March 1, 2021

New England States' Vision for a Clean, Affordable, and Reliable 21st Century Regional Electric Grid: Transmission Planning

We appreciate the opportunity to provide comments in response to the New England States' Vision for a Clean, Affordable, and Reliable 21st Century Regional Electric Grid.

FirstLight Power (FirstLight) is a leading clean power producer and energy storage company in New England with a portfolio that includes 1.4 gigawatts (GW) of pumped-hydro storage, lithium-ion battery storage, hydroelectric generation, and solar generation. These local clean energy resources are a significant contribution to New England's existing zero-emissions electricity today, and provide significant support for the region's efforts to combat climate change and scale up clean energy resources.

Our assets in Massachusetts and Connecticut comprise the largest hydroelectric generation portfolio in the region, supplying New England communities with high paying local jobs and over $34 million in property taxes and local vendor contracts. Our largest asset, the Northfield Mountain pumped hydroelectric facility located in western Massachusetts, provides nearly 1,200 MW of emissions-free energy storage capacity and it serves as a critical asset to maintaining regional reliability on the New England electric grid.

As a leading clean energy producer with experience operating both large-scale renewable energy and storage assets, as well as distributed solar and battery storage projects here in New England, FirstLight submits these comments to help support and inform the States' efforts to advance its clean energy goals while maintaining a competitive and reliable grid.

1. Energy Storage Can Provide Critical Services to Avoid Overbuilding Transmission

The New England States have each approached resource planning by leveraging reports that not only detail decarbonizing the generation sector but also critically how best to move decarbonized electricity to where the supply is needed most. Transmission is a critical component to grid resiliency and reliability, but it is not the only solution available. As we have seen throughout New England, it can be incredibly difficult to site and build new transmission

anywhere in the region. It is also costly to do so, necessitating a more holistic approach to grid planning and buildout. Energy storage, particularly targeted grid scale storage, can serve as a less costly and more easily sited alternative to some transmission buildout.

Storage offers fewer siting challenges than miles-long transmission corridors and can be situated in critical areas for resiliency and reliability purposes. Its flexibility offers a range of value to the localized grid; including reducing peak demand, congestion management, renewable integration, curtailment management, resiliency improvements, and decreasing carbon emissions. We recommend the region consider leveraging grid-scale energy storage as an alternative to some transmission development.

2. Retirement of Obsolete Resources Will Reduce the Need for Additional Transmission

While it is important that the New England states continue to focus on the necessary buildout of transmission and storage alternatives, the region must also consider the value that may be obtained from retiring obsolete resources currently occupying critical locations on the grid. Ideally, the retirement of resources that operate infrequently yet maintain valuable interconnections on the grid will free those locations up to be redeveloped by renewable resources and energy storage.

With the New England states appropriately focused on achieving market-based clean energy entry to meet their goals, it is also important to assure that the ISO-NE market has efficient retirement signals. Improving market entry without assuring efficient market exit will ultimately prove unhelpful to the fleet of clean energy resources (because prices will remain depressed and undercompensate clean energy resources) as well as undermine the needed backstop and balancing fleet of other resources. This concern is not hypothetical—the existing wholesale capacity markets actually discourages rarely used resources to retire once they reach that point of obsolescence. FirstLight can observe this problem firsthand. FirstLight's kerosene fired Tunnel Jet peaking facility is actually among the most economic resources in the ISO-NE capacity market given its very low operation and maintenance expenses, a product of minimal operation during each Commitment Period. FirstLight encourages the New England states to recognize that successful evolution of the New England grid to achieve state clean energy goals requires changes to assure efficient market exit as much as assuring efficient new market entry by clean resources, especially those situated a critical locations along the grid that could potentially offset the need for some transmission buildout.

Absent an effective retirement signal, such obsolete resources are encouraged to remain in the Forward Capacity Market (FCM) to collect capacity payments in exchange for providing very little system value, which is the current state of affairs. As stated in the Connecticut Draft IRP (with respect to fossil peaking units in Connecticut):

> Most of these older units run on residual oil, and their technology is so inefficient and costly to operate that they run infrequently, producing less than 1.8 percent of the

> electricity, yet 3 percent of the CO_2 emissions and 28 percent of the NOx emissions in Connecticut's large fossil-fuel generating fleet. These units receive revenue streams through the ISO-NE capacity market. There does not seem to be evidence that the Pay for Performance (PFP) program instituted by ISO-NE is affecting the retirement decisions of resources, as the region has seen minimal retirements since PFP has been in place.[1]

A review of the regional data reveals a similar story. For example, despite oil generators receiving 20% of capacity revenues in ISO-NE, they only supply 0.52% of energy on average. Coal's declining capacity is also reflected in generation declines to less than 0.1% of generation in 2020, though it still receives 1.5% of the capacity revenues.[2] By contrast, while renewables such as hydropower received up to 16% of capacity revenues, they provide 18.7% of energy on average.

The reality is that many obsolete resources are paid the same capacity payment as resources that are more actively employed, yet they may never be called on to provide any real value to the system or do any of the "work" to keep the system running. The current FCM design promotes this inefficiency, as the obsolete resources require little maintenance (due to little, if any, work required of them), pushing capacity prices below levels sustainable in the end by the marginal resources actively supporting the system. FirstLight recognizes that capacity payments and payments for energy production compensate different values. Nonetheless, it is undeniable that the mismatch in capacity payments and production noted above are not effectively channeling scarce electric ratepayer funds to the resources we need and instead channeling funds to the least desired resources.

Restoring a meaningful retirement signal is fundamental to efficiently achieving state policy goals, including properly planning, siting, and developing transmission infrastructure. Encouraging obsolete resource retirement will free valuable, underutilized, interconnection space for new clean energy and energy storage projects. Making this existing infrastructure available to clean energy resources will minimize the amount of new investment in transmission and other grid upgrades, saving consumers money by more efficiently utilizing the existing system infrastructure.

In addition to helping reduce the need for some additional transmission resources, restoring meaningful retirement signals will also provide the following benefits:

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[1] Connecticut Department of Energy and Environmental Protection, *Integrated Resources Plan: Pathways to Achieve a 100% Zero Carbon Electric Sector by 2040,* 106 (December 2020).

[2] Per average generation and capacity supply obligation by obligation month between 2017 and 2020 per ISO-NE, *Forward Capacity Auction Capacity Obligations* at https://www.iso-ne.com/static-assets/documents/2018/02/fca_obligations.xlsx and ISO-NE *Daily Generation by Fuel Type* at https://www.iso-ne.com/isoexpress/web/reports/operations/-/tree/daily-gen-fuel-type

- Encouraging resources presenting the highest cost energy options, which often correspond with the highest greenhouse gas emissions rates per megawatt-hour, to cease operation. Even if the capacity sale obligation does not lead too much, if any, economic dispatch of that high emissions rate power, the capacity supply obligation requires the resource to run at least two times per year to meet capacity market audit requirements.[3]
- Many of New England's biggest sources of greenhouse gas emissions were sited close to environmental justice communities, disproportionately affecting those communities through their emissions[4]. Replacing these resources with renewable assets and electric storage can provide economic benefits to communities in the form of new investment and property taxes.
- Market rules encouraging efficient retirements will support the market outcomes that attract and retain the full set of resources needed to meet state policy, both the new and existing clean energy resources and the back-up/balancing resources needed to integrate them.

Thank you for your consideration of these comments.

Sincerely,

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[3] While the very high price of their energy dispatch will minimize their economically dispatched generation, the capacity sale requires them to operate at least twice per year to perform claimed capability audits for ISO-NE. Additional high emission self-dispatch may occur to address the risk of Pay-for-Performance charges if system conditions reflect a risk of scarcity event. For dirty resources with fast start capability, further self-dispatch may be needed to perform audits to demonstrate or restore fast start ratings, a prerequisite for getting additional compensation from the Forward Reserve Market. Hence, even if not really needed to meet system reliability, consumers are being required to pay these dirty resources to produce the emissions they do not want.

[4] Connecticut Department of Energy and Environmental Protection, *Integrated Resources Plan: Pathways to Achieve a 100% Zero Carbon Electric Sector by 2040,* 106 (December 2020).