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January 9th 2019

Debra A. Howland
Executive Director, NHPUC
21 S. Fruit St.
Suite 10
Concord, NH 03301-2429

Re: DE 16-576 Development of New Alternative Net Metering Tariffs and/or Other Regulatory Mechanisms and Tariffs for Customer-Generators

Dear Director Howland,
Enclosed for filing please find the Joint Stakeholder comments on the Draft Locational Value of Distributed Generation Study Scope and Methodology from Vote Solar, CLF, and Clean Energy NH (formerly known as NHSEA) in the above referenced docket. Required hard copies will be hand delivered to the commission.

Sincerely,

Madeleine Mineau
Executive Director
Clean Energy NH
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**BEFORE THE NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

DOCKET NO. DE 16-576

DEVELOPMENT OF NEW ALTERNATIVE NET METERING TARIFFS AND/OR OTHER REGULATORY
MECHANISMS AND TARIFFS FOR CUSTOMER-GENERATORS

**JOINT STAKEHOLDER COMMENTS ON DRAFT LOCATIONAL VALUE OF DISTRIBUTED GENERATION
STUDY SCOPE AND METHODOLOGY**

Vote Solar, Clean Energy NH, and Conservation Law Foundation (collectively, the “Joint Stakeholders”) appreciate the opportunity to provide the following comments on the draft scope and methodology for the New Hampshire Locational Value of Distributed Generation (“LVDG”) study filed by New Hampshire Public Utilities Commission Staff (“Staff”) on November 30, 2018.

Comments

We wish to thank Staff for their time and effort in preparing the draft locational value of distributed generation study scope and methodology and we appreciate the opportunity to provide our input.

Overall Scope of Solutions Evaluated

The Joint Stakeholders understand the interest expressed by Staff in limiting the technologies considered in this study to those eligible for Net Energy Metering (“NEM”) due to the study being conducted under Docket DE 16-576. However, to inform a more efficient and modern approach to distribution system planning that avoids over-reliance on unilateral central planning and moves in the direction of market-based solutions, New Hampshire needs a more complete understanding of the potential for Non-Wires Alternatives and the associated value of a full range of Distributed Energy Resources (“DER”). We applaud the inclusion of storage paired with solar generation within Staff’s proposed study scope, and emphasize the importance of framing the study so that the information generated can be used efficiently to conduct complementary analyses for additional DER technologies including demand response, energy storage, and emerging technologies. To provide maximum benefit to the state with limited resources, we recommend that these additional analyses be conducted in the same study, but initiated in an appropriate docket such as grid modernization. By joining two dockets, the Commission would ensure that all relevant stakeholders have full notice and the opportunity to participate. This would be consistent with the settlement agreement and order in the underlying adjudicative proceeding.

Smart Inverters

The incorporation of smart inverters into net metered systems can have a significant beneficial impact on the operation of the distribution system and distribution system equipment. Smart inverters are becoming increasingly more common, and over the next five years the Joint Stakeholders would expect that (a) smarter inverters will be required for all

future interconnected solar facilities and other technologies that require inverters, and/or (b) the deployment of smart inverters will be the technological default and historical “dumb” inverters will become increasingly rare. For these reasons, we recommend that the study adopt an assumption that the future deployment of solar and solar plus storage incorporates smart inverters.

Non-Solar NEM Solutions

The Joint Stakeholders recommend considering a broad set of NEM-eligible technologies such as small scale wind, combined heat and power, and potentially other renewable generation technologies. Although we recognize that solar, and solar plus storage, are the fastest growing and most likely new NEM-eligible technologies currently being implemented, additional NEM-eligible distributed generation (“DG”) should be considered.

Distributed Generation in Totality

The Joint Stakeholders are unclear if the study will evaluate each technology individually or collectively. The Joint Stakeholders assert that the study should represent reality to the maximum extent possible, and therefore should evaluate a mix of distributed generation (*e.g.*, solar, solar plus storage, small-scale wind, small-scale hydro, and all net metering eligible technologies). The mix of technologies should consider the current deployment of distributed generation and the expected future deployment of distributed generation.

The Joint Stakeholders note that evaluating each technology individually – let alone a representative generation profile – is not reflective of reality. Just as there is a diversity of load among customers, there is a diversity of generation attributes in distributed generation. For instance, an individual solar system will have a different generation profile than a group of solar systems located on the same distribution feeder. The generation profiles of individual solar systems differ based on azimuth, tilt, type of panels, and location (a passing cloud may impact solar systems at different times). Furthermore, the collective generation profile of a group of distributed generation that includes different technologies will also look different than any individual generation profile.

In short, the Joint Stakeholders recommend that the study evaluate distributed generation in totality, rather than each technology individually.

Stakeholder Input

The Joint Stakeholders strongly recommend that stakeholder input be incorporated into every stage of the process. Staff and the consultant should engage with stakeholders to gather input each stage of the study, including during the process of collecting data from the utilities. One option would be to hold technical sessions on a regular basis. A second option would be to establish an LVDG advisory group or working group. Such a group would include representatives of the electric distribution companies, the Office of the Consumer Advocate, and other stakeholders. The advisory group would facilitate opportunities for Staff and/or the consultant to seek feedback on the LVDG study, including (but not limited to) technical and

policy recommendations, data acquisition, analyses, and review. The advisory group would serve as a resource for Staff and the consultant.

Timeframe

Consistent with the comments of the Office of the Consumer Advocate at the public hearing on January 2, 2019, the Joint Stakeholders strongly recommend the use of a 10-year forward-looking study timeframe. In addition, the Joint Stakeholders advise the use of a 10-year historical timeframe. Additional historical data on past investments may provide a more robust analysis. A 10-year forecast analysis is used in Least Cost Integrated Resource Planning (LCIRP). For example, from DE15-248 (Eversource LCIRP): “The annual system study is a ten-year forecast analysis identifying capacity needs for the distribution system based on Eversource procedure ED-3002. The first five years of the ten-year report are used for detailed short term planning and budgeting while the last five years of the report are used to identify longer term loading and system issues.” The potential for DG value in addressing the longer term loading and system issues already being identified by the utilities should also be considered.

Study timeframe is key when studying the value of assets with multi-decade lifespans. Although the timeframe of the analysis must be confined for logistical purposes, the study should also include some consideration of the long-term (*i.e.* greater than ten years) impacts of net metering systems on the distribution system. One of the challenges with evaluating locational value is the separation of distribution system planning horizons – which are rarely longer than five years – and the lifespans of net metering systems. Once net metering systems are built, the benefits of net metering systems on the distribution system are by default already incorporated into future distribution system planning processes. As such, the benefits of net metering systems on the distribution system are not realized or acknowledged as benefits, but rather just as the status quo. The benefits of the net metering systems on the distribution system cannot be effectively evaluated in the LVDG study without a counter-factual accounting of what the distribution system would look like in the absence of the net metered systems. Accordingly, the Joint Stakeholders urge the Commission to direct the study consultant to consider a counter-factual analysis of the distribution system for the study term, as well as an illustrative analysis or qualitative review of the long-term (*e.g.*, 30 years) LVDG of net metering systems.

Load Growth Projections

The Joint Stakeholders support Staff’s recommendation that the study scope include a high-growth scenario to represent the potential impact of broad electric vehicle adoption. In addition, the study scope should consider widespread adoption of space and water heating with heat pump technology on potential future load projections, as this form of beneficial electrification is increasingly common to replace oil and propane heating.

The Joint Stakeholders note that any load growth projections based on historical data inherently include some DG. As a result, the benefits of the currently-installed DG could very easily be missed. In order for the study to appropriately account for all of the benefits of DG on the distribution system, the existing DG must be removed from the historical load used in the

load growth projections, and then combined with the estimate for future DG. Without proper accounting for the currently-installed DG, the load growth projections may be artificially suppressed as the load growth net of current DG.

Identifying Locations

The Joint Stakeholders note that in the absence of advanced metering (a.k.a. smart metering), the identification of optimal study locations is going to be based solely on modeling. The utilities simply do not have the information to provide granular insight into the distribution system below the substation. The study scope, in a way, recognizes this lack of information with the expected use of “representative load profiles” in step 3(1).

The lack of advanced metering represents a critical impediment to truly understanding the location value of distributed generation. While the Joint Stakeholders understand overcoming this barrier in time for the study is unrealistic, the Joint Stakeholders note this impediment for consideration of the results of the study and for future consideration.

Conclusion

The Joint Stakeholders appreciate the opportunity to provide these comments on Staff’s proposal regarding the upcoming LVDG study scope and methodology. We look forward to working with the distribution companies, Commission Staff, and all stakeholders on the development of the LVDG study going forward.

Respectfully submitted,



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