

**STATE OF NEW HAMPSHIRE  
DEPARTMENT OF ENERGY**

**INV 2023-002**

**Investigative Proceeding Relative to Compensation of Energy Storage Projects  
for Avoided Transmission and Distribution Costs**

**COMMENTS OF PUBLIC SERVICE COMPANY OF  
NEW HAMPSHIRE d/b/a EVERSOURCE ENERGY**

Pursuant to the Order of Notice issued by the New Hampshire Department of Energy (“DOE”) in this investigative proceeding on June 23, 2023, Public Service Company of New Hampshire, d/b/a Eversource Energy (“Eversource” or the “Company”), submits these comments addressing the issues listed by the DOE in that notice. Under RSA 374-H:3, the DOE is directed to:

investigate ways to enable energy storage projects to receive compensation for avoided transmission and distribution costs, including avoided regional and local network service charges, while also participating in wholesale energy markets. The department shall investigate how this might be done for both utility-owned and non-utility-owned energy storage projects, as well as for both behind-the-meter storage and front-of-the-meter storage.

The DOE must then report its findings and recommendations to the standing committees of the house of representatives and senate with jurisdiction over energy and utility matters within two years after initiating the investigative proceeding, with its report identifying “ways any recommended statutory changes can minimize any potential conflict with the restructuring policy principles of RSA 374-F.” RSA 374-H:3, III.

These written comments focus on the continuing relevance of the comments submitted by the Company in the investigative proceeding conducted by the Public Utilities Commission (“PUC”) in Docket No. IR 20-166. Eversource’s comments address the specific issues required to be considered in the DOE’s investigative proceeding, under RSA 374-H:3, II, as follows:

- 1. How public policy can best establish accurate and efficient price signals for energy storage projects that avoid actual transmission and distribution costs or reduce wholesale electricity market prices.**

Eversource reiterates the key points covered in its comments submitted to the PUC in Docket IR 20-166,<sup>1</sup> in particular that the potential for energy storage resources to avoid or defer

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<sup>1</sup> The Company’s initial comments in that investigative proceeding were filed on January 11, 2021 and may be viewed through the following weblink: [https://www.puc.nh.gov/Regulatory/Docketbk/2020/20-166/LETTERS-MEMOS-TARIFFS/20-166\\_2021-01-11\\_EVERSOURCE\\_COMMENTS.PDF](https://www.puc.nh.gov/Regulatory/Docketbk/2020/20-166/LETTERS-MEMOS-TARIFFS/20-166_2021-01-11_EVERSOURCE_COMMENTS.PDF). Those comments will not be restated at length here.

actual transmission or distribution system upgrade costs should focus on a locational non-wires alternative (“NWA”) analysis. As stated in those earlier comments, opportunities for energy storage to avoid actual distribution<sup>2</sup> costs as an NWA that defers traditional system investments will need to be done within existing but evolving system planning processes that are inclusive of multiple technologies and achieve an objective of identifying the option that constitutes the best technical fit and least cost solution.

Related to that point, the Company has developed a Distribution System Planning Guide which provides specific detail on system design considerations, including energy storage NWA solutions, and which was included as part of the Company’s Least Cost Integrated Resource Plan (“LCIRP”) filing in Docket No. DE 20-161. The Company has also adopted an NWA Framework and Screening Tool that represent a systematic approach to identifying the right resources to cost-effectively solve distribution system needs, whether based on capacity, reliability, resiliency, or voltage. The NWA Framework is used to define a specific NWA solution and technology that addresses an identified local system need, and to evaluate the suitability of that potential solution in comparison to the traditional “wires” solution. The Eversource NWA Framework has also been filed in the Company’s LCIRP docket, DE 20-161.<sup>3</sup>

Energy storage systems are dispatchable resources, and dispatchability is a critical driver of value for their use as NWA solutions. Rather than relying on a statistical forecast of availability, dispatchable storage resources can be actively controlled when the system need arises. However, the suitability of a resource for an NWA solution is dependent on the electric distribution company (“EDC”) having and exercising direct control over operation of the resource. EDC direct control of energy storage operation is critical so that EDC system operators can deploy the NWA resource in the same way they perform switching operations to address overload conditions and maintain reliability of the distribution system.

By contrast, an energy storage resource dispatched based on a contractual schedule would be a less dependable NWA solution for several reasons. First, a pre-set schedule may not meet the needs that arise in real-time on the distribution system. Second, even with contractual penalties for non-performance, the resource may not perform when needed, resulting in a negative impact on system reliability and service to customers. Third, the EDC’s distribution system NWA requirements for dispatchable resources differ from ISO-NE requirements; because EDCs have location-specific requirements for NWAs to alleviate relevant constraints, EDCs cannot draw on the same statistical equalization models used by ISO-NE, and, accordingly, the EDC’s potential pool of resources to address an NWA is significantly smaller than the ISO-NE market pool because of the greater need for locational reliability performance. Fourth, issues such as maintenance problems or disruptions in control systems may prevent a contracted resource from meeting its performance obligations as needed to serve the NWA function; EDC-

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<sup>2</sup> Although it is possible that a dispatchable energy storage resource could effectively perform a transmission function or serve as a transmission system NWA, any such use case would be subject to evaluation and approval by ISO New England (“ISO-NE”) rather than any state authority, and therefore transmission NWAs are excluded from discussion in these comments.

<sup>3</sup> See Docket No. DE 20-161, Exhibit 3 at Bates 002-046.

owned and dispatched resources provide a much higher level of confidence that the NWA solution will meet the distribution system need as it evolves over time.

Although an energy storage resource installed and operated as an NWA solution may be able to obtain value from participation in the wholesale electric markets for energy, capacity, and ancillary services, the overriding objective at all times must be to relieve the distribution deferral need as the priority use case to ensure continued system reliability. Accordingly, the ability of energy storage to defer distribution costs and simultaneously to reduce wholesale market prices may not be possible in many cases due to the distribution system need and the incompatibility of wholesale market opportunities. While there may be opportunities for an energy storage resource to be used for wholesale market participation, the resource most likely would need to be significant in size and dispatched often to impact energy prices. For energy storage systems less than 5 MW in size, the ability to register with ISO-NE as a “settlement only generator” (“SOG”) may provide opportunities to participate in the regional wholesale power markets as a “price taker,” without being subject to ISO-NE dispatch instructions. An energy storage system of 5 MW or more in size, however, would be required to register with ISO-NE as either a “modeled generator” (“MG”) or a “continuous storage facility” (“CSF”), in each case subject to direct dispatch control by ISO-NE. Accordingly, registration and market participation as a MG or a CSF is not a feasible option for energy storage resources serving an NWA function, due to the potential for conflicting dispatch of the storage system between ISO-NE dispatch signals and Company dispatch signals. The energy storage resource owner also would be responsible for any financial penalties resulting from non-compliance with ISO-NE dispatch instructions while meeting distribution system needs as an NWA solution.

Moreover, an EDC such as Eversource is the only entity with a real-time understanding of the relevant distribution capacity, power-quality needs on an hourly basis, and resiliency needs before, during, and after a storm event. And the EDC is the one with the ability to ensure dispatch of the energy storage resource, including ensuring adequate charging of the resource prior to the needed dispatch, as well as having the ultimate responsibility for distribution system performance. Eversource would not bid the energy storage resource into the ISO-NE capacity market, as participation in that market is tied to performance requirements, including associated financial penalties, that may, in some instances, create a conflict of interest between bulk power system and local distribution system needs.<sup>4</sup>

Refraining from direct market participation, therefore, would resolve the potential conflict in a way that preserves the EDC’s performance of assessing distribution capacity. Accordingly, while the EDC could operate the energy storage resource to capture certain incremental market values, which would flow back to its customers and offset the energy storage NWA cost, that option would be available only to the extent there are no impending needs to dispatch an energy storage NWA during any relevant time period.

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<sup>4</sup> For example, on a load constraint feeder, a battery is controlled to discharge as an NWA while the bulk markets, due to high system-wide availability of distributed energy resources (“DERs”), may see an oversupply and negative prices, indicating that the battery should be *charging* rather than *discharging*.

**2. How to compensate energy storage projects that participate in wholesale electricity markets for actual avoided transmission and distribution costs in a manner that provides net savings to consumers.**

In the preferred model where the energy storage NWA is owned and operated by the EDC, there would be no need to compensate the energy storage resource beyond normal rate treatment, as any additional benefits that may be gained from use of the resource, such as any peak reduction benefits, would flow back to EDC customers through reductions in the net energy storage costs to be recovered from customers through distribution rates.

In the alternative model where a third party would own the energy storage resource, a competitive solicitation would be held to select the resource, with detailed specifications for control and operation to meet the relevant NWA requirements clearly stated in the request for proposals (“RFP”). Such a competitive solicitation would be conducted only if it were anticipated that alternative could provide customer savings over the traditional solution or EDC ownership, based on the Company’s NWA analysis for the specific locational need.

The RFP respondents would be expected to submit bids based on their individual assessments of project economics, and the selected project owner would enter into a contract defining the compensation the third party would receive from the EDC and, ultimately, the EDC’s customers. The contractual compensation to the third party resource owner would have to include strong and binding performance obligations and related liability, damages, and financial security provisions, to ensure that the NWA objectives are met; in no event should that contractual compensation include the equivalent of “make-whole” payments to the project owner that would be recovered from EDC customers.

In the context of any such third-party ownership of an energy storage resource, the third party project owner could participate in the wholesale power markets in whatever manner it chooses, provided that it meets the applicable contractual performance obligations for service to the distribution system, and it acknowledges and fully assumes all consequences, financial or otherwise, for any failure to meet ISO-NE rules and procedures.

**3. How best to encourage both utility and non-utility investments in energy storage projects.**

In Eversource’s view, the most reliable approach to deploying energy storage resources for NWA solutions is a model based on EDC ownership and control of the resources in front of the meter. EDCs are uniquely situated to derive additional distribution system benefits over time, given their deep understanding and knowledge of the transmission and distribution system (e.g., circuits, substations, etc.), ISO-NE operational requirements, ISO-NE forward capacity market, ISO-NE market settlement registration, and customer behaviors (including the SOG, MG, and CSF alternatives for ISO-NE market participation as described above). Those multiple factors would enable the EDC to dispatch energy storage resources primarily as NWA solutions in a manner that also captures incremental market values when and how possible, all for the benefit of its retail customers. Those benefits of EDC ownership stand in contrast to the reliability and dependability limitations of third-party owned energy storage resources, as outlined above.

Moreover, utility operation and control of storage resources align the operation of the asset with the primary purpose of grid reliability and resiliency. Operational decisions can impact the reliability of elements within the energy storage NWA solution, and the core function of the energy storage solution must be to serve the reliability needs of the distribution system. As a result, incentives to operate such a resource for purposes other than the NWA solution may introduce potential conflicts between the project owner's interests and the grid's interests, thereby potentially jeopardizing customer service and reliability. In addition, the pursuit of incremental value must include consideration for the long-term performance and asset health of the resource.

As described above, reliance on long-term contracts with third-party project owners also carries risks for customers. Those risks include market consolidation and potential mergers and acquisitions, which may result in resources changing ownership, while other resource owners may go out of business entirely. Level and quality of service, honoring warranties, and asset supply chain continuity are additional concerns. And any development and operation model other than EDC ownership introduces additional stakeholders requiring profit margins from the project before providing value to electric customers. EDC ownership and operation of energy storage resources ensure the flexibility to operate the assets most cost-effectively into the future.

Accordingly, Eversource strongly recommends against the third-party ownership model for energy storage resources serving an NWA function. To the extent that model is implemented, the level of risk borne by customers should be mitigated to the greatest extent possible through strong contractual provisions that ensure the third party owner provides a resource for customers that fully satisfies the primary intended function as an NWA solution. Such contractual provisions must include performance, operational, maintenance, inspection, and reporting obligations and guarantees, including active control and dispatch of the resource, to be backed by binding liability, indemnification, damages, and financial security requirements intended to ensure reliable asset operation and maintenance over the full term of the contract.<sup>5</sup> Material and/or repetitive failures should result in a declaration of contractual breach and disqualification of the vendor from any future solicitations.

**4. The costs and benefits of a potential bring your own device program; how such a program might be implemented; any statutory or regulatory changes that might be needed to create, facilitate, and implement such a program; and whether such a program should include all distributed energy resources or be limited to distributed energy storage projects.**

As described in the Company's initial comments submitted to the PUC in Docket No. IR 20-166 (at pages 15-16), the potential costs that might be expected to be incurred in connection with a bring-your-own-device ("BYOD") program would include customer incentive payments, start-up costs, program administration costs, performance management fees, and participant-

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<sup>5</sup> More detailed summaries of relevant operations, maintenance, and technical requirements for any such contracted energy storage resources are included on pages 14-15 of the Company's initial comments submitted in Docket No. IR 20-166 on January 11, 2021.

funded costs, while BYOD program benefits may include avoided energy market costs, avoided capacity market costs, energy demand reduction-induced price effect (“DRIPE”), capacity DRIPE, transmission and distribution,<sup>6</sup> reliability benefits, and non-energy impacts such as increased customer property values, outage reductions, capital, and O&M costs due to avoiding the purchase of a backup generator, non-embedded emissions, avoided collections and terminations, and federal tax credits.

Eversource continues to expect that the benefits of including energy storage in a BYOD program,<sup>7</sup> if warranted under relevant benefit-cost analysis, would be maximized through existing program designs as detailed in the Company’s initial comments at pages 17-24. More specifically, Eversource and its electric utility affiliates have extensive experience developing and implementing behind-the-meter energy storage programs in their service territories, and that experience would enable the Company to most efficiently implement similar BYOD programs, if cost-justified, using similar methods and processes in New Hampshire. In particular, any incentives payable to BYOD program participants must be based on demonstrated performance when and as necessary to meet program objectives; in no event should those customer incentives include any up-front payments for project installation or any type of “make-whole” payment to the project owner that would be recovered from EDC customers.

That said, the Company reiterates the need for operational control to remain with the EDC to ensure that participating energy storage resources maintain or improve distribution grid reliability without causing any harm to the system, while potentially also obtaining maximum value from the devices through incremental market participation opportunities. In addition, allowing the Company to retain operational control of such resources may create cost savings and synergies by leveraging existing assets such as energy efficiency (“EE”) implementation and marketing staff, DERMS platform, evaluation, measurement, and verification (“EM&V”) protocols, and EE incentive contracts, as well as potentially building on existing EE customer and contractor relationships.

For all these reasons, the Company continues to maintain that it is uniquely qualified to implement and manage BYOD energy storage programs, if such programs are cost-justified based on relevant benefit-cost analysis.

- 5. Any statutory changes the general court should implement, including but not limited to changes to or exceptions from RSA 374-F or RSA 374-G, to enable energy storage projects to receive appropriate compensation for actual avoided transmission and distribution costs while also participating in wholesale energy markets.**

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<sup>6</sup> Transmission and distribution benefits represent avoided costs associated with deferral of transmission or distribution system upgrades, represented in \$/kW.

<sup>7</sup> These comments focus on distributed energy storage resources; however, other DERs might also be appropriate for inclusion in a cost-effective BYOD program, provided that those resources are fully dispatchable and can be effectively integrated with the EDC’s distributed energy resource management system (“DERMS”) and related system architecture.

Eversource remains unconvinced that specific changes to RSA 374-F and RSA 374-G are necessary at this time. However, it is worth considering what changes to those two statutes might be beneficial to facilitate effective deployment of energy storage resources in New Hampshire. In view of the many advantages of EDC ownership and operation of such resources to serve as NWAs on the distribution system, as described above in these comments, the Company believes that statutory amendments should be considered that would allow for greater involvement of EDCs in energy storage resource ownership and operation with fewer regulatory restrictions and process limitations.

Statutory changes to achieve that goal would be consistent with the stated purposes of RSA 374-G, which include “encouraging New Hampshire electric public utilities to invest in renewable and clean distributed energy resources at the lowest reasonable cost to taxpayers benefiting the transmission and distribution system under state regulatory oversight.” RSA 374-G:1. Accordingly, EDCs are already encouraged to own or invest in DERs, such as energy storage resources serving an NWA function, consistent with explicit state policy. EDC participation in DER development and deployment, however, is subject to numerous statutory limitations and regulatory process burdens that substantially restrict what the EDCs may do and how DERs may be developed and used by them.

In Eversource’s assessment, changes to the statutes that would more actively facilitate EDC development and ownership of DERs for NWA purposes would further that state policy. For example, limitations in RSA 374-G on the size, scale, and use of energy storage resource ownership by utilities should be revised so that EDCs may own storage resources greater than 5 MW in size without cumulative limitation based on a percentage of their total distribution peak load in megawatts, if those storage resources will be primarily used for purposes of “reducing line losses, supporting voltage regulation, peak load shaving, or as part of a strategy for minimizing transmission and distribution costs,” as contemplated by RSA 374-G:2, I (b), or potentially also for more expansive grid resiliency purposes such as microgrid applications. Likewise, the requirement under RSA 374-G:5, II for PUC determinations taking into consideration “environmental benefits,” “cost-effective realization of the purposes of the renewable portfolio standards of RSA 362-F,” and “[t]he effect on competition within the region's electricity markets and the state's energy services market” should not be imposed on energy storage resources proposed to be owned and operated by EDCs to provide NWA solutions.

Energy storage used for such purposes is not “generation” and should not be lumped in with it and then subjected to limitations intended to restrain utility involvement in the energy supply business. Instead, removing barriers in the existing law to allow EDCs to invest in storage as a grid asset would put them in a better position to assure that reliability and resiliency benefits accrue to the benefit of customers. EDCs would not be developing energy storage projects to offset generation or participate in wholesale markets, but rather to ensure that distribution system customers are reaping the benefits of a more reliable system while potentially offsetting other distribution investments. In Eversource’s view, EDC investments of this type should be encouraged – as expressly contemplated in state policy – rather than restricted by statutory limitations that are relevant only in the context of generation resources.

**6. Any other topic the department reasonably believes it should consider in order to diligently conduct the proceeding.**

The Company is not aware of any other issues that should be addressed at this stage of the DOE's investigative proceeding. Eversource reserves the right to address any such other issues if and when they may arise during the course of this investigation.

In conclusion, the Company looks forward to the virtual stakeholder session on July 27, 2023, and to further engagement with the DOE and interested stakeholders regarding the important issues to be addressed through this investigative proceeding. Additionally, Eversource believes that the investigation process should permit the filing of reply comments by the stakeholders within 30 days following the first stakeholder session, to be followed by a second stakeholder session to be held on a date in September 2023.