

**STATE OF MINNESOTA  
PUBLIC UTILITIES COMMISSION**

Katie J. Sieben	Chair
Daniel Lipschultz	Commissioner
Valerie Means	Commissioner
Matt Schuerger	Commissioner
John Tuma	Commissioner

**In the Matter of the Petition for approval of Northern States Power Company, dba Xcel Energy, for approval of its Community Solar Garden Program**

**August 23, 2019**

**MINNESOTA SOLAR ENERGY INDUSTRIES ASSOCIATION'S  
REPLY COMMENTS**

**Docket Nos. E-002/M-13-867;  
E-999/M-14-65**

**REPLY COMMENTS OF THE MINNESOTA  
SOLAR ENERGY INDUSTRIES ASSOCIATION**

**I. MnSEIA's Initial Comments Set Forth Our Concerns And Intention To Respond With A Formal Counter Proposal For The Commission's Consideration And Adoption.**

In our initial comments on this matter, the Minnesota Solar Energy Industries Association (MnSEIA) argued that Xcel Energy's (Xcel or the "utility") May 1, 2019 proposal for an alternative method of calculating the Value of Solar (VOS) avoided distribution cost "does not yield accurate results that are fair and reasonable".<sup>1</sup> We also notified the Minnesota Public Utilities Commission ("PUC" or the "Commission") that MnSEIA:

- had retained an expert, CrossBorder Energy's Tom Beach, to help facilitate the development of a new distribution capacity component;<sup>2</sup> and

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<sup>1</sup> COMMENTS, THE MINNESOTA SOLAR ENERGY INDUSTRIES ASSOCIATION, Docket No. E-002/M-13-867, Doc. Id. 20197-154532-01 at 1 (Jul. 19, 2019) (emphasis in original).

<sup>2</sup> *Id.*, at 5. The expert's credentials have been previously filed in the docket along with our prior Commentary Doc. Id 20197-154532-02.

- planned to submit (in our reply comments) a counter proposal to Xcel’s proposed new VOS formula for avoided-distribution-capacity costs, which “can be integrated into an easy-to-read decision option.”<sup>3</sup>

At the time of our initial comments, Xcel had not yet disclosed what the 2020 VOS component value would be under the *status quo* formula, leading to our statement that “There does not appear to be an immediacy in altering this VOS variable.”<sup>4</sup> But according to Xcel’s August 2 petition, absent any change the 2020 component value would be 13.73 cents/kWh (in 2020 dollars).<sup>5</sup> That means this rate component is even more volatile than was acknowledged leading into 2017 and 2019, when MnSEIA and others expressed a similar concern when this methodology twice resulted in an approved \$0.00 cents per kWh. We thus agree with Xcel that this new information lends additional urgency to the need to improve the formula for this component of the VOS before the Commission can approve a VOS rate for 2020.

In these Reply Comments, we present the expert witness’s counter proposal (“Expert Proposal”) and respectfully request that the Commission adopt the proposed Decision Options summarized in Section IV.c. (below). The Expert Proposal is built on three of potential modifications that MnSEIA identified and discussed at length in our initial comments:

- 1) adding a longer data period (10 years instead of five);
- 2) removing the arbitrary 50% discount factor; and
- 3) including the associated costs for avoided distribution O&M and general plant that will accompany any avoided investments in distribution plant.<sup>6</sup>

**II. The History Of S\*RC Subscriber Rate Trends Shows That The VOS Has Been Declining Rapidly, While Offering Zero Value For Avoided Distribution Capacity In 2017 And 2019**

Once again, as in the previous three years, Xcel’s latest VOS proposal includes several proposed changes to the VOS methodology and its implementation, each of which would tend to

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<sup>3</sup> *Id.*, at 2.

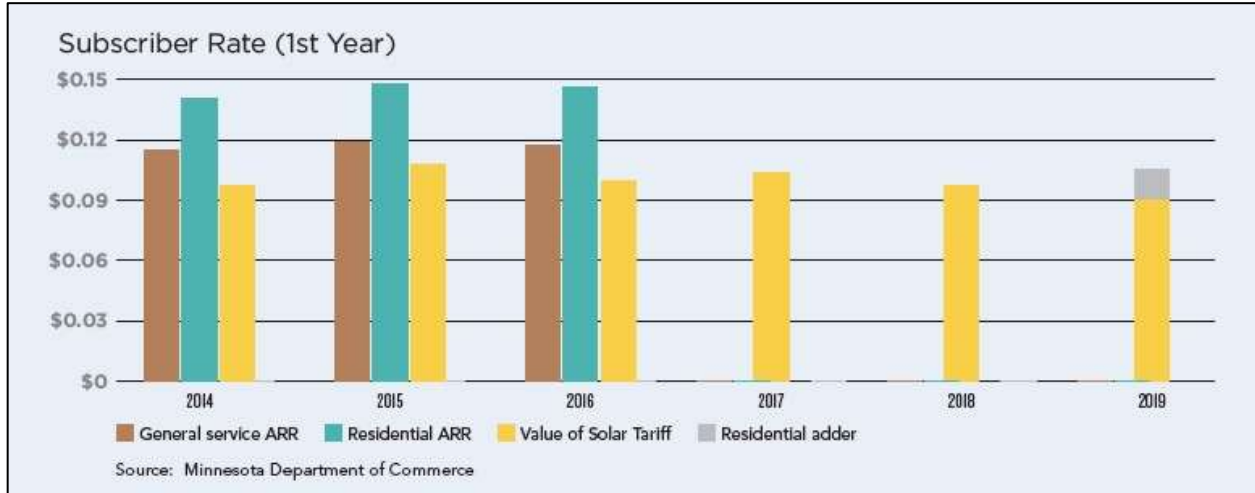
<sup>4</sup> *Id.*, at 5.

<sup>5</sup> INITIAL FILING – PETITION PUBLIC, XCEL ENERGY, Docket No. E999/M-14-65, Doc. Id. 20198-154920-01 at 7 (Aug. 2, 2019) [herein after *Xcel’s August 2, 2019 Petition*].

<sup>6</sup> *Id.*, at 6-9. Our initial comments also identified two other proposed modifications (around the reasonableness of Xcel’s sorting and bucketing of relevant capacity related distribution projects). We do not address those modifications herein, but they may be addressed by other stakeholders in their reply comments.

reduce the bill credit rate available to subscribers of new Community Solar Gardens (CSG). To be sure, the rate available to CSGs has steadily gone down with each successive program year since 2015, as shown in Figure 1 below:<sup>7</sup>

**Figure 1**



As pointed out in our initial comments, “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.<sup>8</sup>

Note that to MnSEIA’s knowledge there are approximately 28 new 1MW S\*RC applications that have been filed under the 2019 VOS rate to date. That is far lower than the annual average of 100+ MWs of CSGs built each year since the S\*RC program opened in December 2014. This large reduction in garden applications illustrates the challenges that developers face when various components of the VOS are inadequately capturing real-world value to the utility, ratepayers or society.

Here is the VOS avoided distribution capacity component value that was approved for the six years 2014-2019, plus Xcel’s calculated 2020 component values:<sup>9</sup>

<sup>7</sup> Bentham Paulos (May 2019), “Minnesota’s Solar Gardens: The Status and Benefits of Community Solar”, at 5. The report, prepared for MnSEIA and others, describes and quantifies the benefits of Minnesota’s competitive third-party community solar market, and is attached hereto as Attachment 1.

<sup>8</sup> *Id.*, at 3 (“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.”).

<sup>9</sup> See Xcel’s August 2, 2019 Petition, *supra* note 5 at 7.

**Table 1: Avoided Distribution Capacity Component**

VOS Vintage	Current VOS Methodology					
	2015	2016	2017	2018	2019	2020*
Distribution Capacity Component per kWh	2.28	0.00	0.00	0.82	0.00	13.73

\* 2020 value is calculated per the VOS methodology but not approved

If the Commission were to simply take the mean value of the distribution component as calculated over the seven years from 2014 to 2020, that would result in a 2020 component compensation rate of **\$0.0252 per kWh** – as represented by the flat blue line in the figure below:

**Figure 2 (distribution capacity value as approved and 2020 calculated in cents/kWh)**

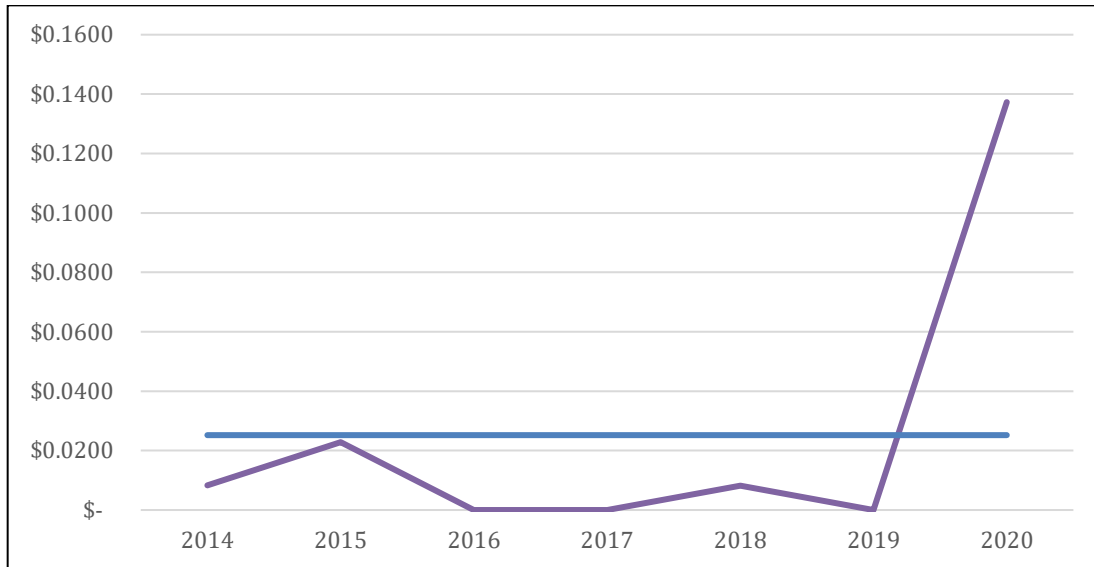


Figure 2 shows that the current formula for the distribution component properly recognizes that distributed solar leads to avoided distribution capacity costs, but the formula is also flawed because it leads to a volatile and predictable rate that likely under-compensates in some years and over-compensates in others.

### **III. MnSEIA’s Competing Expert Proposal Should Be Adopted**

Because MnSEIA is proposing this competing Expert Proposal, we contend that both our methodology and Xcel’s must be evaluated and considered by the Commission.<sup>10</sup>

<sup>10</sup> As described in our Initial Comments, MnSEIA and others did attempt to negotiate these substantive details directly with Xcel, but the Company was not (at that time) open to our position.

*a. The “just and reasonable” standard*

Under the governing state statute, “Every rate made . . . by [a public utility] shall be just and reasonable.” Minn. Stat. 216B.03. The statute also states that, “To the maximum reasonable extent, the commission shall set rates to encourage energy conservation and renewable energy use and to further the goals of sections 216B.164, 216B.241, and 216C.05.”

We appreciate that, under a traditional just-and-reasonable analysis, the 23-cent 2020 rate calculated by Xcel could be determined to be excessive. By the same token, we would argue that any rate that is less than 2.52 cents/kWh (the 7-year mean of the component value calculated under the current approved formula) should *not* be considered excessive or outside the “zone of reasonableness.”<sup>11</sup>

Also, the Commission should consider the reasonableness of the process thus far. The 2019 VOS had a \$0 valuation for distribution capacity value, despite the utility, the Department of Commerce and stakeholders all acknowledging that this component is a problem and that there is annual value to the utility. But it is only now that they scale is tipped towards protecting the utility that this item will likely be amended when in past years the scale was tipped against small power production and cogeneration. The outcome of the methodology should not dictate when a change in methodology is warranted. As such, if the Commission is to adopt an alternative to the 2020 distribution capacity component, MnSEIA suggests that the Commission amend the 2019 VOS to include the newly ratified method for calculating the distribution capacity value.

Lastly, the Commission’s review of how to handle the application of the distribution capacity component should consider Xcel’s other proposed changes to the current VOS methodology or its 2020 VOS application. For instance, at the July 31 Xcel Energy meeting, Xcel informed the work group that they are again attempting to change from the utility modeling to actual performance data, which we assume would lower the 2020 VOS. Undoubtedly there is more data available to the utility this year, but MnSEIA is still not certain that there is sufficient data to warrant a change.<sup>12</sup> Regardless this issue should also be aggregated under the transition away from the current distribution capacity component and viewed from the light of CSG developers and

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<sup>11</sup> MnSEIA will submit a decision option on this point. With the procedure of the 2020 VOS approval and this distribution capacity component being unclear to some extent, MnSEIA suggests that this 2.52 cents/kWh value would make a viable interim rate if a distribution capacity component methodology is not determined before the 2020 VOS is approved, or if the application of the new distribution capacity component would be otherwise problematic for the 2020 VOS.

<sup>12</sup> For example, it may be important to distinguish and treat single-axis-tracker systems differently from fixed-tilt systems (since the two classes differ significantly in terms of capacity factor at our latitude), but we will opine on these matters more when the Commission notices Xcel’s 2020 VOS calculation.

potential subscribers taking a cut in 2020 that they have been legitimately waiting for and relying upon.

***b. MnSEIA's Expert Proposal***

Upon reviewing the 2020 VOS's distribution capacity component with our expert, MnSEIA thinks an approach that improves Xcel's proposed new methodology is the optimal pathway forward. Building on the methodological discussion in our initial comments, and based on the discussion with the other commenters and further internal considerations since the initial comment period, we provide these additional thoughts:

First, MnSEIA and our expert did study Xcel's Information Requests regarding additional years of data, and we propose that 10 years of data is appropriate here to determine the distribution component. A 10 year look finds a better middle ground between the current methodology, which compares today's values with numbers 10 years ago, and Xcel's arbitrary 3-year look back and 2-year look forward. Instead, we propose to use 8 years of historical data and two years of forecast data.

While it is important to acknowledge the challenges of the current methodology, it is also not necessary to completely separate the methodologies either. There were, after all, sound reasons for adopting it initially. One of the strengths of the initial approach is its use of a robust, longer-term data set on distribution investments. Furthermore, this approach would reduce component volatility to a greater degree than Xcel's proposal, gives a better representation of avoided distribution costs over the expected solar module life, and it better aligns the 25-year life of a panel with the expected distribution upgrades of Xcel's distribution system.

Second, MnSEIA seeks to highlight the non-Xcel parties' universal opposition to Xcel's 50% discount factor. Fresh Energy, IPS Solar and the Department of Commerce all found this methodological choice baseless and indefensible. The general consensus appears to be that it unnecessarily reduces the distribution capacity valuation by 50% - especially considering that the 2014 VOS Methodology *already* assumes that solar projects will only be "installed in sufficient capacity to allow this investment stream to be deferred for one year."<sup>13</sup> In other words, the methodology already uses a conservative 1-year assumption to discount the value of this component. Furthermore, Xcel Energy has all of the information available to guide developers to where siting will be the most beneficial. This is exactly why Xcel was initially directed to develop a viable locational component. Yet, Xcel's rationale for implementing a 50% reduction appears to be that developers may not know where to optimally locate their gardens. This justification for the 50% discount is predicated solely upon the utility's inability or strategic unwillingness to accurately communicate to the developer community where these gardens should be situated.

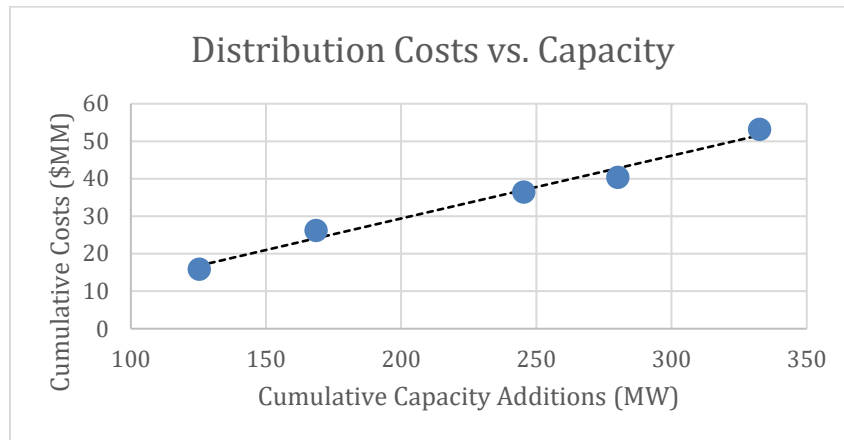
Third, MnSEIA would like to improve upon Xcel's methodology by requesting that the calculation of the avoided distribution capacity cost in \$ per kW use a regression of investments

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<sup>13</sup> 2014 VOS Methodology, at 36 ("PV is assumed to be installed in sufficient capacity to allow this investment stream to be deferred for one year.").

versus capacity as opposed to an average. The purpose of using a linear regression rather than a simple average is to identify the costs that vary with the kW of capacity additions over the entire period. In the example below, based on the five years shown, the linear regression estimate of cumulative costs produces a slope of approximately **\$168 per kW**, instead of the \$160 per kW produced using a simple average of the distribution costs per kW of added capacity over these five years:

$$(Estimated\ Cumulative\ \$MM) = (167.75\ \$/kW) \times (Cumulative\ MW) - (4.19\ \$MM)$$



Fourth, our expert suggests that the distribution capacity component of the VOS should be grossed up to include the avoided distribution O&M and general plant costs that would have been otherwise be associated with the avoided distribution capacity. This reflects the common sense fact that the utility has to operate, maintain, and administer any distribution plant that it adds to its system. If distribution investments are avoided, then the associated O&M and general plant costs also are avoided. Data on distribution O&M and general plant costs per unit of distribution plant are readily available from FERC Form 1.<sup>14</sup>

MnSEIA believes that if our positions are adopted as they are proposed, it will strike an optimal balance between Minn. Stat. §216B.164’s requirement to maximize small power production and cogeneration and the requirement that all rates are consistent with the public interest and ratepayers, and is an otherwise reasonable rate as required by Minn. Stat. § 216B.03. If our expert’s recommendations are followed regarding the distribution capacity value, we estimate that the distribution capacity component would fall consistently in the 1-2cents/kWh range from year to year. Our expert believes that based on the five years of data that Xcel provided, eliminating the 50% discount factor, using a linear regression, and adding the distribution O&M and general plant loaders, the MnSEIA distribution capacity component recommendation would result in a 2020 distribution capacity component of \$0.0174/kWh (*\$0.0174 per kWh = (\$0.0055*

<sup>14</sup> See Attachment 2 for a description and details on this data.

*per kWh*)  $\times 1.033 + (\$0.0117 \text{ per kWh})$ .<sup>15</sup> This lands far below the 2.52cents/kWh “zone of reasonableness” we proffered above.

Furthermore, this range yields a number that is similar to and consistent with Xcel’s 2020 VOS’s Avoided Transmission Capacity value, which is 1.75 cents/kWh.<sup>16</sup> So the value is reasonable in comparison with other similar items in the VOS value stack. It is also similar to avoided distribution capacity costs calculated for Xcel’s system in Colorado.<sup>17</sup> We believe that our formulation identifies the true value that solar provides to the distribution grid year after year, and we request that the Commission adopt our expert’s methodology outright.

### **c. Decision Options Reflecting The Adoption Of MNSEIA’s Expert Proposal**

In order to facilitate an expedient Commission hearing and understanding the complexities of this component, MnSEIA has provided our decision options below:

- A. The Commission will adopt the following changes to Xcel’s Distribution Capacity Component methodology for use in future vintage years:
  - a. Use more (e.g. 10) years of cost and distribution capacity data, including adding historical data for 2011 to 2015, and the per unit rate for avoided distribution capacity would be derived from the cumulative distribution investments (in \$) added over a 10-year period and the cumulative distribution capacity (in MW) added over the same period.
  - b. Eliminate the 50% factor.
  - c. Use a linear regression to determine the \$/kW slope when cumulative costs are compared to cumulative capacity additions.

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<sup>15</sup> See IR 17 docket 13-867 to be filed concurrently with these reply comments. MnSEIA would have used 10 years of data, but Xcel did not provide it. See also IR 18 docket 13-867 to be filed concurrently with these reply comments. This value shows that \$168/kW corresponds to \$0.0055/kWh.

<sup>16</sup> 2020 Value of Solar Overview Stakeholder Meeting, Xcel Energy, July 31, 2019 at 2. Presumably this information will be filed on or around Xcel’s September 1, 2019 compliance filing date for their 2020 VOS approval.

<sup>17</sup> See Crossborder Energy, *Benefits and Costs of Solar Distributed Generation for the Public Service Company of Colorado: A Critique of PSCo’s Distributed Solar Generation Study* at pp. 9-11, esp. Table 5 (December 2, 2013). This study was filed in Colorado Public Utilities Commission Docket No. 13A-0836E on behalf of The Alliance for Solar Choice. The study calculated an avoided distribution capacity cost of \$46.10 per kW-year. Assuming annual solar output in Colorado of 1,765 kWh per kW-year yields an avoided distribution rate of \$0.026 per kWh. We note that the load match factor for distribution in Colorado in this study (23.1%) was much lower than the factor used in the NSP VOS (55.2%).



- d. Add distribution O&M and general plant costs to the \$/kWh distribution capacity component from FERC Form 1 data. The recommended general plant loader shall be 3.3%, inflating the economic value of avoided distribution capacity by 3.3% for general plant. The distribution O&M adder would be \$17 per kW-year, or \$0.0117 per kWh = \$17 per kW / 1,452 kWh/kW-year where 1,452 kWh/kW is the assumed annual PV production.

*AND*

- B. The Commission directs Xcel to re-calculate the 2019 avoided-distribution cost component using the same changes as listed above and apply it to the 2019 VOS;

*OR*

- C. The Commission will not implement a new distribution capacity component methodology at this time, and directs Xcel to implement an interim 2.52 cents/kWh avoided-distribution cost component in the 2020 VOS rate.

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