In the Matter of the Petition for approval of Northern States Power Company, dba Xcel Energy, for approval of its Community Solar Garden Program	**July 19, 2019**
	MINNESOTA SOLAR ENERGY INDUSTRIES ASSOCIATION'S COMMENTS
	Docket No. E-002/M-13-867

COMMENTS OF THE MINNESOTA SOLAR ENERGY INDUSTRIES ASSOCIATION

I.   INTRODUCTORY REMARKS

The Minnesota Solar Energy Industries Association (MnSEIA) appreciates the Minnesota Public Utilities Commission's (PUC or the "Commission") interest in addressing the apparent volatility in the avoided distribution capacity cost component in the Value of Solar (VOS) methodology and for the opportunity to advocate for a more accurate value to compensate Community Solar Garden (CSG) Developers. This volatility is the result of the use of peak load growth over the last ten years in the denominator of the calculation of the avoided distribution capacity cost, and we believe that this volatility likely indicates that this VOS value needs refinement.

Among other things we will discuss later, peak loads will fluctuate from year to year due to factors such as weather and the economy that are independent of underlying load growth. These fluctuations are not necessarily removed when loads are weather-normalized. This does not necessarily represent a disagreement with real-world valuation, but if there are other ways to get at that same valuation that is less volatile, MnSEIA believes pursuing that alternative valuation is a worthwhile endeavor.

MnSEIA is, however, concerned that Xcel Energy's (Xcel) distribution capacity component alternative methodology does not yield accurate results that are fair and reasonable. As such, in these comments MnSEIA will highlight the challenges with Xcel's distribution

capacity component methodology and lay the groundwork for an alternative methodology that we intend to propose in the reply comment period.

Prior to being able to provide an alternative methodology, the industry is still analyzing some information requests received from the utility and we are awaiting the unveiling of the 2020 VOS methodology, which should be July 31, 2019. We hope to have an approach that can be integrated into an easy-to-read decision option.

II.   BACKGROUND
A. Timeline of Material Matters

On September 6, 2016, the Minnesota Public Utilities Commission Ordered Xcel to do the following:

> The Commission will also require Xcel, beginning with the 2018 value-of-solar rate, to use location-specific avoided costs in calculating avoided distribution capacity. Part of the benefit of distributed generation derives from its location on the grid; by being located near load, it reduces local peak demand and defers the need for distribution-system upgrades. The approved methodology allows a utility to calculate its value-of-solar rate using either location-specific or system-wide avoided distribution-capacity costs. In its filings to date, Xcel has used system-wide avoided distribution-capacity costs to calculate the value-of-solar rate. To fully reflect the value of distributed solar generation, however, Xcel will be required to begin including location-specific avoided costs in its 2018 value-of-solar calculations.[1]

On March 26, 2018, the Commission approved Xcel's 2018 System-wide-value-of-solar tariff rate with modifications. In so doing, the Commission opted to not adopt Xcel's 2018 locational specific plan, stating:

> The Commission accepts the Department's offer to convene a stakeholder process to review the calculation of locational avoided distribution costs in calculating the VOS rate. The Department will submit a progress report and any recommendations for methodology changes by December 31, 2018. The requirement that Xcel use locational specific avoided costs in calculation of avoided distribution capacity is suspended pending Commission approval of recommendations by the Department.[2]

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[1]   ORDER – APROVING VALUE-OF-SOLAR RATE FOR XCELS SOLAR GARDEN PROGRAM, CLARIFYING PROGRAM PARAMETERES, AND REQUIREMENT FURTEHR FILINGS, MINNESOTA PUBLIC UTILITIES COMMISSION, Docket No. E-002/M-13-867, Doc. Id. 20169-124627-01 at 14 (Sept. 6, 2016).

[2]   ORDER APPROVING XCELS UPDATE TO THE 2018 SYSTEM-WIDE VALUE-OF-

During the November 14, 2018 SR*C Working Group Meeting, Xcel outlined its proposed solution to the volatility in the VOS's Distribution Capacity Component.[3]

In November of 2018, Xcel, the Minnesota Department of Commerce (DOC or the "Department"), MnSEIA and developers were invited to the Department for a meeting about Xcel's distribution capacity component. In that meeting the industry outlined challenges it had with the methodology, which included among other things, a lack of compensation for future planned distribution upgrades and a general reliance on past data to compute future distribution needs.

On November 27, 2018, MnSEIA rearticulated in writing its verbal position from the prior meeting. In its commentary, MnSEIA stated the following:

> Concurrent with the Commission's consideration of the 2019 VOS is a conversation around the avoided distribution capacity value component and locational value for future gardens. The current 2019 VOS has an effective distribution capacity value of $0. This is a big part of the reason the 2019 VOS dropped 13% in a single year. And it is a strange result, given that Xcel itself has spent $199 million on capacity-related upgrades to its Minnesota distribution system over the past ten years.8 (In other words, Xcel averages almost $20 million per year on capacity related distribution upgrades, but is awarding zero avoided costs savings to 2019-vintage VOS projects.). At the same time, the VOS methodology gives zero value to the $42 million in distribution upgrades that CSG Developers have purchased for the utility (through June 2018), and zero value to the $8.2 million in distribution engineering studies that CSG developers have paid to date – despite the value that both will provide to the distribution system over the next 25 years.[4]

On March 22, 2019, the Commission ordered that "The Minnesota Department of Commerce and Xcel shall solicit the opinions of the stakeholders regarding Xcel's proposed

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SOLAR TARIFF RATE WITH MODIFICATIONS, MINNESOTA PUBLIC UTILITIES COMMISSION, Docket No. E-002/M-13-867, Doc. Id. 20189-141380-01 at 8-9 (Mar. 26, 2018).

[3]   COMPLIANCE FILING – STAKEHOLDER MEETING MINUES, XCEL ENERGY, Docket No. E-002/M-13-867, Doc. Id. 20192-150377-01 at Document B (Feb. 19, 2019).

[4]   COMMENTS – PART 1 OF 2, MINNESOTA SOLAR ENERGY INDUSTRIES ASSOCIATION, Docket No. E-002/M-13-867, Doc. Id. 201811-148051-01 at 4 (Nov. 27, 2018).

alternative method for calculating the VOS's avoided distribution cost, and Xcel shall file a more fully developed proposal no later than May 1, 2019."[5]

On April 9, 2019, Xcel requested that the Solar*Rewards Community (S*RC) Stakeholders weigh in with their thoughts on Xcel's proposed methodology for determining a distribution capacity component.[6]

On April 16, 2019, MnSEIA submitted informal commentary to Xcel. The informal comments articulated the same positions that MnSEIA had previously stated verbally in the November meeting and in MnSEIA's written November 27, 2018 comments. MnSEIA, however, refrained from adding anything additional to the discussion because 1) the legislature at that time was seriously evaluating significant changes to the Community Solar Garden program; 2) Xcel Energy refused to provide estimated distribution capacity component values for the 2020 Value of Solar, despite several companies requesting this; and 3) "our initial challenges with Xcel's methodology were not further considered, we intend[ed] to share those [other challenges] only during a formal PUC comment period."[7]

On May 1, 2019, Xcel filed its Compliance Filing for the Community Solar Gardens Program. This document contained Xcel's methodology and statements of reasonableness for it. It also contained stakeholder outreach and feedback.[8]

On June 6, 2019, MnSEIA requested an extension in part to retain an expert witness to help develop a potential third option for the distribution capacity component.[9]

On June 7, 2019, the Commission granted MnSEIA's extension.[10]

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[5]   ORDER – APPROVING XCEL UPDATE TO THE 2019 SYSTEM WIDE VALUE OF SOLAR TARIFF RATE WITH MODIFICATIONS, Docket No. E-002/M-13-867, Doc. Id. 20193-151281-01 at 14 (Mar. 22, 2019).

[6]   COMPLIANCE FILING – COMMUNITY SOLAR GARDENS PROGRAM, XCEL ENERGY, Docket No. E-002/M-13-867, Doc. Id. 20195-152611-01 at 7 (May 1, 2019).

[7]   *Id.* at 6-10.

[8]   *Id.* at ATTACHMENT C.

[9]   EXTENSIONVARIANCE REQUEST, MINNESOTA SOLAR ENERGY INDUSTRIES ASSOCIATION, Docket No. E-002/M-13-867, Doc. Id. 20196-153411-01 (Jun. 6, 2019).

[10]   NOTICE OF EXTENSIONVARIANCE, MINNESOTA PUBLIC UTILITIES COMMISSION, Docket No. E-002/M-13-867, Doc. Id. 20196-153433-01 (Jun. 7, 2019).

On July 1, 2019, MnSEIA retained Tom Beach of Crossborder Energy. Tom's CV will be filed alongside these comments.

B. Overview of Xcel Energy's Distribution Capacity Component Recommendation

Xcel proposes a new methodology that makes three significant changes to the calculation of avoided distribution capacity costs. First, instead of using ten years of historical capacity-related distribution project costs in the numerator, the new method would use capacity-related distribution investments over three recent historical years and two forecast years. Second, the new approach would use in the denominator the distribution system capacity added by these five years of projects. Third, Xcel discounts the resulting $ per kW avoided distribution capacity cost by an arbitrary 50%.

Xcel's discussion of its method also makes clear that it excludes from the list of capacity-related distribution projects those that are related to:

- Asset health,
- Equipment failure,
- Large customer requirements,
- Transmission requirements, and
- Reliability requirements.

III.   COMMENTARY
A. Expert Witness

MnSEIA is pleased to have retained Tom Beach of Crossborder Energy to help facilitate the development of a new distribution capacity component. Among many other things, Tom worked on a very similar docket in Colorado. Tom will be able to weigh in through our initial comments, reply comments and attend the hearing in person for Commissioner questioning, if need be.

MnSEIA did, however, try to solicit bids from other experts. Most notably was Clean Power Research (CPR), who originally drafted the VOS Methodology. CPR is the expert organization that previously worked on this issue and when contacted about participating in the docket they noted interested in continuing their previous work for the state agencies that had previously engaged them on the VOS methodology. This would help develop a third approach to the distribution capacity component. MnSEIA suggests that the Commission and the Department consider retaining their own expert, CPR for instance, to help develop a third approach to this distribution capacity component process.

There does not appear to be any immediacy in altering this VOS variable, but there is great benefit in ultimately devising a scientifically sound rate. So we suggest the Commission and the Department explore this option, if possible.

B. While The Distribution Capacity Component Should Be Modified To Reduce Volatility, Xcel's Proposal Does Not Capture the Full Value Provided, and Should Subsequently Be Improved Upon By 1) Adding A Longer Data Period; 2) Removing The Arbitrary 50% Discount Factor; 3) Including A Broader Set Of Distribution Projects; 4) Include More "Capacity Related Projects" In The Methodology; And 5) Include Avoided Investments In Distribution Plant.

In general, MnSEIA's commentary today seeks to highlight the practical challenges with Xcel's alternative distribution capacity component. However, as mentioned in our introductory remarks, MnSEIA supports the use of the added distribution system capacity in the denominator of the calculation. One of the issues we do hope this Commission proceeding can solve is to reduce the volatility associated with the current methodology, if an appropriate alternative is available.

When peak load growth over the period used in the analysis is low, the result can be a very high avoided distribution capacity cost component. Conversely, when peak load growth is artificially high, the result can be too-low avoided distribution capacity costs. There is also the issue of how to deal with negative load growth (i.e. declining peak demand) over the period, in which case under the current methodology the avoided distribution capacity cost is assumed to be zero. Adding the distribution system capacity in the denominator of the calculation should address the issue of fluctuations in peak demand causing year-to-year volatility in the avoided distribution capacity cost component. When the utility makes capacity-related investments to its distribution system, by definition it will increase the capacity of the system. Consequently, MnSEIA does support Xcel's utilization of distribution system capacity as the denominator of the calculation.

Nevertheless, MnSEIA has several critiques of Xcel's alternative methodology, because Xcel's alternative approach pulls the distribution capacity component further away from a truly scientific valuation. First, as we have stated in this docket already and in conversations with Xcel, MnSEIA recommends exploring the use of more than five years of data, in order to better capture long-run avoided distribution capacity costs. Distributed solar generation will have an economic life of at least 25 years, and if a new solar installation does not defer a distribution investment immediately, it may contribute to doing so at some other point in its 25-year life. Five years of data is one-fifth of a community solar garden contract life, and it does not appropriately value distribution upgrades that may appear in future years. The five year period is arbitrary. And it generally has the effect of devaluing the actual solar benefits associated with this credit. This is contrary to the VOS's intent of trying to derive the true value of distributed solar.

As such MnSEIA has asked Xcel for more years of the data that the utility uses in its proposed methodology, to explore developing a longer-term calculation. We are currently analyzing the responses from Xcel and hope to integrate these information request answers into our reply commentary. For now we will state that 1) we believe more than 5 years of data is

necessary to create a useful distribution capacity component value; and 2) there are widely-used methods for calculating marginal or avoided distribution capacity costs using more than five years of data. For example, the National Economic Research Associates (NERA) regression method is used by many utilities to determine their long-run marginal or avoided distribution capacity costs. The NERA regression model fits incremental distribution investment costs to changes in distribution system capacity, using at least 15 years of data to capture the utility's long-term marginal costs for capacity. The slope of the resulting regression line provides an estimate of the marginal cost of distribution investments associated with changes in peak demand. The NERA methodology typically uses ten years of historical expenditures on distribution investments (for example, as reported in FERC Form 1), and a five-year forecast of future expenditures and expected increases in distribution capacity. The NERA method has the benefit of providing a means (the regression) to separate investments that impact capacity from those that do not; thus, one does not need to make the difficult determination of which projects are capacity-related and deferrable by distributed generation (which we discuss further below).

Second, MnSEIA strongly opposes Xcel's arbitrary 50% discount factor, and suggests its removal from any distribution capacity component methodology. Per Xcel, this discount factor is supposed to reflect solar not being deployed in the right places or in the right amounts to avoid distribution capacity costs. With respect to these arguments, it is important to note again that Xcel's proposed calculation is based *on just five years of data*, whereas distributed solar will have an economic life of 25 years or more. Although a solar installation may be located in a distribution planning area with zero avoided distribution costs this year (using Xcel's five-year analysis), those avoided costs may increase significantly in future years. This changing location of avoided distribution costs over time can be seen from Xcel's own summary of the results of its proposed method by planning area over time from 2015 through 2019, from Attachment A, page 1 of 3 of its filing, which we have reposted below:

Distribution Capacity Value - Cents per kWh

	Current Method: Peak Growth Based					Alternative Method: Cost Based				
VOS Vintage	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
System Cost per kWh	2.28	0.00	0.00	0.82	0.00	0.23	0.21	0.25	0.17	0.34
Planning Area Cost per kWh										
Minneapolis				0.69	0.00	0.00	0.30	0.00	0.00	0.00
Minnetonka				0.63	27.72	0.24	0.24	0.26	0.11	0.16
Edina				0.53	0.00	0.00	0.00	0.11	0.16	0.15
South East				0.24	0.72	0.21	0.20	0.20	0.13	0.38
Maple Grove				0.32	0.93	0.85	0.06	0.14	0.13	0.00
Newport				0.16	0.39	0.21	0.03	0.00	0.17	0.72
St. Paul				0.06	0.32	0.05	0.00	0.00	0.00	0.00
North West				0.33	0.71	0.13	0.23	0.30	0.23	0.33
White Bear Lake				0.27	0.95	0.24	0.53	0.24	0.22	0.32

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[11]   In this table a planning area may have zero avoided distribution costs in one year, but

As the graph illustrates, there can be large spikes in distribution capacity value from one year to the next. Take the Newport planning area for instance, where the component goes from 0 cents in 2017 to .72 cents in 2019. This rapid rise, even in an alternative designed to reduce volatility, illustrates that there is still a significant amount of price fluctuation from year to year. This fluctuation can be eased with a 25-year look forward, which would likely show the need for distribution capacity at some point throughout Xcel's service territory. This would thus lessen a need for a discount factor based on sub-optimal deployment. In short, the argument for a discount factor appears to be predicated on Xcel's desire to mitigate a problem caused by their own arbitrary desire to use a smaller 5-year sample size.

Furthermore, the converse of Xcel's argument is also true – a solar project will be underpaid if it is located in an area whose avoided distribution capacity costs this year are above the system average on which this VOS component is based. Similar long-term considerations apply with respect to the amount of solar installed. Although the right amount of solar may not materialize this year to displace a near-term distribution upgrade, over time the amount of distributed solar in that area can grow large enough to defer the next addition that is not within today's planning horizon. In sum, the long economic life of solar projects argues for paying the full system-wide avoided distribution capacity cost, without an arbitrary 50% discount.

Third, MnSEIA is concerned with the exclusion of certain categories of distribution projects from Xcel's calculations. For example, "Reliability" projects may be installed principally to deal with threats to reliability, such as certain contingencies on the distribution system; however, these threats may be associated with high-load conditions (which solar can mitigate), and such projects can have a secondary benefit of increasing system capacity. We think that many of these projects should be classified as capacity-related and deferrable by distributed resources. MnSEIA has asked Xcel for cost data on these other categories of distribution projects and we hope to opine more on this matter in Reply Comments.

Fourth, even projects that replace existing infrastructure that fails or reaches the end of its life should be considered to be "capacity-related," because they keep system capacity from declining. In addition, larger solar projects can pay significant amounts for upgrades to the Xcel distribution system that may have secondary benefits of expanding three-phase service, freeing up distribution capacity for additional load growth, and replacing equipment that the utility would have to already replace over the next 25 years. Even if these considerations are not included in the calculations, at a minimum they also argue in favor of _not_ adopting Xcel's arbitrary 50% discount factor.

Fifth, avoided investments in distribution plant are accompanied by lower spending over time on distribution O&M and by reduced common plant. These additional avoided costs can be

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then will have a positive value in a subsequent year. *Id.* at ATTACHMENT A (see the section titled "Alternative Method: Cost-Based").

calculated from FERC Form 1 data and added to distribution capacity costs. We have calculated from recent FERC Form 1 data that Xcel's distribution O&M costs are $17.40 per kW and its general plant in service was 3.3% of total plant in service as of the end of 2018. [12] Thus, if Xcel's 2019 avoided investment-related distribution capacity costs are $160 per kW (without the 50% discount), these should be increased by a factor of 1.033 to account for common plant and by $17.40 per kW for avoided O&M. The resulting 2019 avoided distribution capacity costs are $183 per kW (i.e. $160 x 1.033 + $17.40).

The above challenges with Xcel's distribution capacity component illustrate that the utility's approach is a flawed attempt at mitigating the volatility of the current VOS distribution capacity component methodology. The industry does generally support a transition away from a volatile component for a more stable approach that would promote to better business development, but as illustrated above, Xcel's alternative methodology _unduly and unscientifically_ reduces the value of the component.

Xcel's methodology, with its reduced timelines, arbitrary 50% discount factor, small subset of distribution projects, and lack of avoided investments in distribution plant, is ultimately a methodology we could not support in favor of the current VOS methodology even with its year-to-year volatility. Simply put, we believe the current methodology even with its several years of $0 valuations is a more accurate predictor of this VOS component than Xcel's new alternative proposal, unless our recommended alterations are made.

C. Xcel's May 1, 2019 Categorization of MnSEIA's Informal Comments is Misleading.

MnSEIA is disappointed with the way that Xcel articulated its commentary in its May 1, 2019 compliance filing with the Commission, and we write today to better align the record with our perspective on the proceedings thus far. Despite receiving our commentary that includes rationales for why their methodology is incorrect, Xcel stated that "Parties provided virtually no substantive feedback on the Company's proposed alternate methodology." This is not true. This is evidence by Xcel's Attachment C that they included at the end of with this compliance filing. Xcel received feedback from 5 parties, including Novel Energy Solutions, SunShare, Stoel Rives, Fresh Energy and MnSEIA.

In our informal comments we did decline to provide new arguments for why the methodology is flawed for a number of reasons, including a desire to have the 2020 VOS Value before making any decision on the matter. But more importantly we did not provide additional insight into Xcel's methodology, because Xcel has repeatedly failed to consider the _initial_ concerns that MnSEIA provided to them earlier in the process. Their disregard for our substantive recommendations through this filing amounts to ignoring our initial concerns for the

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[12]   Ratios of NSP Minnesota's distribution O&M expenses and annual peak loads average $17 per kW for the years 2016 to 2018. The 3.3% general plant "loader" is based on general and total plant in service by the end of 2018.

third time in this process (first in the November 2018 meeting, second after our commentary was published in November and now this filing in response to our informal comments).

In our informal comments we stated the following:

At the November stakeholder meeting where MnSEIA, other developer members, Xcel and the Department of Commerce met to discuss how to improve Xcel's distribution capacity component. At that time, Xcel was proposing a 5-year look forward approach to calculating the distribution capacity component as opposed to a partial look forward and look back, as it is doing today. MnSEIA and our members argued **that a 25-year look forward makes significantly more sense**, as the VOS is used for 25 year contracts. We argued this same point in relation to the current methodology in our November commentary. If Xcel intends to upgrade its distribution system and the addition of a new CSG might delay that upgrade during the CSG's life-span, a garden that is online during the time should receive credit for the cost deferral.

MnSEIA and our members further argued that **some valuation should be placed on the upgrade costs that developers are paying to improve Xcel's substations and equipment**. The counter argument, which we've heard in this meeting and elsewhere, is that the upgrades are only needed because a CSG is being added to the grid. The crux of the argument is that the upgrades would otherwise not be made. Certainly this is true at times - but it is not true in all cases. Take for instance when Xcel will have to upgrade an old transformer that is close to where the CSG is to be added. If the developer were to add a new transformer to interconnect their garden, then Xcel would save money on a piece of equipment it knows it will need to upgrade shortly. This is a clear cost savings for the utility and its ratepayers, but it is not included in the current VOS methodology nor is it included in the proposed methodology. Presumably upgrades like this have occurred somewhat frequently with over 500MW of interconnected gardens.

We do have additional challenges with Xcel's distribution capacity component, but because our initial challenges with Xcel's methodology were not further considered, we intend to share those only during a formal PUC comment period.[13]

Now that we have retained Tom Beach, we look to further expound on the above, but we write this here to illustrate that Xcel's statements about stakeholder feedback are misleading and that this process has been unusually frustrating, given all the good work that has transpired between the developer community and Xcel since the SR*C Working Group was established.

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[13]   COMPLIANCE FILING – COMMUNITY SOLAR GARDENS PROGRAM, XCEL ENERGY, Docket No. E-002/M-13-867, Doc. Id. 20195-152611-01 at ATTACHMENT C (May 1, 2019) [Emphasis added].

Xcel's May 1, 2019 filing sought to unfairly cast the industry as nonparticipants in this process. But in so doing, the utility provided more evidence that they have not been listening to the developer community on this issue and have instead chosen to unnecessarily escalate this issue by elevating this to the Commission instead of working it out through mutual development or further negotiations.

But despite the challenges, as this process continues, we hope to return to a more collaborative process and work again with the utility to potentially develop a compromise methodology that all stakeholders can agree upon. We believe with our expert in place we can also provide greater insight into the development of this component and we hope Xcel engages with us to utilize his work in other states on similar matters.

D. Conclusory Remarks

As we recently received Xcel Energy's responses to our information requests and the Xcel meeting that will unveil the 2020 VOS rate is July 31, 2019, MnSEIA intends to file an alternative approach to Xcel's Distribution Capacity Component in our Reply Comments. We hope to provide a third approach for the Commission to consider, or at the very least, a clearer subset of improvements for Xcel's methodology.

We understand that providing new content in reply can be challenging for other stakeholders at times. So we are providing this statement to put the Commission and the utility on notice of our intention in the event that either entity seeks to add an additional comment period for further review of our alternative. In the absence of the 2020 VOS, proposing an alternative methodology is not practicable at this time, but should be shortly.

Thank you for your consideration of our comments.

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