Massachusetts Energy Efficiency Advisory Council

Resolution Regarding the April 30th Draft of the 2019-2021 Three-Year Energy Efficiency Plan

Draft

July 31, 2018

1. Introduction

Under the Green Communities Act ("GCA"), the Energy Efficiency Advisory Council ("EEAC" or "Council") is charged with reviewing the Massachusetts Program Administrators' ("PAs") draft Statewide Electric and Gas Energy Efficiency Plan ("the Draft Plan"), submitted to the EEAC on April 30, 2018. Having reviewed the Draft Plan, the EEAC, by this Resolution, provides the following comments on the Draft Plan to the Department of Public Utilities ("the Department") and the PAs.[1] The EEAC recognizes and commends the PAs on their past energy efficiency achievements, particularly in the electric sector, made during the first two years of the current 2016-2018 Plan. The Council looks forward to building on that success by leveraging the parties' collective experiences and shared commitment to design and deliver programs to achieve all available, cost-effective energy efficiency and demand management savings, for both electricity and natural gas, consistent with the GCA goals. In its February 28, 2018 Resolution, the EEAC stated its firm assessment that program innovation was needed and outlined the Council's priorities on which it expected the 2019-2021 programs to deliver. Unfortunately, while the Draft Plan mentions these priorities, the lack of program details and analytical support provided in the Draft Plan renders the Draft Plan largely non-responsive to these priorities and call for innovation.

Recognizing the PAs' ongoing commitment to energy efficiency, the Council looks forward to continuing collaboration and exchange of information among the PAs, the EEAC and its Consultants[2], and interested stakeholders throughout the summer and fall. It is the EEAC's expectation that the PAs will work with the EEAC and its Consultants to refine and improve the Draft Plan, through timely interim updates that respond to this Resolution. The Council expects to receive a much improved and stronger Revised Plan from the PAs no later than September 14th, leading to filing a Final Plan with the Department in October. In this spirit of collaboration, the Council provides the following comments on the Draft Plan in its role in shaping a 2019-2021 Final Plan that merits the concurrence and support of the EEAC.

2. Savings Goals and Program Costs

The EEAC's initial priority in evaluating the Draft Plan is to consider the level of targeted, cost-effective lifetime energy savings and related benefits achieved by the programs. The Draft Plan does not build on the programs' prior savings and benefits achieved and does not meet the GCA's mandate to acquire all available cost-effective energy efficiency and demand management resources. The PAs' proposed efficiency savings goals for gas and electric in the Draft Plan are too low and well below both the level of current achieved savings and analyzed energy efficiency potential. Consistent with the GCA, the PAs

[1] Only voting members of the EEAC may vote to approve this Resolution, therefore this Resolution does not necessarily represent the individual views of all parties who have participated in the 2019-2021 Draft Plan development.

[2] "Consultant" here refers to the consultant team led by Optimal Energy, Inc., acting on behalf of the EEAC, pursuant RFR-ENE-2016-019, as amended March, 2018.

must also seek to acquire all cost-effective innovations in managing energy demand, especially at times of system peak load conditions and times when clean energy sources are constrained.

The EEAC, informed by its Consultants, supports savings goals substantially higher than those proposed in the Draft Plan, in line with the March 15th Consultants' Assessment of Potential presentation. The EEAC Consultants recommended targeting average annual electric savings goals of 3.15% of retail sales and approximately 11,500 gigawatt hours (GWh) of lifetime savings. For gas, the Consultants recommended average annual gas savings of 1.65% of retail sales and approximately 565 million therms of lifetime savings are achievable. The EEAC also supports the active electric demand savings goals in line with those recommended by the Consultants at the April 25th EEAC meeting: namely, 4.6% of total peak demand, or 437 MW by 2021, including not less than 75 MW of peak load reduction stemming from behind-the-meter energy storage.

The EEAC sees many indications that the PAs can pursue and achieve additional energy savings and benefits, beyond those reflected in the Draft Plan. Among the more significant indications of higher achievable savings are:

- The historical PA achievements, including the evaluated level of savings in 2017 (for electric: annual savings as a percentage of retail sales of 3.18%, and 14,419,888 MWh of lifetime savings; and for gas: annual savings as a percentage of retail sales of 1.20%, and 371,288,182 therms of lifetime gas savings)
- The historical PA achievements of 213 MW of summer capacity savings in 2017 from energy efficiency programs alone;
- The EEAC Consultants' March 10th Assessment of Potential for achievable energy efficiency savings (3.15% of annual sales for electric and 1.65% for gas);
- The EEAC Consultants' April 25th Assessment of Potential for active electric demand management including storage (electric demand savings of 4.6% of total peak demand, or 437 MW by 2021, including at least 75 MW of peak load reduction stemming from behind-the-meter energy storage)
- The energy efficiency savings goals needed to align with the Massachusetts Clean Energy and Climate Plan for 2020 and longer term GWSA targets for 2030;
- Individual PA potential studies showing portfolio electric savings as high as 3.63% of retail sales and portfolio gas savings as high as 2.95% of retail sales; and
- The benefit/cost ratios for the programs in the PAs' Draft Plan (2.03 electric and 1.72 for gas).

The EEAC recognizes the significance of the electric energy efficiency programs' serving oil and propane consumers in a fuel-neutral manner and supports the PAs' proposal to utilize MMBtus as a common measurement of achievement for the electric programs. However, the EEAC will continue to rely on, and expects the PAs to report lifetime and annual electric, oil, and propane savings in parallel to MMBTUs for the electric PAs. The EEAC will also continue to rely on the PA reporting quarterly on all fuel metrics provided in the D.P.U. 08-50 Tables along with reductions in annual and lifetime greenhouse gas emissions. The EEAC will continue to rely on lifetime and annual Therms saved as the measurement of achievement for the gas programs, and the EEAC does not see a need for considering MMBtus as a measurement of achievement for the gas programs because the gas PAs, unlike the electric PAs, do not serve oil or propane customers.

Given the marked differences in achievable savings goals and program costs between the Council's Consultants and the Draft Plan, it is apparent that some of the planning assumptions made by the PAs in the Draft Plan differ from those assumptions made by the EEAC Consultants in their March 15th

recommendation. The EEAC appreciates the collaborative effort that the PAs and Consultants have expended in recent weeks exploring the main assumptions that account for these differences and expects that the "key drivers" process will conclude in August, with results presented at the August EEAC Meeting. The EEAC anticipates that these results will include detailed information from the Consultants and PAs on each of the identified Key Drivers, differences in initial assumptions, updates to planning assumptions, and the impact of those updates on 2019-2021 forecasted energy savings and program costs.

The EEAC notes that, in 2017, the PAs achieved electric savings substantially above plan year goals while spending close to budgeted costs. The PAs' hard work in overcoming sector level challenges to achieve these nation-leading levels of savings is noteworthy and appreciated. 2017 also saw achieved gas savings near plan year goals while 2017 spending by the PAs came in significantly below budgeted costs. The 2019-2021 Three-year plan will mark a decade of gas efficiency programs under an all cost-effective mandate in Massachusetts. The Council reasonably expects to see these mature programs deliver increasing savings in line with the assessment of potential and historical costs to achieve.The Council looks forward to a Revised and Final Plan that builds on the Draft Plan to maximize allocation of funding for programs that directly benefit ratepayers including participant incentives, outreach, education, and technical assistance.

Notwithstanding the potential for assumptions to change through the "key drivers" process, the PAs' most recent results indicate that the steep increase in proposed program costs to achieve in the Draft Plan are not merited. The Council requires a more detailed understanding of the PAs' planning assumptions including detailed and reasonable justification of costs to achieve savings. This justification should include factual support linked to program redesign, participation levels, specific baseline changes, new initiatives, deeper savings, or incorporation of the EEAC's recommendations.

The EEAC expects that the Revised Plan will provide significantly higher savings goals at similar or lower costs to achieve, while clearly demonstrating that the PAs seek to acquire all available cost-effective energy efficiency consistent with the GCA. Natural gas constraints in recent winters have resulted in significant cost impacts to electric and gas ratepayers, and underscore the need for the Revised Plan to achieve greater and better targeted energy savings across both the electric and gas programs. The EEAC expects the PAs to consider additional cost-effective measures that directly address winter peaks, including comprehensive streetlight and other outdoor lighting retrofits and winter gas demand management. The EEAC requires that the Revised Draft provide more specificity and back-up data for the proposed goals in general, and, more specifically, a complete and updated cost-benefit screening tool data from each PA. The updated cost-benefit screening tools should include updated 2018 Avoided Energy Supply Costs (AESC) values, including forthcoming Massachusetts-specific Avoided Cost of Compliance with GWSA[3].

3. Priorities, Comments, and Recommendations

The following section contains the Council's detailed review and feedback on the responsiveness of the Draft Plan to the Council's February Resolution. The Council appreciates the PAs' recognition of certain Council priorities, but the Draft Plan does not sufficiently address any of the recommendations. Therefore, all the Council's priorities and recommendations in its February Resolution remain a present concern, and the Council thus reiterates its priorities below. The Council expects that the Revised Plan will provide significantly more detail, in terms of narrative, supporting data, and assumptions, which

[3] The Council expects results from the Avoided Cost of Compliance with GWSA study as a supplement to the 2018 New England AESC study in August.

demonstrate how the PAs propose to address each of the Council priorities and recommendations throughout 2019-2021. The Council proposes below Key Indicators for each recommendation and expects the Revised Plan to specifically describe how the PAs will address and monitor each one.

a. Underserved Populations and Geographies

Priority:

Increase participation by, and savings from, hard-to-reach and underserved populations and geographies, including moderate income, renters, small business, and non-profits.

Council Assessment of Draft Plan

Ensuring that customers have equitable access to energy efficiency programs has been a consistent priority of the Council. Based on data available, efforts to target and increase services to moderate income customers, renters, and small businesses in the 2016-2018 plan period have been generally ineffective. The Council is especially disappointed with participation in the PAs' moderate income initiative. Although the Draft Plan expresses a commitment to reaching underserved customers it lacks detail on how this will be accomplished. In the residential sector, this commitment is supported by broadly stated strategies to increase simplicity, ease of participation, and access, along with using data-driven approaches to reach customers. For C&I customers, the PAs highlight improving small business savings and experience by expanding segmentation and negotiated incentives into the small business category. There is also discussion about expanding the Main Streets approach pioneered by Eversource and the customer directed option pioneered by National Grid to the other PAs. While these strategies appear promising, there are insufficient details in the Draft Plan narrative and supporting data for the EEAC to assess whether these planned enhancements or expansions will lead to increased participation and savings. The Council expects further details and specific commitments in the Revised Plan. The Council would also like to see concrete opportunities for municipalities to partner directly with PAs to advance the shared goal of promoting energy efficiency and reaching underserved populations and geographies.

Key indicators associated with priority

- # of participants for specific customer groups
    - 60-80% State Median Income (SMI)
    - Renters
    - Non-English speakers
    - Small businesses
- Ratios of participation, incentive spending and lifetime MMBtu/household savings for specific customer groups vs. market rate participants
- Participants per capita by zip code by sector
- Number of partnerships on energy efficiency campaigns with the municipal seal of approval

b. Active Demand Management

Priority:

Include goals specific to active demand management and integrate the delivery of active demand management offerings within the EE programs in the 2019-2021 Plan.

Council Assessment of Draft Plan:

The EEAC continues to support the development and implementation of effective active demand management (ADM) program offerings, including behind-the-meter energy storage (battery and thermal

storage), in 2019-2021. The Draft Plan included a residential direct load control ADM offering targeting customers with connected efficiency equipment (starting with Wi-Fi thermostats), and a large commercial, technology-agnostic, performance-based, load curtailment offering, both of which were proposed statewide. While these two statewide offerings are useful first steps, the amount of ADM proposed in the Draft Plan is too low. The EEAC Consultants' April 25th Assessment of Potential for active demand management estimated potential demand savings equivalent to 4.6% of total peak demand, or 437 MW by 2021, including at least 75 MW of peak load reductions from behind-the-meter storage, based on the results from two PA demand potential studies, which the Consultants extrapolated to all PAs. The amount of ADM proposed in the Draft Plan is less than 30% of the ADM potential estimated by the EEAC Consultants. The Draft Plan includes significant variation in the volume and scope of ADM across the PAs, with some PAs proposing very low levels. Only one PA (Cape Light Compact) proposed behind-the-meter energy storage in the Draft Plan. In addition, both the Residential and C&I proposed ADM offerings were based on summer electricity peak demand only, leaving opportunities to manage electric and gas winter demand un-addressed. The EEAC does not consider its original recommendation satisfied by the Draft Plan and therefore re-emphasizes its recommendation.

The Revised Plan should include: (1) much higher target levels of peak load ADM, including where cost-effective an upfront rebate program for behind-the-meter storage, as part of every PA's offerings; (2) ADM that addresses opportunities to manage both summer and winter demand; (3) MW savings goals specific to ADM; and (4) programs addressing winter gas demand management. Further, the Revised Plan should include a clear description of how the promotion and delivery of all proposed ADM peak load reduction offerings are fully integrated with the EE program delivery. The EEAC expects the PAs to work with DOER and other stakeholders to ensure coordination across the ADM programs proposed in the Revised Plan with other Massachusetts programs, such as Solar Massachusetts Renewable Target (SMART).

Key indicators associated with priority

- ADM MW in summer, and ADM MW in winter, with sub-categories for battery storage and thermal storage
- Conversion rate (% of all outreach offers that have enrolled)
- Penetration (e.g., % of customers with wifi thermostats who have enrolled)
- Performance by technology or service (% of enrollments that have performed)

c. Fuel Switching

Priority:

Promote & incentivize fuel switching strategies, in all sectors, that support the Commonwealth's long term greenhouse gas reduction requirements, as established under the Global Warming Solutions Act.

Council Assessment of Draft Plan

The Council supports fuel switching strategies that are consistent with and support the greenhouse gas reduction goals of the Global Warming Solutions Act. These include opportunities for electric PAs to strategically electrify energy use by converting oil and propane customers to high efficiency air source heat pumps. The 2019-2021 Plan suggests that the PAs will provide an "energy optimization" approach to program delivery, which is intended to be a more holistic and integrated approach, to help customers make informed decisions to decrease overall energy use. The proposed approach is fuel-neutral and should enable customers to access efficiency services, regardless of current fuel, as long as the customer is upgrading to efficient, cost-effective equipment. However, the Draft Plan and associated

Benefit-Cost Ratio (BCR) models do not specify how savings from fuel switching will be counted and incentivized. The Council seeks to ensure alignment of energy efficiency investments and savings goals with the GWSA and needs additional information on the PAs' approach to fuel switching. This should include calculations for savings from fuel switching, broken down by fuel, and a detailed description of how the PAs' will convert customers from oil and propane to support beneficial electrification and all-electric new construction. The Council expects the PAs to work with the EEAC Consultants on issues related to evaluation, measurement, and verification of fuel switching savings and benefits in advance of the Revised Plan.

Key indicators associated with priority

- Number of heat pump and heat pump water heater installations by initial heating fuel type, sector, and market segment

d. Integrated Residential Program Design

Priority:

Provide a new, integrated residential program design that maintains strong savings and benefits for all residential homeowner and rental initiatives by:

- *Increasing customer capture,*
- *Providing new methods for realizing savings,*
- *Expanding HVAC, behavioral, financing, and upstream offerings, and*
- *Increasing conversion rates for HVAC and weatherization measures.*

Council Assessment of Draft Plan

Given declining claimable electricity savings from residential lighting initiatives and other market developments, the Council continues to support a comprehensive redesign for the residential retrofit and retail programs. The PAs' Draft Plan presents a new program reporting structure with single family (Home Energy Services or HES) and multi-family retrofit offers, previously addressed in two separate initiatives, combined into a single new Residential Coordinated Delivery Initiative. However, the PAs' Draft Plan does not provide sufficient detail regarding how, nor a timeline showing when, this updated retrofit program design will be implemented. Further, BCR model inputs and calculations are similar to that offered in 2016-2018 rather than reflecting an updated approach to delivery of the residential programs. The Council will need additional program design details, a timeline for implementation, and updated BCR model inputs with higher residential savings goals before it is able to consider a favorable recommendation regarding the new residential program. Given the contemplated reduction in emphasis on audits, the PAs should also provide specific details regarding plans to continue to achieve savings and participation from weatherization and major measures including training for public-facing professionals.

Key indicators associated with priority

- Number of Home Energy Assessments planned and Conversion rate for recommended-to-installed weatherization and major measures (separately for single and multi-family)
- Total MMBtu savings per household
- Number of contractor trainings planned and number of people to be trained on new initiative and offerings

e. C&I Sector Savings Measures

Priority:

Increase program savings in the C&I sector from HVAC, process, lighting, and CHP measures.

Council Assessment of Draft Plan

The Draft Plan's proposed savings in the C&I sector are too low and do not meet the GCA mandate of "all cost-effective energy efficiency." The EEAC believes there is still significant opportunity in C&I lighting (including controls), HVAC, and process end uses, based on evidence in: the PA potential studies; the MA onsite study; and the Consultant Assessment of Potential. However, the Draft Plan savings are flat or declining from current achieved levels for those end uses rather than a year over year increase, as recommended by the EEAC and the Consultant Assessment of Potential. The EEAC calls for an increase in program savings targets in the C&I sector from HVAC, process, and lighting measures in the Revised Plan. Since submission of the Draft Plan, the PAs have worked with the Consultants to confirm the details of the CHP projections in the Draft Plan. The Council is pleased with the progress of discussions related to CHP and looks forward to seeing a Revised Plan that reflects an increase to CHP projections for 2019-2021, including additional savings estimates for a known, large CHP project..The Revised Plan should also include more detail on the Commercial Real Estate (CRE) offering, including a description of how all recommendations from the 2015 CRE Working Group report will be rolled out statewide in 2019-2021 to expand to more geographies and CRE business types. The Council also expects further detail and specific commitments in the Revised Plan regarding proposed C&I Market Segmentation, specifically regarding program offerings that address challenges currently faced by the municipal market segment.

Key indicators associated with priority

- Savings from lighting and HVAC controls by PA
- Process savings statewide
- CHP savings and project information in line with current reporting practices
- Savings and participation rates broken out by customer consumption size bin, in line with the C&I Customer Profile

- Square Footage projected to be served, number of individual customers, and energy savings projections by PA for the CRE-specific offering

f. Zero Energy Ready Buildings and Passive House

Priority:

Actively promote zero energy ready buildings (ZEBs) & Passive House for new construction and major renovations in all sectors.

Council Assessment of Draft Plan:

In the Draft Plan, the PAs state support for construction of Zero Energy Ready Buildings (ZEBs) and Passive House-compliant buildings through the delivery of targeted education/trainings, technical support and incentives for both commercial and residential customers. The Council is pleased to see the support for these building types expressed in the Draft Plan. The Council requests additional detail to understand how the PAs' planned efforts will translate into spending and savings, what volume of production is expected, and whether the general strategies presented will yield significant results. The Council requests more specificity in how ZEBs and Passive House will be supported beyond education and trainings.

Key indicators associated with priority

- # and % of planned new construction projects built to ZEB or Passive House standards
- # of trainings planned and # of people to be trained in ZEB construction and Passive House construction techniques
- Average % of building energy savings compared to baseline from New Construction programs

g. Integrated Multi-Family Framework

Priority:

Establish a multi-family framework that better integrates residential and commercial offerings and is cost-effective.

Council Assessment of Draft Plan:

The PAs have provided fully integrated residential and C&I services to the multi-family high rise new construction and low income multi-family market segments for some time. However, integrating retrofit multi-family services for the market rate program has been more challenging. Although the PAs have made incremental improvements to the program in recent years, several factors within the residential sector have prompted the PAs to combine the Multi-family Retrofit and HES Initiatives into a combined Residential Coordinated Delivery Initiative. The Draft Plan indicates that smaller multi-family buildings will receive HES-style services while larger multi-unit buildings will follow a more customized path. While this general approach seems promising, the Council has unanswered questions regarding planned participation levels (in all relevant initiatives), how the general strategies will be specifically implemented and represent full residential and C&I integration, and what savings and costs are expected from multi-family energy efficiency projects. The Council specifically expects the PAs to separately track and report single family and multi-family buildings and multi-family dwelling units served within all initiatives serving both building types (Residential, C&I and Low Income; new and existing buildings).

Key indicators associated with priority

- Close rates (for example, audits to projects)
- Savings and number of participants broken out by residential and multi-family C&I

h. Low Income Programs

Priority:

Review low-income programs for potential improvements in participation and achievement of savings, and seek additional savings & cost-efficiency opportunities, to ensure continued success.

Council Assessment of Draft Plan

The Draft Plan states that the low-income program approach will preserve existing implementation and marketing strategies. Recruiting low-income participants through a co-delivery partnership with the federal Low-Income Home Energy Assistance Program (LIHEAP) has been effective and the Council supports this continued approach. There are additional opportunities available to recruit participants that the PAs, in coordination with LEAN, should include in their Revised Plan. Further, the Draft Plan does not propose any new electric or gas savings measures, despite indications that Low-income Energy Affordability Network (LEAN) has been actively exploring them. The Draft Plan also does not include participation numbers, nor identify any specific ideas that could reduce the cost to deliver the program. The EEAC expects to see a Revised Plan with low-income programs that actively seek improvements in recruitment, participation and achievement of savings, and that makes a clear commitment to incorporating additional

cost-effective savings measures and cost efficiency opportunities such as strategic electrification with cold-climate heat pumps.

Key indicators associated with priority

- Total savings and average total cost and savings per participant household# of participants referred by LIHEAP
- # of participating households receiving each measure
- # of heat pump conversion projects from oil and propane

i. Data Management

Priority:

Modernize data management across all PAs and sectors, enhance accessibility to and usefulness of the data to the public, and leverage additional data sources to accomplish items a-h above.

Council Assessment of Draft Plan:

The delivery of the Mass Save programs would significantly benefit from the adoption of a common data platform across PAs, capable of tracking and motivating customer progress in energy efficiency measures over time and enabling two-way online engagement with customers. The PAs have already adopted a customer segmentation approach to serve large and mid-sized C&I customers. The EEAC believes that it will become increasingly imperative to understand and target specific customer needs in the residential and small business sectors, particularly in light of the expected draw-down in claimable electricity savings from screw-in lighting over 2019-2021. In order to better understand and target customers, PAs should coordinate around a common platform to seamlessly share this data among PAs where customers are served by more than one PA.

This need for better coordinated and more comprehensive customer data management is separate from, but intrinsically related to, the EEAC's desire for improved tracking and reporting of the results of Mass Save ratepayer investments. As noted by the Council in its resolution on the 2016-2018 Plan, the need for, and benefits from, improved tracking and reporting have yet to be satisfactorily resolved by the Mass Save Data website, and a common and modern data platform should be designed to save significant time and costs in tracking and reporting across the program administrators.

Prior to full implementation of a common data platform, the statewide databases constructed by EM&V after the completion of each program year form the best available resource for understanding participation trends. It is therefore critical that EM&V databases be constructed as quickly as possible. The Revised Plan should include a detailed description and timeline for how the PAs will coordinate and implement a common data management platform for customer engagement and comprehensive tracking and reporting of Mass Save investments and results.

j. Performance Incentives

The EEAC continues to support the concept and use of performance incentive payments to the PAs to encourage and reward the achievement of ambitious energy and demand savings goals. Performance incentives for the 2019-2021 Plan were not addressed by the Council during the EEAC workshops, and therefore the EEAC did not include a recommendation on performance incentives in its February, 2018 resolution. The PAs' Draft Plan proposed placeholder performance incentives based on the current performance incentive level and design. The EEAC expects to discuss the need for changes in performance incentive design and the incentive mechanism this summer, and may consider revisions to

both the level of incentive payments and the design of the performance incentive mechanism, which it would expect the PAs to address in the Revised Plan.

The EEAC Consultants have suggested that an additional component be added to the performance incentive mechanism for 2019-2021, in addition to the two components in the current mechanism ("savings" based on benefits, and "value" based on net benefits). The additional component would be focused on specific, quantifiable key performance indicators. Performance incentive categories will be discussed prior to the Revised Plan.