



February 19, 2019

VIA ELECTRONIC FILING

Minnesota Public Utilities Commission
121 7th Place East
Suite 350
Saint Paul, MN. 55101-2147

Re: Comments of Vote Solar in the Matter of the Commission's Inquiry into Standby Service Tariffs

PUC Docket No: E999/CI-15-115

Dear Commissioners:

Vote Solar hereby submits comments in response to the "Notice of Comment Period" issued by the Minnesota Public Utilities Commission ("Commission") on October 26, 2018 in the above referenced docket and subsequently extended in the "Notice of Extended Comment Period" on January 11, 2018.

Vote Solar is an independent 501(c)3 nonprofit working to repower the U.S. with clean energy by making solar power more accessible and affordable through effective policy advocacy. Vote Solar seeks to promote the development of solar at every scale, from distributed rooftop solar to large utility-scale plants. Vote Solar has over 80,000 members nationally, including over 200 members in Minnesota. Vote Solar is not a trade group, nor does it have corporate members.

Vote Solar encourages the Commission to order several revisions to the methodology proposed by Xcel Energy for calculating the new PV Demand Credit. Importantly, we urge the Commission to consider adopting a credit that is based on the cost-based demand charges in the underlying retail rates rather than constructing one based on the "capacity value stack" of the Company's avoided wholesale costs.

While we acknowledge the considerable history behind the compromise that led to the establishment of the interim \$5.15 per kW credit, we urge the Commission to step back and consider the original intention of this credit. As we understand it, the PV demand credit is intended to compensate customers on demand charge rates for PV generation benefits to the generation, transmission and distribution system that are not fully valued through reductions in billed demand. This mismatch occurs not because solar generation does not provide the those benefits but because of a mismatch between demand charge billing methodology and cost causation in the rate structure. As described by the Company in its November 2, 2017 Compliance Filing:

As part of this process, Xcel, with input from the Department, MNSEIA and other interested parties, will evaluate to what extent the billing demand quantities of customers

Vote Solar

360 22nd Street, Ste. 730 | Oakland, CA 94612
www.votesolar.org

with solar generation is affected by their solar production. Xcel will review whether there is a mismatch between the net billing demand of individual customers with solar installations and their net demand on system peak demand days relative to non-solar generation customers and, if so, how to reflect that difference appropriately in demand billing or comparable rate component.¹

This describes a process to determine the contributions that solar customers make to reducing demand during distribution system peak demands which are used to establish embedded costs recovered, in this case, through demand charges.

In general, because the proposed PV Demand Credit is intended to provide value based on the retail demand charges, we submit that it would be appropriate to calculate credit values based on the demand charges being addressed, which include the fully embedded generation, transmission and distribution costs included in the demand charge. Our suggestions are more fully described in response to the specific questions posed by the Commission in the October 26, 2018 Notice.

Question 1: Did Xcel propose an appropriate methodology for determining the PV Demand Credit?

The methodology proposed by Xcel for determining the PV Demand Credit is generally appropriate, but we recommend revising the methodology for calculating a number of the inputs to better reflect the true capacity value of the distributed generation to all in all parts of the utility system that are compensated through demand charges. Specifically, we recommend:

- Recommendation 1: The generation capacity credit (Line (a) of Table 2) should be based on the Company's embedded generation cost (identified elsewhere in the document as \$6.40 kW), similar to the embedded transmission cost used in the Company's proposed credit methodology.
- Recommendation 2: The base value of the credit (Line (c) of Table 2) should include embedded distribution costs that are recovered through demand charges.
- Recommendation 3: The "Future Need (2025) Timing Factor" ("Timing Factor") should be removed from the calculation.

Recommendation 1: Replace Levelized CT Costs with embedded generation costs allocated to demand charges.

The Levelized CT costs proposed by the Company are appropriately used in a number of contexts. However, when calculating a credit that is intended to address demand charges that are

¹ Xcel Energy, *Compliance Filing In the Matter of Standby Service Tariffs*, Docket No. E99/CI-15-115, November 2, 2017. Page 3.

in approved rates, the credit should be calculated using those same approved costs as embodied in the embedded generation costs.

Vote Solar suggests that the PV Demand Credit should be treated similarly to reduced demand on the energy commodity side of the bill. As such, to the extent that there are inflows and outflows from customers with self-generation such as solar, inflows are equitably treated as simply a reduction in the customer load. Just as a customer that reduces their demand during distribution system peaks can reduce demand charges, the intent of this credit is to reduce PV customer charges during those same peaks. Because the credit applies to cost-based demand charges, the calculation of the credit should be directly related to the costs that lead to those demand charges.

Vote Solar recommends including the generation cost component of firm service demand charges which apply to non-coincident customer peak demand of \$6.40 per kW as described in the Company response to the Minnesota Solar Energy Industry Association Information Request No. 2. MNSEIA IR 2.b.

Recommendation 2: Include embedded distribution costs in the credit.

Similar to the rationale for including generation system costs embedded in demand charges, the proposed credit should include a credit for distribution system costs embedded in the base value of the credit. Line (c) of Table 2 should include embedded distribution costs that are recovered through demand charges.

Vote Solar recommends including a new line (a.2) to Table 2 to reflect the distribution cost component of firm service demand charges which apply to non-coincident customer peak demand of \$2.35 per kW. MNSEIA IR 2.b.

Recommendation 3: Remove the Timing Factor from the calculation.

The Company proposes to discount the value of the credit to reflect the fact that they do not have a capacity need at this time. In general, without taking a position on whether the Company has a capacity need at this time (a determination about which will appropriately be made in the upcoming Integrated Resources Plan (IRP) to be filed in July), Vote Solar believes that the question of capacity need does not apply to this application. Just as with the question of generation capacity above, it is inappropriate to discount a retail credit by applying a wholesale market resource planning concept.

The company in fact properly recognizes the role of distributed generation in its Integrated Resource Plan modelling by including DG forecasts in its load forecast rather than modelling it as a resource. The solar DG that is being installed by commercial customers who receive the PV Demand Credit was forecasted and accounted for from a resource planning perspective in the Company's last IRP. Similarly, Vote Solar believes that the company's capacity need is irrelevant to calculating a retail credit and that the appropriate calculation of a retail demand credit should use the same embedded cost values used to calculate the demand charges in the first place.

Recommended Demand Credit Calculation

In conclusion, we recommend that the Commission adopt a credit of \$6.11 per kW as calculated in the proposed revision to Table 2 of the Company's proposed Methodology.

Proposed Revised Table 2

Proposed Methodology - PV Demand Credit per kW			
a	Embedded Generation	\$6.40	
a.1	Embedded Distribution	\$2.35	
b	Embedded Transmission	\$3.47	
c	Embedded Generation, Transmission and Distribution Costs	\$12.22	a+b+c
d	Line Losses	6.65%	
e	Total with Losses	\$13.03	c*(1+d)
f	Future Need (2025) Timing Factor	100%	
g	Future Need Adjusted Total	\$13.03	e * f
h	MISO ELCC	50%	
i	ELCC Adjusted Total	\$6.52	g * h
j	Reduced Billed Demand Value	\$0.41	
k	Demand Credit per kW	\$6.11	i - j

The beginning value of the total embedded costs at \$12.22 on Line (c) is equivalent to the seasonal weighted average of the \$15.25 summer rate for four months and the \$10.71 winter rate for eight months. This value was provided by the Company in response to MnSEIA Information Request 2. MNSEIA IR 2b.

Question 2: Does the PV credit methodology accurately reflect solar value?

Vote Solar believes that the PV credit methodology will accurately reflect the value of solar by crediting PV generation customers that pay demand charges with a credit that reflects the full range of benefits that they are delivering to the system. Behind the meter PV generation is different from utility scale solar due to the former's location on the customers' premises and interconnection to the distribution system. The methodology proposed by the Company recognizes some of those values, although we believe its methodology undervalues some of those benefits. In addition to the benefits acknowledged by the Company in its proposed methodology, there are other benefits that a PV Demand Credit begins to address, such as distribution system upgrade deferrals and grid management and ancillary services that the newest generation of advanced inverters can deliver.

The Commission and stakeholders involved in this docket and others previously have identified many potential benefits of distributed generation. In addition to the benefits of reducing system load, thus reducing overall costs at the distribution, transmission and generation level. the Company proposal fails to compensate for other values of solar and potential benefits that have

been broadly recognized in other states, as discussed further below. With the advent of advanced metering technology, we have an increasingly sophisticated view of the benefits provided by DG, including the positive dollar impacts on grid operations. The picture that emerges is one of significant value that can be measured and credited.

Question 3: Is the PV Demand Credit set at the correct level?

As noted above in the response to question 1, Vote Solar recommends that the Commission adopt a credit of \$6.11 per kW. The proposed revised PV Demand Credit more accurately reflects the value provided by customers with demand charges to reducing the costs reflected in calculating demand charges.

Question 4 Is the revised tariff sheet attached to Xcel’s filing appropriate?

As noted previously, Vote Solar believes that the methodology proposed by the Company results in a significant undervaluation of the credit. Otherwise, we do not take issue with the tariff sheet as revised.

Question 5: Are there other issues the Commission should consider in adopting a PV Demand Credit Rider methodology or in setting the level of the credit offered through the Rider?

Vote Solar commends the Commission for requiring the Company to look forward at the opportunities presented by the introduction of emerging inverter technology. The Institute of Electrical and Electronics Engineers (IEEE) has adopted an updated standard IEEE 1547-2018 which provides “technical specifications for, as testing of, the interconnection and interoperability between utility electric power systems (EPSs) and distributed energy resources (DERs)...”² Vote Solar recommends that the Commission continue to investigate the opportunities for advanced inverters to provide grid management/stability services and measures that can be taken to compensate those benefits going forward.

Conclusion

In conclusion, Vote Solar encourages the Commission to order Xcel to revise their methodology for calculating the PV Demand Credit to reflect the full spectrum of benefits provided by solar customers to the distribution system that are not compensated in billed demand charges. Vote Solar commends the Commission and Xcel for recognizing that these are significant and real values. At the same time, we believe that the methodology should reflect the offsets to the actual drivers of cost causation in the ratemaking process and be set at a level that is directly related to the costs that are being offset.

² Institute of Electrical and Electronics Engineers, *IEEE 1547-2018 - IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces*, Accessed on 2/18/2019 at <https://standards.ieee.org/standard/1547-2018.html>.

Vote Solar looks forward to working with the Commission, the Company and other stakeholders going forward to establish a strong and vibrant distributed generation ecosystem in Minnesota.

Thank you for your consideration,

Best Regards,

/s/ William D Kenworthy

William D. Kenworthy
Regulatory Director – Midwest
Vote Solar