May 31, 2017

Via Electronic Mail; Original by Hand Delivery

Mark D. Marini, Secretary
Massachusetts Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

Re: Petition of NSTAR Electric Company and Western Massachusetts Electric Company, each d/b/a Eversource Energy, D.P.U. 17-05

Dear Secretary Marini and Hearing Officer Tassone:

The Northeast Clean Energy Council ("NECEC") greatly appreciates the opportunity to provide these public comments in Massachusetts Department of Public Utilities ("DPU" or "Department") Docket 17-05, the *Petition of NSTAR Electric Company and Western Massachusetts Electric Company, each d/b/a Eversource Energy, for Approval of General Increases in Base Distribution Rates for Electric Service and Approval of a Performance Based Ratemaking Mechanism* ("Eversource Rate Petition"), filed January 17, 2017.

NECEC is the lead voice for over one hundred clean energy companies across the Northeast helping to grow the clean energy economy. NECEC's mission is to create a world-class clean energy hub in the region, delivering global impact with economic, energy and environmental solutions. NECEC is the only organization in the Northeast that covers all of the clean energy market segments, representing the business perspectives of investors and clean energy companies across every stage of development. NECEC members span the broad spectrum of the clean energy industry including solar, energy efficiency, renewable energy, CHP, fuel cells, energy storage and advanced and "smart" technologies. Our members are already – or are very interested in – doing business in the Commonwealth and helping to grow the clean energy economy.

INTRODUCTION

NECEC's comments focus on three areas of the Eversource Rate Petition:

- The Company's[1] proposal to consolidate and align rates among the legacy companies;
- The Company's proposal for a Minimum Monthly Reliability Charge ("MMRC"); and
- Elements of the Company's proposed Grid Modernization Base Commitment ("GMBC") and Performance Based Ratemaking Mechanism ("PBRM").

RATE CONSOLIDATION AND ALIGNMENT

Time-Varying Rates for Small Customers should be Preserved

As part of its rate consolidation, Eversource proposes to eliminate voluntary time-varying rates for small customers, including:

- R-4 (Boston),
- T-1 (Boston),
- R-5 (Cambridge),
- R-6 (Cambridge),
- G-4 (Cambridge),
- G-6 (Cambridge),
- R-6 (South),
- G-7 (South), and
- T-0 (WMECo).

In addition, Eversource proposes to eliminate the time-varying component of its Boston G-1 rate. Currently, that rate has separate pricing for summer and winter energy consumption. As proposed, it would have the same energy prices year-round.

These proposed changes are contrary to state policy and unfair to customers. They should be rejected.

The Department has recognized that the utility industry future lies with electricity pricing that provides customers with timely information about the costs of their electricity usage and how it varies seasonally and during the course of a day.[2] Developing the capability to provide this information in order to reduce peak demand was one of the objectives of the Department's Grid Modernization proceeding. As the Department explained, time-varying prices give customers

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[1] In these comments, NECEC refers to NSTAR Electric Company and Western Massachusetts Electric Company, each d/b/a Eversource Energy, collectively as the "Company" or "Eversource."

[2] *See Investigation into Modernization of the Electric Grid*, D.P.U. 12-76-B; *Massachusetts Electric Company*, D.P.U. 15-155 at 383-384.

the incentive to optimize demand and reduce their consumption during peak periods, which will "lower the cost to all electricity customers, by reducing wholesale electricity prices and avoiding investment in new generation, transmission, and distribution resources."[3] In fact, simultaneous proceedings to review the Massachusetts electric distribution companies' Grid Modernization Plans to accomplish this objective, among others, are currently under way.[4]

The Department recognized that we are headed toward a world where customers should see and be able to respond to price signals, shifting usage to off-peak periods and reducing costs for all. The challenge that regulators and policymakers have given utilities is how best to move ***more*** customers to pricing that better reflects system costs, particularly smaller customers. Unfortunately, Eversource is proposing to head in the opposite direction, eliminating existing time-varying rates for small customers.

Eversource attempts to justify its proposal by arguing that time-varying rates are not appropriate for distribution rates. According to Eversource, distribution system planning is based on peak demand rather than on the volume of energy consumed.[5] However, energy consumption during peak periods is a driver of distribution costs. Rates that charge customers more for use during peak periods strengthen the link between rates and costs, providing customers with an incentive to manage their energy usage to reduce system costs.

Moreover, the time-varying rates being eliminated do a better job aligning rates with costs than the rates that Eversource has proposed in their place. For residential customers, Eversource proposes a rate with just a customer charge and an energy charge that is the same 24 hours per day. The rate includes no increase in pricing for use at times of system (or circuit) peak, and, thus, does not differentiate for customers between energy use that increases distribution system costs and energy use that does not. For small commercial customers, Eversource proposes a rate with a customer charge, an energy charge, and a demand charge. But, the demand charge is assessed on the customer's non-coincident peak demand. And, as multiple intervenors testified, distribution costs are driven by coincident peaks, not non-coincident

[3] *Investigation into Modernization of the Electric Grid*, D.P.U. 12-76 at 9 (Oct. 2, 2012).
[4] *Massachusetts Electric Company and Nantucket Electric Company*, D.P.U. 15-120; *Fitchburg Gas and Electric Company*, D.P.U. 15-121; *NSTAR Electric Company and Western Massachusetts Electric Company*, D.P.U. 15-122/123.
[5] Exh. DPU-18-11.

peaks.[6] Thus, the change in rates proposed by Eversource weakens rather than strengthens the alignment between rates and costs.

In addition to being contrary to pricing policy, the elimination of time-varying rates is also contrary to the Commonwealth's public policy to encourage solar development.[7] Time-varying rates have provided customers an incentive to reduce usage at peak times, and many customers have chosen to do so by installing solar and electing net metering because of the higher credits for electricity generated during peak periods. This higher credit value provides customers with greater savings, reducing the period of time over which they can recoup the costs of their solar investment, thus encouraging them to make the investment. This in turn helps the Commonwealth achieve its solar goals and greenhouse gas emissions reductions requirements.[8] Without time-varying distribution rates, the Commonwealth will have less solar. Thus, the elimination of time-varying rates not only undermines electricity pricing policy, but also undermines Massachusetts' energy and environmental policy as well.

Eversource does propose to offer a new, voluntary time of use rate for small commercial customers: the G-5 rate. However, this new rate is a poor substitute for the rates being eliminated, offering very small differences in price between on- and off-peak periods. For example, while the current T-1 rate has a summertime price difference of over 13 ¢/kWh between on- and off-peak, the new G-5 has a difference of just 0.6 ¢/kWh.[9] To the extent that the G-5 sends a price signal at all, the signal is that it does not matter when you consume electricity.

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[6] Exh. CLC-JFW-1 at 16 ("distribution equipment costs are driven primarily by the coincident peak load for all customers sharing the equipment"); Exh. SREF-TW/MW-1 at 22-23 ("Because the utility system is sized to meet the system's coincident peak demands, it is not the individual residential customer's peak demand that drives additional system costs, but the timing of that demand and its coincidence with other demands on the system."); Exh. VS-NP/RG-1 at 35 ("The costs that a customer imposes on the Company are not related to the customer's maximum demand, or [non-coincident peak]. They are related to [the] customer's demand at the time when collective demand peaks at the feeder or substation that serves the customer. The [coincident peak] therefore is the appropriate measure of cost causation.")

[7] The Patrick and Baker Administrations have each articulated ambitious solar public policy goals and pursued robust solar development through policies such as SREC-I, SREC-II, and SMART. Initially, the Patrick Administration announced in 2007 a goal of 250 MW of solar by 2017. After meeting that goal four years early in 2013, the Patrick Administration announced a new goal of 1,600 MW by 2020. Soon after taking office in 2015, Governor Baker endorsed this updated Patrick Administration goal. More recently, the Baker Administration has revealed that the successor incentive program to SREC-II, the SMART Program, will itself be designed to support 1,600 *additional* MW of solar development.

[8] *See, e.g.*, Chapter 298 of the Acts of 2008.

[9] Exh. ES-RDP-5, Sched. RDP-1 at 1.

Eversource's Proposed Rate Design Changes Would Have Seriously Adverse Impacts on Existing Net Metering Customers

Eversource's proposed rate design changes would have extreme impacts on existing net metering customers, violating the principles of rate stability and continuity. The impacts come from the elimination of voluntary time of use rates and from changes to the design of existing rates. The table below shows the percentage bill increases created by the proposed rates, first for net metering customers and then, for comparison, for the class average.

Rate	Percentage Bill Increase	
	Net Metering Customers	Rate Class Average
Behind the Meter Systems		
R-1 (Boston)	17.7%[10]	6.4%[11]
R-4 (Boston)[12]	126.0%[13]	9.3%[14]
R-1 (South)	78.7%[15]	3.8%[16]
R-1 (WMECo)	27.2%[17]	10.1%[18]
G-1 (Boston)	128.2%[19]	1.3%[20]
T-1 (Boston)[21]	122.8%[22]	4.2%[23]
G-1 (South)	274.4%[24]	2.0%[25]
Standalone Systems		
T-1 (Boston)	48.5%[26]	4.2%[27]
G-1 (South)	16.8%[28]	2.0%[29]

[10] Exh. NECEC-06-03, Attach. at 1.
[11] Exh. AG-38-3, Attach. at 1.
[12] Under the proposed consolidation, the rate would be eliminated and customers moved to R-1.
[13] Exh. NECEC-07-01, Attach. at 2.
[14] Exh. AG-38-3, Attach. at 5.
[15] Exh. NECEC-06-03, Attach. at 4.
[16] Exh. AG-38-3, Attach. at 12.
[17] Exh. NECEC-06-03, Attach. at 37.
[18] Exh. AG-38-4, Attach. at 1.
[19] Exh. NECEC-07-01, Attach. at 7.
[20] Exh. AG-38-5, Attach. at 2 (annual impact calculated from winter and summer impacts).
[21] Under the proposed consolidation, the rate would be eliminated and customers moved to G-1.
[22] Exh. NECEC-07-01, Attach. at 10.
[23] Exh. AG-38-5, attach. at 18 (annual impact calculated from winter and summer impacts).
[24] Exh. NECEC-06-03, Attach. at 54.
[25] Exh. AG-38-5, Attach. at 32.
[26] Exh. NECEC-07-01, Attach. at 15.
[27] Exh. AG-38-5, Attach. at 18 (annual impact calculated from winter and summer impacts).
[28] Exh. NECEC-06-03, Attach. at 57.
[29] Exh. AG-38-5, Attach. at 32.

As noted, the proposed changes violate the principles of rate stability and continuity. Professor Bonbright describes rate stability as "a minimum of unexpected changes seriously adverse to existing customers."[30] The Department describes rate continuity as meaning that "changes to rate structure should be gradual to allow consumers to adjust their consumption patterns in response to a change in structure."[31] The bill impacts for net metering customers, which for some rate classes are 274%, are unquestionably "seriously adverse." In addition, there is no way for these existing net metering customers to "adjust their consumption patterns in response" to the changes. The solar generation facilities have been purchased and installed based on customers' reasonable expectations. They will not produce more or less in response to new rate structures.

As detailed in the table above, the bill impacts are also substantially greater for net metering customers than for other customers in the rate classes. In the most extreme case, Rate G-1 (South), the percentage bill increase for net metering customers is over 130 times greater than the class average percentage increase.

By eliminating time-varying rates for small customers, the Company's proposal would undermine the Commonwealth's and Department's grid modernization, solar, rate design and environmental policies. It would also impose extraordinary bill impacts on existing net metering customers, violating the principles of stability and continuity. The proposed changes should be rejected.

MINIMUM MONTHLY RELIABILITY CHARGE: THE COMPANY'S PROPOSAL SHOULD BE REJECTED

Eversource has proposed a Minimum Monthly Reliability Charge ("MMRC") without demonstrating that one is warranted. The Company also fails to demonstrate that the proposed MMRC is consistent with statutory requirements. *See* G.L. c. 164 § 139(j). The charge is therefore unjustified and discriminatory and should be rejected.

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[30] James Bonbright, (1961) *Principles of Public Utility Rates*, Columbia University Press, at 291.
[31] *Massachusetts Electric Company*, D.P.U. 09-39 at 402; *National Grid*, D.P.U. 15-155 at 384.

The Company concedes that the MMRC is not needed to preserve revenues; the Company is "made whole" through revenue decoupling.[32] The claim, rather, is that costs are being shifted from net metering customers to other customers. However, the Company has provided no evidence of such a shift. It cites only displaced revenues,[33] which are calculated as revenues from kilowatt-hours that the customers would have purchased had they not been self-generating.[34]

However, the Department has already found that such an approach is inadequate. To demonstrate a cost shift, the company must quantify "the amount of costs attributable specifically to DG customers."[35] The Company has provided no cost of service analyses that show the costs actually imposed by net metering customers and how those costs compare to the costs imposed by other customers.

In addition, Eversource has also not quantified the benefits provided by distributed generation installed by customers and supported by net metering. Net metering enables distributed generation, which provides multiple benefits that reduce distribution, transmission, energy, and environmental compliance costs. The Department has found that the utility must quantify these "system benefits" as well as costs when attempting to demonstrate a cost shift.[36] Eversource has not done so.

Moreover, the proposed MMRC would impose a very large cost on net metering customers in return for only a very small benefit to other ratepayers. The MMRC would increase the bill of a typical residential net metering customer by over 34%.[37] Yet, the alleged cost shift (based on displaced revenues) that the MMRC is designed to address represents less than 0.5 percent of revenues (displaced revenue of $4.3 million[38] compared total revenues of nearly $1 billion[39]).

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32 Exh. ES-RDP-1 at 19.
33 Exh. ES-RDP-1 at 96.
34 Exh. DPU-15-5 at 1.
35 *Massachusetts Electric Company*, D.P.U. 15-155 at 458.
36 *Id.*
37 Exh. DPU-10-19, Attach. at 1.
38 Exh. DPU-10-12, Attach.
39 Exh. DPU-15-1-a at 2; Exh. DPU-15-1-b at 2.

Even if a MMRC for net metering customers were justified, the design proposed by Eversource should be rejected. The MMRC proposed by Eversource violates several principles of good rate design: it is inefficient, confusing, and unfair.

The key feature of Eversource's proposed MMRC is a demand charge based on the customer's non-coincident peak demand. It is difficult to find any reason to support such an approach.

First, the charge is inefficient. The Department has defined efficiency in rates as follows:

> Efficiency means that the rate structure should allow a company to recover the cost of providing the service and should provide an accurate basis for consumers' decisions about how to best fulfill their needs. The lowest-cost method of fulfilling consumers' needs should also be the lowest-cost means for society as a whole. Thus, efficiency in rate structure means that it is cost-based and recovers the cost to society of the consumption of resources to produce the utility service . . . In practice, meeting the goal of efficiency should involve rate structures that provide strong signals to consumers to decrease excess energy consumption in consideration of price and non-price social, resource, and environmental factors.[40]

Whereas the MMRC proposed by Eversource would charge customers based on their non-coincident peak, system costs are driven by coincident peak demand. Thus, the charge does not recover the "costs to society of . . . [providing] the utility service." Customers whose demand peaks outside of system peak periods would pay too much, and customers whose individual peaks coincide with system peaks may well pay too little. Ironically, a non-coincident peak demand charge could actually incentivize some customers to shift load to the coincident peak. Any customer whose demand peaks outside of the system peak period could reduce their charges by shifting load to the peak period. This would increase costs as a whole and is exactly the opposite of the behavior that should be incentivized.

Second, the demand charge would be confusing for small customers, violating the principle of simplicity, which the Department defines as being "easily understood by customers."[41] As Eversource's witnesses state, "Demand rates have never been employed for residential customers."[42] Yet, "the Company is proposing to introduce a demand charge for residential

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[40] *Massachusetts Electric Company*, D.P.U 09-39 at 401–402; *National Grid*, D.P.U. 15-155 at 383-84.
[41] D.P.U. 09-39 at 402.
[42] Exh. ES-RDP-1 at15, lines 6-7.

customers who elect net metering service."[43] As the California Commission found when rejecting a proposed demand charge for solar customers, "demand charges can be complex and hard for residential customers to understand."[44] Several intervenors in this proceeding have also presented evidence that demand charges are not appropriate for residential and small commercial customers.[45] Those of us in the energy industry may be able to converse easily about the difference between kilowatts and kilowatt-hours. But, the same is not true for a typical residential customer. Ask your neighbor.

Also, given current metering and communications capabilities, the proposed demand charges are not actionable for most customers. Small customers have little or no insight into the drivers of their peak demand and little or no ability to control those drivers. For example, residential customers typically cannot control when their refrigerator or water heater cycles. Until small customers have the information and tools to control demand, demand charges for those customers do not provide effective price signals. Moreover, as noted above, demand charges based on non-coincident peaks, to the extent that they send any actionable signal, would likely send the signal to act at the wrong time.

Third, the MMRC proposed by Eversource would violate the principle of fairness by imposing different charges on customers within the same rate class. Eversource is effectively creating a separate rate class for customers who choose to net meter without conducting a cost of service study to support it. The MMRC imposes a demand charge on customers who choose net metering service while other customers in the same class do not pay such a charge. In addition to the inappropriateness of a demand charge for small customers, discussed above, imposing a demand charge on some customers in a class and not others without evidence to support differences in costs to serve the customers is unfair and discriminatory.

Further, the MMRC proposed by Eversource imposes a different customer charge on net metering customers than other customers in the rate class pay. For example, most R-1 customers would pay a customer charge of $8.00 per month, but R-1 net metering customers would pay a customer charge of $10.38, almost 30% more. But again the company has presented no evidence that the customer-related costs for net metering customers are any

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[43] *Id.*, at lines 10-12.
[44] California Public Utilities Commission, Decision 16-01-44, Decision Adopting Successor to Net Energy Metering Tariff, Rulemaking, 14-07-002 at 75 (Jan. 28, 2016).
[45] Exhs. SREF-TW-1 at 24-27; VS-NP/RG-1 at 25-29; AC-ML-1 at 25-27.

higher than for other customers in the class. Therefore, there is no basis for a higher customer charge.

The same problem exists with distribution kWh charges. Under Eversource's proposal, net-metering customers would pay lower distribution kWh charges than other customers with no cost basis for the distinction. For example, a typical residential customer would pay a distribution kWh charge of 5.011 ¢. However, a net-metering customer subject to Eversource's proposed MMRC would pay a charge of 3.064 ¢, 39% less. Yet, the company has presented no evidence of a cost difference to support the difference in rates.

The MMRC proposal should be rejected. The Company has not demonstrated that the charge is warranted, failing to quantify either the costs imposed by net metering customers or the benefits they provide. In addition, the charge violates key rate design principles: it is inefficient, establishing rates that do not align with costs; confusing, imposing a demand charge on small customers who will neither understand nor be able to respond to it; and unfair, creating different charges for customers within a single rate class.

GRID MODERNIZATION BASE COMMITMENT ("GMBC")

NECEC welcomes the Company's effort to identify specific investments through which it intends to modernize its distribution system, incorporate DER and mitigate climate change impacts. However, additional benefit-cost analysis consistent with the DPU's approved framework[46] is needed to ensure that the GMBC will effectively move Eversource toward achieving the Department's grid modernization objectives. In this section, NECEC offers comments about certain elements of the GMBC.[47]

As an initial matter, while NECEC recognizes that the Company has put the grid-facing components of its Grid Modernization Plan ("GMP") into the rate case and left most customer-facing components in the GMP in Docket 15-122/123, both types of investment need to be

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[46] *See Investigation into Modernization of the Electric Grid*, D.P.U. 12-76-C.

[47] NECEC does not address here the nature of the approval(s) that may be appropriate in this proceeding, in the Grid Modernization proceedings, or in future proceedings for the investments proposed in the GMBC and other grid modernization investments. NECEC has consistently taken the position that a forward looking, outcomes based regulatory framework is appropriate for supporting and encouraging the planning processes and investment needed to advance grid modernization. *See* "Leading the Next Era of Electricity Innovation: The Grid Modernization Challenge and Opportunity in the Northeast," NECEC Institute, August 2014, http://www.cleanenergycouncil.org/files/NECEC_Leading_Next_Era_Electricity_Innovation.pdf.

integrated to achieve the electricity future the company itself has laid out. The components of the GMBC that the Company refers to as "Customer Engagement & Enablement" include infrastructure for EV charging and "Customer Tools for DER Integration," which NECEC generally supports, as discussed below. Together the proposed investment for these components is $60 million or 15% of the total GMBC. The rest of the GMBC – called "Distribution System Network Operations" – is essentially "grid-facing."

In addition, some parts of the GMBC appear to fall short of the threshold for considering an investment to be grid modernization. In response to intervenor testimony, the Company notes that much of the GMBC investments are foundational and argues that acceleration of these investments warrants treatment as grid modernization.[48] While NECEC supports the acceleration of this investment, the Company must demonstrate that it is tied to achievement of the Department's grid modernization objectives to be eligible for the special cost recovery Eversource seeks.[49]

In particular, the Company is not proposing investments to integrate DER that are sufficient or appropriately paced to capture the value of DER for the distribution system and all customers, as intervenors have pointed out.[50] The Customer Tools for DER Integration are important but do not represent a sufficiently large or comprehensive commitment to enable the Company to fully support the quantity and types of customer-based DER that can be expected over the next five to ten years.

NECEC recommends that the Department require the Company to review the following categories of investment to identify ways to encourage, accommodate and support substantially greater quantities of advanced DER for customers over this time frame:

- Distribution System Network Operator,
- Automation, and

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[48]Exh. ES-GMBC-Rebuttal at 23 ("Traditional ratemaking is not designed to encompass the accelerated pace of investment and, if the Company is unable to include the GMBC under the PBRM, grid modernization will necessarily stall, to the detriment of customers.")

[49] As noted in its initial and rebuttal testimony, Eversource is seeking to recover $400 million of GMBC-related investment as a stretch factor under its PBRM proposal and has stated that approval of the PBRM as proposed is required for it to be willing to make the GMBC investment. If the PBRM is not approved, Eversource would seek recovery of GMBC costs through a capital tracker. Exh. ES-GWPP-1 at 43.

[50] *See, e.g.*, Exhs. CLC-KRR-1 at 18-19, 32-35, 39; AC-AA-1 at 3-13; SREF-TW/MW-1 at 8-11; VS-RB-1 at 5, 38.

- Foundational Technology for DMS and Automation.

For example, the Company's plans for its "Distribution Management System" fall short of industry best practices for DER integration. The Company stated in its response to NECEC-4-1 that:

- "In the five-year GMBC time horizon the DMS will not interact with controllers and control systems for DER equipment and systems at particular customer locations."
- "In the five year GMBC time horizon, the DMS will not leverage the distributed intelligence and optimization in future building management systems, microgrids, and other aggregations of DER."
- "The DMS will not include many of the functions typically included in Distributed Energy Resource Management Systems (DERMS)."

The Company did not offer sufficient rationale for omitting these capabilities, which are designed to enhance DER integration, other than observing that "technologies . . . such as DERMS are rapidly evolving." The Company should keep up with the progress on DERMS and DER integration being made by other utilities or be required to document why doing so is not appropriate.[51]

Storage Proposal

NECEC supports the Company's commitment to the development of storage projects without delay. However, such projects should not be solely owned by the utility but should be owned by electricity customers and/or third-party storage vendors as well, unless the storage is to be dedicated strictly to use as a distribution asset and is located on utility property.

Eversource has not offered sound reasons why storage should be solely or primarily utility-owned. The Company states in its response to NECEC-1-4 (b) that under a "contract for energy storage as a service" the Company "would not have operational control over an asset that is being relied upon for a critical reliability function and may need to invest in additional assets to

[51] For example, a summary of DERMS status at PG&E can be found in the "EPIC Project 2.02 Overview" dated June 2016, at: https://www.sce.com/wps/wcm/connect/596cefb1-923b-4955-8dc5-3bebe9f248f7/0616_PGE_EPICSummerWorkshop_2.pdf?MOD=AJPERES. This presentation highlighted "close alignment with California IOUs in progress", including the fact that "SCE unveiled [a] "Grid Management System" vision in early February 2016 and [was to be] issuing DERMS RFP later in 2016."

ensure reliability for customers." However, an energy storage contract between the non-utility storage owner and the Company could provide operational control to the Company for some or all hours of the year and could be structured to avoid the "need" for the Company to invest in additional assets for reliability. Such a contract could include penalties for failure of the owner to make the storage available to the Company under the terms of the contract. The Company should at least be exploring "storage as a service" as part of its initial investments.

Service providers – including members of NECEC – have already entered the market for providing utilities the services available from storage, using multiple business models and demonstrating both operational performance and the innovation for which competitive markets are known. For example, a nearly 1 MW fleet of battery storage systems has been successfully tested at 29 commercial customer sites by Hawaii Electric (HECO). These systems are responding to utility dispatch signals and also providing unprecedented visibility into distributed resources and grid conditions. Dora Nakafuji, Hawaiian Electric's director of renewable energy planning said "This shows we can scale behind-the-meter energy storage to create a more stable and efficient grid as we provide customers with higher levels of renewable energy . . . ."[52] A further example is provided by the Aliso Canyon procurement for Southern California Edison and San Diego Gas & Electric – a grid-scale storage project with over 70 MW contracted and installed in six months to handle a sudden reliability problem.[53] A substantial portion of this capacity is third party owned.

Also in California, behind-the-meter storage fleets are operating in the three major investor-owned utilities under resource adequacy contracts under the Demand Response Auction Mechanism (DRAM), and an 85 MW fleet of behind-the-meter storage is being built through the Southern California Edison (SCE) Local Capacity Requirements (LCR) contracts, with several MW now in operation and responding to utility dispatch signals. Finally, the following are examples of storage offered with solar to utilities through PPAs:

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[52] *See* press release "Hawaiian Electric and Stem, Inc. successfully test 1 MW of energy storage at 29 commercial customer sites: System helps customers save money, helps utility manage grid", Release Date 1/30/2017", https://www.hawaiianelectric.com/hawaiian-electric-and-stem-inc-successfully-test-1-mw-of-energy-storage-at-29-commercial-customer-sites.

[53] "Tesla, Greensmith, AES Deploy Aliso Canyon Battery Storage in Record Time," January 31, 2017, Greentech Media, https://www.greentechmedia.com/articles/read/aliso-canyon-emergency-batteries-officially-up-and-running-from-tesla-green.

- Connecticut Municipal Electric Energy Cooperative (CMEEC), with Tesla;[54]
- Salt River Project PPA, with NextEra;[55]
- Tucson Electric, with NextEra;[56]
- Kaua'i Island Cooperative, with Tesla;[57]
- Kaua'i Island Cooperative, with AES.[58]

The variety of these applications of storage, including third-party owned storage, makes it clear that utility ownership is not the only business model for storage. The Company should extract the lessons that can be learned from business models and use cases like these for adaptation to its own planning for storage development and procurement of storage services.

The Company's other concern with non-utility ownership of storage is that "the EDC may also require investment in other foundational systems and assets to permit dispatch of such assets." However, such systems may be required in any case to operate the distribution system in the future, and the utility's "dispatch" could be limited to a call or a price signal for discharge of storage, while most of the investment in the systems that actually dispatch and manage multiple storage assets could be made by non-utility service providers.

The Company should limit its ownership of storage to monopoly distribution functions and should not rule out utilizing storage that is owned by customers or third parties to support distribution functions as well. The Department should direct the Company to adjust accordingly its plans for procurement of storage during the term of the GMBC.

Focusing solely on utility-owned storage will also leave storage values and benefits on the table. For example, one reason to encourage storage that is not owned by the Company is that a

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54 "Former Norwich dairy farm turns into solar energy site, August 10, 2016, http://www.nhregister.com/business/20160810/former-norwich-dairy-farm-turns-into-solar-energy-site

55 "Salt River Project signs PPA for 20 MW solar+storage project," April 24, 2017, http://www.utilitydive.com/news/salt-river-project-signs-ppa-for-20-mw-solarstorage-project/441015/.

56 "TEP Receives Approval to Develop Two Innovative Energy Storage Facilities," June 2016, https://www.tep.com/news/energy-storage/.

57 "Tesla Completes Hawaii Storage Project That Sells Solar at Night," March 8, 2017, https://www.bloomberg.com/news/articles/2017-03-08/tesla-completes-hawaii-storage-project-that-sells-solar-at-night.

58 "AES' New Kauai Solar-Storage 'Peaker' Shows How Fast Battery Costs Are Falling," Greentech Media, January 16, 2017, https://www.greentechmedia.com/articles/read/aes-puts-energy-heavy-battery-behind-new-kauai-solar-peaker.

distribution utility is not and should not be in the business of participating in the wholesale markets for generation and generation-related products unless there is a failure of the competitive market.[59] As the Company notes in its response to NECEC-1-5 (b), "storage assets have the potential to participate in the regulation, energy, and capacity wholesale markets." Since these are competitive markets, the best way to study the value of storage assets in these markets is for a competitive participant in the wholesale market to own them and seek to optimize their value in these markets. The Company would be able to meet its objective of "validat[ing] . . . the extent such assets can [participate in wholesale markets] while serving a reliability function for the distribution system" (Exh. NECEC-1-5 (b)) by entering into contracts with storage owners under which the Company could call directly for discharge of storage or utilize a price signal to induce storage to provide grid services to the Company.

Other value streams for storage assets that would not be captured in the Eversource proposal would be those that accrue to host customers, including reduction of electricity costs and increased resiliency (e.g., by providing islanded power during grid outages). Support for deployment of customer-owned storage assets will also increase customer choice, enabling customers to incorporate storage in their energy management strategies and providing customers the opportunity to offer grid services to the Company.

It is not necessary for Eversource to invest solely in storage itself. Instead, Eversource could and should identify the areas on the distribution system where non-wires solutions, such as storage, could offer grid benefits and develop a procurement under which it would contract for these services where they are cost-effective. Such a contract would enable host customers and storage vendors to monetize more value streams than the Company can, increasing or better capturing the value of storage, which would tend to lower its costs. Storage could also provide grid services at lower cost. This would free up the Company's funds for other investments that are consistent with its monopoly distribution functions and that are needed to modernize the grid.

<u>Electric Vehicle Charging Proposal</u>

NECEC generally supports the Company's inclusion of make-ready EV charging infrastructure in the GMBC. Barriers currently exist to installation of charging stations in the numbers that are

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[59] *See, e.g.*, Exh. TEC-JB-1 at 23.

required to meet the goal of 300,000 ZEVs registered in Massachusetts by 2025, and the Company's investment in make-ready infrastructure may help to overcome those barriers.

NECEC concurs with the recommendation of ChargePoint witness Michael Waters that "qualifying charging stations/solutions must be 'smart' including the ability to provide charging interval level data on an individual port basis, load management capabilities, and two-way communication capability to remotely verify station status, collect data, and execute demand response" because these capabilities are needed to enable important EV charging value propositions.[60] In addition, NECEC urges the Department to direct the Company to anticipate future Vehicle-to-Building and Vehicle-to-Grid ("VTG") applications in the design of the make-ready EV charging infrastructure in order to minimize the need for replacement of components once VTG standards are in place and to accelerate the implementation of VTG applications.

NECEC also agrees with ChargePoint that the Department should consider the volumetric charges and other alternatives to demand charges that are identified in the testimony of Michael Waters to address the situation that "DC fast charging stations are currently characterized by having a low load factor with sporadic instances of very high energy use due to a limited number of vehicles in the market that will use these stations in the near term."[61] The initial rates related to EV charging should be designed as much as possible to stimulate EV penetration and can then evolve over time. In addition, appropriate time-varying rates, potentially with critical peak period(s), should be available for EV charging to optimize the utilization of EV storage as a load management resource.

PERFORMANCE BASED RATEMAKING MECHANISM ("PBRM")

NECEC supports the use of a forward-looking, outcomes-based ratemaking framework for distribution investment, particularly grid modernization investments that represent a departure from historic levels and types of investment. Eversource's PBRM proposal is a step in this direction.[62] Without a forward-looking approach, the distribution company may not have sufficient incentive to invest in grid modernization to achieve the benefits that have been

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[60] Exh. CP-MKW-1 at 33.
[61] Exh. CP-MKW-1 at 21.
[62] NECEC is commenting broadly on the Eversource PBRM proposal. These comments are not meant to indicate support for specific elements and factors in the PBRM.

identified by the Department. It is critical, however, that cost recovery be linked to achievement of specified outcomes associated with metrics related to grid modernization, as well as service quality and other performance objectives, which have been agreed up front.[63] The Company asserts that "the incentive properties of the [Grid Modernization Plan] GMP factor are obviously superior to a capital tracker for all the same reasons that PBR regimes (inclusive of price cap and revenue cap regulation) are superior to traditional rate-of-return regulation."[64] Performance standards are required to balance the incentive for cost containment under a PBRM with incentives to pursue other goals such as investment in long-term grid modernization.

Eversource has proposed a number of performance metrics "with the specific intention to yield information and insight into the Company's activities" and "to produce gains in knowledge and experience that will inform future development of the modernized electric grid."[65] However, it is "not proposing that the Department assess penalties or financial incentives in association with the identified performance metrics."[66] Moreover, most of the "Customer Benefit Metrics" are limited to the GMBC[67] and are not sufficiently linked to grid modernization outcomes or specific customer benefits.[68] Further, none of these metrics is linked to financial performance and the Company has not proposed a plan or timetable to do so. The proposed metrics may be helpful for annual reporting of Company progress on the GMBC investments, but they do not meet the need for performance standards in connection with the revenue cap formula, during and after the GMBC period.

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[63] *See* "Leading the Next Era of Electricity Innovation: The Grid Modernization Challenge and Opportunity in the Northeast," NECEC Institute, August 2014, pp.12-15, http://www.cleanenergycouncil.org/files/NECEC_Leading_Next_Era_Electricity_Innovation.pdf.

[64] Exh. ES-PBRM-Rebuttal-1 at 5, 55.

[65] Exh. ES-GMBC-1 at 133.

[66] Exh. ES-GMBC-1 at 135.

[67] Exh. ES-GMBC-3.

[68] Grid modernization performance standards do not have to be linked to specific categories of investment, but should be systematically linked to grid modernization goals. For example, one of the standards for the goal of integrating DER should be expeditious and predictable interconnection. The process of application review and study (included as a GMBC metric) is already subject to a separate performance standard with penalties, as specified in DPU 11-75-F (July 31, 2014). An *additional* standard should be added for Eversource *construction* of any system modifications required for interconnection, including, for example, setting expeditious or standardized construction schedules in advance, meeting or beating deadlines for completion, and minimizing total "Utility Time Lapsed" (i.e., without "clock" stoppage).

Grid modernization performance metrics/standards could be developed through the Company's grid modernization proceeding (D.P.U. 15-122) or through a proceeding on Service Quality Guidelines. Since this has not yet taken place, the Department should require, before the revenue cap formula is finalized, that the PBRM include outcome-based grid modernization and other metrics with a timetable to link them directly to the Company's revenue.

OTHER ISSUES

NECEC is concerned that the record shows Eversource has a policy of collecting Contributions in Aid of Construction ("CIAC") from DER developers that are not required under current tax law. NECEC notes that multiple public commenters (including Syncarpha Capital, LLC) have also identified significant concerns about this practice and that the record shows that Eversource collected millions of dollars in 2016 as CIAC from Solar PV developers.[69] The result of Eversource's policy appears to be the imposition on a particular type of customer of large and unjustified costs. NECEC asks that the Department require Eversource to discontinue this practice as part of its final Order in this case.

CONCLUSION

NECEC greatly appreciates the opportunity to offer these public comments on the Company's proposal to consolidate and align rates among the legacy companies; the Company's proposal for a Minimum Monthly Reliability Charge ("MMRC"); and elements of the Company's proposed Grid Modernization Base Commitment ("GMBC") and Performance Based Ratemaking Mechanism ("PBRM"). We look forward to continuing to productively engage throughout this proceeding in order to advance the dynamic electricity system future that Eversource and the parties to this case describe and that the Department has set as an objective.

Sincerely,

Peter Rothstein
President

Janet Gail Besser
Executive Vice President

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[69] Exh. NECEC-5-1.

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