



January 27, 2023

BY ELECTRONIC MAIL

Jared S. Chicoine, Commissioner
New Hampshire Department of Energy
21 S. Fruit Street, Suite 10
Concord, NH 03301-2964

Re: **IP 2022-01 Investigative Proceeding Relative to Customer-Generation Interconnection**

Commissioner Chicoine:

In connection with the above-referenced matter I enclose Unitil Energy Systems, Inc.'s responses to the Requests for Comments set forth in the Department of Energy's December 5, 2022 Order of Notice.

Thank you for your attention to this matter. Please do not hesitate to contact me should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick H. Taylor", written in a cursive style.

Patrick H. Taylor
Chief Regulatory Counsel

Enclosures

CC: Office of the Consumer Advocate

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State of New Hampshire Department of Energy
IP 2022-01
Investigative Proceeding Relative to Customer-Generator Interconnection
Request for Comments – Set 1
December 9th, 2022

Request 1-1:

How to create transparent, consistent, and reasonable engineering standards for interconnection, with special consideration given to established best practices used by other states as set forth in the Interstate Renewable Energy Council's (IREC) 2019 Model Interconnection Procedures;

- a. Please identify the applicable existing, and pending, interconnection codes, statutes, standards, and procedures that apply to the interconnection kW thresholds for various Distributed Energy Resource (DER) technologies (Battery, Wind, Solar, etc.). Include Federal, State, and Local requirements.
- b. Please provide feedback on the IREC 2019 Model Interconnection Procedures. Include responses to the following questions:
 - i. Have any entities adopted this model?
 - ii. Is there interest in adopting this model in the future?
 - iii. If there is interest, are there any procedures that need to be addressed to respond to directives or goals of SB 262?
 - iv. Are there other preferred model interconnection procedures and, if so, what are they?

Response:

- a. Unitil Energy Systems, Inc. ("Unitil") follows the New Hampshire Interconnection Standards for Inverters sized up to 100kVA per each distribution company's filed tariff.¹ In addition, for technical requirements IEEE Std 1547 –Standard for Interconnection and Interoperability of Distributed Energy resources with Associated Electric Power Systems Interfaces is referenced by most states and utilities. UL 1741, UL 1741 – SA, and UL 1741 - SB testing procedures are also used to certify DER compliance to IEEE 1547. See, e.g., Puc 906.01; see also Unitil Interconnection Requirements for Customer-Owned Generation at Section 5.1.
- b.
 - i. Unitil is not aware of any states that have implemented the IREC 2019 Model Interconnection Procedures.
 - ii. Unitil does not recommend adopting the IREC 2019 interconnection model as a whole. Some of the screens may be inhibiting to the installation of DER. For example, the transformer screen is

¹ See Unitil Energy Systems, Inc. Second Revised Page 78-B. Unitil's "Interconnection Requirements for Customer-Owned Generation" (see Section 3.1) incorporate New Hampshire-specific Interconnection Standards for Inverters sized up to 100kVA.

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significantly more conservative than present procedure and would require higher interconnection costs. Some of the timelines are also impractical. However, Unitil is open to investigating the IREC 2019 Interconnection model in the course of this investigation.

- iii. As mentioned above, Unitil does not recommend implementing the IREC 2019 Model Interconnection Procedures as written, but is open to working with other stakeholders to create a standard process which addresses the directives and/or goals of SB 262.
- iv. Unitil has started to meet with the other electric distribution companies within New Hampshire to discuss creating a state-wide standard interconnection process. Unitil recommends allowing the NH utilities to continue to meet together to create a draft standard procedure prior to working with other stakeholders.

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(Request 1-2:

How to ensure timely, consistent, and reasonably-priced interconnection studies.

- a. Please identify issues, concerns, and impediments to completing timely interconnection evaluations / studies;
- b. To the extent possible, please identify the issues and kW thresholds that impact the level of effort, and therefore the schedule and cost of completing interconnection evaluations/studies

Response:

- a. The number of DER interconnection applications received by Unitil in the past two years has increased by a factor of four. This recent surge of applications has created a temporary back log of applications needing to be processed. This has initiated the need to adjust internal processes, purchase a new application processing system, and hire new employees to reduce the back log.

In addition to the temporary surge of applications needing to be processed, the additional density of DER on the electric system causes the need for more detailed study and system modifications to be performed.

- b. Currently there is a New Hampshire Standard for interconnection of inverter based DER 100kVA and smaller. For inverter-based systems 10kW or smaller, a screening process is implemented that performs the needed analysis. This screening process requires approximately 20 business days (from date the application is received) to complete and the installation is approved, or the required system modifications identified. If the application does not pass the stipulated screens (or are larger than 10 kW), supplemental study is required.

Currently, Unitil charges the following costs for the supplemental study of inverter-based DER 100 kW or smaller. The supplemental study is performed within 35 business days after the application is deemed complete. If system modifications are required, an interconnection agreement is provided with the scope and cost of the modifications.

| Project Size (Max AC Rating of Inverter) | Supplemental Review Fee |
|---|------------------------------------|
| 0-34 kW | \$300 |
| 35-74 kW | \$800 |
| 75-100 kW | \$1,250 |

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For systems larger than 100 kW, the estimated study cost is generated on a case-by-case basis and an Impact Study Agreement is sent to the applicant with the cost of study. Most applications 500 kW or larger require a System Impact Study. The System Impact Study is normally completed within 55 business days after the Impact Study Agreement and payment is received and the interconnection agreement is sent to the applicant within 15 days after the study is complete.

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REQUEST:

Please examine and make specific recommendations regarding the following:

How to ensure just and reasonable pricing of grid modernization upgrades mandated by the distribution utility for interconnection of distributed energy resources, including transparency and consistency in pricing guidelines and appropriate cost-sharing among parties benefitting from such upgrades.

- a. Please identify issues and concerns, if any, regarding the transparency of interconnection cost estimates and schedules.
- b. Please identify options for appropriate cost-sharing as well as issues and concerns.

RESPONSE:

- a. The Electric distribution companies (EDC's) are not aware of any issue regarding the transparency of interconnection cost estimates. When an application is analyzed, and it is determined that a modification to the electric system (system modification) is required, an interconnection agreement is provided to the applicant. The cost estimate generated is specific to the required system modification. The interconnection agreement details the required system modifications and the estimated cost with an estimated schedule.
- b. One option to share interconnection costs is to include DER in the annual forecasting and planning process. System upgrade projects would be constructed as needed due to the forecasted DER. The cost of system upgrades would be included in a special reconciling capital system improvement fee which would originally be paid by the rate payers. As DER is installed in the area where the system improvement was constructed, they would pay their pro-rata share of the capital system improvement fee based on a \$/kW rate. This amount would be credited to the reconciling capital system improvement fee and credited to the ratepayers. Although this option would lower the interconnection cost for individual DER facilities, it passes the burden of cost on all ratepayers and there is a risk that DER is not interconnected after the system modifications are built. It can also be very complicated to create the capital system improvement fee.

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Request 1-4:

How to ensure distribution system upgrades paid for by customer-generators are not claimed as part of the utility rate base.

- a. Identify methods for ensuring transparency of how system upgrade costs are applied.

Response:

Any customer contributions received are applied to the construction project reducing the cost of the assets placed in service to either zero or, at the least, a reduced cost. This practice is the same for all customer contributions related to construction projects, not just for Customer-Generator Interconnection.

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REQUEST:

Please examine and make specific recommendations regarding the following:

Whether it is appropriate to establish an “Interconnection Working Group” convened at the Department to regularly assess if interconnection standards need modification.

- a. Identify potential benefits, issues, and concerns on the concept of an “Interconnection Working Group.”

RESPONSE:

- a. Unitil has met with other New Hampshire electric distribution companies (EDC’s) in an effort to improve the interconnection process. The Company supports of the formation of an “Interconnections Working Group” to meet regularly to create interconnection standards for the state of New Hampshire. Unitil recommends that the NH utilities continue to meet to create a proposed standard that can be presented to the Interconnections Working Group as a proposed baseline for comment.