WWW.ECOGYENERGY.COM | 718-304-0945

February 1, 2023

Ecogy Energy
559 Thames St. Suite 1
Newport, RI 02840

Via Electronic Mail
The New Hampshire Department of Energy
21 South Fruit Street, Suite 10
Concord, NH 03301

RE: Investigative Proceeding Relative to Customer Generation Interconnection

Dear New Hampshire Department of Energy,

Ecogy Energy ("Ecogy") respectfully submits these comments in response to the Department of Energy's ("Department") request for comments on the investigative proceeding relative to customer-generator interconnection.

Ecogy, based in Newport, RI and founded in 2010, is an experienced developer, financier, and owner-operator of distributed generation projects across the U.S. and Caribbean. Ecogy appreciates New Hampshire's efforts to drive the deployment of distributed generation ("DG"). In the New England region, Ecogy is a leader in DG deployment. Ecogy has built and maintains solar PV systems in Connecticut, Massachusetts, Rhode Island and Vermont. In nearby Rhode Island, Ecogy has had the majority of projects in the Renewable Energy Growth program's medium-scale category for 2019, 2020 and 2021.

Ecogy's focus and niche is on the <1 MW arena, particularly on systems sited on rooftops, parking lots, and brownfields. Ecogy believes that if medium-scale projects are soundly planned, properly developed, and have fair incentives, the State, its residents, and the clean energy industry as a whole will ultimately be more successful. The benefits from DG will not only drive down electricity prices in the long term but also greatly benefit Granite Staters through jobs, lease payments (to hosts), expand municipal tax bases and stimulation of local economies.

Comments and Recommendations

Our comments and recommendations regarding the Department's request are outlined below:

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 DER technologies (Battery, Wind, Solar, etc.). Include Federal, State and Local requirements**

Interconnection ("IX") codes, which are applicable across jurisdictions, include the IEEE Standard 1547 TM-2018 for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces ("IEEE Std 1547 TM-2018"), Standard Interconnection Agreements, and Procedures for Small Generators ("SGIP"). The Underwriter's Laboratories UL-1741, "Inverters, Converters and Controllers for Use in Independent Power Systems," which cover interconnection system equipment are also widely applicable.

    b. **Please provide feedback on the IREC 2019 Model Interconnection Procedures. Include responses to the following questions:**

        i. **Have any entities adopted this model?**

Some utilities are upgrading their interconnection procedures to be in line with the various aspects of the IREC 2019 Model Interconnection Procedures ("Model"). For instance, States such as Maine, Connecticut, and New Jersey have opened dockets or proceedings to review interconnection procedures and/or grid modernization which rely heavily on making changes regarding the basis of different recommendations under the Model.

        ii. **Is there interest in adopting this model in the future?**

There is widespread interest in adopting the IREC 2019 Model IX Procedures. For instance, the interconnection dispute resolution practices in California, Massachusetts, and Minnesota represent the national best practice as outlined in the Model.[1] It appears the practice among utilities is to update their interconnection procedures based on the Model's recommendations rather than make complete overhauls.

---

[1] Gwen Brown & Sky Stanfield, New CA Approach Aims to Resolve Interconnection Disputes Faster (May 23, 2022), accessed at: https://irecusa.org/blog/irec-news/new-ca-approach-aims-to-resolve-interconnections-faster/

iii. If there is interest, are there any procedures that need to be addressed to respond to directives or goals of SB 262?

Utilities should be required to publish their hosting capacity maps ("HCMs") as required under section 3 of SB 262 and make at minimum monthly updates to the maps.

iv. Are there other preferred model interconnection procedures and, if so, what are they?

N/A

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

a. Please identify issues, concerns, and impediments to completing timely interconnection evaluations/studies.

I. Availability of Hosting Capacity Maps

A backbone for timely interconnection studies is the availability of hosting capacity maps ("HCMs"). HCMs should not only exist but should be made accessible so that customer-generators can utilize information from HCMs early in the project development process. For instance, New York's Consolidated Edison ("ConEd") has a HCM portal that provides valuable information such as Substation/Bank Name, Feeder information, Local Maximum Hosting Capacity (MW), Local Minimum Hosting Capacity (MW), Anti-Islanding Hosting Capacity Limit (MW), Feeder DG Connected (MW), Feeder DG in Queue (MW), Substation Backfeed Protection, HCA Refresh Date among others (See figures 1 and 2). Overall, quality HCMs include two elements: (1) basic distribution system data that requires no specific modeling and (2) the modeled hosting capacity results that identify what amount of DER capacity can be interconnected without triggering upgrades.[2] Providing hosting capacity information and frequently updating HCMs is best practice and is of great help to customer-generators early in the development process.[3]

[2] CT Pub. Util. Reg. Authority, Shute, Mihaly & Weinberger LLP Comments on Interconnection Best Practices (August 25, 2020), accessed at: https://portal.ct.gov/-/media/PURA/electric/DG-Policy-Working-Group/Solar-Connecticut-Report-on-Interconnection-Best-Practices-8-25-20.pdf
[3] *Id.*, 12.

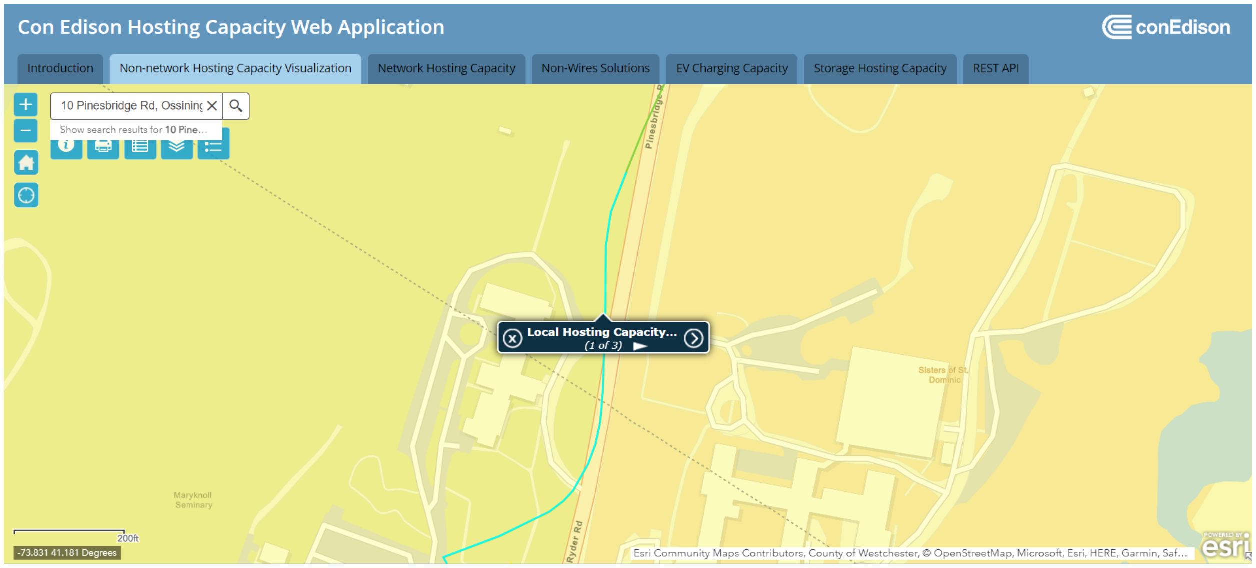
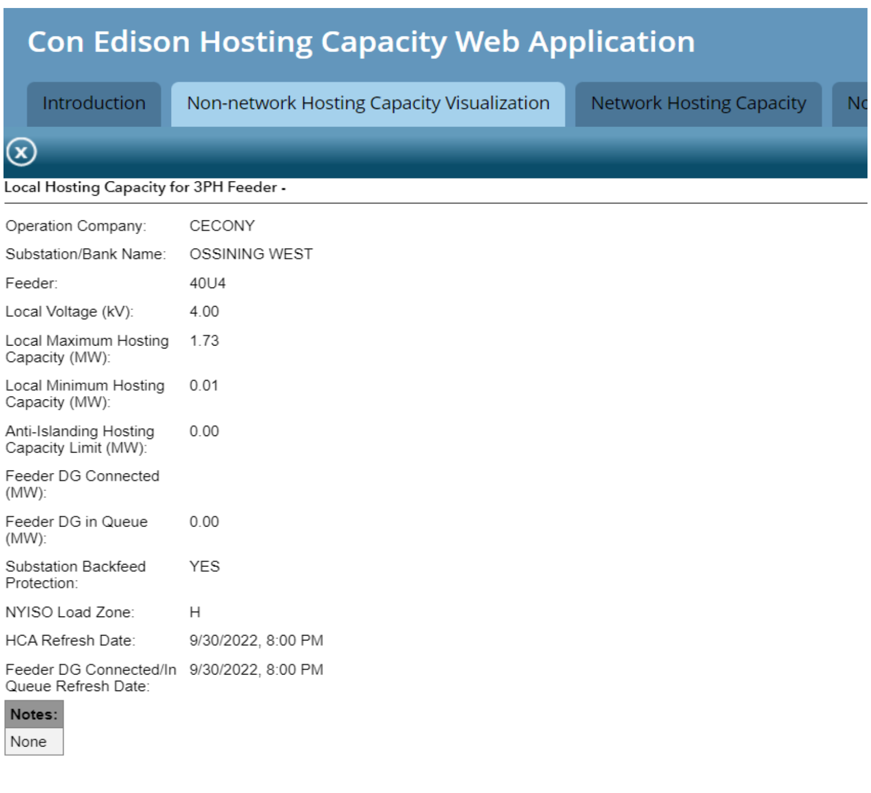


Figure 1. ConEd Hosting Capacity Maps portal which can be accessed at https://www.coned.com/en/business-partners/hosting-capacity.



Operation Company:	CECONY
Substation/Bank Name:	OSSINING WEST
Feeder:	40U4
Local Voltage (kV):	4.00
Local Maximum Hosting Capacity (MW):	1.73
Local Minimum Hosting Capacity (MW):	0.01
Anti-Islanding Hosting Capacity Limit (MW):	0.00
Feeder DG Connected (MW):	
Feeder DG in Queue (MW):	0.00
Substation Backfeed Protection:	YES
NYISO Load Zone:	H
HCA Refresh Date:	9/30/2022, 8:00 PM
Feeder DG Connected/In Queue Refresh Date:	9/30/2022, 8:00 PM

Notes:
None

Figure 2. Information provided on HCM portal

It is no surprise that most states which are requiring utilities to produce DG HCMs rank among the states with the highest DG penetration in the country. California, Nevada, Minnesota, New York, Maryland, New Jersey, and Connecticut require utilities to produce HCMs while efforts are on to require the same in Colorado, Illinois, Michigan, Massachusetts and Georgia.[4]

The importance of HCMs cannot be overstated as the time and money saved from their availability benefits developers, utilities and public utility commissions. Additionally, HCM availability also provides a path towards proper planning for grid upgrades.

II. Uncertain Interconnection Process

Lack of a document that codifies interconnection procedures makes the process cumbersome. ConEdison developed a 'Bluebook' that contains most of the needed information about interconnection.[5] The Bluebook's codification of DG installation information reduces time spent pulling information relating to the utility's interconnection process from different sources. It is also important to note that ConEdison's Bluebook is regularly updated to reflect changes in standards and procedures.

III. Automation

A manual interconnection process that makes use of papers and physically filed documents will always make for an unwieldy process. The best practice is to have a web-based portal where the entire process from application to payments to approval occurs and that also provides an interface for utility-developer/customer-generator interaction.

IV. Absence of a Pre-Screen Process

The prescreening process enables developers and utilities to identify challenges early in the interconnection process. With the pre-screen process, interconnection timelines and cost estimates can also be clarified. However, a pre-screening process should be thorough and be able to spot future problems in the interconnection process.

V. Uncertainty about Cost-Sharing

Uncertainties over cost-sharing methods prolong the IX evaluation process. The utility should, as much as possible, develop guidelines for cost-sharing for customer-generator certainty. The New

[4] William Driscoll, Solar Hosting Capacity Maps must be Accurate to be Useful, accessed at: https://pv-magazine-usa.com/2020/06/16/solar-hosting-capacity-maps-must-be-accurate-to-be-useful/
[5] ConEdison, A Customer Guide to Electric Service Installation, accessed at: https://www.coned.com/-/media/files/coned/documents/small-medium-large-businesses/electricbluebook.pdf

Hampshire Department of Energy should explore the most equitable cost-sharing methodologies currently used, allowing advanced projects to share the upgrade costs and proceed to interconnect.

VI. Lack of Uniformity in Interconnection Procedures among Utilities

Interconnection procedures among utilities (especially utilities in a particular state) should ensure some level of consistency and harmonization.

Addressing these impediments to timely interconnection studies is essential, as they not only drive up costs for small and medium-scale DG but impact the customer-generator economics negatively.

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

I. DG System Size

The larger the proposed DG project, the more likely interconnection evaluation would take longer. Small and medium-scale DG requires little evaluation compared to large DG. It is for this reason that small and mid-scale DG is incentivized and expedited in many jurisdictions. In Massachusetts, systems below 200 KW enjoy the expedited review and the cost of completing interconnection studies for such system size is significantly lower. Therefore, efforts to expedite the interconnection process for such projects, as discussed, should be adopted in New Hampshire.

II. Project Economics/Incentive Structures

The customer-generators decision to invest resources in interconnection evaluations/studies is impacted by project economics including incentives. Many markets have developed incentive structures that encourage DG, thereby encouraging developer investment in such projects. For instance, Rhode Island has developed the Renewable Energy Growth Program ("RE Growth") and Massachusetts has developed the Solar Massachusetts Renewable Target program ("SMART"). While not without their peculiar interconnection challenges, these programs have developed incentive structures that make interconnection studies (and projects) worthwhile with a focus on better land use (including incentives for rooftop, canopy and brownfield projects) and small-scale systems (<250 kW AC, <500 kW AC and <1 MW AC). This underlines the importance of designing DG programs in a way that has the least barriers to entry for small, medium scale and optimally-sited DG (such as those sited on rooftops, parking lots, brownfields and landfills).

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 benefiting from such upgrades.

a. **Please identify issues and concerns, if any, regarding the transparency of interconnection cost estimates and schedules.**

I. Itemize IX Scope and Cost

Interconnection Cost Estimates should be provided as comprehensive line items that list the description of equipment, labor estimates, and any other modifications needed. The scope of the work should also be clearly stated in an easily readable, user-friendly form for engineers and developers alike. The cost estimates and scope of work should line up with the upgrades that are actually carried out by the utility. The utility should be required to reconcile any differences in payments and make refunds where less than the provided cost for upgrades is spent after a proper accounting.

In ConEdison, customer-generator payment for estimated interconnection costs is made into an escrow account and the costs are reconciled at the end of the project and then paid within a certain time frame after the upgrades are completed.[6]

II. Time Estimates

A Utility should provide a time estimate of the interconnection process. The IREC Interconnection 2019 Model recommends disclosing timeframes.[7]

III. Make Interconnection Queue Public

Making the IX queue public provides customer-generators with an idea of how long it will take to have their interconnection applications appraised and approved/disapproved.

b. **Please identify options for appropriate cost-sharing as well as issues and concerns.**

---

[6] ConEdison, Interconnection Guide for Large Combined Heat and Power (CHP) Projects 5 - 20MW (October 2016), accessed at: https://www.coned.com/-/media/files/coned/documents/save-energy-money/using-private-generation/specs-and-tariffs/con-edison-chp-guide-over-5mw.pdf?la=en

[7] IREC, Model Interconnection Procedures 2019 (September 2019), accessed at: https://irecusa.org/wp-content/uploads/2021/07/IREC-model-interconnection-procedures-2019_100319.pdf, 23.

I. Cost should follow Size

Small and medium scale DG should not be burdened with costs that make such projects uneconomical. . Interconnecting small and mid-sized DG should be streamlined and made quicker and more affordable. These kinds of DG projects should not be burdened because of the high degree of value, resiliency, local voltage support, and non-wires alternatives that they provide.

California and New York do not require the applicants of small DG systems to pay for all the distribution system upgrades they trigger. This streamlines the administrative costs of interconnection because the utility does not spend time developing cost estimates, collecting deposits, and then reconciling actuals to estimates for the upgrades. It incentivizes utilities to perform, rather than obstruct, these upgrades because they make a return on the capital cost added to the rate base. As a result, customers who want to install a small DG system will encounter few, if any, barriers due to the need for grid upgrades.

New York exempts net metering projects at or under 25 kW from paying more than $350 for distribution upgrades,[8] while California exempts net metering projects below 1 MW from paying any distribution upgrade costs.[9] The reason behind this policy is to encourage customer adoption of DG, and requires the equal treatment of DER customers and load customers. The California Public Utilities Commission ("CPUC") for instance, requires that upgrades triggered by small systems should be rate-based, just as upgrades triggered by small-load customers are rate based and paid by all customers.[10]

Among larger customer-generators, there are two ways that states share upgrade costs including the reimbursement of certain upgrade costs, and a group study process. For larger projects, New York requires the reimbursement of certain high-value distribution system upgrade costs among all customer-generators that benefit from the upgrade. This sharing ensures that a single project is not responsible for shouldering all of the costs of an upgrade when that upgrade enables the placement of other DGs in future years. Customers are more likely to agree to expensive upgrades with the knowledge that they are likely to be reimbursed for some of these costs in the future. To prevent cross-subsidization, such policies should be crafted narrowly to ensure that all projects required to reimburse upgrade costs benefitted from that upgrade, the cost are apportioned equitably, and any reimbursements flow back to DG customers in a timely manner. Other states have implemented a group study process that includes a cost-sharing mechanism for

---

[8] See note 2, 4.
[9] *Id.*
[10] *Id.*

larger projects. Massachusetts and California allow for group interconnection studies and upgrade cost sharing in certain situations.[11]

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.

I. Information on Upgrade Cost Estimates

See answer at 3(a)(I) above

II. Understand System Upgrade Benefits

An understanding of who benefits from system upgrades is essential in apportioning cost. System upgrades may help the utility, customer, and/or customer-generators.

5. 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".

We support the creation of an Interconnection Working Group (IWG). The purpose of the IWG is to provide stakeholders a forum to develop revised generator interconnection queue process procedures with the goal of reducing study time and increasing certainty. As IWG brings together different stakeholders, it makes for a robust conversation and cooperation around improving the interconnection process. Ecogy would be happy to participate and be an active stakeholder in a future IWG.

We thank you for your careful consideration of these comments and appreciate your support of the clean energy industry in the Granite State.

Warmest regards,

/s/

Brock D. Gibian
Director of Development
Ecogy Energy
www.ecogyenergy.com
718-304-0945

[11] *Id.*