414 Nicollet Mall
Minneapolis, MN 55401

May 20, 2021

—Via Electronic Filing—

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: REPLY COMMENTS
UPDATING GENERIC STANDARDS FOR UTILITY TARIFFS FOR INTERCONNECTION AND OPERATION OF DISTRIBUTED GENERATION FACILITIES ESTABLISHED UNDER MINN. STAT. §216B.1611
DOCKET NOS. E999/CI-16-521 & E999/CI-01-1023

Dear Mr. Seuffert:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed Reply Comments in response to the Commission's November 13, 2020 Notice of Comment Period and Comments filed by Parties October 30, 2020 and April 30, 2021.

We have electronically filed this document with the Minnesota Public Utilities Commission, and copies have been served on the parties on the attached service list. Please contact Amber Hedlund at amber.r.hedlund@xcelenergy.com or (612) 337-2268 or me at holly.r.hinman@xcelenergy.com. or (612) 330-5941 if you have any questions concerning this filing.

Sincerely,

/s/

HOLLY HINMAN
REGULATORY MANAGER

Enclosures
c: Service Lists

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
Joseph K. Sullivan	Commissioner
John A. Tuma	Commissioner

IN THE MATTER OF UPDATING THE GENERIC STANDARDS FOR THE INTERCONNECTION AND OPERATION OF DISTRIBUTED GENERATION FACILITIES ESTABLISHED UNDER MINN. STAT. §216B.1611	DOCKET NO. E999/CI-16-521 E999/CI-01-1023 **REPLY COMMENTS**

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits these Reply Comments in response to the Commission's November 13, 2020 Notice of Extended Comment Period and Comments filed by Parties October 30, 2020 and April 30, 2021.

We respond to the comments of the Department of Commerce, MnSEIA/Joint Movants[1], and the Midwest Cogeneration Association/Heat Is Power Association. In these Reply Comments, we address topics including customers' access to rate information, the exclusion of merchant plants from the Commission's order, various legal issues regarding the applicability of statute and prior cases, and specific questions about the guidance provided by Attachment 6.

In our prior October 30, 2020 comments, we identified a few areas where the guidance provided in 2004 is no longer in sync with regulations that post-dated that guidance and we do not reiterate those items here. We believe that those language modifications could be made by the Commission without upsetting the utilities'

[1] The Joint Movants as identified in the October 30, 2020 Initial Comments include MnSEIA, Vote Solar, Fresh Energy, and Environmental Law and Policy Center. The March 23, 2018 Motion (uploaded to the edockets system on March 27, 2018) was submitted by a different group, Minnesota Solar Energy Industries Association & Project, the Environmental Law and Policy Center, the Institute for Local Self Reliance, the Minnesota Center for Environmental Advocacy, Minnesota Brownfields, and Clean Energy Economy Minnesota. For clarity, we refer to the October 30, 2020 Comments from MnSEIA or "the MnSEIA Group".

Distributed Generation (DG) tariffed programs that implement the guidance of Attachment 6.

REPLY COMMENTS

A. Department of Commerce

We appreciate the Department's focus on practical considerations, including the rates available to other, "non-Attachment 6" DG customers. While we acknowledge there are key differences between a Value of Solar (VOS) methodology, for example, and the broader class of generation considered in the Commission's Attachment 6 guidance, we appreciate the interest in making the outcomes of any modifications understandable and practical to administer through utility tariffs.

However, we caution against the characterization of the VOS methodology as an avoided cost methodology. FERC Order 872 is clear that an avoided cost rate applicable to PURPA or QF projects does not include compensation for environmental benefits. The VOS includes compensation for environmental benefits, indeed it is the component of the calculation with the highest economic value. This FERC Order states:

> 123. Finally, although we are sympathetic to the claims of certain QFs that they provide non-energy benefits (such as environmental benefits, waste reduction benefits, and economic development benefits) that are not reflected in avoided cost rates, PURPA section 210(b) prohibits the Commission from requiring QF rates to be set above full avoided costs. Because the Commission already requires states to set QF rates at full avoided costs, it is barred from requiring QF rates set higher than that based on the non-energy benefits that QFs may also provide. However, nothing in PURPA, the PURPA Regulations as they currently exist, or this final rule would prevent states from rewarding QFs for such nonenergy benefits so long as that is done outside of PURPA, such as is now done for renewable energy credits (RECs) to compensate QFs for providing unique environmental or other non-PURPA benefits. We address in the sections below each type of competitive price that could be used as an acceptable energy avoided cost.
>
> *Qualifying Facility Rates and Requirements Implementation Issues Under the Public Utility Regulatory Policies Act of 1978*, Order No. 872, 85 FR 54638 (Sep. 2, 2020), 172 FERC ¶ 61,041 (2020).

The FERC has determined that PURPA QFs need to receive an avoided cost rate, but that a rate that includes compensation for non-energy benefits is outside of PURPA. The VOS rate that is currently applicable to the applications in the CSG program is a rate that includes non-energy benefits and therefore is not an avoided cost rate.

B. MnSEIA Group

The October 30 comments of the MnSEIA Group introduce the following topics: 1) the transparency of rate information; 2) the pending appeal addressing their stated need to obtain the avoided cost information in the annual PURPA filings in order to determine the avoided costs of the utilities; 3) various points regarding Minn. Stat. § 216B.164 and Minn. Stat. § 216B.1611[2], arguing that Minn. Stat. § 216B.164 has been "invalidated" by PURPA; 4) they further argue that Attachment 6 should be changed so that it would now be applicable to merchant plants and that it should be revised so that it would not limit its application to onsite generation; and 5) discuss avoided cost pricing and the Commission's Red Lake Falls decision (Docket Nos. 16-1021 and 17-464).

The discussion below provides a review on these and other issues raised by MnSEIA. The comments of other parties include some of the same issues, and we have not separately responded to similar comments.

MnSEIA provided as an Appendix to their October 30, 2020 Comments a proposal of a new Attachment 6, though the proposal was not provided with redline markings against the current Attachment 6. Some of the revisions proposed in MnSEIA's new Attachment 6 are briefly annotated but not directly addressed in the body of MnSEIA's comments.

1. Access to Rate Information

In their October 30, 2020 Comments, MnSEIA again raises arguments presented in the March 23, 2018 Motion to Reopen and Amend the DG Tariffs. MnSEIA on page 3 highlights a desire to obtain knowledge of the pricing for the DG Tariff without the need to sign a Non Disclosure Agreement. As we explained in our June 17, 2019 filing in this docket at pages 2-3, the One Year Power Purchase Agreement energy rate that is part of our DG Tariffs at tariff sheet 10-76 is calculated and updated annually in Schedule G of our annual cogeneration and Small Power Production filing – the most recently filing is in Docket No. 21-09. We provide an excerpt below from that filing showing the rates, and the A52 rate that has peak and off-peak pricing with

[2] Midwest Cogeneration Association raises a similar argument about Minn. Stat. § 216B.1611.

monthly grouping would align with the rates applicable for tariff sheet 10-76. These are publicly filed with no need for a NDA. The "proposed rates" in that table are now our current tariffed rates.

Schedule G: Summary of 2021 Proposed Rates

Tariff Sheet	Tariff Name	Rate Code	Description of Rate	Months	Current Rate	Proposed Rate	Filing Schedule
9-2	Excess Generation-Average Retail Utility Energy Service	A50	Pmt for Excess Energy with Retail Non-Demand Metered Service	Oct-May	0.11402	0.11705	C
				Jun-Sep	0.11964	0.13098	
			Pmt for Excess Energy with Retail Demand Metered Service	Oct-May	0.06302	0.06601	
				Jun-Sep	0.06527	0.07048	
9-3	Sale to Company After Customer Self-Use	A51	Energy Payment per kWh	Oct-May	0.02310	0.02010	A
9-4	Monthly Net Metering	A53					
9-3	Sale to Company After Customer Self-Use	A51		Jun-Sep	0.02237	0.02029	
9-4	Monthly Net Metering	A53					
9-4.2	Annual Net Metering (kWh Banking Option)	A55		Annual	0.02283	0.02017	G
9-3	Sale to Company After Customer Self-Use	A52	On Peak Energy Payment per kWh	Oct-May	0.02693	0.02431	A
9-4	Monthly Net Metering	A54					
9-3	Sale to Company After Customer Self-Use	A52		Jun-Sep	0.02926	0.02792	
9-4	Monthly Net Metering	A54					
9-4.2	Annual Net Metering (kWh Banking Option)	A56		Annual	0.02778	0.02562	G
9-3	Sale to Company After Customer Self-Use	A52	Off Peak Energy Payment per kWh	Oct-May	0.02107	0.01787	A
9-4	Monthly Net Metering	A54					
9-3	Sale to Company After Customer Self-Use	A52		Jun-Sep	0.01864	0.01616	
9-4	Monthly Net Metering	A54					
9-4.2	Annual Net Metering (kWh Banking Option)	A56		Annual	0.02018	0.01725	G
9-3	Sale to Company After Customer Self-Use	A51	Capacity Payment for Firm Power per kWh	Oct-May	0.00214	0.00208	G
9-4	Monthly Net Metering	A53					
9-4.2	Annual Net Metering (kWh Banking Option)	A55					
9-3	Sale to Company After Customer Self-Use	A51		Jun-Sep	0.01410	0.01446	G
9-4	Monthly Net Metering	A53					
9-4.2	Annual Net Metering (kWh Banking Option)	A55					
9-3	Sale to Company After Customer Self-Use	A52	Capacity Payment for Firm Power per On Peak kWh	Oct-May	0.00617	0.00600	G
9-4	Monthly Net Metering	A54					
9-4.2	Annual Net Metering (kWh Banking Option)	A56					
9-3	Sale to Company After Customer Self-Use	A52		Jun-Sep	0.04040	0.04144	G
9-4	Monthly Net Metering	A54					
9-4.2	Annual Net Metering (kWh Banking Option)	A56					

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MnSEIA issued the Company information requests (IRs) asking where these rates can be found. We responded on August 23, 2019, listing the rates and explaining where they can be found in our public tariffs. These IR responses are attached in Attachment "A" to these comments[3]. MnSEIA's October 30 comments then argue that the applicable rates are not public and that Trade Secret protection has been applied and that this is a topic on appeal. This is incorrect, as indicated in our June 17, 2019 compliance filing and in our response of August 23, 2019 to IRs on this issue.

2. Appeal Dismissed

We note that the appeal referenced by MnSEIA challenging their desire to see non-public information has now been decided. In an order dated April 5, 2021 in Minnesota Court of Appeals Docket No. A20-0827, the appeal was dismissed.

3. Neither Minn. Stat. §216B.1611 nor 216B.164 has been invalidated

Minn. Stat. § 216B.164 largely focuses on the net-metered DER facilities of less than 1 MW capacity and the type of compensation for the net energy supplied to the utility.

[3] Attachment A contains our responses to MnSEIA IRs 1 through 10. Our response to MnSEIA IR-1 is applicable to this issue.

It also requires that qualifying facilities (QFs) above 1 MW capacity (up to the applicable QF cap) be paid the utility's full avoided capacity and energy costs. Instead of Minn. Stat. § 216B.164 being "invalidated" by PURPA, as argued by MnSEIA, this statute implemented PURPA. The Minnesota Court of Appeals has stated "*PURPA was codified in Minnesota under Minn. Stat. § 216B.164, which enables the PUC to regulate the energy industry and implement PURPA's provisions.*" *In the Matter of the Petition of Northern States Power for Approval of Its Proposed Community Solar Garden Program*, (Minn. Ct. Appeals) No. A15-1831, 2016 WL 3043122, May 31, 2016.

Minn. Stat. § 216B.1611, on the other hand, directs the Commission to establish statewide interconnection standards. The statute discusses its purpose as including to "*... establish the terms and conditions that govern the interconnection and parallel operation of on-site distributed generation*"(Subd. 1(1)); and, "*establish technical requirements that will promote the safe and reliable parallel operation of on-site distributed generation resources*" (Subd. 1(3)). The statute empowers the Commission to establish by order "*... generic standards for utility tariffs for the interconnection and parallel operation of distributed generation fueled by natural gas or a renewable fuel, or another similarly clean fuel or combination of fuels of no more than ten megawatts of interconnected capacity*" (Subd 2(a)). This statute does not address the Commission setting any compensation rate applicable to DERs.

We note that Attachment 6 addresses certain non-energy benefits as part of the overall compensation to on-site DER, such as emission credits and RECs. These are outside of the FERC defined avoided energy and capacity costs. However, as explained in our October 30, 2020, comments, under pars. 123 and 176 of FERC Order 872, states are allowed to reward QFs for such non-energy benefits so long as it is done outside of PURPA and not called an "avoided cost" rate. In this way, Attachment 6 could be consistent with PURPA and with Minn. Stat. § 216B.164 as it can address non-energy benefits as part of the compensation but that these rates would need to be established outside of PURPA and would not be considered to be "avoided cost" rates.

4. Merchant Plants and On-site Generation

MnSEIA in their comments asked that the scope of Attachment 6 be expanded to apply to merchant plants, something that was rejected by the Commission in the September 2004 order. The September 2004 order stated that the Department and Rate Regulated Utilities believed that the guidelines should not apply to "merchant plants" – that is, generators developed for the purpose of selling electricity at wholesale, without the expectation that the generators would also consume any of the electricity. This is because the merchant plants were already adequately regulated by FERC. (September 2004 Order, p. 7). The Commission agreed with this, and stated

that "*The Department correctly acknowledges that this docket does not preclude any party from developing a merchant plant; such plants, however, are beyond the scope of this docket.*" (September 2004 Order, p. 9).

Consistent with merchant plants not being subject to Attachment 6, the September 2004 order limited the application of Attachment 6 to a "*... generation facility serving the customer receiving retail electric service at the same site.*" (Order, p. 7).[4] This limitation also aligns with Minn. Stat. § 216B.1611, as the purpose of this statute is only applicable to *"on-site distributed generation*" (Minn. Stat. § 216B.1611, Subds. 1(1) and 1(3)). As a result, compensation rates for merchant plants are not addressed in Attachment 6, but instead are governed by PURPA and Minn. Stat. § 216B.164.

In practice, we generally receive requests for a PPA from merchant plants over 1 MW who are QFs seeking a longer-term contract. We follow the requirement for PURPA avoided cost pricing and the requirements under Minn. Stat. § 216B.164.

Here are some examples from 2020 on the compensation rates set in PPAs for distributed generation facilities with capacities between 4.8 and 10 MW as filed with the Commission.

- Docket No. E002/M-20-39 (*In the Matter of the Petition of Northern States Power, doing business as Xcel Energy for Approval of a Power Purchase Agreement with the University of Minnesota for Its South East Plant in Minneapolis*), the Commission approved a PPA at a locational marginal pricing (LMP) based rate with the University of Minnesota for excess energy up to 10 MW from the 16.4 MW distributed generation cogeneration South East Plant. The PPA has an initial term of 5 years, but can be extended by the parties.

- Docket No. E002/M-20-418 (*Notification of PPA with WM Renewable Energy, LLC*), the Company had entered into a PPA with a LMP-based rate for a 4.8 MW distributed generation landfill gas-to energy plant. The PPA has an initial term of 2 years. WM Renewable Energy will retain the renewable energy credits (RECs).

[4] In the Appendix filed by MnSEIA on October 30, 2020 in this docket, MnSEIA appears to propose striking the phrase "serving the customer receiving electric retail service at the same site" from the Qualifications section 2(a). MnSEIA also appears to propose at 2(c) adding the sentence "The DG facility determines how much energy and capacity it will commit for sale." In addition to contravening the guidance of Attachment 6, the Company is concerned this conflicts with other portions of the tariffed governance of DG facilities, including where applicable, the 120% rule and buy-all, sell-all provisions.

- Docket No. E002/M-20-260 (*Notification of PPA with Rapidan Hydroelectric)*, the Company had entered into a PPA with a LMP-based rate for 5 MW distributed generation hydro facility. The PPA has a five year term. RECs will go to the Company.

- Docket No. E002/M-20-614 (*In the Matter of Approval of a Power Purchase Agreement (PPA) between Xcel Electric and the City of St. Cloud for 8.5 MW Hydroelectric Generation*), the Commission approved the PPA for a 8.5 MW hydro facility at avoided cost rates that were based on our publicly available tariffed avoided cost rates, as adjusted to reflect the long-term nature of the PPA, the operating characteristics of the facility, the timing of our capacity need, and other factors. RECs will go to the Company.

We note that FERC Order 872 allows utilities to file a petition with FERC to find that there is a rebuttable presumption that small power production facilities with a capacity greater than 5 MW have access to the MISO market and that the utility should be relieved of its obligation to purchase from these QFs. The Company has filed such a petition with FERC and it is pending in FERC Docket QM21-16.

One aspect of Minn. Stat. § 216B.164, Subd. 4, which has drawn particular attention in MnSEIA's comments is the provision that requires the avoided cost for renewable PPAs to be set at the least cost renewable resource. This provision has been the subject of evolving understanding. Under PURPA, there is no single, formally established method of calculating the avoided cost of energy and capacity. There are many different sources that could potentially be used as the basis for avoided energy and capacity costs, depending on the contract negotiated. For example, as shown above, some QF contracts use LMP as the basis of avoided costs. Moreover, under Minn. Stat. §216B.164, subd. 4(b), the avoided costs can be as negotiated by the parties, as set by the Commission, or as determined through a competitive bidding approved by the Commission.

5. Red Lake Falls and Avoided Cost Pricing

In addressing this statute, the Commission set avoided cost rates rate for a 4.6 MW hybrid wind/solar generation project, via its May 31, 2018 order in *In the Matter of a Complaint by Red Lake Falls Community Hybrid LLC Regarding Potential Purchase Power Agreement Terms and Pricing with Otter Tail Company*, in Docket Nos. E017/CG-16-1021 and E017/CG-17-464. There, citing Minn. Stat. 216B.164, sudb. 4(b), the Commission set the avoided costs equal to an estimate of avoided costs of about $34.11/MWh based on Otter Tail Power's (OTP's) Small Power Production Tariff.

The April 26, 2018 hearing recording in that matter showed that this $34.11/MWh price reflected a blended rate from the OTP 2016 Integrated Resource Plan, applying $30/MWh for wind and $80/MWh for solar to derive the weighted average cost applicable to the type of generation at issue there.[5] The Commission motion to adopt the $34.11/MWh rate relied on OTP's statements during the hearing that this rate is consistent with PURPA and that it would adequately and accurately reflect avoided costs. Although the exact pricing of OTP's lowest renewable PPA rate was not in the public record, the record appears to reflect a price in the low $20s/MWh range.[6]

The *Red Lake Falls* Order states that Minnesota implemented PURPA by enacting Minn. Stat. § 216B.164, which states in part that: "This section shall at all times be construed in accordance with its intent to give the maximum possible encouragement to cogeneration and small power production *consistent with protection of the ratepayers and the public*," (emphasis in the Commission Order). The Order then noted that Minn. Stat. 216B.164, sudb. 4(b), specifically states: "*[t]he qualifying facility shall be paid the utility's full avoided capacity and energy costs as negotiated by the parties, as set by the Commission, or as determined through competitive bidding approved by the Commission.*"

The order states that under this statute the Commission has the discretion to set the avoided cost of energy and capacity. The Order states that there is no need to determine if there is any conflict between PURPA and state law, as both were written to encourage renewables at a time when renewable prices were high and could not effectively compete in the marketplace. The Commission found that its determination results in just and reasonable rates that are consistent with the protections of customers and public.

During the April 26, 2018 deliberations in that matter, with the introduction of the motion eventually approved by the Commission, beginning at about 3:20:00, the discussion of the Commissioners showed their alignment that the pricing being set by the Commission was based on the project being a hybrid of solar and wind and that it was not just a wind project. The specific project size and specific type of technology were important for the Commission in determining the appropriate pricing.

The Company proposed pricing in the St. Cloud Hydro PPA consistent with the principles adopted by the Commission in the *Red Lake Falls* Order applying Minn. Stat. § 216B.164, subd 4(b) and Minn. Rule Ch. 7835. These are:

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[5] *See* Hearing recording of the Commission's April 26, 2018 Agenda Meeting, beginning at approximately 2:30 and again at approximately 3:18. Recording available at: http://minnesotapuc.granicus.com/MediaPlayer.php?view_id=2&clip_id=738

[6] See Otter Tail Opening Brief of October 6, 2017, at 30; and, Red Lake Falls Brief of October 6, 2017, at 4.

- The PPA pricing of avoided costs was negotiated by the parties, consistent with Minn. Stat. 216B.164, sudb. 4(b).
- Under 18 CFR § 292.304(c)(3), the standard rates for purchases "... may differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the differing technologies."
- Since there was no recent competitively bid hydro PPA, there was no least cost hydro PPA available for comparison, and the PPA pricing instead was based on Xcel Energy's avoided costs rates that were based on our publicly available tariffed avoided cost rates, as adjusted to reflect the long-term nature of the PPA, the operating characteristics of the facility, the timing of our capacity need, and other factors. RECs will go to the Company.
- The PPA pricing results in just and reasonable rates that protect the ratepayers and public, and
- The PPA pricing is consistent with PURPA that adequately and accurately reflects avoided costs.

Consistent with this, for wind and solar resources we have recent competitively bid PPAs, so for wind and solar resources we have a resource specific least cost PPA to draw on for comparison that would align with Minn. Stat. § 216B.164, Subd 4 that requires renewable avoided costs to be set at the least cost renewable resource.

In our October 30 comments, we noted that it is more appropriate to value renewables based on the lowest cost, recently procured wind and/or solar resources procured via a competitive RFP. As renewables, and particularly wind, can be priced below our average system cost with the availability of tax credits, resources procured via RFP will yield the best price signal available in the market. The RFP could be consistent with the FERC regulations and at the same time better align with state statute that requires renewable avoided capacity and energy costs be set at the least cost renewable energy facility.

We note that FERC Order 872 encourages avoided cost pricing that reflects market rates, including variable energy rates such as locational marginal prices (LMPs) that are established at the time of delivery. FERC also requires that capacity rates be fixed for the duration of the contract if the Qualifying Facility can help address a capacity need, but also requires that the developer demonstrate that it has taken meaningful steps to move the project forward in order to demonstrate that it is entitled to a PPA. Other avoided cost pricing mechanisms are described at 18 CFR § 292.304. Until the Commission provides more refined direction, the Company is supportive if working through available options in PPA negotiations with the goal of ensuring that retail customers are "indifferent" as to whether their power is sourced from the Company or a Qualifying Facility.

6. Other Topics

MnSEIA raises other arguments, some of which were previously addressed by parties in this proceeding. They suggest that either the guidance of Attachment 6 be revised or that the utility implementation of tariffs be revised in the following ways.

a) Incorporate system-wide line-loss rates[7];

MnSEIA wishes to avoid the expense of a line loss study for DG customers on a per project basis by instead applying a utilities' measurement of a system-wide line-loss. As noted in our July 6, 2020 response to MnSEIA IR 5,

> "The Company is not aware of requests for resource specific line loss studies. As stated in the Company's tariff, the line loss study would be specific to the applicable generating resource and interconnection with scope, methods, and cost of the study determined upon evaluation of the request. Application of project specific line loss credit is contingent upon this same project being deemed eligible to receive capacity payments […]"

Absent the performance of a specific line loss study on a project specific basis, the Company's system-wide line loss values are publicly available in the annual QF filing – Schedule G, Page 1. Docket No. 21-09 contains the following information in Schedule G:

Loss Factors	Summer On-Peak	Summer Off-Peak	Average Summer	Winter On-Peak	Winter Off-Peak	Average Winter	Annual Average
Overall	0.9232	0.9364	0.9318	0.9225	0.9334	0.9296	0.9303
50% of Overall	0.9616	0.9682	0.9659	0.9612	0.9667	0.9648	0.9652

b) Calculate a capacity credit for DG consistent with the Integrated Resource Planning;

Regarding capacity costs, MnSEIA argues that a 15-year period should apply rather than the prescribed 5-year period and they argue that by not offering a 15 year period in contravention of the Attachment 6 guidance, that utilities are engaging in discriminatory behavior and violating legislative intent. This question was directly addressed in the Commission's 2004 order, at p. 15, where it stated: "The

[7] Midwest Cogeneration Association similarly argues that the system-wide approach benefits DG customers by avoiding the costs of a study.

Commission concludes that the value that ratepayers receive from having reserve capacity 15 years before any anticipated need is too slight to warrant compensation."

Further, MnSEIA argues the 15 year period is necessary for consistency with the integrated resource planning process. We note that the integrated resource plan has a 5-year action planning period required by state rule. MN State Rule 7843.0400 Subp 3C states, "The supporting information must include an action plan, a description of the activities the utility intends to undertake to develop or obtain noncurrent resources identified in its proposed plan. The action plan must cover a five-year period beginning with the filing date. The action plan must include a schedule of key activities, including construction and regulatory filings."

c) Employ contract lengths appropriate to the deployed technology;[8]

MnSEIA argues that "fairness" requires they receive contracts with utilities to purchase their output for a fixed rate for an unspecified period of time (a long-term contract option).[9] As the Company responded to MnSEIA in IR 10, the Company's DG tariff are in books 9 and 10 of its tariffs. There are a variety of term lengths in the tariffed contracts in these tariff books. Predominantly, most net metered customers (with under 1 MW DER nameplate capacity) have available to them the Uniform Statewide Contract found at tariff sheets 9-10 through 9-12 (and at Minn. R. 7835.9910), that has no set contract term length and which also resets on an annual basis the energy payment and capacity rates applicable to the DER.

We noted above FERC Order 872 and our approach on this, and this includes having longer term PPAs with correspondingly appropriate avoided cost pricing.

d) Provide for diversity and reliability credits

This issue is described at pages 24-25 of the September 28, 2004 Order. As explained there, the theory of a diversity credit that DG advocates argued should apply and be paid to the small generator would be the amount of the benefit the utility accrues

[8] Midwest Cogeneration Association similarly argues that avoiding negotiated contracts benefits DG customers by avoiding the costs of negotiation and suggests contracts be open ended for the life of the generator.

[9] In the Appendix filed on October 30, 2020 in this docket, MnSEIA appears to propose modifications to existing language and/or wholly new language in sections 2(c) , 6(a)(iii),(iv), and 7. While there is limited or no support presented for these proposals, it appears to seek a levelized payment (which would be higher than actual in earlier years), with a "planning" escalation rate, but without a commitment for providing firm delivery for resource adequacy purposes. This appears to be a significant departure from compensation for the actual value of the capacity and energy provided to the system at the time of delivery and the Company opposes this proposal.

from reducing its reserve capacity requirements due to having smaller generators on its system. A diversity credit is not applied to DG tariffs as these resources are not used by MISO to establish the planning reserve margin requirement. However, a reserve margin capacity credit is applied in the annual capacity calculation of the DG tariffs A51-A56.[10]

Attachment 6 addresses a Diversity Credit by stating at page 5: "No additional diversity credits for energy and capacity should be given to DG customers who contract for standby service." For PV systems, the Company now has a PV Demand Credit Rider that provides greater value to on-site generation and we do not see a need to enhance that value with further credits or payments.

e) Provide distribution credits based on short- and long-term avoided costs

The methodology that MnSEIA suggests for applying distribution credits is UMN Professor Gabe Chan's proposed approach to the avoided distribution cost component of the VOS. The approach, which includes estimating costs, "de-averaging" values, and applying a true up, was not adopted by the Commission[11] and the Company does not see a fit here.

f) Provide different values based on technology specific time of generation and compensate renewable facilities with market-rate REC prices.

We have addressed these issues above. The Commission has authorized technology specific avoided costs pricing. We understand that for wind we can use recent least cost wind resource to determine avoided costs, and for solar we should use recent least cost solar resource. We also note above the recent FERC order further discussing parameters around avoided cost pricing, and stating that RECs are not part of the avoided cost pricing.

C. Midwest Cogeneration Association

The Midwest Cogeneration Association (MCA) and Heat is Power Association raised a series of arguments generally aimed at establishing compensation guidance

[10] The Company discusses this further in its July 6, 2020 response to MnSEIA IR 6. This is part of Attachment A to this filing which includes our responses to MnSEIA IRs 1-10.
[11] March 9, 2021, ORDER APPROVING XCEL'S 2021 VALUE-OF-SOLAR RATE, Docket No. E002/-13-867, In the Matter of the Petition of Northern States Power Company, dba Xcel Energy, for Approval of its Proposed Community Solar Garden Program.

applicable to combined heat and power (CHP) customers. MCA echoes several points raised by MnSEIA that the Company has addressed above.

1. New Valuation Model

MCA argues that within the Integrated Resource Plan, the Company should issue Requests for Proposals (RFPs) with a "statement of the rates" that "should consider not only avoided cost rates for sales to the grid, but also credits for the reliability, resiliency, emission reductions, line loss reductions, and overall energy and capacity cost savings to the utility and its customers that are produced by customers' who install at their own expense DG self-generation"[12] such as CHP customers. MCA further suggests a working group be established to make recommendations on "emissions reduction credits" ostensibly applicable to these projects.

The Company understands the creation of a new "Value of CHP" methodology to be beyond the scope of this proceeding. To illustrate how such a process is beyond the scope, we address the emissions reduction credit concept raised by MCA. Xcel Energy's Upper Midwest system had an annual average CO_2 intensity of 637 lbs/MWh as of 2020. A typical CHP system using a gas combustion turbine would likely operate at close to double that emission rate -- 1,200 lbs/MWh or more is typical of today's most efficient simple-cycle gas turbines. So, by exiting our system and self-generating, the customer's choice to invest in a CHP system is likely to increase, not decrease, CO_2 emissions from electricity production. Moreover, this differential would increase over time: under our most recently filed resource plan (filed June 30, 2020), our system-wide CO_2 intensity is projected to decline to 260 lbs/MWh by 2030, while a CHP system installed today would continue to emit at a relatively constant rate of around 1,200 lbs/MWh. This means by 2030, the CHP system would be emitting significantly more CO_2 per MWh generated than had the customer remained on the Xcel Energy system.

2. Terms of Standby Service

MCA also suggests revisions to the terms of Standby Service in its Initial Comments. Once again, we believe fundamental restructuring of the terms of service for the recently reformed Standby Service tariffs is out of scope in the current proceeding. MCA's comments are also inconsistent with fundamental ratemaking principles.

As noted in MCA comments section 5.A., our standby rates are not based on avoided costs. That is appropriate, as the cost basis for standby rates must be consistent with

[12] October 30, 2020 Comments of Midwest Cogeneration Association at page 2.

the base rates connected to the standby rider. Standby service provides for cost recovery from customers for their use of the utility system when their generation is fully or partially down and for their ability to use it (distribution costs).

Avoided cost implies the opposite: utility payment for the purchase of their power. If a QF customer of a certain size wants to sell their power to the utility, they have the right to pursue a purchased power agreement.

The discussion about the low outage rates of cogeneration is also misplaced as part of the current proceeding. Standby rider design precisely recognizes actual differences in the availability of a customer's generation, and the standby charges vary with that availability. That standby design feature was a key element that was debated and resolved in the standby proceeding.

Cogeneration systems are now appropriately compensated through reduced utility tariff charges for their capacity and energy contributions.

Standby service also recognizes the diversity of forced (or unforced) outages of customer generation. Standby has no incremental charge to customers for their outages outside the daily six hour peak period. Even within the peak period, one outage does not produce a significant demand charge, as opposed to the 15-minute peak demand basis used for standard service billed demand quantities. Instead, standby service only provides for a peak energy surcharge, with the total of those surcharges combined with the reservation demand charge limited to the firm demand charge when there is a full customer generation outage for the entire month.

DG installations are optional for customers, and that decision making should (as it is with standby service) be based on price signals that are consistent with our standard embedded cost based rates.

If a customer has generation for partial export to the grid, that means the customer still uses some power for their own energy requirements, and that energy will impose a utility backup requirement that should be compensated through standby service. If a customer has generation entirely for export to the grid, then standby service is not a requirement and the customer can pursue a purchase power agreement.

MCA's discussion seems to indicate that customers should be able to buy power from the grid at retail rates, but inconsistently be able to arbitrage by selling power to the grid at higher avoided (or incremental) cost based prices. The Company is not supportive of revising the terms of standy service as MCA suggests for these reasons.

CONCLUSION

We appreciate the opportunity to provide these Reply Comments.

Dated: May 20, 2021

Northern States Power Company

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Xcel Energy Information Request No. 1
Docket No.: E999/CI-16-521
Response To: Minnesota Solar Energy Industries Association & Environmental Law and Policy Center
Requestor: David Shaffer
Date Received: August 12, 2019

Question:
Can you please provide the current energy and capacity rate for distributed generation facilities between 1 MW to 10 MW in size?

Response:
This issue was addressed in our June 17, 2019 filing in Docket No. 16-521 that is available at the following link:
https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={208B6A6B-0000-CB1A-BEB8-843491A185E1}&documentTitle=20196-153663-02

This filing states that "The rates on Sheet 10-76 are calculated and updated annually in Schedule G of the January Cogeneration and Small Power Production filing. The most current filing is in the Docket No. E999/PR-19-9." Please note that the Energy and Capacity rates in Schedule G are publicly provided in the current A52 rate at Tariff sheet 9-3, and the current version of this tariff states in part as follows:

> Where the customer receives time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company (A52)	Oct-May	Jun-Sep
On Peak Energy Payment per kWh	$0.02941	$0.03194
Off Peak Energy Payment per kWh	$0.02117	$0.01847
Capacity Payment for Firm Power per On Peak kWh	$0.00602	$0.03900

DETERMINATION OF FIRM POWER

The customer will have supplied firm power if during the billing period an on peak capacity factor of at least 65% was achieved. The calculation of the on peak capacity factor will be as follows: the average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

Our June 17, 2019 filing also stated in part as follows:

> The Company provides some guidance to help set expectations. As a general matter, we believe that the avoided cost for renewable energy on our system would not be higher than recent RFP pricing for renewable projects. This is based on the statute and also because our avoided cost calculated for purposes of entering into a new renewable PPA should not be higher than the actual bid cost for entering into a renewable PPA. NSP issued a wind energy RFP in 2016, and more than 30 responses were below $22/MWh on a Levelized Cost of Energy basis. Accordingly, once a LEO has been established, and compliance with size limits are met, the developer of a renewable QF project should expect pricing below the $22/MWh level. More specific cost detail can be provided once a LEO has been established and other relevant information has been provided.

Preparer: Jim Denniston
Title: Assistant General Counsel
Department: General Counsel
Telephone: 612-215-4656
Date: August 23, 2019

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Xcel Energy Information Request No. 2
Docket No.: E999/CI-16-521
Response To: Minnesota Solar Energy Industries Association & Environmental Law and Policy Center
Requestor: David Shaffer
Date Received: August 12, 2019

Question:
Does Xcel Energy have a tariff with a set rate for renewable distributed generation facilities between 1 MW to 10 MW in size that is based on Attachment 6 and not limited by Minn. Stat. §216B.164, Subd. 4?

Response:
This issue was addressed in our June 17, 2019 filing in Docket No. 16-521 that is available at the following link:
https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={208B6A6B-0000-CB1A-BEB8-843491A185E1}&documentTitle=20196-153663-02

This filing states that "The rates on Sheet 10-76 are calculated and updated annually in Schedule G of the January Cogeneration and Small Power Production filing. The most current filing is in the Docket No. E999/PR-19-9." Please note that the Energy and Capacity rates in Schedule G are publicly provided in the current A52 rate at Tariff sheet 9-3, and the current version of this tariff states in part as follows:

> Where the customer receives time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company (A52)	Oct-May	Jun-Sep
On Peak Energy Payment per kWh	$0.02941	$0.03194
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Capacity Payment for Firm Power per On Peak kWh	$0.00602	$0.03900

DETERMINATION OF FIRM POWER

The customer will have supplied firm power if during the billing period an on peak capacity factor of at least 65% was achieved. The calculation of the on peak capacity factor will be as follows: the average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

Our June 17, 2019 filing also stated in part as follows:

> The Company provides some guidance to help set expectations. As a general matter, we believe that the avoided cost for renewable energy on our system would not be higher than recent RFP pricing for renewable projects. This is based on the statute and also because our avoided cost calculated for purposes of entering into a new renewable PPA should not be higher than the actual bid cost for entering into a renewable PPA. NSP issued a wind energy RFP in 2016, and more than 30 responses were below $22/MWh on a Levelized Cost of Energy basis. Accordingly, once a LEO has been established, and compliance with size limits are met, the developer of a renewable QF project should expect pricing below the $22/MWh level. More specific cost detail can be provided once a LEO has been established and other relevant information has been provided.

Preparer: Jim Denniston
Title: Assistant General Counsel
Department: General Counsel
Telephone: 612-215-4656
Date: August 23, 2019

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Xcel Energy Information Request No. 3
Docket No.: E999/CI-16-521
Response To: Minnesota Solar Energy Industries Association & Environmental Law and Policy Center
Requestor: David Shaffer
Date Received: August 12, 2019

Question:
Are there any publicly available rates for distributed generation facilities between 1 MW to 10 MW?

Response:
This issue was addressed in our June 17, 2019 filing in Docket No. 16-521 that is available at the following link:
https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={208B6A6B-0000-CB1A-BEB8-843491A185E1}&documentTitle=20196-153663-02

This filing states that "The rates on Sheet 10-76 are calculated and updated annually in Schedule G of the January Cogeneration and Small Power Production filing. The most current filing is in the Docket No. E999/PR-19-9." Please note that the Energy and Capacity rates in Schedule G are publicly provided in the current A52 rate at Tariff sheet 9-3, and the current version of this tariff states in part as follows:

> Where the customer receives time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company (A52)	Oct-May	Jun-Sep
On Peak Energy Payment per kWh	$0.02941	$0.03194
Off Peak Energy Payment per kWh	$0.02117	$0.01847
Capacity Payment for Firm Power per On Peak kWh	$0.00602	$0.03900

DETERMINATION OF FIRM POWER

The customer will have supplied firm power if during the billing period an on peak capacity factor of at least 65% was achieved. The calculation of the on peak capacity factor will be as follows: the average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

Our June 17, 2019 filing also stated in part as follows:

> The Company provides some guidance to help set expectations. As a general matter, we believe that the avoided cost for renewable energy on our system would not be higher than recent RFP pricing for renewable projects. This is based on the statute and also because our avoided cost calculated for purposes of entering into a new renewable PPA should not be higher than the actual bid cost for entering into a renewable PPA. NSP issued a wind energy RFP in 2016, and more than 30 responses were below $22/MWh on a Levelized Cost of Energy basis. Accordingly, once a LEO has been established, and compliance with size limits are met, the developer of a renewable QF project should expect pricing below the $22/MWh level. More specific cost detail can be provided once a LEO has been established and other relevant information has been provided.

Preparer: Jim Denniston
Title: Assistant General Counsel
Department: General Counsel
Telephone: 612-215-4656
Date: August 23, 2019

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Xcel Energy Information Request No. 4
Docket No.: E999/CI-16-521
Response To: Minnesota Solar Energy Industries Association & Environmental Law and Policy Center
Requestor: David Shaffer
Date Received: August 12, 2019

Question:
How can MnSEIA & ELPC see the information and rates demarcated as "trade secret" in this proceeding? What, if any nondisclosure documents, must be signed and what criteria must be met to attain a nondisclosure agreement for this docket? Please provide all nondisclosure documents for MnSEIA & ELPC to sign and return to the utility.

Response:
This issue was addressed in our June 17, 2019 filing in Docket No. 16-521 that is available at the following link:
https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={208B6A6B-0000-CB1A-BEB8-843491A185E1}&documentTitle=20196-153663-02

This filing states that "The rates on Sheet 10-76 are calculated and updated annually in Schedule G of the January Cogeneration and Small Power Production filing. The most current filing is in the Docket No. E999/PR-19-9." Please note that the Energy and Capacity rates in Schedule G are publicly provided in the current A52 rate at Tariff sheet 9-3, and the current version of this tariff states in part as follows:

> Where the customer receives time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company (A52)	Oct-May	Jun-Sep
On Peak Energy Payment per kWh	$0.02941	$0.03194
Off Peak Energy Payment per kWh	$0.02117	$0.01847
Capacity Payment for Firm Power per On Peak kWh	$0.00602	$0.03900

DETERMINATION OF FIRM POWER

The customer will have supplied firm power if during the billing period an on peak capacity factor of at least 65% was achieved. The calculation of the on peak capacity factor will be as follows: the average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

Our June 17, 2019 filing also stated in part as follows:

> The Company provides some guidance to help set expectations. As a general matter, we believe that the avoided cost for renewable energy on our system would not be higher than recent RFP pricing for renewable projects. This is based on the statute and also because our avoided cost calculated for purposes of entering into a new renewable PPA should not be higher than the actual bid cost for entering into a renewable PPA. NSP issued a wind energy RFP in 2016, and more than 30 responses were below $22/MWh on a Levelized Cost of Energy basis. Accordingly, once a LEO has been established, and compliance with size limits are met, the developer of a renewable QF project should expect pricing below the $22/MWh level. More specific cost detail can be provided once a LEO has been established and other relevant information has been provided.

Please note that all filings by the Company in this docket have been public filings and are fully accessible without the need for signing a nondisclosure agreement.

Preparer:	Jim Denniston
Title:	Assistant General Counsel
Department:	General Counsel
Telephone:	612-215-4656
Date:	August 23, 2019

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Xcel Energy Information Request No. 5
Docket No.: E999/M-16-521
Response To: Minnesota Solar Energy Industries Association
Requestor: David Schaffer
Date Received: June 22, 2020

Question:
Has any developer of a potential Distributed Generation facility requested a Line Loss study as is outlined in Attachment 6 of the Interconnection Standards? How much does such a study cost? How is that Line Loss study performed?

Response:
As explained in our September 18, 2018 Comments in the current docket, the Commission's September 28, 2004 Order in Docket No. E999/CI-01-1023 states that the provisions in Attachment 6 are "guidelines" (see, for example at page 29 of that order). We noted that this 2004 Order is very clear that specific implementation of the Attachment 6 guidelines is to be through utility tariffs, and that the resulting tariff dockets provide the appropriate forum for evaluating the extent to which the tariffs adequately fulfill the purpose of the guidelines. The Commission's March 19, 2019 order in the current docket, at p. 3, stated that: "Utilities have developed their DG tariffs consistent with Attachment 6 (and the rest of the Interconnection Standards), as required by Minn. Stat. § 216B.1611, subd. 3(1)."

The Line Loss issue addressed in the Attachment 6 guideline is reflected in the Company's tariff at sheet 10-75, which states as follows:

> **LINE LOSS CREDITS**
> If Customer requests the Company to provide a specific line loss study, Customer may be eligible for additional line loss credits if the study supports such credits. The Customer is responsible for the cost of the study, regardless of the study's outcome.

We interpret this IR as asking about this tariff provision and answer accordingly.

The Company is not aware of requests for resource specific line loss studies. As stated in the Company's tariff, the line loss study would be specific to the applicable generating resource and interconnection with scope, methods, and cost of the study determined upon evaluation of the request. Application of project specific line loss

credit is contingent upon this same project being deemed eligible to receive capacity payments as discussed further in our response to MnSEIA IR No. 9.

The Integrated Distribution Plan (Docket No. E002/M-19-666) discusses an accurate method for measuring distribution line losses. The description, found on pages 44-45, is provided below.

> *To measure actual losses on the distribution system, we would need the ability to collect data from locations throughout the distribution system. Specifically, the Company would need the ability to collect energy data at both individual customer premises and from the transformers at each distribution substation. This would allow the Company to evaluate the amount of energy leaving each substation compared to the amount of energy being delivered to the customer. The difference between these two amounts would be used to determine the losses across the distribution system.*
>
> *To obtain data at the customer level, AMI meters along with the FAN communication network would need to be installed throughout the system. To collect substation level data, we would need SCADA technology at each distribution substation. We discuss our SCADA capabilities in Table 14. We currently have full SCADA capabilities at 42 percent of our substations and partial capabilities at 21 percent. Even those distribution substations that currently have SCADA functionality only have it on the low side of the transformer, and similar equipment would need to be installed on the high side of the transformer to collect the data needed to quantify the losses that occur in the substation transformer.*
>
> *In addition to the customer and substation level data, the Company would also need to collect secondary data regarding the transformers and service lines and lengths to perform an accurate line loss analysis. This information would need to be collected manually as it is not currently tracked by the Company in the detail needed for a line loss analysis. Once all of the customer and distribution station level data is available, the Company would need to develop or purchase software that could take the field data, integrate data from the DER on the system, and calculate the line losses.*

In the absence of having the equipment in place to allow us to proceed with the above methodology, we would need to develop a suitable alternative based on the specific details including the location and operating parameters of the proposed project.

Preparer:	Mary Morrison
Title:	Senior Resource Planning
Department:	Resource Planning
Telephone:	612.330.5862
Date:	July 6, 2020

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Xcel Energy Information Request No. 6
Docket No.: E999/M-16-521
Response To: Minnesota Solar Energy Industries Association
Requestor: David Schaffer
Date Received: June 22, 2020

Question:
For customers that are also hosts to Distributed Generation facilities, but are not standby customers, is a diversity credit applied to any tariff paid for generation fed back to the utility's system? If so, how is that credit determined? Has the utility ever provided a DG facility with a distribution credit resulting from the installation of any DG facility?

Response:
As explained in our September 18, 2018 Comments in the current docket, the Commission's September 28, 2004 Order in Docket No. E999/CI-01-1023 states that the provisions in Attachment 6 are "guidelines" (see, for example at page 29 of that order). We noted that this 2004 Order is very clear that specific implementation of the Attachment 6 guidelines is to be through utility tariffs, and that the resulting tariff dockets provide the appropriate forum for evaluating the extent to which the tariffs adequately fulfill the purpose of the guidelines. The Commission's March 19, 2019 order in the current docket, at p. 3, stated that: "Utilities have developed their DG tariffs consistent with Attachment 6 (and the rest of the Interconnection Standards), as required by Minn. Stat. § 216B.1611, subd. 3(1)."

The distribution credit issue addressed in the Attachment 6 guideline is reflected in the Company's tariff at sheet 10-75, which states as follows:

> **DISTRIBUTION FACILITY CREDIT**
> Customer may also be eligible for a Distribution Facility Credit (DFC). Upon request, a list of substation areas or feeders that may be candidates for distribution credits, as determined through the Company's normal distribution planning process, shall be provided to the Customer. The terms and conditions of such credit shall be determined from a case-specific study of avoided distribution costs. Such study shall include review of both avoided distribution lines and avoided distribution transformers.

> The value of the DFC shall be equal to the Company's avoided distribution costs resulting from the installation of the DG facility. The avoided distribution costs are based on Company's annual distribution capacity planning study that identifies capacity needs, any corresponding required upgrades and load growth on area distribution feeders. Upon receiving a DG application, and as part of the case specific study, the Company will perform an initial screen of the DG project to determine if the project is located on a distribution feeder that has potential for a DFC. The DG customer is responsible for the cost of such screening study. If the screening study shows that there exists potential for a DFC, the Company shall, at its own cost, pursue further study to determine the DFC, as part of an annual distribution capacity study. Once established by contract and accepted by Company and customer, DFC shall be fixed over the term of the contract.

We interpret this IR as asking about this tariff provision on the distribution facility credit and answer accordingly. The Company has not provided a DG facility with this type of distribution credit.

On the diversity credit issue, this issue is described at pages 24-25 of the September 28, 2004 Order. As explained there, the theory of a diversity credit that the DG coalition argued should apply and be paid to the small generator would be the amount of the benefit the utility accrues from reducing its reserve capacity requirements due to having smaller generators on its system. A diversity credit is not applied to DG tariffs as these resources are not used by MISO to establish the planning reserve margin requirement. However, a reserve margin capacity credit is applied in the annual capacity calculation of the DG tariffs A51-A56.

For Distribution Generation Facilities (DG) that are customer owned DG such as situations where a retail customer is net metering its DG under our A50-A56 rate codes, or is interconnected to us but is self-using all DG without exporting to us the customer does not receive a direct diversity credit. Under these situations, the customer still owns the capacity of the DG and has not assigned that to NSP. These tariffs include a capacity component in the annual determination of the rate. The capacity is dependent upon the type of retail electric service and firm power supply of the resource. The capacity credit is discussed in the response to Information Request MnSEIA-9, in this docket.

Residential and Small Commercial (non-demand billed) customers with DER under 40kW who net meter and/or export energy to the Company via Rate Code A50 receive credits for demand related cost since demand-related cost are embedded in the Company's retail rates and rate code A50. Rate Codes A51-56 include a separate capacity component, applied as described in the tariffs. Customers with DER that are greater than 40kW may be eligible for the PV Demand Credit. Customers who

receive the PV Demand Credit directly receive compensation for avoided demand related costs.

We do have DG resources that qualify as a capacity resource with MISO. Aurora Distributed Solar projects and Community Solar Gardens are registered and accredited as capacity resources under MISO Module E Tracking Tool (MECT) and in accordance with the requirements of the MISO Business Practice Module for Resource Adequacy. However, this only extends to DG that NSP has the contractual rights to the capacity and if NSP meets the MISO requirements to claim this capacity with MISO.

The MISO requirements are set forth in Section 69A.3.1.e of the MISO Tariff that requires the following to qualify intermittent generation resources as a Capacity Resource in the MISO Module E Tracking Tool (MECT).

Intermittent Generation and Dispatchable Intermittent Resources are resources that are eligible to qualify as a Capacity Resource by a Market Participant provided that the Market Participant: (a) possesses ownership or equivalent contractual rights for the resource; (b) supplies historical performance data for the resource as established in the BPM for Resource Adequacy; and (c) registers the resource with the Transmission Provider in accordance with the BPM for Market Registration (if the resource is located within the MISO Balancing Authority Area metered boundary), or the BPM for Resource Adequacy (if the resource is located outside the MISO Balancing Authority Area metered boundary).

In order for requirement (a) to be met (*that the Market Participant possesses ownership or equivalent contractual rights for the resource*), at a minimum NSP would need to possess ownership or equivalent contractual rights to the capacity, such as is the case under the PPAs we have with Aurora and the contracts we have with Community Solar Gardens. Where there is a customer-owned DG facility where NSP does not have ownership or contractual rights for the capacity NSP ineligible to claim accredited capacity with MISO.

In order for requirement (b) to be met (*that the Market Participant supplies historical performance data for the resource as established in the BPM for Resource Adequacy*) at a minimum there would need to be a production meter installed and NSP would need access to the 15-minute interval data from the production meter. In addition to the above which explains how NSP as the Market Participant can register and claim the capacity, the customer can also directly be a Market Participant if it meets the MISO requirements set forth above. However, if it does so, then NSP would need to have visibility into this arrangement in order to avoid doubling counting the accredited capacity and the reduction in load.

Preparer:	Tom McDonough/ Mary Morrison/ Nick Paluck
Title:	Manager – Transmission Access/ Sr. Resource Plan Analyst/ Rate Consultant
Department:	Market Operations/ Resource Planning/ Regulatory Affairs
Telephone:	612.337.2258/ 612.330.5862/ 612.330.2905
Date:	July 6, 2020

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Xcel Energy		Information Request No. 7
Docket No.:	E999/M-16-521	
Response To:	Minnesota Solar Energy Industries Association	
Requestor:	David Schaffer	
Date Received:	June 22, 2020	

Question:
Has the utility ever provided a list of substations or feeders that could be likely candidates for distribution credits through the utility's normal distribution planning process as is required under Attachment 6?

Response:
As explained in our September 18, 2018 Comments in the current docket, the Commission's September 28, 2004 Order in Docket No. E999/CI-01-1023 states that the provisions in Attachment 6 are "guidelines" (see, for example at page 29 of that order). We noted that this 2004 Order is very clear that specific implementation of the Attachment 6 guidelines is to be through utility tariffs, and that the resulting tariff dockets provide the appropriate forum for evaluating the extent to which the tariffs adequately fulfill the purpose of the guidelines. The Commission's March 19, 2019 order in the current docket, at p. 3, stated that: "Utilities have developed their DG tariffs consistent with Attachment 6 (and the rest of the Interconnection Standards), as required by Minn. Stat. § 216B.1611, subd. 3(1)."

The distribution credit issue addressed in the Attachment 6 guideline is reflected in the Company's tariff at sheet 10-75, which states as follows:

> **DISTRIBUTION FACILITY CREDIT**
> Customer may also be eligible for a Distribution Facility Credit (DFC). Upon request, a list of substation areas or feeders that may be candidates for distribution credits, as determined through the Company's normal distribution planning process, shall be provided to the Customer. The terms and conditions of such credit shall be determined from a case-specific study of avoided distribution costs. Such study shall include review of both avoided distribution lines and avoided distribution transformers.
>
> The value of the DFC shall be equal to the Company's avoided distribution costs resulting from the installation of the DG facility. The avoided distribution costs are based on Company's annual distribution capacity planning study that identifies capacity needs, any corresponding required upgrades and load growth on area

> distribution feeders. Upon receiving a DG application, and as part of the case specific study, the Company will perform an initial screen of the DG project to determine if the project is located on a distribution feeder that has potential for a DFC. The DG customer is responsible for the cost of such screening study. If the screening study shows that there exists potential for a DFC, the Company shall, at its own cost, pursue further study to determine the DFC, as part of an annual distribution capacity study. Once established by contract and accepted by Company and customer, DFC shall be fixed over the term of the contract.

We interpret this IR as asking about this tariff provision on the distribution facility credit and answer accordingly.

On an annual basis a list is created by our Distribution System Planning Department that contains feeders and substation transformers that may be eligible for a Distribution Facilities Credit. This list is a result of the annual Capacity Planning Process and has been available "upon request".

The Company has no record of prior requests to see the list. Our most recent Integrated Distribution Plan in MPUC Docket No. 19-666 contains publicly available information on all projects in our five-year budget and the associated feeders impacted by those projects.

Preparer:	Chris Punt
Title:	Manager
Department:	DER Integration
Telephone:	651.229.2549
Date:	July 6, 2020

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Xcel Energy		Information Request No. 8
Docket No.:	E999/M-16-521	
Response To:	Minnesota Solar Energy Industries Association	
Requestor:	David Schaffer	
Date Received:	June 22, 2020	

Question:
Has the utility ever undertaken an initial screening study to determine whether a proposed Distributed Generation facility may be eligible to receive distribution credits as is outlined in Attachment 6 of the Interconnection Standards? In the event that a distribution credit was warranted, did the utility, at its own cost, pursue further study to determine the distribution credit as part of its annual distribution capacity study? Regardless of whether an initial screening study was undertaken, how does the utility perform such a study?

Response:
As explained in our September 18, 2018 Comments in the current docket, the Commission's September 28, 2004 Order in Docket No. E999/CI-01-1023 states that the provisions in Attachment 6 are "guidelines" (see, for example at page 29 of that order). We noted that this 2004 Order is very clear that specific implementation of the Attachment 6 guidelines is to be through utility tariffs, and that the resulting tariff dockets provide the appropriate forum for evaluating the extent to which the tariffs adequately fulfill the purpose of the guidelines. The Commission's March 19, 2019 order in the current docket, at p. 3, stated that: "Utilities have developed their DG tariffs consistent with Attachment 6 (and the rest of the Interconnection Standards), as required by Minn. Stat. § 216B.1611, subd. 3(1)."

The distribution credit issue addressed in the Attachment 6 guideline is reflected in the Company's tariff at sheet 10-75, which states as follows:

> **DISTRIBUTION FACILITY CREDIT**
> Customer may also be eligible for a Distribution Facility Credit (DFC). Upon request, a list of substation areas or feeders that may be candidates for distribution credits, as determined through the Company's normal distribution planning process, shall be provided to the Customer. The terms and conditions of such credit shall be determined from a case-specific study of avoided distribution costs. Such study shall include review of both avoided distribution lines and avoided distribution transformers.

> The value of the DFC shall be equal to the Company's avoided distribution costs resulting from the installation of the DG facility. The avoided distribution costs are based on Company's annual distribution capacity planning study that identifies capacity needs, any corresponding required upgrades and load growth on area distribution feeders. Upon receiving a DG application, and as part of the case specific study, the Company will perform an initial screen of the DG project to determine if the project is located on a distribution feeder that has potential for a DFC. The DG customer is responsible for the cost of such screening study. If the screening study shows that there exists potential for a DFC, the Company shall, at its own cost, pursue further study to determine the DFC, as part of an annual distribution capacity study. Once established by contract and accepted by Company and customer, DFC shall be fixed over the term of the contract.

We interpret this IR as asking about this tariff provision on the distribution facility credit and answer accordingly.

No customer has ever elected to fund a screening study and therefore the Company has not undertaken an initial screening study to determine whether a proposed Distributed Generation facility may be eligible to receive distribution credits as is outlined in this tariff provision.

If Xcel Energy were to perform a case specific screening study to determine the distribution credit it would likely include the following steps:

1. Determine if the DG Facility is on a feeder or substation transformer that is planned to be mitigated by an approved capacity project within the next five years.
2. Determine if the timing of the DG facility, along with the anticipated provisions of the PPA detailing obligations to produce during specific hours and PPA term length, allow for the potential of the approved capacity project to be deferred
3. Calculate the avoided distribution capacity costs to determine the potential credit.
    a. Project the DG Facility's minimum potential output by time of day and compare with the time of capacity need.
    b. If the comparison yields that a large enough reduction in the capacity need is likely, the capacity project could be deferred and a credit could be awarded based on the annual avoided cost.
    c. If the project is a net metered project, it would already be receiving a credit for distribution costs, and the study would need to make sure that there would not be double compensation for this credit.

All DG projects are still required to follow the standards interconnection process.

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Telephone: 651.229.2549
Date: July 6, 2020

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☐ **Public Document – Not Public Data Has Been Excised**
☒ **Public Document**

Xcel Energy Information Request No. 9
Docket No.: E999/M-16-521
Response To: Minnesota Solar Energy Industries Association
Requestor: David Schaffer
Date Received: June 22, 2020

Question:
Under Attachment 6 of the Interconnection Standards, capacity is determined with a 5-year look ahead. If capacity was determined over a period of 15 years instead of 5 years, would the need for capacity in any given year change? If yes, please explain how it would change. Please provide any supporting documentation that is available.

Response:
As explained in our September 18, 2018 Comments in the current docket, the Commission's September 28, 2004 Order in Docket No. E999/CI-01-1023 states that the provisions in Attachment 6 are "guidelines" (see, for example at page 29 of that order). We noted that this 2004 Order is very clear that specific implementation of the Attachment 6 guidelines is to be through utility tariffs, and that the resulting tariff dockets provide the appropriate forum for evaluating the extent to which the tariffs adequately fulfill the purpose of the guidelines. The Commission's March 19, 2019 order in the current docket, at p. 3, stated that: "Utilities have developed their DG tariffs consistent with Attachment 6 (and the rest of the Interconnection Standards), as required by Minn. Stat. § 216B.1611, subd. 3(1)."

The capacity payment issue addressed in the Attachment 6 guideline is reflected in the Company's tariff at sheets 10-77 to 10-78, which states as follows:

> **Capacity Payment:** The capacity payment shall be based on the total accredited DG capacity made available to the Company. The capacity payment rate shall be set for the term of the PPA agreement based on the year in which the agreement is signed and that rate may escalate during the term of the agreement.
>
> The total dollar capacity payment shall be the product of the monthly accredited capacity in kW for the billing month and the capacity payment rate. The procedure to determine monthly accredited capacity is defined in the PPA and the method of determining the capacity payment rate is indicated below.
>
> Upon written request of the customer, which includes the required customer specified parameters, Company shall determine the capacity payment rate. The

starting value for capacity payment rate will be taken from the Company's Annual Filing of Cogeneration and Small Power Production Tariffs and will be adjusted based on project specifics characteristics as described below. The fixed escalation rate is 2.5% per year to be applied on the anniversary of the commercial operation date.

1) The need for capacity is established in the utility's most recent integrated resource plan (IRP). A need exists if the utility shows a deficit at any year of the 5-year planning period.
2) Capacity payments should be made for the total accredited DG capacity, regardless of when the power is delivered to the system.
3) The expected life of a capacity addition is the expected life of the specific capacity addition from the utility's most recently approved integrated resource plan (IRP).
4) If the contract to purchase power from a DG source happens to begin at the time the utility needs the capacity, the full capacity payment is made and would be adjusted only for the length of the contract (i.e., in such a case, there is no discount to the capacity payment for adding capacity sooner than IRP indicates that it is needed).
5) The formula for potential adjustments to capacity payments based on the timing difference between IRP indicated need and the actual DG in-service date is:

$$A2 = \frac{(1+i)^m - 1}{(1+i)^n - 1} * \frac{(1+i)^{n-a} - (1+e)^{n-a}}{(1+i)^m - (1+e)^m} * A1$$

Where:
A1 = Levelized annual value of a capacity purchase at the time of need.
A2 =Levelized annual value of the capacity paid for in a power purchase contract.
m =Expected lifetime of ordinary (alternative) future capacity addition.
n = Length of power purchase contract.
l = Utility Cost of Capital.
e = Escalation rate affecting value of new capacity additions.
a = Length of time between beginning of contract and time of need for capacity

Definition of Peak Periods
The on-peak period is defined as those hours between 9:00 a.m. and 9:00 p.m. Monday through Friday, except the following holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

When a designated holiday occurs on a Saturday, the preceding Friday will be designated a holiday. When a designated holiday occurs on a Sunday, the following Monday will be designated a holiday. The off-peak period is defined as all other hours not designated as on-peak hours.

Summer months are July and August; Non-Summer months are all other months. Definition of on-peak and off-peak periods is subject to change with change in Company's system operating characteristics or electric energy market standards.

TERMS AND CONDITIONS OF SERVICE

1. Electric service provided by Company to customer at the same site during the same billing period shall be billed in accordance with the appropriate retail electric rates; thus, supplemental load service shall be provided to the DG customer through the Company's base electric rates. Company shall pay customer each month according to the applicable Energy and Capacity Purchase Payments and any applicable Distribution Facility Credit, established in the contracts under this tariff.

2. The customer must enter an Interconnection Agreement with the Company for the interconnection and parallel operation of any qualifying DG facility under this tariff.

3. In order to receive energy and capacity payments, the customer must execute a Power Purchase Agreement with Company.

4. Customer is responsible for any applicable study fees and interconnection costs. The customer must pay all such costs as specified in the Interconnection Agreement.

5. The customer shall be responsible for all costs associated with the installation, operation, and maintenance of the facility.

6. Company may assess a monthly fee for metering and billing the Energy and Capacity Purchase Payments and any applicable Distribution Facility Credit transactions. Typical costs for meter reading and billing are shown below. For most DG installations, two meters are required. The appropriate metering options available are determined by the Minnesota Technical Requirements or utility requirements.

7. The voltage and phase of customer's distributed generation facility must be consistent with existing retail service configuration and is approved by the Company in accordance with the Company's interconnection requirements.

8. For interconnections not subject to the MN DIP or MN DIA, the customer must maintain a power factor close to unity as possible or as specified in the "Power Factor" provision of the "Distributed Generation Interconnection Requirements" section of this tariff. For interconnections that are subject to the MN DIP, the Power Factor shall be consistent with the MN Technical Requirements and MN DIA, including the Operating Agreement attached to the MN DIA or Uniform Statewide Contract.

We interpret this IR as asking about this tariff provision and answer accordingly.

PPAs may include provisions addressing both the sale of energy and capacity to the Company. A PPA can be evaluated on a customer-specific and site-specific basis, to determine eligibility, system reliability, capacity benefits, and impact on Company's transmission and distribution systems. The tariff provides details, including inputs

and formulas, for determining capacity payments. See tariff Sheets 10-77 through 10-79 that describe the evaluation inputs and methods, and are quoted above. Pursuant to state statute, Minn. Stat. § 216B.164, subd. 4, the parties may negotiate the full avoided capacity and energy costs in a PPA.

To the question as to whether a 15 year period were to be used instead of a 5 year period was addressed in the Commission's 2004 order, at p. 15, where it stated: "The Commission concludes that the value that ratepayers receive from having reserve capacity 15 years before any anticipated need is too slight to warrant compensation."

Preparer: Mary Morrison
Title: Senior Resource Planning Analyst
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Telephone: 612.330.5862
Date: July 6, 2020

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☐ **Public Document – Not Public Data Has Been Excised**
☒ **Public Document**

Xcel Energy		Information Request No.	10
Docket No.:	E999/M-16-521		
Response To:	Minnesota Solar Energy Industries Association		
Requestor:	David Schaffer		
Date Received:	June 22, 2020		

Question:
What is the standard contract term length currently provided for by customers that take service under the standard DG tariff, or any tariff that stems from the utility's adherence to Attachment 6 of the Interconnection Standards?

Response:
As explained in our September 18, 2018 Comments in the current docket, the Commission's September 28, 2004 Order in Docket No. E999/CI-01-1023 states that the provisions in Attachment 6 are "guidelines" (see, for example at page 29 of that order). We noted that this 2004 Order is very clear that specific implementation of the Attachment 6 guidelines is to be through utility tariffs, and that the resulting tariff dockets provide the appropriate forum for evaluating the extent to which the tariffs adequately fulfill the purpose of the guidelines. The Commission's March 19, 2019 order in the current docket, at p. 3, stated that: "Utilities have developed their DG tariffs consistent with Attachment 6 (and the rest of the Interconnection Standards), as required by Minn. Stat. § 216B.1611, subd. 3(1)."

The Company's DG tariff are in books 9 and 10 of its tariffs. There are a variety of term lengths in the tariffed contracts in these tariff books. Predominantly, most net metered customers (with under 1 MW DER nameplate capacity) have available to them the Uniform Statewide Contract found at tariff sheets 9-10 through 9-12 (and at Minn. R. 7835.9910), that has no set contract term length and which also resets on an annual basis the energy payment and capacity rates applicable to the DER.

Preparer:	Mary Morrison
Title:	Senior Resource Planning
Department:	Resource Planning
Telephone:	612.330.5862
Date:	July 6, 2020

CERTIFICATE OF SERVICE

I, Crystal Syvertsen, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota

xx electronic filing

Docket No. E999/CI-16-521
E999/CI-01-1023

Dated this 20th day of May 2021

/s/
_____
Crystal Syvertsen
Regulatory Administrator

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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Christine	Fox	cfox@itasca-mantrap.com	Itasca-Mantrap Coop. Electric Assn.	PO Box 192 Park Rapids, MN 56470	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Kornbaum	Frank	fkornbaum@mnpower.com		N/A	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Mike	Franklin	mfranklin@mncef.com	MN Conservative Energy Forum	235 E 6th St Fifth Floor St. Paul, MN 55101	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Nathan	Franzen	nathan@geronimoenergy.com	Geronimo Energy, LLC	8400 Normandale Lake Blvd Suite 1200 Bloomington, MN 55437	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Katelyn	Frye	kfrye@mnpower.com	Minnesota Power	30 W Superiot St Duluth, MN 558022093	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Hal	Galvin	halgalvin@comcast.net	Provectus Energy Development llc	1936 Kenwood Parkway Minneapolis, MN 55405	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Edward	Garvey	garveyed@aol.com	Residence	32 Lawton St Saint Paul, MN 55102	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Allen	Gleckner	gleckner@fresh-energy.org	Fresh Energy	408 St. Peter Street Ste 220 Saint Paul, Minnesota 55102	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Nitzan	Goldberger	n.goldberger@energystorage.org	Energy Storage Association	1800 M Street NW Suite 400S Washington, DC 20036	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Sarah	Groebner	sgroebner@redwoodelectric.com	Redwood Electric Cooperative	60 Pine St Clements, MN 56224	Electronic Service	No	OFF_SL_16-521_Official Service List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Cody	Gustafson	cgustafson@mnpower.com		N/A	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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Tony	Hainault	anthony.hainault@co.hennepin.mn.us	Hennepin County DES	701 4th Ave S Ste 700 Minneapolis, MN 55415-1842	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
James	Haler	jhaler@southcentralelectric.com	South Central Electric Association	71176 Tiell Dr P. O. Box 150 St. James, MN 56081	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Donald	Hanson	dfhanson@ieee.org	Solar Photovoltaic Systems	P. O. Box 44579 Eden Prairie, MN 55344	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
John	Harlander	john.c.harlander@xcelenergy.com	Xcel Energy	N/A	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Jared	Hendricks	jared.hendricks@owatonnautilities.com	Owatonna Public Utilities	PO Box 800 208 S Walnut Ave Owatonna, MN 55060-2940	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Annete	Henkel	mui@mnutilityinvestors.org	Minnesota Utility Investors	413 Wacouta Street #230 St.Paul, MN 55101	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Ryan	Hentges	ryanh@mvec.net	Minnesota Valley Electric Cooperative	125 Minnesota Valley Electric Dr Jordan, MN 55352	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Ronald	Horman	rhorman@redwoodelectric.com	Redwood Electric Cooperative	60 Pine Street Clements, MN 56224	Electronic Service	No	OFF_SL_16-521_Official Service List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Brian	Jeremiason	bjeremiason@llec.coop	Lyon-Lincoln Electric Cooperative, Inc.	205 W. Hwy. 14 Tyler, MN 56178	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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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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Samantha	Norris	samanthanorris@alliantenergy.com	Interstate Power and Light Company	200 1st Street SE PO Box 351 Cedar Rapids, IA 524060351	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Timothy	O'Leary	toleary@llec.coop	Lyon-Lincoln Electric Cooperative, Inc	P.O. Box 639 Tyler, MN 561780639	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Jeff	O'Neill	jeff.oneill@ci.monticello.mn.us	City of Monticello	505 Walnut Street Suite 1 Monticelllo, Minnesota 55362	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
Russell	Olson	rolson@hcpd.com	Heartland Consumers Power District	PO Box 248 Madison, SD 570420248	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Donna	Pickard	dpickardgsss@gmail.com	Genie Solar Support Services	1215 Lilac Lane Excelsior, MN 55331	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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John C.	Reinhardt	N/A	Laura A. Reinhardt	3552 26th Ave S Minneapolis, MN 55406	Paper Service	No	OFF_SL_16-521_Official Service List PUC
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_16-521_Official Service List PUC
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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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Rafi	Sohail	rafi.sohail@centerpointenergy.com	CenterPoint Energy	800 LaSalle Avenue P.O. Box 59038 Minneapolis, MN 554590038	Electronic Service	No	OFF_SL_16-521_Official Service List PUC
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