Massachusetts Program Administrators' Update to the April Draft of the 2025-2027 Energy Efficiency and Decarbonization Plan

August 15, 2024

I. Introduction

The Program Administrators ("PAs")[1] are pleased to provide this update to the April Draft of the 2025-2027 Energy Efficiency and Decarbonization Plan. This update also comprises our written response to the Massachusetts Energy Efficiency Advisory Council ("EEAC") Resolution regarding the April Draft (the "July Resolution").[2]

We propose an almost $5 billion investment, including approximately $1.73 billion in equity-related investment, in order to achieve the most ambitious greenhouse gas emissions reductions ever set for the Commonwealth. The holistic suite of efforts proposed in this response represents a significant step towards the achievement of the Massachusetts 2030 climate goals for the building sector and in support of our efforts to ensure that all eligible residents and businesses across the Commonwealth benefit from the Mass Save® programs. The collaboratively developed activities and offerings within this revised Plan represent a powerful commitment to equity and to continuous improvement.

We are deeply grateful to the EEAC, including the Equity Working Group ("EWG"), the public, our implementation and community partners, and our trade allies for their feedback and support in refining and improving the first draft of the Plan.[3] Stakeholder feedback culminated in the July Resolution, which incorporates approximately 380 recommendations related to development of the 2025-2027 Energy Efficiency and Decarbonization Plan ("Plan"). The PAs have fully or in part adopted over 90% of these recommendations.

This memorandum highlights key changes to the Plan since April, largely in response to these recommendations. It also includes summary tables and an Appendix describing each Council recommendation, whether and how the PAs intend to address the issue as part of the Three-Year Plan, and a description of all program design changes from the April draft that the PAs intend to incorporate in the Three-Year Plan to be filed with the Department of Public Utilities

[1] The Berkshire Gas Company, Eversource Gas Company of Massachusetts, d/b/a Eversource Energy, Fitchburg Gas and Electric Light Company, d/b/a Unitil (Gas Division), Liberty Utilities (New England Natural Gas Company) Corp., d/b/a Liberty Utilities, Boston Gas Company, d/b/a National Grid, NSTAR Gas Company, d/b/a Eversource Energy, Cape Light Compact JPE, Fitchburg Gas and Electric Light Company, d/b/a Unitil (Electric Division), Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, and NSTAR Electric Company d/b/a Eversource Energy.

[2] *See* "Massachusetts Energy Efficiency Advisory Council Resolution Regarding the April 1st Draft of the 2025-2027 Energy Efficiency Plan," adopted June 26, 2024 and issued in final form on July 1, 2024.

[3] Feedback was provided through three public listening sessions; approximately 100 written public comments; multiple meetings of the EEAC, EWG, and Commercial and Industrial Working Group; at least 17 "deep dive" sessions with the Council's consultant team, the Department of Energy Resources ("DOER"), and the Attorney General's Office ("AGO"); and many additional meetings with implementation partners and other stakeholders.

("Department") on October 31, 2024. This memorandum constitutes the Program Administrators' final, written response to the Council's recommendations as required by the Department.[4] Per Department directive, the PAs are not allowed to make further substantive changes to the Plan.[5] As a next step, the PAs will integrate the changes described here into the Plan draft and tables for submission to the EEAC on September 25, 2024 to support Council action on a Final Resolution in October. As required by statute, the PAs will file a Final Three-Year Plan for approval with the Department on October 31, 2024.

II. Revised Plan Targets

The revised Plan lays out ambitious goals that meet the requirements established by the Secretary of the Executive Office of Energy and Environmental Affairs ("EEA") to reduce greenhouse gas emissions ("GHGs") by 1 million metric tons at a budget of less than $5 billion, while prioritizing equitable delivery of decarbonization measures and an improved customer experience.

2025-2027 Revised Plan Targets

- Weatherize approximately 174,900 homes, including over 66,100 low- and moderate-income households and just under 46,700 rental units.
- Support the installation of heat pumps in over 115,100 households, including over 22,200 low- and moderate-income households and over 12,900 rental units.
- Invest almost $1.73 billion in energy efficiency and electrification improvements for, and efforts to reach and serve, low- and moderate-income customers, renters, customers who primarily speak a language other than English ("LOTE customers"), and small businesses. This includes almost $615 million dedicated to serving renters.
- Reduce GHG emissions by just over 1.0 million metric tons of CO2e.
- Deliver 183 million lifetime MMBtus in energy savings and just under $12.6 billion in total benefits to customers.

For a comparison of changes to plan targets since the April draft, please see Table 1 below. A detailed breakdown of equity-related investments is also included in Table 2 in the Equity Section.

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[4] In its Order approving the 2022-2024 Three Year Plans, the Department required the Program Administrators to

> submit a final written response to the Council's comments or recommendations no later than 45 days after the Council issues the July resolution required by G.L. c. 25, § 21(c). In this response, the Program Administrators shall include a summary of each Council recommendation or comment, and specify whether and how the Program Administrators intend to address the issue in the Three-Year Plans. The Program Administrators also shall include a description of any program design changes from the draft Statewide Plan that they intend to incorporate in the Three-Year Plans filed with the Department, regardless of whether these changes were prompted by the Council's comments. The Program Administrators shall not be permitted to make any further substantive changes to the Statewide Plan after submitting their final written response to the Council.

Three Year Plans Order for 2022-2024, D.P.U. 21-120 through D.P.U. 21-129, at 32.

[5] *Id.*

TABLE 1: 25-27 PLAN TARGETS		April Draft	August Draft
2030-GHGs	**MTCO2e**	1.06 Million metric tons	**1.02 million metric tons**
Energy Savings	**NLMMBTUs**	196 Million MMBtus	**183 Million MMBtus**
Benefits	**2025$**	$13.8 Billion	**$12.6 Billion**
--Equity Benefits	**2025$**	N/A	**$3.8 Billion**
Total Investment	**Nominal$**	$4.99 Billion	**$4.99 Billion**
--Equity Investment	**Nominal$**	$1.4 Billion	**$1.73 Billion**
Weatherization Jobs	**Homes**	174,000	**174,900**
--Low- and Moderate-income	**Homes**	48,000	**66,100**
--Renter*	**Homes**	38,000	**46,700**
Heat Pump Installs	**Homes**	115,000	**115,100**
--Low- and Moderate-Income	**Homes**	15,800	**22,200**
--Renter*	**Homes**	11,500	**12,900**

*Note: Renter totals include low-, moderate- and non-income qualified households and therefore there is overlap between the low- and moderate-income targets and the renter targets noted above.
** All numbers provided in this response remain subject to quality assurance review and corrections. Definitive, final numbers will be provided in the October 31, 2024 filing of the final Plan.

III. Equity[6]

Equity remains a foundational principle of our decarbonization efforts during the 2025-2027 Term. In the revised Plan, we expand on our commitment to equity and incorporate distributive justice as a key element of program design and implementation. Recognizing that there can be multiple definitions and uses of these terms, in the context of the decarbonization and energy efficiency services provided through the Mass Save programs, we define 'distributive justice' as a commitment to promoting fair and equitable distribution of benefits and burdens across all customers, upholding and prioritizing the needs of historically underserved customers burdened with economic challenges, racial inequality, negative environmental impacts, and justice disparities. The PAs are cognizant of their responsibility to enable a just energy transition for all and will continue to engage with our stakeholders, including the Equity Working Group, in this ongoing process of adopting distributive justice in the implementation of Mass Save programs. The PAs are deeply grateful to all stakeholders for their time, efforts and engagement during the Plan development process. We recognize that distributive justice is a work in progress and that stakeholders and the Equity Working Group have high expectations for achievement. While they do not fully meet all recommendations, the activities and offerings proposed within this Plan represent a strong and meaningful commitment to Equity and to continuous improvement. The PAs will remain engaged with stakeholders during the coming term in order to meet the goals that we have laid out and to identify additional improvements in promoting the fair and equitable distribution of the benefits of energy efficiency.

The PAs are working to achieve more equitable participation for historically underserved customer groups, including renters, moderate-income households, LOTE customers, and small businesses.[7] Additionally, serving low-income customers remains a core focus of the programs, and the PAs and our partner Community Action Agencies (CAPs) remain focused on increasing service to this vulnerable customer group. The Equity Working Group continues to provide invaluable feedback on how to prioritize delivery to these groups and recommendations for achieving more equitable delivery of the programs. The PAs thank them for their support and look forward to continued collaboration during the 2025-2027 term.

In the revised 2025-2027 Three-Year Plan, the PAs have outlined a community-based approach to implementing equitable strategies targeted towards historically underserved groups and low-income customers to increase access to Mass Save programs:

- **Significantly Increased Investment in Underserved Customer Groups and Low-Income Customers:** The revised Plan proposes to invest almost $1.73 billion in energy efficiency and electrification improvements for, and efforts to reach and serve, low- and moderate-income

[6] This section incorporates an abbreviated draft of the Equity section for the revised Plan.

[7] *See* Residential Nonparticipant Customer Profile Study (MA19X06-B-RESNONPART), produced for the Massachusetts PAs by DNV GL, Feb. 6, 2020. Residential Nonparticipant Market Characterization and Barriers Study (MA19X06-B-RESNONPART), produced for the Massachusetts PAs by Navigant, Illume, and Cadeo, Feb. 27, 2020. Commercial and Industrial Small Business Nonparticipant Customer Profile Study (MA18X11-B-SBNONPART), produced for the Massachusetts PAs by DNV GL, Apr. 15, 2020. Massachusetts Limited English Proficient and English-isolated Customer Journey Mapping and Barriers Study (MA21R37-B-LEPJM), produced for the PAs by Guidehouse, Illume, and Cadeo, Oct. 25, 2023.

customers, renters, LOTE customers, and small businesses as described further below. This marks, by a substantial margin, the largest investment in these customer groups made as part of a three-year plan in the Commonwealth. For further details on these equity investments, see Table 2 below.

- **Increased focus on electrification and expanded access for Low-Income Customers:** As the Commonwealth transitions towards high-efficiency electric heating, it is critical that low-income customers—especially those that heat with delivered fuels—have an opportunity to electrify. Since the April draft, the PAs have revised the Plan to provide a greater focus on electrification of low-income households, aiming to install heat pumps in over 16,500 low-income homes over the 2025-2027 term. This target represents approximately 50 percent year-over-year growth in low-income heat pump installations during the term and will require significant additional investment in weatherization and barrier mitigation to make these homes electrification-ready. The PAs and their partner CAPs aim to weatherize over 41,200 low-income homes in support of these efforts. To ensure that the workforce is sufficient to drive these increases in service, the PAs and their low-income lead vendors, ABCD and Action, will continue to leverage the capabilities and resources of Home Performance Contractors ("HPCs") by onboarding new HPCs. They will also contract with additional market rate vendors to provide service within the low-income programs. For example, market rate vendors are being brought on to support QA/QC of projects delivered by other vendors and deliver energy efficiency and electrification improvements in mixed-income buildings. Local CAPs will also increase capacity through additional staffing to meet customer demand. The PAs, ABCD, and Action will also continue to review and optimize workflow processes, including with these new vendors, to ensure that projects are managed as efficiently as possible while also ensuring quality installations for this vulnerable customer group. For further details on these workforce and workflow efforts, see the Low-Income Section below.

- **100% Incentives and Enhanced Accessibility for Moderate-Income Customers:** The 2025-2027 Plan includes no-cost weatherization, barrier remediation, and electrification for all moderate-income customers. The Plan also includes several program design changes to reduce financial and logistical barriers for these customers. These include expanded eligibility through the adoption of area median income ("AMI") as an alternative qualifier to state median income; the ability to qualify for weatherization improvements by attesting to household income; the creation of a facilitated (or "turnkey") delivery model for improvements; and elimination of out-of-pocket costs for these customers. The PAs aim to weatherize approximately 24,900 and electrify just under 5,700 moderate-income households, and provide significant additional investments in barrier mitigation necessary to meet these targets.

- **A Record Level of Support for Renters:** Since the April draft, the plan has been updated to provide no-cost weatherization, barrier remediation, and electrification for rental properties in designated equity communities[8] (where electrification will not increase renters' energy

[8] The PAs worked collaboratively with DOER and the EWG to establish the criteria and select designated equity communities for the 2025-2027 Plan. With the exception of communities located in Cape Light Compact territory, which has a unique territory with different characteristics, the PAs selected communities in which: (1) more than 35 percent of the population are renters; (2) there were greater than 8,000 renters; and (3) more than 50 percent of the

burdens), coupled with automatic qualification. This will include coordination of (or "turnkey") delivery of services to address time constraints, manage costs, and improve the customer experience, as well as outreach to landlords. To help protect against increased energy burdens, landlords will be required to sign a form—similar to what is currently required in the low-income program—committing not to raise rent or evict tenants for a period following the receipt of program incentives. Plan budgets have been updated to reflect these increased offers and our efforts to support this underserved group. These budgets reflect a record investment of almost $615 million dedicated to serving renters.

- **Enhanced Access for Small Businesses:** The PAs are implementing several efforts to address equity considerations for our small business customers. For example, the PAs are launching two new offers focused on a) equitable participation of leased commercial space, which targets both the renters and their landlords, and b) small charitable nonprofit organizations. Both of these efforts will include increased incentives, enhanced outreach and marketing, and individualized approaches for supporting participation. To improve access for small business customers, the PAs will also provide concierge services through existing pathways via lead vendors and QA/QC vendors. The lead vendors will assist in scheduling small business assessments, explain the measures and costs associated with them, assist customers in obtaining financing when needed, and help choose a contractor when the lead vendor is not able to implement recommended measures themselves. The third-party QA/QC vendor will ensure the work is completed thoroughly and to a high quality. Additionally, the PAs will ensure that LOTE customers are able to participate in the programs by running marketing campaigns in multiple languages, providing program materials in multiple languages, and offering translation services when needed. With the additional funding proposed for Community First Partners ("CFPs") (described below), the PAs will provide support and training for the CFP lead vendor and energy advocates on small business incentives and opportunities to drive more small business assessments from CFP efforts. Lastly, the PAs also strive for equity with the vendors that deliver energy efficiency work. Recognizing that not all vendors and contractors offer comprehensive services or are large enough to win the small business services contract, the PAs are expanding the Customer Directed Option and will actively recruit smaller vendors and contractors to bring in more projects through that pathway. This will have the impact of bringing in a wider and more diverse set of contractors than ever before that can deliver energy efficiency services to small business customers and grow their businesses by engaging with the PAs.

- **Additional Support for Schools in Underserved Communities:** The PAs will work with DOER and other stakeholders to support energy efficiency and decarbonization improvements at schools in underserved communities. Since the April draft, the PAs and DOER have determined that these efforts will be two-fold.

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population are low- or moderate-income. The process resulted in selection of 21 communities, including: Boston, Brockton, Chelsea, Everett, Fall River, Framingham, Fitchburg, Lawrence, Lowell, Lynn, Malden, New Bedford, Oak Bluffs, Pittsfield, Quincy, Revere, Salem, Springfield, Tisbury, Woburn, and Worcester. Unitil, Berkshire Gas, and Liberty may further limit eligibility within these communities in their service territories by focusing on certain EJ census blocks.

First, the PAs will have a special offer to fully decarbonize five schools in underserved communities that will be selected by DOER. These decarbonization projects will serve as models for supporting a clean, equitable transition for our public schools. For the decarbonization of these five schools, the PAs are proposing to provide approximately $47 million across multiple terms, which will supplement funding from other state agencies. Additional PA funding will go toward supporting the creation of municipal energy manager roles in the communities where the five schools are located where such a role does not yet exist. Funding will also support a) technical assistance, such as building decarbonization assessments of these school buildings, to help them determine their path to decarbonization, b) engineering design assistance and c) implementation of identified energy efficiency and electrification upgrades. Furthermore, the PAs will support DOER's lead in selection of the five schools, messaging to stakeholders, and recruiting other funding, such as MA School Building Authority's ("MSBA") heat pump program and MassCEC Green School Works grant—both of which are due to launch in January 2025.

Second, the PAs are launching an offer to assist all participating K-12 schools on their path to decarbonization. That offer will include:

- A competitive grant to create municipal energy manager roles in communities that want to pursue school decarbonization and where such a full-time role does not yet exist. This grant will be launched in September 2025 in coordination with the Mass Save Community First Partnership so that communities have the opportunity to plan both applications simultaneously where they choose to do so.
- Portfolio Planning and Project Planning assistance in the form of Portfolio Prioritization Plans, Building Decarbonization Assessments, and Decarbonization Master Plans designed to work together with MassCEC's Green School Works program and be part of the PAs' increased technical assistance for commercial customers.
- Implementation funding in the form of an enhanced incentive for energy efficiency and electrification of school buildings that takes into account the particular budget constraints faced by school districts and municipalities.
- Staff Training and Teacher Curriculum, including both targeted training for facilities staff on building codes and decarbonization technologies for their school buildings as well as the integration of Mass Save K-12 education teacher training and student workshops that can maximize the opportunity for schools to integrate clean energy into learning outcomes and educational offerings while engaging in building upgrades.

The PA approach to school decarbonization acknowledges the array of, sometimes overlapping, funding available for schools from different state entities and sources. Alongside the leadership efforts of DOER, the PAs are collaborating with a cross-agency working group that also includes the Climate Office, the MSBA, and MassCEC, to align the various program priorities and offers, participation requirements, application processes and other logistics to provide municipalities and school districts with a clear and more streamlined experience for accessing this much-needed decarbonization support.

- **Community Partnership Enhancements:** The 2025-2027 Plan significantly strengthens our commitment to working with community partners by deepening our efforts to provide multilingual, culturally sensitive outreach and engagement. This approach is crucial in raising awareness and participation in energy efficiency programs, particularly in designated equity communities with substantial populations of low- and moderate-income customers, renters, and LOTE customers. In response to the recommendations from the EWG, we are increasing both the budget and flexibility for CFPs. This will enable CFPs to tailor their outreach strategies more effectively, retain skilled staff, and design marketing initiatives that resonate deeply with their residents. We recognize the unique knowledge that these community-based organizations and municipalities possess and are committed to empowering them further by enhancing data sharing between vendors and communities, supporting more targeted outreach, and driving a significant increase in participation among underserved groups. These initiatives bolster support for CFPs and are integral to our commitment to distributive justice, ensuring that all communities have the opportunity to participate fully in the energy efficient future that we are co-creating. This enhanced partnership model not only acknowledges the importance of local expertise but is also critical to delivering on the broader principles of distributive justice by ensuring that the benefits of energy efficiency are more equitably distributed, particularly among those who have historically been underserved. The 2025-2027 Plan's equity initiatives, informed by the Equity Working Group, represent a concerted effort to address both new challenges and ongoing needs.

- **Equitable Workforce Development:** The Plan doubles annual funding to MassCEC from $12 million to $24 million to support workforce diversity, including training for contractors and job seekers who speak languages other than English and creation of a "contractor development pathway" to provide business development support for Minority- and Women-owned Business Enterprises ("M/WBEs"). Additionally, the PAs are also committed to reviewing background check requirements and addressing opportunities for returning citizens to work in the programs while appropriately protecting the safety and security of participants. To that end, the PAs will:
    - meet with workforce advocates, including Browning the Green Space and Action for Equity, as well as the Office of the Attorney General and the Department of Energy Resources, in order to solicit input, suggestions, and ideas; and
    - develop a common set of principles for addressing opportunities for returning citizens on or before January 2026. These principles will be guided by applicable legal requirements and guidance from jurisdictional authorities, as well as the PAs' own policies and procedures. The PAs will publish these principles on or before January 2026.[9]

[9] As a part of this effort, the PAs will consider examples of common fact patterns provided in legal guidance and how they may address them. Each PA is ultimately responsible for making its own decisions regarding individual applicants—consistent with its corporate policies, the principles noted above and the law, and its own internal review and determination based upon the matter specific facts. Each PA's decision will also take into account the context of the specific situation and business interest. For example, what was the nature of the conviction, what is the position being applied for, and does it entail unsupervised customer contact, etc.?

- **Increasing Supplier Diversity:** The PAs are strongly committed to increasing supplier diversity and have been working across the energy efficiency and global supplier diversity teams to identify all of the ways that we can achieve this mutual goal. As a new effort and informed by the Council's recommendations, the PAs will set an aspirational benchmark[10] using 15% of dollar volume of direct Mass Save contracts to diverse suppliers for the 2025-2027 Term. To achieve enhanced supplier diversity, we will work diligently to build the pipeline of diverse suppliers, support them in responding to requests for proposals ("RFPs"), and enhance our tracking so that we can measure progress towards this benchmark. These efforts will include establishment of the following set of key performance indicators to be reported on annually, as part of our Q4 reports:
    - The total amount of dollars spent on direct contracts with Mass Save and the subset of these dollars spent on diverse suppliers, with detailed breakouts by diverse supplier type (including MBEs, WBEs, Disadvantaged Business Enterprises, LGBTQ+ Business Enterprises, and Veteran-owned Business Enterprises). Diverse supplier spend will be based on both prime and subcontractor spending. The 15% aspirational benchmark will be clearly noted as part of the reporting;
    - The total number and percent of diverse suppliers directly invited to participate in statewide RFPs, with detailed breakouts by the same diverse supplier types; and
    - The total number and percent of diverse suppliers that respond to these RFPs, with detailed breakouts by the same diverse supplier types.

  Separately, the PAs will also survey our contractor community on a regular basis to identify which of them are diverse and we will make this information publicly available on the Mass Save website for interested customers.

  Additionally, we are committing to increase diverse supplier participation through the following initiatives:
    - Providing greater advance notice of opportunities by posting them on the MA Goods and Services website, MassSave.com, and with diverse supplier organizations, such as BECMA, and reaching out proactively to directly invite diverse suppliers to respond to specific RFPs;
    - Reaching out and educating diverse suppliers on opportunities to work with Mass Save through annual Supplier Diversity Summits;
    - Facilitating quarterly and RFP-specific matchmaking opportunities to connect diverse suppliers with lead vendors;
    - In some cases, individual PAs are asking vendors to voluntarily provide a percent that they can commit to spend on diverse subcontractors. Where those vendors are selected, those voluntary commitments will become part of the terms and conditions on the contract with that vendor that the PA is able to track against;

[10] The PAs will not use the benchmark as a means to preference or disadvantage certain suppliers based on race, gender, or sexuality in our individual procurement decisions. The benchmark is aspirational and expressly does not require a certain percentage of spending or quota be spent on diverse suppliers.

- Working closely with MassCEC, with its greatly expanded workforce diversity budget, to establish a contractor development pathway to provide a pipeline of skilled diverse workers; and
- Providing support to diverse suppliers and creating and funding a diverse vendor network to help coordinate upcoming RFP opportunities and share best practices among diverse suppliers.

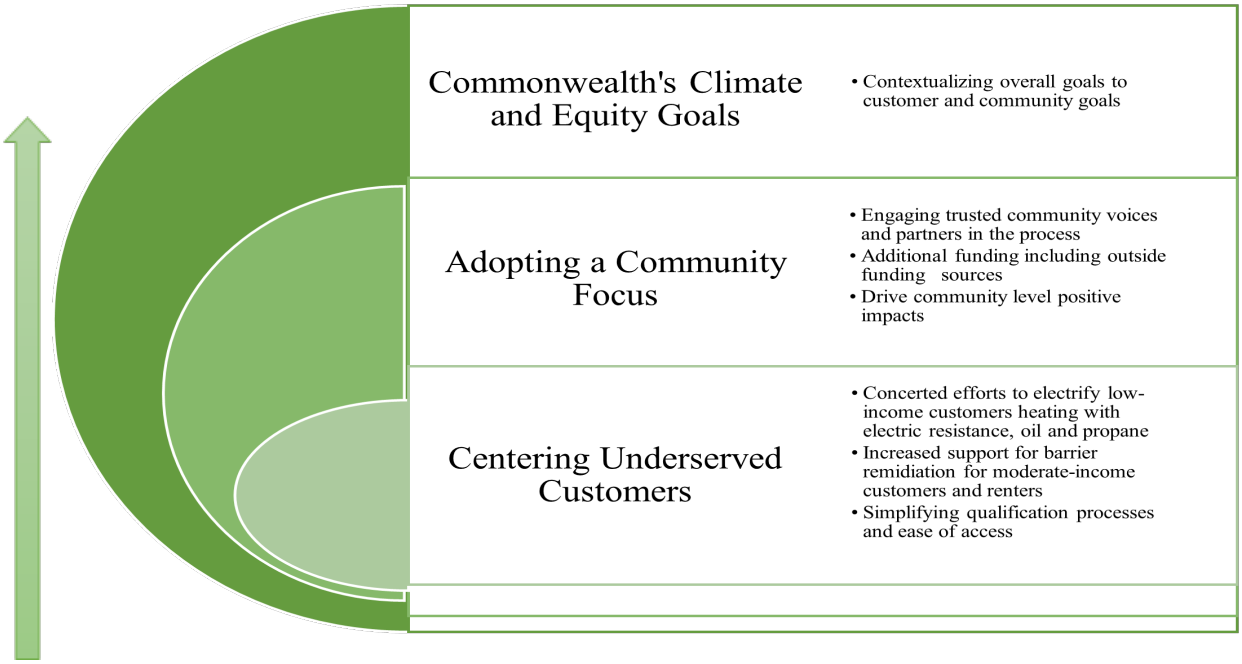
- **Operationalizing Language Access:** The Plan provides enhanced support for LOTE customers by improving language access throughout the customer journey, including material translations, interpreter services, and multilingual staff. The PAs worked with their vendors to develop language access strategies for residential and small business programs in the five most commonly spoken languages in Massachusetts other than English, including Spanish, Portuguese, Mandarin, Cantonese, and Haitian Creole. These materials were released in draft in June and for certain documents, such as the technical glossary, also include simplified English. The PAs have committed to implementing the recommendations and are working to operationalize them within the programs. CFPs will also provide additional language support in communities where other languages are spoken. As part of these efforts, the LEAN Statewide Client Services Center and the Mass Save Statewide Contact Center will be positioned to comprehensively serve LOTE customers.

- **Data-Driven Approaches:** The plan includes improved data collection and reporting to better target investments and assess the effectiveness of energy efficiency programs in underserved communities and for underserved customer groups across different building types. Each of the equity-related targets in the Plan, such as the number of heat pumps targeted to low- and moderate-income customers and the aspirational benchmark to spend 15% of dollar volume of direct Mass Save contracts with diverse suppliers, were developed based on significant feedback from the EEAC, EWG, and stakeholders. These targets are fully funded in the revised Plan and are supported with underlying implementation strategies designed to meet and hopefully exceed the established goals. The PAs also worked with DOER, the EWG, and stakeholders to develop metrics that will be used to report performance against those targets and at a high level of granularity across communities, customer groups and building types.[11] The metrics also include indicators necessary to understand potential barriers to performance. Each of these metrics is also supported by reporting pipelines, primarily through the Benefit-Cost models, which will ensure timely and accurate reporting on performance. Further details on equity metrics and reporting are included below in the Cross-Cutting section.

- **Enhanced Customer Experience:** The plan includes establishment of a new Mass Save Statewide Contact Center, in addition to the LEAN Statewide Client Services Center, to provide holistic, multilingual support for all customers, ensuring they receive the guidance and

[11] Equity metrics were presented and discussed at the March, April, and August EWG meetings and a nearly complete list of operational metrics were included in the April draft and presented at the April and June EEAC meetings.

information needed to participate in energy efficiency and decarbonization programs effectively.



A bottom-up approach to decarbonization through an equity lens

TABLE 2: EQUITY INVESTMENT	April Draft	August Draft
Total Equity Investment	$1.4 Billion	**$1.73 Billion**
--Low- and Moderate-Income Incentives	$919 Million	**$1.3 Billion**
--Renter Incentives*	$479 Million	**$615 Million**
--Small Business Turnkey Incentives	$83 Million	**$95 Million**
--Community Engagement	$18 Million	**$20 Million**
--Language access	$30 Million	**$24 Million**
--Workforce Development	$77 Million	**$94 Million**
--Program Support (includes low-income and small business turnkey support)	$214 Million	**$237 Million**

*Note: Renter incentive include incentives to low-, moderate- and non-income qualified renter households and therefore there is overlap between the LMI incentives and the renter incentives noted above.
** All numbers provided in this August 15 response remain subject to quality assurance review and corrections. Definitive, final numbers will be provided in the October 31, 2024 filing of the final Plan.

The equity investments in the 2025-2027 Plan reflect new approaches informed by the EWG, such as significant investments for renters in designated equity communities, as well as continued and increased support for existing programs, such as the Community First Partnership. They are also indicative of a broader and meaningful commitment to principles of distributive justice and equity.

IV. Cost control strategies

Given the increased cost of the programs, the Department directed the PAs to identify additional strategies to control costs for the 2025-2027 term.[12] The PAs have worked closely with DOER, the AGO, the Council consultants, and the EEAC to identify and commit to the following additional strategies for controlling costs, while ensuring that program resources are prioritized for our most vulnerable customers. These strategies, which are described in further detail in the Residential and Low-Income section below, include:

- Declining heat pump incentives for non-income qualified customers over the course of the term;
- Significant reductions to the HEAT loan offering through establishment of a $25,000 cap on the loan amount, efforts to seek a 1.5% reduction in the interest rate buydown paid to lenders, and establishment of shorter repayment terms for customers at higher income levels;
- Creation of a turnkey heat pump and barrier remediation delivery model, starting with moderate income customers and renters in designated equity communities, which includes managed pricing;
- Support for greater price transparency for heat pump installation jobs through the creation of an enhanced heat pump calculator;
- Establishment of an outside funding working group with DOER, the AGO, and other stakeholders to continue pursuing additional sources of funding for the programs and program participants; and
- Continuation of the PAs' existing efforts, including collaboration and sharing of resources, use of competitive procurements, and rigorous quality control and inspection efforts.

V. Residential and Low-Income Sectors

The Residential and Low-Income sector programs drive energy efficiency and electrification improvements for new and existing homes across Massachusetts. In the 2025-2027 term, the PAs and their partner CAPs aim to weatherize approximately 174,900 homes, including over 66,100 low- and moderate-income households and 46,700 rental units, and support the installation of heat pumps in over 115,100 households, including more than 22,200 low- and moderate-income households and 12,900 rental units.

The PAs and their partner CAPs will aim to drive greater adoption of residential and low-income decarbonization measures and simplify the customer experience through four key enhancements: (1) expanding residential Home Energy Assessments to include decarbonization opportunities, (2) providing seamless customer experiences by expanding turnkey installations to include facilitation of barrier mitigation and heat pump installations, (3) a commitment to key customer segments including moderate-income customers and renters, and (4) expanding the capacity of the workforce serving low-income customers and other efforts to improve efficiencies in the low-income sector. These enhancements will be delivered through a suite of services that enable customer access and

[12] Fitchburg Gas and Electric Light Company d/b/a Unitil, D.P.U. 24-47-A, 15 (2024).

allow them to participate on their terms. The remainder of this section highlights notable changes from the April Draft designed to control costs and shift resources to underserved customer groups and put in place the capacity necessary to meet the ambitious goals established for the low-income sector.

A. Residential Cost Control Measures

HEAT Loan Considerations

The HEAT Loan has been a key component in the success of the PAs' energy efficiency plans. Customers consistently identify the HEAT Loan as a reason why they installed measures and affirm that the HEAT Loan enabled them to make more improvements than they would have without the loan.[13] Recognizing the importance of the HEAT Loan, but also the desire to reduce costs associated with the HEAT Loan and allocate additional budget to equity priorities, the PAs have proposed a number of changes to the HEAT Loan for the upcoming term. At the highest level, the PAs have reduced the overall three-year budget for the HEAT Loan to $190 million. The PAs will continue to offer a 7-year repayment term at 0% interest for households earning from 81% up to 135% of state median income ("SMI").[14] Customer households earning 135% up to 300% of SMI and those earning above 300% of SMI will be eligible for 5-year and 3-year loan terms respectively at 0% interest rate. There will also be a cap of $25,000 per loan.

In an effort to keep HEAT Loan costs down, the PAs will also undertake cost saving efforts such as cross promoting other financing opportunities with the MA Climate Bank in order to reduce the number of HEAT Loans. The PAs will also explore opportunities to negotiate an interest rate reduction with lenders relative to current levels and consider the potential for establishing risk mitigation mechanisms (including, but not limited to, a loan loss reserve) to help support such reductions. Further, the PAs will also establish a stakeholder working group, which includes the AGO, DOER, and the Council Consultant team, to explore options for bringing down HEAT loan costs, including the potential for accessing outside capital. Finally, the PAs have committed to completing a HEAT Loan Study to evaluate the importance of the HEAT loan in driving uptake of improvements and the sensitivity of those decisions to customers of different income levels at different interest rates, with a goal of determining whether the PAs can make further modifications to the HEAT loan that will reduce costs without impacting the effectiveness of this vital program.

Heat Pump Incentives

In response to EEAC feedback and the need to further control program costs, the PAs incorporated several changes to the design of heat pump incentives for the 2025-2027 Plan. First, the PAs have adopted a declining incentive structure for heat pump incentives over the term, recognizing that as heat pumps become a more mainstream technology it should not be necessary to provide incentives at the current levels in order to foster consumer adoption. These declining reductions will help control costs and free up budget for other equity-related Plan priorities. Second, the PAs designed a multi-tier incentive structure in order to better accommodate customers in different places on

[13] *See* HEAT Loan Assessment (RES 37), Table 2, at 9 (available at MA-RES-37-HEAT-Loan-Evaluation-Report_FINAL_01AUG2018.pdf (ma-eeac.org)). For further background on the HEAT Loan and how it operates, please see Section 3.4.5 of the April Draft.

[14] Note: this bracket roughly aligns with income requirements for energy saver loan offered by MA climate bank.

their heat pump journey and to encourage all customers to install a heat pump regardless of their situation. Third, as part of the multi-tier incentive structure, the PAs have introduced incentives for heat pump scenarios that were not previously addressed, including providing incentives to replace central air conditioning units and inefficient heat pumps with more efficient models and providing incentives to install heat pumps in previously unconditioned spaces. Lastly, the PAs designed incentives to encourage sizing and installation of heat pumps that can support full heating load, even for customers who are not yet ready to disconnect their fossil fuel system.

Since the April draft, the PAs have also decided to continue offering incentives on a per-ton basis for partial home displacements in order to minimize disruption to the market. This offer also aligns with how the C&I heat pump incentives are structured. The calculation of partial home incentives will be based on cooling tons. This is being done to minimize confusion for customers that might be doing their own research, as system sizes are often shown in terms of tons of cooling capacity. Another potential point of confusion is that Air-Conditioning, Heating and Refrigeration Institute ("AHRI") ratings may provide three different heating capacities for the same unit. Using cooling tons as the basis for calculating the incentive minimizes these potential points of confusion. See Table 3 below for further details on revised heat pump incentives.

The PAs have also decided not to impose a requirement that customers weatherize as a prerequisite to receive a partial home heat pump incentive. Requiring weatherization in order to be eligible for a partial home heat pump rebate may constitute a significant barrier to participation. However, the PAs want to continue to actively encourage the installation of weatherization in combination with heat pumps. To that end, the PAs are proposing a $500 customer bonus for customers who weatherize prior to or within 6 months of a partial home heat pump installation. The PAs also plan to offer differentiated marketing for contractors based on certain capabilities, including those who are able to offer both weatherization and heat pump installations.

Table 3: Overview of Residential Heat Pump Incentives (2025-2027 Plan Term)

Offer name	Scenario	Offer		
		2025	2026	2027
Tier 1 ASHP: Base Heat Pump Rebate	Previously unconditioned space, heat pump, or central AC replacement	$250/ton	$250/ton	$250/ton
Tier 2 ASHP: Hybrid Heat Pump Rebate	Partial displacement with Wx bonus and full heating load bonus (no disconnection required)	$1,250/ton $500 wx bonus $500 full heating load bonus	$1,125/ton $500 wx bonus $500 full heating load bonus	$1,000/ton $500 wx bonus $500 full heating load bonus
Tier 3 ASHP: Whole Home Rebate	Whole home w/disconnection requirement (also includes air-to-water heat pumps)	$3,000/ton up to $10,000	$2,700/ton up to $9,000	$2,500/ton up to $8,000
Ground Source Heat Pump Rebate	Ground source heat pumps	$15,000 Whole Home	$13,500 Whole Home	$12,000 Whole Home
		$2,000/ton Partial	$2,000/ton Partial	$2,000/ton Partial

Transparency on Heat Pump Pricing
The PAs acknowledge the importance of creating heat pump pricing transparency, so customers are better informed when soliciting and reviewing heat pump installation quotes from Heat Pump Installer Network ("HPIN") contractors. The PAs will support price transparency in two ways. First, the PAs will create a public facing, geographically based heat pump pricing guide using anonymized data from program participants. This guide is meant to be a reference for customers as they solicit and review heat pump bids from HPIN contractors, so they have visibility into the average installation costs in their area and can better ensure that they are receiving competitive pricing. Second, the PAs will be launching a quote comparison service through which customers will have access to specialists who will walk them through each bid they have received, so they are more educated when it comes time to decide which quote and HPIN contractor is the best fit for them.

Residential Turnkey Delivery Model
The Residential Turnkey Solutions ("RTS") initiative will expand its turnkey delivery model to address pre-weatherization and electrification barriers and to support heat pump installation, starting first with moderate-income customers. Building off the existing model for weatherization, turnkey delivery will simplify and streamline the customer experience by supporting customers from project origination to completion with a single vendor managing the multiple steps and subcontractors throughout the process. The turnkey delivery model provides a high level of quality assurance from the design phase through installation and post-work inspection—ensuring that installations perform well and customers are satisfied with the process and outcomes. The turnkey delivery approach also allows the PAs to provide instant incentives to the customer, reducing or eliminating out-of-pocket costs and potential incentive fulfillment delays. Finally, turnkey delivery will allow the PAs to control costs for these installations through the development of a PA- and vendor-managed pricing structure. Under this pathway, the lead vendor will collect bids from its network of subcontractors for each portion of the scope. The lead vendor will award work based on factors including equipment selection, technical capabilities, work quality, quoted cost, and LOTE proficiency. This approach will ensure high-quality installations, equitable access for customers, and competitive pricing.

B. Measures to Further Scale Low-Income Sector Operations

Expansion of Low-Income Sector Workforce Capacity
A core theme of the 2025-2027 Plan is to increase low-income customer participation in the Mass Save programs and therefore, it will be crucial to expand the workforce capable of serving low-income households. In order to achieve greater low-income participation, high degrees of customer satisfaction, and ensure that customers are served in a timely manner, low-income lead vendors, ABCD and Action and local CAPs, have deployed several strategies to increase program capacity to serve more customers. Local CAPs are adding capacity through additional staffing to meet customer demand. ABCD and Action will continue to leverage the capabilities and resources of more HPCs to provide low-income services. Additionally, ABCD and Action are finalizing contracts with market rate vendors so that they can also provide services in the low-income program. For example, market rate vendors are being brought on to support QA/QC of projects delivered by other vendors, as well as delivery of energy efficiency and electrification improvements in mixed-income buildings. This strategy was developed so that vendors already

operating in and familiar with the Mass Save programs could be trained to also provide low-income services; thus reducing or eliminating the need for handoffs and referrals, which can negatively impact the customer experience and delay implementation timelines. The PAs, ABCD, and Action believe that this will allow the low-income programs to meet customers at all points of entry into the Mass Save offerings and also help address prior challenges associated with mixed income properties by enabling one vendor to serve a property with mixed income levels. Utilizing the existing workforce will also help to add the level of near-term capacity necessary to achieve the ambitious year-over-year production goal growth.

Review Low-Income Sector Workflow to Achieve Efficiencies and Manage Workflows

The increase in Low Income Sector production goals, and the subsequent expansion of the delivery network necessary to achieve them, introduce new challenges to the operational efficiency, workflow management, and data availability standards of the programs. The integration of new and existing sources of federal funding (and the additional requirements those funding sources introduce) intensify these challenges. The PAs, Action and ABCD are pursuing several efforts to achieve efficiencies and better manage workflows. First, the PAs, ABCD and Action are committed to better leveraging existing technologies, such as Monday.com, to boost operational efficiency and inter-agency communications, and provide greater transparency around program trends and progress before production is reported. Monday.com is a statewide digital workflow management platform used by all implementing agencies (CAP agencies, Home Performance Contractors, RTS vendors) to input, manage, and report projects or project referrals. As part of these efforts, the PAs, ABCD and Action are working to utilize new features and establish new reporting requirements within this platform to enhance visibility into the pipeline and timing of various projects before production is reported. These new reporting requirements respond to recent in-the-field experience with surges in invoices from low-income contractors. Second, ABCD and Action are contracting with RTS lead vendors to increase collective program delivery capacity and reduce bottlenecks, initially in QA/QC, with designs to expand the range of services as needed to meet demand. Third, the PAs, ABCD, and Action are also exploring field tool technologies that can satisfy the reporting requirements of both Mass Save and federal funding sources and allow for greater digital integration with Monday.com. These efforts, once completed, will greatly reduce the administrative burden of switching between tools or duplicating data entry at the implementing agency level.

Increase Planned Weatherization for Low-Income Customers by 5% per Year; Market Rate Weatherization Concerns

The increase in the planned number of heat pumps installed at low- and moderate-income homes has driven a corresponding increase in the number of weatherization jobs. Combining weatherization and heat pumps ensures that heat pumps are right-sized, and that customers' residences are as energy efficient as possible. Because the number of planned low- and moderate-income heat pump installations has increased by more than 5% per year, so too has the number of associated weatherization jobs.

The PAs do not believe it will be practical to increase market rate weatherization jobs by more than 5% per year due to a number of issues. In an effort to devote as much funding as possible to equity commitments, the PAs will need to prioritize those market rate opportunities with the highest impact and savings opportunities. Recent EM&V studies have shown that many market

rate jobs are not necessarily high impact and/or do not have high savings potential. In response to these evaluation studies, the PAs are considering programmatic changes that would reduce the number of low-impact jobs. Some options under consideration include pre-screening prior to audits to determine whether the job has high savings potential and changing program qualification criteria so that program resources are focused on the most inefficient homes. The net impact of these constraints and changes is that fewer market rate weatherization jobs are likely to be completed in the 2025-2027 timeframe compared to the 2022-2024 term.

VI. Commercial and Industrial Sector

Electrification is central to the PAs' delivery of services to C&I customers for the 2025-2027 term. Strategies for the next term will include ensuring energy assessments explore both energy efficiency and electrification measures, as well as anticipated steps needed for full electrification. The PAs will actively promote energy recovery measures, including those installed in conjunction with dedicated outdoor air systems, and weatherization. The New Construction pathway will require all-electric buildings and there will be new prescriptive heat pump measures, such as rooftop units. The PAs aim to engage as many gas customers as possible, including those not yet in a position to electrify in the near term. The PAs will encourage full electrification where feasible but will also support those customers where partial electrification is the more attainable short-term strategy. While these strategies are outlined in various sections of the April Draft Plan, the PAs are adding details and combining them into a single electrification overview for the C&I segment. More details regarding electrification and efficiency strategies enhanced or developed since the April Draft are discussed below.

Electrification and Energy Efficiency Assessments

A central strategy for electrification includes ensuring energy assessments explore both energy efficiency and electrification measures. The Comprehensive Building Assessment ("CBA") will be the building block of this approach, which establishes a standardized process and set of requirements for exploring both efficiency and electrification measures, as well as anticipated steps needed for full electrification. New technical assistance ("TA") studies will be introduced that are oriented toward decarbonizing entire building portfolios. The Portfolio Prioritization Plan will rely on a light-touch version of the CBA that helps customers identify buildings and systems with the most attractive near-term decarbonization opportunities. The PAs will also introduce a more in-depth Decarbonization Roadmap offering, which provides assistance for customers ready to invest in fully decarbonizing their portfolios, especially those working to comply with BERDO[15] and BEUDO.[16] These Decarbonization Roadmaps will also include an option to study geothermal network potential.[17] The PAs will also develop customer-facing information to enable them to

[15] Building Emissions Reduction and Disclosure, City of Boston Code, Ordinances, Chapter VII, § 7-2.2

[16] Building Energy Use Disclosure Ordinance, City of Cambridge, Ordinance No. 2021-26.

[17] Geothermal networks can be supported through the energy efficiency programs if they are owned by customers or third-party vendors and comply with all program rules. Utility-owned networks are supported through other non-energy efficiency programs led by the utilities.

easily understand ventilation deficiencies, the benefits of code compliant ventilation and the costs likely associated with increased ventilation levels.[18] The PAs will make this information non-technical and graphic in nature. The PAs will improve tracking of a customer's progress on electrification studies through standardized study templates and enhancements to internal PA tracking systems. Additionally, the PAs have agreed to store results of decarbonization studies of large customers in a database, as well as limited structured data on opportunities identified. This will be a static database to share studies among PAs and the customers for whom the studies were completed.

Market Pull Towards Comprehensive Approach

The intent for C&I sector is to create market pull towards a comprehensive approach for energy use in commercial buildings, which includes heat pumps, control systems, ventilation, and weatherization. The Deep Energy Retrofit offering is designed to achieve this for large C&I customers. The CBA will be the standard for large C&I customers and is designed to identify a comprehensive suite of measures. Small Business Turnkey vendors complete a comprehensive assessment for smaller customers. The PAs recently solicited Turnkey vendors equipped to deliver this broader portfolio of measures and will complete a procurement for a deeper bench of TA vendors to provide these services to large C&I customers by the end of 2024.

Promoting Full Conversion Electrification in C&I

The C&I sector is comprised of a very diverse group of building types, each with unique challenges and opportunities. Across this entire segment, the PAs will promote full conversions where it is technically feasible. To help increase customer demand and understanding of these technologies, the PAs will leverage the new technical assistance offerings described above, to help customers feel comfortable with the steps needed to fully convert from fossil fuel systems over the long term, while being transparent about project economics, which often have limited or negative lifetime cost savings.

Standard Packages for C&I Electrification

The PAs offer a host of standard measures via the prescriptive pathways. These prescriptive measures offer standard specifications for equipment enabling streamlined project delivery. Equipment incentivized ranges from air-source heat pumps to geothermal systems and associated control systems, and weatherization. The PAs continually explore opportunities to expand the menu of equipment supported and are currently exploring opportunities to include prescriptive or custom express offerings for heat recovery equipment (to reduce energy use from heating equipment) and air-to-water heat pumps. The PAs will leverage Comprehensive Building Assessments to help customers identify packages of measures that could be implemented at their facilities. The PAs will also lead a "Cash for Clunkers" style marketing campaign to encourage customers to replace old, inefficient, and unreliable heating systems running on oil or propane with heat pumps.

Existing Building Commissioning ("EBCx")

The PAs engaged a consultant to help craft and launch a revised EBCx offering that takes lessons learned from some of the leading programs in the nation. Initially, the PAs intend to concentrate

[18] The PAs are also working with evaluation stakeholders to establish a framework to allow baseline energy use to reflect code compliant ventilation levels in buildings that are under ventilated prior to engagement.

heavily on HVAC and associated controls. The PAs' approach will include guidance on participation (documentation requirements, templates, M&V protocols, etc.) by end use. This approach will allow for clear and specific requirements for commissioning different systems, which customers or vendors could access to optimize one or more systems within a building. The PAs will continue to support other end uses like process loads via the custom pathway and develop greater structure, with increased guidance over time.

The PAs will use the common industry terms "Existing Building Commissioning" and "Monitoring Based Commissioning" to build market knowledge and understanding of the services. The PAs will develop a pool of prequalified EBCx providers and work with customers to identify the providers best suited to commission their facilities. The PAs intend to manage the pool of qualified service providers to ensure consistency and high-quality outcomes. Additionally, the PAs will assist customers in identifying their commissioning scope and facilitate the connections between customers and qualified EBCx providers. The PAs will also provide partial payment of EBCx study costs up-front, providing the remainder of the study funding upon implementation of a percentage of EBCx measures identified. This funding structure alleviates the risk that customers will undertake studies at no cost but then not implement the recommendations and realize the energy savings.

To further encourage implementation of recommendations, the PAs will ensure that the investigation report findings include sufficient information for the customer to provide a scope of work to an implementation vendor as well as the estimated costs for implementation. During implementation planning, customers will work with the qualified service providers and the PA project team to identify contractors appropriate for the project scope to ensure a smooth transition for project onboarding. The PAs will also ensure qualified service providers are available to follow up with the implementation contractor to minimize customer burden and maintain project momentum after the EBCx investigation phase. Finally, the PAs will ensure verification of any measures implemented.

The PAs are committed to launching the EBCx offer in 2025 and are likely to leverage a third-party vendor to help improve consistency and scale across the state. The Strategic Evaluation Plan has included EBCx as an area for embedded evaluation.

Municipal Lighting

As presented in the April Draft, only small business customers were eligible for lighting fixture incentives; for medium and large customers, including municipalities, the PAs would only incentivize and claim savings for lighting controls. However, in the revised Plan, the PAs will treat all municipal customers similarly to small business customers and allow them to continue receiving both non-controlled and controlled lighting incentives for their buildings. This change is being proposed in support of C&I Existing Buildings Enhancement #9 ("Support energy efficiency and electrification improvements in schools in equity communities") and to align with DOER Green Communities program design.

Municipal customers face unique challenges compared to other commercial building owners because they lack reserve funding for energy efficiency upgrades. Without PA incentives and additional grants, energy efficiency upgrades in municipal buildings often do not progress. Many

municipal customers still have outstanding lighting opportunities that can only be realized through a combination of PA incentives and DOER Green Communities funding.

The DOER Green Communities program bi-annual grantmaking process includes support for high-efficiency lighting in K-12 school buildings, for which municipalities must submit Mass Save Sponsors' incentive offer letters as part of their Green Communities' applications. Allowing incentives for fixtures for all municipal buildings will reduce confusion and align the lighting offering with the objectives of the DOER Green Communities program. Removing fixture incentives for municipal customers would burden any municipality that has applied for the DOER Green Communities Spring Block because Spring Block applications that include lighting would need to be revised or withdrawn.

VII. Cross Cutting Issues

Revised Performance Metrics and Reporting

The PAs worked in collaboration with DOER to provide the EWG, the Council, the public, and interested stakeholders with valuable and easy-to-understand information on the programs that help measure progress toward our Plan goals.[19] While a significant volume and variety of data is currently published on regular intervals as noted in Section 5 of the April Draft, existing reporting can be difficult to interpret. Reformatting and refining the structure and interface for that information will better serve the Council, the public, and interested stakeholders, streamline data administration processes, and thus minimize the administrative costs of responding to *ad hoc* data requests as required by G.L. c. 25, §§ 19(a), (b).

During the 2025-2027 term, the PAs will publish the measure-level outputs of a subset of each PA's benefit-cost models on a quarterly basis and provide ZIP Code level production and incentives for major measures, including weatherization and heat pump installations, on a biannual basis. These granular datasets will enable stakeholders the flexibility to conduct a variety of analyses.

Further, the PAs will provide summary tables, primarily derived from the above-mentioned data, for frequently requested operational metrics. Progress on each of the metrics will be reported against the plan targets or a baseline, as appropriate. In addition, the PAs will report extensive supplier diversity information as described in Section III above.

The operational metrics for the 25-27 Plan include:

- GHG reductions impacting 2030 compared with the EEA Secretary's goals.
- Weatherization and heat pump installations and incentives by income-qualification status, single-family/multifamily buildings, renter status, and specifically for heat pumps, the displaced fuel and full/partial displacements, both statewide and within the designated equity communities.

[19] Equity metrics were discussed at the March, April, and August EWG meetings and a nearly complete list of operational metrics were included in the April draft and presented at the April and June EEAC meetings.

- The number of homes receiving weatherization recommendations with barriers, and the number of barrier mitigation jobs and incentives by income-qualification and renter status, both statewide and in the designated equity communities.
- Average conversion rate on weatherization recommendations and time-to-serve for Home Energy Assessments.
- Total spending in the designated equity communities, including incentives, technical assistance, and community funding, by income-qualification status and renter status for Residential sector programs and isolating small business weatherization investment for C&I sector programs.
- Community First Partnership communities and awards by partner organizations.
- Total number and spending on contracts directly between PAs and vendors, as well as the number and percentage of diverse suppliers who were directly informed of RFPs and who responded to RFPs.
- Total number of customers indicating preference for a language other than English at intake and, of those, how many ultimately receive HEAs and weatherization by their language of preference.
- Number of thermostats participating through market-rate and low-income offerings.
- ConnectedSolutions participants and savings by measure.
- C&I Custom electrification and non-electrification projects, energy savings, and GHG savings.
- C&I existing building commissioning and decarbonization planning study enrollments, completions, and resulting projects, grouped by small, medium, and large buildings by square footage.

A table outlining the reporting cadence and describing these metrics is provided in Appendix C.

The PAs have also worked with DOER to simplify quarterly reporting to make these updates more valuable and user friendly. Finally, the PAs will establish a working group with DOER and other key stakeholders to streamline and improve the accessibility of reported data on an ongoing basis.

Performance Incentives[20]

The Program Administrators have worked with DOER, the AGO, and the EEAC consulting team extensively on structuring a Performance Incentive ("PI") approach that is consistent with Department precedent and that is responsive to stakeholder goals for the 2025-2027 term, including a focus on achieving equitable outcomes. The PAs, DOER, and the AGO have agreed upon the following overall structure and pool for 2025-2027.

The structure of the PI mechanism will be very similar to the 2022-2024 PI mechanism, but with a greater emphasis on equity. There will be three components: equity, standard, and value. The equity component will be comprised of benefits flowing from measures in the following segments: low-[21] and moderate-income customers, C&I turnkey, and renters (including C&I multi-family).

[20] The Compact, as a municipal aggregator, does not receive a performance incentive. See D.P.U. 08-50-A at 51.

[21] While the PAs will, as needed, provide incentives for fossil fuel equipment within the low-income sector, those measures will not be included in equity PI, instead appearing in the standard component.

The standard component will include all benefits that are not included in equity, including electrification. Finally, as directed by the Department, the value component is calculated as total portfolio benefits less total program costs. Non-controllable costs, such as MassCEC's workforce development funding and other statutory assessments, will be excluded from this calculation of net benefits.

The total amount of PI available for the PAs to earn will be $190 million. This statewide total will be allocated across all utility PAs and divided among the three components accordingly: 50 percent will be for the equity component, 30 percent will be for the standard component, and 20 percent will be for the value component, each with a specific payout rate.[22] Each component will have an associated threshold that each PA will need to achieve before beginning to earn PI. The thresholds are calculated as a percentage of benefits planned for each component. For example, the threshold for equity is 65 percent. If a PA plans to have $20 million in benefits that would fall within the equity component,[23] then to begin earning PI in the equity component, they will need to attain 65 percent of $20 million in benefits, or $13 million. The threshold for the value component is 75 percent and for the standard component is 60 percent.

The threshold for the standard component, however, is nuanced in that it is based on the entire portfolio of benefits, not just the benefits within the standard component. This, again, highlights the emphasis on equity within the PI mechanism. Including equity benefits in the standard component threshold ensures that the PAs continue pursuing equity benefits even if they are running behind on non-equity benefits because all benefits contribute to the total.

Finally, a PA will be limited to earning the planned amount of PI for each component unless the PA attains certain goals related to that component. Once a PA attains these goals, it will be able to earn more than the design-level PI as the delivered benefits surpass their planned amount. For example, using the scenario above with design level benefits for the equity component of $25 million, that PA can only earn more than design level PI for equity if it has both exceeded the $25 million in benefits (100 percent of design level benefits) and met the specific goals related to the equity component.

For the equity component, there are two goals that the PA needs to attain in order to earn more than 100 percent of design level PI (in addition to achieving greater than 100 percent of planned equity benefits): (1) its planned number of low- and moderate-income customers who received heat pumps;[24] and (2) its planned benefits delivered to renters. For the standard component, the goals each PA needs to achieve in order to earn more than 100 percent of planned PI (in addition to achieving greater than 100 percent of planned portfolio benefits) are: (1) achievement of the PA's planned C&I non-turnkey benefits; and (2) achievement of the PA's planned C&I turnkey benefits. For the value component, the goal each PA needs to achieve in order to earn more than 100 percent of planned PI (in addition to achieving greater than 100 percent of net benefits) is the PA's planned

[22] Each of these amounts is referred to that PAs' design level PI.

[23] Under this scenario, the PA's planned $25 million in benefits within the equity component is referred to as design level benefits for the equity component.

[24] The number of heat pumps is measured by housing units.

total non-incentive spend (excluding assessments) as a percentage of total planned portfolio benefits.

A summary of the agreed upon PI approach for 2025-2027 is as follows:

Total Pool: $190,000,000

Component	Measures	% of Pool	Threshold %	Locks to exceed 100% of design PI (125% cap)
Equity	LMI, Renters (incl. C&I MF renters), C&I Turnkey, no FF	50%	65%	• LMI Heat Pumps • Renter Benefits
Standard	Non-Equity	30%	60% Portfolio-based	• Total (non-turnkey) C&I Benefits • C&I Turnkey Benefits
Value	Normal value component, excluding non-controllable assessment	20%	75%	• Total Non-Incentive Spend (Excluding assessments) / Total Benefits

Evaluation, Measurement, and Verification

Evaluation, Measurement, and Verification ("EM&V") has been an integral component of the Mass Save programs since their inception. Massachusetts has invested heavily in EM&V research and is a leader in the country in terms of comprehensive, in-depth evaluation. Since the April Draft, there have been twenty-one completed EM&V studies across residential and income-eligible, C&I, special and cross-cutting, and demand response. Descriptions of each completed study are provided in Appendix D. In addition, there have been three important updates for EM&V since April: (1) the EEAC EM&V Policy memo; (2) an updated Strategic Evaluation Plan ("SEP"); and (3) refinement of the market transformation models.

- **EEAC EM&V Policy Memorandum:** Since the enactment of the Green Communities Act[25] establishing the framework for the delivery of energy efficiency programs for the benefit of the Commonwealth, several legislative amendments have transformed the vision for energy

[25] G.L. c. 25, s. 19, 21 and 22.

efficiency programs to focus on equitable delivery of all cost-effective energy efficiency and to achieve greenhouse gas emissions reduction in compliance with the emission-reduction targets set by the Secretary of Energy and Environmental Affairs. Given these recently enacted laws and the precedent that the PAs have established in leading the nation in well-designed and effective energy efficiency programs, there are great expectations for balanced, equitable, cost-effective, bold, and innovative statewide electric and natural gas, and individual PA efficiency investment plans for the 2025-2027 term.

It is critical, however, that the energy efficiency programs be evaluated, measured, and verified in a way that enables the PAs to clearly report those savings to the public at large and to the Department. There is a need to ensure the independence and objectivity, both real and perceived, of evaluation activities, as well as ensure consistency, timeliness, and credibility of the results.

To that end, the EEAC adopted a revised EM&V Policy Memorandum during its regular meeting on July 17, 2024, that articulates "climate forward" EM&V principles and policies to guide the development of the 2025-2027 SEP and application of EM&V study results, as well as considerations for the work of the Evaluation Management Committee. A complete copy of the EM&V Policy Memorandum is provided in Appendix E.

- **Strategic Evaluation Plan**: As part of the statewide planning process, the Evaluation Management Committee ("EMC") reflects on lessons learned from past research, seeks input from stakeholders, and identifies research priorities for the coming term. The Strategic Evaluation Plan ("SEP") summarizes these findings and will guide EM&V activities for the next three years in alignment with the objectives of the Plan. This updated version has some noticeable differences, the most significant change being that this version includes summaries of memorandums on how EM&V practices might evolve in response to EEAC's EM&V Policy Memorandum. These memorandums detail the policy directive, current EM&V practices, and the consideration and final resolution of the working groups were developed regarding:
    - Attribution;
    - Stipulated Baselines; and
    - Protocols for Market-Driven vs. Program Driven Renovations and Infrastructure Investments.

  In addition, this version of the SEP groups all lessons learned and research priorities into their own distinct sections rather than designating them by research area. Finally, there are over twenty Stage 1 plans for studies that are anticipated to start in early 2025. It is not a comprehensive list of all the work that will be conducted during the 2025-2027 term, however, in order to maintain flexibility with respect to changing priorities. The updated SEP is provided in Appendix F.

- **Market Transformation Models:** The robust EM&V framework has supported the development and continuous improvement of cost-effective energy efficiency programs as they adapted to changing markets. A strategy of the 2025-2027 Plan is to initiate an explicit market transformation goal for certain portions of the programs; that is, areas where the PAs believe that their efforts will lead to long-term, permanent changes in the adoption of an efficiency

measure. These identified areas include Non-Residential New Construction, Residential Multifamily New Construction, 1-4 Unit New Construction, Residential Renovations and Additions, and electrification of residential heating equipment. The PAs also continue to work on finding additional areas appropriate for this type of work.

An initial step to effectuating, demonstrating, and evaluating market transformation is the creation of market transformation logic models. The PAs are committed to refining the existing market transformation logic models to reflect current understanding of the heat pump market. Refining and updating the logic models in a thoughtful and deliberate way can be a time intensive process. It may not be possible to have the logic models fully updated for the September Draft. As an interim step, the PAs have worked with the Council consultants to review the objectives, barriers, strategies, and expected actions to be taken in relation to heat pump market transformation activities.

The heat pump logic models will be updated to reflect the PAs' approach to transform the heat pump market by addressing lack of customer awareness and confidence, lack of market actor experience, high first cost of heat pumps and associated home upgrades, high operating costs, and the difficulty of electrifying when multiple trades are required. The logic models will also reflect the PAs' plans to address the previously listed barriers through a series of strategies and corresponding actions such as increasing the availability of contractor training opportunities around heat pumps, engaging with manufacturers/ distributors, supporting code changes to require heat pumps in place of central air conditioners, offering incentives and loans for all required work for heat pump installations, offering comprehensive decarbonization audits, providing tools to customers to evaluate system costs and better understand heat pumps, and providing turnkey project assistance. The logic models will be updated and refined to reflect these changes as soon as practicable.

Embodied Carbon; Innovative New Approaches

Since the April draft was filed, the PAs have been researching and seeking market input on program options for supporting embodied carbon reductions across both C&I New Construction and Residential New Construction. The PAs' overall goal is to influence customer and design team/builder project decisions while dovetailing proposed program support with existing standards and tools (*i.e.*, LEED, RESNET) and local policy direction, and at the same time weighing reliable ways to establish baselines and ease of participation. For commercial new construction/major renovation and multi-family high rise, the PAs propose a materials-based approach to embodied carbon reduction that focuses on encouraging project teams to select lower global warming potential products within the highest-impact material categories and would offer customers incentives on a $/kgCO2e reduction basis. The PAs are considering incentive adders for customers who also conduct Whole Building Life-Cycle Assessments ("WBLCAs") to address embodied carbon and/or who reuse a certain percentage of materials in major renovations. For single family (1-4 unit) properties, the PAs are supporting an effort led by MassCEC and the Northeast HERS Alliance to establish an embodied carbon baseline for Massachusetts. Once established, the PAs' will utilize RESNET standard 1550 to target incentives based on percent reductions of embodied carbon from the established baseline.

VIII. Conclusion

This submission marks the latest iteration of the most ambitious three-year energy efficiency and decarbonization plan proposed to date. The revised Plan provides unprecedented levels of investment in, and support for, achieving environmental, equity, economic, and job creating benefits for residents, businesses, communities, and institutions in the Commonwealth. We are grateful to the EEAC, DOER, EWG, the AGO, and every stakeholder who collaborated and contributed feedback on the April Draft Plan. We look forward to providing a revised Plan with tables on September 25, 2024, incorporating these updates.

Appendices

Appendix A – Spreadsheet template with PA responses to all EEAC recommendations and resolution items

Appendix B – Statewide and PA-Specific Summary Data Tables

Appendix C – Proposed Operational Metrics for 2025-2027 Plan

Appendix D – EM&V Studies completed since April Draft Plan

Appendix E – EEAC EM&V Policy Memo

Appendix F – Strategic Evaluation Plan

Appendix A

Attachment: Spreadsheet template with PA responses to all EEAC recommendations and resolution items

Appendix B
Statewide and PA-Specific Summary Data Tables

Statewide Adjusted Net Lifetime Savings All Fuels (MMBtu), excluding active demand response programs

	2025	2026	2027	2025-2027
Residential	29,125,274	31,958,036	36,582,072	97,665,382
Low Income	11,212,001	11,881,934	12,924,243	36,018,179
Commercial & Industrial	15,740,829	17,138,148	16,520,333	49,399,311
Total	56,078,105	60,978,118	66,026,649	183,082,871

Statewide Benefits ($)

	2025	2026	2027	2025-2027
Residential	$1,843,160,292	$2,001,076,069	$2,304,814,977	$6,149,051,338
Low Income	$827,664,061	$870,063,507	$939,848,703	$2,637,576,272
Commercial & Industrial	$1,213,560,605	$1,304,900,207	$1,247,443,526	$3,765,904,337
Total	$3,884,384,958	$4,176,039,783	$4,492,107,206	$12,552,531,947

Statewide Budgets ($)

	2025	2026	2027	2025-2027
Residential	$833,486,955	$889,590,448	$1,000,345,930	$2,723,423,333
Low Income	$348,027,622	$383,572,647	$439,029,955	$1,170,630,224
Commercial & Industrial	$334,744,569	$378,747,592	$381,725,761	$1,095,217,922
Total	$1,516,259,146	$1,651,910,687	$1,821,101,646	$4,989,271,480

Statewide GHG Emissions Reductions (CO2e)

	2025	2026	2027	2025-2027
Residential	186,491	207,120	242,744	636,355
Low Income	49,351	53,477	59,650	162,477
Commercial & Industrial	68,930	76,445	78,211	223,587
Total	304,772	337,043	380,604	1,022,419

Statewide Renter Incentives ($)

	2025-2027
Market Rate Residential	$96,249,307
Moderate Income	$52,301,312
Low Income	$453,990,852
Commercial & Industrial	$12,151,579
Total	$614,693,050

PA-Specific Summary Table

Program Administrator	Total Program Costs	2030 GHG (CO2e)	Net Lifetime MMBTU	Total Benefits	Equity Benefits
National Grid Electric	$ 1,436,600,000	233,611	44,700,000	$ 3,488,700,000	$ 1,024,300,000
NSTAR Electric	$ 1,392,600,000	251,070	50,600,000	$ 3,785,200,000	$ 1,064,200,000
Cape Light Compact	$ 264,100,000	27,704	5,300,000	$ 447,200,000	$ 2,200,000
Unitil Electric	$ 25,700,000	4,230	900,000	$ 56,100,000	$ 27,000,000
National Grid Gas	$ 984,000,000	270,020	43,200,000	$ 2,498,900,000	$ 687,700,000
NSTAR Gas	$ 403,700,000	125,025	20,300,000	$ 1,155,000,000	$ 475,100,000
EGMA	$ 402,800,000	94,585	15,600,000	$ 957,900,000	$ 401,600,000
Liberty	$ 48,200,000	9,392	1,400,000	$ 97,300,000	$ 50,700,000
Berkshire	$ 21,300,000	4,699	700,000	$ 42,800,000	$ 13,700,000
Unitil Gas	$ 10,400,000	2,083	400,000	$ 23,500,000	$ 13,800,000
Total	$ 4,989,400,000	1,022,419	183,100,000	$ 12,552,600,000	$ 3,760,300,000

Appendix C
Proposed Operational Metrics for 2025-2027 Plan

Cadence	Operational Metric or Dataset
Quarterly	GHG reductions in 2030 by residential and commercial sectors (tracked against the EEA Secretary's goal as expressed in approved plan)
Quarterly Dataset	Measure-level production results, including incentives, savings, and benefits, in the format of the "Calcs" tab from each program administrator's benefit-cost model.
Residential Metrics (including equity)	
Quarterly	**HEAs:** Total number of home energy assessments broken out by (1) those with insulation recommendations that have barriers, (2) those with insulation recommendations that have no barriers, and (3) those with no insulation recommendations broken out by income qualification (low-income vs non-income qualified income at the time of assessment); renters vs. Non-renters; and statewide vs. Designated Equity Communities **Barriers:** Number of barrier mitigation projects and incentives broken out by income qualification (low-income, mod-income, non-income qualified/market-rate); Renters vs. Non-Renters; and Statewide vs. Designated Equity Communities. **Weatherization:** Number of weatherization projects and incentives broken out by SF and MF, across income qualification (low-income, mod-income, non-income qualified/market-rate); Renters vs. Non-Renters; and Statewide vs. Designated Equity Communities. Note: The combination of these metrics will enable the assessment of rolling conversion rates from assessment to recommendation to barrier remediation and insulation.
Quarterly	Time to serve/assess HEAs for residential sector, shown by county and comparing lead vendors and HPCs. Time to serve for the low-income sector, shown by CAP territory (and based on a combined TTS for local CAP and HPCs).
Quarterly	Quantities and incentives for households installing heat pumps, broken down by measure type (existing fuel and by full vs partial displacement), program pathway (rebates vs turnkey, with turnkey distinguishing 1-4 unit and 5+ unit buildings), income qualification (low-income, mod-income, non-income qualified/market-rate), Renters vs. Non-renters, and Statewide vs Designated Equity Communities.

Bi-annual Dataset	For each zip code (with select community zip codes denoted): number of households that install heat pumps (broken out by whole home and partial) and weatherization jobs broken out by income qualification (low-income, mod-income, non-income qualified/market-rate).
C&I Metrics (including equity)	
Quarterly	Number of EBCx study enrollments, number of studies completed, and number of studies with completed projects in C&I grouped by size using studied square footage
Quarterly	Number of custom C&I electrification and traditional energy efficiency (including lighting and non-lighting) projects, savings by fuel and combined, and 2030-GHG reductions.
Quarterly	Number of small business weatherization projects, total savings (net Lifetime MMBtu), and incentives broken out by Turnkey and non-Turnkey. Number of small business energy assessments
All Other Equity Metrics	
Quarterly	Total equity investment, including low- and moderate-income incentives, renter incentives, small business turnkey incentives, community engagement, language access, workforce development, and program support to these customers.
Annual	Total of CFP awards for all CFP communities and awards by partner
Annual	**Supplier Diversity:** # of direct contracts with diverse suppliers and spend for contracts with diverse supplier that are directly between PAs and vendors (with breakouts for MBEs, WBEs, and other diverse supplier types); total number and spend of all direct contracts.
Annual	**Supplier Diversity:** # and % of diverse suppliers directly informed on the availability of RFPs (with breakouts for MBEs, WBEs, and other diverse supplier types)
Annual	**Supplier Diversity:** # and % of diverse suppliers responding to RFPs (with breakouts for MBEs, WBEs, and other diverse supplier types)
Annual	**Language Access:** Total number of customers indicating preference for a language other than English at intake, by their language of preference **Language Access:** Total number of customers indicating preference for a language other than English at intake who ultimately receive HEAs and weatherization by their language of preference. Note: The combination of these metrics will enable the assessment of rolling conversion rates from intake to assessment to weatherization for customers expressing LOTE preference.
Active Demand Reductions / ConnectedSolutions Metrics	

Bi-annual	Active demand participation and savings by PA, by technology and dispatch type (Res: batteries and direct load control thermostats and water heaters; C&I: Targeted/Daily Dispatches for batteries and technology-agnostic) Number of participating thermostats by customers on an electric rate discount vs market rate, compared with the number of connected thermostats incentivized by low-income vs market-rate programs.

Appendix D
EM&V Studies Completed Since April Draft Plan

Commercial and Industrial

1. C&I Existing Building Baseline Study (MA22C05-B-BSLN)*
   - Characterized the type, quantity, and efficiency of energy-using equipment for existing buildings to support program planning and future market and evaluation research. The results of the general population survey showed that heat pumps account for primary heating in about 12% of C&I tax parcels, and over half of the state's C&I facilities rely on manual or handheld manual thermostats, while only 7% of facilities (17% of square footage) rely on a BMS. The survey results also demonstrated that the lighting controls market has not changed substantively since the last time the baseline study was conducted (2020), as dimmer switches and occupancy sensors are the dominant technology in 20%-30% of C&I tax parcels, while advanced lighting controls are only present in about 3% of parcels.
2. Custom Program Process Study (MA23C04-B-CUSTPRPR)*
   - Identified opportunities to increase the efficiency and productivity of custom offerings. This study found that custom project processes worked well overall for most recent participants, but the least satisfactory aspects of the process reported by participants include project timelines, incentives, and documentation requirements. In response to the DOER EM&V Policy directives, the EMC will be revisiting documentation requirements for custom project baseline determination, as well as developing new protocols for determining impacts from existing building projects, which may result in expedited engineering review, streamlined documentation requirements, and faster project timelines in the 2025-2027 term plan. This study recommended the creation of a database of evaluated custom projects, which is underway, and the continued evaluation of custom express calculation tools, which is included in the SEP for the 2025-2027 term.
3. MA CI 2022 Custom Electric Rolling Evaluation (MA23C06-E-CUSTELEC)^
   - Provided verification and re-estimation of energy and demand savings for a sample of statistically selected non-lighting custom electric projects through site specific verification, monitoring, and analysis. The results of this study were used to determine the gross realization rates and lifetime savings adjustment factors for custom electric energy efficiency projects implemented in 2021, 2022, and 2023, and were combined with the previous two studies to provide rolling results based on the most recent three years of study. On the whole, the results of this study were higher than the previous study.
4. MA CI Energy Optimization Model Version 2.1 Update (MA24CXX-B-EOUPDATE)^
   - Updated the C&I Energy Optimization Model to estimate impacts for prescriptive heat pump measures in commercial buildings using the most up-to-date program data. This study resulted in increased C&I midstream VRF measure impacts, decreased midstream ASHP measure impacts, increased fuel savings and almost doubled electric penalties for VRFs displacing gas and ASHPs displacing all fuels

from the April plan. These updates are largely due to changes in the modeling approach for VRFs (now utilizing updated performance curves from NREL) and in the modeling of ventilation air provisions.

5. Prospective Realization Rates for PY2025 Custom Gas (MA24-C03-G-RECUSTGAS)^
   - -Will update gross realization rates and lifetime savings adjustment factors to be applied to custom gas projects in the 2025-2027 term.

Residential & Income Eligible

6. Heat Pump Metering Study (MA22R51-B-HPMS)^
   - Performed field monitoring to assess actual heating and cooling performance and usage of the latest generation of residential heat pumps being supported by the programs. Fielded participant surveys to understand customer experience and usage of heat pumps and backup/auxiliary heating systems. The study quantified gross measure impacts for heat pump installations and informed savings parameter estimates for the Massachusetts Technical Reference Manual. The measure impacts for residential heat pumps were similar to the previous measure impacts with varying directional changes across the multiple heat pump types and fuel baselines.
7. MA Income Eligible Process Evaluation (MA23R55)^
   - Process evaluation to look at program ecosystem, customer experience, program processes, and program opportunities.
8. MA Income Eligible Single Family Impact Evaluation (MA23R56)^
   - Update gross savings impacts. For most measures this resulted in lower savings.
9. Renovations and Additions Process & Program Theory Logic Model Update (23R54-B-RAPROCESSPTLM)^
   - Through an online survey with homeowners who participated in the R&A program between 2021 and 2023, interviews with 17 builders and 5 HERS raters active in the program during that same timeframe. Mixed levels of program satisfaction from customers and builders suggest room for improvement in the program. HERS raters drive program awareness and participation. The PAs should increase awareness about the program, provide additional support on how to participate, and provide educational materials on energy efficiency. Market actor opinions were mixed about how the market would respond to the R&A program switching to an all-electric model.
   - The team held 4 meetings with the PAs' program and implementation team to update the existing R&A program theory and logic model (PTLM). Home and building owners learn about the program primarily through HERS raters, and the R&A pages of the Mass Save website. HERS raters are provided program materials for use with clients, via Northeast HERS board quarterly meetings and newsletter. Builders are engaged via outreach with home builder and remodeler association and on-line training.
10. Residential New Construction Baseline Study (MA23R60)^

- Used RESNET data to develop updated UDRH specifications for single-family and multifamily homes, compared program and non-program homes against each other, against previous baselines, against different code versions. Market actor interviews provided qualitative feedback about the RNC market to inform program design and future evaluations. Both Single-family and Multi-Family HERS scores have improved since the previous studies. Homes with electric heat have HERS scores better than those with fossil-fuel systems, and all-electric homes have better scores than all other homes on average.

11. RCD Single Family Impact Study (MA23R58)^
    - Update realization rates for weatherization and deemed gross savings impacts for other measures. Overall resulted in lower savings.
12. Income Eligible & Market Rate Multifamily Impact Evaluation (MA23R59)^
    - Update of deemed gross savings impacts.

Special & Cross Cutting

13. Heat Pump Market Effects Indicators Baseline & Interim Studies (MA22X06-B-HPMEIB, MA23X18-B-INTERIMHP)*
    - Developed an approach to quantifying any market effects, measured market progress made in 2022; and assessed traditional NTG to establish a floor for market effects from 2022.
    - Research found that PAs were a key driver in the increase of heat pump sales from 2021 and 2022 and provided insights that could be used to update the program theory for market transformation (e.g., customer awareness and understanding of heat pumps, contractor trainings, changes in inventory and stocking practices).
14. Non-residential New Construction & Fuel Switching NTG (MA22X02-B-NRNCHPNTG)^
    - Produced updated NTG values for Paths 1 and 2 of the Commercial New Construction and Major Renovations program as well as measure NTG for C&I fuel switching. These NTG values would only be applied if these program components were to be treated as resource acquisition.
    - However, the NTG values should not be applied for impact accounting purposes if program components are treated as market transformation initiatives.
15. Minority & Women-Owned Business Enterprise Contractor Study (MA23X16-B-MWBE)^
    - This study reviewed non-incentive spending for contracted vendors from 2016-2018 and then 2019-2021, which was then analyzed for MWBE certification and other lists. Surveys, a focus group, review of best practices, and a pipeline analysis were also conducted.
16. NEIs Associated with Resilience of Battery Storage for IE Customers (MA23X11-E-BATTNEI)^

- Developed participant resilience NEIs associated with battery storage for income-eligible and moderate-income customers participating in the Cape and Vineyard Electrification Offering. The results of the study showed that one battery is sufficient to provide the critical load for a home during outages in summer, fall, and spring; however, a second battery greatly improved the system's ability to meet critical demand during winter outages. Once there is more CVEO participant data available, the NEI values will be updated for homes that have one and two batteries.

17. Supplement & Analyze Residential Heat Pump Invoice Cost Data (MA23X14-B-RHPINV)^
    - Provided basis for long-term heat pump cost-tracking process and normalized metrics that can be compared over time
18. C&I Omnibus Electric NTG Study (MA23X15-E-CIONTG)
    - Updated NTG for selected custom and prescriptive measures for downstream electric C&I programs. Updated NTGRs were comparable to those derived from the previous study, completed in 2021.
19. C&I Omnibus Gas NTG Study (MA24X28-G-CIONTG)^
    - Updated NTG for selected custom and prescriptive projects for downstream gas C&I programs. Updated NTGRs were comparable to those derived from the previous study, completed in 2021.
20. Non-Residential New Construction & Multifamily Market Actor Population Sizing Study (MA23X17-B-NRNCMS)^
    - Estimations of the number of architects, MEP engineers, design/build contractors, and sustainability consultants active in the MA NRNC and the Passive House NC markets and the proportion that have participated or are currently participating in Mass Save new construction programs.

Demand Response

21. MA C&I Targeted and Daily Dispatch Summer 2023 Study (MADR2301-E-CITDD)^
    - Updated RR values for each type of C&I DR offering.
    - Provided results of process evaluation based on conversations with respondents regarding program satisfaction, participant motivations, participation barriers, and incentives.

*Filed with the 2023 Plan Year Report

^Report is or will be final for 2025-2027 plan.

Appendix E

Attachment: EEAC EM&V Policy Memo

Appendix F

Attachment: Strategic Evaluation Plan