P. O. Box 512
Montpelier, Vermont 05601
September 24, 2021

Holly R. Anderson, Clerk
Public Utilities Commission
112 State Street, 4th Floor
Montpelier, Vermont 05620-2701

Subject: Proposed changes to PUC rule 5.100, pertaining to construction and operation of net-metering systems
Case number 19-0855-RULE

Dear Ms. Anderson:

Thank you for the opportunity to comment on the proposed changes to rule 5.100.

I acknowledge that I am joining this process rather late. I have reviewed the orders, comments, and transcripts provided on the ePUC internet site for this case. I am responding to the Commission's request for comments responding to the issues discussed at the workshop on August 24.

Some of the participants in these workshops may remember me from my participation in the revision of the statute and then this same rule, that resulted in the current version of the rule.

I provide this response from my perspective as an owner. Individual net metering systems were the first to be granted certificates of public good and are the backbone of net metering. The application process for owners of small net metering systems should remain simple. Instead of retaining simplicity, the proposed draft makes the process for for small users more complex than in the current version. (I believe the draft created April 15, 2019 is still the working draft.)

I am the owner of a small, individual, roof-mounted net metering system (3 kW) with battery back-up. The system went into operation toward the end of 2011, delayed because of a back order on one of the inverters. (I thought then, and still do think, it would be a waste of money to install electric generation on my roof that provides me no electricity when my electric supplier is unable to supply me with electricity. So I paid the big bucks for a battery backup (nominally 12 kWh.)) My system actually has a certificate of public good and an amendment. The system was originally designed to be installed in two phases. The first phase was all the equipment for both phases except only half the panels. That was the first CPG. In order to install the other half of the panels two years later, I needed to amend the CPG. My installer urged me not to delay much longer on the addition. That was because panel technology had changed and he could no longer get my original panels. And if I waited too long, it would be difficult integrating the output of the new panels with that of the existing panels. The addition of those panels required the amendment in 2013, because the capacity (based on DC output, not on the inverter) increased.

Now I would only need one CPG because it would be based on the inverter, not the modules.

The proposed amendment would require me to again have an initial CPG and an amendment. Even if someone now submits a registration of two phases, that person would likely need an amendment by the time the second phase came around, based on my experience. The modules for the second phase would be different and an amendment would be required because of that change in information.

Section by section comments

Even though these comments are by section of the proposed rule, they do respond to the items from the many workshops, particularly the one on August 24, 2021.

5.102 (A). I appreciate the change in computation of time so that all are calendar days. I find it awkward when some statutes and rules count small numbers of days as business days and others count small numbers of days as calendar days. So the change proposed for this rule is another step toward getting a uniform system of counting days by State government: all calendar days.

5.103 definition of "Amendment". Not all information on a registration form should require an amendment. The proposed definition of an amendment is a problem. Changes to some of the information in a registration appears to be irrelevant to the certificate of public good. Changes to that information should not require an amendment. Based on the current registration form (12/20/19) the following appear to be irrelevant:

- PV module manufacturer and model
- Number of modules
- Power Rating per Module (DC Watts)
- Total Array Output

When I submitted my two applications for Certificates of Public Good (a first application and two years later an amendment on the registration form) the size of a system was based on the DC output. Now it is based on the AC inverter. As long as the inverter has not changed, I believe that the information on the modules is irrelevant. My first CPG lists the capacity as the output of the modules. So when I installed the second phase, which doubled the output while remaining within the capacity of my original inverter, I needed an amendment.

5.103 definition of "Net metering". Please change this definition to match the definition in statute (10 V. S. A. §8002(15)). I am using the definition in the rule 5.100 as the basis and marking it up to show the changes that need to be made in order to return the PUC's definition to the legislature's (statutory) definition.

> "Net-Metering" means ~~the process of~~ measuring the difference between the electricity supplied to a customer and the electricity fed back by ~~a~~ the customer's net-metering system~~(s)~~ during the customer's billing period:
> (1) using a single, non-demand meter or such other meter that would otherwise be applicable to the customer's usage but for the use of net metering; or
> (2) if the system serves more than one customer, using multiple meters. The calculation shall be made by converting all meters to a non-demand, non-time-of-day meter, and equalizing them to the tariffed kWh rate.

It is important to use the correct definitions of "net metering" and "net metering system" Using the correct definitions has the potential for eliminating some of the ideas discussed at the workshops.

5.103 definition of "Net metering system". Please change this definition to match the definition in statute (10 V. S. A. §8002(16)). I am using the definition in the rule 5.100 as the basis and marking it up to show the changes that need to be made in order to return the PUC's definition to the legislature's (statutory) definition.

> "Net-Metering System" means a plant for generation of electricity that:
> (1) is of no more than 500 kW capacity;
> (2) operates in parallel with facilities of the electric distribution system;
> (3) is intended primarily to offset the customer's own electricity requirements; and does not primarily supply electricity to electric vehicle supply equipment, as defined in section 201 of this title, for the resale of electricity to the public by the kWh or for other retail sales to the public, including those based in whole or in part on a flat fee per charging session or a time-based fee for occupying a parking space while using electric vehicle supply equipment; and
> (4) either (i) employs a renewable energy source; or (ii) is a qualified micro-combined heat and power system of 20 kW or ~~less~~ fewer that meets the definition of combined heat and power ~~facility~~ in subsection 8015(b)~~(2)~~ of Title 30 and uses any fuel source that meets air quality standards.

The portion in statute on electric vehicle charging was added to the statute following creation of the current rule 5.100.

One can quibble over whether it should be "less" or "fewer". I, and the style manuals I use, prefer "fewer", which is the word in the statute.

5.103 definition of "Preferred Site" (1).
As it currently stands, (1) is about putting a net metering system onto any new or existing structure as long as the structure's primary use is not the generation of electricity. This allows a new house to be built with solar panels on the roof.

I suggest that this definition not be amended. Leave it at structures; do not add impervious surfaces. Impervious surfaces are adequately covered under (3). A new impervious surface includes one that was created minutes before filing an application. I do not think that is appropriate as a preferred site. This rule does not define an "impervious surface". I use other definitions of an impervious surface as guidance to figure out what this might mean in this proposed rule. Throw down some gravel or compact some earth and *viola!* a new impervious surface. I acknowledge that I am providing an extreme example. Yet the principle holds.

> Vermont's stormwater program defines an impervious surface as "those manmade surfaces, including paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates." (10 V. S. A. §1264(b)(6))

> Montpelier's zoning ordinance defines an impervious surface as "a surface composed of a material that impedes or prevents the natural infiltration of water into the soil including, but not limited to, rooftops, streets, driveways, sidewalks, walkways, patios and similar hard-surfaced areas whether constructed of concrete, asphalt, stone, brick, gravel or compacted earth, unless they are specifically designed, constructed and maintained to be pervious." (Section 5101.I(1))

5.103 definition of "Preferred Site" (2).
As it currently stands, (2) is about putting a net metering system onto a new canopy over a paved parking lot. The new canopy would be built for the placement of equipment that generates electricity, thus would be ineligible for preferred site (1). An existing canopy would be a preferred site under (1).

The proposed revision to (2) is potentially problematic. The canopy would be a structure built for the placement of equipment that generates electricity. The canopy would be an impervious surface. The potential problem is that this definition does not prevent diverting the runoff from the solar panels away from an underlying engineered pervious surface onto an impervious surface.

5.103 definition of "Preferred Site" (3).
As it currently stands, (3) is about putting a net metering system onto the land of a tract that contains a structure or impervious surface that existed for a period at least six months before an application was filed. This preferred site appears to be available only to net metering systems that will require an application. It appears to be unavailable to systems using a registration.

I am having trouble with separating the changes proposed for (1) from those proposed for parts of (3). Part of (3) deals with an existing structure (as does (1)) and it is not clear how that difference works out. (3) would imply that the existing structure may be demolished, otherwise the phrase would not be "within the existing footprint". (1) requires that the existing structure be retained. (3) will remove the requirement that a structure or impervious surface exist for some amount of time before being granted status as a preferred site. I suggest that (3) be amended to something like:

> A tract previously developed for a use other than siting a plant on which a structure or impervious surface was lawfully in existence and use for ____ *[some specified period of time before filing an application]* ~~prior to July 1 of the year preceding the year in which~~ before an application for a certificate of public good under this Rule is filed. To qualify under this subdivision (3), the ~~limits of disturbance of a proposed net-metering system must include~~ energy generation component of the plant must be located within the footprint of either the ~~existing~~ structure or impervious surface. For purposes of this subsection, the energy generation component of the plant does not include interconnection equipment. The limits of disturbance of any component or equipment ~~and~~ may not include any headwaters, streams, shorelines, floodways, rare and irreplaceable natural areas, necessary wildlife habitat, wetlands, endangered species, productive ~~forestlands~~ forest soils, or primary agricultural soils, ~~all of which are~~ as

defined in 10 V.S.A. chapter 151;

I suggest moving the sentence on interconnection equipment ahead of the sentence on limits of disturbance. I suggest this to make clear that the conditions on the limits of disturbance also apply to any disturbance needed for the interconnection equipment.

5.105 (C) registration timeframes and (E) CPG issuance. I ask that (C) Timeframes, be retained as in the current rule. The proposed changes will triple the time for deemed approval of small net metering systems. (Instead of deemed approval on the 11th day, deemed approval will be on the 31st day.) As the owner of a small net metering system, I find the proposal to be an additional, unnecessary delay. Or the proposed (E) can be modified to retain the dual periods of deemed approval as in the (C) that is proposed to be deleted.

The statute (30 V. S. A. §8010 (c)(3)(C)) requires the rules to "seek to simplify the application or review process as appropriate". I do not see the proposed revision on timeframes or CPG issuance, as they relate to small photovoltaic systems, to be a simplification.

5.105 (E) CPG issuance for registrations. In the second line, I believe the word should be "registration", not "application".

5.105 (E) CPG issuance for registrations. Please provide more specific references within 30 V. S. A. §248. The only reference I find there relating to net metering is that a certificate of public good is needed.(§248(n)(1)). Or remove the references to §248. Or maybe refer to 5.111.

5.109 Amendments to Approved Net-Metering Systems. Alteration of some information on a registration should not require an amendment. I have discussed this under the definition of "Amendment" above. Changes to the following information should not require an amendment.
- PV module manufacturer and model
- Number of modules
- Power Rating per Module (DC Watts)
- Total Array Output

The statute (30 V. S. A. §8010 (c)(3)(C)) requires the rules to "seek to simplify the application or review process as appropriate". I do not see the proposed revision on amendments to approved systems to be a simplification.

Information requested by attachment B to the August 22, 2019 procedural order. My comments relate to the information on modules. I base this on my experience as the owner of a 3 kW, roof-mounted photovoltaic system. It is not necessary to collect the information. If the information is collected, the information does not need to be reviewed before a CPG or amendment is deemed issued. That is because the important value is the nameplate rating of the inverter, not the capacity of the modules. As long as the capacity of the inverter does not change, there seems to be no need to review or amend for changes in the modules.
- PV module manufacturer and model
- Number of modules
- Power Rating per Module (DC Watts)

- Total Array Output

Conclusion

As you are aware, most small system owners apply for a certificate of public good maybe once in their lives. The net metering system rule should be kept simple. Particularly for individual net metering systems. Most installers, probably all, are sophisticated enough to navigate the rule. The rules also need to be accessible to individual owners, both before they get to the point of having an installer and for reference after the installation is over.

Thank you for taking the time to read these comments.

Sincerely,
Thomas Weiss