

August 16, 2019

Daniel P. Wolf  
Executive Secretary  
Minnesota Public Utilities Commission  
121 7th Place East, Suite 350  
Saint Paul, Minnesota 55101-2147

RE: **Supplemental Comments of the Minnesota Department of Commerce, Division of Energy Resources**  
Docket Nos. E002/M-13-315 and E999/CI-15-115

Dear Mr. Wolf:

Attached are the Supplemental Comments of the Minnesota Department of Commerce, Division of Energy Resources (Department) in the following matter:

In the Matter of Xcel Energy – Electric – Rate for Large Solar Photovoltaic Installations;  
and a Commission Inquiry into Standby Service Tariffs.

The Department's supplemental comments address Xcel proposed rate for large solar photovoltaic installations. Based on our review of the February 19, 2019 initial comments of various parties, Xcel's March 19, 2019 Reply Comments, and meetings with Xcel and other parties, the Department recommends that **for Xcel's next rate case, the Minnesota Public Utilities Commission (Commission) require Xcel to propose a pilot project for its commercial demand-metered customers with behind the meter solar installations, a new rate design that includes a coincident peak based generation and transmission demand rate and billing quantities, and a non-coincident based distribution demand rate and billing quantities.** The Department is available to answer any questions that the Commission may have.

Sincerely,

/s/ CHRISTOPHER T. DAVIS  
Analyst Coordinator

/s/ LISE TRUDEAU  
Senior Engineering Specialist

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## Before the Minnesota Public Utilities Commission

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### Comments of the Minnesota Department of Commerce Division of Energy Resources

Docket No. E002/M-13-315 and E999/CI-15-115

#### I. INTRODUCTION

On November 14, 2011, Northern States Power Company d/b/a Xcel Energy (Xcel or the Company) filed a Stipulation and Settlement Agreement between the Company and several parties to its then pending 2010 rate case, Docket No. E002/GR-10-971. Among the terms of the agreement, Xcel agreed to study the load profile of larger solar facilities to determine the applicability of a solar facility's unique load characteristics to the standby and supplemental rate tariff.

On May 14, 2012, the Minnesota Public Utilities Commission (Commission) issued its Findings of Fact, Conclusions, and Order in Xcel's 2010 rate case. The Commission adopted the Stipulation and Settlement Agreement, and directed Xcel to "file with the Commission and supply to the Department of Commerce the results of the study of the load profiles of Large Solar Facilities."

On August 24, 2012, Xcel filed a Solar Load Profile Study, which it re-filed on September 14 to include previously redacted information after customers consented to the public release of their solar load profile data. In its study, Xcel concluded that "solar contributes to capacity requirements during peak periods" but also that "further analysis would be needed to support decision making."<sup>1</sup>

In its December 3, 2012 comments the Department agreed with Xcel's conclusion that photovoltaic (PV) systems contribute to meeting power system capacity requirements during peak periods and that the current Standby Service Tariff does not incorporate this contribution. The Department also concluded:

Because Xcel's ratepayers pay for the costs of power obtained from PV and other resources, calculating a reasonable capacity credit requires ensuring that the credit adequately reflects the value of the resources yet is not excessive. The best way to balance these goals is to set the capacity value of PV based on capacity costs that are avoided due to the addition of the PV systems. Thus, calculating a reasonable capacity credit for Xcel customers with PV installations requires first calculating the solar capacity value of PV

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<sup>1</sup> Docket No. E002/GR-10-971, August 24, 2012 Xcel Compliance Filing — Solar Load Profile Study, page 6.

installations in Xcel's service territory and second, multiplying the solar capacity values times the costs avoided due to capacity savings.<sup>2</sup>

On May 13, 2013 the Commission issued its Order Setting Interim Rate and Establishing New Solar Rate Docket (Docket No. E002/M-13-315). In the Order, the Commission required Xcel to modify its Standby Service tariff to provide an interim photovoltaic capacity credit of \$5.15 per kW per month. Xcel was required to give the credit to large photovoltaic customers on the Standby Service tariff. The Commission also required that customers receive this credit beginning with bills issued on or after June 1, 2013. In addition, the Commission required that on or before October 1, 2013, Xcel file a large customer photovoltaic rate proposal that appropriately reflects the value of solar resources on Xcel's system. As part of the Company's proposal, Xcel was also required to re-evaluate the interim Standby Service tariff capacity credit.

On October 1, 2013, Xcel proposed its *Rate for Large Solar Photovoltaic Installations* Docket No. E002/M-13-315 requesting that the Commission approve continuation of the existing solar Standby Service capacity credit of \$5.15 per kW/ month and proposing to revisit the capacity credit upon Commission approval of a Value of Solar methodology.

On March 17, 2014, the Department filed its recommendation for a final solar standby service capacity credit of \$5.15 per kW per month for customer-sited solar facilities over 100 kW. The Department also recommended that the Commission approve a start date of June 1 for each customer's grace period, unless the customer chose another date.

On May 19, 2014 the Commission issued its Order Setting Final Solar Photovoltaic Standby Service Capacity Credit, Requiring Updates, and Requiring Compliance Filing. The Order, among other things, established a \$5.15 per kW per month for solar PV customers and required Xcel to file an update in this docket within two years of the Order on the progress at Midcontinent Independent System Operator (MISO) to establish a specific solar capacity accreditation value and any other changes potentially relevant to the decision as to whether to update the credit.

On May 19, 2016, the Company proposed to exempt solar and new wind customers from the standby service requirements and to replace the existing standby service solar capacity credit with a new volumetric capacity credit through a new rider. Although Xcel did not believe the \$5.15 per kW credit was fully supported, Xcel used it as a "legacy" level for Solar PV customers. Xcel proposed converting the \$5.15 per kW credit into a focused peak period capacity credit of \$0.07395 per kWh, which is essentially a credit to billed firm demand charges. The Company

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<sup>2</sup> December 3, 2012 comments, page 6.

proposed to apply the credit to renewable generation during the peak hours of 1:00 p.m. to 7:00 p.m., which represent the typical peak period for system load requirements.

On November 9, 2016, the Department submitted Reply Comments. The Department recommended that Xcel's solar capacity credit be calculated using the methodology proposed by the Department and the Solar Rate Reform group (SRRG), including the following components:

- Estimating Xcel's avoided cost per kW-month, which consists of:
  - Avoided capacity costs (\$/kW/month), plus
  - Avoided transmission costs (\$/kW/month) plus
  - Line Losses
- Multiplying the avoided costs by either:
  - Effective Load Carrying Capability (ELCC),<sup>3</sup> or
  - MISO-determined solar capacity value.

In our April 21, 2017 Comments the Department discussed how the capacity from Xcel's customers with PV would not provide value to Xcel unless the facilities were registered with MISO. However, the Department reported in its May 15, 2017 comments that Xcel had determined in discussions with MISO that the Company would not be able to register the capacity for these solar installations unless the energy was also available. The solar projects in question were net-metered so the energy was not fully available, and consequently project capacity could not be registered with MISO. (In situations where the Company purchased all the energy, such as community solar gardens, Xcel was able to register the solar capacity with MISO because it was also purchasing all the energy output from the solar garden.) Given this understanding, the Department proposed to continue discussions with Xcel, MISO, solar developers and other parties to try and reach some resolution for the issue.

On August 23, 2017, Xcel and the Department jointly proposed a decision option for the Commission to consider at its August 24, 2017 agenda. The recommendation included a proposal that Xcel study whether customers with solar installations 40 kW or greater are being overbilled for demand and if so, how to remedy the overbilling.

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<sup>3</sup> ELCC is an analytical approach that disaggregates the overall power system reliability into the individual generator's (power plant) contribution to the system reliability. Plants that are consistently able to deliver power during times of high risk (hours when demand on the system is high) have a high ELCC, while less reliable plants have a lower ELCC. For variable generators like solar and wind, the ELCC method can distinguish between solar and wind resources that consistently produce power during high-risk hours, sometimes produce power during high risk hours, and rarely produce power during high risk hours. Extensive peer-reviewed assessments, including work by the North American Electric Reliability Corporation (NERC) and the Institute of Electrical and Electronic Engineers (IEEE), have identified ELCC as the best industry practice for determining the capacity value of variable (intermittent) generation resources such as PV and wind.

On October 3, 2017, the Commission issued its *Order Approving Three Tariffs with Conditions and Requiring Xcel to File a Proposal for its Solar PV Capacity Credit Rider*. Order Points 18, 19 and 20 required the following:

18. Xcel shall work with other interested stakeholders and parties in this docket on development of a Solar PV Capacity Credit Rider and, in so doing, seek to reach an agreement on what the value of the Solar PV Capacity Credit Rider will be in the interim, prior to establishment of a methodology.
19. Xcel shall work with the parties to reach agreement on a proposed process and timeframe for establishing a methodology to be used in developing the solar PV capacity rider.
20. Within 30 days of the Order, Xcel shall file a report with the Commission with any agreements or partial agreements reached by the parties on the PV Solar Capacity Credit, and explain or identify any areas of disagreement or impasse remaining and basis therefore.

On November 2, 2017 Xcel submitted in Docket E999/CI-15-115 the PV Demand Credit Agreement terms reached by Xcel, the Department, and Minnesota Solar Energy Industries Association (MNSEIA). The agreed terms (on pages 2-3 of that filing) included:

1. *Interim Rate Level*

Approve Xcel's PV Demand Credit Rider ("PV Rider"), as filed on May 19, 2016, but Xcel will recalculate the level of the credit in the PV Rider assuming a starting value of \$4.52/kW<sup>1</sup> credit and 11 months as the average non-grace period months in the conversion formula for the kWh based solar credit. This recalculation results in a credit value of 7.139 cents per kWh.

2. *Customer Eligibility*

Current customers under the Standby Service Rider who qualify under the PV Rider at a given location will no longer be on the Standby Service Rider and will be enrolled in the PV Rider. New customers who qualify for the PV Rider at a given location may also enroll in the PV Rider under this rate provided that they do so before the date of an order issued by the Commission authorizing a change to this rate. This subsequently revised rate in an updated PV Demand Credit Rider is referred to as the Revised PV Rider Rate.

3. *Availability Term*

The PV Rider credit rate of 7.139 cents per kWh will be available to customers properly enrolled at the rate as described above for a given location for six years from the date of the Commission order approving the PV Rider. Any customer enrolling in the Revised PV Rider will receive the credit as set forth in the Revised PV Rider.

4. *Proposed Process and Time Frame for Establishing Methodology to Develop Solar PV Capacity Rider*

Require Xcel, following discussions with the Department of Commerce, MNSEIA and other interested parties, to file a proposed methodology for determining the appropriate solar capacity or demand credit. The methodology should consider reasonable ways to incorporate cost of service principles in demand charges for behind-the-meter solar customer accounts as well as also address the additional issues surrounding the solar capacity or demand credit rider as raised by parties in this docket. Xcel should file its proposal and discussion of the additional issues by September 19, 2018 as well as rationales for why this study is or is not a better indicator of capacity or demand value than previously derived values. Parties will be allowed 60 days to respond.

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 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. Xcel will also be conducting a new ELCC load study in preparations for its resource planning process. In addition, Xcel will compare this credit to current peak controlled demand credits. All study results will be provided to parties by July 1, 2018.

On January 4, 2018, Xcel submitted redlined and clean versions of its Photovoltaic Demand Credit Rider Tariff. On April 20, 2018, the Commission issued its *Order Approving Solar PV Demand Credit Rider with Modifications and Standby Service Rider*. The Commission's Order included the following two Order Points in regards to the Rider:

1. Xcel's proposed solar PV Demand Credit Rider, and the terms and conditions of the agreement regarding Xcel's PV Demand Credit Rider, as filed on March 20, 2018, is adopted, as modified herein.
2. Xcel shall file the studies provided to parties under the PV Demand Credit Agreement with the Commission in this docket at the same time Xcel provides the studies to the parties.

On August 17, 2018, Xcel submitted its Compliance Filing Solar Effective Load Carrying Capability (ELCC) Study and PV Billed Demand Study. The PV Demand Billed Demand Study indicated that Xcel's commercial customers with PV installations had average reductions in the monthly billing demand charges of 6.3% for year 2016 and 7.8% for year 2017 due to the changes noted above.

On October 19, 2018, Xcel submitted its Photovoltaic Demand Credit Methodology.

On February 19, 2019 the following parties submitted comments on Xcel's October 19, 2018 Photovoltaic Demand Credit Methodology:

- MNSEIA;
- Vote Solar;
- Sundial Energy;
- Department; and
- City of Minneapolis, Target Corporation and Commercial Customer Cohort (the Commercial Customer Cohort).

On March 13, 2019 the Department submitted a letter stating that since the parties' recommendations varied so much, the Department, Target, and MNSEIA believed the record in this proceeding would benefit by adding an additional step or two. The parties recommended that only Xcel submit reply comments on March 19, 2019 and from there see if recommendations could be narrowed down enough such that parties could agree to a more narrow range of recommendations and perhaps a common recommendation. The parties would then request a timeframe for submitting supplemental comments.

On March 19, 2019, Xcel submitted its Reply Comments.

In the time since Xcel submitted its February 19, 2019 PV Demand Credit Methodology, the Department met with MNSEIA, Target, the City of Minneapolis Xcel, and met by phone with staff of the Regulatory Assistance Project (RAP).

## **II. XCEL'S CURRENT PV DEMAND CREDIT RIDER**

The Current PV Demand Credit Rider consists of two rate codes, Rate Code A85 (Closed) and Rate Code A86 (Standard). Both rate codes have the same components:

1. Customer Charge per month of \$25.75;
2. Credit per kWh of \$0.07139 for solar PV generation during the peak period of 1:00 pm to 7:00 pm for all days;
3. Credit kWh limit equal to the Peak Period maximum 15-minute solar PV kW output for the billing period times 100 hours for billing periods ending in the months of June, July, August or September and 75 hours for billing periods ending in other months.
4. Rate Code A86 (Standard) is applicable by customer request to demand-metered commercial and industrial customers that use Solar Photovoltaic as a customer-sited generation source with a capacity greater than 40 kW (AC) with a single production meter to serve all or a portion of customer's electric energy requirements. The rider is not available to customer-sited generation that is the subject of another incentive program such as Solar\*Rewards.
5. Rate Code A85 (Closed) is limited to qualifying customer account locations that: 1) are receiving Standby Service Rider tariff service with the Photovoltaic Solar Credit on the date this Rider is originally approved by the Commission, or 2) have enrolled for the Rider before the date the credit rate in this Rider is revised by the Commission. The closed rate will remain fixed for a six year period beginning with the original Commission order date approving this Rider, expiring April 20, 2024. After expiration of the closed rate, the applicable standard rate will replace the closed rate.



### III. COMMENTS ON XCEL'S PROPOSED PV DEMAND CREDIT RIDER METHODOLOGY

On page 2 of Xcel's March 19 Reply Comments, the Company stated that:

...the purpose of the PV Demand Credit Rider and the Company's proposed methodology is to explore whether there is a mismatch between the net billing demand of customers with on-site solar and their net demand on system peak days relative to non-solar customers. If there is a mismatch, the Rider is in place to reflect an appropriate adjustment to the solar customer's demand billing component.<sup>4</sup>

The parties offered the following comments on Xcel's proposed PV Demand Credit Rider methodology:

1. **Vote Solar** urged the Commission to consider adopting a demand credit 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. Specifically Vote Solar made the following three recommendations.
  - a. The generation capacity credit<sup>5</sup> should be based on the Company's embedded generation costs,<sup>6</sup> similar to the embedded transmission costs used in the Company's proposed credit methodology. Vote Solar noted that Xcel identified a non-coincident customer peak demand of \$6.40 per kWh in response to MNSEIA IR No. 2.b.
  - b. The base value of the credit<sup>7</sup> should include embedded distribution costs that are recovered through demand charges.
  - c. The "Future Need (2025) Timing Factor" (Timing Factor) should be removed from the calculation. Vote Solar states that it is inappropriate to discount a retail credit by applying a wholesale market resource-planning concept.

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<sup>4</sup> On pages 10-11 of our February 19, 2019 Comments the Department stated, "The purpose behind Xcel's proposed new PV Demand Credit Methodology is to address the fact that the peak demand charge for solar customers will often be set on the days that system peaks do not occur and thus capacity charges do not reflect costs caused by customers with solar PV."

<sup>5</sup> (Line (a) of Table 2)

<sup>6</sup> Embedded costs

<sup>7</sup> (Line (c) of Table 2)

2. **MNSEIA** stated that Xcel's proposed methodology reflected a different approach to the calculation of the PV demand credit than what MNSEIA understood the agreement to represent. MNSEIA stated it expected Xcel's Billing Study to be a customer-focused credit that mitigates an inherent overbilling from demand charges that are measured at the customer's non-coincident peaks, not at the time of the coincident peak. In the event that the Commission wants to approve a methodology similar to Xcel's proposal, MNSEIA proposed the following changes:

- a. Restudy Requests*

MNSEIA recommends that the Commission:

- i. Require Xcel, among other things, to restudy the PV Demand Credit Rider methodology and focus on where C&I solar customers are overbilled on their demand charges.
- ii. Require Xcel to modify its PV Demand Credit Rider to mirror its program offering in Colorado, and while Xcel is modifying its rider for compliance, the November 2, 2017 negotiated agreement will be modified by altering the 2024 end date to 2025; or
- iii. Require Xcel to restudy its Reduced Billed Demand Value by December 31, 2019 to better account for the new projects that are currently coming on line and to improve its data set, and in the meantime preclude Xcel from applying the \$0.41 reduction.

- b. Changes to Xcel's proposed methodology*

- i. Xcel should use a levelized CT cost of \$5.06<sup>8</sup> to reflect a 50/50 mix of greenfield and brownfield locations.
- ii. Xcel should add an embedded distribution cost of \$2.35 per kW-month.
- iii. Since Xcel's currently approved integrated resource plan (IRP) assumes continued development of, and immediate need for, customer sited solar, the Future Need Timing Factor should be set at 100%.

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<sup>8</sup> Line a of Table 2 of Xcel's October 19, 2019 Photovoltaic *Demand Credit Methodology*.

- c. Additional rider changes*
- i. Provide customers with a 15-year term associated with each PV Demand Credit Rider vintage year;
    - ii. Permit energy storage that is paired with PV to participate in the program; and
    - iii. Request Xcel to provide prospective customers with complete data upfront about their demand charges and how they are calculated to ensure informed customer choice.
  3. **Sundial Energy** stated that it agrees with MNSEIA's comments and that Xcel's proposed methodology further delays establishing a long-term, reliable rate that Sundial can show its clients. Thus, Sundial requested that the Commission extend the current period of the PV Rider by at least one year to account for the delay, in addition to requiring Xcel to perform a restudy using valid inputs that properly account for the cost of capacity on the Company's grid.
  4. **The Commercial Customer Cohort** argued that Xcel's avoided CT costs are too low and that Xcel should use the lowest levelized cost of energy (LCOE) of \$7.50 per kW-month from the Brattle Group's April 2018 Cost Of New Entry (CONE)<sup>9</sup> Study (or more reasonable assumptions for generation costs) as with the recent Dakota Range III and Jeffers petitions and the 2019 Value Of Solar Tariff (VOST). The Commercial Customer Cohort also recommended that the Commission require Xcel to:
    - a. Use the embedded transmission costs of \$4.09-kW-mo used in the 2019 VOST;
    - b. Eliminate the 60 percent future need adjustment;
    - c. Eliminate the Reduced bill demand value;
    - d. Eliminate the factor "Applicable Months per Year";
    - e. Eliminate the "Credit kWh Limit" in the Tariff;
    - f. Eliminate the "Credit Limit" in the Tariff;
    - g. Include an avoided distribution cost in calculation;
    - h. Extend the term of the current PV Demand Credit Rider while the methodology is under deliberation; and
    - i. Rename the Rider as System Peak Shaving Rider and make solar + storage systems eligible.

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<sup>9</sup> CONE is an estimate of capacity revenue needed by a new generator in its first year of operation to make it economically viable to build a power plant in MISO.

#### IV. DEPARTMENT ANALYSIS

##### A. BACKGROUND

As evidenced by the long introduction section above, parties and the Commission have struggled to ensure that Xcel's commercial demand-metered customers that have behind the meter solar generation are charged rates that reflect cost-of-service principles.

Although the Department originally agreed with Xcel's conclusion that photovoltaic (PV) systems contribute to meeting power system capacity requirements during peak periods that the then-current Standby Service Tariff did not recognize,<sup>10</sup> the Department's opinion changed when we realized, as noted above, that Xcel could not count solar installations as a capacity resource for their MISO Module E requirements unless the installations were registered with MISO, which could not occur if the customers used net metering.<sup>11</sup>

The Department discussed with RAP staff how solar resources would not count towards a utility's planning reserve margin (PRM). In response, RAP staff described how the California Public Utilities Commission (CPUC) approved Option R rates for San Diego Gas and Electric (SDGE), Southern California Edison (SCE) and Pacific Gas and Electric (PG&E).

A review of the CPUC December 19, 2014 *Decision on a Rate Design Proposal to Adopt an Option R Tariff for Pacific Gas and Electric Company* (see Attachment A) persuaded the Department that Xcel should conduct a study of whether Xcel's capacity charges reflect the costs caused by the Company's customer with solar installations.

The Option R rates were designed to account for the fact that the peak demand charge for solar customers will often be set on the days that system peaks do not occur (non-coincident peak days) and thus capacity charges for demand-metered solar customers do not reflect costs caused by customers with solar PV. This mis-accounting occurs because the peaks of customers

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<sup>10</sup> See page 3 of the Department's December 3, 2019 Comments in Docket No. E002/GR-10-971.

<sup>11</sup> The Department recently raised this issue with Xcel again, whether net metering disqualifies Xcel or a customer's ability to register behind the meter PV generation if the customer also has net-metering, and received the following response:

If a resource is net metered we cannot also claim that as a capacity resource. Net metered results in a reduction of our load forecast requirements. Claiming both a load reduction and the resource as capacity would be double counting, a reduction to our load and as a capacity resource required to meet our Planning Reserve Margin Requirement (PRMR). As an example our CSG does not reduce our load forecast but does provide a capacity value that we utilize to meet our PRMR. If we had a similar arrangement with net metering customers (the right to the energy and capacity) we would not reduce our load forecast and then could utilize it as a capacity resource.

with solar PVs are often set on days when the sun isn't as strong while the system peak is often set on sunny days. The CPUC based its decision on additional analysis that the Solar Energy Industry Association (SEIA) conducted on five customers that Pacific Gas and Electric (PG&E) had originally studied. SEIA compared the five PG&E customers' peak period net loads on the peak day of the month to the same customers' individual maximum peak period net loads during those months. SEIA's additional analysis came to several conclusions, including:

- On June 21, 2011, the date of PG&E's 2011 system peak load, all five customers' solar systems generated substantial output, significantly reducing their loads during the peak hours. The average output of all five customers' PV systems between 2 p.m. and 6 p.m. ranged from a minimum of 48 percent to a maximum of 86 percent. All five of these customers experienced their maximum peak period loads on June 28 when their solar output fell drastically due to a marine layer.<sup>12</sup> High temperatures across Northern California were much lower than on June 21, and the maximum coincident demand was 27 percent lower than the peak demand on June 21. The average of the highest peak period demands of the five PG&E customers was 309 kW on June 21 whereas the average of the highest peak period demands on June 28, which determined the coincident capacity charges for these customers that month, was 673 kW.
- Using the PG&E data on the five customers' loads during the 40 highest system peak intervals to calculate the average peak demand during those 40 intervals, SEIA found that the average load during the 40 intervals of highest system peak demand was 203 kW. In contrast, SEIA found that the average maximum peak period loads billed for these five customers across the six summer months was 744 kW, resulting in demand charges for generation capacity in excess of the demands the five customers imposed on PG&E's grid during the highest coincident peak load hours of the summer. SEIA estimated that these customers were billed for 3.9 times more peak and part-peak period capacity than was required to serve them.
- SEIA conducted similar analyses for transmission and distribution costs. Regarding transmission capacity, SEIA found that PG&E charged the five PGE customers for five times more capacity than they required during the 40 highest system peak intervals. For distribution capacity, SEIA compared each of the five customers' loads during the 40 highest intervals of demand at the substation and distribution planning area level. SEIA found that the three customers in the Hayward distribution planning area were overbilled for capacity by a factor of 19.5 and that the two customers in the Livermore distribution planning area were overbilled by a factor of 1.7. Across all five customers, the average factor of overbilling was 2.1.

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<sup>12</sup> A "marine layer" is similar to fog and thus reduces production of solar energy.

Based on these findings, the Department and other parties supported Xcel conducting a billing study.

*B. XCEL'S BILLING STUDY AND PROPOSED METHODOLOGY*

There are several statements in the record describing the purpose of Xcel's billing study. As mentioned above, on November 2, 2017 Xcel submitted the PV Demand Credit Agreement terms reached by Xcel, the Department, and MNSEIA. The agreement terms included the following language under *Proposed Process and Time Frame for Establishing Methodology to Develop Solar PV Capacity Rider*:

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. Xcel will also be conducting a new ELCC load study in preparations for its resource planning process.<sup>13</sup>

In addition, in its October 19, 2019 Methodology proposal, Xcel stated:

The purpose of the PV Demand Credit Rider and the Company's proposed methodology is to explore whether there is a mismatch between the net billing demand of customers with on-site solar and their net demand on system peak days relative to non-solar customers. If there is a mismatch, the Rider is in place to reflect an appropriate adjustment to the solar customer's demand billing component.

These statements discuss the solar issue in terms of a mismatch in billing. Billing of customers involves an attempt to reflect costs that customers impose on the system. As the CPUC decision on PG&E's Option R rate stated, the crux of SEIA's argument was that PG&E's application of demand charges in the affected rates did not accurately allocate various capacity costs commensurately with the costs customers impose on PG&E.<sup>14</sup>

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<sup>13</sup> Xcel November 2, 2017 *Compliance Filing, Standby Service Tariffs*, Docket E999/CI-15-115, page 3.

<sup>14</sup> CPUC Decision, page 14.

As discussed below, Xcel's study should have focused on comparing the difference in costs that commercial customers with and without solar arrays impose on Xcel's system and then compared that to the differences in how these two different customer groups are allocated costs. That is, the purpose of Xcel's billing study was to come up with a fair way of allocating costs that customers impose on the system.

Consequently, the Department was surprised to find the following description of Xcel's proposed methodology on page 4 of its Proposed Methodology filing:

The Company's proposed methodology is based on a capacity value stack approach that includes the cost components recommended by the Department in this docket and related preceding dockets for PV solar credit valuation. This is primarily an avoided cost approach that quantifies applicable avoided generation capacity costs and line losses, and can also recognize transmission costs. The total of component costs items are then applied to a system peak capacity contribution factor and then adjusted for a billed demand reduction associated with customer PV operation. The proposed methodology yields a credit level of \$2.15 per kW as the basis for conversion into the Rider peak period energy credit per kWh.<sup>15</sup>

The Department did not recommend using the capacity value stack approach in this case. The capacity value stack approach recommended by the Department earlier in this docket was made when we assumed, incorrectly, that the customer-owned behind-the-meter solar installations contributed to meeting Xcel's power system capacity requirements during peak periods and that this contribution was not reflected in how customers were billed.

Avoided costs are appropriate for determining the value of a solar resource if Xcel were to be procuring the resource. However, as mentioned above, Xcel is not able to register customer-owned resources that use net metering with MISO and thus these solar resources do not reduce Xcel's needs for capacity. The Department notes that parties discussed whether commercial customers with solar arrays provide value to Xcel because over time the Company's forecasting will pick up the trend that solar installations reduce sales and thus reduce Xcel's need for capacity and energy. The Department notes that this phenomenon will occur regardless of whether the solar resources are registered with MISO.

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<sup>15</sup> Xcel Energy October 19, 2018 *Photovoltaic Demand Credit Rider Methodology*.

However, since the resource is not registered with MISO, the solar arrays' output will operate like a Conservation Improvement Program (CIP) investment. Xcel's customers that make CIP investments are not paid by Xcel for their reductions in capacity and energy; instead they are rewarded with reductions in their energy and, if applicable, demand quantities on their electric bills. The same is true for Xcel customers with PV installations. The customers are rewarded with reductions in the level of electric energy on their bills. However, Xcel's current approach for determining the levels of demand to which demand rates apply *overbills customers with solar arrays* because the rates overcharge the customer for capacity costs that the customer imposes on Xcel's system at the time of the peak. The purpose in the PV demand credit is to fix this issue.

The issue is that capacity costs on a utility's system are caused by the need to meet peak demand (known as coincident peak), whereas the level of demand that Xcel uses to bill its demand-billed solar customers is based on each customer's peak (non-coincident peak), which typically happens at a different time than the system peak and thus is higher than the amount of capacity that the customer uses during the system peak. As a result, the level of demand charged to demand-billed solar customers assigns too much responsibility for capacity costs to these customers. Given the discussions about this mismatch, the Department had expected that Xcel's proposed methodology would use the results of its billing study to determine how to fairly allocate capacity costs to the Company's demand-billed commercial customers with solar. Xcel's proposed methodology did not accomplish this task and thus the Department concludes that the Commission should reject the study and Xcel's proposed use of a value stack methodology.

In the event that the Commission wants to approve a capacity value stack methodology similar to Xcel's proposal, the Department makes the following observations:

- In our February 19, 2019 initial comments, the Department recommended that Xcel use the costs of Unit 5 referenced in Xcel's January 2, 2019 Docket No. E999/PR-19-9 filing, a 215 MW CT with an in-service date of 2025 (MISO PY 25/26). However, in its Reply Comments, Xcel stated that, "The 2025 cost for a CT in Docket No. E999/PR-19-9 is based on the costs of 2019 Black Dog CT escalated to 2025. The Company does not believe it is appropriate to use 2025 escalated costs for a 2019 rate. When the 2025 costs are discounted to 2019, the levelized CT costs are similar to those proposed by the Company."<sup>16</sup> Thus, the Department concludes that Xcel's proposed levelized CT costs are reasonable.

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<sup>16</sup> Xcel February 19, 2019 Comments at 7-8.



- The Commercial Cohort objected to Xcel's proposal to use a Future Need Timing Factor<sup>17</sup> because the Commission's January 11, 2017 *Order Approving Plan With Modifications and Establishing Requirements for Future Resource Plan Filings* established the Company's need for new renewable resources, including anticipated solar resources. Specifically, page 7 of the Commission's Order states:

The Commission will modify Xcel's plan to acquire 400 MW of large-scale solar in 2016–2021. Instead, Xcel will be required to acquire approximately 650 MW of solar in this timeframe through a combination of the Company's community solar gardens program or other acquisitions (without limitation to "large-scale" solar).

On pages 9-10 of its Reply Comments, Xcel stated:

In the Company's most recent IRP (Docket No. E002/RP-15-21, January 2, 2015), the initial Preferred Plan recommended no resource additions, and identified a resource need in 2024. The supplement (January 29, 2016) continued to identify a resource need in 2024 with the additions resulting from the outcome of the CAP CON proceeding (Docket No. E002/CN-12-1240) and the proposed retirement of Sherco Units 1 & 2. The IRP Order acknowledges a system need for intermediate capacity in 2026 following the retirement of Sherco Units 1 and 2.<sup>17</sup> During the IRP deliberations the Commission recommended resource additions resulting in a revised capacity need of 2025. These resource additions included 1000+ MW of wind based on existing market pricing and availability, 400 MW demand response based on a potential study, and solar resources to achieve 650 MW by 2021 based on the high interest in the Community Solar Gardens program. *We believe parties misconstrue the Order when they imply the Commission found the Company's system had a near-term need for solar resources. [Emphasis Added].*

In our initial comments, the Department stated, "The Department agrees that theoretically a new resource does not provide a utility capacity value in years when there is not a capacity need."<sup>18</sup> However, the Commission required Xcel to acquire more solar resources in its IRP. Since the Commission's resource plan Order determined a "need" for the resources that

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<sup>17</sup> See the Commercial Cohort initial comments at 4-5.

<sup>18</sup> Department February 19, 2019 initial comments, page 15.

customer behind the meter solar generation can presumably be used to meet, it is reasonable to exclude Xcel's proposed Future Resource Timing Factor.<sup>19</sup>

Regarding the study approach, the Company's billing study did not take into account the size of the solar array relative to the size of the load at the customer site. Xcel noted that "solar generation capacity as a percent of customer site load is a significant variable affecting the degree that billing demands can be reduced from Company supplied capacity."<sup>20</sup> The Company could have removed the effect of this significant variable if it had normalized the percent reduction of billing demand for a standardized amount of solar relative to site load. This normalized approach was used by Lawrence Berkeley National Lab's (LBNL) study completed in 2017, Exploring Demand Charge Savings from Commercial Solar.<sup>21</sup> Consequently, the Department concludes that Xcel's billing study is incomplete.

### *C. XCEL'S ALTERNATIVE METHODOLOGY*

As described on pages 7-8 of the Company's October 19, 2018 filing, Xcel provided an alternative methodology:

The Company also developed and considered another credit methodology using a PV capacity contribution from the individual PV customer information in the PV Billed Demand Study. This approach compared the 2017 maximum PV contribution to the average PV kW contribution during the top 10 system peak days. The resulting capacity contribution was 36 percent for the hour between 5 pm and 6 pm and 50 percent for the hour between 4 pm and 5 pm. These capacity contributions are based on a simple average of all 24 customers included in the updated PV demand study, which individually comprise a wide range of the capacity contributions. The average 36 percent contribution for the hour ending 6 pm represents a range from 17 percent to 61 percent. The average 50 percent contribution for the hour ending 5 pm represents a range from 23 percent to 67 percent.

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<sup>19</sup> The factor can be eliminated, or set to 100%. Both steps would create the same result.

<sup>20</sup> Xcel Energy Compliance Filing, Solar Effective Load Carrying Capacity (ELCC) Study and PV Billed Demand Study, August 17, 2018, at Attachment B, page 4.

<sup>21</sup> Darghouth et al, Lawrence Berkeley National Laboratory, Exploring Demand Charge Savings from Commercial Solar, 2017.

These PV capacity contributions during the top ten system load days are based on the ten day average, although there is a significant variation in the PV contribution within the ten days. Compared to the average for the top ten days, the PV capacity contribution for the individual 10 days varied from the average by a range of -33 percent to +13 percent for the hour ending 6 pm, and by a range of -10 percent to +7 percent for the hour ending 5 pm. The next step in the alternative methodology applied the capacity contribution to the embedded generation capacity cost of \$6.40 less the \$0.41 per kW value of reduced billed kW demand quantities. This produced the same demand credit value of \$2.15 per kW as the proposed methodology for the hour ending 6 pm, and a demand credit value of \$3.02 per kW for the hour ending 5 pm.

Although this alternative methodology has value in affirming the proposed methodology, we believe our proposed methodology is more appropriate. The alternative methodology is highly data intensive, which reduces transparency and increases the difficulty of updating. It also includes a very diverse and limited set of specific current customers that may affect the reliability of its results.

The Department notes that the Company's alternative methodology suffers from the same flaw as its proposed methodology because the billing study did not take into account the solar generation capacity as a percent of customer site load. Consequently, the Department concludes that Xcel's billing study is incomplete.

Xcel allocates its demand-related distribution plant according to the individual customer maximum demands, a common practice. The allocation of demand-related distribution embedded costs should be handled in the same way for customers that have solar as those that do not have solar because the costs any of the customers are imposed are based on their maximum demand, whether the maximum demand occurs during MISO's peak or not.

Cost causation for generation and transmission related costs, however, is based more on whether the demand occurs during the MISO coincident peak. In its alternative methodology, Xcel calculated the average PV capacity contribution of the 24 customers included in the study, during Xcel's top ten system load days. The PV capacity contribution showed the percent by which the solar customers contribute to Xcel's needs at system peak. Xcel's alternative methodology did not take into account the fact that the average customers with solar impose lower costs on Xcel's transmission needs than an average customer without solar because the

customers with solar have lower demand during the MISO coincident peak than the average demand-billed customers. To treat solar customers fairly, the alternative methodology should multiply the capacity contribution of 50% (using MISO's initial accreditation value<sup>22, 23</sup>) by both the embedded generation and transmission capacity costs (\$6.40 plus \$3.47 per kW = \$9.87 per kW) for a demand credit of \$4.94 per kW.<sup>24</sup>

#### *D. POTENTIAL COMMISSION OPTIONS*

Based on the Department's review of the initial February 19, 2019 Comments of MNSEIA, Vote Solar, Sundial Energy, and the Commercial Customer Cohort, the Department concludes that there are three potential paths forward for the Commission:

1. Require Xcel in its next rate case to propose rate design for the Company's commercial customers with behind the meter solar installations. The pilot rate design project should include a coincident peak based generation and transmission demand rate and billing quantities, and a non-coincident based distribution demand rate and billing quantities. Until the pilot project is approved, either:
  - a. approve Xcel's alternative methodology that used a PV capacity contribution from the individual PV customer information in the PV Billed Demand Study as described on pages 7-8 of Xcel's October 19, 2018 filing, except the capacity contribution should be applied to the embedded generation capacity cost of \$6.40 per kW less the \$0.41 per kW value of reduced billed kW demand quantities *plus* the embedded transmission capacity cost of \$3.47 per kW, or
  - b. Maintain Xcel's current PV Demand Credit Rider of \$0.07139 per kWh of peak period solar PV generation, but for the closed rate, A85, extend the expiration date from April 20, 2024 to April 20, 2027.

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<sup>22</sup> Given the small number of solar PV customers in Xcel's study, the high level of annual variation, and limited number of years of data, the Department recommends using MISO's current approach to capacity credit. Xcel's study should be treated as an initial, but very limited observation – MISO's initial assigned capacity value of 50%, falls within the range of numbers observed in Xcel's study.

<sup>23</sup> Xcel Compliance filing, October 18, 2018, page 2, describes MISO's process for establishing the solar capacity accreditation value.

<sup>24</sup> Distribution costs are traditionally allocated using a non-coincident demand factor and thus Xcel's present practice of determining bill determinants using a non-coincident demand does not need to change.

2. Require Xcel to further develop its alternative methodology<sup>25</sup> that used a PV capacity contribution from the individual PV customer information in the PV Billed Demand Study.
3. Require Xcel to develop a buy all/sell all (BASA) arrangement in Docket No. E,G999/CI-16-521 that bases Xcel's payment to commercial customers with solar on Xcel's cost of procuring solar energy on the market or some other per kWh price.

The Department discusses each of these options below.

1. Pilot project for a coincident peak based generation and transmission demand rate and billing quantities, and a non-coincident based distribution demand rate and billing quantities.

Xcel's commercial and industrial demand rates bill customer demand based on the customers' maximum demand, whether the demand occurred during peak times or not. As discussed above, this rate design may lead to customers with solar being allocated an unfair amount of capacity costs. The Department disagrees with Xcel's proposed methodology because it fails to reflect that Xcel's solar demand customers generally decrease Xcel's overall peak,<sup>26</sup> as shown in Xcel's Study.<sup>27</sup> That is, Xcel's rate design causes problems because it fails to reflect costs adequately. Xcel's demand-metered customers with solar have been charged too much because they are billed based on their level of non-coincident peak demand, even though they contribute less to coincident peak demand than non-solar customers do.

In response to Xcel's proposed methodology, the Department's February 19, 2019 Comments recommended that the Commission require the Company to propose a new rate design in its next rate case that includes a coincident-peak based generation and transmission demand rate and billing quantities, and a non-coincident-peak based distribution demand rate and billing quantities. The Department concludes that this rate design would fix the present misallocation of embedded costs.

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<sup>25</sup> See pages 7-8 of Xcel's October 19, 2018 filing

<sup>26</sup> This occurs because ratio of solar customers' non-coincident peak to MISO coincident peak is less than the ratio of non-solar customers' ratio of non-coincident peak to MISO coincident peak, thereby reducing Xcel's system costs.

<sup>27</sup> Xcel Energy Compliance Filing, Solar Effective Load Carrying Capacity (ELCC) Study and PV Billed Demand Study, August 17, 2018, at Attachment B, page 3-4.

In Xcel's March 19, 2019 Reply Comments, the Company stated that a coincident peak based demand approach can have two forms:

- a. The billed demand quantities can be determined after the fact based on customer loads at the time of monthly system peaks defined by a specific hourly system load. Xcel stated that this approach has theoretical merit, but is rarely ever used for electric rate design because it is inherently volatile and unpredictable and thus likely unacceptable to all parties.
- b. A time of use (TOU) rate design can measure customers' non-coincident-peak loads during typical system peak hours, with an on-peak period, for example, of four to six hours duration. Xcel raised several concerns with this approach and stated that transitioning to a narrower TOU-based rate design would at a minimum require a phased-in approach. Xcel concluded that the narrower TOU billing approach would not differentiate PV customer contributions to system peak loads relative to non-coincident peak loads from other customers.<sup>28</sup> In other words, Xcel contends that this second TOU rate design would not help the fact that the peak demand charge for solar customers will often be set on the days that system peaks do not occur and thus capacity charges would not reflect costs caused by customers with solar PV.

As noted by Xcel, the Company has approximately 48,500 demand-metered customers. The Department concludes that Xcel raised a good point--that any demand rate that is more MISO coincident peak focused should be phased in. The Department recommends that the Commission require Xcel to propose for its demand-metered customers with behind the meter solar a pilot project for a new rate design in its next rate case that includes a coincident peak based generation and transmission demand rate and billing quantities, and a non-coincident based distribution demand rate and billing quantities.

As noted above, Xcel's discussion of future need for solar is not the issue that needs to be addressed through Xcel's rate design. The main issue to address is that Xcel bills demand-metered solar customers based on their maximum (non-coincident peak) demand while demand-metered customers with solar capacity are likely contributing less to the peak and being billed too much if they are charged based on non-coincident peaks.

As to Xcel's concern about volatility, it is true that the measurement will change each year - so will the non-coincident peak. Even if the Department's method results in more variance in the kW of demand each year, it would in turn it will be fairer and give solar capacity customers an incentive to ensure that their solar units are functioning well.

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<sup>28</sup> Xcel Reply Comments, page 6.

So, just as Xcel measures each customer's maximum, non-coincident peak, and uses that information for billing purposes for the next year, the Company should be able to measure each customer's demand at the time of the system (MISO) peak each year, and use that information for billing purposes for the next year.

As to Xcel's concern that using a TOU rate design for the energy component of the bills for demand-metered solar customers would not help the fact (discussed above) that the peak demand charge for solar customers will often be set on the days that system peaks do not occur and thus capacity charges would not reflect the lower costs caused by customers with solar PV, this issue may be resolved in the pilot project by eliminating demand charges and building recovery of demand costs into the TOU pricing. Under a TOU design that recovers both energy and demand costs in on-peak and off-peak kWh rates, solar customers that use less power during Xcel's on-peak period would pay less of the higher on-peak rates.

## 2. Buy-All-Sell-All contract

The Department has discussed with parties about Xcel implementing a "buy-all, sell-all" agreement where the Company's demand-metered solar customers would pay the same rates as other demand-metered customers in the same rate case for all the energy and demand used at the facility, including the electricity and demand delivered by Xcel and the amount of electricity and demand produced by the customers' solar panels. At the same time, Xcel would pay the customers a specific rate for every kWh produced at the customer's site. The amount to be paid could be determined in Phase 3 of Docket No. E999/CI-16-521, *In the Matter of Updating Generic Standards for Utility Tariffs for Interconnection and Operation of Distributed Generation Facilities Established under Minn. Stat. §216B.1611*, the Commission could approve the contract approach in this docket, or the contract could be developed in the context of Xcel's next rate case. One potential approach would be set the contract price equal to Xcel's latest cost of solar on a kWh basis. The customers' solar rate would be set for the expected life of the customer's solar facility.

One of the best ways to understand the buy-all, sell-all proposal is to imagine a customer with a qualifying solar array. Xcel would install a meter that measures every kWh consumed at the customer facility and also measures the relevant peak demand. (Currently, the peak demand would be measured as non-coincident peak. In the future, demand may be measured at the MISO coincident peak.) Xcel's customer would pay the energy and demand costs, using the relevant customer class tariffs, for the billing quantities measured at that meter. At the same time, Xcel would place a meter on the customer's solar panel. The customer would be paid the specified solar kWh rate for every kWh produced by the customer's PV panels, whether the solar energy was consumed at the customer site or if it were exported to Xcel's system.

If the rate is set at the market rate, the advantages of the buy-all, sell-all proposal are that it would reimburse customers with PV at a fair rate and for a sufficient amount of time to allow the customer to obtain financing. At the same time, the customers without PV would not be harmed because Xcel would be paying the market rate for solar.

*E. COMPARING THE DEPARTMENT'S RECOMMENDED PILOT PROJECT TO PREVIOUS AVOIDED COST APPROACH*

In the Commission's October 3, 2017 *Order Approving Three Tariffs with Conditions and Requiring Xcel to File a Proposal for its Solar PV Capacity Credit Rider*, the Commission asked Xcel to provide rationales for why its proposal is or is not a better indicator of capacity or demand value than previously derived values.

The Department concludes that the intent of Xcel's billing study and proposal is superior to the avoided cost approach used originally given that MISO will not allow Xcel to use the customer behind the meter generation to meet the Company's resource needs. Xcel's intentions were to rectify a rate design issue. Although the Department believes that a better billing study could be designed and applied to Xcel's embedded generation and transmission costs to calculate an appropriate PV Demand Credit, the Department concludes that the best approach is for Xcel to design a pilot rate that recognizes that allocating embedded generation and transmission costs based on a customer's contribution to MISO's coincident peak will treat solar and non-solar customers fairly.

**V. DEPARTMENT CONCLUSIONS AND RECOMMENDATIONS**

The Department recommends that for Xcel's next rate case, the Commission require Xcel to propose a pilot project for its demand-metered commercial and industrial customers with behind the meter solar installations, a new rate design that includes a coincident peak based generation and transmission demand rate and billing quantities, and a non-coincident based distribution demand rate and billing quantities.

/ar



**CERTIFICATE OF SERVICE**

I, Linda Chavez, hereby certify that I have this day served copies of the following document on the attached list of persons by electronic filing, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

**MINNESOTA DEPARTMENT OF COMMERCE – SUPPLEMENTAL COMMENTS**

Docket Nos. **E002/M-13-315**  
**E999/CI-15-115**

Dated this **16th** day of **August, 2019**.

/s/Linda Chavez

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Gail	Baranko	gail.baranko@xcelenergy.com	Xcel Energy	414 Nicollet Mall 7th Floor Minneapolis, MN 55401	Electronic Service	No	SPL_SL_13-315_Interested Parties
Steve W.	Chriss	Stephen.chriss@walmart.com	Wal-Mart	2001 SE 10th St. Bentonville, AR 72716-5530	Electronic Service	No	SPL_SL_13-315_Interested Parties
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800 St. Paul, MN 55101	Electronic Service	Yes	SPL_SL_13-315_Interested Parties
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Rebecca	Eilers	rebecca.d.eilers@xcelenergy.com	Xcel Energy	414 Nicollet Mall - 401 7th Floor Minneapolis, MN 55401	Electronic Service	No	SPL_SL_13-315_Interested Parties
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	SPL_SL_13-315_Interested Parties
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Linda	Jensen	linda.s.jensen@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota Street  St. Paul, MN 551012134	Electronic Service	Yes	SPL_SL_13-315_Interested Parties
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Michael	Kampmeyer	mkampmeyer@a-e-group.com	AEG Group, LLC	260 Salem Church Road  Sunfish Lake, Minnesota 55118	Electronic Service	No	SPL_SL_13-315_Interested Parties
Jon	Kramer	sundialjon@gmail.com	Sundial Solar	3209 W 76th St  Edina, MN 55435	Electronic Service	No	SPL_SL_13-315_Interested Parties
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E  St. Paul, MN 55106	Electronic Service	No	SPL_SL_13-315_Interested Parties
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	SPL_SL_13-315_Interested Parties
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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City	Clerk	dmaras@ci.albertlea.mn.us	City of Albert Lea	221 E Clark St  Albert Lea, MN 56007	Electronic Service	No	OFF_SL_15-115_Official
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800  St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_15-115_Official
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_15-115_Official
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