

January 13, 2016

Ms. Judith Whitney, Clerk
Vermont Public Service Board
112 State Street, Drawer 20
Montpelier, VT 05620

Re: **Draft Rule 5.100 – Regulations pertaining to Construction and Operation of Net Metering Systems**

Dear Ms. Whitney,

On December 7, 2015, the Public Service Board (Board) circulated a draft net metering rule among Act 99 working group participants. On this day, the Board also asked Act 99 participants to submit comments on the proposed rule by January 6, 2016. The deadline date for comments was subsequently extended to January 13, 2016. In this letter filing, BED comments on the Board's proposed net metering rule, as requested. Specifically, BED's comments address the following topics:

- Rule 5.100 General comments
- Rule 5.104 Energy Measurement for net metering systems
- Rule 5.105 Billing Standards and Procedures (B) Membership in multiple new metering groups
- Rule 5.105 Billing Standards and Procedures (C) Group member allocations.
- Rule 5.105 Billing Standards and Procedures (D) Siting incentives.
- Rule 5.105 Billing Standards and Procedures (F) Credits for Excess generation
- Rule 5.106 Group System Requirements (A)(1) 10 miles from net metering system
- Rule 5.107 Electric Company Requirements (A) Generally (5) – (7) credits, charges and fees
- Rule 5.111 Certificates of Public Good (6) Request for Hearing

Rule 5.100 General comments

Based on the results of recent Standard Offer RFPs', this may be an appropriate time to re-assess the level of incentives that utilities are required to pay to net metering system owners and group net metering members. In BED's opinion, aligning incentives with the potential value that PV systems can offer to Vermonters, in terms of reduced utility costs is desirable for the sustainability of net metering programs in Vermont. Better alignment is also necessary to ensure that the goals and requirements of 30 VSA §8010(c)(1)(C) and (E) are upheld.¹

Also, BED requests that the Board provide specific examples of billing scenarios to help utilities better understand how the Board envisions the manner in which net metering invoices will be conveyed to net metering customers and members. It would also be helpful if such examples clearly illustrated the basis for calculating any applicable taxes/franchise fees and the Energy Efficiency Charge. Examples illustrating single customer and group net metering, along with months with and without excess generation and with a credit carried forward from prior months would be particularly helpful. Absent examples, language clarifying the KW and KW basis for calculating the EEC, and the dollar basis for assessing taxes or franchise fees should be added to the proposed rule for clarity.

Rule 5.102 Definitions/Terminology

It might be helpful to differentiate between "kWh Credits" and "Dollar Credits" for clarity in discussing metering and billing at later points in the Rule as opposed to using more generic terms.

Rule 5.104 Energy Measurement for Net Metering systems

Both the current and proposed rules require customers to install production meters, at their expense, if the customer has voluntarily subscribed to a time-of-use, demand or other similar type of dynamic, real-time retail pricing tariff. This requirement is important as the production meter enables distribution utilities to appropriately monetize the customer credit for excess energy exported onto the grid during peak and off-peak periods.

¹ 30 VSA §8010(c)(1)(C) and (E) state, in large part, that to the extent "feasible" net metering does not shift costs included in each retail electricity provider's revenue requirement between net metering customers and other customers, and that net metering remains available to all Customers.

But, BED recommends that the Board clarify subsections of the rule. Proposed rule 5.104(2), for example, could be misinterpreted and potentially increase a host utility's costs. To ensure that BED avoids inadvertently paying too much for net metering systems installed on its distribution grid, BED makes a critical assumption about the Board's intent with respect to this rule. BED assumes that the phrase, "net of any credit" refers to net of any credit, in dollars, based on excess generation from prior periods. If this is a correct assumption, then BED and other host utilities should be held harmless with respect to the crediting of customer's bills.

Nevertheless, BED suggests that section 5.104(5) be further clarified to ensure that host utilities do not pay net metering customers with a production meter installed for energy while also billing the same customers at a reduced energy consumption level. In many (most) cases, consumption at a customer's retail meter is reduced by generation (i.e. where the generation is not directly connected to the grid, but is only connected to the grid through the retail meter). A literal interpretation of, "all KWH produced by the net metering system shall be credited to the customer's account at the residential retail rate", could be interpreted to require the host utility to pay for the gross generation at retail rates, and to bill the net metering customers for the reduced load recorded by the bi-directional meter. This type of situation would lead to a double payment. Existing Rule 5.105(C) recognizes this issue by requiring new metering customers to connect their systems directly into the host utility's grid before being eligible to receive credit for generation at the retail rate.

Rule 5.105 Billing Standards and Procedures (C) Group member allocations.

In this proposed rule, the Board introduces a new term: *order of priority*. It is BED's understanding that the introduction of this new term is an attempt to clarify existing language that allows for the allocation of energy to group members based on a method that sequences the allocation of said energy; meaning account "a" is assigned enough kWh's to zero out the monthly bill amount of account "a" (including the customer charge, EEC and franchise fees), account "b" is assigned enough kWh's to zero out the monthly bill amount of account "b" and so on. In this manner, all of the energy produced in the month by such a system would be assigned to each account until there are no more kWhs to assign. The last remaining account of this group might not receive any kWh from the net metering system, and in that case would then pay for energy delivered by the distribution utility and consumed at the location of the group net metered customer's

premise at retail rates. The amount of that payment would include that account's customer charge, consumption based charges, EEC and franchise fee and applicable taxes; whereas the other accounts would not be assessed these charges.

In addition, 5.105(C) does not make it clear that the gross generation for group net metering systems cannot be allocated where a customer's billing meter is already being reduced (i.e. where a GNM system is behind a retail load meter); i.e. group net metering systems must be connected directly to the utility distribution grid, not behind an existing retail meter.

In BED's view, the new term, "order of priority" does not clarify the existing language, nor does it help to simplify the process for allocating energy among the accounts assigned to a net metered system. In fact BED is concerned that its current billing system might not be able to handle "order of priority assignments" as described in the proposed rule. BED recommends that "order of priority" assignment not be permitted, and that prior to system commissioning; members/owners of a net metered system should be required to assign energy production to specific accounts based on percent of system production. This process would be simpler from an accounting point of view and clearer from a rules perspective.

Rule 5.105 Billing Standards and Procedures (D) Siting incentives.

BED supports the Board's proposed rule with one exception: 5.105 (D) 1. In BED's opinion, mandating incentives to build net metered PV arrays on new and existing buildings in densely populated cities, such as Burlington, is inappropriate. BED also contends that such an incentive is potentially in conflict with 30VSA §8010(c)(1)(C).

In BED's view, incentive payments based on location rather than the actual value of the generator's capacity to reduce a utility's "revenue requirement" will only result in cost shifting between and among customers. From the utility's perspective, a solar array at a given azimuth/angle looks the same, and provides the same value in reducing a utility's cost, regardless of whether it is in a green field or on a rooftop. Simply put, there is no corresponding benefit to the host utility that would be associated with the additional siting incentive.

However, if utilities are required to pay a siting incentives, as proposed in this rule, utilities will then have to recover any such siting incentive from its other retail customers. The customers who will pay the lion share of that incentive, if that incentive is socialized in rates, will predominantly be those without net metering arrays (both since non-net

metering customers will have larger net billing consumptions and since at the present time non-net metering represents the majority of the customers at this time).

In short, providing an “incentive” payment for siting arrays in certain locations, over other locations, does not appear to comply with the statutory requirement to avoid cross subsidies. Nevertheless, the potential for cross subsidy is tempered by the proposal to only apply incentives to “excess generation” but any proposals to broaden this application to all generation, or increase the incentives, will exacerbate the concern.

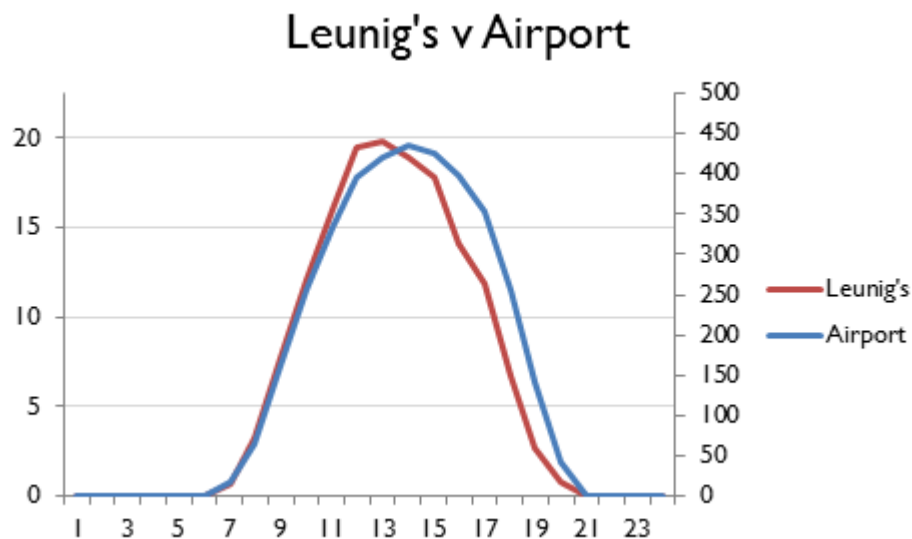
BED also asserts that providing a 5.105 (D) (1) incentive as an economic signal to market actors to locate net metered systems in accordance to a state-wide priority list is a misapplication of utility rate making principals. It may also have an unintended consequence: driving up the cost of renewable energy for municipal utilities compared to non-municipal utilities since most net metered systems in urban areas will be located on buildings and parking lots rather than brownfields. What the incentive does do however is provide a market signal that allows the State to prioritize the use of buildings and certain land for energy production over other types of infrastructure. But such prioritization of land and building uses should be established at the local level, in BED’s opinion. BED suggests that any siting incentives to be offered should be at the discretion of the host utility, at least in the case of municipal utilities, and not mandated at the state level. Providing municipal utilities flexibility to pay additional amounts based on local determinations of value, versus the mandating of such payments, would be helpful for renewable resources.

BED also suggests that if the Board believes an incentive is still necessary that it allow for municipal utilities to consider establishing incentives based on the directional setting and azimuth of PV arrays rather than the location of such arrays. BED believes that there is, for now, a rational economic basis for providing such an incentive.

For example, in the event that ISO-NE peak loads shift to occur later in the day, west-facing solar installations may become more valuable to utilities and society on a per kWh basis than the traditional South-facing array. Increased value per kWh of a west-facing array is a function of the timing of production. While the total energy production of a west facing array may be lower compared to a south-facing array, the production of energy would be coincident with system peak loads that might occur later in the afternoon. As the New England peak has not been before Hour Ending 15 since 2000 and over 90% of the Vermont monthly peaks since 2004 have occurred in the afternoon or

evening, it is likely that peaks will continue to occur primarily in the afternoon and evening. A west-facing array would also help to diversify solar resources as a majority of PV systems are currently facing south. Finally, facing arrays to the west is a could be a way to reduce the size and impact of the “Champ/Duck Curve”.

Two BED arrays can be used to illustrate the effect of azimuth. Leunig’s array is pointed south and the Airport array is pointed west. This graph shows two systems’ output during the ISO-NE peak day in 2015:



During the ISO-NE Peak Hour, the west-facing Airport array was at 81% of its max for the day, while south-facing Leunig’s array was at 60%. The capacity savings from a west-facing array appear to exceed the value of the reduction in energy production even at today’s capacity market prices. With the increase in capacity prices with FCM#s 8&9, this gap is likely to open even wider. West-facing arrays also have the additional benefits mentioned previously (transmission reduction, diversification, and Champ/Duck Curve reduction). Yet, the west-facing array will be paid less when payment is solely based on production.

Rule 5.105 Billing Standards and Procedures (F) Credits for Excess generation

As currently structured, this proposed rule would require utilities to credit the owners of net metered systems an amount equal to the prevailing retail rate, plus a per kWh adder for excess generation based on siting or if the associated RECs are assigned to the

utility. The application of the credit only to “excess generation” seems to clearly comply with 30VSA §8010(c)(2)(F).

To the extent that the PSB determines that such an adder is appropriate, BED agrees that it should apply to excess generation only. BED also believes that the adder, like the retail rate, should be subject to periodic adjustments in accordance with state laws and subject to market conditions.

Rule 5.106 Group System Requirements (A)(1)

Subsection (A)(1) proposes to establish a requirement that all meters associated with a group net metered system be located within the same electric company service territory and no more than 10 miles from the net metered system. BED supports the proposed rule while noting that it will have no real impact in BED’s service territory. In BED’s opinion, establishing a rule that clusters net metering members in close proximity to the generator is consistent with the original intent of net metering. That intent was to not only increase customer’s renewable energy options but to also help increase reliability and reduce the demands on the transmission and distribution systems by locating generation closer to where electricity is consumed. Net metering should help to reduce the load at the point of consumption (i.e. with on-site generation), and avoid the transmission of power over long distances from a central generating plant. Further, the proposed Rule allows for the economies of scale that group net metering may offer, while still recognizing the basic purpose of any net metering resource.

Rule 5.107 Electric Company Requirements (A)(5) – (7) charges and fees:

Subsections A (5) through A (7) establish guidelines for utilities to impose cost-justified charges and fees on the owners of interconnected net metered systems. The list of charges and fees identifies both one-time activities associated with setting up net metered accounts and ongoing activities needed to maintain system integration and to support the utility infrastructure required for net metering systems to function.

BED considers 5.107 (5) and (6) to be critical components of making net metering sustainable and avoiding cost shifting where feasible. This is especially true, if the net metering caps can now be exceeded such as is envisioned by 5.107(D). BED would note that any such proposed fees or charges would, by statute, be subject to PSB approval and that any opponents to such proposed fees and charges would be able to offer evidence in the hearings on such proposals. However, if such charges are not allowed to at least be

advanced for hearing and review, the utility's hands are inappropriately "tied" as far as recovering the cost of infrastructure required to support net metering.

BED has not proposed such tariff charges, and might not choose to request the right to do so at current levels of net metering implementation, but the ability to argue for them in front of the PSB (based on BED specific circumstances and information) is very important. The process for requesting such charges could be clarified if it would lend comfort to net metering customers and developers.

In addition, BED requests further clarification with respect to Subsection A (7). This subsection states that the electric company may, prior to interconnection, charge a reasonable fee to cover the cost of electric company distribution system improvements necessary to safely and reliably serve the net metering customer(s). BED understands that this rule is designed to allow for the recovery of one-time fees associated with grid strengthening so that utilities can ensure that grid reliability is maintained as new net metered systems are installed. However, BED is unsure how such a fee could be imposed under certain circumstances.

Consider the following example: suppose a circuit had the capacity to accommodate up to 100 kW of PV. Suppose now that three net metering systems are built on this same circuit over a three year period: system A is a 50 kW system that is installed in year 1, system B is a 49 kW system installed in year 2 and system C is a 20 kW system seeking to be installed in year 3. Under the current rule, system C would be charged the full cost of the circuit upgrade because it was the last proposed system. But is that a fair allocation of the costs? Arguably, systems A and B also contributed to the need to upgrade the circuit and could be considered cost causers as well.

BED is not advocating that upgrade costs should be apportioned amongst all three systems in this hypothetical scenario. Instead BED requests that the Board clarify the rule so that utilities have clear guidelines as to how these types of one-time, grid reliability costs can be imposed on net metered systems. Should they be apportioned in accordance to the size of systems and the timing of interconnection or does the sequence of interconnection trump all other circumstances.

Rule 5.111 Certificates of Public Good (6) Request for Hearing

This subsection of the proposed rule pertains to requests for hearing to resolve certain issues through a hearing process before the Board. However, the rule grants this option to a limited set of stakeholders: the Department of Public Service, the Agency of Natural

Resources, or the applicant. The rule states that “[u]nless the request [for hearing] is made by the Department of Public Service, the Agency of Natural Resources, or the applicant, a request for hearing must be accompanied by a motion to intervene made pursuant to Board Rule 5.116.”

BED requests that the Board allow the host utility to be deemed an automatic party to any proceeding involving a net metered system being interconnected to the host utility without first having to file a motion to intervene. BED believes that allowing the host utility to also request a hearing (without having to first file a motion to intervene) would reduce regulatory costs for all parties involved, including the Board, and help to streamline the hearing process. Part of the Board’s consideration of BED’s request should take into account that any such motion that a utility does file with the Board that pertains to a net metered system seeking to interconnect with a host utility would by its nature be granted without much discussion simply because no other party but the host utility could adequately represent the interests of the host utility. Consequently, it would appear to make abundant sense to forego any unnecessary filing of or rulings on motions that would be automatically granted anyway.

Conclusion

As noted above, BED contends that PV market is currently transforming and maturing. The policy to bootstrap the PV market has been successful, as evidenced by the recent standard offer proposals.

BED further asserts, that on balance the proposed Net Metering Rule will help to move Vermont toward a more sustainable (i.e. at higher levels of implementation) policy structure for Net Metering.

Lastly, BED requests that the Board consider modifying the proposed rule to:

1. Clarify some of the ambiguities discussed above
2. Make any siting adder discretionary for publically owned host utilities.
3. Consider allowing for municipal utilities to pay incentives based on the directional setting and azimuth of PV arrays.
4. Provide at least the option for a utility to impose fees for non-recurring costs and charges for the use of the distribution system on net metering customers after appropriate hearing and review by the PSB.

As always please feel free to contact us if you have any questions.

Sincerely,

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