UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New England Winter Gas-Electric Forum Docket No. AD22-9-000

POST-TECHNICAL CONFERENCE COMMENTS OF ACADIA CENTER ON DEMAND RESPONSE ISSUES

Acadia Center submits these comments pursuant to the Commission's Notice of Request for Comments in the above-captioned docket, dated September 21, 2022.[1] Acadia Center works to advance a just and equitable clean energy economy that contributes to ensuring health and opportunity for all communities across New England. Critically, electric reliability and decarbonization as required by state law are complementary goals that are both essential to maintain thriving communities safe from harm. It is the responsibility of this Commission, ISO-New England (ISO-NE), and the leaders of the six New England states to work together to collaboratively ensure that both of these goals are achieved on behalf of New England residents. The Commission's September 8 forum in Burlington, Vermont was a testament to this joint task and a step in the right direction.

These comments are limited to the subject of demand response in New England. In these comments, Acadia Center provides analysis and information focused on demand response in order to help facilitate important informed discussions about demand response as part of the solution to New England's winter reliability needs. Acadia Center is also participating in a

[1] eLibrary No. 20220921-3026.

separate set of post-forum comments that covers a broader scope of issues, including the need for specific wholesale market reforms.

Acadia Center previously submitted pre-forum comments in this proceeding on September 2, 2022,[2] including a paper published by Acadia Center and its partners on September 1, 2022, entitled "New England's Winter Electricity Challenges Call for a Clean Energy Solution."[3] The paper identifies near-term clean energy solutions that can be deployed within just months to bolster the electric system to help avoid winter blackouts, including targeted energy efficiency and ramped up demand response. It also identifies medium- and longer- term clean energy solutions to avoid electric system reliability challenges for years to come such as the deployment of complementary clean energy resources including offshore wind and solar, together with energy storage, along with an enhanced transmission grid that connects communities to more clean energy as well as to neighboring regions. Melissa Birchard, Acadia Center's Director for Clean Energy & Grid Transition, additionally provided oral comments on Panel 3 at the Technical Conference on September 8, 2022.

I. Post-Technical Conference Comments Focused on Demand Response

These comments are focused on demand response in order to highlight, in particular: (1) the realistic and beneficial nature of demand response as a part of the solution set to New England's winter reliability challenges, (2) the experience New England has with demand response that can form the basis for expanding active demand response as a winter reliability

[2] eLibrary No. 20220902-5134.
[3] Birchard, M., *et al.*, New England's Winter Electricity Challenges Call for a Clean Energy Solution, at p. 4 (Sept. 1, 2022), available in the docket at eLibrary No. 20220902-5134 and online at https://acadiacenter.org/resource/new-englands-winter-electricity-challenges-call-for-a-clean-energy-solution/.

resource, and (3) the importance of additional cross-jurisdictional conversations ahead of winter 2023-2024, including timely discussions between ISO-NE and the New England states on how to appropriately incentivize expanded wintertime demand response offerings.

1. Demand response is a realistic and necessary solution to help address New England's winter reliability challenges.

Demand response is a diverse and flexible resource that can be designed and deployed to serve a wide range of system needs including strengthening New England's winter reliability. New England's overreliance on gas currently puts it at risk of electric system blackouts when gas is in high demand for both heating and electricity generation. Accordingly, reducing consumption on either the heating or the generation side of that coin will reduce the consumption of gas, oil, and other fuels, thereby conserving those fuels and reducing overall reliance on imported fuel sources. Demand response can strategically reduce the use of gas for both electricity and thermal needs. As a result, stakeholders at the September 8 Technical Conference such as Mr. Daly, Vice President of Energy Supply at Eversource Energy, incorporated demand response into the list of solutions that can help address the winter reliability problem, along with other parts of the solution set such as transmission, offshore wind, and energy storage.[4]

As Acadia Center and its partners describe in their September 1 paper filed in this docket, demand response is a realistic solution in part because it can be rolled out more quickly than many other options,[5] including important but less timely solutions raised at the Technical Conference and in Acadia Center's pre-forum comments. New electric transmission lines to connect consumers with clean energy, for example, are needed but take time to plan and deploy.

[4] Transcript ("Tr.") 158:21-25, 159:1-9.
[5] New England's Winter Electricity Challenges Call for a Clean Energy Solution, at p. 4.

Additional fossil fuel infrastructure, if feasible at all, would not only take a long time but also conflict with state climate laws and therefore should generally be avoided.

To be clear, although the size and scope of New England's overall vulnerability to winter reliability challenges is not known with specificity at this time, and in practice each reliability challenge that arises will ultimately have unique facts and circumstances, it is unlikely that demand response *alone* can eliminate all winter reliability risks in the region. The same basic logic would apply to energy storage alone, or offshore wind alone; these are each part of the puzzle rather than the entire puzzle. Standard industry practice requires that demand response serve as part of a well-designed portfolio of solutions that includes other energy resources such as generation, energy efficiency, and backup emergency conservation measures if needed.

Demand response can and must be a part of the solution set. As Chair Bartlett of the Maine Public Utilities Commission explained at the forum, "demand response doesn't have to solve the problem in and of itself," but can be a powerful part of the picture in combination with other solutions. In his words, "[t]hat's going to get you there just as well as the big fix."[6] In the near-term, this means that demand response could be paired with targeted energy efficiency, strategically deployed energy storage, and non-gas generation.

Claims that demand response cannot reduce reliability risks related to gas constraints are false because every increment of reduced need for generation can benefit the grid during times of fuel constraints. Such claims appear to focus narrowly on the fact that demand response has typically been called on only for a limited number of hours per day in New England to address a handful of days with high summer peak demand. Those claims are flawed because they fail to recognize that every increment of reduced need for electric generation - or gas-fired heating - can

[6] Tr. 250:18-23.

potentially reduce the risk of a blackout. As Chair Nelson of the Massachusetts Department of Public Utilities aptly articulated in Burlington, demand management can "buy you more time, and thus make that probability of that [reliability] event happening less."[7]

Indeed, the deployment of rolling blackouts is itself a kind of crude and harmful management of demand that is intended to reduce demand over key stretches of time, though it evinces extraordinarily poor planning and has extremely high impacts compared to an actual demand response program. Compared to the strategic scalpel that demand response can provide, rolling blackouts are like throwing an axe in the dark. As Mr. Dickerson, President of the Northeast Power Coordinating Council ("NPCC"), explained at the Technical Conference, "at the end of the day what we're doing is either increasing supply to meet demand, or reducing demand to match the supply…"[8] Demand response can accomplish the same goal in a non-harmful, well-planned way that results in no loss of life or impact on consumer comfort--and in fact provides economic benefits to New England's communities instead of losses.

Smart demand response measures can help balance supply and demand by making numerous incremental adjustments to participating devices and facilities, such as reducing the number of elevators in use in large buildings, lowering the temperature of hot water heaters by a degree or two, and delaying the most energy-intensive industrial practices. This approach lowers demand in a way that benefits both participating customers, by paying them for their participation, and the electric system as a whole by helping to balance supply and demand. Preemptive planning and the strategic use of demand response could therefore help to avoid

[7] Tr. 247:21-25, 248:1.
[8] Tr. 10:16-18.

emergency conditions that might otherwise require rolling blackouts to maintain the same balance.

Further, even if rolling blackouts did become necessary due to extreme prolonged weather, the strategic deployment of demand response in advance of such an event, and/or following an event, could reduce the length and geographic scope of controlled blackouts. Advance planning to deploy demand response in this way could limit overall impacts on human life and the economy, allowing the electric system to go back to full functioning more quickly than otherwise.

As the energy resource mix evolves with the introduction of new clean resources, demand response can evolve in parallel to provide modified services that support grid needs. While demand response is currently used primarily for summer peak demand reduction in New England, other functions that demand response can serve include conservation, valley filling, flexible load shape, load shifting, and load building.[9] Targeted conservation is a particularly useful function to avoid blackouts, but as the electric system evolves other functions like valley filling may become increasingly important.

Demand response has much to recommend it as a part of a winter reliability solution, with a key benefit that demand response resources already exist in New England that could be repurposed for winter reliability. New demand response resources also can be ramped up with greater speed than most other types of energy resources.[10] At the September 8 Technical

[9] *See* Regulatory Assistance Project, Demand response: a powerful flexibility resource, slide 4 (Mar. 12, 2019), available at https://www.raponline.org/wp-content/uploads/2019/03/rap-pato-erra-dr-presentation-2019-mar-12.pdf.

[10] While demand response can be ramped up more quickly than most generation and transmission solutions can be put in place -- apart from resources that may already be planned and scheduled to come

Conference, Ms. Rebecca Tepper, Chief of the Energy and Environment Bureau in the Massachusetts Attorney General's Office, stressed that demand management is "a big part of the puzzle"[11] and that, as for demand response in particular, "we haven't even touched what we're going to be able to do with that."[12] Demand response represents a large reservoir of untapped potential close at hand, that can be rolled out fairly quickly and with limited approvals and permitting, unlike major new infrastructure that typically requires extensive financing, planning, and approvals processes.

With smart planning and incentives that reflect reliability needs, demand response measures can be tailored to support specific demands on the electric grid throughout the year, including in the winter as well as the summer. Winter demand response programs designed to reduce risks associated with fuel constraints may differ from demand response programs designed for summer peak reduction, but they have the potential to be even more valuable and ramping these types of programs up now can also benefit the region when it becomes winter peaking in the future.

Failing to ramp up the region's demand response resources, including flexible load, would be a substantial and avoidable policy failure. Demand response can be a cheap, clean, and highly responsive resource when properly designed and funded. As New England communities stare down the barrel of potential rolling blackouts, it would be foolhardy to dismiss low-hanging fruit like demand response that can be deployed rapidly and cost-effectively.

online soon -- targeted energy efficiency and strategic energy storage also could likely be deployed on rapid timeframes with appropriate incentives and expedited program implementation.

[11] Tr. 56:3-4.

[12] Tr. 56:15-16.

2. New England has experience with demand response that can be applied to winter needs and ramped up quickly at relatively modest cost.

All of the New England states and ISO-NE have experience with demand response programs of various types, and a current reservoir of demand response exists today. According to data released by ISO-NE's Demand Resources Working Group, as of January 1, 2022, New England had the following levels of seasonal audited demand response capability.[13]

WINTER MW				
Zone	Demand Response Assets	On-Peak Demand Resources	Seasonal Peak Demand Resources	Total
ME	92.116	239.34		331.456
NH	28.312	162.852		191.164
VT	42.863	160.34		203.203
CT	96.149	130.913	558.182	785.244
RI	19.141	320.566		339.707
SEMA	30.224	522.513		552.737
WCMA	57.694	554.846	38.771	651.311
NEMA	39.705	842.73		882.435
Total	406.204	2934.1	596.953	3937.257

The Demand Resources Working Group reports the following capacity supply obligations by demand resource type and load zone, also as of January 1, 2022.[14]

[13] *See* Demand Response Working Group Statistics Report (2022-02-31) at https://www.iso-ne.com/static-assets/documents/2022/01/dr_stats_january_2022.pptx. Related data and analysis can be found at https://www.iso-ne.com/committees/inactive.

[14] *See* Demand Response Working Group Statistics Report (2022-02-31) at https://www.iso-ne.com/static-assets/documents/2022/01/dr_stats_january_2022.pptx.

Zone	Active Demand Capacity Resource	On-Peak Demand Resource	Seasonal Peak Demand Resource	Total
ME	96.136	157.454		253.59
NH	42.275	148.911		191.186
VT	47.152	161.926		209.078
CT	125.995	113.636	630.879	870.51
RI	33.969	319.728		353.697
SEMA	43.483	509.244		552.727
WCMA	81.208	558.966	18.003	658.177
NEMA	59.321	866.151		925.472
Total	529.539	2836.016	648.882	4014.437

The New England states each have demand response and related state-level programs that are continuing to grow and diversify each year. With the right incentives from the regional level and adjusted cost-effectiveness evaluations that more accurately reflect the value of wintertime demand response, many of these programs could be re-targeted from summer to winter needs and/or ramped up greatly. The chart below shows a non-exhaustive list of ongoing state-based and utility-specific demand response and related programs along with annual savings targets.

Massachusetts[15]	2022-2024 EE Plan net savings from active demand reduction programs: • Residential ADR for existing buildings (summer), annual savings targets of 2,460 MWh, 123,122 kW • C&I ADR for existing buildings, summer, savings of 596 MWh, 154,607 kW annually

[15] *See* https://ma-eeac.org/wp-content/uploads/2022-2024-3YP-Order_1.31.22.pdf; *see also* https://ma-eeac.org/wp-content/uploads/Exhibit-1-Three-Year-Plan-2022-2024-11-1-21-w-App-1.pdf

Connecticut[16]	2022-2024 summer peak demand reduction programs: • Reductions from residential demand management: 60,515 kW • Reductions from C&I demand management: 244,056 kW During 2022-24 term, EE and demand management programs to result in: • Combined active & passive annual peak demand reduction of 395 MW Eversource CT also has a C&I winter dispatch demand management offering of 5 events per winter at 3 hours per event, using storage as well as a technology-agnostic offering (e.g. snowmaking, industrial processes)
Rhode Island[17]	Active demand response peak demand reduction (Docket 5023) • Target for 2023: 74.5 MW
Maine[18]	Pay for Performance Measure demand reduction targets for 2023: • Demand Response, Curtailment: 11.2 MW • Load Shift, Residential Battery Storage: .33 MW • Load Shift, Commercial Battery Storage: .25 MW Device-level Incentive Measure demand reduction targets for 2023: • Load Shift, EV Chargers: 1.5 MW • Load Shift, Thermal Storage – PCM: .05 MW
New Hampshire[19]	NH peak demand reduction programs: • 2023 Electric Residential Active Demand Reduction target: 2,168 kW • 2023 Electric C&I Active Demand Reduction target: 10,714 kW
Vermont[20]	BYOD program (residential solar plus storage): • The Green Mountain Power (GMP) BYOD program provides the utility a peak demand reduction resource from the coordinated discharge of residential customer energy storage devices during forecasted summer peak demand events. Participating storage devices are discharged on average 5 to 8 times per month for an average of 3 to 6 hours per event. Flexible load management program (2021-23) • Residential annual flexible load annual target – 300 kW • Business sector annual flexible load annual target – 600 kW

[16] *See* https://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f7cdd1168525797d0047c5bf/ea714e056ac86bef852588220071e982?OpenDocument; *see also* https://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f7cdd1168525797d0047c5bf/04d115cb68d338b785258788007091c9?OpenDocument.

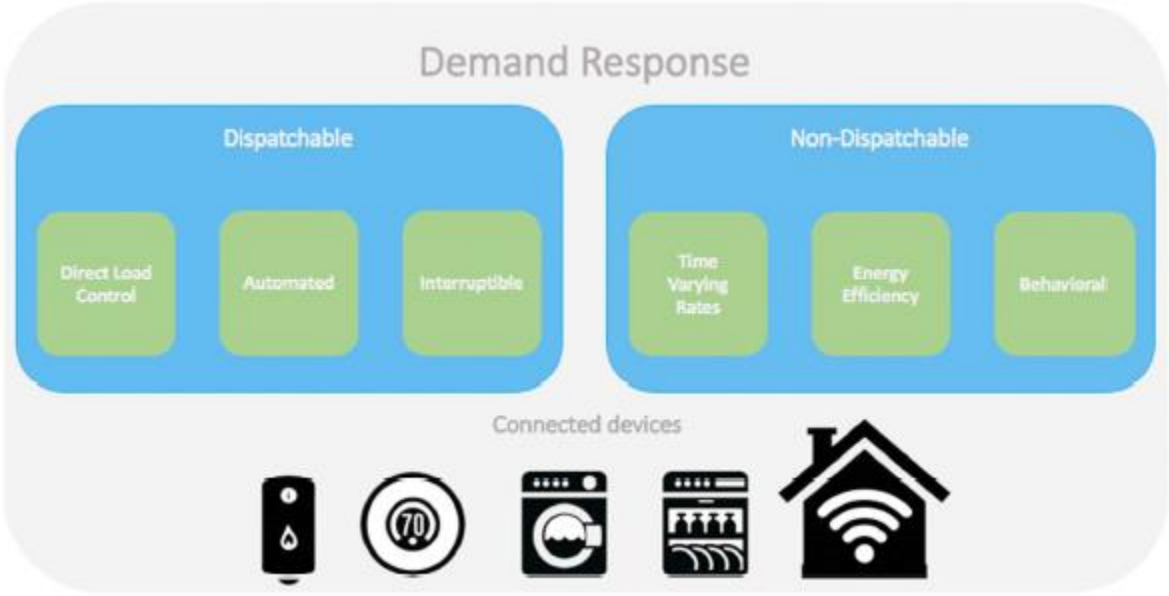
[17] *See* http://rieermc.ri.gov/wp-content/uploads/2020/10/3yp-only-2021-ap-and-2021-2023-3yp-combined-filing.pdf.

[18] *See* https://www.efficiencymaine.com/docs/Triennial-Plan-V_FY2023-2025.pdf; *see also* https://www.efficiencymaine.com/docs/L_Demand-Management-Program-Analysis-and-Considerations.pdf.

[19] *See* https://www.puc.nh.gov/Regulatory/Docketbk/2020/20-092/LETTERS-MEMOS-TARIFFS/20-092_2022-03-01_NH_UTILITIES_NHSAVES-PLAN.PDF.

[20] *See* https://www.efficiencyvermont.com/Media/Default/docs/plans-reports-highlights/2021/Efficiency%20Vermont%20Revised%202021-2023%20Triennial%20Plan_Final.pdf; *see also* https://greenmountainpower.com/wp-content/uploads/2020/11/BYOD-Customer-Agreement-11-2-20.pdf.

State programs include demand reduction that is "dispatchable" and therefore called "active" demand response, as well as demand reduction (or demand management) that is non-dispatchable, i.e. "passive." While both of these types of demand management can help reduce stress on the electric grid in the wintertime, dispatchable or active demand response[21] has a unique ability to target time-limited reliability needs. The following image depicts visually these two types of demand response and includes some examples of devices in the residential context that have been used for demand management purposes in New England, including hot water heaters, thermostats, clothes washers, and dishwashers.[22]



[21] Active demand response, which can also be called active demand reduction, is sometimes shortened to ADR, a short name that appears in the chart above.

[22] Image from Fraunhofer USA, Joana Abreu PhD, Consumer and Market Optimized Design of Residential DR Programs using Connected Devices, prepared for the Massachusetts Department of Energy Resources, p. 7 (Jan. 2019), available at https://www.mass.gov/doc/final-report-of-fraunhofer-cse-consumer-demand-management-project/download.

The products and technologies that are currently in use in New England for active demand management are diverse and can become more diverse and numerous in the future, particularly with a full-throated implementation of the reforms envisioned by the Commission in Order 2222. Metering is an issue that has limited overall volume, as described by the Massachusetts program administrators in their most recent plan: "For C&I Sector applications, any load is theoretically curtailable through a metered approach. For other applications that are device specific, there must be a means for the PA to cause the device to reduce load during peak events."[23] However, the utilities have developed strategies for ramping up controllable devices like smart thermostats through for instance valuing current passive demand reduction benefits as well as future connected active demand reduction benefits.[24] Valuing the risk reduction, reliability benefits, and fuel volatility mitigation benefits of these measures could further enhance the cost-effectiveness of controllable devices, as well as metering and sub-metering, and support rapid expansion of the demand response resource.

Program measures to date in various New England jurisdictions have encompassed demand response featuring controllable thermostats, battery storage, networked electric vehicle chargers, water heating equipment including wi-fi enabled heat pump water heaters, as well as commercial and industrial measures such as lighting control, industrial process modifications,

[23] Mass. D.P.U. 21-120 – D.P.U. 21-129, Three-Year Plan 2022-2024, Exhibit 1 at 34 (Nov. 1, 2021), available at https://ma-eeac.org/wp-content/uploads/Exhibit-1-Three-Year-Plan-2022-2024-11-1-21-w-App-1.pdf ("Mass. Three-Year Plan").

[24] *See id.* at 36 ("The PAs may also offer higher incentives for purchasing some controllable tiers of technologies. This strategy will allow the PAs to increase the number of controllable devices in instances in which there are insufficient installed devices to justify integration costs. Offering tiered incentives may also allow the PAs to increase the purchase of devices, which may not yet be cost effective as an ADR offering but is one the PAs reasonably believe will have a path to cost effectiveness in the near future. To help support these higher incentives, the PAs will look for every opportunity to identify devices in which connectivity delivers additional energy efficiency (kWh) and passive demand reduction (kW) savings and has the option for incremental ADR (kW) reductions.").

thermal storage, snowmaking, and combined heat and power, among other technologies.[25] The Rush Hour Rewards program is an example of a program that harnesses smart thermostat technologies to provide grid benefits.[26] Google Nest works with the utility to provide this service, which has been used to provide grid benefits and cost savings from controllable gas-fired heating as well as electric cooling in some jurisdictions.[27]



The chart below, taken from Eversource's energy efficiency plan in Connecticut, illustrates some of the commercial and industrial initiatives that Eversource has implemented recently in Connecticut.[28]

[25] *See, e.g.*, Mass. Three-Year Plan at 34.
[26] *See* https://support.google.com/googlenest/answer/11460181?hl=en; https://support.google.com/googlenest/answer/11459120?hl=en#:~:text=Program%20Details,no%20longer%20than%203%20hours.
[27] *See* https://support.google.com/googlenest/answer/12731407?hl=en&ref_topic=11116263. Image of thermostat is from https://support.google.com/googlenest/answer/9244031?hl=en&co=GENIE.Platform%3DAndroid#:~:text=Rush%20Hour%20Rewards%20helps%20you,use%20and%20lower%20grid%20costs.&text=Rush%20Hour%20Rewards%20does%20it%20for%20you.
[28] 2022-2024 Conservation & Load Management Plan: Connecticut's Energy Efficiency and Demand Management Plan, at p. 132 (Nov. 1, 2021), available at https://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f7cdd1168525797d0047c5bf/04d115cb68d338b785258788007091c9/$FILE/Final%202022%202024%20Plan%20to%20EEB%20(11-1-2021).pdf.

Targeted Dispatch	Daily Dispatch	Winter Dispatch

• 3-8 events per summer
• 3 hours per event
• $35/kW-summer (technology agnostic)
• $100/kW-summer (storage)
• Typical dispatch strategies & technologies:
  ○ Usually, manual dispatch
  ○ Temperature setback ~3°F
  ○ VFD speed limiting
  ○ Early setback
  ○ Process changes
  ○ Generators
  ○ Combined heat and power
  ○ Lighting
	• 30 - 60 events per summer
	• 2-3 hours per event
	• $200/kW-summer (storage)
	• Typical dispatch strategies and technologies:
	  ○ Usually, automatic dispatch
	  ○ Batteries
	  ○ Flywheels
	  ○ Thermal storage
	  ○ Industrial freezers
		• 5 events per winter
		• 3 hours per event
		• $25/kW-winter (technology agnostic)
		• $50/kW-winter (storage)
		• Typical dispatch strategies and technologies:
		  ○ Usually, manual dispatch
		  ○ Snowmaking
		  ○ Industrial processes
		  ○ Generators

Maine has been implementing a Load Shifting Initiative that reflects some of the goals and benefits that could be achieved on a broader scale if ISO-NE worked with the states on robust implementation of Order 2222. One of the goals of the Maine initiative is to "enhance grid reliability and help accommodate increasing amounts of intermittent renewable generation and beneficial electrification."[29] Vermont recently launched a Flexible Load Management program with similar benefits.[30] According to Vermont's efficiency utility, part of the rationale for this program is due to "emerging consensus that distributed energy resources and load management will play an increasingly critical and valuable role in power cost reduction and the creation of headroom in the utility grid."[31] These types of flexible load management programs will be particularly key as building and transportation electrification expands in New England over coming years, by taking advantage of electrified devices to offer increased flexibility to the grid operator in managing reliability needs as well as reducing costs.

[29] *See* Efficiency Maine, Triennial Plan for Fiscal Years 2023-2025, p. 83 (Nov. 29, 2021), available at https://www.efficiencymaine.com/docs/Triennial-Plan-V_FY2023-2025.pdf ("Maine Triennial Plan").
[30] Efficiency Vermont 2021-2023 Triennial Plan, at p. 7, available at https://www.efficiencyvermont.com/Media/Default/docs/plans-reports-highlights/2021/Efficiency%20Vermont%20Revised%202021-2023%20Triennial%20Plan_Final.pdf.
[31] *Id*. at 32.

3. The Commission should direct ISO-New England to work with the states to provide incentives to ramp up wintertime demand response without delay.

The Commission should direct ISO-NE to initiate conversations with state leaders and relevant stakeholders within 60 days to establish price signals by fall 2023 for demand response measures that can help alleviate wintertime reliability challenges. As Chair Nelson indicated at the Technical Conference, even though New England's greatest electric reliability challenges occur in the wintertime, and the ISO has been sounding an alarm about winter reliability for years, regional price signals that are available for demand response in summertime remain absent as to the wintertime.[32] In Chair Nelson's words, the region needs "market signals that give us winter pricing that will actually help extend that 21 day period into a longer timeframe."[33]

As part of their 2019-2020 energy efficiency and demand management programs, the Massachusetts utilities launched winter demand reduction programs to test their viability and cost-effectiveness. What they found was that the programs were viable but not cost-effective, because the region lacks price signals applicable to winter demand reduction programs like demand response. According to the utilities, these efforts "demonstrated both customer interest and the ability to curtail load during the winter in response to demand reduction events."[34] However, the utilities could not find adequate financial benefit from the programs in wintertime because "curtailing winter load has no impact on the Installed Capacity Requirement, and therefore curtailment in winter does not result in avoided capacity costs" similar to those that are used to find financial value in similar demand reduction programs during the summertime.[35]

[32] Tr. 248:7-14.
[33] Tr. 248:19-23.
[34] Mass. Three-Year Plan at p. 37.
[35] *Id.*

DNV wrote an extensive final report describing the findings from this initiative in Massachusetts. As DNV explains, National Grid, Unitil, and Cape Light Compact all implemented programs designed to reduce energy costs during peak periods, while Eversource's program was designed not only to reduce energy costs but also to reduce carbon emissions produced during peak periods.[36] All utilities paid participating customers only to the extent that those customers actually reduced demand, and there were no direct penalties for non-performance other than the proportional reduction of total incentives payments.[37]

Ultimately, the utilities concluded that the programs were not cost-effective, but their findings along the way were particularly interesting in two respects. First, they found that customers were willing to participate in these programs and that there are opportunities for reducing peak wintertime demand for electricity.[38] Second, Eversource's investigation also explored the ability of such measures to reduce carbon emissions, and in doing so specifically analyzed the ability of demand response to provide conservation during times of gas constraints.[39] The logic for assessing the ability of demand response to reduce fuel use for electricity generation during times of gas constraints was that by doing so, Eversource could best target demand response deployment to reduce the increased carbon emissions associated with alternative sources of fossil fuel-fired electric generation.[40] This means that Eversource looked

[36] Cross-State C&I Active Demand Reduction Initiative Winter 2020/2021 Evaluation Report, at p. 1 (Jan. 18, 2022), available at https://ma-eeac.org/wp-content/uploads/MA21DR02-E_Cross-State-DR-W20-21-Report_1-18-2022.pdf ("DNV Report").
[37] *Id.*
[38] Mass. Three-Year Plan at 37 ("The PAs have demonstrated both customer interest and the ability to curtail load during the winter in response to demand reduction events."). According to the DNV Report, Eversource does not typically market advanced demand response initiatives for the winter even when they are offered, in an effort to keep down costs for a program that is not considered cost-effective due to lack of incentives. *See* DNV Report at 24. A lack of advertisement will inevitably constrain uptake and ultimately may lower cost-effectiveness by falling short of economies of scale.
[39] DNV Report at 18 *et seq.*
[40] *See id.* at 6-7.

closely at how to reduce demand on the electric system at times when gas constraints were likely to cause coal- and oil-fired generation units to be called on by the grid operator to help maintain electric reliability. It is possible that the approach used for this analysis, as well as the results, could be useful as ISO-NE and the states collaborate to develop effective demand response programs that target times of likely gas constraints.

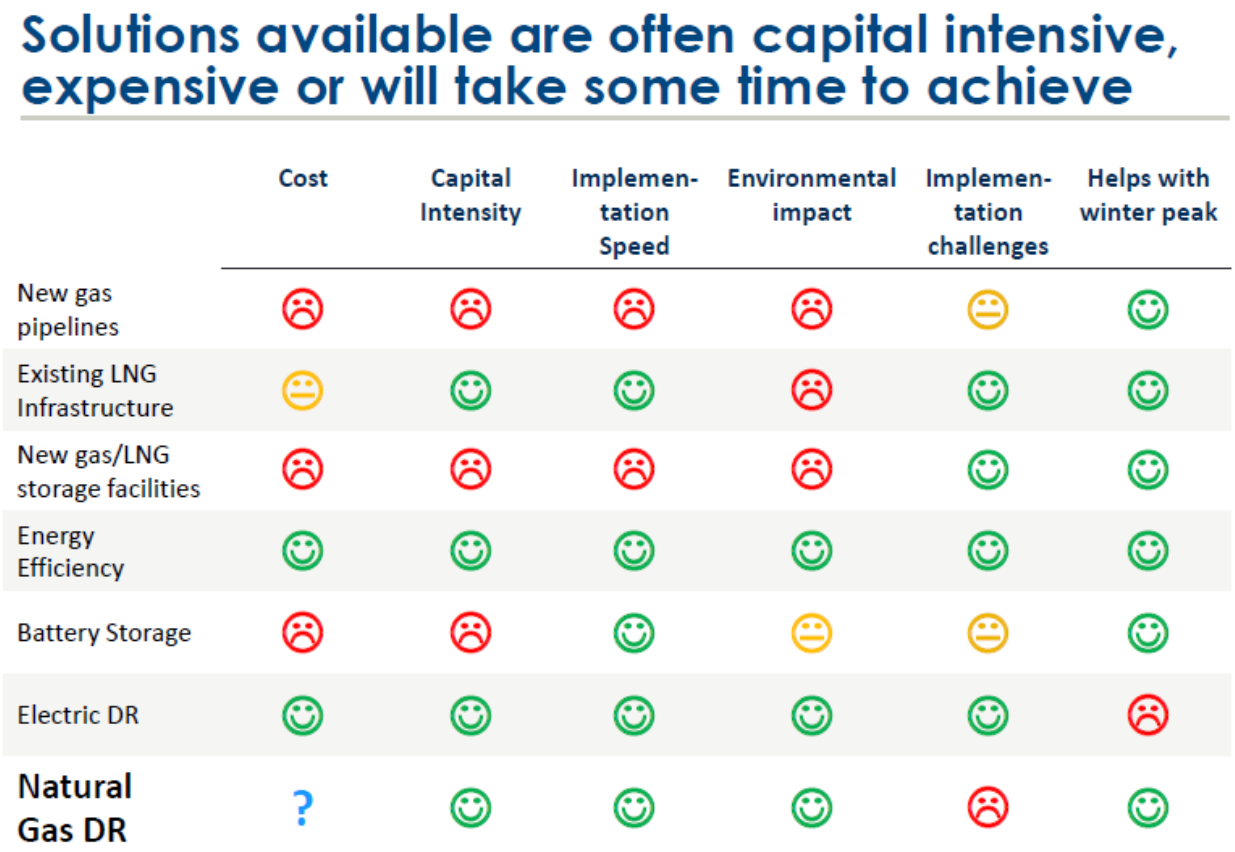
Maine's efficiency utility has also found that the narrowness of ISO-NE programs and insufficient incentives stand in the way of greater demand response participation. Among the market barriers Maine has identified to expanding electric demand response is "restrictive ISO-NE programs" that leave "most of Maine's C&I customers unserved by any program that would promote load curtailment" and lack of "adequate incentives" sufficient to motivate customers to significantly reduce their load."[41] Given the high potential cost to the region, both in terms of human and health impacts and the economic impacts of potential rolling blackouts, it is essential to ensure that demand response programs are expanded to be as inclusive as possible and to provide incentive levels that accurately reflect reliability benefits such as risk reduction.

Finally, gas demand response, as distinct from electric demand response, is also a part of the solution that has been largely untapped. A few years ago, the Brattle Group released a report calling for more investigation of gas demand response measures, on the basis that reducing gas demand could both help solve gas supply constraints and reduce price spikes.[42] In comparison to other winter solutions, the Brattle Group found both electric and gas demand response (as well as

[41] Maine Triennial Plan at 84.

[42] Weiss, J., et al., Brattle Group, Demand Response for Natural Gas Distribution: Opportunities and Challenges, slides 2, 16-18 (June 2018), available at https://www.brattle.com/wp-content/uploads/2021/05/13929_demand_response_for_natural_gas_distribution.pdf. As the Brattle Group explained, natural gas demand response programs would include residential and commercial heating demand reduction via thermostat controls as well as water heating demand reduction via temperature settings. *See id.* slide 3.

energy efficiency) to be potentially valuable options, as depicted in the following Brattle Group visual.[43]



As a result of this interest, a number of state programs in New England recently have piloted demonstration projects or otherwise explored the benefits of gas demand response programs in the wintertime, with often frustrating results due to a lack of financial incentives. National Grid and Eversource recently carried out programs in Massachusetts focused on natural gas demand response.[44] The utilities concluded that the program was not cost-effective and terminated it for the time being due to nonviability.[45] The Commission should direct ISO-NE to consult with the New England states to determine the states' interest in carrying out a study of

[43] *See id.* slide 11.
[44] Mass. Three-Year Plan at 37.
[45] *See id.*

gas demand response potential in the region, and should encourage ISO-NE to help fund and carry out such a study if there is adequate interest.

Both stronger wholesale markets signals and stronger incentives that flow through and from the states can help transform demand response into a powerful wintertime resource that helps the region to cost-effectively maintain electric reliability in the near term and the longer term. The Commission should direct ISO-NE to consider widening existing wholesale market programs for demand response, including through reducing barriers to participation and increasing incentives to accurately reflect grid needs. Perhaps even more importantly, the Commission should also direct ISO-NE to discuss with the states how best to support state-based demand response programs that currently lack adequate price signals.[46] Regional price signals must be reformed so that they do not neglect winter reliability needs solely because the electric system is not yet winter peaking. With adequate information from ISO-NE as to the scope and size of the reliability risk, the states and their utilities may also have the tools to more accurately reflect winter reliability benefits in cost-effectiveness analysis. The Commission should direct ISO-NE to discuss with the states what information, in addition to any new incentives or price signals, would be helpful to facilitate the accurate evaluation of the benefits that demand response can provide to the electric grid, price mitigation, and the reduction of price volatility.

[46] Some types of demand response participants may be more likely to participate in enhanced state-based programs than ISO-NE programs, in part due to information barriers, costs to participate, and lack of expertise in wholesale markets complexities.

II. Conclusion

Acadia Center appreciates the opportunity to participate in these important discussions. We look forward to continued engagement as solutions are considered and put in place to keep New England communities safe from the harms of both blackouts and the climate emergency. We strongly encourage the Commission to continue its work with state leadership, ISO-NE, and stakeholders across the region to resolve New England's winter reliability challenges as quickly as possible while protecting communities from harm and advancing the clean energy transition.

Respectfully submitted,

Melissa E. Birchard
Melissa E. Birchard
Director, Clean Energy and Grid Transition
Acadia Center
15 Court Square, Suite 1000
Boston, MA 02108
mbirchard@acadiacenter.org

Dated: November 7, 2022