State of New Hampshire Department of Energy

IP 2022-01

Investigative Proceeding Relative to Customer-Generator Interconnection

Agilitas Energy Comments – Set 1

Agilitas Energy appreciates the Department's thoughtful examination of several key issues impacting generator interconnection. We are confident that solutions exist that will enable more effective, efficient integration of clean energy resource onto the New Hampshire electric grid. The Department has an opportunity in this proceeding to research policy changes that can have a dramatic local impact on economic development and job creation, and will bring benefits to New Hampshire communities, businesses, and residents.

Q-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 IREC 2019 Model Interconnection Procedures.

It is important to differentiate between interconnection procedures and interconnection standards. Both are critical to the efficient deployment of distributed energy resources (DER). Procedures govern the administrative actions, processes, and timelines by which a request to interconnect a DER is managed, from application submittal to the execution of an Interconnection Agreement. These procedures should be viewed as an extension of the utility electricity delivery tariff. Standards establish technical requirements for DER equipment and models, engineering study methods to evaluate system impacts, and other items such as metering and communication protocols. Standards for DER can be considered akin to other engineering standards and criteria used to plan, design, construct, and operate the electric distribution system. The development and maintenance of effective procedure and standards should follow a similar but separate sequence to accommodate some key differences.

Agilitas Energy suggests the formation of both an Interconnection Procedure Stakeholder Group and a DER Standards Stakeholder Group. These groups should consist of appropriate EDC staff, industry representatives, regulatory staff, and interested parties. It is important that these teams have effective leadership and administrative support, e.g., a dedicated facilitator. Both groups should utilize and benefit from the considerable efforts of similar groups in other New England states and in New York. The NH groups should strive to reach rapid consensus on the baseline documents that will serve as the starting point for discussion. Due to the relatively advance stage of DER deployment in neighboring states, achieving early adoption of foundational procedures and standards should be expected.

Critical to team success is proper regulatory oversight. The groups will need guidance on the regulations that govern the often-complex interaction between EDCs and DER customers. Ideally, the parties will be able to reach consensus on most key items. But there will be areas of disagreement and there needs to be an efficient process by which stakeholders can challenge areas of disagreement and seek the input of regulators or independent experts on a potential resolution.

Q-2: How to ensure timely, consistent, and reasonably-priced interconnection studies.

Timely: Effective procedures must clarify the DER data, information, and models needed prior to commencing each phase of study. At commencement, the DER Planning Engineer (and any outside consultant hired to perform the study) must meet with the DER developer to review the scope of the study and the scenarios to be included. At the conclusion of the study, a results meeting is critical to ensure all parties understand the conclusions and can provide feedback on the study. The EDCs should be required to implement a "portal" or other means of tracking dates and milestones.

One of the most challenging elements of any DER interconnection study is the preparation of cost estimates for EDC interconnection facilities and upgrades to the distribution system. The development of cost estimates can either be quick and inaccurate, or slow and less inaccurate. See question 3 below for additional comments.

Consistent: Standards must detail the types of studies required for specific categories and sizes of DER projects. For each type of study, a consistent set of study elements should be included (or waived by the EDC per an established standard). The DER developer should be given a chance to understand and comment on the scope. DER study reports should follow a consistent format.

Reasonably-priced: DER studies are either performed "in-house" by one or more EDC engineers, or are performed by engineering study vendors (consultants) with the assistance of EDC engineers. The inputs and results often require review and validation by multiple utility departments (e.g., planning, distribution engineering, protection and control, substation, metering, operations). Prior to the start of each study, an agreement is executed that details the expected cost (and duration) of the study, the deposit required, and whether post-study costs reconciliations are involved. Proper accounting for the labor hours and expenses for each study is critical. The EDC should be required to provide each DER applicant a post-study, detailed accounting of the actual labor and expense associate with each study. The details should also be tracked and made available to the regulators and to the public on a quarterly basis. This level of transparency is critical to monitoring performance, identifying outliers, and implementing process improvements.

The Department should also investigate the implementation of price caps for each study, or even fixed prices. DER developers have a strong preference for price certainty. EDCs have a strong preference for full cost recovery. It is possible that properly implemented price caps or fixed pricing could meet both objectives with minimal need to allocate unrecovered expenses to utility rates.

Integral to a successful study process is transparency, oversight, and incentives. Agilitas Energy suggests a quarterly report format be established that provides details on each project in the interconnection queue and tracks EDC performance relative to milestones. Study cost data should be included.

Regarding incentives, Agilitas Energy firmly believes that a fundamental reason for interconnection delays (during the study phase or more generally) is a lack of utility incentive to be a strong performer in this arena. In many aspects, DER interconnection resembles a "non-profit" segment of the EDC business. The effort involved is tremendous and the implications of non-performance are significant. In other words, there is considerable risk and zero opportunity for profit. EDCs make profit when revenues from customers exceed expenses. Revenues are based on rates that included an allowable return on the net cost of plant in-service (i.e., pole, wires, and other electric delivery infrastructure). When a DER

is interconnected, the costs of interconnection-related infrastructure is 100% funded by the DER developer. Thus, the net addition to utility "plant in-service" is zero. Zero net plant equals zero chance for profit. While there may be secondary corporate benefits to being a strong proponent of clean energy and for having strong interconnection performance, the primary role of utility executives centers around their fiduciary obligation to maximize shareholder returns. Thus, it is understandable that utility executives do not devote significant effort to improving the performance of non-profit business segments. Consider energy efficiency. Utilities are generally allowed some level of performance incentive in this segment of business operations. Commendably, Eversource has earned nationwide recognition as a top performer in this important field. While legislation is likely required to implement DER-related incentives for EDCs, this investigative proceeding should include the formation of legislative recommendations to incentivize top performance.

Q-3: 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.

Utility interconnection cost uncertainty is perhaps the most difficult aspects of DER project development. Interconnection costs are associated with two categories of equipment: Interconnection Facilities and System Upgrades. Interconnection Facilities are typically located at or near the DER project site and are often dedicated solely to that particular project. These facilities include poles, wires, and equipment needed to tap the existing utility circuit and bring a new service to the project site. Metering equipment, disconnection switches, and electronic isolation devices (e.g., reclosers) are examples. System Upgrades are improvements to the utility distribution system (and possibly the transmission system) that are needed to resolve any unacceptable impacts or criteria violations identified via the System Impact Study. The upgrades include reconductoring existing circuits, installing new or extended circuits, adding transformation capacity at substations, and installing new protection and control devices (e.g., additional reclosers, substation relays, etc.).

The magnitude of interconnection costs is a concern. High costs may eliminate the economic justification for project development. When the high costs are technically justified and properly allocated, the project developer can make the appropriate decision to walk away and consider the project's failure as the normal course of business. However, developers often have insufficient access to information to conclude that the high costs are technically justified. It can be difficult for DER developers to gain access to the proper information, models, and utility engineers to discuss, evaluate, and possibly challenge the study results and cost estimates. This investigative proceeding should explore methods to allow greater transparency into and confidence in the process of identifying and estimating interconnection costs.

Even when the magnitude of the identified interconnection cost is palatable to the project economics, the uncertainty of those costs may still be unacceptable and result in project cancellation. In New Hampshire and many other jurisdictions, DER developers are responsible for 100% of the ***actual costs*** of interconnection, even if those actual costs far exceed the ***estimated costs***. There is no obligation or incentive for the utility to design, procure, and construct the interconnection facilities and system upgrades for less cost than the original estimate. At the conclusion of construction, the DER developer is left to "hope and pray" that the actual costs did not exceed the estimate. They are completely

powerless in this regard. Agilitas Energy requests that this proceeding examines methods to resolve this concern. Other states have implemented interconnection agreements that make the utilities responsible for costs that exceed 110% or 125% of the original estimate.

Cost estimation is a difficult problem in the utility industry, especially in a period of supply chain constraints and rising inflation. When a System Impact Study has identified the need for system upgrades, the EDC has a decision to make: 1) perform a simple, quick, low accuracy cost estimate or 2) perform a detailed, time-consuming, higher quality cost estimate. Option one may take only a few hours or days, but might fail to identify some serious and expensive issues that impact project constructability. These issues may not materialize until mid-construction and could have a major impact on the final, actual costs payable by the developer. Option two often requires site visits, surveys, and preliminary designs to be created. Vendors are often engaged such that utility staff can remain focused on the for-profit segments of their business. Option two can take multiple months for a large substation project. This proceeding or a subsequent working group should examine the trade-offs between Option one and two and implement interconnection policies that properly assign risks and responsibilities for cost estimation. The review and resulting procedures should ensure that utilities are not able to systemically increase their cost estimates to minimize the possibly that they are held responsible for actual costs in excess of the estimate.

Post-project cost transparency is another best practice that should be reflected in DER interconnection procedures. When the interconnection work is completed, whether under or over budget, the utility should provide a detailed accounting breakdown of the actual cost of the work. Significant variances should be documented. The utilities should also be required to disclose the magnitude of each specific overhead charge (aka "indirect charges") that have been included in the total cost. Agilitas Energy strongly recommends that this proceeding investigate whether the EDCs are appropriately assigning corporate overhead expenses to DER interconnection projects.

Lastly, Agilitas Energy agrees that cost-sharing principles should be a key focus area of this proceeding. Interconnection-related system upgrades, while triggered by the proposed DER project, can often result in improved distribution system capacity and reliability, and may reduce O&M expenses. Some upgrades, e.g., circuit reconductoring to mitigate potential DER-related voltage impacts, may allow for future customer load growth, future DER interconnections, and could defer traditional utility investments. Blind adherence to a "cost causer pays" paradigm can lead to DER-developers funding system modernization that brings value to many customers. The concept of "beneficiary pays" should be investigated.

Q-4: How to ensure distribution system upgrades paid for by customer-generators are not claimed as part of the utility rate-base.

Agilitas Energy has no comment other than we share a desire for the utilities to confirm and document that such double counting is not occurring and has not occurred historically.

Q-5: Whether it is appropriate to establish an "Interconnection Working Group" convened at the Department regularly to assess if interconnection standards need modification.

See response to Q-1. Agilitas Energy suggests the formation of a non-technical Policy & Procedure group and a separate Technical Standards group. Further, these groups should have a dedicated facilitator, should quickly research similar activity in neighboring states, and have an aggressive timeline for adopting consensus items.