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Debra A. Howland  
Executive Director  
New Hampshire Public Utilities Commission  
21 South Fruit Street, Suite 10  
Concord, NH 03301-2429

RE: Docket No. DE 15-296, Electric Distribution Utilities  
Investigation into Grid Modernization

Initial Comments of Eversource Energy on Staff Recommendation

Dear Director Howland:

On February 12, 2019, the Staff of the Commission submitted its "Staff Recommendation on Grid Modernization" ("Staff Report") in the above-captioned proceeding. The Staff Report set out numerous recommendations for changes to developing, planning, understanding, and communicating about activities aimed at modernizing the electric delivery grid in New Hampshire. At the time of its submission, the Staff requested that parties be provided an opportunity to submit written comments responding to the Staff Report. The Commission granted that request by a secretarial letter dated March 13, 2019. Following its review of the Staff Report, as well as information provided during a technical session on March 25, 2019, Public Service Company of New Hampshire d/b/a Eversource Energy provides the enclosed as its responsive comments.

If you have any questions, please do not hesitate to contact me. Thank you for your assistance with this matter.

Very truly yours,



**Matthew J. Fossum**  
Senior Counsel

Enclosures  
CC: Service List

**THE STATE OF NEW HAMPSHIRE**  
**before the**  
**PUBLIC UTILITIES COMMISSION**

**ELECTRIC DISTRIBUTION UTILITIES**

**Investigation into Grid Modernization**

Docket No. IR 15-296

**COMMENTS OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**  
**D/B/A EVERSOURCE ENERGY ON FEBRUARY 12, 2019 STAFF**  
**RECOMMENDATION**

**1. Introduction**

On February 12, 2019, the Staff of the New Hampshire Public Utilities Commission (“Commission”) submitted its “Staff Recommendation on Grid Modernization” (“Staff Report”) in Docket No. IR 15-296. The Staff Report set out the extensive review by the Staff of issues relating to grid modernization following on earlier work that had been undertaken by a large stakeholder group, and which had resulted in a report from the Staff’s consultant, Raab Associates, Ltd., on March 20, 2017. The Staff Report set out numerous recommendations for changes to developing, planning, understanding, and communicating about activities aimed at modernizing the electric delivery grid in New Hampshire to make it more resilient, dynamic, and useful for utilities and customers alike.

At the time of its submission, the Staff requested that parties be provided an opportunity to submit written comments responding to the Staff Report, and the Commission granted that request by a secretarial letter dated March 13, 2019. Following its review of the Staff Report, as well as information provided during a technical session on March 25, 2019, Public Service Company of New Hampshire d/b/a Eversource Energy (“Eversource” or the “Company”) provides below its initial responsive comments. Eversource also notes that the Staff has

indicated that it may supplement or amend its recommendation in the future, particularly as it relates to issues of cybersecurity. To the extent that the Staff may file such an amendment or supplement, Eversource requests that parties be given an opportunity to comment upon or otherwise respond to that amendment or supplement.

## **2. General Comments**

Initially, Eversource appreciates the thorough and comprehensive approach to grid modernization and distribution system planning outlined in the Staff Report. Over the next ten years, a robust electric power distribution system has the potential to play an even more critical role in enabling economic growth, environmental sustainability, and customer satisfaction. Technological advances are making it possible to continue to transform the electric distribution grid from its current model of one-way power flow and mechanical, or even manual operation and control, to one that embraces digital automation, intelligence-based control and distributed energy resources (“DER”) to allow the utility to deliver significant enhancements in safety, reliability, resiliency, and asset optimization. Eversource recognizes that the future economic well-being of New Hampshire will continue to be fostered by a resilient, modern, and integrated utility grid. In addition, Eversource’s customers expect to take service from an electric grid that is resilient, reliable, allows for more options to manage usage and reduce energy costs, and that enables opportunities to explore emerging customer-side energy solutions like solar, storage, and electric vehicles. The sound methodological approach proposed in the Staff Report with its emphasis on traceability and longer term integrated planning provides a strong framework within which Eversource will be able to maximize the value proposition of the modern utility grid for its customers.

In particular, Eversource supports the Staff Report’s focus on objectives to be obtained, rather than on the deployment of particular technologies or resources. In Eversource’s view, this focus on desired outcomes, as defined in Table C-5 “Goals, Specific Objectives, and Definitions” on page 93 of the Staff Report, is beneficial because it will assure that grid modernization activities will be aligned with the goals and policies of the State and electric customers and will not be tethered to particular technologies that may become outmoded or provide only partial solutions. This focus on outcomes will also ensure flexibility as certain functionalities become increasingly important as the grid evolves and becomes more complex over time with increasing penetration of DER.

Further, Eversource supports the Staff’s goal of “traceability” – that is, the ability to demonstrate how particular investments are mapped to and aligned with specific objectives. This traceability properly retains a focus on goals and objectives rather than on any particular device, technology, or vendor. The concept of capabilities recognizes the importance of increasing the capacity of the grid to execute multiple functionalities. Rather than having a near-term focus on investments that meet objectives today, mapping to capabilities reflects the fact that building the capacity of the grid in areas such as interoperability, situational awareness, and investment optimization will enable a grid that is flexible and can react to technological developments as they emerge over time. Eversource supports modernization that will enable the distribution grid to serve as a customer-centric platform that enables a cleaner energy future for New Hampshire.

Likewise, Eversource appreciates the comprehensive nature of the Integrated Distribution Plan (“IDP”) proposed by the Staff. The proposal for the IDP is substantially based upon the work and ideas developed by the United States Department of Energy (“DOE”), with which

Eversource is already familiar and generally supports.<sup>1</sup> Having a common base from which to begin assessments and investments will assist all parties in understanding what is proposed, and why, and how best to achieve the desired ends. In the same way, Eversource is encouraged by the Staff's review of grid modernization activities in other states. Importing best practices from the DOE and other states into New Hampshire will save time and resources and provide greater assurance that proposed actions and investments will have lasting benefits.

As a final general note, while Eversource appreciates the proposals of the Staff, much of what is contained in the Staff Report was developed from theoretical approaches for addressing various problems and concerns. If it is to be successful, the IDP must be turned into a practical document and Eversource anticipates working expeditiously on developing an IDP proposal and putting it into practice. Delays in moving from the theoretical to the practical will only hamper the delivery of benefits to the State and its electric customers and Eversource, therefore, supports a more aggressive development and implementation timeline than is found in the Staff Report.

### **3. Current Investment Strategies**

As the transition begins from the older model of the Least Cost Integrated Resource Plan ("LCIRP") and toward something like the IDP, care and attention must be given to assuring that reliability is maintained and that appropriate and necessary investments in the distribution system are continued. Although Eversource supports the holistic approach to planning contemplated by the IDP, the Company also recognizes that traditional investments in asset management and aging infrastructure will continue to be critical components of the Company's investment plan.

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<sup>1</sup> Eversource notes that it believes the IDP, or similar, is the more appropriate submission and opportunity to propose, discuss and address numerous issues related to grid modernization rather than the prior reviews done through the LCIRP process. In furtherance of this, contemporaneously with these comments Eversource is filing a request for a waiver of the LCIRP filing requirements in Docket No. DE 15-248 and asking that the LCIRP be waived in favor of the IDP proposed through this docket.

Deploying new technology without addressing the reliability concerns associated with aging infrastructure ignores the fact that investments are required to ensure all utility assets are fundamentally safe and reliable as well as intelligent. To that end, Eversource proposes that “business as usual investments,” defined as expenditures that are needed primarily to ensure reliable operations or to comply with service quality and safety standards, should continue to be evaluated as they have in the past. In that these investments are of the type the utilities have traditionally done for the benefit of customers and the protection of the system, continuing that evaluation method makes sense. Moreover, these investments should not be subjected to the kind of traceability analysis noted by the Staff. In that they are not tied to, or specifically supportive of, a particular objective of grid modernization, exempting them from that analysis is reasonable.

With respect to the inclusion of alternatives to more traditional system investments, Eversource acknowledges that there is a growing trend of looking to use those alternatives, sometimes referred to as “non-wires alternatives” or NWAs, in addressing system needs. These NWAs may not necessarily be for purposes of meeting a defined modernizing objective, but to supplant a different type of traditional utility investment. To the extent that an NWA is solely an alternative to a traditional investment, it should be evaluated in much the same way as business as usual investments. In the event that an NWA can provide additional modernization benefits, such as DER integration, and/or provide direct net benefit to customers, it should be evaluated in a traceability framework that recognizes the multiple grid modernization objectives achieved.

That said, Eversource emphasizes that these NWAs should not be deployed hastily or indiscriminately. Instead, if they are to be used, such investments must be required to meet certain criteria if they are truly to replace a more traditional investment. They must demonstrate

that they will be available when and where they are needed to meet identified system needs. They must have a level of reliability that matches or exceeds the more traditional solution. And, they must be cost-effective.

#### **4. Traceability Analysis**

Regarding the types of investments that fall outside the realm of traditional solutions, and more in the area of grid modernization, Eversource agrees that having a traceability analysis as suggested by the Staff is reasonable. This analysis should be performed for a portfolio of investments to assure that the plan serves the intended and desired purpose and objectives.

In Eversource's view there is a need for investment in enabling functionalities, such as communications infrastructure and communications network management, that should be considered as part of the five-year plan portfolio of grid modernization investments the Staff discusses for the IDP. Using a portfolio approach to traceability analysis, investments in enabling functionalities would be considered as a part of the overall development of capabilities and progress in achieving grid modernization objectives.

Lastly, the IDP should allow the utility flexibility to augment or add functionalities as technologies evolve. For example, the definition "Volt-Var Management and Power Quality" functionality is focused on the management of steady state voltage, which is a functionality currently performed by engineers and system operators. In the future, Volt-Var optimization functionality will utilize field and substation equipment and advanced logic to achieve multiple objectives including increased operational efficiency, reduce costs, and enable DER integration. The traceability analysis would continue to show how the investment maps to the desired objectives, but should not be so restrictive that additional benefits of newer technologies are ignored to maintain devotion to a particular means of achieving those objectives. In other words,

the goals should be known and clear, but utilities should have flexibility within the analysis to reach those goals by maximizing newer technologies for the benefit of customers.

## **5. Timeframes**

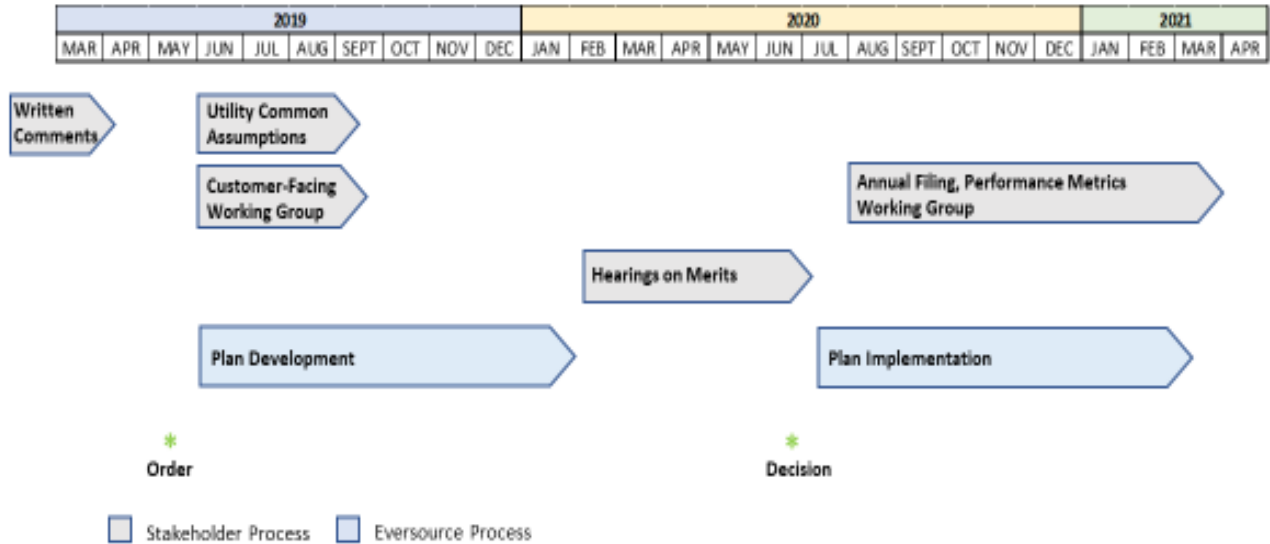
### **A. IDP Development**

Sections 5.0 and 6.0 of the Staff Report set out various timelines and milestones for the development of the new IDP. In Eversource's assessment, this timeline is unnecessarily long. Based upon the Staff Report, as well as information shared at the March 25, 2019 technical session, it appears that the Staff anticipates a lengthy stakeholder process (which Eversource comments upon below) that would not conclude until late in 2019 or early in 2020. That stakeholder process would then be followed by plan development and filing and an adjudicative process. Only after both the stakeholder and adjudicative processes are complete would any plan implementation begin. By the Staff's estimation, the very earliest that these regulatory processes would be complete is the middle of 2020, but it is more likely to be later. Also, given the Staff's reasonable desire for different evaluations for each utility, it is possible or even likely that one or more of the utilities would not have the necessary approvals until sometime in 2021. This would mean that grid modernizing investments would only begin to be made two or more years from now. We can be more efficient than that. As described below, Eversource's position is that many of the proposed working groups could be eliminated or condensed and some of the work Staff envisions happening prior to the IDP filing could (and should) occur after the filing.

To advance the process, Eversource would prefer to receive an order in the near term setting the requirements of an IDP filing. This order should include guidance on the content of the IDP. To aid in that process, Eversource also proposes revisions to the content of the IDP from that proposed in the Staff Report. A proposed outline for such a filing is included as an attachment at



the end of these comments. In addition, the order should allow the utilities up to 12 months to file a plan, though it could be filed earlier if a company is ready. An illustrative timeline that Eversource believes is reasonable is set out below.



Eversource does not intend to curtail reasonable stakeholder processes and working groups, but Eversource also does not believe that extended regulatory processes are needed here. These issues have been through extensive stakeholder processes already as outlined in the report, “Grid Modernization in New Hampshire, Report to the New Hampshire Public Utilities Commission,” and now is the time to put forth specific plans to meet specific goals.

**B. Technology Deployment**

Section 3.5 of the Staff Report (page 42) sets out the Staff’s proposed timeframes for technological investments. Eversource cautions that to the extent the Commission or others may rely upon that proposed timeline, it should be considered only conceptual and not prescriptive. While it is true that developing functionalities should happen in a phased approach, multiple variables, many of which are specific to an individual utility, will impact how functionalities

should be established. Factors such as historical investments in building capabilities, dependencies between functionalities, and the pace of adoption of DER on the system will determine the optimal deployment timeframe for each company. As depicted in Figure 2-7 “Distribution System Platform with Core Technology Components and Applications” on page 32 of the Staff Report, the core cyber-physical layer provides foundational support for core planning and operational systems. Eversource agrees that these core components need to be deployed first as the technology foundation upon which more advanced applications will be integrated over time. In addition to the core components, on the Eversource system, additional advanced applications can start to be implemented in years 1 - 3 as the base components become available. Beyond the third year, the more advanced applications, such as market settlement, would be phased in to further leverage the functionality of the core components. This would also allow for the technology in these more advanced areas to mature. In contrast, under the Staff’s formulation, investments in sensing and measurement and communications would not happen for some time, but foundational investments in grid visibility are essential enabling functions that support multiple capabilities and objectives. While further investments are needed to enable the modern grid, being bound to that schedule may, even inadvertently, lead to sub-optimal development of capabilities.

Of note, however, Eversource does agree with the Staff’s near term focus on planning capabilities as those are necessary prerequisites to more robust investment. Without meaningful planning capabilities, efficient deployment of modern investment when and where it is needed would be difficult.

## **6. Advanced Metering Functionality**

Eversource supports a reasoned and measured approach to the deployment of advanced metering functionality. A measured approach is not only supported by current New Hampshire

law requiring customers to opt-in to the use of advanced metering (RSA 374:62), but there are also practical reasons for moving in a deliberate fashion. Advanced metering has potential operational and customer benefits and can be an enabler to higher stages of grid evolution. However, it can also have a high cost, and potential customer benefits may be better achieved in the short term by other strategic investments. Potential costs and benefits should be weighed before striking down a particular path.

### **7. Working Groups and Stakeholder Analysis**

The Staff Report (Section 5.1.2., page 66) sets out a series of potential areas, 13 in total, where the Staff believes that working groups or some stakeholder processes may be beneficial. In Eversource's assessment, there are some areas where a working group might be beneficial, but there is no need for groups that cover the full scope of areas identified by the Staff. Additionally, it should be made clear as early as possible in any working group how the group will be managed or facilitated (by Staff, a consultant, or otherwise), who the participants are, and what the expected outputs of the working group process are.

As for specific groups, rather than implementing a cost effectiveness working group, Eversource proposes that the utilities be responsible for developing common assumptions where applicable. Without such common assumptions to begin an analysis, the review of a filed IDP would become bogged down by differences of opinion on foundational or baseline analyses.

Eversource also recommends that there be a single working group to address customer-facing and metering issues, including customer and utility data, customer education, and consolidated billing. The investments that might come from the recommendations of such a group are not as immediately necessary as grid-facing investments and, because they are customer facing, it is vital to get robust stakeholder input to assure the best result from the customers' perspective.

To the degree there might be a separate working group on performance metrics and/or annual report filing, such a group should only be established after plans are approved to provide more specificity. Without approved or authorized plans, which will vary by utility, knowing how best to measure and report on the performance of those plans would be difficult or impossible. Eversource proposes that each utility propose performance metrics as a part of its IDP filing, and, after plans are approved, it will be easier to find consistency among utilities. Further, annual reports should be accurate reflections of goals and objectives of approved plans, rather than based upon conceptual or theoretical objectives.

In Eversource's assessment, a working group on cybersecurity is unnecessary given that Eversource currently collaborates with utilities across the region and the nation to share information and best practices. An open working group process is not the appropriate forum to set expectations for utility cybersecurity performance. Grid modernization is often raised in these existing collaboration events and Eversource will continue to ensure that best practice sharing is an outcome of these meetings.

Other potential working groups should be limited to the degree possible. An abundance of working groups will run the risk of duplicating prior efforts, or parallel efforts in this proceeding or another. Also, more groups would require more time from all stakeholders, without an assurance of more useful outcomes. Also of significance is that, to a degree, it is inefficient to discuss many topics theoretically. Once an IDP is filed and there are real investment proposals to address, parties will have the chance to react to, and discuss, those proposals rather than the abstract idea of one, which may or may not be realistic or relevant to New Hampshire.

## **8. Plan Updates**

Eversource supports the Staff's proposal for submission of five-year implementation plans with a refresh of those plans every three years. Having a regular and predictable period for investments, and for planning updates, will enable the integration of new technology developments and the incorporation of lessons learned.

## **9. Rate Design and Cost Recovery**

With respect to rate design, Eversource believes the framework expressed in the Staff Report will be helpful in evaluating rate design options for the various goals and objectives of an IDP. Noting the preferences for certain forms of rate design such as time varying rates, Eversource believes these should be evaluated in the context of the various aspects of service provided (e.g., generation vs. transmission vs. distribution). For example, it might be that time varying rates for generation supply could be proposed within a grid mod proceeding, but, in Eversource's view, distribution rates should be addressed in a fully contested distribution rate proceeding. Rate design proposals should also reflect consideration of important principles including: cost causation and customer impacts; the technological and information requirements associated with implementation; and customer information, education and engagement. With respect to specific charge types, the Staff Report indicates strong preferences for treatment and evaluation of customer and demand charges. Eversource believes these, and other, elements of rate design need to be evaluated in a balanced and equitable manner, reflecting cost of service and other fundamental considerations including those noted above, along with timing of their implementation and alignment of IDP goals and objectives. Insights gained from rate design in other Company rate proceedings and pilots, along with feedback provided via written comments or working group activities should also be factored into development of rate design proposals.

Eversource also supports the concept of a tracking mechanism or rate dedicated to grid modernizing investments. Assuring efficient cost recovery will encourage greater and more rapid deployment of investments. While Eversource does not, at this time, support or advocate for any particular rate design for recovery of grid modernizing costs (or, indeed, other costs), Eversource does appreciate that any rate design should help achieve the above objectives while strengthening openness, interoperability, scalability, and transparency.

With respect to performance metrics and performance-based regulation, Eversource agrees with Staff that it is important to first establish a baseline. Consistent with Staff's recommendation, Eversource intends to propose metrics along with its IDP. Eversource concurs with Staff's perspective that the utilities are all at different starting points relative to the filing of the first IDP, and therefore does not view it appropriate to establish common metrics and baselines across the utilities. Eversource intends to propose performance metrics for tracking purposes with its initial IDP and recommends the tracking of metrics for a minimum of five years to establish a baseline. Discussions of performance-based regulation as part of the Staff Working Group were highly limited, and it is unclear at this time how such a proposal would or should be incorporated into an IDP. Accordingly, Eversource would not intend to submit a proposal for performance-based regulation in an initial IDP.

## **10. Conclusion**

As in its opening comments, Eversource states its appreciation for the thorough and comprehensive approach to grid modernization and distribution system planning outlined in the Staff Report. Eversource agrees with the Staff's proposed general framework for transitioning away from the old views around planning the electric distribution grid to a new model that appropriately accounts for the changes in technology and customer expectations while enhancing

the utility's ability to assure safety, reliability, resiliency, and asset optimization. In the judgment of Eversource, though, this shift can happen more efficiently than proposed by the Staff while maintaining appropriate opportunities for stakeholder involvement. Eversource hopes that the Commission will issue an order in the near future setting the parameters for the IDP, or other submission, and allow Eversource and the other utilities to begin the work of planning and preparing their systems to support the goals of a modern electric grid for the benefit of customers and the future economic well-being of New Hampshire.

## ATTACHMENT TO COMMENTS OF EVERSOURCE

### Proposed IDP Outline

Executive Summary

Introduction

System Overview and DER Integration

Current Capabilities

- (a) Business applications
  - a. GIS
  - b. OMS
  - c. SCADA
  - d. CIS
  - e. MDMS
  - f. ADMS
  - g. Workforce management
- (b) Communications networks
- (c) Sensing & Measurement
- (d) Automation (DA and VVO)
- (e) DER Control and Automation
- (f) Load flow, forecasting and planning tools
- (g) Hosting capacity analysis
- (h) Locational value analysis
- (i) Customer data transparency
- (j) Advanced metering functionality

Five Year Plan

- (a) Business as Usual (e.g., asset management, vegetation management, new service, DA, resiliency, emergent failures, facilities)
  - a. Category descriptions
  - b. Business drivers
  - c. Expected outcomes
- (b) Grid Modernization
  - a. Category descriptions
  - b. Traceability analysis
  - c. Cost effectiveness analysis
- (c) Architectural Considerations
  - a. Platform Component Integration (e.g., Layering and Interoperability)
  - b. Future Proofing (e.g., Scalability, Extensibility, Flexibility)
  - c. Resilience (including Business Continuity Plans for Critical Operational Systems)

Ten Year Vision



## Distribution System Planning Process

- (a) Methodology (T&D)
- (b) Planning use of the engineering forecast
- (c) Planning by area
- (d) Joint planning for wholesale delivery service
- (e) Peak load curves
- (f) CLM measures
- (g) Distributed generation planning methodology

## Cybersecurity and Privacy

## Performance Metrics

## Rates and Regulatory