

VERMONT PUBLIC POWER SUPPLY AUTHORITY

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BY ELECTRONIC MAIL

June 12, 2015

Susan M. Hudson, Clerk
Vermont Public Service Board
112 State Street, 4th floor
Montpelier, VT 05620-2701

Re: Revisions to Vermont's Net Metering Rule pursuant to Act 99

Dear Mrs. Hudson:

Vermont Public Power Supply Authority ("VPPSA") appreciates the opportunity to comment on potential revisions to Vermont's Net Metering Program. VPPSA has been an active participant in the Act 99 Workshops held this spring by Public Service Board ("Board") staff. These workshops provided a valuable venue for stakeholders to exchange information and ideas related to ensuring that the both the costs and benefits of net metering are appropriately reflected in new rules. VPPSA has shared the concepts discussed in the workshops with its member systems, which have informed these comments. After careful consideration of the issue, and for the reasons describe below, VPPSA proposes that the net metering rate be based on each utility's retail rate.

The ability for a customer to produce their own electricity through net metering is a growing and permanent part of the electric energy world; it has become an integral part of the options now available to electric utility customers of all classes and sizes. The new net metering rule ultimately promulgated by the Board should reflect this reality, and be a vehicle for a net metering program that is simple, fair, and accessible. A rule that is sustainable as a matter of both process and economics will help ensure that net metering options can be most readily evaluated and implemented by those customers who wish to pursue them, while maintaining fairness among customers and a strong distribution system on which both net metering and non-net metering customers can rely.

According to 30 V.S.A. §8002, a net metering system "is intended to primarily offset the customer's own electricity requirements." Vermont's net metering program should remove unnecessary

barriers to self-generation, enabling those who wish to provide for some or all of their electricity needs through an onsite renewable resource or virtual net metering system to do so. The net metering rule that takes effect in 2017 should endeavor to make net metering available to those who want to participate. However, it should not, and does not need to, guarantee a high rate of return to those who invest in net metering.

The current program has succeeded in encouraging development of net metering projects in the state, with the most rapid growth in the program occurring in 2014 and 2015. The existing structure of the net metering program does not, however, account for the ongoing and significant decreases in the installed cost of solar PV systems of all sizes. In consideration of these significantly lower technology costs, the Board should ensure that all ratepayers benefit from such a program.

Technology costs have declined to the point that in many cases installed costs can be recovered simply through offsetting retail rates, and a “solar adder” or any other incentive (at least for solar PV) will soon be unnecessary in order to encourage development. This is especially true for residential customer investments in larger, 500kW group systems which can take advantage of economies of scale, and is expected to remain true even as federal tax credits decline in 2017. For at least the 500kW systems, even using conservative estimates of installed system costs, the revenue saved by a customer offsetting the kWh charges on the electric bill can be roughly equal to, if not less than, the cost of installing a solar PV system. Installed costs are expected to be lower when the new rule takes effect in 2017 than they currently are. Below is a table that helps reflect the residential customer benefits of this type of solar installation.

Residential Participant in Group PV System					
Year Investment is made	Cost of Solar Investment (\$/W) ^A	Average Retail Residential Rate (\$/kWh) ^B	Internal Rate of Return (%)	Annual Benefit Exceeds Annual Cost (yr)	Average First Year Monthly Net Cost
2017	\$3.07	\$0.156	86%	3	\$3
2018	\$2.94	\$0.161	N/A	1	-\$5
2019	\$2.84	\$0.165	N/A	1	-\$13
Assumptions					
A) Bloomberg New Energy Finance Total Installed Cost for Commercial Scale projects. \$3.07/w is the 2015 estimated cost, conservatively applied to 2017. The cost shown for 2018 applies the Bloomberg 2016 estimate, and so on.					
B) Assumes 2015 average retail rate of \$0.147, 3% annual escalation applied, generally consistent with "Evaluation of Net Metering in Vermont . . ." conducted by the Department of Public Service in late 2014.					
Other Assumptions: Investment in 6 kW portion of 500kW system with a 17% capacity factor. Financed with a VSECU Energy Improvement Loan financed at 6.75% for 30 years.					

As shown, using a conservative assumed cost of solar investment for commercial scale projects, there is immediate annual payback beginning in 2018 (increasing as costs continue to decline),

and only minimal costs in 2017, with a very generous rate of return. The resulting cash flows imply that investments in net metering are likely to continue under the VPPSA proposed structure, illustrating that costs have declined to the point where credits above and beyond offsets to retail rates are unnecessary. Since the installed costs for residential rooftop systems are presently higher than those for larger systems, in the near term the payback on those projects is not generally as robust. If there are concerns that the return on investment for the smallest net metering installations is not adequate, the Board could consider the merits of differentiated rates based on size, so long as such consideration is consistent with the general principles incorporated in these comments.

While in recent years net metering customers and developers have been able to benefit from lower installation costs and higher rates, the savings have not been passed on to the remainder of Vermont's ratepayers. Net metering clearly brings benefits to the state, utilities, and ratepayers; however many of these benefits are difficult to quantify with accuracy and it is likely that these same benefits could be achieved at significantly lower costs to ratepayers through acquisition of other distributed generation resources, both utility and independently owned.

In light of this economic reality, the Board should set the net metering rate for generation, including excess generation, at utilities' retail rates. This approach allows for different rates in different service territories, which appropriately reflect utilities' unique characteristics. While the retail rate credit structure was implemented in Vermont in the earlier iterations of the net metering program with limited resulting deployment, the costs of the technology have declined to the point where additional incentives are not needed, and VPPSA expects deployment would continue apace if a retail rate structure were implemented.

Vermont's collective experience going back to Rule 4.100 in the 1980s, and continuing through Standard Offer and net metering proceedings in recent years, establishes that engaging in "value of solar" or "avoided cost" calculations on a regular basis is time-consuming and complex, and the resulting values are imprecise, with the risk of the precision put on all ratepayers not engaged directly in the investment. The Public Service Department's "Evaluation of Net Metering in Vermont Conducted Pursuant to Act 99 of 2014" compared the value of net metering installations installed in 2013 to their costs and concluded that the benefits of net metering are roughly equal to the costs. There was variation among utilities, however, and in some service territories the costs exceeded the estimated benefits. This was specifically true for winter peaking utilities and those systems where distribution upgrades due to load growth are not anticipated in the foreseeable future. Moreover, in the workshops and presentations following issuance of the report, it became clear that there was not consensus on the appropriate value for a number of variables, such as transmission and distribution benefits. The effort highlighted the significant challenges and complexities of implementing a value-based approach. A retail-rate based net metering program has the advantage of providing greater certainty to customers and developers

as to what the rate will be, relative to a valuation approach based on hard-to quantify, and often variable, benefits.

Should the Board instead decide to set a statewide rate for net metering rather than using retail rates, VPPSA proposes that the net metering program be administered on a statewide basis by an independent facilitator, similar to the Standard Offer program. As VPPSA proposed during the 2014 legislative session, net metering production costs would be prorated among utilities according to load ratio share. Under the proposed structure, the customer would have a choice of a) paying his/her electric utility bill to the utility, while receiving compensation from a statewide facilitator for production from the net metering system; or b) if the customer wished and was able, receiving compensation through a single, non-demand meter at the statewide rate to the extent that production exceeds usage.

It is VPPSA's position that generation credits from net metered systems should be applied to the energy charges on the customers' electric bills and not used to offset the customer charge or energy efficiency charge, as net metered customers use the distribution grid and contribute to the utility's administrative costs and should thus contribute to paying those costs.

In the long-term, the introduction of a distribution access charge that is assessed on all customers and cannot be offset by generation credits for net metered customers will be a key component of a fair net metering program. All users of a utility's distribution system should contribute towards the cost of its operation and maintenance. Net metering customers rely on the distribution grid to bring electricity in when the on-site system is not generating, and to "export" electricity when on-site generation exceeds consumption. The introduction of a distribution charge would bring corresponding adjustments in the retail rates to better reflect the energy component of rates. This concept is part of a broader rate design effort that is outside of the scope of this proceeding, but bears mentioning here as it relates directly to avoiding the shifting of utility costs between net metering customers and other customers.

VPPSA's net metering design proposal will comprehensively balance the goals of 30 V.S.A §8010(c)(1) [Act 99]. Consistent with provisions A and B of the statute, it will achieve deployment in accordance with the Comprehensive Energy Plan (including goals of affordability, economic vitality, sustainability). It will limit cost shifting in utility's revenue requirement [provision C] by requiring net metering customers to share the costs of operating the utility and maintaining the distribution grid. It will balance the accounting for all of the costs and benefits of net metering [provision D], while maintaining the ability for all customers who wish to self-generate, to do so [provision E]. VPPSA's proposal will balance the pace of deployment with net metering's impact on rates [provision F] and account for changes over time in the cost of the technology [provision G].

It is clear from the goals articulated in Act 99 that the net metering program is not meant to be an incentive program as it is under the current structure. This differs from the incentive structures of the successful Standard Offer program through its long-term contracts and the incentive structure of the new Renewable Energy Standard through its mandatory retirement of renewable attributes or the penalty of an Alternative Compliance Payment. Net metering is, and will continue to be, a significant component of Vermont's renewable energy programs, but it does not need to be pursued at any and all cost to the state's ratepayers.

Several administrative topics that were raised in the working groups should also be addressed in the new net metering program. As the penetration of distributed generation increases, the need for utilities and grid operators to know what is currently installed on the system has become essential on a statewide and regional basis. ISO-New England has indicated that in order to plan for the future transmission and capacity needs of the New England system, an accurate inventory of distributed resources is needed for each state. To that end, there should be a statewide tracking system for net metered systems. One important element of the tracking system would be a requirement that net metering customers provide an "as built" certification providing details about the system that was installed to the state and their utility prior to receiving net metering credits. This would help ensure that utility and system planners have accurate information regarding the generation resources installed on their system and ratepayers do not bear the cost of securing unnecessary capacity at the regional level.

The Act 99 Workshops discussed the possibility of excess generation over a year's time and a new net metering design could address this. VPPSA does not support the idea of utilities being required to pay customers for excess generation, as this is inconsistent with the fundamental concept that net metering is offsetting usage with generation, creating a wholesale transaction for power that may run counter to Federal Energy Regulatory Commission rules.

Thank you for this opportunity to comment. VPPSA looks forward to continuing to participate in the process to create Vermont's new net metering rule.

Sincerely,

A handwritten signature in cursive script that reads "Melissa Bailey". The signature is written in black ink and is positioned above the typed name and title.

Melissa Bailey
Vermont Public Power Supply Authority