

September 17, 2015

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

Re: IR 15-296: Electric Distribution Utilities Investigation into Grid Modernization Order of Notice

Dear Ms. Howland:

The New England Clean Energy Council (“NECEC”) greatly appreciates the opportunity to provide comments in response to the New Hampshire Public Utilities Commission (“PUC”) Order of Notice in Docket IR 15-137, which opens an investigation into grid modernization, pursuant to House Bill 614, implementing the goals of the state 10-year energy strategy (“strategy document”).

NECEC is a regional non-profit clean energy business, policy, and innovation organization whose mission is to accelerate the region’s clean energy economy to global leadership by building an active community of stakeholders and a world-class cluster of companies. NECEC is the only organization in New England that covers all of the clean energy market segments, representing the business perspectives of investors and clean energy companies across every stage of development. NECEC members span the broad spectrum of the clean energy industry, including energy efficiency, demand response, renewable energy, combined heat and power, energy storage, fuel cells and advanced and “smart” technologies.

NECEC commends the New Hampshire PUC for initiating this proceeding. Over the last three years, NECEC has been deeply involved in regulatory proceedings and policy discussions related to grid modernization, the 21<sup>st</sup> century electricity system and the utility of the future, particularly in Massachusetts and New York. In these proceedings, we have worked collaboratively with other stakeholders including utilities, environmental and consumer advocates. Drawing on this work, NECEC published a paper in August 2014 – *Leading the Next Era of Electricity Innovation: The Grid Modernization Challenge and Opportunity in the Northeast*. The paper examines the benefits of grid modernization and a 21<sup>st</sup> century electricity system and the policy and regulatory framework needed to advance them. NECEC respectfully offers the paper (which can be found at [here](#)) and the following comments for the PUC’s consideration as it investigates what grid modernization could mean for New Hampshire.

## **INTRODUCTION**

The electric power system across New England, and the nation, is at an inflection point. Distributed energy resources – everything from energy efficiency and demand response to solar, storage, smart devices and building systems – are creating both new demands on the grid, while opening up new opportunities for system-wide efficiencies and benefits. At the same time, policymakers and customers are expecting more from their utilities and the electricity system as a whole. The 20<sup>th</sup> century grid, originally designed for one-way electricity flow from

large generators to end users, needs to evolve if it is to meet 21<sup>st</sup> century demands for a more reliable, resilient, efficient and cleaner grid.

The combination of these new demands on utilities, substantial capital investments to maintain current functions and meet new needs and flat or declining electricity sales as a result of changing customer behavior, will require that utilities and the regulatory frameworks under which they operate evolve to continue to ensure safe, reliable and affordable electricity service. In addition, as the strategy document states, “The potential benefits of grid modernization are wide-ranging and can include better outage response and increased reliability; enhanced customer engagement in reducing the high costs of meeting peak demand; easier integration of distributed generation, renewable resources and energy storage; improved efficiencies for distribution utilities; advanced integration of electric vehicles; and cost savings for all customers.” (p.17)

New Hampshire is not alone in considering how to move forward on grid modernization. The benefits articulated in its strategy document are similar, if not the same, as the objectives stated for grid modernization in Massachusetts and New York, states that have undertaken extensive regulatory proceedings to explore and advance grid modernization. (p.18) Several other Northeast states are delving into these issues as well. In addition to Massachusetts and New York, Rhode Island and Connecticut are currently investigating grid modernization and the rate implications of expanded distributed generation through various forums. We urge New Hampshire to take advantage of the work and experience of its neighboring states, considering and adopting approaches that fit the New Hampshire context.

The Order of Notice, posted on July 30, 2015, requested that interested parties provide comment on the definition, or elements, of grid modernization that should be included in the Commission’s initial investigation. In its white paper, NECEC focuses on four key priorities that will enable policymakers, regulators, utilities, advanced energy industry leaders and customers to resolve the tensions that have arisen and realize the benefits of a 21<sup>st</sup> century electricity system. These four priorities can be pursued in parallel or sequentially and can be adapted or incorporated into the existing and evolving regulatory and policymaking processes in New Hampshire as the PUC deems appropriate. We briefly discuss the four priorities or foundational elements to advance and support grid modernization below. They are described in greater detail in NECEC’s paper, *Leading the New Era of Electricity Innovation*. The four priorities are:

- Planning for Grid Modernization
- Establishing a Forward-looking, Outcomes Based Regulatory Framework
- Implementing Efficient and Fair Rates
- Unlocking Innovation

## **Planning for Grid Modernization**

Utilities should develop and implement forward-looking business plans, including distribution system investment plans, to make the transition from a commodity electricity delivery business model to a business model in which the utility serves as a distributed platform system operator that integrates distributed energy resources, enables bidirectional markets for electricity services and is a hub for grid data and information services, while continuing to provide the safe, reliable and affordable service customers expect.

New Hampshire can use existing regulatory processes such as its integrated resource planning for distribution regulations to require utilities to describe how they are modifying their planning to address the changing demands on the distribution system. This will involve making the vital connections between network users and the bulk power system, as well as serving as a platform enabling the development and deployment of a range of innovative products and services while harnessing the benefits of known and proven technologies (e.g. distributed solar).

This planning process will include investigating how to integrate increasing amounts of distributed energy resources (“DER”) including, but not limited to, distributed and utility-scale solar, wind, advanced energy efficiency and smart devices, and storage. The planning process will also include investigating upgrades into the grid itself, including embedding communication and visibility of connected resources and load across the distribution system.

### **Establishing a Forward-looking, Outcomes Based Regulatory Framework**

Regulatory frameworks that are forward-looking and focused on outcomes will help to advance grid modernization. Developing these processes will require three key steps:

- Regulators will need to work with utilities and other stakeholders to define the outcomes that the utility will be expected to deliver in the future. It is essential to have clear objectives and goals with measurable outcomes.
- There will need to be mechanisms in place to ensure that both utilities and customers benefit from cost-saving efficiencies. Any process or outcome that only benefits one or another party will not provide the right incentives to capitalize on the collaborative opportunities in grid modernization.
- Based on the above-determined goals, regulators should define outcome-based incentives that reward utilities for delivering value to, and enabling value creation by, network users.

Such a regulatory framework would support investments in a modern grid with enhanced reliability, resiliency, and environmental performance. It would also align incentives to fully integrate distributed energy resources, encouraging utilities to view DER owners as both customers and new partners in efficient operation of system.

### **Implementing Efficient and Fair Rates**

Regulators must also develop improved electricity tariffs or rates that (1) set fair prices for the range of services distribution utilities deliver and ensure recovery of allowed costs, (2) compensate distributed energy resources and electricity users for the services they provide, and (3) send market signals to network users to optimize system-wide efficiency.

Rates should send accurate signals about the value of consuming or producing electricity at different times and locations and under different system conditions, enabling customers to optimize their use of the electricity system. An example of this type of price signal is Time Varying Rates, which can send efficient signals to optimize electricity demand and reduce peaks. Rates should also ensure utilities have a reasonable opportunity to recover all allowed costs in a fair and non-discriminatory manner. Finally, rates can be designed to further state and regional policy objectives, such as incentivizing energy efficiency or distributed energy adoption. Accomplishing these three objectives may require balancing among them so that policy goals are achieved in a way that preserves efficient price signals and maintains adequate cost recovery.

## Unlocking Innovation

Innovation with respect to how customers use and interact with energy is moving at an incredible rate. To become the central platform of a 21<sup>st</sup> century electricity system, distribution utilities across the Northeast must continually adapt to new technologies and changing energy needs, becoming active partners with the region's advanced energy companies and innovative system integrators of new technologies. Regulators should support these innovation efforts by allowing utilities to establish budgets for demonstration, testing, and integration and share accelerated learning about the performance, cost, and capabilities of these new technologies. These innovation activities would be consistent with the modern utility's role as an active system operator and integrator of distributed and advanced energy technologies and would ensure that the Northeast's utilities will be positioned to take advantage of cutting edge technologies and capabilities for their customers.

## CLOSING

NECEC looks forward to working with the PUC and stakeholders and to participating in the technical session in this investigation to help New Hampshire to take advantage of the many benefits grid modernization can offer to customers.

Sincerely,



Janet Gail Besser  
VP, Policy and Government Affairs