COMMERCE DEPARTMENT

July 8, 2019 **PUBLIC DOCUMENT**

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

RE: **PUBLIC Reply Comments of the Minnesota Department of Commerce, Division of Energy Resources**
Docket No. E015/M-19-337

Dear Mr. Wolf:

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

> Petition of Minnesota Power for Approval of its Electric Vehicle Commercial Charging Rate Pilot.

The Petition was filed on May 16, 2019 by:

> Jenna Warmuth
> Senior Public Policy Advisor
> Minnesota Power

The Department **recommends that the Minnesota Public Utilities Commission approve the pilot with conditions.** The Department is available to answer any questions that the Minnesota Public Utilities Commission may have.

Sincerely,

/s/ MATTHEW LANDI
Rates Analyst

ML/ar
Attachment

COMMERCE DEPARTMENT

Before the Minnesota Public Utilities Commission

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

Docket No. E015/M-19-337

PUBLIC DOCUMENT

I. INTRODUCTION

On May 16, 2019, Minnesota Power (MP or the Company), submitted its Petition requesting approval of an Electric Vehicle Commercial Charging Rate Pilot program (Commercial EV Rate Pilot, or Pilot).

On May 22, 2019, the Minnesota Public Utilities Commission (Commission) issued a Notice of Comment Period (Notice), requesting that initial comments be submitted by June 17, 2019.

The Commission's Notice invited comments on the following topics:

1. Should the Commission approve Minnesota Power's proposed Electric Vehicle Commercial Charging Rate Pilot?
2. Are there other issues or concerns related to this matter

In addition to the Minnesota Department of Commerce, Division of Energy Resources (Department), on or around June 17, 2019, the following stakeholders submitted comments in response to the Commission's notice:

- The Office of Attorney General – Residential Utilities and Antitrust Division (OAG);
- Fresh Energy, Minnesota Center for Environmental Advocacy, Natural Resources Defense Council, Sierra Club, and the Union of Concerned Scientists (collectively, Clean Energy Organizations, or CEOs);
- CharePoint, Inc. (ChargePoint);
- Greenlots;
- Tesla, Inc. (Tesla);
- ZEF Energy, Inc. (ZEF Energy); and
- Large Power Intervenors (LPI).

The Department's Initial Comments inadvertently stated that a new initial deadline was created per an extension request submitted on May 12, 2019. This was included in the Department's initial comments in error. The Commission's notice set the following comment submission schedule: (1) an initial comment deadline of June 17, 2019; (2) a utility reply comment deadline of June 27, 2019, and; (3) a party reply comment deadline of July 8, 2019.

Below, the Department responds generally to initial party comments submitted on or around June 17, 2019 and to Minnesota Power's reply comments submitted on June 27, 2019.

II. DEPARTMENT ANALYSIS

A. OVERVIEW OF RATE DESIGN CONCERNS

On pages 5 and 6 of Tesla's initial comments, Tesla cites a list of rate design principles listed in Attachment A to the Commission's *Notice Seeking Comment on Procedural Schedule* in Docket No. E002/M-15-662[1] and provides its interpretation of some of the principles' application to MP's Commercial EV Rate Pilot's demand charge discount (the 30% demand cap and associated EV demand credit[2]). The Department here reproduces the entire list of Design Principles and Objectives found in the Notice's Attachment A for completeness:

> The following draft rate design principles and objectives are derived from a combination of sources, including prior Commission orders and Minnesota statutes. Additionally, Staff reviewed recent efforts in other states considering rate design principles, notably California, Massachusetts, and New York.[footnote omitted] These are designed to begin discussion of the topic and are in no specific order or priority.
>
> 1. Low income customers and those with special medical needs should have access to enough electricity to ensure basic needs at an affordable cost;
> 2. Rates should be based on marginal costs;
> 3. Rates should be equitable, generally based on cost-causation principles and avoiding cross-subsidies, unless it is necessary to meet explicit state policy goals;
> 4. Rates should allow a utility to recover its revenue requirement in a manner that maintains utility revenue stability, and minimizes year-to-year under- or over-collections;
> 5. Rates should encourage conservation and energy efficiency;
> 6. Rates should reduce coincident system peak demand;

[1] *In the Matter of an Alternative Rate Design Stakeholder Process for Xcel Energy*. Docket E002-M-15-662. NOTICE SEEKING COMMENT ON PROCEDURAL SCHEDULE at Attachment A (February 16, 2016). Available at https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={AAB14AE3-EEDF-4188-8AE3-BD5BDA9EE5BA}&documentTitle=20162-118338-01.

[2] The Department notes that the Company is proposing to implement the 30% demand cap by providing an EV Demand Credit on participants' monthly bills, reducing the Demand Charge component such that it equals no more than 30% of the monthly bill.

7. Rates should be stable, understandable, and provide customer choices;
8. Rates should encourage economically efficient decision-making; and
9. Rates should be aligned with wholesale market prices that reflect the varying price of electricity throughout the day and year.

While this list of rate design principles is instructive and helpful, the Department notes that Docket No. E002/M-15-66 was informational in nature, therefore the Commission took no action in that particular docket related to these principles. Nevertheless, the Department believes they are useful as a guide in the development of rate designs generally, and are useful for the purposes of discussing Minnesota Power's Commercial EV Rate Pilot.

The Department appreciates the important discussion that Tesla provided regarding rate design principles. As the Commission weighs how to best facilitate wider EV deployment in Minnesota, the Department notes that longstanding rate design principles are not mutually exclusive with the Commission's transportation electrification policy goals, as outlined in the Commission's Order in Docket No. E999/CI-17-879 (Commission EV Inquiry). Indeed, the Department asserts that without adherence to longstanding rate design principles, EV deployment in Minnesota could be hindered in the long-run.

The Commission recognized in its Commission EV Inquiry Order and in subsequent EV-related proceedings that EVs have the *potential* to benefit all ratepayers, but this potential is expressly and critically contingent upon *how* EVs are integrated in Minnesota.[3] That is, without smart and efficient EV load management, the potential benefit offered by transportation electrification for all ratepayers may not be fully actualized.

In the absence of smart charging infrastructure, EV load is managed through rate designs that send price signals to EV owners and operators that induce charging behavior that more efficiently utilizes the electricity system. The Commission's finding that transportation electrification is in the public interest depends in large part on the system's ability to meet the needs of additional load in a way that improves the system's efficiency. The Commission's EV Inquiry found that transportation electrification is in the public interest because effective and efficient EV integration can lead to the efficient utilization of the electricity system, which has the potential to put a downward pressure on rates for all ratepayers, and aligns with higher levels of renewable energy generation, both of which help reduce statewide greenhouse gas and other environmentally harmful emissions.[4]

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[3] *In the Matter of A commission Inquiry into Electric Vehicle Charging and Infrastructure.* Docket No. E-999/CI-17-879, ORDER MAKING FINDINGS AND REQUIRING FILINGS (February 1, 2019). Available at: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={10BBAA68-0000-C413-9799-DF3ED0978E75}&documentTitle=20192-149933-01.

[4] *Id.,* at 10. Order Point #1.

The record before the Commission in this proceeding, and the Commission EV Inquiry, is replete with information and data that leads to the inexorable conclusion that EV charging should be incentivized to occur during the overnight hours when electricity demand and system costs are lowest and renewable energy generation is highest. That conclusion is virtually uncontested.

There is significant concern, however, that the rate design that Minnesota Power proposed is inadequate to accomplish the Commission's transportation electrification policy goals. The concerns are myriad:

1. The proposed on- and off-peak periods are not sophisticated enough to recognize Minnesota Power's system peak on daily and seasonal bases.
2. The proposed on- and off-peak periods' Energy Charges may not fully reflect the marginal costs of generating electricity during those times.
3. Cross-subsidization of participants by nonparticipants may occur due to the 30% demand cap and associated EV Demand Credit.
4. The 30% demand cap may result in artificially low monthly bills in consideration of the monthly bills public charging station operators and electric vehicle fleet operators may be required to pay once the Company's Meter Data Management (MDM) system is implemented and a more sophisticated rate design is offered, which could result in rate shock and/or limit critical investments in public charging infrastructure and delay fleet electrification.
5. The proposed $0.00 per kW Off-peak Period Demand Charge may not reflect the costs of utilizing Minnesota Power's system during the off-peak period, violating principles of cost causation.
6. A $0.00 Off-peak Period Demand Charge eliminates a price signal, thereby eliminating an incentive for energy conservation.
7. It is currently unknown whether the rate design will allow Minnesota Power to collect its revenue requirements from participants.

These concerns underscore the Department's general concern about the long-term effect of an inadequate rate design on wider EV deployment in Minnesota. However, the Department recognizes that Minnesota Power is currently in the process of implementing its new Meter Data Management (MDM) system, which will "have the capability to bill customers utilizing hourly data received from the [advanced metering infrastructure]."[5] Further, the Company stated in its reply comments that they simply did not yet have the information available needed to respond to the Department's requests for additional information related to the concerns identified above.

[5] Petition, at 10.

In the interim, before the full implementation of the MDM, the Department urges the Commission to strike a reasonable balance between the recognition of the Commercial EV Rate Pilot, in the Company's words, as a "bridging solution meant to gather information" so that the Company can "develop a future robust solution that appropriately and accurately reflects the costs to serve these customers,"[6] and the myriad concerns that the Department has identified.

Some of the concerns identified by the Department can and should be addressed now, whereas it may be reasonable for the Commission to defer on requiring other changes until such time that they can be implemented in a cost-effective and comprehensive way. In the following sections, the Department attempts to strike that balance and focuses on elements of the Company's rate design that are most likely to lead to unintended consequences and thus should be addressed now.

The following are elements of the Commercial EV Rate Pilot that the Department recommends that the Commission address now:

1. The proposed on- and off-peak periods
2. The proposed 30% demand cap

The Department's analysis in the following sections discusses these two elements.

B. THE PROPOSED ON- AND OFF-PEAK PERIODS

In addition to Minnesota Power's own admission, multiple stakeholders recognized that the proposed on- and off-peak periods do not accurately reflect underlying system costs.[7] The Department concludes that requiring the Company to create a rate design with more sophisticated time periods is a necessary modification to the proposed Pilot.

The Commission recently required Xcel to implement a rate design in its Public Charging Pilot program that includes three different time periods that reflect Xcel's underlying system costs for each time period.[8] The Commission relied upon the system data information that Xcel provided in its Residential TOU Pilot program.[9]

[6] Minnesota Power Reply Comments, at 3.
[7] Petition, at 14. Minnesota Power Reply Comments, at 2. OAG Initial Comments, at 6-7. CEO Initial Comments at 3-4. Tesla Initial Comments, at 6 (see Footnote 13). ChargePoint Initial Comments, at 2.
[8] *In the Matter of a Petition for Approval of Electric Vehicle Pilot Programs.* Docket No. E002/M-18-643, Order forthcoming.
[9] *In the Matter of Xcel's Residential Time of Use Rate Design Pilot Program.* Docket No. E002/M-17-775.

Here, too, the Commission has access to Minnesota Power's underlying system costs: the Company recently filed a compliance filing report that can and should be used to inform a multi-tiered time-of-use rate design for the Company's Commercial EV Rate.[10] This report contains information that provides the variable cost of serving residential demand in each hour of the year:

Figure 1. Hourly Variable Cost by Month of Serving Residential Load (c/kWh)[11]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	5.6	5.6	5.3	5.1	5.5	5.7	5.2	5.4	5.0	5.3	5.5	5.5
	5.4	5.5	5.2	5.1	5.5	5.8	5.2	5.4	5.0	5.4	5.4	5.4
	5.3	5.4	5.2	5.1	5.5	5.8	5.1	5.4	5.0	5.4	5.4	5.3
	5.2	5.4	5.2	5.1	5.7	5.8	5.2	5.4	5.1	5.5	5.4	5.2
	5.3	5.4	5.4	5.6	5.9	5.9	5.2	5.5	5.4	5.9	5.6	5.3
6am	5.9	6.0	6.2	6.3	6.2	6.2	5.4	5.7	5.7	6.6	6.0	5.7
	7.4	6.9	7.1	6.7	6.5	6.5	5.8	6.1	6.2	6.6	6.5	6.7
	8.2	7.5	7.5	6.8	6.7	6.7	6.3	6.4	6.4	6.8	6.8	7.5
	8.9	7.9	7.6	7.0	6.9	7.1	6.9	6.7	6.7	6.9	7.1	7.9
	8.8	7.8	7.6	6.9	7.0	7.4	7.6	7.0	7.0	7.0	7.1	8.5
	9.3	7.5	7.4	6.7	7.0	7.8	8.6	7.4	7.1	6.9	7.0	8.1
midday	8.5	7.4	7.1	6.5	6.9	8.2	9.9	7.9	7.3	6.8	6.9	8.0
	8.0	7.1	6.8	6.5	6.9	8.7	12.0	8.5	7.6	6.8	6.7	7.9
	7.4	6.8	6.6	6.4	7.0	9.3	15.3	9.4	8.2	6.8	6.6	7.5
	7.1	6.6	6.4	6.3	7.0	9.8	19.0	10.1	8.7	6.8	6.5	7.1
	7.4	6.5	6.4	6.2	6.9	10.2	21.7	10.1	8.8	6.7	6.4	7.4
	9.9	6.9	6.4	5.9	6.6	9.9	25.8	9.5	8.7	6.6	7.5	11.2
6pm	17.3	8.9	7.1	5.8	6.3	9.4	24.7	9.0	8.3	7.4	8.9	33.0
	17.9	9.1	8.1	6.6	6.4	8.7	18.4	8.3	7.9	7.1	8.5	29.9
	15.6	9.0	8.3	6.7	6.6	8.2	14.0	7.9	7.3	6.4	7.8	17.8
	10.5	7.8	7.4	5.9	6.1	7.5	10.3	7.2	6.8	5.9	6.9	12.4
	8.2	6.8	6.4	5.3	5.7	6.7	7.9	6.3	5.9	5.6	6.3	9.4
	6.5	6.2	5.5	5.1	5.5	6.2	6.1	5.7	5.1	5.3	5.9	6.9
midnight	5.9	5.8	5.2	5.0	5.4	5.8	5.4	5.5	4.9	5.3	5.6	5.8

While this information analyzed residential electricity costs, the proposed on- and off-peak periods for the Commercial EV Rate match the on-and off-peak peak periods in MP's Residential EV Service Tariff. Given that (1) the time period differentiation for the Residential EV Service Tariff was used as the basis for the proposed Pilot and (2) the record in Docket No. E015/M-12-233 regarding Minnesota Power's Residential Time-of-Day Rate continues to develop and includes useful information, the Department concludes that the time period differentiation information contained in the Company's Residential Time-of-Day Rate docket can inform the Commission's decision on the appropriate on-and off-peak periods to use for this Pilot.

[10] *In the Matter of Minnesota Power's Temporary Rider for a Residential Time-of-Day Rate for Participants in the Smart Grid Advanced Metering Infrastructure Pilot Project*, Docket No. E-015/M-12-233. Minnesota Power's Time-of-Day Compliance filed February 20, 2019. Accessed at: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={D0CF0B69-0000-C41F-90D8-0016DB7B61D9}&documentTitle=20192-150445-01

[11] *Id.,* at 18.

Table 1 below is from the compliance filing report in Docket No. E015/M-12-233 that provides options for Minnesota Power's Residential Time-of-Day rate design:[12]

Table 1. Time Period Options for the Commercial EV Rate Pilot from Minnesota Power's Residential Time-of-Day Compliance Filing Report in Docket No. E015/M-12-233

Table 5: Final Rate Design Options – Time Periods

	Option 1	Option 2	Option 3
Peak	3:00 PM – 8:00 PM weekdays in Dec – Feb and Jun – Sep	3:00 PM – 8:00 PM weekdays	5:00 PM – 9:00 PM weekdays in Nov – Apr 2:00 PM – 6:00 PM weekdays in May – Oct
Off-peak	All other times	All other times	All other times
Super off-peak	11:00 PM – 5:00 AM	11:00 PM – 5:00 AM	11:00 PM – 5:00 AM

Option 2 above is the simplest of the three options, and is therefore the most similar to the proposed Commercial EV Rate Pilot rate structure.

The Department recommends that the Commission require Minnesota Power to adopt, without prejudice toward any future Commission decision on the Company's Residential Time-of-Day Rate design, Option #2 from "Table 5: Final Rate Design Options – Time Periods," reproduced above, for the Commercial EV Rate Pilot.

Appropriate and differentiated energy charges on a per-kWh basis are also an important element of a time-of-use rate. While the Company stated that they "currently do not have the necessary load and cost data analysis with hourly detail for these customers on which to base pricing information," the Department expects that any future EV rate offerings will have an appropriate and differentiated energy charge.

C. THE PROPOSED DEMAND CAP OF 30%

The proposed demand cap of 30%, credited on participants' monthly bills as an EV Demand Credit, will have a significant impact on participants' monthly bills. In response to DOC IR No. 4, the Company provided the impact of the Commercial EV Rate Pilot on monthly bills for five likely participants in the Company's Pilot.[13] It is unclear why the Company provided analysis of only five likely participants instead of the six referenced in the Petition.

[12] *In the Matter of Minnesota Power's Temporary Rider for a Residential Time-of-Day Rate for Participants in the Smart Grid Advanced Metering Infrastructure Pilot Project*, Docket No. E-015/M-12-233. Minnesota Power's Time-of-Day Compliance, at 22.
[13] DOC Attachment 6.

The Company did not indicate whether the monthly bill information provided is representative of each customers' monthly bills, so the Department assumed that the monthly bills would be the same for each month during the course of the Pilot. Below is the Department's analysis of the monthly, annual, and 3-year pilot savings for these participants. Given that there may be additional customers that participate in the Pilot, including the sixth likely participant referenced in the Petition, these figures more than likely represent a lower end, conservative estimate of the total reduction of participants' bills.

The Department also notes that there are significant differences in the operating characteristics of a direct current, fast charging (DCFC) public charging station and operators of EV fleets:

- Public charging stations are passive providers of Level 3 (higher kW) charging services that likely have lower total electricity consumption (lower kWh) at any given time compared to EV fleet operators but are more likely to have EVs charge during the on-peak period resulting from expected patterns of EV use and charging. Consequently, public charging stations are likely to have a higher demand component and lower electricity consumption on their monthly bills.

- EV fleet operators actively manage EV charging and are more likely to use Level 2 (lower kW) charging and likely have higher total electricity consumption (higher kWh) due to the number of vehicles and the frequency of charging, but are more likely to have EVs charge during the off-peak period compared to DCFC charging stations. Consequently, EV fleet operators are likely to have a lower demand component and higher electricity consumption on their monthly bills.

As indicated by the table below, some of the demand and energy use differences between DCFC public charging stations and EV fleet operators are evident in the data provided by the Company in response to DOC IR No. 4. The total pilot bill credit amount represents the reduction in revenue that Minnesota Power may experience as a result of offering the Commercial EV Rate Pilot.

Table 2. Department Analysis of the Proposed EV Demand Credit
[TRADE SECRET DATA HAS BEEN EXCISED]

Consumption (kWh) **Demand (kW)** **Current Monthly Bill** **Commercial EV Rate Bill**					
Monthly EV Demand Credit (Pilot - Current) **Annual EV Demand Credit** **Pilot EV Demand Credit**					
TOTAL PILOT PARTICIPANT EV DEMAND CREDIT					

The Department is concerned that Minnesota Power has not noted this anticipated revenue deficiency explicitly in the Petition for the Commercial EV Rate Pilot, and has subsequently declined to perform any type of financial analysis related to the impact of the Commercial EV Rate Pilot in the Company's responses to information requests and in the Company's reply comments. The Department here does not call for nor expect a cost-benefit analysis of the Pilot program. Instead, the Department is concerned that the limited information in the record regarding the financial impact of the Commercial EV Rate Pilot creates significant risk for both the Company and for its other customers for the benefit of public charging station operators and EV fleets. Given the significant reduction in participating customer bills under the Commercial EV Pilot, it is likely that participants would not be paying for their full share of the costs they incur due to the 30% demand cap. Thus, those costs would be shifted to non-participating customers in a future rate case. While EV pilots are important learning exercises, they should be designed such that they could reasonably be extended as permanent rate offerings, with perhaps minor changes. Pilots should not be crafted to be unsustainable by incorporating a rate structure that shifts cost recovery to non-participants.

Demand charges are intended to recover a utility's costs in designing their distribution system to a size that ensures that all customers are able to maintain electricity service during peak conditions, and ensure that each customer is paying their fair share of those costs. The demand charge proposed by Minnesota Power is the same demand charge that customers currently pay under the existing GSD tariff. By reducing a participants' monthly bill through an EV demand credit, participants will not be paying for the costs they cause the utility to incur in designing the distribution system to handle peak conditions. Therefore, Minnesota Power is proposing a de facto subsidy of participants in the Company's Commercial EV Rate Pilot by nonparticipants.

Such cross-subsidization is difficult to accept given the limited analysis that Minnesota Power has provided to stakeholders and the Commission. For instance, a poor rate design that results in cross-subsidization has real-world consequences for other ratepayers: lower income ratepayers who cannot afford EVs and who are not eligible for LIHEAP may be subsidizing people who can afford EVs. Such an adverse and inequitable outcome exacerbates income disparities and is surely one that all stakeholders would hope to avoid.

In addition to these important equity concerns, and in order to determine the reasonableness of the Company's proposal, the scale of the subsidy and its impact on both the utility and other ratepayers needs to be fully understood.

Minnesota Power's responses to OAG IR Nos. 004,[14] 005,[15] and 008[16] further heightens these concerns: the Company expects that the costs of the Pilot to be minimal. It is not clear on what basis that the Company has arrived at that conclusion, or how the Company defines "minimal,"

[14] DOC Attachment 4.
[15] OAG Initial Comments, Attachment A.
[16] DOC Attachment 5.

but the lack of any financial analysis in the record, the Company's declination to perform any such analyses, and the tangible risk that the Commercial EV Rate Pilot poses to other ratepayers leads the Department inexorably to the following recommendation:

The Department recommends that the Commission deny, without prejudice, Minnesota Power's request to provide its proposed EV Demand Credit. Alternatively, should the Commission approve some level of EV Demand credit, the Department recommends that the Commission require Minnesota Power to show, in its next general rate case, the extent to which non-participants are subsidizing participants in the Commercial EV Rate Pilot. To that end, the Department recommends that Minnesota Power add the following evaluation metrics to the list found on pages 20-21 of the Petition:

- **The total amount of EV Demand credit provided to each participant, compared to the total demand revenue the Company would have received from each participant without the Pilot; and**
- **The total amount of EV Demand Credit provided for the Pilot, compared to the total demand revenue the Company would have received without the Pilot.**

The Department notes that Minnesota Power did not propose any reporting requirements, but instead proposed to track certain metrics to inform any future rate or program offerings. **The Department recommends that Minnesota Power be required to provide a report of the evaluation metrics as applied to the Commercial EV Pilot either in the Company's next EV rate/pilot proposal, or absent such a filing, as a compliance filing in the instant docket within 60 days of the conclusion of the Pilot.**

Should the Commission approve some level of demand credit, the Department provides the following analysis of the OAG's recommended 50% demand cap. The OAG explained the following:[17]

> [I]f the Commission allows the pilot to move forward with a demand-charge cap, it should require the Company to set the cap no lower than 50 percent. The Company suggests in its petition that it is problematic for General Service Demand customers to incur demand charges totaling more than 50 percent of their bills. A 50 percent demand-charge cap would ensure that this does not occur. Moreover, raising the cap would increase participants' incentive to charge off peak, decreasing pilot costs and better balancing the interests of participants and nonparticipants compared to a 30 percent cap.

The Department concurs with the OAG's reasoning. The basis for Minnesota Power's support for a 30% cap, on the other hand, appears to be based on "bringing these customers more in-

[17] OAG Initial Comments, at 6.

line with other GSD customers on a $/kWh basis."[18] It is unclear why Minnesota Power decided that this metric was an important objective for the Pilot program. In response to DOC IR No. 1, the Department asked the following question:[19]

> Please explain whether the six commercial customers who currently have electric vehicle charging infrastructure in use (six customers) are currently paying for the service they receive from MP relative to the costs MP incurs to provide service to those six commercial customers. Please provide specific figures, if available.

The Company provided the following response:

> As discussed on pages 12 and 13 of the initial filing in this docket, it was discovered that these six customers are paying more than four times what the average GSD customer pays when looking at costs expressed as $/kWh. Although specific costs incurred by MP to serve these customers have not been analyzed specifically, the purpose of this proposed Pilot is to gather data and better understand the cost of service for commercial EV charging infrastructure.

Additionally, Minnesota Power addressed OAG's recommendation in its reply comments:[20]

> The 30 percent cap was determined to be a balanced approach that recognizes most public charging takes place during the on-peak period, but lowers the impact that demand would have to a level that doesn't discourage progress. Minnesota Power believes that the 30% demand cap aligns with these goals and provides the appropriate relief for these early adopter public charging customers.

The Department here remains concerned with the Company's rationale: the relief provided by a 30% demand cap is intended to levelize the six likely participants with other GSD customers on a $/kWh basis, but there is nothing in the record to suggest that this metric will lead to incremental EV deployment or serve any other public interest objective aside from offering an attractive subsidy for existing customers who choose to be Pilot participants.

The Department performed some preliminary analysis on the OAG's recommended 50% demand cap using the data provided by MP in response to DOC IR No. 4. The table below shows the results of that analysis.

[18] Petition, at 12.
[19] DOC Attachment 1.
[20] Minnesota Power Reply Comments, at 2.

Table 3. Department Analysis of the OAG's 50% Demand Cap Recommendation on the EV Demand Credit
[TRADE SECRET DATA HAS BEEN EXCISED]

Current Monthly Bill					
OAG's Recommendation					
Monthly Bill Credit (OAG - Current)					
Annual Bill Credit					
Pilot Bill Credit					
TOTAL PILOT PARTICIPANT EV DEMAND CREDIT					

The table below summarizes the difference between Minnesota Power's proposed 30% demand cap and the OAG's recommended 50% demand cap.

Table 4. Comparison of Minnesota Power's and OAG's EV Demand Credit Proposals
[TRADE SECRET DATA HAS BEEN EXCISED]

	Minnesota Power's Proposal	OAG's Proposal	Delta (MP - OAG)
Total Pilot Bill Credit			

Based on the limited information in the record, the Department concludes that, should the Commission approve some level of demand cap, the OAG's recommended 50% cap is preferable to Minnesota Power's proposed 30% cap.

If the Commission approves an EV Demand Credit, the Department recommends that the Commission require Minnesota Power to implement the EV Demand Credit by creating a cap on the demand charge component of a participants' monthly bill at 50%.

III. DEPARTMENT RECOMMENDATIONS

The Department appreciates the opportunity to further comment on the Company's proposed Commercial EV Rate Pilot. The Department makes the following recommendations:

- **The Department recommends that the Commission require Minnesota Power to adopt, without prejudice toward any future Commission decision on the Company's Residential Time-of-Day Rate Design, the following rate design for the Commercial EV Rate Pilot: Peak – 3:00 PM to 8:00 PM weekdays, Off-Peak – all times other than Peak or Super Off-Peak, Super Off-Peak – 11:00 PM to 5:00 AM.**

- **The Department recommends that the Commission deny, without prejudice, Minnesota Power's request to provide its proposed EV Demand Credit. Alternatively, should the Commission approve some level of EV Demand credit, the Department recommends that the Commission require Minnesota Power to show, in its next general rate case, the extent to which non-participants are subsidizing participants in the Commercial EV Rate Pilot. To that end, the Department recommends that Minnesota Power add the following evaluation metrics to the list found on pages 20-21 of the Petition:**

    - **The total amount of EV Demand credit provided to each participant, compared to the demand revenue the Company would have received without the Pilot; and**
    - **The total amount of EV demand credit provided for the Pilot, compared to the demand revenue the Company would have received without the Pilot.**

- **The Department recommends that Minnesota Power be required to provide a report of the evaluation metrics as applied to the Commercial EV Pilot either in the Company's next EV rate/pilot proposal, or absent such a filing, as a compliance filing in the instant docket within 60 days of the conclusion of the Pilot.**

- **If the Commission approves an EV Demand Credit, the Department recommends that the Commission require Minnesota Power to implement the EV Demand Credit by creating a cap on the demand charge component of a participants' monthly bill at 50%.**

/ar

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	5/29/2019
Type of Inquiry:	Rate Design	Response Due:	6/10/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

Request Number: **1**
Topic(s): Rate Design Impacts and Considerations
Reference(s): Petition, Table 2, p. 5; Commission's Order in Docket No. E999/CI-17-879

Request:

1. Please explain why Minnesota Power (MP) proposed to use the same energy charge--$0.07619--for both on- and off-peak time periods.

2. Please explain whether this energy charge is reflective of MP's costs to provide electricity during both on- and off- peak time periods.

3. Please explain whether the six commercial customers who currently have electric vehicle charging infrastructure in use (six customers) are currently paying for the service they receive from MP relative to the costs MP incurs to provide service to those six commercial customers. Please provide specific figures, if available.

4. Please explain how each component of the proposed rate design ($0.00 off-peak demand charge and 30% cap) aligns with the costs MP expects to incur to provide the proposed service.

5. Please explain whether there exists any potential for cross-subsidization of participants in MP's proposed Electric Vehicle Commercial Charging Rate Pilot by other ratepayers if (1) the off-peak demand charge is $0.00 and (2) demand charges are capped at 30% of a customer's monthly bill.

6. Please explain what other rate design options MP considered in developing this pilot program and the rationale for why those options were not chosen.

Response Date: 06/10/2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	5/29/2019
Type of Inquiry:	Rate Design	Response Due:	6/10/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

RESPONSE:

1. The energy charge of --$0.07619/kWh was used to be consistent with the Commission approved energy charge for standard General Service Demand (GSD) customers. The intent of the Pilot rate is to remove barriers to EV adoption, providing an opportunity for customers to experiment with EV technology and for Minnesota Power to gather information. As described in the petition, Minnesota Power will quantify and analyze the costs and benefits of the pilot through the various performance metrics outlined in the filing.
2. The energy charge is consistent with the standard General Service energy charge and is not reflective of specific on and off-peak time period costs.
3. As discussed on pages 12 and 13 of the initial filing in this docket, it was discovered that these six customers are paying more than four times what the average GSD customer pays when looking at costs expressed as $/kWh. Although specific costs incurred by MP to serve these customers have not been analyzed specifically, the purpose of this proposed Pilot is to gather data and better understand the cost of service for commercial EV charging infrastructure.
4. The intent of the pilot rate is to remove barriers to EV adoption. Minnesota Power will quantify and analyze the costs and benefits of the Pilot through the various performance metrics outlined in the filing. The demand charge and proposed 30% demand cap are not aligned with specific costs at this time.
5. If these type of customers are able to significantly change their load profile, i.e. switch to having a high load factor, then the potential for cross-subsidization could exist. Minnesota Power does not believe these customers currently have the ability to drastically change their EV charging behavior.

Response Date: 06/10/2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number: E015/M-19-337 ☐Nonpublic ☒Public
Requested From: Minnesota Power

Date of Request: 5/29/2019
Type of Inquiry: Rate Design Response Due: 6/10/2019

Requested by: Matthew Landi
Email Address(es): matthew.landi@state.mn.us
Phone Number(s): 651-539-1823

6.

Alternative Options Considered	**Reason Not Chosen**
On- and Off-Peak Energy and Demand Charges	Limited historical data available to use in justifying on and off-peak specific rates.
40 % Demand Cap	This option still left the six customers in the upper 80th percentile when examining $/kWh billed.
Rule of 100	This option determines billed demand by dividing billed kWh by 100. Although this also acts as a demand cap, it provides no incentive to shift charging to off-peak hours when possible.

Response Date: 06/10/2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	5/29/2019
Type of Inquiry:	Rate Design	Response Due:	6/10/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

Request Number: **2**
Topic(s): Smart Charging and Time-of-Use Rates
Reference(s): Petition, pp. 10 – 11

Request:

1. Please explain when MP expects to have the ability to implement smart charging and advanced time-of-use rates for future EV rate offerings. Please provide an expected timeline of when these features could be implemented specifically for customers interested in EV charging of any kind (DCFC, fleets, public charging, level 2 chargers, residential and commercial charging, etc.) and whether MP has any plans to implement these features in the course the proposed Electric Vehicle Commercial Charging Rate Pilot.

2. Please explain if MP is aware of current customer interest in smart charging or advanced time-of-use rates.

3. Please provide more specific information for the current issues MP encounters in trying to implement such features.

4. Please explain if MP expects electric vehicle charging behavior to be sufficiently induced to occur during the proposed off-peak time period through only changes in the demand charge.

RESPONSE:

1. Minnesota Power expects to gain a better understanding of EV charging load and grid impacts through this pilot. As stated in the filing: "The Company is currently awaiting Commission direction on its February 20, 2019 filing in Docket No. E015/M-12-233 which outlines how a system-wide Time-of-Day rate could be implemented in Minnesota Power's service territory. The outcome of this docket will likely inform many program offerings, including this Pilot proposal." At this time, Minnesota Power is focused on completing full deployment of its AMI metering and MDM

Response Date: 06/10/2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	5/29/2019
Type of Inquiry:	Rate Design	Response Due:	6/10/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

implementation before committing to any timelines related to Smart Charging or advanced TOU rates.

2. The Company has sought out and gathered feedback from EV charging (Public and Fleet) commercial customers. These customers' main concerns are high-demand charges and on-peak rates that would make it uneconomical for them to charge during the day.
3. The Electric Vehicle charging industry is still in the early adoption stages. The Company has found very limited data or examples of smart-charging or advanced Time of Use rates for commercial EV applications across the United States, including in Minnesota. One of the main objectives of this pilot is to learn more about this customer class to inform future offerings.
4. As stated in the filing: "The Company realizes this is not a definitive solution and is excited to partner with customers that are going through early iterations of business model and technology pilots in the electrification of transportation movement." Customers who enroll in this rate pilot will see a benefit by shifting demand to off-peak and/or the demand cap. The tariff was designed to provide an incentive to shift, but not penalize, on-peak charging. The Company believes this will allow flexibility for customers that are experimenting with this early technology, while allowing the company to collect data on the costs to serve this type of customer class and load profile. Additionally, there is very limited deployment of Medium and Duty in the state of Minnesota, so while there may be assumptions about how flexible EV fleet loads are the first experience in Minnesota Power's territory has not aligned with assumptions.

Response Date: 06/10/2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	5/29/2019
Type of Inquiry:	Rate Design	Response Due:	6/10/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

Request Number: 3
Topic(s): Public Policy Considerations
Reference(s): Petition, pp. 12 – 16

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1. Please explain MP's position on whether this energy charge proposal is generally in the public interest, and specifically considering the Minnesota Public Utility Commission's (Commission) Order in Docket No. E999/CI-17-879 and specifically Commission Finding #5(c):

    5. *Expectations Regarding Utility Role:* The Commission finds that Minnesota's investor owned utilities should take steps to encourage the cost-effective adoption and integration of EVs. Among these steps, utilities should:
        c. *Encourage environmentally and economically optimal EV integration through*, at a minimum, the ***adoption of appropriate and effective time-of-use and EV-specific rate designs***, and reasonable initiatives or investments that encourage and support smart charging. (emphasis added)

2. If the "purpose of the proposed 30 percent demand cap is to bring these [six customers] more in-line with other [General Service Demand] customers on a $/kWh basis," please explain how this demand cap is relevant to promoting electric vehicle adoption in MP's service territory and specifically relevant to the Commission's Order in Docket No. E999/CI-17-879.

3. Please explain how each component of the proposed rate design ($0.00 off-peak demand charge and 30% cap) is in the public interest, addressing specifically (1) whether the $0.00 off-peak demand charge reflects the costs incurred by MP to provide service during the off-peak time period and consistent with the purpose of a demand charge and (2) what impact MP expects the 30% cap will have on energy conservation and energy efficiency.

Response Date: 06/10/2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	5/29/2019
Type of Inquiry:	Rate Design	Response Due:	6/10/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

RESPONSE:

The following response applies to questions 1-3 in DOC IR #3.

As stated in the referenced filing, "for both fleet and public vehicle charging, demand charges are a barrier, but most significantly to a public charging station, which typically has a low load-factor. By capping demand rate billings, the Company is minimizing the economic risks to these public charging station owners, which are so critical to the advancement of electric transportation adoption. The 30 percent cap was determined to be a balanced approach that recognizes most public charging takes place during the On-Peak period, but lowers the impact that demand would have to a level that doesn't discourage progress. All while the industry transitions to rates that support beneficial electrification and grid modernization."

This logic coincides with the Commission's findings in the February 1, 2019 Order in the docket. Specifically, Section B (1) Designing Efficient and Effective Rates states: "Fleet managers "tend to be very sensitive to operations and maintenance costs, **and so are more accustomed to thinking in terms of total cost of ownership**" **and therefore more likely to consider fuel cost savings in choices about vehicle types**."

The Pilot design also aligns with Order Point 3 under Commission Findings and Conclusions: "*Optimizing EV Benefits*: The Commission finds that how EVs are integrated with the electric system will be critical to ensuring that transportation electrification advances the public interest. **This may include rate design that pairs charging with periods of low demand and high renewable energy generation, encourages advanced technology for enhanced load management, and provides direct benefits to EV owners through lower fuel costs of electricity**."

As outlined in the Regulatory Assistance Project's ("RAP") June 2018 "Ensuring Electrification in the Public Interest" report ("RAP BE Report"), the purpose of a demand charge is to "*give customers an incentive to improve their individual load factor—that is, to spread out their usage to reduce their individual peak demand. But demand charges do not necessarily provide incentives for customers to adjust their usage in a way that is helpful for managing system peaks. A more*

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	5/29/2019
Type of Inquiry:	Rate Design	Response Due:	6/10/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

effective rate structure would encourage these customers to move their charging to off-peak times for the grid as a whole, when it is less stressed and less expensive to serve. This would contribute to the management of system peaks rather than individual customers' peaks."[1] Therefore, the Pilot design's elimination of the demand charge during the off-peak hours incentivizes these customers to adjust their usage to the off-peak hours.

The Pilot's demand cap incentivizes beneficial electrification by bringing down operational costs, which in turn promotes more efficient use of energy overall. According to the RAP BE Report, "*Today, replacing fossil-fueled equipment with efficient electricity- fueled equipment can create opportunities for consumers to control and reduce the cost of their energy use over time. This is due to the improved efficiency of both electricity generation and end-use appliances, as well as the affordability of electricity relative to other fuel options. In other words, due to the efficiency of an EV or heat pump, for example, the quantity of electricity required to produce a certain output (e.g., miles driven or heat delivered) is less energy-intensive and less expensive than the quantity of the fossil fuel currently being used to provide the same output*."

[1] Farnsworth, Shipley, Lazar, Seidman "Ensuring Electrification in the Public Interest" https://www.raponline.org/knowledge-center/beneficial-electrification-ensuring-electrification-public-interest/

Response Date: 06/10/2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

OAG No. 004

State Of Minnesota
Office Of The Attorney General
Utility Information Request

In the Matter of Minnesota Power's Petition for Approval of its Electric Vehicle Commercial Charging Rate Pilot		**MPUC Docket No.**	E-015/M-19-337
Requested from:	Minnesota Power		
By:	Peter Scholtz	**Date of Request:**	May 30, 2019
Telephone:	(651) 757-1473	**Due Date:**	June 11, 2019

Reference: Petition at 20

MP states that meter programming "has a small incremental cost relative to a standard GSD meter, but these costs are not substantial enough at this time to justify additional monthly service charges."

a. Identify any other costs, including capital costs that MP will incur as a result of the pilot.

b. Quantify both the meter programming costs identified in the Petition and any costs identified in your answer to (a).

c. How, if at all, will pilot costs be recovered from ratepayers?

RESPONSE:

a. At this time, Minnesota Power has not identified any additional costs that will be incurred as a result of the Pilot. This filing is limited to the petition or rate and capital costs are outside the scope.
b. At this time, Minnesota Power does not feel that programming costs are quantifiable and expects them to be very minimal. The process for deploying a meter with bucketed time periods (Time of Use) only slightly varies from a service point receiving a meter for the General Service – Demand Tariff.

At this time, Minnesota Power expects the costs of this Pilot to be minimal and does not anticipate requesting cost recovery for those costs.

Response by: Jenna Warmuth
Title: Senior Public Policy Advisor
Department: Regulatory Strategy and Policy
Telephone: 218-355-3448
Email: jwarmuth@mnpower.com

OAG No. 008

State Of Minnesota
Office Of The Attorney General
Utility Information Request

In the Matter of Minnesota Power's Petition for Approval of its Electric Vehicle Commercial Charging Rate Pilot		**MPUC Docket No.**	E-015/M-19-337
Requested from: Minnesota Power			
By:	Peter Scholtz	**Date of Request:**	May 30, 2019
Telephone:	(651) 757-1473	**Due Date:**	June 11, 2019

Reference: Petition at 20–21

How does MP plan to account for electric sales under the pilot? Will the revenue from these sales offset pilot costs?

RESPONSE:

Minnesota Power will track electric sales under this pilot through its customer information system. The Company cannot claim the revenues from the pilot rate will offset Pilot costs. Minnesota Power does anticipate the costs associated with this pilot rate to be minimal.

Response by: Jenna Warmuth
Title: Senior Public Policy Advisor
Department: Regulatory Strategy and Policy
Telephone: 218-355-3448
Email: jwarmuth@mnpower.com

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	6/10/2019
Type of Inquiry:	General	Response Due:	6/20/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

Request Number: **4**
Topic(s): Pilot Program Enrollment
Reference(s): Petition, pp. 12 and 20-21

Request:

1. Please provide a comparison of the current customer bills of the six commercial customers identified in the Petition who currently take service under the General Service Demand (GSD) tariff and a sample bill of those customer bills if those customers opted to enroll in the Company's proposed Electric Vehicle Commercial Charging Rate Pilot (Commercial EV Rate Pilot). Please also provide a non-trade secret example that compares the current customer bill under the existing GSD tariff and the Company's proposed Commercial EV Rate Pilot.

2. Please provide information related to the following topics:
   a. Customer enrollment period
   b. Planned number of participants or limits to the number of participants
   c. Customer enrollment process
   d. Customer service agreement

RESPONSE:

1. Pease see *DoC IR 04 Attach 1 TS.xlsx*, the Trade Secret spreadsheet showing the comparison of the current customer bills. Further, Minnesota Power created use cases with varying usage and demand which encompass likely usage scenarios, attached as *DoC IR 04 Attach 2.xlsx*.

2a. The Company will allow customers to enroll in the rate throughout the program period. There will be no designated enrollment period.

2b. There will be no limit to the number of participants allowed to enroll in the Pilot. The rate will be open to all interested customers.

Response Date: June 20, 2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket Number:	E015/M-19-337	☐Nonpublic	☒Public
Requested From:	Minnesota Power		
		Date of Request:	6/10/2019
Type of Inquiry:	General	Response Due:	6/20/2019
Requested by:	Matthew Landi		
Email Address(es):	matthew.landi@state.mn.us		
Phone Number(s):	651-539-1823		

2c. Customers will submit an application to Minnesota Power. Upon receiving an application, the Company will work with the site host to install a second meter, consistent with the Company's current process for EV charger installation.

2d. The Service Agreement refers to the Company's application for service, the rate schedule or tariff sheet, and the Rules and Regulations. Minnesota Power will collect an application from participating customers with information regarding their site, expected number of chargers, etc. The aforementioned application has not yet been drafted.

Response Date: June 20, 2019
Response by: Jenna Warmuth
Email Address: jwarmuth@mnpower.com
Phone Number: 218-355-3448

PUBLIC DOCUMENT
TRADE SECRET DATA EXCISED

DoC IR 04 Attachment 1
Docket No. E015/M-19-337
Page 1 of 2

	[redacted] [TRADE SECRET DATA EXCISED]	[redacted] [TRADE SECRET DATA EXCISED]	[redacted] [TRADE SECRET DATA EXCISED]	[redacted] [TRADE SECRET DATA EXCISED]	[redacted] [TRADE SECRET DATA EXCISED]
kWh					
kW					
Bill Line					
Service Charge					
Demand Charge kW @ $6 50					
Energy Charge kWh @ $0 07619					
Tax Reform Credit -1.5259%					
Low-Income Affordability Program Surcharge					
Renewable Adjustment kWh @ $-0 00096					
Transmission Adjustment kWh @ $0.00193					
Boswell 4 Plan Adjustment kWh @ $-0.00109					
Solar Energy Adjustment kWh @ $-0.00007					
Resource Adjustment					
Subtotal					
EV Demand Credit					
Total Charge					
Total Demand Charge					
Demand Percent	57% 30%	83% 30%	74% 30%	79% 30%	80% 30%

-

PUBLIC DOCUMENT
TRADE SECRET DATA EXCISED

kWh	[TRADE SECRET DATA EXCISED]	[redacted]	
kW			
Bill Line			
Service Charge			
Demand Charge kW @ $6 50			
Energy Charge kWh @ $0 07619			
Tax Reform Credit -1.5259%			
Low-Income Affordability Program Surcharge			
Renewable Adjustment kWh @ $-0 00096			
Transmission Adjustment kWh @ $0.00193			
Boswell 4 Plan Adjustment kWh @ $-0.00109			
Solar Energy Adjustment kWh @ $-0.00007			
Resource Adjustment			
Subtotal (Does Not Print on Bill)			
EV Demand Credit			
Total Charge			
Total Demand Charge			
Demand Percent		89%	30%

DoC IR 04 Attach 2
Docket No. E015/M-19-337

	Scenario 1		Scenario 2		Scenario 3	
kWh	18,000		10,000		7,000	
kW	300		400		250	
Bill Line	Current Bill	New EV Rate	Current Bill	New EV Rate	Current Bill	New EV Rate
Service Charge	$12.00	$12.00	$12.00	$12.00	$12.00	$12.00
Demand Charge kW @ $6.50	$1,950.00	$1,950.00	$2,600.00	$2,600.00	$1,625.00	$1,625.00
Energy Charge kWh @ $0.07619	$1,371.42	$1,371.42	$761.90	$761.90	$533.33	$533.33
Tax Reform Credit -1.5259%	($50.86)	($50.86)	($51.48)	($51.48)	($33.12)	($33.12)
Low-Income Affordability Program Surcharge	$0.67	$0.67	$0.67	$0.67	$0.67	$0.67
Renewable Adjustment kWh @ $-0.00096	($17.28)	($17.28)	($9.60)	($9.60)	($6.72)	($6.72)
Transmission Adjustment kWh @ $0.00193	$34.74	$34.74	$19.30	$19.30	$13.51	$13.51
Boswell 4 Plan Adjustment kWh @ $-0.00109	($19.62)	($19.62)	($10.90)	($10.90)	($7.63)	($7.63)
Solar Energy Adjustment kWh @ $-0.00007	($1.26)	($1.26)	($0.70)	($0.70)	($0.49)	($0.49)
Resource Adjustment	$93.26	$93.26	$51.81	$51.81	$36.27	$36.27
Subtotal	$3,373.06	$3,373.06	$3,373.00	$3,373.00	$2,172.82	$2,172.82
EV Demand Credit	NA	($1,340.12)	NA	($2,268.72)	NA	($1,390.22)
Total Charge	$3,373.06	$2,032.95	$3,373.00	$1,104.28	$2,172.82	$782.60
Total Demand Charge	$1,950.00	$609.88	$2,600.00	$331.28	$1,625.00	$234.78
Demand Percent	58%	30%	77%	30%	75%	30%

DoC IR 04 Attach 2
Docket No. E015/M-19-337

Scenario 4		Scenario 5		Scenario 6		Scenario 7	
4,500		4,000		1,000		10,000	
200		200		100		50	
Current Bill	New EV Rate	Current Bill	New EV Rate	Current Bill	New EV Rate	Current Bill	New EV Rate
$12.00	$12.00	$12.00	$12.00	$12.00	$12.00	$12.00	$12.00
$1,300.00	$1,300.00	$1,300.00	$1,300.00	$650.00	$650.00	$325.00	$325.00
$342.86	$342.86	$304.76	$304.76	$76.19	$76.19	$761.90	$761.90
($25.25)	($25.25)	($24.67)	($24.67)	($11.26)	($11.26)	($16.77)	($16.77)
$0.67	$0.67	$0.67	$0.67	$0.67	$0.67	$0.67	$0.67
($4.32)	($4.32)	($3.84)	($3.84)	($0.96)	($0.96)	($9.60)	($9.60)
$8.69	$8.69	$7.72	$7.72	$1.93	$1.93	$19.30	$19.30
($4.91)	($4.91)	($4.36)	($4.36)	($1.09)	($1.09)	($10.90)	($10.90)
($0.32)	($0.32)	($0.28)	($0.28)	($0.07)	($0.07)	($0.70)	($0.70)
$23.31	$23.31	$20.72	$20.72	$5.18	$5.18	$51.81	$51.81
$1,652.73	$1,652.73	$1,612.72	$1,612.72	$732.59	$732.59	$1,132.71	$1,132.71
NA	($1,148.83)	NA	($1,165.98)	NA	($614.61)	NA	$0.00
$1,652.73	$503.90	$1,612.72	$446.75	$732.59	$117.98	$1,132.71	$1,132.71
$1,300.00	$151.17	$1,300.00	$134.02	$650.00	$35.39	$325.00	$325.00
79%	30%	81%	30%	89%	30%	29%	29%

DoC IR 04 Attach 2
Docket No. E015/M-19-337

kWh	40,000	
kW	300	
Bill Line	Current Bill	New EV Rate
Service Charge	$12.00	$12.00
Demand Charge kW @ $6.50	$1,950.00	$1,950.00
Energy Charge kWh @ $0.07619	$3,047.60	$3,047.60
Tax Reform Credit -1.5259%	($76.44)	($76.44)
Low-Income Affordability Program Surcharge	$0.67	$0.67
Renewable Adjustment kWh @ $-0.00096	($38.40)	($38.40)
Transmission Adjustment kWh @ $0.00193	$77.20	$77.20
Boswell 4 Plan Adjustment kWh @ $-0.00109	($43.60)	($43.60)
Solar Energy Adjustment kWh @ $-0.00007	($2.80)	($2.80)
Resource Adjustment	$207.24	$207.24
Subtotal (Does Not Print on Bill)	$5,133.47	$5,133.47
EV Demand Credit	NA	($585.66)
Total Charge	$5,133.47	$4,547.81
Total Demand Charge	$1,950.00	$1,364.34
Demand Percent	38%	30%

CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, 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
Public Reply Comments

Docket No. E015/M-19-337

Dated this 8th day of July 2019

/s/Sharon Ferguson

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
David	Aafedt	daafedt@winthrop.com	Winthrop & Weinstine, P.A.	Suite 3500, 225 South Sixth Street Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_19-337_19-337
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022191	Electronic Service	No	OFF_SL_19-337_19-337
Alison C	Archer	aarcher@misoenergy.org	MISO	2985 Ames Crossing Rd Eagan, MN 55121	Electronic Service	No	OFF_SL_19-337_19-337
Thomas	Ashley	tom@greenlots.com	Greenlots	N/A	Electronic Service	No	OFF_SL_19-337_19-337
Kevin	Auerbacher	kauerbacher@tesla.com	Tesla, Inc.	1050 K Street NW, Suite 101 Washington, DC 20001	Electronic Service	No	OFF_SL_19-337_19-337
Max	Baumhefner	MBAUMHEFNER@NRDC.ORG	Natural Resources Defense Council	111 Sutter St 21st Fl San Francisco, CA 94104	Electronic Service	No	OFF_SL_19-337_19-337
Jessica L	Bayles	Jessica.Bayles@stoel.com	Stoel Rives LLP	1150 18th St NW Ste 325 Washington, DC 20036	Electronic Service	No	OFF_SL_19-337_19-337
Katherine	Bell	ksheldon@tesla.com	Tesla, Inc.	6801 Washington Ave S #110 Minneapolis, MN 55439	Electronic Service	No	OFF_SL_19-337_19-337
Carolyn	Berninger	cberninger@mncenter.org	Minnesota Center for Environmental Advocacy	26 E. Exchange St., Suite 206 St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-337_19-337
James J.	Bertrand	james.bertrand@stinson.com	STINSON LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
James	Canaday	james.canaday@ag.state.mn.us	Office of the Attorney General-RUD	Suite 1400 445 Minnesota St. St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-337_19-337
Ray	Choquette	rchoquette@agp.com	Ag Processing Inc.	12700 West Dodge Road PO Box 2047 Omaha, NE 68103-2047	Electronic Service	No	OFF_SL_19-337_19-337
John	Coffman	john@johncoffman.net	AARP	871 Tuxedo Blvd. St, Louis, MO 63119-2044	Electronic Service	No	OFF_SL_19-337_19-337
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	No	OFF_SL_19-337_19-337
Riley	Conlin	riley.conlin@stoel.com	Stoel Rives LLP	33 S. 6th Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Heidi	Corcoran	Heidi.Corcoran@CO.DAKOTA.MN.US	Dakota County	N/A	Electronic Service	No	OFF_SL_19-337_19-337
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	OFF_SL_19-337_19-337
Ian	Dobson	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_19-337_19-337
James C.	Erickson	jericksonkbc@gmail.com	Kelly Bay Consulting	17 Quechee St Superior, WI 54880-4421	Electronic Service	No	OFF_SL_19-337_19-337
John	Farrell	jfarrell@ilsr.org	Institute for Local Self-Reliance	1313 5th St SE #303 Minneapolis, MN 55414	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_19-337_19-337
Edward	Garvey	edward.garvey@AESLconsulting.com	AESL Consulting	32 Lawton St Saint Paul, MN 55102-2617	Electronic Service	No	OFF_SL_19-337_19-337
Bruce	Gerhardson	bgerhardson@otpco.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_19-337_19-337
Janet	Gonzalez	Janet.gonzalez@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-337_19-337
Joe	Halso	joe.halso@sierraclub.org	Sierra Club	1536 Wynkoop St Ste 200 Denver, CO 80202	Electronic Service	No	OFF_SL_19-337_19-337
Matt	Harris	matt.b.harris@xcelenergy.com	XCEL ENERGY	401 Nicollet Mall FL 8 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_19-337_19-337
Kimberly	Hellwig	kimberly.hellwig@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Shane	Henriksen	shane.henriksen@enbridge.com	Enbridge Energy Company, Inc.	1409 Hammond Ave FL 2 Superior, WI 54880	Electronic Service	No	OFF_SL_19-337_19-337
Michael	Hoppe	il23@mtn.org	Local Union 23, I.B.E.W.	932 Payne Avenue St. Paul, MN 55130	Electronic Service	No	OFF_SL_19-337_19-337
Samantha	Houston	shouston@ucsusa.org	Union of Concerned Scientists	1825 K St. NW Ste 800 Washington, DC 20006	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Lori	Hoyum	lhoyum@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_19-337_19-337
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	OFF_SL_19-337_19-337
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	No	OFF_SL_19-337_19-337
Richard	Johnson	Rick.Johnson@lawmoss.com	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Sarah	Johnson Phillips	sarah.phillips@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Brendan	Jordan	bjordan@gpisd.net	Great Plains Institute	2801 21st Ave S., Suite 220 Minneapolis, MN 55407	Electronic Service	No	OFF_SL_19-337_19-337
Mark J.	Kaufman	mkaufman@ibewlocal949.org	IBEW Local Union 949	12908 Nicollet Avenue South Burnsville, MN 55337	Electronic Service	No	OFF_SL_19-337_19-337
Thomas	Koehler	TGK@IBEW160.org	Local Union #160, IBEW	2909 Anthony Ln St Anthony Village, MN 55418-3238	Electronic Service	No	OFF_SL_19-337_19-337
Frank	Kohlasch	frank.kohlasch@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd N. St. Paul, MN 55155	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
James D.	Larson	james.larson@avantenergy.com	Avant Energy Services	220 S 6th St Ste 1300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Peder	Larson	plarson@larkinhoffman.com	Larkin Hoffman Daly & Lindgren, Ltd.	8300 Norman Center Drive Suite 1000 Bloomington, MN 55437	Electronic Service	No	OFF_SL_19-337_19-337
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	OFF_SL_19-337_19-337
Annie	Levenson Falk	annielf@cubminnesota.org	Citizens Utility Board of Minnesota	332 Minnesota Street, Suite W1360 St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-337_19-337
Ryan	Long	ryan.j.long@xcelenergy.com	Xcel Energy	414 Nicollet Mall 401 8th Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_19-337_19-337
Susan	Ludwig	sludwig@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_19-337_19-337
Peter	Madsen	peter.madsen@ag.state.mn.us	Office of the Attorney General-DOC	Bremer Tower, Suite 1800 445 Minnesota Street St. Paul, Minnesota 551017741	Electronic Service	No	OFF_SL_19-337_19-337
Kavita	Maini	kmaini@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	OFF_SL_19-337_19-337
Nick	Mark	nick.mark@centerpointenergy.com	CenterPoint Energy	505 Nicollet Mall Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	OFF_SL_19-337_19-337
Joseph	Meyer	joseph.meyer@ag.state.mn.us	Office of the Attorney General-RUD	Bremer Tower, Suite 1400 445 Minnesota Street St Paul, MN 55101-2131	Electronic Service	No	OFF_SL_19-337_19-337
Kevin	Miller	kevin.miller@chargepoint.com	ChargePoint, Inc.	254 E. Hacienda Avenue Campbell, California 95008	Electronic Service	No	OFF_SL_19-337_19-337
Stacy	Miller	stacy.miller@minneapolismn.gov	City of Minneapolis	350 S. 5th Street Room M 301 Minneapolis, MN 55415	Electronic Service	No	OFF_SL_19-337_19-337
Herbert	Minke	hminke@allete.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_19-337_19-337
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_19-337_19-337
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Mark	Nabong	mnabong@nrdc.org	Natural Resources Defense Council	20 N. Wacker Drive #1600 Chicago, IL 60606	Electronic Service	No	OFF_SL_19-337_19-337
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_19-337_19-337
Michael	Noble	noble@fresh-energy.org	Fresh Energy	Hamm Bldg., Suite 220 408 St. Peter Street St. Paul, MN 55102	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Debra	Opatz	dopatz@otpco.com	Otter Tail Power Company	215 South Cascade Street Fergus Falls, MN 56537	Electronic Service	No	OFF_SL_19-337_19-337
Carol A.	Overland	overland@legalectric.org	Legalectric - Overland Law Office	1110 West Avenue Red Wing, MN 55066	Electronic Service	No	OFF_SL_19-337_19-337
Jeff	Oxley	jeff.oxley@state.mn.us	Office of Administrative Hearings	600 North Robert Street St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-337_19-337
Jennifer	Peterson	jjpeterson@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_19-337_19-337
Marcia	Podratz	mpodratz@mnpower.com	Minnesota Power	30 W Superior S Duluth, MN 55802	Electronic Service	No	OFF_SL_19-337_19-337
David G.	Prazak	dprazak@otpco.com	Otter Tail Power Company	P.O. Box 496 215 South Cascade Street Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_19-337_19-337
Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Electronic Service	No	OFF_SL_19-337_19-337
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-337_19-337
Thomas	Scharff	thomas.scharff@versoco.com	Verso Corp	600 High Street Wisconsin Rapids, WI 54495	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	332 Minnesota St, Ste W1390 St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-337_19-337
Timothy	Sexton	Timothy.Sexton@state.mn.us	Minnesota Department of Transportation	395 John Ireland Blvd #620 St. Paul, MN 55155-1899	Electronic Service	No	OFF_SL_19-337_19-337
Anne	Smart	anne.smart@chargepoint.com	ChargePoint, Inc.	254 E Hacienda Ave Campbell, CA 95008	Electronic Service	No	OFF_SL_19-337_19-337
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	OFF_SL_19-337_19-337
Byron E.	Starns	byron.starns@stinson.com	STINSON LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
James M	Strommen	jstrommen@kennedy-graven.com	Kennedy & Graven, Chartered	200 S 6th St Ste 470 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Eric	Swanson	eswanson@winthrop.com	Winthrop & Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_19-337_19-337
Lynnette	Sweet	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_19-337_19-337
Stuart	Tommerdahl	stommerdahl@otpco.com	Otter Tail Power Company	215 S Cascade St PO Box 496 Fergus Falls, MN 56537	Electronic Service	No	OFF_SL_19-337_19-337

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Karen	Turnboom	karen.turnboom@versoco.com	Verso Corporation	100 Central Avenue Duluth, MN 55807	Electronic Service	No	OFF_SL_19-337_19-337
Andrew	Twite	twite@fresh-energy.org	Fresh Energy	408 St. Peter Street, Ste. 220 St. Paul, MN 55102	Electronic Service	No	OFF_SL_19-337_19-337
Thomas	Tynes	jjazynka@energyfreedomcoalition.com	Energy Freedom Coalition of America	101 Constitution Ave NW Ste 525 East Washington, DC 20001	Electronic Service	No	OFF_SL_19-337_19-337
Lisa	Veith	lisa.veith@ci.stpaul.mn.us	City of St. Paul	400 City Hall and Courthouse 15 West Kellogg Blvd. St. Paul, MN 55102	Electronic Service	No	OFF_SL_19-337_19-337
Jenna	Warmuth	jwarmuth@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802-2093	Electronic Service	No	OFF_SL_19-337_19-337
Darrell	Washington	darrell.washington@state.mn.us	DOT	N/A	Electronic Service	No	OFF_SL_19-337_19-337
Justin	Wilson	justin.wilson@chargepoint.com	ChargePoint	240 East Hacienda Ave. Campbell, CA 95008	Electronic Service	No	OFF_SL_19-337_19-337
Joseph	Windler	jwindler@winthrop.com	Winthrop & Weinstine	225 South Sixth Street, Suite 3500 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	No	OFF_SL_19-337_19-337
Patrick	Zomer	Patrick.Zomer@lawmoss.com	Moss & Barnett a Professional Association	150 S. 5th Street, #1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_19-337_19-337