



August 17th, 2023

Ms. Holly Anderson, Clerk

Vermont Public Utilities Commission
112 State Street, 4th Floor
Montpelier, VT 05602

RE: 19-0855-RULE Proposed revisions to Vermont Public Utility Commission Rule 5.100

Dear Clerk Anderson,

Renewable Energy Vermont (“REV”) submits these comments regarding the proposed changes to Rule 5.100 filed with the Secretary of State’s Office on June 23rd, 2023. The net-metering program has been and will continue to be critical to the state’s efforts to advance renewable energy development and meet its climate goals. As such, REV believes that any proposed change which impedes the rapid deployment of net-metered systems faces a high burden of proof to demonstrate that it is addressing an issue that is comparably vital to the public interest and that cannot be addressed in a less burdensome manner.

While REV believes that the draft rule includes many positive changes, such as simplifying the process for extending a Certificate of Public Good, several provisions are likely to slow the deployment of net-metered systems and do not provide other clear value for Vermonters. Overall, we believe that changes to preferred siting criteria, the treatment of system expansions, and a vague prohibition on participation in wholesale markets will limit the ability of local planning bodies to support renewable generation in their jurisdictions, unfairly disadvantage early adopters of solar power, and stifle business innovations that would benefit Vermont ratepayers while providing little public benefit.

1 Prohibition on Significant Forest Clearing

REV believes that the implementation of a prohibition on “significant forest clearing” on preferred sites in 5.103 is arbitrary and unjustified. While the Commission’s decision to increase the threshold for significant forest clearing from one to three acres is appreciated, REV reiterates our prior concern that this acreage threshold approach does not align with meaningful climate or ecological impacts. Because this definition fails to account for the volume of biomass present on a site, forest age, species diversity, habitat connectivity, or other factors that would speak to its value as a source of carbon storage and sequestration or wildlife habitat it needlessly and arbitrarily limits the ability of local and regional planning entities to support renewable generation within their own jurisdictions.

As REV has acknowledged, forests play an important role in sequestering and storing carbon. However, given the heavy dependence of the ISO-New England grid on fossil fuels, and Vermont’s interconnection with the market, solar is substantially more effective at reducing

atmospheric CO₂ concentration than forests. A 2021 analysis by Synapse Energy Economics has calculated that in New England converting an acre of forest to a solar array will result in 470 tons of CO₂ savings each year.¹ Other assessments point in the same direction.² REV is unaware of any scientifically grounded assessment that contests the fact that solar development is more beneficial than maintaining tree cover from a carbon perspective.

The specific carbon balance associated with a particular solar project depends upon a wide variety of factors that the Commission has opted to ignore by creating a simple, area-based threshold. These include how much standing biomass is on the site. By their very nature early successional forests store very little carbon as they contain very little woody biomass compared to mature forests. Clearing at this type of site will incur very little carbon debt and will begin paying atmospheric dividends virtually immediately. A portion of the carbon stored in more mature forests may continue to be stored if the cleared trees are used in wood products. And of course, the emissions that solar offsets depend on the composition of the electrical grid. Currently, the average marginal greenhouse emissions in ISO-New England exceed 700 lbs/MWh of CO₂ meaning that offset emissions far exceed forest sequestration rates.³ None of these issues are addressed by the acreage threshold approach advanced by the Commission.

Similarly, the habitat value of a specific parcel depends on much more than whether or not there is 10% canopy cover and its connection to other treed areas in the immediate vicinity. Species diversity, the proliferation of invasive species, proximity to existing roads and powerlines, and many more characteristics all impact habitat quality, and none of the issues are addressed by the proposed rule.

Given the limited scale of forest clearing that has occurred to date as a result of net-metered projects – just over 200 total acres as of 2021 according to the Agency of Natural Resources – especially in relation to the clearing that occurs as a result of other forms of development, REV questions the need for this restriction at all. Rather REV echoes the 1/12/2023 Public Comment submitted but the Vermont Association of Planning and Development Agencies that limitations on “significant forest clearing” should be managed legislatively so that they are applied to all types of development equally rather than targeting net metering specifically.

Should the Commission continue to pursue this new restriction, REV urges the Commission to utilize a standard that is tied to climate and ecological science. As a starting point, REV suggests separating the climate and habitat concerns into separate provisions. For climate REV would suggest barring a site from preferred site status if it can be affirmatively demonstrated to result in an increase in atmospheric CO₂ over the project’s expected lifespan. As the grid become cleaner,

¹ Synapse Energy Economics (2021). “*Carbon Dioxide Emissions Tradeoffs: Forests or Solar Panels?*” <https://www.synapse-energy.com/carbon-dioxide-emissions-tradeoffs-forests-or-solar-panels>

² Eisenson, Matthew (2022) “*Solar Panels Reduce CO2 Emissions More per Acre than Trees*” State of the Planet: News from the Columbia Climate School.

³ ISO New England (2023). “*2021 ISO New England Electric Generator Air Emissions Report*” <https://www.iso-ne.com/static-assets/documents/2023/04/2021-air-emissions-report.pdf>

this restriction would become tighter reflecting the more limited climate benefits that solar provides in a truly low-carbon environment. If the New England states succeed in dramatically decarbonizing the grid in the next decade, it may be that clearing even a single acre of mature trees would no longer provide a climate benefit. To address habitat concerns, REV would suggest limiting forest clearing in Highest Priority Forest Blocks. These blocks, identified in the Vermont Conservation Design, are precisely the blocks that have the highest habitat and habitat connectivity value for many crucial native species.⁴

2 The Effect of Amendments on Net-Metering Compensation

Section 5.108 proposes to limit the expansion of existing systems to 5% or 10 kW before triggering the application of the most recently adopted adjustors to the output of the existing system. This will make system expansions significantly more expensive at the same time we are asking Vermonters to increase their level of electrification which is inconsistent with the state's climate goals and the intent of the net-metering program to support self-generation.

At the residential level, Vermonters who move to electric vehicles and heat pumps, as encouraged by the state's climate policies, could see their electricity usage more than triple (See Table 1). This means that a household with what is currently an average-sized net-metering system, approximately 7 kW, would need to increase its system size by 14 kW to maintain the same level of self-generation. If the original system were installed in 2020 and transferred its RECs to the utility, it would receive a positive 2 cents/kWh in adjustor which would be reduced to -2 cents/kWh if the system were to be expanded. Effectively, this results in 4 cents/kWh of lost credits from the existing system and would make system expansion several thousand dollars more expensive than if the adjustors that were in place at the time the system was built were retained. This differential disadvantages early adopters of solar.

⁴ Vermont Agency of Natural Resources (2016) "*BioFinder 2.0 Component Abstract.*" <https://anrmaps.vermont.gov/websites/biofinder2016/Documents/ComponentAbstracts/InteriorForestComponentAbstract.PDF>

Table 1. Residential Electricity Demand with High Electrification

Demand Source	Low ¹ (kWh)	High ² (kWh)
Baseline Demand	650	650
Two Electric Vehicles ³	817	1,143
Two Cold Climate Heat Pumps ⁴	386	386
Heat Pump Water Heater ⁵	209	209
Total Monthly Usage	1,853	2,179
Total Annual Usage	22,232	26,152
1. Assumes fleet average EV efficiency of 0.35 kWh/mile 2. Assumes EV efficiency of a Ford F150 Lightning, 0.49 kWh/mile 3. Assumes 14,000 miles of travel per year per vehicle 4. Assume 193 kWh per Month as reported by Efficiency Vermont 5. Estimate of water heat usage from Green Mountain Power		

In many instances, the disincentive to expand Category 3 systems would be even more severe as the pre-existing system would represent a larger percentage of the total capacity of the expanded system. For example, the pre-existing portion of a 250 kW system expanded to 500 kW would be 1/2 of the total capacity as opposed to 1/3 of the system size in the residential case described above. Here both the absolute and proportional loss in credit revenue would be higher than in the residential case. Given the current focus on reducing the sites that are eligible for preferred site status, the Commission should be doing everything in its power to maximize the utilization of existing preferred sites. Expanded systems will have a smaller total footprint than would be required to create a separate system with the same capacity as the system expansion. The expanded system will have only one interconnection route and will have a smaller vegetation management area than the combined management areas around two smaller systems. Disincentivizing these expansions will result in greater competition between urgently needed renewable energy generation and other valuable land uses.

The Commission's comments indicate the reason for rejecting the Public Service Department's proposal to compensate the existing system at the existing rate and the new system at the new rates was that it was administratively difficult for the utilities to apply two different adjustors to the same system. REV appreciates this practical barrier but urges the Commission to be more creative in finding a compensation mechanism that would avoid this preserve disincentive to expand existing systems. REV has suggested using a weighted average of the existing and current adjustors (see Table 2 for an illustration of what this would look like) which would allow utilities to apply a single – albeit unique – adjustor to the expanded system while achieving the same result as the Department's proposal. REV has reached out to the distribution utilities about the feasibility of the approach within their existing billing systems. To date – outside of the Vermont Electric Coop which indicated that this would also be difficult to support within their billing software – REV has not received a definitive answer to this question.

Table 2. Illustration of the adjustors applied to the output of the existing system using a weighted average

	Capacity (kW)	REC Adjustor (cents/kWh)	Siting Adjustor (cents/kWh)	Total Adjustor (cents/kWh)
Initial System (NM 2.2)	7	1	1	2
Added Capacity (NM 2.5)	14	0	-2	-2
Adjustor as Written		0	-2	-2
Weighted Average Adjustor		0.33	-1	-0.67

For larger systems, considering the system expansion to be a separate plant for the purposes of determining REC and siting adjustors would accomplish this same end with relatively little burden to the utilities given the comparatively small number of systems involved.

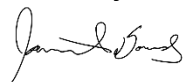
3 Prohibiting Wholesale Market Participation Chills Innovation and Disadvantages Vermont

Section 5.135 provides that “[n]o net-metering system may participate in a wholesale market unless the Commission finds that such participation will not harm the interests of Vermont ratepayers and will be in the public good.” REV’s interpretation of the Commission’s language in the *Order Requesting Comments on the Draft Rule* from 12/2/2022 is that Commission seeks to protect against double compensation (i.e., double-counting for the same services), but the broad language of the proposed Rule goes much further to presume that net-metering systems have no right to wholesale markets to provide any service, even if it is a service that is not already being compensated through the net metering program.

While the Commission reserves the right to approve such participation but issue a vague and blanket prohibition, with no clearly defined criteria for grant approval, the proposed Rule would discourage innovation to take advantage of FERC Order No. 2222 that could create additional opportunities for net-metered systems to provide value to the system owner *and* to reduce overall systems costs for all Vermont utilities and their ratepayers. We urge the Commission to be more specific about its concerns with net-metering participation in wholesale markets and the process for gaining approval for doing so.

Thank you for the opportunity to comment.

Sincerely,



Jonathan Dowds
Deputy Director