



Via electronic submission

September 17, 2015

Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street
Concord, N.H. 03301

Re: IR 15-296, Investigation into Grid Modernization

Dear Ms. Howland,

On behalf of Northeast Energy Efficiency Partnerships (NEEP),¹ please accept our comments regarding the scope of IR 15-296, Investigation into Grid Modernization, opened on July 30, 2015.² NEEP is a regional non-profit that works to accelerate energy efficiency in homes, buildings and industry across the Northeast and Mid-Atlantic states. Our Policy Outreach and Analysis group serves as an information resource for policymakers, program administrators, and others to support the adoption and implementation of public policies and programs that advance energy efficiency.

We offer the below comments in response to the Commission's Order of Notice, opening an Investigation into Grid Modernization. The Order of Notice identifies grid modernization as encompassing "[R]eplacement of aging infrastructure, outage management, the integration of distributed generation, and education of customers on how to manage their energy use for the benefit of the electric delivery system and to minimize costs."³

We are encouraged by the current scope of the Commission's investigation. To further inform the scope of the Commission's proceeding, below we summarize: (1) two key resources for consideration; and (2) three other grid modernization-relevant proceedings taking place in the region.

Two Key Resources for Consideration

We suggest that Staff thoroughly examine two key resources for consideration during the scoping component of this investigation:

1. The Regulatory Assistance Project's "Smart Rate Design for a Smart Future;"⁴ and
2. The Department of Energy's "The Future of the Grid: Evolving to Meet America's Needs."⁵

¹ These comments are offered by NEEP staff and do not necessarily represent the view of the NEEP Board of Directors, sponsors or partners.

² New Hampshire Public Utilities Commission. IR 15-296. Investigation into Grid Modernization. Available at: <http://www.puc.state.nh.us/Regulatory/Orders%20of%20Notice/0730onIR15-296revised%20Grid%20Modernization.PDF>

³ *id.* at page 1.

⁴ Lazar, J. and Gonzalez, W., Regulatory Assistance Project. Smart Rate Design for a Smart Future. (July 2015) Available at: <http://www.raponline.org/document/download/id/7680>

⁵ US Department of Energy. The Future of the Grid: Evolving to Meet America's Needs. (December 2014) Available at: <http://energy.gov/sites/prod/files/2014/12/f19/Future%20of%20the%20Grid%20December%202014.pdf>

Key Resource- Smart Rate Design for a Smart Future

This report, authored by the Regulatory Assistance Project, presents some of the most well-informed and up-to-date analysis available on how states can take actions to modernize rate design and system planning to prepare for the proliferation of distributed energy resources. Such rate designs fall within the scope of the present proceeding's goal of educating customers on how to manage their energy use for the benefit of the electric delivery system and to minimize costs. Key lessons applicable to New Hampshire as it explores grid modernization include: (1) An explanation of how technology enhancements can improve the effectiveness of more complex rate designs by enabling customers to respond to price signals automatically;⁶ (2) Guiding principles for rate design specific to customer-sited solar generation;⁷ (3) An exploration of the value of time of use rates combined with critical peak pricing;⁸ and (4) Suggested rate designs for electric vehicles.⁹

Key Resource- The Future of the Grid: Evolving to Meet America's Needs

This report, commissioned by the United States Department of Energy, was published in December 2014 and summarizes input offered during four workshops held to create an industry driven vision of the electric grid in 2030. It offers key suggestions applicable to New Hampshire as it explores grid modernization, including: (1) Placing an emphasis on energy storage as a key component of future system design;¹⁰ (2) Exploring opportunities for grid planning based on locational marginal pricing of distributed generation;¹¹ and (3) Recognizing importance of enabling real-time automated communications with equipment on both the distribution system and customer side of the meter.¹²

Grid Modernization Proceedings in the Region

The New Hampshire Public Utility Commission finds itself in good company as it contemplates opportunities associated with modernization of the electric grid. Below we discuss three other jurisdictions within the Northeast and Mid-Atlantic region also exploring grid modernization opportunities, including Massachusetts, New York, and the District of Columbia.

Grid Modernization in Massachusetts

Massachusetts has one of the most clearly defined grid modernization proceeding within the region. The Massachusetts Department of Public Utilities began their investigation into grid modernization opportunities in October 2012 by soliciting comment on several different areas of inquiry including: (1) Current status of electric grid infrastructure as it related to grid modernization; (2) Grid facing technologies; (3) Customer facing technologies; (4) Time-varying rate design; (5) Costs and benefits of grid modernization; (6) Grid Modernization

⁶ *Supra*, at note 4, Page 32.

⁷ *Supra*, at note 4, Page 42.

⁸ *Supra*, at note 4, Page 53-55.

⁹ *Supra*, at note 4, Page 66-67.

¹⁰ *Supra*, at note 5, Page 6.

¹¹ *Supra*, at note 5, Page 8.

¹² *Supra* at note 4, Page 10.

policies; (7) The pace of grid modernization implementation; and (8) Health, interoperability, cybersecurity, and privacy.¹³

Initial efforts resulting from the preliminary Order included months of working groups, workshops, stakeholder outreach events, and several public comment periods. Building upon these efforts, Massachusetts' major utilities—Eversource,¹⁴ Unital,¹⁵ and National Grid—recently filed their proposed ten year grid modernization plans. The utilities proposed plans that cover: (1) Facilitation of planning around the impact of DER rollout; (2) System reliability improvements; (3) Distribution automation; (4) Customer engagement and empowerment; (5) Time varying rates; (6) Advanced metering functionality; (7) Volt/VAR optimization; (8) Cybersecurity; (9) Research and development; (10) Advanced analytics; (11) Cost-effectiveness; and (12) Targeted cost recovery.¹⁶

While the Massachusetts plans focus heavily on system reliability, they also place great emphasis on customer empowerment and the integration of distributed energy resources such as energy efficiency and demand response. In fact, the Department of Public Utilities notes that grid modernization holds great potential to “[E]nhance the success of the Massachusetts energy efficiency initiatives, through the use of marketing campaigns and the advancement of technologies that both reduce peak demand and save energy.”¹⁷ Such marketing and customer empowerment campaigns dovetail with time varying rates and associated pricing signals, which are a common consideration in most discussions around grid modernization.

Grid Modernization in the District of Columbia

Within their recent Order Opening an Investigation into Modernizing the Energy Delivery System for Increased Reliability,¹⁸ the District of Columbia Public Service Commission identifies the initial scope of their proceeding as:

- (1) An initial overview of the current energy distribution system in the District and current plans to modernize the system;
- (2) An examination of new technologies that will impact the delivery of energy in the District including but not limited to:
 - a. Energy storage;
 - b. Distributed energy resources (DERs);
 - c. Electric vehicles,
 - d. Microgrids, and
 - e. The integration of identified enabling technologies; and
- (3) An identification of regulations and other policies that will enable or inhibit the modernization of the District's energy delivery system for increased sustainability, reliability, efficiency and interactivity.

¹³ Massachusetts Department of Public Utilities. Motion into Modernization of the Electric Grid. (October 2012) Page 7-17. Available at: <http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=12-76%2f10212dpvtord.pdf>

¹⁴ Eversource Massachusetts Grid Modernization Plan. Available at: http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=15-122%2fInitial_Filing_Petition.pdf

¹⁵ Unital Massachusetts Grid Modernization Plan Proposal. Available at: http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=15-121%2fUnital_GMP_Report2015819.pdf

¹⁶ Rather than being complete, this list summarizes some of the broader grid modernization strategies the Commission might consider within their own proceeding, including customer engagement and time varying rates.

¹⁷ Massachusetts Department of Public Utilities. Motion into Modernization of the Electric Grid. (October 2012) Page 5. Available at: <http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=12-76%2f10212dpvtord.pdf>

¹⁸ District of Columbia Public Service Commission. Order No. 17912. Order Opening Investigation into Modernizing the Energy Delivery System for Increased Sustainability. Available at: http://dcpsc.org/edocket/docketsheets_pdf_FS.asp?caseno=FC1130&docketno=1&flag=C&show_result=Y

While the District of Columbia proceeding is still in its infancy, the language above indicates a scope that bears many similarities to New Hampshire's present investigation and may be worth regional collaboration or communication as both jurisdictions explore opportunities associated with grid modernization.

Grid Modernization in New York

New York is exploring new regulatory frameworks related to issues of grid modernization within their Reforming the Energy Vision proceeding.¹⁹ While the scope of the New York proceeding may extend far beyond the topics to be considered in the District of Columbia,²⁰ two related documents may be worth Commission review as they continue discussions around grid modernization: (1) the Public Service Commission's Order Adopting Dynamic Load Management Filings ("DLM Order");²¹ and (2) NYSEDA's Report on Microgrids for Critical Facility Resiliency in New York State ("Microgrid Report").²² The DLM Order prescribes methods for integrating distribution level demand response programs into utility business models to fulfill system needs. The Microgrid report describes public policy levers and regulatory reforms which could help shepherd widespread adoption of microgrids.

Perhaps the most unique aspect of the New York proceeding is its focus on opportunities associated with performance-based ratemaking, as identified within the Staff Whitepaper on Ratemaking and Utility Business Models.²³ The Order covers issues related to rate design and compensation for distributed energy resources, time varying rates, and standby service tariffs. Some of these issues—particularly those that pertain to rate design and reliability metrics—may be of value for the Commission to consider within their own investigation.

Conclusion

We applaud the Commission for exploring new policy frameworks, new rate structures, and investments in the tools and technologies that will help modernize the electric grid, thereby continuing to grow and develop the kind of cleaner, more efficient, resilient energy system that our economy requires. The future that lies ahead can be one where people have greater understanding of and control over their energy use, where energy efficiency and clean, distributed resources comprise a growing share of our energy mix, and where less energy is

¹⁹ New York Public Service Commission. Reforming the Energy Vision: About the Initiative. Available at: [http://www3.dps.ny.gov/W/PSCWeb.nsf/a8333dccc1f8dfec0852579bf005600b1/26be8a93967e604785257cc40066b91a/\\$FILE/REV%20factsheet%208%20%20%2014%20\(2\).pdf](http://www3.dps.ny.gov/W/PSCWeb.nsf/a8333dccc1f8dfec0852579bf005600b1/26be8a93967e604785257cc40066b91a/$FILE/REV%20factsheet%208%20%20%2014%20(2).pdf)

²⁰ NEEP. Reforming the Energy Vision Resource Directory. Available here: http://www.neep.org/sites/default/files/resources/New%20York%20REV%20Document%20Links%20Table_0.pdf

²¹ New York Public Service Commission. Order Adopting Dynamic Load Management Filings with Modifications. Available at: <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB4QFjAAhUKewjD0pbH5pLHahWLIB4KHWWIDFQ&url=http%3A%2F%2Fdocuments.dps.ny.gov%2Fpublic%2FCommon%2FViewDoc.aspx%3FDocRefId%3D%257B2570EDCA-FE13-402F-8F32-C7E61881AEDB%257D&ei=rnTCVcPDBoupeuWQsqAF&usq=AFQjCNH6r49ovQeXVzk7WaihJHJ2ko8YUQ&sig2=NPagFmbQgMsFB9PQDz9ilg&bvm=bv.99556055.d.dmo>

²² See Generally, NYSEDA. Microgrids for Critical Facility Resiliency in New York State. December 2014. Available at: <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCUQFjABahUKewiao-qd8tPHAhUFRlAKHcz4CK8&url=http%3A%2F%2Fwww.nyserda.ny.gov%2F-%2Fmedia%2Ffiles%2Fpublications%2FResearch%2FElectric-Power-Delivery%2FMicrogrids-for-Critical-Facility-NYS.pdf&ei=E5XkVdrNJYXyggTM8aP4Cg&usq=AFQjCNGbk9lq55tbleHF060VfbP8gJH4Qw&sig2=ivdBJNwTCXjt6WCwXS2Rma>

²³ New York Public Service Commission. Staff White Paper on Ratemaking and Utility Business models. (July 2015) Available at: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b48954621-2BE8-40A8-903E-41D2AD268798%7d>

wasted and more of our energy dollars stay in the region growing local jobs instead of exporting earnings to foreign fuel suppliers.

Please accept these comments in the spirit they are intended: to aid the Commission, and ultimately New Hampshire ratepayers, in securing a more affordable, reliable, cleaner and sustainable energy future.

Contact information:

A handwritten signature in cursive script that reads "Brian D. Buckley".

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