Written Public Comments Submitted to the Grid Modernization Advisory Council

Below are the written comments submitted to MA-GMAC@mass.gov in advance of the November 9, 2023 GMAC meeting. This document includes written submissions of comments made at the two GMAC Listening Sessions on October 30, 2023, and November 1, 2023.

Submitted Comments:

1. **Amaani Hamid, Senior Regulatory Affairs Manager at Leap**, (amaani@leap.ac) – Received 10/12/23. *(Oral comments delivered at the 10/30/23 GMAC Listening Session)*
2. **Rachel Loeffler, Private Landowner in Eversource service territory,** (rachelloeffler@gmail.com) – Received 11/1/23. *(Oral comments delivered at the 10/30/23 GMAC Listening Session)*
3. **Cathy Kristofferson, Pipe Line Awareness Network for the Northeast, Inc.,** (cathy.kristofferson@gmail.com) – Received 11/1/23. *(Oral comments delivered at the 11/1/23 GMAC Listening Session)*
4. **Joint comments from environmental and climate advocates in Massachusetts,** submitted by Priya Gandbhir, Conservation Law Foundation, (pgandbhir@clf.org) – Received 11/1/23.
5. **Graham Turk, MIT Researcher and Eversource customer,** (gturk@mit.edu) – Received 11/2/23. *(Oral comments delivered at the 11/1/23 GMAC Listening Session)*
6. **Leslie Zebrowitz, Co-Chair of Newton EV Task Force,** (evtaskforcenewton@gmail.com) – Received 11/3/23.
7. **NRG Energy, Inc**, submitted by Greg Geller, Stack Energy Consulting, (greg@stackenergyconsulting.com) – Received 11/7/23.
8. **Cape Light Compact**, submitted by Margaret Downey, (mdowney@capelightcompact.org) – Received 11/7/23.

Comments from Leapfrog Power, Inc on ConnectedSolutions' export cap of 150% of peak site load

Leap enables distributed energy resource (DER) providers across North America to provide grid flexibility, delivering revenue for their customers and integrating additional demand-side resources into electricity systems. Leap began participating in ConnectedSolutions this year and already has over 2 MW of load providing grid services via ConnectedSolutions.

Last year, an export cap equal to 150% of peak site load (i.e. the 150% export cap) was implemented for storage assets with an Interconnection Standard Agreement after June 8, 2023 and capacity greater than 50 kW. I am reaching out to urge the Grid Modernization Advisory Council (GMAC) to support Leap's proposal of increasing the export cap to 600% for the 2024 delivery year, which we believe is a more appropriate cap for C&I storage sites as explained in more detail below. Although we firmly believe that having no export cap is the best approach to incentivize and extract the full value of storage assets, we find an export cap of 600% to be a reasonable compromise that addresses concerns the Massachusetts Department of Public Utilities (DPU) has regarding the installation of large batteries while supporting ConnectedSolutions' goal of leveraging these assets to develop a more sustainable grid.

Leap has a number of storage partners with prospective assets that are slated to participate in ConnectedSolutions during the 2024 season and beyond. These batteries are in the 300-500 kW range and have been installed in a wide range of C&I facilities, such as middle schools, for energy security, reliability, grid services, and decarbonization purposes. Programs like ConnectedSolutions enable the deployment of these assets by providing a cutting-edge incentive. However, the 150% export cap severely limits the value these facilities would receive, thus hindering the deployment of these assets at scale or making it difficult to justify the opportunity cost of participating in ConnectedSolutions.

It is our understanding that the 150% export cap was arbitrarily set in order to comply with D.P.U. 22-137, footnote 30 which states "The Department emphasizes the importance of designing energy efficiency measures that aim to primarily decrease on-site load rather than increasing export to the grid." In addition, we understand Joshua Kessler's concern raised during the Active Demand working group held on September 13th regarding out-of-state developers installing oversized batteries in order to take advantage of state incentives. However, we urge stakeholders to weigh this potential risk against the value and upside of removing or increasing the 150% export cap will provide to the many businesses that are installing large storage assets for reliability purposes.

Prior to the establishment of the 150% export cap, BTM storage exports in ConnectedSolutions was limited to the approved Interconnection Service Agreement capacity, which already provides the necessary guardrails to manage storage sites and would be logical to revert to. However, given the DPU's concerns, Leap believes that increasing the export cap from 150% to 600% would be more appropriate as it is based on actual use-cases of storage assets being deployed for clean reliability purposes. For example, at sites like hospitals and clinics (where peak electricity load can range between several hundred kW to upwards of 1 MW), emergency backup is critical and storage assets are a clean alternative to dirty backup generators. To effectively provide emergency backup, it is reasonable to assume that an asset would need to provide 24 hours worth of peak load capacity. Assuming a site with 100 kW of peak load and a 4-hour BTM storage asset, a 600 kW capacity would be necessary to meet 24 hours worth of backup generation (100 kW * 24 hours = 2,400 kWh and for a 4-hour battery to provide 2,400

kWh it would need to have a capacity of 2,400 kWh / 4 hours = 600 kW). As such, the current 50 kW threshold for exemption to the 150% export cap is prohibitively small. Given outages do not occur every day, C&I facilities must also consider other use cases of the asset including demand response participation in order to maximize the value of the asset to both the site and the grid, and should therefore be allowed to participate with its full capacity.

Massachusetts is a leader in developing and implementing innovative programs that leverage DERs for grid services and ConnectedSolutions is one of the country's premier programs, especially when it comes to utilizing behind-the-meter (BTM) storage assets. However, the 150% export cap creates significant barriers that will hinder growth of the commercial storage assets participating in the program. We urge the GMAC to provide comments to the Energy Efficiency Advisory Council (EEAC) in support of Leap's proposal of a 600% export cap for the upcoming year.

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Rachel Loeffler, Private Landowner in Eversource service territory,
(rachelloeffler@gmail.com) – Received 11/1/23. *(Oral comments delivered at the 10/30/23 GMAC Listening Session)*

GMAC (Grid Modernization Advisory Council) Public Comment Listening Session #1 October 30, 2023
Comments provided by Rachel Loeffler

Thank you, Build Trust and Local Relationships	Thank you for hosting this public forum, and accepting public comment on the process. I understand the enormity of the task facing the Commonwealth as it faces the energy transition and increased energy demand. All large-scale infrastructure projects succeed or fail based upon building trust, and local relationships. I am speaking today to request that the public process embrace the small town wisdom: Good neighbors talk to their neighbors and neighbors are stronger together.
Good neighbors talk face to face and take the time to walk through the specific plans.	My mayor [Town Manager] recently said, "When starting a new construction project, even though a project has the right to do the work on their own property, good neighbors talk to their neighbors, walk them through the plans, what to expect during construction, and what the final result of the work will be." I encourage the GMAC to consider a more direct approach to outreach with property owners where utility upgrades and construction takes place. A good neighbor knows that a notice in the mail is insufficient on its own to build trust and set expectations for projects of any complexity.
Reciprocity to Private Landowners	Private landowners who have granted utility company's access to the land are important collaborators and stakeholders in any improvement project. Those who provide an easement to the public utility, do so with a belief in the public good and shared benefit to all. They do so, expecting reciprocity in return-- That the Utility company will use this easement with the utmost care and thoroughness to protect the landowner, the land, and its future value.
Collective Knowledge	Private landowners and abutters have a detailed collective knowledge of the land, how it functions throughout the seasons, and what other features are nearby or adjacent to the proposed work. They should not be excluded from the process, but instead engaged early on to test assumptions of existing conditions and assist in vetting the viability of the final restoration of the land.
Conservation Commission	Historically, notice to a property owner or an abutter of proposed improvements has taken two forms. A general letter indicating the work is

or Letter	about to begin, and or when there is a wetland nearby, notification through the local Conservation Commission.
Unintended impacts	Though this is better than no communication, it is fairly passive and requires the land owner to be vigilant and aggressive in getting access to the proposed plans and work, to ascertain the extent of potential impact to their property.
Adversarial	In addition, it changes what could be a collaborative and proactive relationship, into one that may be adversarial, since any unforeseen negative consequences of the work can only be remediated after the work has begun, sometimes at great cost, and prolonged timelines.
No place to talk	Thirdly, it takes what could be a private discussion between the landowner and utility, into the public forum of the conservation commission. Which is not necessarily appropriate, as the commission's jurisdiction is the protection of wetlands and rare species not people, or private interests.
Wetlands more protected than private home/property owners	Currently the way the improvement work has been approached by the public utilities: Wetlands and Rare Species in the Commonwealth are more protected than individual homeowners and property owners granting easements to the utility company.
Access vs Ownership	Right of Access is not the same as ownership, and should be approached with care and integrity.
Protection	Actions taken through right of access should not diminish the value of the property or home, and should not cause short-term or long-term harm to private infrastructure on the homeowner's land.
New type of public engagement	As you consider a new public engagement process, please consider meeting individually with private landowners whose land you will be entering. During this meeting you should share your existing conditions plans, your temporary construction conditions, and restoration plans. These should be detailed in capturing the existing conditions and showing the limit of work, changes to terrain, management of stormwater, and engineering to protect adjacent areas from harm. The private landowners can help identify issues and complications unknown to the utility company because the utility company may lack detailed knowledge of the land.

Increased transparency Public availability of plans	These plans, and comments by landowners on the plans should be publicly available to all. Any promises made by utility company representatives should be met, with recourse to a government public agency, in case crews on the ground cut corners or lack sufficient information.
Closeout of project with Landowner and State Rep	The process may also benefit from a final walk through with the property owner after the work is complete. Ideally this meeting would take place with a state or local representative, who would thereby have an understanding of the work and its impact throughout their district.
Time Effort Investment	I realize that these modifications to engagement may require more time and effort upfront, but may save time and money in the long run, while strengthening relationships with the landowners granting access through their land.
Thank you	Again thanks for sharing your time and offering the opportunity to speak, and I look forward to neighborly collaboration in the years ahead.

Thanks again,
Rachel Loeffler

P·L·A·N
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November 1, 2023

Via email: MA-GMAC@mass.gov

Grid Modernization Advisory Council
c/o Department of Energy Resources
100 Cambridge Street, 9th Floor
Boston, MA 02114

RE: GMAC Public Listening Session #2

To Commissioner Mahoney and GMAC members,

Please accept this written version of my spoken testimony given for the Pipe Line Awareness Network for the Northeast at the GMAC Public Listening Session #2 from here in Ashby in Unitil's Fitchburg Gas & Electric service area where I am an electric ratepayer.

This testimony focuses on hybrid heating, the ESMPs reliance on hybrid heating as a method of reducing electric peak & needed grid mods, and the idea of incentivizing fossil-backed hybrid heating.

At the October 12th GMAC meeting, the Department's consultant presented recommendations during their review of sections 8,9 & 11 of the ESMPs. On slide 53 they listed a recommendation for MassSave to "Provide incentives that favor fossil-fueled supplement/hybrid ASHP over pure ASHP." Not shown on the slide, but presented was that this would accomplish a 95% emissions reduction. That 95% figure is reflected in Eversource's ESMP [at 412] for their modeling of 10, 20 and 30F hybrid heating switchover temperatures which shows "At 10 F, the total hours under back up system would be an average of 34 hours a year, achieving 95% of the GHG reductions as compared to a full replacement heat pump."

The Eversource ESMP [at 476] says "Hybrid Heating Solutions utilize a backup fuel source that can be burned during extreme cold conditions (See Section 8.2.1.3 for details) and therefore allow the re-dimensioning of ASHPs to smaller units that can operate due to a lower floor temperature at a higher COP." And that relying on those smaller unit hybrid solutions allow for "significant impact on the overall peak system demand of the electric system, allowing an increase in the system utilization, allowing for less distribution and transmission investments."

To me that sounds like decades of purposefully undersized ASHP installs reliant on a combusted fuel for cold weather heating only able to handle temps above whichever switchover temp was chosen. And less than the needed electric grid buildout.

No temperature switchover was given in any of the ESMPs, but they all discussed hybrid heating as a solution for reducing electric grid buildout.

National Grid's Long Range Forecast & Supply Plan in 22-149 approved yesterday[1] by the DPU contained a 30F switchover which according to the Eversource modeling [at 412] results in 845 hours a year and only 65% of the GHG emissions reductions.

Promoting fossil fuel use over full electrification is the wrong direction for rapid transition. It can only be viewed as least cost if you don't consider other impacts, some of which are detailed below.

Considering that ASHP have an expected service life of 20 or more years - is that 20 or more years bringing us right up to 2050 of combusted gas for winter heating?

What happens when the retained fossil heating system's life is over, or unexpectedly dies early, or anytime within the hybrid heat pump system's 20+ year service life? Does that mean a new fossil system for "backup" since that "re-dimensioned" smaller unit hybrid setup isn't capable of whole home heating? Will that be incentivized as well since incentives pushed the purchase in that direction in the first place?

I did see in the GMAC Meeting Summary "There was discussion about whether natural gas as a backup for heat pumps is a viable solution, particularly in light of concerns over ongoing maintenance of gas pipelines." For me, I wonder how delivered fuels can be a viable backup solution since those companies don't make their money on infrastructure. 34 hours of fuel sold per customer doesn't exactly sound like a viable business model.

I did see that at the following GMAC meeting on the 26th no check mark in your column for accepting that suggestion from the consultant but don't imagine that's the end of it. [*Ed. Thank you for explaining I misunderstood the checkmark system.*] Can the GMAC recommend against incentivizing fossil fuel based systems over full electrification?

The Seavey presentation[2] at the GSEP Working Group meeting on the 20th showed the costs those retained gas ratepayers will help payoff to be $34.4B to maintain the gas distribution system's leaks and old pipes. There are other capex expenses for gas expansions and resiliency work that the retained ratepayers will help payoff also all for the so-called backup heating. That seems a lot of money that could be put towards grid modernization not shoring up a crumbling pipeline system.

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[1] Order in D.P.U.22-149 *Petition of Boston Gas Company d/b/a National Grid to the Department of Public Utilities pursuant to G.L. c. 164, § 69I, for Review and Approval of its Long-Range Forecast and Supply Plan for the period of November 1, 2022, to October 31, 2027* "The Company assumed that the controls run the heat pump when outside temperatures are above 30 degrees Fahrenheit and switch to the gas system when temperatures are 30 degrees Fahrenheit or lower." at 21 available at https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18158955

[2] Dorie Seavey, PhD, *"GSEP's cumulative costs"* available at https://www.mass.gov/doc/seavey-gsep-cost-presentation/download

We all talk about decarbonization and how we need emission reductions, but we need more than reduction, we need emissions elimination.

All ESMP mentions of ASHP installs need to specify if whole home/full or hybrid/partial. 1 million whole home installs would be the elimination of emissions which is quite different than 1 million hybrid/partials which may only be reducing emissions by 65%.

Section 11 feels lacking for all three ESMPs. They are all pretty much the same text from the template so are thin and need work. It's unfortunate because better gas-electric coordinated planning to decommission the gas systems and build up the electric grid is needed rather than coordinating on hybrid heating to keep the $34B gas system in service.

Thank you for the opportunity to provide input to this critical undertaking.

Respectfully submitted,

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Via Electronic Delivery Only
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November 1, 2023

Commissioner Elizabeth Mahony, Chair
Grid Modernization Advisory Council
c/o Massachusetts Department of Energy Resources
100 Cambridge Street, 9th Floor
Boston, MA 02114

Subject: Comments on Electric Distribution Companies' Draft Electric Sector Modernization Plans

Dear Chair Mahony and Members of the Grid Modernization Advisory Council,

The undersigned respectfully submit these comments regarding the draft Electric Sector Modernization Plans ("ESMPs") filed by the Electric Distribution Companies ("EDCs")[1] with the Grid Modernization Advisory Council ("GMAC"). We thank the GMAC for your hard work to ensure that as Massachusetts moves toward its clean energy future – which will rely heavily on electrifying our buildings and transportation sectors – our electric distribution system is able to keep up with increasing demand and load growth with the necessary reforms made in a manner that protects the Commonwealth's environmental justice communities. To that end, we make the following recommendations with the hope that when the ESMPs are filed with the Department of Public Utilities ("DPU") in the next phase of this endeavor, these efforts will result in successful outcomes.

Legislative and Procedural Background

In recent years, Massachusetts climate law and policy has been strengthened significantly. In March 2021, the Global Warming Solutions Act ("GWSA") was updated by the enactment of An Act to Create a Next-Generation Roadmap for Massachusetts Climate Policy ("Roadmap Law"), under which the Commonwealth is mandated to achieve net-zero GHG emissions, or an 85% reduction below 1990 emissions levels, by the year 2050.[2]

In addition, in December 2020, Massachusetts' Executive Office of Energy and Environmental Affairs ("EEA"), in collaboration with Massachusetts Department of Environmental Protection ("MassDEP") and Massachusetts Department of Energy Resources ("DOER") released its 2050 Decarbonization Roadmap,[3] as well as its Interim Clean Energy and Climate Plan ("CECP") for 2030.[4] A final Clean Energy and Climate Plan for 2025 and 2030 was released on June 30, 2022

[1] The Massachusetts EDCs that have filed ESMPs with the GMAC are Eversource, National Grid, and Unitil, herein collectively "the EDCs" unless individually named.
[2] 2021 Mass. Acts Chapter 8.
[3] Mass. Exec. Office of Energy and Env't. Affairs, Massachusetts's 2050 Decarbonization Roadmap (2020), Available at https://www.mass.gov/doc/ma-2050-decarbonization-roadmap/download.
[4] Mass. Exec. Office of Energy and Env't. Affairs, Clean Energy and Climate Plan for 2030 (2020), Available at https://www.mass.gov/doc/interim-clean-energy-and-climate-plan-for-2030-december-30-2020/download

and included sublimits by sector for the first time as required by the Roadmap Law[5] and a Clean Energy and Climate Plan for 2050 ("2050 CECP") was released in December 2022.[6] Pursuant to the 2050 CECP, because it achieves Massachusetts' GHG emissions reductions mandate at the least cost, "[t]he dominant strategy to decarbonize transportation and buildings is electrification."[7] The 2050 CECP noted the establishment of the GMAC in An Act Driving Clean Energy and Offshore Wind and the GMAC's role in providing recommendations to the EDCs "to improve grid reliability and resiliency, further enable distributed energy resources and electrification, and minimize or mitigate costs and risks to ratepayers."[8]

In August 2022, the Massachusetts Legislature directed the DPU to require EDCs to develop and file ESMPs, the purpose of which is:

> to proactively upgrade the distribution and, where applicable, transmission systems to: (i) improve grid reliability, communications and resiliency; (ii) enable increased, timely adoption of renewable energy and distributed energy resources; (iii) promote energy storage and electrification technologies necessary to decarbonize the environment and economy; (iv) prepare for future climate-driven impacts on the transmission and distribution systems; (v) accommodate increased transportation electrification, increased building electrification and other potential future demands on distribution and, where applicable, transmission systems; and (vi) minimize or mitigate impacts on the ratepayers of the commonwealth, thereby helping the commonwealth realize its statewide greenhouse gas emissions limits and sublimits under chapter 21N.[9]

The Legislature also set forth elements which must be included in the ESMPs, and determined certain timelines and benchmarks for measuring success.[10] In addition to the legislative directives for the GMAC, the DPU has reviewed petitions from the EDCs regarding grid modernization and has pre-authorized certain grid-facing and customer-facing investments, while costs from grid-facing investments will be recovered annually outside of the usual ratemaking process.[11]

The GMAC has taken the approach of utilizing guiding questions to evaluate the EDCs' draft ESMPs. The intent of using these guiding questions is to ensure that the resultant ESMP filings at the DPU will ensure results that include equity both in process and in outcomes; least-cost investments in the electric distribution system or alternatives; achievement of Massachusetts' greenhouse gas ("GHG") emissions limits and sublimits under the GWSA; optimization of customer benefits and cost-effective investments; and minimization or mitigation of impacts on

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[5] Mass. Exec. Office of Energy and Env't Affairs, Massachusetts Clean Energy and Climate Plan for 2025 and 2030 (Jun. 30, 2022), available at: https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download.
[6] Mass. Exec. Office of Energy and Env't Affairs, Massachusetts Clean Energy and Climate Plan for 2050 (Dec. 2022), available at: https://www.mass.gov/doc/2050-clean-energy-and-climate-plan/download.
[7] 2050 CECP at xiv.
[8] 2050 CECP at xvii.
[9] M.G.L. c. 164, §92B.
[10] M.G.L. c. 164, §92B.
[11] MA DPU Docket Nos. 21-80-A and -B, 21-81-A and -B, 21-82-A and -B

ratepayers, especially low-income ratepayers. The undersigned agree with these questions as providing appropriate guidelines for the GMAC's review of the ESMPs.

Since the endeavor to modernize the electric distribution system is rooted in the need to achieve Massachusetts' legal mandate to achieve net-zero GHG emissions under the Roadmap Law, each ESMP which moves from the GMAC process to review at the DPU must demonstrate achievement of such GHG emissions limits. Additionally, impacts on ratepayers in general should be minimized or mitigated through the use of cost-effective and least-cost investments – so long as these investments are demonstrated to lead the Commonwealth to achievement of its GHG emissions reduction target – but it must also be understood that low-income ratepayers and members of environmental justice communities need additional protections to protect these ratepayers from bearing the burden of the costs of transitioning to Massachusetts' clean energy future.

The ESMPs Require Addition and Clarification of Information Regarding Certain Parameters and Technologies

Once filed at the DPU and approved, the ESMPs will provide a path forward for the modernization of electric distribution grid infrastructure throughout Massachusetts. Accordingly, each EDC's ESMP must fully flesh out the information needed to undertake this effort from the start, including thorough consideration of emerging technologies such as DERs and Battery Storage, as well as the demand implications of electrification demonstrated by load forecasting.

1. The draft ESMPs should be supported with additional information including but not limited to:
    a. timing and success of interconnection queue applications;
    b. battery storage and DERs, including third-party assets;
    c. seasonal and geographic impacts on the system; and
    d. outreach to interconnection and resource stakeholders.
2. Consistency among the EDCs' ESMPs is necessary to ensure a just and efficient transition to our clean energy future.
3. As the EDCs work through finalizing their ESMPs, they should continue to look forward to next steps, including anticipating increased appetite for clean energy resources from consumers, ensuring that the grid itself does not remain a barrier to the clean energy transition.

In addition to the guiding questions prepared by the GMAC's consultant, Synapse Energy Economics, the undersigned support the comments of Advanced Energy United and Northeast Clean Energy Council ("NECEC") filed in July 2023, including the authors' request to include a provision for outreach to interconnecting customers in Section 3 ("Stakeholder Engagement") of the ESMPs.[12] The undersigned support the recommendation of Advanced Energy United and NECEC that the EDCs provide additional information in Section 4 ("Current State of the Distribution System") about geographic parameters as well as information about the timing and

[12] Comments of Advanced Energy United and NECEC (July 13, 2023) at 1-2, available at: https://www.mass.gov/doc/gmacpublic-comments-on-edcs-draft-outline-advanced-energy-united-northeast-clean-energy-council/download.

success of interconnection queue applications, including the time between the filing, approval, and operation. The ESMPs should also address battery storage, seasonal issues, system peaks, and congestion in Section 5 ("5- and 10- Year Electric Demand Forecast"), as these are considerations which are anticipated to have significant impacts on the region's evolving electric grid.[13]

In its ESMP, Eversource does not seem to address the July 2023 recommendations from Advanced Energy United and NECEC regarding the need for outreach to interconnection customers. The undersigned request that this be added to their ESMP. Eversource also did not provide much by way of additional clarity regarding the interconnection queue process including the timing between filing, approval, and operation. Eversource did, however, note changes to the interconnection process for Distributed Energy Resources ("DERs") which were made to address significant interconnection queue backlogs by developing a framework for more comprehensive solutions which modified the DER planning process to standardize and expedite interconnection studies in the planning regions.[14] Similarly, National Grid's ESMP will benefit from additional information regarding battery storage, seasonal issues (including peaking), and impacts to load. Although these issues are raised in Section 5 of National Grid's ESMP, they are only discussed at a very high level.[15] Like Eversource and National Grid, Unitil did not address stakeholder process for interconnection customers. Unitil also did not address the recommendations regarding the interconnection queue. Further, although it provided some detail on seasonal peaking and DERs, Unitil did not widely explore battery storage or electric vehicles in its 5- and 10- year electric demand forecasting, noting slow adoption.[16] National Grid and Unitil should update their ESMPs to provide information regarding the interconnection process for DERs or to explain how they plan to address this issue.

The undersigned also support the July 13, 2023 comments of Cape Light Compact regarding the importance of reporting and metrics, including how the EDCs will coordinate reporting across its different dockets to improve outcomes from decisions regarding matters such as time-varying rates, performance-based ratemaking, energy efficiency, advanced metering, electric vehicles, peak demand reductions.[17]

Overall, the ESMPs should provide a framework for how the EDCs will move toward our new, modern electric grid, and should only include recommendations and steps that will ensure rapid, responsible progress toward Massachusetts' clean energy future. To that end, recommendations which serve to backpedal on this progress cannot be a part of this work. For example, assertions that fossil fuel backups are needed to ensure reliability of heat pumps[18] are not only false, but also perpetuate misinformation about the reliability of electrification technologies. Additionally,

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[13] Comments of Advanced Energy United and NECEC (July 13, 2023) at 2-3, available at: https://www.mass.gov/doc/gmacpublic-comments-on-edcs-draft-outline-advanced-energy-united-northeast-clean-energy-council/download.
[14] Eversource ESMP at 115.
[15] National Grid ESMP at 197 et seq.
[16] Unitil ESMP at 51 et seq.
[17] Comments of Cape Light Compact (July 13, 2023) at 2, available at https://www.mass.gov/doc/gmacpublic-comments-on-edcs-draft-outline-cape-light-compact-jpe/download.
[18] See slide 9, Synapse presentation to GMAC on Oct. 12, 2023, available at: https://www.mass.gov/doc/gmac-meeting-slides-10-12-2023/download.

the EDCs must consider the value of not only their own infrastructure, but all assets which may be incorporated into the electric distribution grid, including third-party DERs. With these changes, the ESMPs will provide robust and detailed planning for Massachusetts' future electric grid.

The Modernized Electric Distribution Grid Must be Designed and Constructed to Withstand the Already Evident Impacts of Climate Change

While we continue to work to reduce GHG emissions and limit global warming to 1.5 degrees Celsius, the unfortunate reality is that the impacts of climate change, including extreme weather and increased frequency and severity of storms, are upon us. As Massachusetts transitions to a clean energy economy by electrification of our buildings and transportation systems, the durability and resilience of the electric distribution grid becomes more critical than ever before. Key to ensuring a resilient and reliable electric grid is consistency among the EDCs regarding best practices, especially as related to planning for hazard mitigation and adaptation.

1. The ESMPs should be made consistent regarding planning for mitigation of and adaptation to climate hazards including storms, wind, flooding, and extreme temperatures.
    a. Consistent standards regarding substation and infrastructure siting and construction should be utilized.
2. Reliability and resilience should be elevated as priorities with the intent of eventually mandating standard practices and procedures for the EDCs to utilize when addressing reliability and resilience.

As with people around the world, Massachusetts residents rely on the use of electricity in their daily lives for cooking, working, lights, heat, recreation, transportation, and more. As Massachusetts transitions to a clean energy future based heavily on electrification of buildings and transportation, the need for our electric system to be reliable and resilient will only grow. Accordingly, it is vital that the modernized electric distribution grid be designed for longevity to avoid repeatedly incurring replacement costs; to withstand increased strain from higher load; and to endure climate hazards such as flooding, heat waves, cold snaps, wind, and storms.

Planning for Mitigation of and Adaptation to Climate Hazards

In its Rulemaking Petition to the DPU, submitted on May 3, 2023, CLF has recommended the addition of 220 CMR 10.000: Hazard Mitigation and Climate Plans to the DPU's regulations.[19] Under the proposed regulation, all investor-owned utility companies would be required to develop Hazard Mitigation and Climate Adaptation Plans ("HMCAPs") which include, at a minimum: an evaluation of climate-related risks for the company's service territory including changes in temperature extremes, humidity, precipitation, sea level rise, and extreme storms; an assessment of potential impacts of climate change on existing operations, planning, and physical

[19] CLF Petition for MA DPU Rulemaking to Establish Regulations to Implement the GWSA and An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy (May 3, 2023), at 47, available at: https://www.clf.org/wp-content/uploads/2023/05/Conservation-Law-Foundation-GWSA-DPU-Petition-May-3-202333.pdf.

assets; identification and prioritization of climate adaptation strategies; an evaluation of costs and benefits against a range of possible future scenarios and climate adaptation strategies; and an implementation timeline, with benchmarks, for making changes in line with the findings of the study to existing infrastructure to ensure reliability and resilience of the g[20] Identification of the criteria noted above will serve to ensure that investor-owned utility companies are appropriately positioned to take on the unavoidable impacts of climate change which will impact our energy systems.

In 2018, the Commonwealth developed the Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan ("SHMCAP") in compliance with Governor's Executive Order 569, as a comprehensive plan to integrate adaptation strategies for climate change with general hazard mitigation planning and maintaining Massachusetts' Stafford Act eligibility for federal disaster and hazard mitigation funding.[21] The SHMCAP recommended 108 actions across five main goals: to integrate programs and build institutional capacity; to develop forward-looking policies, plans, and regulations; to develop risk-reduction strategies for current and future conditions; to invest in performance-based solutions; and to increase education, awareness, and incentives to act.[22] Although the SHMCAP provides an adequate starting point for the EDCs' evaluation and planning of resilience measures for Massachusetts' electric distribution grid, enactment of CLF's proposed regulation requiring investor-owned utilities to develop their own HMCAPs will allow for more precision in planning and enable utilities to keep their plans more up-to-date than only having a common plan across the Commonwealth allows. Accordingly, we recommend that while action from the DPU on CLF's petition is awaited, the GMAC instructs the EDCs to incorporate the principles of the HMCAPs, noted above, into their resilience planning in Section 10 of the ESMPs. As demonstrated below, the three EDCs participating in the ESMP process express a range of design standards; we encourage the GMAC to recommend changes which bring these design standards into alignment, as a broad statewide framework will provide necessary consistency and enable the EDCs to adhere to best practices. In addition to recommending incorporation of the principles regarding climate resilience included in CLF's Rulemaking Petition to the DPU, we note the following.

Utility Specific Comments

Eversource's ESMP relies on the SHMCAP as well as its own Climate Vulnerability Study, which significantly expands the scenarios envisioned in the SHMCAP, looks at extreme temperature, heavy precipitation, drought, sea level rise, and storm surge through 2080. Eversource anticipates a reduction in storm costs with implementation of their planning.[23]

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[20] Conservation Law Foundation, *CLF Petition for MA DPU Rulemaking to Establish Regulations to Implement the GWSA and An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy* (May 3, 2023), at 47-48, available at: https://www.clf.org/wp-content/uploads/2023/05/Conservation-Law-Foundation-GWSA-DPU-Petition-May-3-202333.pdf.

[21] MA Executive Office of Energy and Environmental Affairs ("EEA"), *Massachusetts State Hazard Mitigation and Climate Adaptation Plan*, September 2018, available at: https://www.mass.gov/files/documents/2018/10/26/SHMCAP-September2018-Full-Plan-web.pdf.

[22] MA Executive Office of Energy and Environmental Affairs ("EEA"), *Massachusetts State Hazard Mitigation and Climate Adaptation Plan*, September 2018, at 12, available at: https://www.mass.gov/files/documents/2018/10/26/SHMCAP-September2018-Full-Plan-web.pdf.

[23] Eversource ESMP at 489 et seq.

Eversource rightly recommends that the SHMCAP action titled "Regional power grid planning and incorporation of climate change data" be elevated from a medium priority action to a high priority action and the Massachusetts EDCs should be added as partners for the action titled "Build energy resiliency".[24] As more aspects of Massachusetts residents' daily lives become reliant on electricity, it has become increasingly critical that EDCs make necessary upgrades to enhance the electric grid's reliability and resilience to minimize the frequency and duration of outage events. In 2023, Eversource published an updated Climate Adaptation and Mitigation Plan, which mentions the company's vulnerability assessment and that the company plans to incorporate lessons from that assessment into transmission and distribution infrastructure design and standards.[25] The Climate Adaptation and Mitigation Plan is thus more of an update on business-as-usual reliability work and a statement of intent to do actual climate adaptation planning. This statement of intent to do adaptation planning is echoed in the ESMP: "By the end of 2024, the Company plans to translate these Climate vulnerability study results into updates to its Distribution Planning and Equipment Design standards."[26] While we appreciate the stated intention to plan for a resilient electric grid, this planning must be mandatory and enforceable, and performed with uniformity and oversight provided by establishment of a regulation for HMCAPs.

Eversource identified 318 critical impacted zones and established[27] By Eversource's calculation, undergrounding the most critically impacted areas of distribution lines will result in a 98% improvement of the System Average Interruption Duration Index ("SAIDI"), but costs about twice as much per mile as the next most expensive solution (aerial cable).[28] The up-front cost of undergrounding should be compared with cost data for operations and maintenance of the various solutions to determine how frequently each would require repair or replacement. Finally, regarding the elevation of substations, we would like to see additional Rate Map ("FIRM") used to identify locations for differing elevation standards; specifically when the map was last updated and when the Company's standards used in determining substation elevation were last updated[29]

National Grid also notes that it regularly reviews and updates its distribution construction standards with a focus on changes designed to improve distribution system performance by reducing the number of customers impacted by outages, reducing the duration of outages, and mitigating the impact on customers during outages.[30] National Grid followed a four phase framework regarding vulnerability risk assessment, the phases being: validation of climate science, hazards, and assets in scope; assessment of vulnerability of each asset to each hazard; prioritization of assets identified in Phase 2; and development of adaptation measures to address assets with the highest risk[31] – a similar concept to Eversource's identification of critical impact zones and design of a portfolio of resilience solutions. National Grid also notes the benefits of undergrounding distribution lines but identifies the risk to the above-ground components of the

[24] Eversource ESMP at 496.
[25] Eversource Climate Adaptation and Mitigation Plan, available at: https://www.eversource.com/content/docs/default-source/community/eversource-camp-plan.pdf.
[26] Eversource ESMP page 25
[27] Eversource ESMP at 503.
[28] Eversource ESMP at 504.
[29] Eversource ESMP at 509.
[30] National Grid ESMP at 360.
[31] National Grid ESMP at 377.

system near coastal zones.[32] National Grid provides electric distribution services to much of the coastal region north of Boston, as well as some coastal areas south of Boston and most of Worcester County.[33] Coastal flooding also poses a threat to substations, and National Grid has begun discussion to increase their flood mitigation design criteria to a more stringent criteria in anticipation of increased flood levels in the future.[34] National Grid identifies moving infrastructure inland[35] as an option for alleviating the risk associated with coastal flooding. In addition to the assessments conducted so far, and as noted above, we recommend developing a full HMCAP to fully identify the risks, vulnerabilities, and potential solutions needed to develop a reliable and resilient electric distribution system and to provide a method to begin standardizing and coordinating resilience efforts across the EDCs' service territories.

Unitil notes that it has identified the same risks to its infrastructure as contained in the SHMCAP.[36] Unitil identifies solutions via its Storm Resiliency Program, which differs from its vegetation management program by reducing tree exposure along certain circuits to improve performance during major storms, but does include removing all overhanging vegetation and performing intensive hazard tree review and removal.[37] Unitil remarks that it did consider undergrounding as an option for hardening its electric distribution system but indicates it was deterred by the high cost of burying the electricity lines.[38] Noting the significant benefits of trees, especially in urban areas such as Fitchburg , where the shade and air quality benefits of tree canopy are critical to protecting communities from the impacts of climate change. Accordingly, with the understanding that Unitil is concerned about incurring significant costs associated with undergrounding, that the company look to strike a balance between tree removal and undergrounding.

Any Steps Toward Achievement of Massachusetts Climate Goals Must Center on Principles of Environmental Justice

The DPU, which will ultimately review these ESMPs, is required to consider environmental justice in its decisionmaking, in addition to GHG emissions reductions, costs, and reliability. While environmental justice has been treated as a procedural box to check, the reality is that protection of our most vulnerable communities is key to achieving a just transition to Massachusetts clean energy future. All efforts to eliminate GHG emissions and develop a modern electric grid must center the needs of environmental justice communities, in terms of cost, impacts, and procedure.

1. The ESMPs should all include information regarding the EDCs' efforts to incorporate principles of environmental justice into their planning, regardless of the specific makeup of their service territories.
2. The ESMPs should provide additional information regarding barriers for grid

[32] National Grid ESMP at 369.
[33] Electricity Providers by Municipality, available at https://www.mass.gov/doc/map-of-electric-company-electric-service-territories-by-municipality/download.
[34] National Grid ESMP at 371.
[35] National Grid ESMP at 371.
[36] Unitil ESMP at 151.
[37] Unitil ESMP at 159-160.
[38] Unitil ESMP at 160.

modernization for low and middle-income consumers as well as renters and multi-family dwellings as well as solutions for such impediments.

3. The EDCs and DPU should implement the lessons of the Attorney General's Stakeholder Working Group regarding public participation and engagement with the public for proceedings before the DPU.

All electric ratepayers will be impacted by the significant investments in electric infrastructure necessary to eliminate GHG emissions in the Commonwealth. With careful and diligent planning, however, these expenses can and should be minimized or mitigated using cost-effective and least-cost investments. Member of environmental justice communities – who have borne the burdens of poor infrastructure siting and planning and who suffer disproportionately from the impacts of increased energy rates – must be provided with protections over and above the general population.

Utility Specific Recommendations for Improvement of Environmental Justice Aspects of the ESMPs

In its ESMP, Eversource adopts state definitions of terminology relating to environmental justice, including "energy benefits", "environmental benefits", "environmental justice", "environmental justice population" and "meaningful involvement" and defines equity as "engaging all stakeholders, including Eversource's customers and communities with respect and dignity while working toward fair and just outcomes, especially for those burdened with economic challenges, racial inequity, negative environmental impacts and justice disparities."[39] While Eversource's definition of "equity" is a good starting point, we encourage the company to tweak the language to be more direct regarding provision of beneficial outcomes for members of environmental justice populations and to also incorporate their customers' access to clean energy resources into this definition. In general, Eversource appears to have thought through some ways to improve environmental justice outcomes for communities, including providing turnkey installation services for EV chargers for residents of environmental justice communities or customers enrolled in the low-income discount rate as well as rebates for EV chargers for multi-unit dwellings and public and workplace EV charging.[40] Eversource also indicates a plan to focus workforce development efforts toward environmental justice communities.[41] To round out the company's consideration of environmental justice matters in its ESMP, we recommend additional consideration of incentives and planning for increased energy efficiency and grid modernization upgrades to tenant-occupied dwellings, as renters generally lack the funds, knowledge, or incentive to undertake such efforts and landlords may require mandatory conversions to be compelled to act.

National Grid includes its draft Equity and Environmental Justice Policy and Stakeholder Engagement Framework in the appendices to its ESMP and seeks feedback on this framework.[42] The framework is "intended to articulate [National Grid's] commitments to centering equity and environmental justice, building on [its] existing outreach and engagement practices, and

[39] Eversource ESMP at 35.
[40] Eversource ESMP at 279.
[41] Eversource ESMP at 397.
[42] National Grid ESMP at 30.

leveraging input from environmental justice stakeholders … EEA and the Attorney General's Office."[43] National Grid notes the need for new efforts to fully integrate equity and environmental justice into its operations, planning, programs, and business operations and identifies multiple efforts targeted at stakeholder engagement, such strengthening the company's relationship with indigenous communities in its service territory, providing economic incentives for energy efficiency and EVs, and workforce development.[44] We look forward to learning more about these efforts and providing feedback as additional information is provided. Regarding revisions to its ESMP before filing with the DPU in 2024, we encourage National Grid to work through Sections 5 and 6 and incorporate discussion on how environmental justice considerations will be addressed in its demand forecasting and planning processes, as currently those sections lack this information.

Unitil discusses stakeholder engagement with environmental justice communities in Section 3 of its ESMP as the other EDCs do. However, the only other mention of environmental justice appears in Section 10 "Reliable and Resilient Distribution System".[45] We understand that a large part of Unitil's electric distribution service territory is comprised of environmental justice populations, but nevertheless encourage the company to go back through its ESMP, especially the sections regarding electric grid demand and planning over the next five to ten years, and add detail about whether and how consideration of environmental justice principles played a role in development of its ESMP.

Recommendations for Improvement of Process Relating to the ESMPs

Each of the EDCs addressed stakeholder outreach to environmental justice communities in Section 3.5 of their ESMPs. In developing their stakeholder outreach, the EDCs can look to the efforts of climate and environmental justice advocates as well as state and local governments. In Massachusetts, two notable examples of this important work exist. Beginning in 2021, the Massachusetts Attorney General's Office ("AGO") convened a Stakeholder Working Group ("SWG") with members from environmental and climate justice advocacy groups[46], which discussed barriers to participation in energy regulatory proceedings. The group convened regularly for almost two years, and in May 2023 their work culminated in the release of the report "*Overly Impacted & Rarely Heard: Incorporating Community Voices into Massachusetts Energy Regulatory Processes*"[47] which provides recommendations for improvement of the energy regulatory process as the Commonwealth moves toward a decarbonized energy future. The report included input from public surveys, interviews, and multiple focus groups, all of

[43] National Grid ESMP at PDF page 412.
[44] National Grid ESMP at PDF page 413.
[45] Unitil ESMP at 168.
[46] The SWG participants included GreenRoots, National Consumer Law Center, Massachusetts Climate Action Network, Alternatives for Community & Environment, Regulatory Assistance Project, Conservation Law Foundation, Vote Solar, Environmental Defense Fund. Support was also provided by Strategy Matters and Neighbor to Neighbor.
[47] Mass. Atty. Gen. "Overly Impacted & Rarely Heard: Incorporating Community Voices into Massachusetts Energy Regulatory Processes" (hereafter "SWG Report") (May 2023), available at: https://www.mass.gov/doc/overly-impacted-and-rarely-heard-incorporating-community-voices-into-massachusetts-energy-regulatory-processes-swg-report/download.

which provided valuable insight into the public perception and understanding of energy regulatory processes.

Also in 2021, the DPU opened an inquiry on its own motion into procedures for enhancing public awareness of and participation in its proceedings.[48] In this matter, climate and environmental justice advocates provided insights on how proceedings can be more accessible for the public to understand both the nature and impact of project applications and encouraging public reactions to such project applications. We encourage the EDCs to turn to the recommendations outlined in filings in that docket for additional recommendations on how to engage with environmental justice communities.

Before the EDCs can establish regulations for ensuring energy infrastructure procedures include meaningful engagement with the public, the barriers to such meaningful engagement must be identified. The EDCs should apply the lessons learned from the SWG's performance of this exercise and the DPU should examine the appropriateness and adequacy of this review. The SWG put forth recommendations for reforming the Commonwealth's approach to public engagement in energy infrastructure proceedings, first identifying barriers to public engagement in general, and then identifying specific procedural steps for public engagement, such as intervention, hearings, and adjudication.[49] The SWG recognized that due to its technical complexity, interested persons needed to expend a significant amount of time and resources to gain a working knowledge of energy proceedings. Accordingly, the SWG issued a number of recommendations, such as non-technical, plain language summaries of documents in proceedings, website improvements, increased staffing and interaction between staff and members of the public, and free access to transcripts.[50] The barriers faced by interested parties will vary from project to project and state to state and there may be situations where discretion or flexibility is warranted. The EDCs may find, as the SWG did, that the public wants to see more transparency in proceedings so that they can more easily participate in and impact proceedings.[51] One way to improve efficiency and increase the likelihood of successful outcomes is to increase pre-filing community engagement notices before undertaking a particular project.[52]

Notice Requirements

In addition to meeting legal notice requirements, the EDCs should distribute notices by posting language-appropriate materials in gathering spaces that are commonly visited by the public. This may include places of worship, community and senior centers, grocery stores, schools, laundromats, post offices, bus and train stations, and large multi-unit residential buildings. Such notices should be printed on brightly colored paper and written in large text to draw attention. In some cases, social media may be a useful tool in providing notice. In addition to publication on the project proponent's social media[53], the information can be shared by other interested parties such as municipal bodies, elected officials, community-based organizations ("CBOs"), and

[48] See Dept. of Public Util. Docket No. 21-50, *Vote and Order Opening Inquiry* (2021).
[49] SWG Report at 2.
[50] SWG Report at 6.
[51] SWG Report at 6.
[52] SWG Report at 7.
[53] SWG Report at 33, 38, 71.

others. News outlets also typically have associated social media accounts where notice can be published. On social media, as with other formats, the notice document should be translated into the appropriate languages for the communities expected to be impacted by the activity.[54]

The EDCs should also engage with municipal legislative bodies, municipal regional and planning commissions, local elected officials, tribal serving organizations and tribal communities (both council and programs, and members), and small businesses in areas relevant to a particular proceeding to identify CBOs that should receive public notices. Environmental NGOs and CBOs are often already engaging with local stakeholders, such as municipal legislative bodies, municipal and regional planning commissions, local elected officials, tribal serving organizations and tribal communities (both council and programs, and members, and small business to identify best practices for holding public hearings in a given community. The EDCs should reach out to all such groups and take advantage of the existing connections to affected communities to ensure that outreach extends to as wide an audience as possible. This outreach process should include building relationships with environmental justice populations using trusted advocates to foster open and respectful communication, to better understand and apply community-specific best practices.

Hearings

A lingering impact of the COVID-19 pandemic, virtual meetings and hearings have taken a strong grasp on the way we do business and, indeed, how we conduct our everyday lives. This has had great benefits for public process, as virtual hearings have enabled many people who would otherwise be unable to engage with public meetings and hearings due to obligations such as work, childcare needs, household chores, or difficulty commuting to a meeting place to listen and participate in such proceedings.[55]

Virtual or hybrid hearings must remain the norm. Virtual access has promoted greater and more equitable participation in public bodies.[56] Hybrid hearings allow interested parties to attend hearings in person if they are able while still ensuring that members of the public who cannot attend in person can still participate. Additionally, the Department should provide multiple time options, including times during non-business hours, such as weekends and evenings, for public hearings to ensure that people who cannot leave work to attend a hearing or who work multiple jobs can participate.

The EDCs should ensure that for any in-person hearings, the site that is chosen meets requirements for ADA[57] accessibility, is close to public transportation if available or has ample and low-cost parking, is equipped for a hybrid component, and is set up in a way that facilitates discussion and participation. Tools such as headphones should be available for those who are

[54] SWG Report at 32.
[55] SWG Report at 52.
[56] *See, e.g.*, Kim Driscoll, *Legislature Should Not Be Exempt from Open Meeting Law*, BOS. GLOBE, Mar. 29 2021, https://www.bostonglobe.com/2021/03/29/opinion/legislature-should-not-be-exempt-open-meeting-law/?p1=BGSearch_Overlay_Results ("The collective use of virtual meeting tools by so many Massachusetts residents has made it easier for residents of all ages to engage on issues they care about without having to drive to a hearing at city hall or hire a babysitter to attend a school committee meeting.").
[57] Americans with Disabilities Act of 1990, 42 U.S.C. § 12101 et seq. (1990).

hard of hearing. An ASL interpreter should be available for any persons in the audience requiring sign language translation. ASL and language interpreters should be providing real-time, live interpretation of the hearings, as opposed to reading and translating from a record.

The interpretation should be carried out as soon as the event begins. It is essential to maintain the quality of translation and interpretation services. We recommend a list of specific service agencies which project proponents may use to meet their needs and ensure the accuracy of translations and interpretation for public involvement. Subpar services such as an interpreter lacking the skills or technical knowledge needed to accurately capture the information causes significant inequities in public participation. Identifying language services providers with the technical knowledge needed to translate adequately is necessary to ensure the public's understanding of proposed activities and therefore the ability to provide feedback.

Interpreters should receive all presentation materials in advance and, as discussed above, must possess subject matter expertise in the areas of energy, energy infrastructure, permitting, siting, and utilities. All materials distributed or displayed at these meetings, including agenda, notes, and slide presentations, must be provided in all languages simultaneously.

Although pre-registration should be encouraged as a useful planning tool, people who have not pre-registered should not be precluded from commenting at public hearings, whether in person or remotely. Allowing members of the public increased flexibility to make comments despite prior pre-registration ensures equitable and robust public participation.[58]

Finally, the EDCs should maintain webpages that provide clear instructions for how the public can engage in process.[59] This webpage should include instructions for how to pre-register for participation in a public hearing along with accessibility resources.

Language Access

The EDCs should develop language access protocols[60] and ensure translation of public notices and for hearings wherever an impacted community includes a population that is more vulnerable to the adverse impacts of climate change or that has been historically burdened[61] by the energy infrastructure siting. Generally, these communities have high prevalence of BIPOC populations, low-income individuals and families, and limited English proficiency. Although environmental justice populations can be identified by recognizing that a portion of their members have limited English proficiency, this designation does not specify which language or languages are spoken in the community, so determining what languages a notice or proceeding must be translated into needs to occur on a case-by-case basis. The EDCs should use publicly available data so that the approach of determining which languages require translation is replicable and aligns with the

[58] SWG Report at 54.
[59] *See, e.g.*, *How to Participate at the Commission*, MAINE PUBLIC UTILITIES COMMISSION, https://www.maine.gov/mpuc/about/how_to_participate.shtml.
[60] SWG Report at 40.
[61] 88 FR 33240, 33413 (2023).

Massachusetts definitions of "environmental justice" and "environmental justice principles"[62].

To determine which and how many languages notices should be translated into, the EDCs should carefully consider which communities are impacted by the matter in question and determine the make-up of those communities and coordinate the simultaneous release of project documents in English and any necessary languages to ensure equal comment opportunities to limited English proficient residents.

Conclusion

We thank the GMAC and the EDCs for their efforts toward the Commonwealth's clean energy future. As noted in the 2050 CECP, aggressive electrification of buildings and transportation in Massachusetts is the most cost-effective means to achieving our GHG emissions reduction mandate. The increase in electric load and uptick in reliance on the electric grid to provide energy for our daily lives necessitates this thorough and timely review of the current state of the electric distribution system and what actions must be undertaken to ensure a clean, resilient, reliable, and affordable grid for the future. It is clear from the EDCs' ESMP filings that the time spent working through drafting with the GMAC has been fruitful, and we believe that with incorporation of the recommendations contained herein and continued engagement moving forward, the ESMPs will be strengthened for their filing at the DPU in 2024.

Thank you for your time and attention to these comments. Please reach out to Priya Gandbhir (pgandbhir@clf.org) for any additional discussion on the ESMPs and grid modernization in Massachusetts.

Very truly yours,

Priya Gandbhir, Senior Attorney, *Conservation Law Foundation*
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David Schreiber, Vice President, *Jewish Climate Action Network of Massachusetts*
Marcia Cooper, President, *Green Newton*
John R. Cook, Jr., *individually*

These comments were drafted and coordinated by Conservation Law Foundation.

[62] M.G.L. Ch. 30, § 62; *see also* Mass.gov, Executive Office of Energy and Environmental Affairs, *Environmental Justice Populations in Massachusetts*, available at https://www.mass.gov/info-details/environmental-justice-populations-in-massachusetts#what-isan-environmental-justice-population (last accessed 7/24/2023).

Graham Turk
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11/2/2023
To: MA-GMAC@mass.gov

Dear Commissioner Mahony & GMAC Members,

I am writing to comment on Eversource's Electric Sector Modernization Plan (ESMP). I am an Eversource customer and power systems researcher at Massachusetts Institute of Technology. Prior to my current role, I worked on the power supply and innovation teams at Green Mountain Power, an electric distribution utility in Vermont. I delivered a version of these comments during the second listening session on November 1, 2023.

Motivation
This concern comes from the fact that under today's rates, an average Massachusetts home will spend more money on heating and cooling after installing a heat pump system; this is a major deterrent to electrification and will prevent the state from meeting its climate targets. Excessive and unnecessary investment in the distribution grid (whose costs are recovered from all customers in rates) will place these goals even further out of reach.

Introduction
Eversource's ESMP systematically overlooks rate design and demand flexibility as alternatives to capital-intensive capacity upgrades. Their demand forecasts assume flat volumetric rates, which many states are transitioning away from because they are inefficient, regressive, and not cost-reflective. If approved, Eversource's plan will push millions of dollars of unnecessary spending onto Massachusetts grid users, increasing energy burdens and disincentivizing electrification.

Evidence for Rate Design's Effectiveness
Time-varying electricity rates, enabled by the deployment of advanced meters, provide opportunities for customers to reduce their costs by shifting demand to "off peak" hours when the grid is not congested. This is especially true for customers who adopt electric vehicles (EVs), which can be programmed to delay charging to later hours. EV charging is significantly more price-responsive than other household loads, and nudges alone are not enough to get EV owners to change their charging behavior (i.e., incentives are required).[1] Rate design is also an important tool for reducing the operating costs of heat pumps. Using actual metered data, Sergici et al. propose revenue neutral alternatives to flat volumetric rates that shift some of the cost recovery burden to non-volumetric charges (e.g. fixed and demand charges) and better reflect the underlying costs of generation and delivery.[2] At current gas prices and Eversource's

[1] Bailey et al., "Show Me the Money! Incentives and Nudges to Shift Electric Vehicle Charge Timing."
[2] Sergici et al., "Heat Pump–Friendly Cost-Based Rate Designs."

residential rates, below ~35F it is cheaper to burn gas than run a heat pump.[3] That gap must close if we want any hope of electrifying rapidly.

Time-varying rates are also effective at reducing peak demand. Under flat volumetric rates, customers receive no information or price signals about when the grid is constrained. In contrast, across 15 surveyed utility programs, critical peak pricing induced a drop in peak demand by 13-20%, climbing to 27-44% when rate design was accompanied with enabling technologies (e.g., smart thermostats and water heaters).[4] Furthermore, low income households responded to variable prices at the same level or higher than medium/high income households. The notion that only wealthy households will respond to time-varying prices is not supported by evidence.

For EV charging specifically, rates must be designed carefully. Simple volumetric time-of-use pricing (like Eversource's G-2 and G-3 rates) would produce large "rebound" peaks as a result of many residential EV chargers turning on in a synchronized manner.[5] Eversource's ESMP acknowledges this limitation:

> *"However, the activation of the start of the charging must be done carefully to avoid creating a new local peak. For example, a residential program that prevents charging from 3pm-8pm but allows all vehicles to begin charging at full speed at 8pm would result in higher total system peaks than if each car had simply begun charging when it arrived home -- see the modeling presented in Section 8.1.3" (p. 459).*

While Eversource claims that passive programs are "not effective mechanisms to manage real time locational grid congestion constraints" (p. 458), this is based on the incorrect assumption that volumetric time-of-use rates are the only option. Many utilities have implemented alternatives including residential demand charges, capacity subscriptions, and offset time-of-use windows. A demand charge rate that encourages EV owners to spread charging over nighttime hours (rather than charge at full power when vehicles arrive at home) yields a significant reduction in peak demand.[6]

Advanced metering will be ubiquitous in Massachusetts by the end of this decade, and there is no reason not to transition eligible customers to smarter rates as soon as possible. While a transition to time-varying rates would inevitably create winners and losers in the near term compared to flat volumetric rates, in the long term all customers will benefit from the deferral or elimination of costly grid upgrades. Eversource states, "prior experience indicates that not all customers will respond to price signals," (p. 281), but not all customers need to respond to achieve meaningful peak demand reductions across one or many distribution feeders. These rates should be the default for all residential customers, with the ability to opt-out. At the very

[3] Michaels and Nachtrieb, "Transitioning to Heat Pumps in Cold Climates: A Systems Dynamics Analysis."
[4] Faruqui and Sergici, "Household Response to Dynamic Pricing of Electricity."
[5] Muratori and Rizzoni, "Residential Demand Response."
[6] Gschwendtner, Knoeri, and Stephan, "Mind the Goal."

least, Eversource should conduct a sensitivity analysis on peak demand under various time-varying rates.

Other Gaps in Eversource's ESMP

Besides the general omission of time-varying rates in their load modeling, I would like to highlight a few other parts of Eversource's ESMP that I found problematic. For each, I provide a direct quote from the ESMP followed by my critique:

> *"The Company has explored other mechanisms to manage electric demand reductions but finds some specific applications such as Electrification Heating Demand Response as difficult to yield tangible demand reductions sufficient to defer or avoid necessary grid upgrades." (p. 10)*

While it may be true that heating is less flexible than other loads (like EV charging), this is not a valid reason to omit modeling thermostatic demand response entirely. Utility programs to cycle or temporarily adjust HVAC equipment have proven highly effective for decades.

> *"The savings from the Mass Save active demand response programs (see section 6.1.9) is currently not explicitly included in the Company's forecasts. The Mass Save programs have an "Opt-Out" capability, such that customers may simply decide not to reduce load on a given day. Therefore, the Company does not treat new Active Demand Response program enrollments as a firm capacity resource that could result in the reliable reduction in peak demand necessary to displace a traditional distribution asset, because the actual performance of the customer cannot be ensured."*

The fact that individual customers can opt out of individual events does not mean that active demand response programs are unreliable in aggregate. Probabilistic models can be developed that predict (with high likelihood) the level of demand response from an aggregation of buildings, which can be used for long-term peak demand planning and real-time operations. In fact, diverse aggregations may even be *more* reliable than traditional distribution assets, which are single points of failure. Considering that ISO New England's forward capacity auction allows for active demand response resources, I struggle to understand Eversource's choice to exclude them entirely from their demand model.

> *"Currently, the default technology for residential sites selected for heating conversion is assumed to be an air source heat pump. The reference electric heating load is based on the heating design capacity at the design day temperature and coefficient of performance (COP). The reference electric heating design load assumed is 5 kW per residential heat pump customer for an average house size of approximately 2,000 sq. ft. in Massachusetts and seasonal COP of 2.34 and a floor COP of 2."*

This modeling assumption is misaligned with a recent Cadmus study on heat pumps in the northeast, which found that even a whole home heat pump system (with no primary backup)

had a coincident winter peak demand of 1.03 kW per 1000 square feet.[7] Eversource's ESMP also includes a sensitivity analysis on hybrid heating systems (which would switch from electric to backup fossil heat below a certain temperature setpoint) but does not include this in demand forecasts. Because Eversource is a gas and electric utility, they are in a strong position to develop new business models around hybrid heating solutions, which would cut emissions while reducing the need to build excess distribution and transmission capacity. For example, they could install integrated thermostats that switch from electric to backup fossil heat when the temperature is below a pre-specified threshold, helping to mitigate heating-driven winter peak demand. Another alternative would be to transition entire neighborhoods to electric heating (potentially with backup battery storage) rather than upgrading old gas pipeline infrastructure.

> *"An unknown quantity to date of peak demand impacts is likely to be gained from intelligent rate design (See Section 9.7.2) which incentives customers to control, much like most commercial customers today, their peak demand" (p. 475).*
>
> *"With customers adopting more and more electrified technologies into their life (EV, Heating, Induction Stoves) in addition to high load units such as dryers, it will become increasingly more important to incentivize specific behaviors to help minimize the system load (See Section 9.7.2 on potential rate components which might incentivize such behavior" (p. 477).*
>
> *"For example, a residential program that prevents charging from 3pm-8pm but allows all vehicles to begin charging at full speed at 8pm would result in higher total system peaks than if each car had simply begun charging when it arrived home -- see the modeling presented in Section 8.1.3" (p. 459).*

Sections 9.7.2 and 8.1.3 do not exist in the draft ESMP. Given these sections' apparent relevance to the role of rate design, which was not modeled elsewhere, I was curious to see the results.

Conclusion

To meet Massachusetts' decarbonization targets, we must look beyond traditional approaches. Proven tools like rate design and demand management will help avoid expensive capital investments, which in turn will make electrification more attractive and decrease energy burdens.

To achieve those aims, I recommend that the GMAC request the following from Eversource in the next round of ESMP drafting:

- Model load profiles under alternative rate designs, including time of use, demand/subscription charge, and critical peak pricing
- Model active demand management as a firm capacity resource for peak reduction
- Investigate how to collect a portion of embedded network costs through fixed or connection charges to reduce volumetric charges

[7] Veilleux, "Residential ccASHP Building Electrification Study."

- Include a load duration curve that illustrates how many hours per year of active demand management would be needed to reduce system peak demand by 5%, 10%, and 20%
- Use heating demand profiles that consider hybrid heating solutions at different setback temperatures
- Propose EV-specific rates that receive data from a charger or vehicle (and do not require AMI meters), similar to what they have already implemented in Connecticut[8]
- Include chapter and section number in the header or footer of each page to make the document easier to navigate

Thank you for the opportunity to comment and I look forward to staying involved.

Sincerely,

Graham Turk

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8 https://www.eversource.com/content/residential/save-money-energy/clean-energy-options/electric-vehicles/ev-charger-managed-charging/ct

Leslie Zebrowitz, Co-Chair of Newton EV Task Force, (evtaskforcenewton@gmail.com) –
Received 11/3/23.

You probably are already aware of this, but I want to urge you to seriously consider emulating Vermont's approach.

https://environmentamerica.org/updates/vermont-utility-proposes-to-install-battery-storage-in-most-homes/

Thank you.

Leslie Zebrowitz, Co-Chair

Newton EV Task Force

STACK ENERGY
CONSULTING

November 6, 2023

Grid Modernization Advisory Council
100 Cambridge St, 9th Floor
Boston, MA 02114

Re: NRG Energy, Inc. Comments on Electric Sector Modernization Plans

Dear Commissioner Mahony and Grid Modernization Advisory Councilors:

NRG Energy, Inc. ("NRG") appreciates the Council's work on the Electric Sector Modernization Plans ("ESMPs") and the transparency with which the Council is operating. We thank the Council for the opportunity to provide comments.

As licensed competitive, retail energy suppliers, the NRG Retail Companies[1] provide competitive electric generation supply as well as other energy-related products and services to residential and non-residential customers in the Massachusetts competitive retail market. Moreover, the NRG Retail Companies provide competitive electric generation supply to 22 Massachusetts cities and towns consistent with municipal aggregation plans approved by the Department of Public Utilities ("DPU").

In this capacity, the NRG Retail Companies are keenly interested in seeing that customers reap the operational and financial benefits of the Department's grid modernization initiatives, and the benefits of advanced metering infrastructure ("AMI"), as soon as possible.

To achieve this outcome, the Grid Modernization Advisory Council ("GMAC") should provide feedback on the following four areas to the Electric Distribution Companies ("EDCs") on their ESMPs:

1. The EDCs should develop a statewide uniform data access protocol as soon as possible so that customers benefit from AMI once the EDCs deploy it on their premises

2. To ensure AMI delivers the benefits that are justifying ratepayer investment, the protocol should:
    - Ensure that customer loads are settled using AMI data on a granular interval, rather than continuing to use load profiles for settlement
    - Enable the bulk transfer of expanded customer usage data available through AMI
    - Similar to New Hampshire and New York, Include a statewide data repository with comprehensive datasets (e.g., electric/gas usage, rate information) and streamlined access for consumers and their retail suppliers

[1] NRG's retail electric supplier subsidiaries licensed by the Massachusetts Department of Public Utilities include Direct Energy Business, LLC; Direct Energy Services, LLC; Energy Plus Holdings, LLC; Green Mountain Energy Company, Inc.; NRG Home f/k/a Reliant Energy Northeast LLC; and XOOM Energy Massachusetts, LLC. For purposes of these comments, the licensed subsidiaries will be referred to collectively as the "NRG Retail Companies".

- To stimulate participation in demand response programs and real-time behavior change, enable customers and their designated energy provider to access data directly (and in near real-time) from the customer meter in an open, non-discriminatory fashion.

3. The EDCs should implement Time-Varying-Rates on a default, opt-out basis for all basic service customers as soon as practical and implement robust customer education campaigns to maximize TVR participation and impact.

4. The EDCs, the DPU, the Department of Energy Resources ("DOER") and Council should seek to empower customers to control more of their energy bill. This includes but is not limited to collaborating with ISO-NE to reduce transmission costs.

NRG expands on each of these four recommendations below.

1. **Recommendation #1: The EDCs should develop a statewide uniform data access protocol as soon as possible so that customers benefit from AMI once the EDCs deploy it on their premises**

NRG appreciates that the AMI Working Group is actively discussing the statewide data access protocol. Still, it will take several years for the EDCs to implement the protocol, for suppliers to build the front-end customer interface to enable customer engagement, and for EDCs and suppliers to educate customers. On Slide 10 of the EDC's AMI Working Group presentation from October 31, under the category of when "aggregated data" will be available, the EDCs proposed to "ensure functionality is ready when AMI deployment is substantially complete." The Council should recommend to the EDCs that they be ready to share aggregated data immediately following AMI installation to an aggregation. For example, once everyone in a municipality has AMI, customers and competitive suppliers in that municipality should be able to access the data.

The time immediately following deployment is critical for engaging customers. If customers see no benefit from AMI until two-three years after the AMI is deployed at their premises, they are far less likely to engage in their energy usage. A guiding principle should be for customers and their competitive suppliers/aggregators to have access to AMI data nearly immediately following deployment at their premises.

Therefore, to ensure consumers and retail suppliers can access data immediately after the EDCs deploy AMI, EDCs and stakeholders should seek to finalize the protocol as soon as possible.[2]

[2] NRG supports the comments made by DOER in their June 29 submission to the GMAC:

"The EDCs should include a description of what a uniform statewide data access strategy and process might look like for the Commonwealth. Examples include New York, which has a Distribution System Data Portal that transparently displays the utility system capabilities, needs, limitations, and opportunities for DERs, and developing plans in New Hampshire."

Recommendation #2: To ensure AMI delivers the benefits that are justifying the ratepayer investment, the Council should recommend that the statewide protocol:

A. Ensure that customer loads are settled using AMI data on a granular interval, rather than continuing to use load profiles for settlement

The value of AMI for customer demand response resides in being able to measure and bill a customer's supplier based on that customer's actual consumption over time. Not doing so, and instead relying on a hypothetical load profile, will cause a customer who has a different load shape because of demand response to have their efforts go unacknowledged in terms of reduced costs of energy, capacity, and transmission. Consequently, and at a minimum, the roll-out of AMI should ensure this core functionality is turned 'on' for the purposes of settlement.

B. Enables the bulk transfer of expanded customer usage data available through AMI, including on an opt-out basis for municipal aggregations

Green Button Connect My Data ("GBC:MD") is well-suited for providing individual customers with access to their own usage data. However, for competitive retail suppliers or aggregators that are routinely downloading thousands or tens of thousands of customer datasets, GBC:MD is not viable for obtaining their customers' billing quality data. Therefore, the Council should recommend that the EDCs enable bulk transfers of AMI data to competitive retail suppliers and aggregators through an alternative mechanism to GBC:MD. This could include but not be limited to Electronic Data Interchange ("EDI"). For municipal aggregations where customers were already enrolled on an opt-out basis, this data should be provided on an opt-out basis. NRG supports the EDC proposal on Slide 11 of their October 31 presentation to the AMI WG that said, "consent not required if number of unaffiliated customers in aggregation exceeds 100."

EDCs already transfer bulk data today that is not AMI, so this is extending that practice to AMI.

C. Includes a statewide data repository with comprehensive datasets (e.g., electric/gas usage, rate information) and streamlined access for consumers and their retail suppliers

New York and New Hampshire are both implementing statewide data repositories with centralized data access. Given National Grid's and Eversource's presence in each of these states, they can leverage their learnings to develop a statewide repository in MA. Consumers, utilities, retail suppliers, and others could realize efficiencies from the implementation of repositories in multiple states (e.g., vendor pricing, similar requirements, APIs).

To ensure that the repository includes comprehensive information, the Council should recommend that the EDCs in MA use the "Logical Data Model" that stakeholders agreed to in the settlement of Docket No. DE 19-197 in New Hampshire.[3] Among other important datasets, the "Logical Data Model" includes

[3] Please see Appendix B of the Settlement Agreement in Docket No. DE 19-197. State Of New Hampshire. Before The Public Utilities Commission. Electric And Natural Gas Utilities. Development Of a Statewide, Multi-Use Online Energy Data Platform.

both electric and gas usage, as well as the customer's rate. This enables competitive suppliers and aggregators to tailor offerings that match a customer's profile. In their October 31, 2023, presentation to the AMI Working Group, the EDCs excluded data categories included in the "Logical Data Model," including rate information. Consumers in MA should have access to the same data categories available to consumers in NH.

Regarding customer authorizations, in non-aggregation situations, customers should not have to endure the hassle of authorizing competitive suppliers to access their data in the central repository if they have previously provided authorization to competitive suppliers to access their usage data. This will help streamline access.

D. Grant customers and their designated energy providers the ability to access data directly (and in near real-time) from the customer meter in an open, non-discriminatory fashion. This is necessary to stimulate participation in demand response programs and real-time behavior change.

While a statewide repository is valuable for billing purposes and customers settlements, data will not be available in the repository with the necessary latency (i.e., time between the customer uses the energy and when that data is visible) to enable certain applications. For instance, real-time price alerts, demand response, and demand charge management often require changing behavior within seconds or minutes. Slide 10 of the EDCs October 31 AMI WG presentation proposes making data available the next day for individual customers and the next month for aggregated customers.

<u>To enable real-time behavior change and demand response participation, the Council should recommend that with the proper customer authorization, the EDCs provide direct access to near real-time meter data to customers and their competitive suppliers/aggregators in an open, non-discriminatory manner</u>.

This requires that meters meet IEEE 2030.5 standards and utilize the Home Area Network ("HAN") function that is preloaded on the meter with specific functions for the sharing of data with an interval of one second or greater. The Council should recommend that the EDCs include in their ESMPs the key provisions in a recent settlement agreement reached in Colorado between Xcel Colorado, Colorado PUC trial staff, and stakeholders. Specifically, Section II, titled "HAN Deployment and Data Rules" of the Settlement Agreement stated:

"The Settling Parties agree that development and deployment of the HAN functionality of the Advanced Meters in an open, non-discriminatory manner (as described below) is in the public interest. Customers' easy access to their energy usage is in the public interest."[4]

[4] Before The Public Utilities Commission of The State of Colorado. In The Matter of The Application Of Public Service Company of Colorado For Approval to Amend The Certificate Of Public Convenience And Necessity For Its Advanced Grid Intelligence And Security (AGIS) Initiative. Proceeding No. 21a-0279e. Unanimous Comprehensive Settlement Agreement. The Unanimous Comprehensive Settlement Agreement ("Settlement Agreement" or "Agreement") was entered into by Public Service Company of Colorado ("Public Service" or the "Company"), Trial Staff ("Staff") of the Colorado Public Utilities Commission ("Commission"), the Office of the Utility Consumer Advocate ("UCA"), Mission:Data Coalition, Inc. ("Mission:Data"), Western Resource Advocates

Recommendation #3: **The EDCs should implement Time-Varying-Rates ("TVRs") on a default, opt-out basis for all basic service customers as soon as practical and implement robust customer education campaigns to maximize TVR participation and impact.**

The EDCs have differing proposals on TVRs in their ESMPs. National Grid proposes pilots in 2026-2027 prior to large-scale rollout and opt-in rates for interested customers beginning in 2028. Eversource appears to only be considering TVRs after full AMI deployment and on an "optional" basis, which NRG assumes means "opt-in."[5]

As detailed by the Brattle Group, opt-in TVR rates lead to significantly lower customer participation in TVRs compared to default rates, with opt-in participation reported as less than 2%. [6][7] If TVRs are exclusively offered in Basic Service on an opt-in basis, Massachusetts policymakers should expect an underwhelming level of participation.

NRG believes that Basic Service should be more reflective of the underlying fundamentals of wholesale costs, which augurs in favor of a default rate structure that is time-varying. Several states have transitioned to opt-out time varying rates for utility default service, including California, Colorado, Michigan, and Missouri.[8]

In the study referenced above, Brattle provides examples of TVRs saving customers from 8%-20% on their energy bill and driving steep peak demand reductions. Brattle also highlights that states, including California, have implemented consumer protections coincident with the deployment of opt-out TVR.

Given the ability for TVRs to reduce customers money and drive down peak demand, utilities should offer TVRs on an opt-out default basis as soon as possible (i.e., no later than 12 months after a customer receives AMI on their premises) and implement robust customer education campaigns to maximize participation and impact.

Recommendation #4: The EDCs, the DPU, the Department of Energy Resources ("DOER") and Council should seek to empower customers to control more of their energy bill. This includes but is not limited to collaborating with ISO-NE to reduce transmission costs.

In New England, capacity and transmission are billed based on coincident peak demand billing determinants. To maximize the benefits of TVRs, customers and their suppliers must be granted the ability to reduce their usage at these hours in which those billing determinants apply, and thus reduce

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("WRA"), Utilidata, Inc. ("Utilidata"), Itron, Inc. ("Itron"), the Colorado Solar and Storage Association ("COSSA"), and the Solar Energy Industries Association ("SEIA") (collectively the "Settling Parties")

[5] Page 293 of the Eversource ESMP states "Access to usage information, insights, alerts, and availability of optional time-varying rates, for instance, will provide customers with new opportunities to manage energy consumption and lower bills."

[6] Moving Ahead with Time-Varying Rates (TVR) - US and Global Perspectives (brattle.com). See Slide 2.

[7] An emerging push for time-of-use rates sparks new debates about customer and grid impacts | Utility Dive. An emerging push for time-of-use rates sparks new debates about customer and grid impacts | Utility Dive. Jan 28, 2019. Citing Brattle Principal Ahmad Faruqui, the article stated, "About half of U.S. investor-owned utilities have optional time varying rates for residential customers," he said. New programs are being tested or talked about in at least ten states, but at present only 1.7% of all residential customers have chosen to use them.

[8] Cooper and Shuster, "Electric Company Smart Meter Deployments: Foundation for a Smart Grid," Institute for Electric Innovation, April 2021, p. 3.

their cost exposure not just to the cost of energy but to the capacity and transmission services of ISO-NE as well. By allowing customers to manage their entire energy bill, the peak to off-peak ratios in the TVRs will increase, resulting in higher net benefits to all consumers. In the previously referenced presentation, Brattle noted that "On average, residential customers reduce their on-peak usage by 6.5% for every 10% increase in the peak-to-off-peak price ratio." This reduction has a direct impact on the capacity and transmission costs allocated to those customers' suppliers.

One area ripe for customer savings is transmission-related costs, which have spiked to over $145,000/MW-yr. in ISO-NE and represented over 35% of total wholesale costs in August of 2023.[9] Most Massachusetts customers have no recourse for managing this 35% of their bill and TVRs must include the ability for customers to reduce their transmission costs. Suppliers should have the ability to be faced with these charges and to have settlements for them occur at the customer level, thus conveying an incentive for suppliers to offer demand-response retail products to customers that optimize around reducing transmission and capacity costs that are demand-related. For Basic Service TVR, meanwhile, those costs should be allocated to the on-peak price interval.

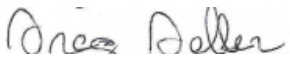
Beyond cost allocation, all customers in MA could reap benefits if ISO-NE incorporated TVR-induced load reductions into their transmission planning process, which could lead to deferrals in transmission build. NRG is aware of the ability for certain large customer classes to reduce their transmission cost allocation today, so extending this aspect of rate design to other customer classes would allow an equitable basis for customer responsiveness to transmission pricing which, today, is only open to larger customers who, by responding, are arguably able to shift transmission costs onto the residential customer class.

Therefore, the Council should recommend that the EDCs include the ability for customers to manage their entire energy bill in TVRs, that suppliers can monetize avoided costs around ISO-NE demand-related charges, and that the DPU, DOER, EDCs, and Council collaborate with ISO-NE to ensure that these TVRs are factored into transmission planning.

Conclusion

NRG thanks the GMAC for your consideration of these comments. By adopting the recommendations above, the GMAC can enable Massachusetts consumers to realize the benefits of AMI. Please contact Greg Geller (contact information below) with any questions.

Sincerely,



Respectfully submitted on behalf of NRG Energy, Inc. by Greg Geller
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[9] 2023_08_nlcr_final.pdf (iso-ne.com). See Table 3-1 of ISO-NE Monthly Regional Network Load Cost Report August 2023. Prepared on October 20, 2023.

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November 7, 2023

Re: Comments on Draft Electric Sector Modernization Plan of Eversource Energy

Dear Commissioner Mahony and Grid Modernization Advisory Council Members,

The towns of Aquinnah, Barnstable, Bourne, Brewster, Chatham, Chilmark, Dennis, Edgartown, Eastham, Falmouth, Harwich, Mashpee, Oak Bluffs, Orleans, Provincetown, Sandwich, Tisbury, Truro, West Tisbury, Wellfleet and Yarmouth, and Dukes County, organized and operating collectively as the Cape Light Compact JPE, a joint powers entity pursuant to G.L. c. 40, §4A ½ and G.L. c. 164, §134 (the "Compact"), submit to the Grid Modernization Advisory Council ("GMAC") the following comments on the Draft Electric Sector Modernization Plans ("Draft ESMPs") submitted by Eversource Energy ("Eversource") and the other electric distribution companies (collectively, the "EDCs") on September 1, 2023. The Compact is the municipal aggregator and energy efficiency program administrator on Cape Cod and Martha's Vineyard. Eversource is the EDC in the Compact's service territory so these comments are primarily related to Eversource's Draft ESMP.

1. Pursuant to G.L. c. 164, §§ 92B-92C, the Climate Act required, among other things, the GMAC to "encourage least-cost investments in the electric distribution systems," and to review and provide recommendations on the ESMPs that "maximize net customer benefits and demonstrate cost-effective investments in the distribution grid," minimize or mitigate impacts on ratepayers, and reduce impacts on and provide benefits to low-income ratepayers. Eversource's Draft ESMP was filed with the GMAC without costs, bill impacts, a net benefits assessment, and – at least initially – metrics. It is difficult to evaluate the proposals, in particular alternatives, in such isolation and does not seem possible for the GMAC to fully undertake its statutory review. The GMAC recommendations should expressly note that the GMAC did not have the benefit of this information to evaluate the Draft ESMP, and should ask that the DPU direct in its orders on these ESMPs that future Draft ESMPs must be accompanied by this information on the initial filing date.

2. Eversource's Draft ESMP largely recounts existing projects or proposals such as grid modernization investments or the capital investment projects ("CIPs") pending with the Department. The Compact was hoping for more creativity in the Draft ESMP and – in particular – use of municipal aggregations. Meeting the 2050 climate goals largely through infrastructure upgrades and new facilities is one approach. But as recognized in GMAC recommendations, non-wire alternatives, demand response, and storage solutions have not received nearly enough attention. Beyond even that though, Eversource should tap into targeted partnerships to find creative solutions for system constraints. For example, certain areas and facilities on Cape Cod and Martha's Vineyard could be excellent candidates for microgrids. Significant investments are being made by municipalities in wastewater

treatment facilities that are designed to be resilient and energy efficient, include clean energy assets, and – with program support including clarity regarding ownership of and access to electric grid assets – could be deployed as multi-user microgrids. Eversource and the Compact are currently collaborating on a potential grant opportunity for a microgrid. However, the Compact would like to ensure that these kinds of projects happen regardless of available grant funding.

3. The Compact is the energy efficiency program administrator on Cape Cod and Martha's Vineyard – where Eversource is the EDC and National Grid provides gas service for some Compact customers. Eversource's Draft ESMP notes the Compact's role, but the plan does not mention working in partnership with the Compact to bring about demand response and least-cost alternatives, nor having the Compact participate as part of the newly proposed Joint Utility Planning Working Group discussed in Section 11. The Compact respectfully requests that the Eversource ESMP be revised to include collaboration with the Compact in non-wire alternatives, demand response, and storage solutions.

   The Department of Energy Resources ("DOER") recommended that the EDCs should "identify initial potential locations for pilot programs to start the transition from gas to electric in their overlapping gas and electric service territories." Recommendation #114 (October 26, 2023). The Compact would welcome integrated planning with the EDCs and participation in pilots to develop targeted programs to assist with meeting the Commonwealth's climate goals. In addition, the Compact agrees with DOER's recommendations that Eversource should "provide more detail on demand management programs and how it will reduce peak load in the 2035-2050 timeframe. See Recommendation #80 (October 26, 2023).

4. Eversource's Draft ESMP shines a spotlight on the pressing need for approval of Eversource's pending CIPs, including the Cape CIP in Docket D.P.U. 22-55. These projects provide the foundation for Eversource to move forward with and remove barriers to DER interconnections. The Compact urges swift approval of the pending CIPs by the Department.

5. The Compact encourages the GMAC to take into account significant differences between the EDCs' Draft ESMPs in its recommendations. It is crucial that disparities between the EDCs be contended with prior to the DPU filings. For example, all EDCs should adopt the new opportunities for storage developers and customers, including rate redesign specific to behind the meter energy storage. See National Grid Draft ESMP at 74.

6. The Compact supports GMAC recommendations calling for the EDCs to have a strategy in their ESMPs to implement time-varying rates ("TVR") with the roll out of advanced metering and to begin customer education prior to completion of that roll out. See Recommendations 55 and 60 (October 12, 2023). The plan should also include how the EDCs will enable third parties, such as the 168 municipal aggregators operating in Massachusetts, to offer meaningful TVR – including utility billing for critical peak pricing TVR.

   In addition, TVR offered by third parties will require data access, which should also be covered in the ESMP. As discussed in DOER's Comments to the GMAC (dated June 29,

2023), the ESMPs should include "a description of what a uniform statewide data access strategy and process might look like for the Commonwealth."

7. Finally, the Compact has two clarifications for the Eversource ESMP:

   (A) The Draft ESMP refers to the New Bedford Industrial Park Battery Storage System on page 352. The ESMP should clarify whether that storage system will be used for peak shaving.

   (B) The Draft ESMP notes Eversource's asset health model for poles on page 103. That model should include the number of double poles in its service territory. The number of double poles on Cape Cod and Martha's Vineyard have continued to increase resulting in safety concerns and aesthetic eyesores. The ESMP should report the number of double poles and the plan to decrease them.

The Compact appreciates the opportunity to provide feedback.

Submitted by:

Margaret T. Downey, Administrator