June 15, 2021 *Submitted electronically via email: MA-EEAC@mass.gov*

MA Energy Efficiency Advisory Council
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: 2022-2024 Three-Year Energy Efficiency Plan – Post April Draft

To whom it may concern,

On behalf of Northeast Energy Efficiency Partnerships (NEEP)[1], I am pleased to submit comments relative to the draft Mass Save 2022-2024 Three Year Energy Efficiency Plan (Mass Save Plan or Plan). NEEP is a non-profit whose mission is to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities.

We thank the Massachusetts Energy Efficiency Advisory Council (EEAC) for the opportunity to provide input on the draft Mass Save 2022-2024 Three Year Energy Efficiency Plan. The Plan lays out clear goals and we applaud the work that the Program Administrators (PAs) have done in its design. Massachusetts is a national leader in energy efficiency, and it is because of the continued work and dedication of these parties that the state is able to implement such forward thinking energy efficiency policy.

The following comments are intended to provide technical assistance and resources to help in the design of this program and highlight some best practices to consider to ensure that the equity and climate goals of the state are reflected in the Plan. In addition to these recommendations, NEEP has tools and resources available online and can offer direct technical assistance.

Modifications to Accelerate Heat Pump Market Transformation

On March 26, Governor Baker signed *An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy ("Act")*. While the state is still enacting this legislation, with many unknowns, this plan will be a valuable piece on the path to achieving the state's climate and equity goals. Part of this legislation requires the state to set benchmarks for certain technologies, including heat pumps. NEEP recognizes that while in some instances the cost-effectiveness may still not be aligned, we recommend the plan leave room to align with potential, mandates, benchmarks, and limits and start to adopt practices to aid in the market transformation envisioned by the law. Specifically, NEEP would like to highlight the following elements of the PA's proposed electrification and heat pump strategy that could be modified or reconsidered to better align the Plan with statewide goals.

[1] These comments are offered by NEEP staff and do not necessarily represent the view of the NEEP Board of Directors, sponsors or partners. NEEP is a 501 (c)(3) non-profit organization that does not lobby or litigate.

Central Air Heat Pumps

NEEP recommends the PA's consider accelerating the transition to central air heat pumps by phasing out incentives for central air conditioning systems that are not heat pumps before year 3 of the plan. The central AC market is a cost-effective area for the electrification of space heating because the incremental cost of moving a consumer for cooling only to heat pump is several hundred dollars and offers a way to fairly easily transition consumers to heat pumps, even in gas scenarios. By implementing these cost-effective policies now, the PAs can take advantage of opportunities to provide cooling in the near term and then heating as it becomes increasingly more affordable. Especially as there is evidence that heat pumps will become part of state goals, these programs can start to lead this transition and gain industry knowledge and experience in this area to accomplish any state benchmarks set in this area.

A Whole Building Strategy for Heat Pumps

NEEP recommends the PA's consider designing a whole building strategy for heat pumps alongside the partial displacement strategy in order for Massachusetts to ensure an accelerated yet sustainable market growth for heat pumps. The Rhode Island Renewable Thermal Market Development Strategy study showed that consumers in New England have on a lack of confidence in reliability and performance of heat pumps.[2] Focusing too heavily on a partial displacement strategy now could limit the state's ability to advance the market towards whole house solutions in the future. While there are not heat pumps for every scenario, leading products are available to cover all heating/cooling needs, allowing for programs to drive consumers towards full replacement now.

It is important that these programs consider the amount of time it will take to ready the market to embrace clean heat technology. To do so the program administrators can develop a series of tools to support a holistic approach to quality heat pump performance and consumer experience now. Below is an outline of different components the PA's can incorporate to create this strategy and start the market transformation:

- **Consumer Education:** Consumer education is important to drive awareness and understanding of the technology. A heat pump doesn't "act" exactly like traditional fossil heating systems and consumers will need to have the opportunity to learn about this technology. This can be done through more proactively promoting Mass CEC's Clean Energy Lives here campaign. NEEP also has a Consumer Buying Guide available to leverage.
- **Weatherization:** Weatherization of buildings will be an important component of heat pump satisfaction and cost-effective installation. The Draft 2030 Clean Energy Clean Power Plan released earlier this year identified pivoting the market for building envelope retrofits and clean heating systems and recognizes that deep building envelope efficiency retrofits with heat pumps will be the least-cost decarbonization pathway for at least 60%, and potentially more than 95%, of households. To start to take steps now to increase weatherization, NEEP recommends that the PAs consider standardizing the definition of a deep

[2] Rhode Island Renewable Thermal Market Development Strategy, January 2017, page 32, available at: https://www.synapse-energy.com/sites/default/files/RI-Renewable-Thermal-15-119.pdf.

energy efficiency retrofit so that it amounts to a level of savings achieved in the home or results in a minimum efficiency standard, such as a Passive House. Additionally, that PA's consider ways to weatherize every home that interacts with this and other program offerings., i.e. every participant is followed up to see about weatherization no matter what program they have participated in (appliance rebate, thermostat, storage).

- **Quality Installation and Performance:** Ensuring quality performance and insulations of the heat pumps installed will be important to growing customer trust in the product. To ensure that the heat pumps meet High performance specifications, the Program Administrators can look to NEEP's cold climate ASHP Specification and product for product qualification. Additionally, NEEP also has resources on new best practices for sizing/selecting and installing heat pumps in cold climates. See NEEP's available resources. Further, PA's can partner with manufacturers to ensure they are including best practices that support high quality installations. New York is rolling this model out in 2022. Quality installation verification is another tool programs should use to monitor participating contractors.
- **Design and Construction Industry**: It is important to also consider the transition of the building design and construction industry as the state shifts to clean heating technologies and other building improvements. NEEP recommends that in designing these programs PAs, and other parties, consider what training and education will be needed to provide trainings and workforce opportunities for the design and construction industry workforce as well. Part of this should consider how to provide support for training and accreditations, including opportunities such as establishing quarterly up-to-date, free-of-charge CEU credit-accruing workshops and classes to architects, contractors, manufacturers, code officials, inspectors, builders and related design and construction professionals that focus specifically on base and stretch energy code provisions.

Recommendations to Ensure Equitable Service and Access

PA's identified equity as a key strategic priority for the 2022-2024 plan. NEEP applauds the PA's for centering the Plan on the goals of ensuring more equal access to and participation in energy efficiency programs, especially for historically underserved communities. From an energy justice perspective, energy efficiency policies have the significant potential to reduce energy poverty and the home energy affordability gap, but without thoughtful design, that these policies are susceptible to furthering social inequities. In addition to the initiatives outlined in the plan, NEEP suggests that the Programs Administrators consider the following recommendations that can help in fulfilling this strategy.

- **Use data to inform programs.** In addition to the data and tracking methods already used by the PA's, energy efficiency programs can also use data to drive program design and implementation by identifying customers or providing more public facing metrics. For example, *An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy* institutionalized the definition of marginalized communities, making them identifiable. This data can be used to target programs and education efforts for these communities. Programs in other states are able to use data on energy usage and arrearages to identify

participants in energy efficiency programs and alleviate communities with the highest energy burden first. Additionally, public facing metrics can be used to ensure success and allow for public facing accountability. One example to look to is Seattle City Light, which reports on Social Justice metrics. One of these metrics is purchases from Women and Minority Owned Businesses Enterprise.[3] This metric tracks the company's investment in these businesses, which provides a way to see and track dollars invested in these businesses.

- **Offer enhanced incentives and more customer services to help with the process of participation in these programs**. Currently, the proposed plan offers the enhanced residential program and the income eligible program; both programs offer no cost insulation upgrades, with income eligible offering no-cost air-sealing upgrades and new home appliances as well. NEEP applauds the work PAs have done in this area, but would recommends identifying additional inti. For example, in 2019, Bay State Gas Company d/b/a Columbia Gas of Massachusetts ("CMA") provided an enhanced weatherization offering to support the homes and businesses impacted by the September 2018 natural gas explosion incidents in the Greater Lawrence portion of its service territory.[4] This plan increased CMA's workforce in the area to reduce wait times; reduced the rebate times for customers from 4 - 8 weeks to 5-7 business days; assigned project managers to small business customers to help guide them through the weatherization and retrofit process; offered higher rebates and incentives to all participants; offered enhances incentives to mitigate barriers (e.g. knob and tube wiring, asbestos removal); gave free weatherization to small business, non-profit, and faith organizations; utilized geo-targeting to identity customers; and expanded customer education and marketing efforts to increase enrollment.
- **Use innovative financing mechanisms to lower upfront costs**. One program that PA's can look to is Tariffed On-Bill Model. Thoughtful tariffed on-bill programs can result in consumer bill savings, increased system reliability, and reduced emissions. By using the Pay As You Save® model, consumers are guaranteed to see at least 20% bill savings while paying the utility back for the cost of the upgrade on bills. Since this model ties the investment to the meter, rather than to the customer, and guarantees savings, it is particularly useful for low-income and rental populations. A tariff is not categorized as a loan to the customer, therefore, it does not add to the debt profile of the property owner the way a bank loan would and is more accessible to customers with limited credit.

New Metrics for Implementing Active Demand Reduction Programs

Achieving aggressive decarbonization goals will require energy efficiency program administrators to not only reduce energy use overall through their programs, but also to understand when energy efficiency programs are

[3] Seattle City Light Strategic Plan, 8, https://www.seattle.gov/Documents/Departments/CityLightReviewPanel/Documents/2019-2024%20City%20Light%20Strategic%20Plan(0).pdf.

[4] Massachusetts Office of Energy and Environmental Affairs, Docket No: D.P.U. 18-110, Information Request, DPU-CMA- 1-1, November 19, 2018, available at https://www.google.com/url?q=https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/10054081&sa=D&source=editors&ust=1616102393451000&usg=AOvVaw1yKeAlYQHhdFRrjJTN7Lmj.

reducing energy use. Designing and implementing Active Demand Reduction programs lays the ground work for these shifts. Further, active demand reduction programs such as time-of-use programs or appliance based offerings are also a great way to engage a wider swath of customers at a lower cost and can began to inform consumers about their energy habitats and empower them to have more influence over their power bill. While the PA's estimate in the draft plan that Active Demand Measures and other opportunities may not result in meaningful savings. NEEP believes that there is value in pursuing these programs both in energy savings, as new data and tools are available to implement these programs, and in customer benefits. Therefore, NEEP encourages the PA's to consider including more Active Demand Reduction programs in both their residential and commercial programs offerings.

New data is available to show that these programs deliver results and to better design these programs to ensure savings. The current practice to estimate savings from active demand reduction or other time specific programs is to use general energy usage loadshape estimates.[5] This is problematic because many factors influence how a single customer uses an appliance or the energy in their home. Some of which depend on if it is a workday or weekend, number of occupants, climate, and whether individuals work from home or commute.[6] To gain access to more granular information about energy usage, PA's need access to energy use load shapes of appliances and/or buildings. Massachusetts just completed the Three-Year Massachusetts Residential Baseline study a year-by-year residential baseline comparison in. This allows for a side-by-side breakdown of residential energy usage by appliance in Massachusetts. With this data, program administrators can make more informed decisions about how to change energy usage in the state. To see more about how this data can be used to enhance energy efficiency program planning see NEEP's Regional End Use Load Profile Priority Research and Data Sharing Recommendations.

Additionally, these programs provide more than energy savings through engaging consumers. When designed properly, regulation of large appliances (refrigerators, washers and dryers, and dishwashers) can result in less impacts on consumers, as unlike modifications to heating and cooling, these appliances will not significantly affect the comfort of the indoor environment.[7] Additionally, appliance based programs provide for an opportunity to use price signals to incentivize customers to participate in the programs helping to lower customer rates.[8] Additionally, as more utilities begin offering time-of-use rates and demand charges, utilities can employ this data to offer more customer-centric programs.

Further, while the PA's note that it is unlikely that AMI meters will be installed, the DPU has just ordered that all utilities file plans to install AMI smart meters as part of their infrastructure update plans on July 1, 2021.[9] There could be benefits in identifying and designing some pilot programs or initiatives that can inform this implementation and eventually use the installation of these meters to enhance energy efficiency programs.

Therefore, NEEP would like to encourage the PA's to re-consider the role and potential for active demand reduction and/or time of use rates programs, especially in residential programs for this cycle. When designed

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[5] Appliance Daily Energy use in New Residential Buildings, 723
[6] Appliance Daily Energy use in New Residential Buildings, 722.
[7] Appliance Daily Energy use in New Residential Buildings, 716.
[8] Mims Frick, Natalie, Wilson, Eric J, Reyna, Janet, Parker, Andrew S, Present, Elaina K, Kim, Janghyun, Hong, Tianzhen, Li, Han, & Eckman, Tom. End-Use Load Profiles for the U.S. Building Stock: Market Needs, Use Cases, and Data Gaps. United States. https://doi.org/10.2172/1576489.
[9]Order Addressing Form And Content Of: (1) Grid Modernization Plan Filings; (2) Electric Vehicle Proposals Required Under The Transportation Act, Chapter 383 Of The Acts Of 2020, And Other Electric Vehicle Program Proposals; And (3) Battery Energy Storage Proposals, Docket no.: 20-69-A, page 25, https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/13552861.

properly these programs provide benefits to the energy system and consumers and can help PA's and other regulators start to rethink the generation and use of energy in both energy efficiency and infrastructure planning proceedings.

Conclusion

NEEP appreciates the work of the EEAC and PAs so far in drafting the Mass Save 2022- 2024 Three Year Plan. NEEP hopes that these comments are able to provide additional insight and technical guidance to align the plan with state climate and equity goals and ensure that Massachusetts continues to lead the nation in energy efficiency work.

Sincerely,

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