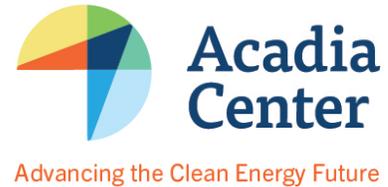


Massachusetts 2019-2021 Efficiency

Evaluation of September 14, 2018 Draft

September 27, 2018



In Massachusetts, energy efficiency is delivered primarily through utility-run programs, overseen by the Department of Public Utilities (“DPU”) with the assistance of a stakeholder council called the [Energy Efficiency Advisory Council](#) (“EEAC”), on which Acadia Center holds the environmental representative seat. In April 2018, the program administrators (“PAs,” which include utilities and a municipal aggregator) proposed their draft 3-year plan for 2019-2021. This [Draft Plan](#) called for substantially lower electric and natural gas savings goals compared to previous achievement, a summer-only demand management program, a re-design of the residential delivery program without details necessary to support it, and few signs of improvement on providing public transparency to data.

As part of the EEAC, Acadia Center drafted the [EEAC’s July 31st response](#) to the April 30th Draft Plan. The response urged the PAs to make substantial improvements before the plan is voted on by the EEAC and filed with the DPU in late October. On September 14th, the PAs released the next draft of the 3 Year Plan. This memo examines whether the PAs made the changes that Acadia Center was looking for in the Revised Draft¹. It analyzes key shortcomings that must be addressed in advance of the October vote, as well as other important components that have improved but require more concrete details, including programs for underserved populations.

While the Revised Draft is responsive to the EEAC’s resolution in a number of important areas and contains some innovative ideas for addressing EEAC priority issues such as better serving non-English speakers, facilitating passive house construction, and increasing C&I market segmentation, many specific details about changes to program delivery and offerings are missing. More significantly, the PAs have not proposed to obtain all available cost-effective energy efficiency and demand resources, as required by statute. Before the EEAC votes on the Final Plan in late October, the PAs must address the following four key issues:

- increase the savings goals to levels recommended by the EEAC Consultants;
- ensure that no efficiency funding or incentives go toward conversions to natural gas;
- incorporate the avoided GWSA costs of compliance in determining benefits of efficiency; and
- reduce performance incentives to levels commensurate with the benefits and savings delivered by the Final Plan.

Four Remaining Key Issues Must Be Addressed by Final Plan

Savings Goals: Still Far Too Low

- Did the PAs increase savings goals to the levels [recommended by the EEAC Consultants](#)? **No.**
 - Consultants’ Recommended Goals: 2.9% of electric annual sales /1.25% gas
 - Revised Draft Proposed: 2.47% electric /1.08% gas, a slight increase from April Draft
 - Lifetime electric savings: 11% lower than Consultant Goal Recommendation
 - Lifetime gas savings: 11% lower than Consultant Goal Recommendation
 - Lifetime MMBTU savings: 30% lower than Consultant Goal Recommendation

- Are the PAs' proposed savings goals consistent with prior performance, accounting for decreasing residential lighting savings the programs can claim? **No.**
 - The proposed savings levels for 2019-2021 are below total electric savings in 2016 and 2017, even when residential lighting is removed from all calculations.
 - The gas programs, which do not face the baseline adjustment issues of residential lighting, propose to save 7% (26 million therms) less in 2019 than they did in 2017.
- Are the costs to achieve each unit of savings consistent with prior costs? **No.**
 - Cost per kWh (both annual and lifetime): ~40% higher in 2019 than 2017
 - Cost per therm (both annual and lifetime): ~20% higher in 2019 than 2017

Heating System Conversions: Final Plan Should Not Provide Additional Funding for Gas Conversions or Extra Money for New Gas

- Does the Revised Draft propose for gas PAs to serve oil and propane customers, counter to the EEAC's July Resolution? **Yes.**
 - The Revised Draft proposes an "Energy Optimization" approach through which the PAs offer information and choices to oil and propane customers, troublingly noting that "in some instances, this may mean increasing electric or gas usage in order to help customer utilize energy more efficiently..." (34, emphasis added)
 - Measures that increase gas usage are not allowed under the Green Communities Act, only "strategic electrification"
- Does the Revised Draft contain money for oil to gas conversions? **Likely Yes** (they *are* paying extra).
 - The April draft of the plan did not include any claimed savings from the gas PAs for deliverable fuels (oil and propane). This has changed with the September draft – with about 2% of overall MMBTUs of gas savings coming from delivered fuel customers switching to gas and *increasing* the amount of gas used.
 - The Revised Draft states the PAs' intent to not offer additional incentives for fuel switching, instead only compensating for the incremental efficiency within the customers' chosen fuel. However, benefit-cost models reveal some incentives for switching to gas from oil or propane that are greater for fuel-switching customers than the corresponding base to high efficiency gas incentive.
 - The PAs need to provide more detailed information on the "Energy Optimization" approach, including the mechanics of recommendations provided to customers, the interplay with gas company sales to expand their territory, incentives and non-incentive offerings to customers to ensure that the approach does not enable cross subsidization or installation of additional fossil fuel infrastructure using efficiency funds.

Carbon Reduction Benefits: Need Commitment to Use Massachusetts-Specific Avoided Cost of GWSA Compliance

The carbon reduction benefits of energy efficiency are calculated through a region-wide study conducted every three years – the Avoided Energy Supply Costs (AESC) study. The [2018 AESC](#) provides a dollar value for the tons of avoided carbon emissions attributable to energy efficiency measures. However, the AESC study overlooks that, even in the absence of energy efficiency programs, the Commonwealth still needs to reach its Global Warming

Solutions Act (GWSA) 2050 statutory mandate of 80% carbon reductions from 1990 levels. In that circumstance, because every option for compliance is more expensive than energy efficiency, the costs to meet the GWSA targets would increase further. DOER commissioned a study as a continuation of the AESC to identify this Massachusetts-specific cost of compliance with the GWSA. [That study](#), released in August 2018, found that the Massachusetts energy efficiency program's value of avoided emissions should be about 18% higher, adding an extra \$17 per MWh or \$35 per short ton of carbon dioxide to the benefits calculation. In its July resolution, the EEAC instructed the PAs to update their calculations to include this value in the Revised Draft.

- Does the Revised Draft propose to base benefit calculations on the updated MA-specific value of avoided cost of compliance with the GWSA? **Not Concretely.**
 - The PAs have provided two sets of tables throughout the Revised Draft – one with the added avoided carbon costs, and one without. The text of the Revised Draft indicates that the PAs are still reviewing the study and have not yet determined which values to submit to the DPU in the final plan.
 - Due to the significance of the energy efficiency programs in achieving the Commonwealth's GWSA mandate – making up nearly 1/3 of the reductions in 2020 – the appropriate value of these emissions reductions to Massachusetts ratepayers is a reasonably foreseeable environmental compliance cost, in the language of DPU precedent, and should be included in the PAs' calculations.

Performance Incentives: Lower Incentives Reward Lower Savings Targets

The decline in claimable residential lighting savings spanning the 2019-2021 Plan is so significant that even if the PAs raise the savings levels to those proposed by the Consultants, the MWh and MMBTU savings and benefits delivered by the programs will decline as compared to the 2016-2018 three-year plan. This further indication that new, innovative delivery models are needed to capture the large amounts of remaining efficiency savings in pockets beyond lighting.

Performance incentives are a great tool to reward the PAs for taking on risk of high, stretch savings goals, driving innovation, and pushing for market transformation. But the incentive pools should be set to align with the level of savings and benefits that the programs deliver. If the PAs are not stretching and driving innovation as they have in the past, performance incentives should be lower.

- Does the proposed performance incentive reward PAs for taking on additional risk and achieving high levels of savings and benefits for Massachusetts consumers? **No.**
 - The Revised Draft proposes lowering the threshold for achieving a percentage of performance incentives from 75% of design level to 65% -- meaning the PAs can earn money for delivering an even smaller slice of a smaller pool of benefits than in the past.
- Does the proposed performance incentive pool correspond to proposed savings and benefits levels? **No.**
 - Compared to 2016-2018 Plan, PAs propose a placeholder that seeks an increase of \$27.5M in performance incentive while delivering \$1.1B less in total benefits
 - Applying same ratio of benefits to performance incentive as 2016-2018, this plan's performance incentive should be \$37M less
- Does proposed performance incentive contain simple metrics with established baselines for demand, strategic electrification, and renters as recommended by the EEAC Consultants? **No.**

- PAs mention (but do not actually propose) an adder for benefits related to active demand measures and heat pump installations with no threshold
- Adder does not incentivize PAs to address EEAC priorities and rewards from the first unit installed, rather than limiting the incentive to improvement over baselines

Other Factors for Consideration in Review of Revised Draft

Underserved Populations: Need More Details and Concrete Plans

In general, the PAs' rhetoric around underserved populations has improved from the April draft – for instance the statement that, as the PAs address specific access barriers for sub-segments currently considered hard to serve, access for all customers improves (Revised Draft, page 31). The PAs included new offerings and marketing ideas that are responsive to the EEAC and stakeholders' calls to serve the underserved populations better, but insufficient details are provided to be certain these ideas will increase participation and savings.

- Does the Revised Draft include specific plans to address moderate income? **Some.**
 - Includes proposal for no-cost weatherization for moderate income customers and plans to coordinate outreach with municipalities
 - Need changes to onerous income verification process and specific reporting indicators
- Does the Revised Draft include specific plans to address non-English speakers? **Some.**
 - PAs promise continuity of preferred language through course of service, but it remains to be seen how. Need to involve every person customer meets through MassSave.
 - Adding Russian and Mandarin to MassSave phone line
- Does the Revised Draft include specific plans to address renters? **Some.**
 - Enhanced incentives for landlords who weatherize all units, and online and phone-based options in lieu of full audit for renters.
 - Still need dedicated approaches to rental HVAC, and concrete rental outreach/marketing strategy
- Does the Revised Draft include specific plans to address microbusinesses? **Not really.**
 - Propose strategic efforts by each PA, tailored to their service territories – a series of demonstration projects from which a real program may be developed
 - Need to make sure community outreach components of residential is coordinated with Main Streets and community outreach components in C&I

Active Demand Management: Need Higher Targets and Upfront Incentives

- Does the Revised Draft meet the EEAC Consultants' recommendations for levels of active demand management (ADM) savings levels and behind-the-meter storage? **No.**
 - Revised Plan includes 153 MW of active demand management by 2021, which is 8% lower than the 166 MW recommended by the Consultants.
 - The PAs propose behind-the-meter storage of 34 MW by 2021, or 60% lower than the 84 MW of storage in the Consultant estimate
- Does the Revised Draft include ADM for electric and gas in the winter? **Yes, but likely not much.**
 - "Temperature optimization" – all PAs expect to offer at some point in three-year period

- This offering involves a single manufacturer of WiFi thermostat adjusting setpoint schedules for gas and electric heating based on outside temps and user behavior to reduce demand over entire season
- Does the Revised Draft offer upfront rebates for energy storage, as recommended by clean tech experts and energy storage community? **No.**
 - Residential Program: Revised Draft proposes an energy storage program through which participants earn incentives for their performance. Although there will not be an upfront incentive, as with most other EE equipment, the storage would be eligible for financing through a zero-interest HEAT loan.
 - Low Income: **No.**
 - C&I Program: Revised Draft proposes a storage program with incentives for peak demand and daily response. **No upfront incentive.**

Heat Pumps and Passive House: Need More Details on Commitment

- Alignment with Green Communities Act amendment to allow “strategic electrification”? **Some.**
 - The Revised Draft proposes more heat pumps and heat pump water heaters, though still far below Consultant estimate.
 - The Green Communities Act allows higher incentives for heat pumps that would make that option less expensive for homeowners, and drive conversions toward electric heat pumps on climate and state policy basis, but the Revised Draft does not include this.
- Does the Revised Draft provide support for zero-energy and Passive House buildings? **Yes.**
 - The Revised Draft lays out a robust Passive House offering, including trainings for professionals, funding for modeling, design team, certification, and performance incentives to focus on multi-unit Passive House construction.
 - Need more details on who is providing the trainings and integration into retrofit

Residential Redesign: Some Great Ideas for an Unknown Point in Time

- The Revised Draft proposes some innovative ways to meet customers where they are and utilize modern information management technologies, such as point of purchase instant rebates and online tools to pre-screen customers for weatherization opportunities. Very few of these enhancements seem ready to implement, and no details on timeline are provided.
- The Revised Draft also does not include a fundamental residential program redesign, as the PAs and EEAC have been contemplating for the last year of planning. PAs propose some incremental changes, but overall rely on the same basic structure and delivery mechanisms that have been in place under Mass Save since 2012.

C&I Savings: Need More Savings and More Details on What Will Change

- The Revised Draft is responsive to many of the EEAC’s specific recommendations on C&I, including a focus on process, controls, training, market segmentation, higher combined heat and power forecasts, and proposed innovation in customer engagement.

- However, the savings targets for C&I remain too low. C&I provides the most cost-effective savings and is not impacted to the same degree as the residential programs due to changing lighting baselines. Savings targets for C&I declined over 2016-2018; it's time for that trend to reverse.
- The C&I programs also need to focus more on HVAC and retro-commissioning, the savings from which remain lower than Consultant estimates, particularly as these sources of savings will serve as the future in a world with less claimable lighting savings.

Better Utilize and Share Data: Some Ideas, No Cohesive Strategy

- The Revised Draft proposes many investments in single-purpose customer engagement platforms, some of which have the potential to substantially benefit customers, like the instant rebate platform. This adds to the long list of single-purpose engagement tools already in play.
- It is unclear how important data from these tools and other sources of data on which the PAs rely (like their own billing systems) will be harmonized and shared across platforms. Without tools to track customers and re-engage them, it will be impossible for the PAs to meet their stated objective of serving customers where they are and with what they need.
- The Revised Draft also does not address the EEAC's call for better transparency of MassSave's own data or the adoption of a common data platform across PAs, capable of enabling two-way engagement with customers and facilitating targeting, coordination, and customer service.

¹ Most of these positions are commonly held at the EEAC, as presented in its July 31st Resolution, available at: <http://ma-eeac.org/wordpress/wp-content/uploads/Resolution-Regarding-April-30th-Draft-of-2019-2021-Plan.pdf>.