CLEAN ENERGY NH
Your Voice in All Energy Matters

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June 29, 2023

Jared Chicoine, Commissioner
Department of Energy,
21 S. Fruit St., Suite 10,
Concord, New Hampshire 03301-2429

RE: IP 2022-001, Investigative Proceeding Relative to Customer-Generator Interconnection
Clean Energy NH Solar Working Group (SWG) – Round 2 Comments

Clean Energy NH (CENH) offers the following comments in response to the NH Department of Energy's (the "Department") Notice of Second Technical Session and Request for Comment 2 in the Notice issued on May 26, 2023. CENH again provides an overarching introduction in an opening letter with the Comments included as an addendum.

Introduction

CENH reiterates its unique perspective among the parties to this investigation and expands upon information previously provided.

CENH business members do include more than 20 solar companies with hundreds of NH employees. These companies have collectively installed hundreds of MW of solar power in NH and across the northeast. Our business members deliver clean low-cost energy that reduces consumer costs and increases NH's own energy supply. Our members also include a variety of hydro power companies, whose facilities have provided consistent, low-cost, clean energy to the local governments and in-state businesses for decades. The facilities are a critical mix of our local and instate energy portfolio and a deep interest in the interconnection issues facing the state.

However, CENH is not a trade organization that is focused on advancing the agenda of a narrow segment of the NH business community. Instead, CENH is a statewide non-profit organization dedicated to strengthening New Hampshire's economy by transitioning to a local, reliable, and clean energy system with lowest possible energy costs that benefits all NH citizens, local governments, and businesses. In fact, CENH's economy-wide, bipartisan focus has enabled the organization's membership to rapidly grow to include a significant proportion of the state's population, energy system, and economy.

CENH now has 36 municipal members, representing over 425,000 NH citizens, nearly one-third of the state's population. CENH also represents the interests of hundreds of NH business and residential. They are all looking to reduce their energy costs by accessing affordable, clean energy supplies. Furthermore, all three of the state's utilities are CENH members. And finally, we actively partner with multiple NH state agencies, as well as travel and tourism interests, chambers of commerce, regional planning commissions, universities and community colleges, and workforce development entities across the entire state. As such, CENH is unique in this proceeding as we bring a perspective informed by no single entity or type of entity, but instead by all sectors of the NH economy and most segments of NH society.

Clean energy measures, including energy efficiency, strategic electrification, energy storage, and renewable energy technologies all present economic, energy, and environmental opportunities for the state as they are increasingly the least-cost method to manage overall energy consumption and, therefore, energy costs. They provide an ancillary benefit of avoiding fossil fuel consumption, which reduces the "export" of energy dollars into the state, while also improving environmental quality and public health measures. Each of the technologies not only can impact energy consumption but they can also be utilized as "non-wires alternatives"[1], and, therefore, impact distribution and transmission system costs as well.

[1] Navigant Research defines NWA as: "*[A]n electricity grid investment or project that uses non-traditional T&D solutions, such as distributed generation, energy storage, energy efficiency demand response, and grid software and controls, to defer or replace the need for specific equipment upgrades, such as T&D lines or transformers, by reducing load at a substation or circuit level*." Navigant Research (2017). Non-Wires Alternatives: Non-Traditional Transmission and Distribution Solutions - Market Drivers and Barriers, Business Models and Global Market Forecasts. Cited in Feldman, Brett (2017). Non-Wires Alternatives: What's Up Next In Utility Business Model Evolution, Utility Dive, https://www.utilitydive.com/news/non-wires-alternatives-whats-up-next- in-utility-business-model-evolution/446933/.

In support of this assertion, CENH notes that the value of distributed generation to reduce electric power energy supply, distribution, and transmission costs was quantified in the Department's own study, conducted by Dunsky Energy and Climate Advisers. This study shows that solar PV systems provide avoided energy, distribution, and transmission costs.[2]

CENH also notes that the NH PUC issued Order No. 26,813 in Docket No. DE 22-073 approving a 4.9 MW solar project to be owned and operated by Until Energy System (UES).[3] In the Order, the PUC notes that it was Unitil Energy's position that,

> "*by generating PV electricity, especially during mid-day hours, the Kingston Project could provide ancillary load support for UES's distribution network in the southern Rockingham County area, and thereby reduce transmission and distribution costs assessed to UES, and, by extension, UES's distribution customers*." (Order at 4).

The PUC noted in the Order that they found that the project met the purpose of RSA 374-G in that the project was consistent with

> *"reducing line losses, supporting voltage regulation, or peak load shaving, as part of a strategy for DE 22-073 - 9 - minimizing transmission and distribution costs as provided in RSA 374-F:3, III."* (Order at 8 and 9).

CENH further notes that ISO-New England (ISO-NE) reported at a Federal Energy Regulatory Commission on June 20, 2023, that their indicates supply and demand for electricity should roughly balance out in the region through 2027. Further, ISO-NE indicated that the liquefied natural gas facility in Everett would no longer be needed for reliability purposes. However, ISO-NE is not yet ready for the facility to close. The ISO-NE analysis credits **stronger than expected growth in solar power**, fewer retirements of existing power plants, and flat demand for electricity.[4]

The ISO-NE president and CEO noted at this same event that demand for electricity is expected to spike in the early 2030s as cars, homes, and businesses are electrified to address to reduce carbon emissions.[5] As evidence of this, CENH notes that that ISO-NE's final 2023 ISO-NE 2023 transportation electrification forecast, released on April 28, 2023, projects that there will be 2.2 million electric vehicles (EVs) on the road in 2031.[6] This is 4000 percent growth over the vehicles on the road in 2022. However, it is worth noting that ISO-NE's 2022 final EV forecast had projected that 1.5 million EVs would be on the road for 2031.[7] This revision upward is consistent with ISO-NE forecasts over the past decade for both energy efficiency and solar PV adoption; ISO-NE annual forecasts for the energy transition tend to be conservative.

ISO-NE forecasts for EVs and building electrification mean that significant growth in electric generation, and electric power distribution and transmission will be needed as the economics and efficiency of new technologies drives the market away from fossil fuel for heating and transportation. As noted in CENH's first round comments, solar PV is the fastest source of low-cost electricity generation that can be built to meet New Hampshire's growing needs for clean, affordable power, capable of providing insulation from broader market forces. However, ISO-NE also projects that NH's solar installations will SIGNIFICANTLY lag the other five New England states. In ISO-NE final 2023 PV forecast found that by 2032, NH will have approximately 55 percent as much as installed solar capacity in Vermont, and just over a quarter of the installed solar PV capacity in Maine. As electric load grows in New Hampshire without a corresponding increase in local DERs, then there could be significant economic implications.

A factor influencing NH lagging the region in developing in-state low-cost energy resources such as solar PV is the regulatory environment. On June 21, 2023, Freeing the Grid, a joint initiative of the Interstate Renewable Energy Council (IREC)

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[2] Dunsky (2022). New Hampshire Value of Distributed Energy Resources Final Report, Dunsky Energy + Climate Advisors on behalf of the NH Department of Energy, https://www.energy.nh.gov/sites/g/files/ehbemt551/files/inline-documents/sonh/nh-vder-report.pdf.

[3] PUC (2023). Order No. 26,813, Docket No. DE 22-073, Petition for Approval of Investment in and Rate Recovery of a Distributed Energy Resource Pursuant to RSA 374-G, NH Public Utilities Commission, https://www.puc.nh.gov/Regulatory/Docketbk/2022/22-073/ORDERS/22-073_2023-05-01_ORDER-26813.PDF.

[4] Mohl, B. (2023). Grid Operator Dials Back Electricity Concerns Growth In Solar Power Eases Concerns Through 2027, Commonwealth Magazine, https://commonwealthmagazine.org/energy/grid-operator-dials-back-electricity-concerns/.

[5] Ibid.

[6] ISO-NE (2023). *2023 Final Transportation Electrification Forecast*, ISO-NE Load Forecast Committee, https://www.iso-ne.com/static-assets/documents/2023/04/transfx2023_final.pdf.

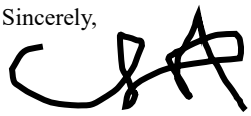
[7] ISO-NE (2022). 2022 Final Transportation Electrification Forecast, ISO-NE Load Forecast Committee, https://www.iso-ne.com/static-assets/documents/2022/02/evf2022_forecast.pdf.

and Vote Solar, released a report card that graded each state on the quality of its interconnection policies.[8] While the other five New England states only managed "Cs", New Hampshire was only state to score a "D".[9] However, a review of NH's scoring suggest that it barely achieved that grade as it had failed to meet any of the primary scoring criteria used in the methodology.[10]

This broader view of the regional forecasts, trends in solar PV, and comparison to other states underscores the need for this investigation to result in actionable recommendations and a commitment to collaboration among public, private, regulated, and non-profit entities. To that end CENH offers below a set of recommendations that intended to further the conversation regarding: 1) what can be done immediately, requiring no regulatory or legislative action; 2) what should be done in the medium term, where there is enough certainty to go forward at the PUC and the legislature, allowing the finest details to be resolved in those proceedings; and 3) the establishment of a standing working group that will consider thornier issues, where there is recognition of the problem, with less consensus (yet) on the solutions.

CENH offers the following comments, informed by our members. CENH further looks forward to reviewing the comments submitted by the other stakeholders in this investigation and engaging in the second scheduled technical session. CENH wishes to thank the Department for adopting parties' recommendation to hold multiple technical sessions, as well as allowing a comment period on a draft report before it is submitted. Understanding that time will be tight, but based on the progress made, CENH suggests that the Department consider circulating a draft agenda for the next meeting, taking suggestions from this round of comments, before finalizing the agenda. Further, CENH would recommend that before drafting the initial version of the report, the Department consider sharing an outline of the recommendations, and even hold a brief stakeholder session to allow parties to consider the whole picture before the Department subjects itself to the more substantive work of adding context and details.

Sincerely,



Chris Skoglund
Director of Energy Transition
Clean Energy NH

[8] IREC (2023). IREC Interconnection Grades Highlight Reforms Needed to Support Clean Energy Growth, Interstate Renewable Energy Council, https://irecusa.org/blog/irec-news/irec-interconnection-grades-highlight-reforms-needed-to-support-clean-energy-growth/.

[9] Freeing the Grid (2023). Introduction to Interconnection Grades, IREC and Vote Solar, https://freeingthegrid.org/introduction-to-interconnection-grades/.

[10] Freeing the Grid (2023). New Hampshire Interconnection Grade, IREC and Vote Solar, https://freeingthegrid.org/wp-content/uploads/2023/06/FTG-New-Hampshire.pdf,

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Addendum - Clean Energy NH Responses to Request for Comments - Set 2
RE: IP 2022-001, Investigative Proceeding Relative to Customer-Generator Interconnection

I. Suggestions for 2nd Technical Session

1. Consider inviting IREC and Vote Solar to provide a presentation at the beginning of the technical session on the Freeing the Grid State Interconnection Scores.
    a. The presentation may allow parties to investigate to understand what was being assessed and the best practices that New Hampshire is being advised to consider.
    b. Presentation may also allow parties to identify what the assessment missed, and which is in place.
    c. Dialogue may also allow parties to identify priority recommendations that would lead to the largest positive change.

2. Consider issuing a draft agenda in advance of the second technical session and request comments on the content and order.

3. Consider developing a potential summary, based on Comments 1 and 2, as well as first technical session, of areas of agreement; items for clarification; and contested issues and circulating in advance so that parties might come prepared to work through those items.

II. Suggestions for Remaining Process and Report

Consider establishing a set of outcomes/principles that parties can agree that they are working towards. Rather than simply say we're working on "interconnection", establish the outcomes/principles that the work on interconnection would ideally achieve.

Such outcomes/principles, if delivered first, could be crucial to shaping the understanding of decision-makers and earning their buy-in and support.

Outcomes/Principles could simply be:
1. Reduce overall electricity .
2. Speed completion of distributed energy resource (DER) projects.
3. Equitably share costs across all beneficiaries including project developers, and ratepayers.

III. Recommendations

The following recommendations are divided into the framework identified in the Notice issued on May 26. The framework breaks down potential recommendations into near, mid, and long-term recommended actions.

1. **Near-term** - *Non-statutory/non-regulatory changes/Administrative practices*
    a. Publication of Monthly Interconnection Lists by all utilities regarding the status of projects in the queue.

    This could simply be publication of an excel spreadsheet that allows developers to see where each of their projects stand and would increase administrative efficiency by reducing utilities receiving unnecessary communications (e.g., email, calls from developers).

    Publication would contain (bold are priority)
    i. List of all projects in queue
    ii. Redacted proprietary details
    iii. AC kW Size
    iv. BESS Size (if applicable)
    v. Substation
    vi. Feeder
    vii. Town
    viii. Date of application
    ix. Date application was deemed complete
    x. Date of study start
    xi. Date of study finish
    xii. ISA date
    xiii. Commercial Operation Date
    xiv. Active/Withdrawn
    xv. i.3.9 approval date (if applicable)

2. **Mid-term -** *Statutory (Legislative)/ Regulatory (Public Utilities Commission)*
    i. Establish a Pre-Application Process – The state should require that utilities provide project developers with technical information about a specific point of interconnection that can help inform them of potential limitations and costs for their projects early in the interconnection process. Process may include:
        1. Regularly updated hosting capacity maps
        2. Provision of pre-application reports that could include:
            a. Substation name;
            b. Substation transformer rating;
            c. Aggregate connected facilities (kW) on the substation transformer;
            d. Aggregate submitted complete facility applications (kW) that have not yet been interconnected;
            e. For the nearest available feeder, the circuit rating and approximate circuit length from the proposed project to the substation; and
            f. Identification of facilities on the circuit and on the transformer by technology type.

    ii. Standardization of Fees – The state should establish uniform costs across the utilities that should be justified in their scope and scale.
        1. Standardized fees for applications **IF** there is a reduction in other fees
        2. Standardized fees for studies - across projects and utilities
        3. Standardized timeline for studies - across projects and utilities
        4. Interconnection tariff guidelines - across projects and utilities

    iii. Establishment of Time Limits and Enforcement of those Limits – The state should develop time limits for the interconnection process that apply to both utilities and project developers.
        1. *Utility time limits* would address concerns among project developers and their customers over delays due to limited/slow communication.

            Specific limits of time for key steps in the interconnection process:
            a. Receipt of application (ex. 5 business days)
            b. Application deemed complete by utility (ex. 10 business days)
            c. Initial Screens (ex. 20 business days)
            d. Send System Impact Study Agreement (ex. 5 business days)
            e. System Impact Study (ex. 40-55 business days)
            f. Hold Results meeting following System Impact Study (ex. 5 business days)
            g. Send interconnection service agreement to customer

        2. *Developer time limits* would address concerns regarding speculative projects occupying queue which ultimately don't get built, or do not respond in a timely manner, and prevent the projects further down the behind them from moving on to the System Impact Study steps.

            Specific limits of time following
            a. Sign System Impact Study Agreement and Pay deposit (ex. 15 business days)
            b. Request Interconnection Service Agreement (ISA) following System Impact Study (ex. 15 business days)
            c. Sign ISA after receipt (ex. 15 business days)
            d. Pay Initial Deposit of ISA 25 percent (ex. 60-75 business days)
            e. Pay Balance of ISA 75 percent (ex. 120-150 business days)
            f. Grace period if developer misses a milestone (ex. 30 days)

    iv. Establish Uniform Distribution System Planning Standards – The NH electric distribution companies appear to be applying different distribution system reliability standards and the lack of uniform standards means that there are inconsistent interconnection upgrade costs among the utilities. The state should establish a consistent system reliability standard that goes through a formal, transparent, and open process to allow the costs and benefits to be considered by all parties.

        Background: At present time, CENH members note that Eversource is enforcing an N-1 reliability standard on its distribution system, claiming to have done so for 30+ years. While there may be benefits to this, the costs need to be more deeply considered.
        In the case of DER project development, the company appears to be requiring projects to conduct upgrades to distribution system equipment along two paths. Ostensibly, this is to ensure that the DER projects can still deliver power to the grid when the primary circuit is interrupted.

However, it is also CENH's understanding that Eversource is not providing DER projects with the opportunity to reduce project costs by only upgrading the primary path, understanding that they would be tripped offline in the case of an outage. Eversource has suggested that they require primary and secondary upgrades, if needed, in case the primary path was to be catastrophically affected, creating an outage for months. Project developers recognize this is a risk, but question the frequency that this has happened, if ever, in New Hampshire.

Therefore, it appears that, in some instances, DER projects are being served a bill for interconnection upgrades that make projects financially unviable or result in project sizes being reduced to eliminate the need for those upgrades. The net result is that less installed solar PV capacity in NH.

Considering the passage of HB281 by the House on June 29, 2023, which will likely be signed by the Governor, and which eliminates an arbitrary geographic barrier municipal solar project, it is likely New Hampshire will see more larger solar project applications result. The rigid application of the Eversource reliability standard could undermine the beneficial impact of that bill.

v. Equitably Allocate Cost Allocation – The state should develop alternatives to the "Cost Causer" Pays Model. There needs to be certainty around the cost for interconnection for projects to be but. Having consistent/predicable interconnection upgrade costs will result in greater economic efficiency as hirer ratio of projects started to projects built. This will drive projects costs lower and drive up the benefits to consumers.

1. To maximize the rate of DER project development, the state should prioritize consideration of the following interconnection upgrades.

    a. *Utility Prorated Cost Sharing* – In this model, the utility makes the investment necessary to expand the capacity at the interconnection site and the project pays for its share of the upgrade. Provides smaller DERs with opportunities they would not otherwise have if they were to bear the full cost and allows new projects to follow and pay their way as they come online.

    b. *Proactive Upgrade Cost Sharing* – In this model, the utilities would utilize their experience and expertise to identify points where interconnection upgrades will likely need to occur and develop those sites. This reduces delays for new projects coming online as the hosting capacity is in place and they can pay their share of the costs as they interconnect.

2. Two other models are considered around the country but have drawbacks that make them less appealing and are NOT recommended.

    a. *Group Study/Group Cost Allocation* – This can result in fair allocation of costs and lower costs to interconnect, but cluster studies can take longer to complete as more variables to integrate. If the project drops out, the study may need to be repeated, causing further delays.

    b. *Post-Upgrade Allocation (Reimbursement)* - The "cost causer" still pays for the upgrades incurred but they bear the full financial burden unless/until a new project(s) interconnects, reimbursing them for its share of the capacity utilized. This model can still result in a significant number of projects not being built as they won't have certainty regarding the financing and cashflows of the project.

ii. Establish an Interconnection Forum for Reconciliation of Issues – Create a means to resolve issues related to interconnection early and quickly. Avoid to the greatest degree possible tying up time of developer and utility staff that should be spent on project applications.

Ex. Mass Dispute Resolution Process[11]

a. Step 1 - Good faith negotiation (includes an Ombudsperson)
b. Step 2 - Mediation/non-binding arbitration
c. Step 3 - DPU adjudicatory hearing

[11] https://www.mass.gov/info-details/interconnection-dispute-resolution-guidance

2. **Long-term** – The state should establish a standing working group.
    a. The working group will consider unresolved issues in this investigation as well as track processes and progress in other jurisdictions to provide ongoing guidance to the NH legislature, PUC, and Department of Energy.

    b. The working group's mandate would expand to include storage and grid modernization as needed. Alternatively, specific topic based technical working groups would be established to consider related issues in parallel to interconnection to ensure that NH does not fall behind and incur economic costs that were avoidable.