enroll customers in the program
d. Cultivate and expand an effective, motivated sales force
e. Acquire and upgrade information about customers' decision-making processes regarding participation in energy efficiency

2. **Provides new methods of realizing savings**
    a. Promote cost-effective new fuel switching measures that advance state greenhouse gas reduction and cost-saving goals, including from delivered fuels to regulated energy sources
    b. Integrate new active demand management measures (e.g. EV charging) and storage into EE programs, in addition to achieving passive demand reductions through efficiency
    c. Co-deliver and coordinate electric vehicles/charging, distributed energy resources, and other related services with EE programs, while ensuring primacy of energy efficiency measures
3. **Increases conversion rates for existing measures** (especially weatherization, heating and cooling)
    a. Develop new audit approaches, including data-driven remote options
    b. Provide an easier path and reduce barriers for the customer: requiring fewer steps, automate and expedite approval processes, and improve access to financing
    c. Improve feedback loop and increase targeted reengagement to close on recommendations
    d. Cultivate and expand personal/trusted, long-term relationships with the customer
    e. Offer greater customization to customers: using single measure, comprehensive, incremental, and performance-based options

4. **Modernizes data management** to provide a more consistent statewide experience for customers and other stakeholders**,** to accomplish items 1-3 above.

<u>Multi-Family Program</u>

1. Establish a multi-family retrofit program framework that seamlessly integrates residential and commercial metered savings opportunities into whole building solutions and increases uptake of whole building measures
2. Enable program tracking and energy benchmarking by building/facility to support improved customer service and provide customizable levels of service appropriate to varying customer and building types (Is this an overarching

recommendation and therefore could it be deleted?), including incremental paths to whole building improvements

3. Identify and present options to address market and regulatory barriers to serving multifamily properties, including a blended BCR for multifamily core initiative
4. Leverage key points in the building life cycle including refinancing
5. Reexamine a pay for performance program for market rate multifamily

Low income Programs

1. Identify and support new and enhanced electric and gas measures and innovative strategies
2. Review program model strategies to achieve additional cost efficiencies
3. Identify and implement continuous improvement opportunities and include information in the 2019-2021 Plan
4. Assess whether there are gaps in participation and take steps to deliver equivalent and proportional services regardless of geography if necessary
5. Develop and demonstrate alternative measure packages and service delivery models to serve a wider and diverse range of customer needs and interests
6. Ensure communication between the market rate and Low-Income Programs to identify and coordinate program innovations when applicable
7. Develop new delivery models to increase participation rate of households between 60 and 80 percent median income (Should we include this recommendation in another section because low-income = <60%? Some version might already be in the second workshop recommendations.)

Section 8: Cross-Cutting & Wrap-Up Workshop (January 30, 2018)

The focus of this last workshop was on Cross-Cutting Issues and Wrap-Up of the Recommendations."

(Agenda, briefing document, slides, and meeting summary for this meeting can be found on the MA EEAC website here: TBD)

Cross-Cutting & Wrap-Up Workshop: Topics

TBD

Cross-Cutting & Wrap-Up Workshop: Recommendations

TBD

Appendix A: Councilor Workshop Participants

TBD

Appendix B: Workshop Topics

Workshop Sector/#	Residential #1	C&I #1	Residential #2	C&I #2	Residential #3	Cross-Cutting Issues
Workshop Date	26-Sep	3-Oct	24-Oct	31-Oct	5-Dec	5-Jan
Main Topic	**New Approaches in the Face of Rising Baselines and Other Trends: Challenge and Innovative Options**	**Advancing/Enhancing Existing Initiatives, Approaches, & Measures**	**Advancing/ Enhancing Existing Initiatives, Approaches, & Measures**	**Opportunities for Innovation in C&I**	**New Approaches in the Face of Rising Baselines and Other Trends: Challenge and Innovative Options**	**Drill Down on Cross-Cutting Issues**
Subtopic	**Potential Innovative Options to Explore in Residential:**	**Existing Initiatives, Approaches, & Measures to Discuss Potential Improvements:**	**Potential Enhancement Opportunities in Products and Service Delivery:**	**Potential Innovative Areas to Explore:**	**Potential Innovative Options to Explore in Residential:**	**Cross-Cutting Topics & Finalize Recommendation Package**
Discussion	Whole Home/Building Approaches	Combined Heat & Power	Heating & Cooling Equipment	Lighting & Controls	Whole Home/Building Approaches	Active Demand Management
	New Measures/Strategies: Renewable Heating/Fuel Switching	C&I Process Savings	Serving Underserved Populations	HVAC & Controls	New Measures/Strategies: Renewable Heating/Fuel Switching	Finalize Recommendation Package
	New Measures/Strategies: Active Demand Management, Storage, Electric Vehicles, & Solar	Data-Driven Customer Acquisition and Engagement Strategies; Big Data	Retail Lighting & Consumer Products	New Demand Management Opportunities	New Measures/Strategies: Active Demand Management, Storage, Electric Vehicles, & Solar	
	Data-Driven Customer Acquisition and Engagement Strategies	Small Business	Behavior Programs	Fuel Switching	Data-Driven Customer Acquisition and Engagement Strategies	
		New Construction	New Construction		Multifamily	
					Low Income Programs	