

**STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

Docket No. IR 20-004

Electric Distribution Utilities

**Investigation of Electric Vehicle Rate Design Standards, Electric Vehicle Time of Day
Rates for Residential and Commercial Customers**

SUPPLEMENTAL COMMENTS OF CHARGEPOINT, INC.

I. Introduction

ChargePoint, Inc. (“ChargePoint”) provides these supplemental comments in response to questions raised by the Commission at the July 14, 2020 hearing convened in this docket, as well as post-hearing comments provided by the utilities on July 24, 2020.

II. Comments

A. Alternatives to Demand Charges

As ChargePoint and other parties have noted in prior comments in this proceeding, there are a variety of sustainable ways to alleviate demand charges, which are currently an obstacle to EV infrastructure deployment. The rate design options are not limited to demand charge holidays and can be cost-neutral. ChargePoint recommends that the Commission direct the New Hampshire utilities to file within 120 days proposals for alternatives to customer demand charges. It would be administratively efficient to combine this inquiry with Staff’s recommended inquiry into electric vehicle (“EV”) time-of-use (“TOU”) rates, which ChargePoint supports.

ChargePoint recommends that the Commission direct the utilities to propose demand charge alternatives consistent with or similar to those launched in other jurisdictions. Examples of such programs in other jurisdictions include:

- Replacing or pairing demand charges with higher volumetric pricing to provide greater certainty for charging station operators with low utilization. Such a rate could be scaled based on utilization or load factor as charging behavior changes over time. Pacific Power has implemented such a rate in Oregon, providing for a demand charge transition discount of 90% and an on-peak energy charge transition discount of 10% on May 15, 2017, and reducing the demand charge transition discount gradually each year to 0% on May 15, 2026 while increasing

the on-peak energy charge transition discount gradually each year to 100% on May 15, 2016.¹

- Implementing a multi-phase “rate limiter” such as the one offered by Ameren in Illinois. The Ameren rate is designed to limit the average monthly cost for customers who limited their total kWh usage during the four summer billing periods of June through September to 20% or less of their annual kWh consumption.²
- Forgiving a portion of billed demand when the customer has a low load factor. Xcel Minnesota has adopted such an approach in its general service rate.³

Rate design pilots and programs such as these can offer needed certainty to support a new but beneficial EV charging industry in New Hampshire.

B. Alternative Metering – Benefits, Criteria, and Screening

The General Court, Commission Staff, and stakeholders have recognized that EVs will be deployed at an increasing rate in New Hampshire and greater New England over the next five to ten years. The time to plan for this deployment is now. In order to plan for this deployment, the Commission should direct the New Hampshire utilities to propose pilot programs providing EV-TOU rates to early EV adopters. Because these programs will be voluntary pilots, and given that advanced metering has not yet been deployed widely throughout the state, making use of embedded metering is a commonsense and cost-saving solution.

ChargePoint understands the concerns regarding alternative metering that Eversource expressed at the July 14, 2020 hearing and in written comments on July 24, 2020. Notwithstanding these concerns, it is important to note that EV charging stations that embed load monitoring technology with billing quality accuracy are a critically important tool that can reduce participation costs and increase program participation levels while providing granular and valuable data.

In fact, as Eversource notes in its July 24, 2020 comments, it has already used alternatives to traditional metering successfully in demand management programs in both Connecticut and Massachusetts.⁴ Eversource states that it “acknowledges the merits of these options and continues to examine opportunities to expand these offerings to customers, including customers with EV chargers.”⁵ At the same time, Eversource expresses concerns about the

¹ See Pacific Power, Oregon Schedule 45, Public DC Fast Charger Optional Transitional Rate Delivery Service available at https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/rates-regulation/oregon/tariffs/rates/045_Public_DC_Fast_Charger_Optional_Transitional_Rate_Delivery_Service.pdf.

² See Ameren Tariff available at <https://www.ameren.com/-/media/rates/files/illinois/aiel14rtds4.pdf>.

³ See Xcel-MN Tariff available at https://www.xcelenergy.com/staticfiles/xcel/Regulatory/Regulatory%20PDFs/rates/MN/Me_Section_5.pdf.

⁴ Eversource Comments at 2-3.

⁵ *Id.* at 2.

potential accuracy of alternative metering.⁶ ChargePoint addresses below some of the questions that have been raised by the Commission and the utilities with respect to alternative metering.

Level 2 charging stations produced by companies like ChargePoint are consumer electronic devices that include high quality, embedded metrology designed to meet a generally agreed-upon standard. For example, ChargePoint's current residential EV charging solution, ChargePoint Flex, meets or exceeds the requirements set forth in the electricity-as-motor-fuel sections of NIST Handbooks 44. In utility terms, ChargePoint Flex meets the accuracy requirements of ANSI C12.1-2008 (1% class) as applied to embedded EVSE metering.

The embedded metering capabilities that ChargePoint offers, and that other competitive solution providers also provide, have been vetted for accuracy in other states and are in use to support utility TOU rate billing pilot programs. For example, the Minnesota Public Utilities Commission approved a pilot proposal in 2017 to reduce the upfront cost burden for customers looking to opt into EV tariffs by implementing the tariff directly with smart EV charging.⁷ Earlier this year the Wisconsin Public Service Commission similarly approved multiple pilot programs utilizing alternative metering.⁸

In jurisdictions such as these, utilities have adopted important device eligibility criteria to ensure essential qualities. These qualities including accuracy, reliability, privacy, efficiency, security, and compatibility with utility systems. Specifically, Northern States Power Company-Minnesota, for instance, screened market-available EV charging devices for its EV-TOU pilot program in accordance with the following minimum requirements:⁹

- Capable of storing interval data for up to 90 days to ensure charging data is retained locally until it can be transmitted and received;
- Meter accuracy as shown by the manufacturer must be within 2 percent;
- Ability to retrieve 15-minute interval energy usage data;
- Secure data transfer between the customer and the utility;
- 10-watt standby power consumption maximum;
- Charging device is UL-listed;
- Compatible metering data format (e.g. XML, MV90, OCPP and CNMP);
- Ability to offer administrative privileges that enable a utility to access charging data and to receive information from the EV charging device; and
- Editing controls that prevent data tampering.

As part of the RFP process, charging stations can be screened for compliance with metering requirements such as accuracy within a 2 percent range. Northern States Power

⁶ *Id.* at 3.

⁷ See Minn. PUC Order on Petition for Approval of a Residential EV Service Pilot Program, Docket No. E002/M-17-817 (May 9, 2018), attached in the Appendix to these comments.

⁸ See Wisc. PSC Order on Application of NSP for Approval of EV Service Programs, Docket No. 4220-TE-104 (July 16, 2020), attached in the Appendix to these comments.

⁹ See Northern States Power Company, Petition for Approval of a Residential EV Service Pilot Program at 9, Minn. PUC Docket No. E002/M-17-817 (Nov. 17, 2017), attached in the Appendix to these comments.

Company-Wisconsin used similar screening criteria and tested for this high level of accuracy during the RFP process in order to ensure compliance.¹⁰

Adopting screening criteria such as these improves the success of a pilot program from the perspective of the utility as well as the customer. Screening criteria enable the secure use of networked charging solutions that can provide utilities with visibility of, and access to, port-level data for EV behavior that takes place on the customer's side of the meter. This offers a more granular and valuable data set than just collecting data from a metered service standpoint, which may contain multiple charging stations downstream or even other loads.

For these reasons, ChargePoint recommends pursuing EV-TOU pilot programs that employ alternative metering that has been appropriately screened in accordance with minimum functional criteria, such as those listed above. These pilot programs will test customer responsiveness and provide valuable experience at least cost, while preparing the state to better manage EV load when it becomes ubiquitous.

III. Conclusion

ChargePoint appreciates the opportunity to provide these comments and strongly supports the efforts of the Commission and its Staff to advance with important EV rate programs at this time, including alternatives to traditional demand charges and EV-TOU rate pilot programs.

Respectfully submitted,



Melissa E. Birchard
Keyes and Fox, LLP
18 Loudon Rd. #1393
Concord, NH 03301
Tel.: 857-276-6883
E-mail: mbirchard@keyesfox.com
ATTORNEY FOR CHARGEPOINT, INC.



Kevin George Miller
Director, Public Policy
ChargePoint, Inc.
Tel.: 917-836-4954
E-mail: kevin.miller@chargepoint.com

July 31, 2020

¹⁰ See NSP Comments on the Application of NSP for Approval of EV Service Programs, Wisc. PSC Docket No. 4220-TE-104 at 13 (June 3, 2020), attached in the Appendix to these comments. See also Wisc. PSC Order in Docket No. 4220-TE-104 (July 16, 2020) (approving pilot program), attached in the Appendix to these comments.

Appendix

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange
Dan Lipschultz
Matthew Schuerger
Katie J. Sieben
John A. Tuma

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of Xcel Energy's Petition for
Approval of a Residential Electric-Vehicle
Service Pilot Program

ISSUE DATE: May 9, 2018

DOCKET NO. E-002/M-17-817

ORDER APPROVING PILOT
PROGRAM, GRANTING VARIANCE,
AND REQUIRING ANNUAL REPORTS

PROCEDURAL HISTORY

On November 17, 2017, Xcel Energy (Xcel or the Company) filed a petition for approval of a residential electric-vehicle (EV) service pilot program (the pilot). The pilot would provide an alternative to Xcel's existing EV service by reducing the upfront cost to meter EV usage separately from other electricity usage.

In February 2018, the following stakeholders filed comments recommending approval of the pilot, in some cases with modifications:

- Fresh Energy, Minnesota Center for Environmental Advocacy (MCEA), and the Sierra Club
- ChargePoint, Inc.
- Greenlots
- Institute for Local Self-Reliance

On March 5, the Minnesota Department of Commerce filed comments recommending that the Commission approve the pilot with certain reporting requirements.

On March 15, Xcel filed reply comments.

On April 12, the matter came before the Commission.

FINDINGS AND CONCLUSIONS

I. Summary of Commission Action

In this order, the Commission approves Xcel's EV pilot program with modifications, grants a

variance to the Commission's metering and billing-error rules for purposes of the pilot, and specifies content requirements for annual reports on the program.

Xcel will also be required to make a compliance filing with updated tariff sheets reflecting the Commission's decisions, as well as a set of evaluation criteria to assess the pilot's outcomes.

II. Background

A. Xcel's Current EV Service Offering

In 2014, the Minnesota Legislature passed Minn. Stat. § 216B.1614, which directs each public utility selling electricity at retail to file, by February 1, 2015, a tariff enabling customers to purchase electricity solely for the purpose of recharging an electric vehicle.

Xcel filed a residential EV tariff in January 2015 in compliance with Minn. Stat. § 216B.1614, and the Commission approved it in June 2015.¹ The tariff gives customers the option to have their EV charging separately metered and billed based on time of use, with off-peak usage receiving a lower per-kilowatt-hour rate.²

Residential customers taking service under Xcel's current EV tariff must supply premises wiring for a second electric meter, as well as equipment for charging their vehicle (known as electric-vehicle supply equipment, or EVSE). The result is that customers typically spend between \$1,725 and \$3,525 to enroll in Xcel's current EV tariff.

In response to stakeholder feedback that these upfront costs are a barrier to participation in its EV service offering, Xcel proposed the pilot program now under review.

B. Xcel's EV Pilot Proposal

Overview

Xcel's EV pilot would address upfront cost barriers by employing EVSE that sends usage data to the utility via the customer's home wireless network, removing the need to install a second meter. Moreover, customers would have the option to pay for EVSE over a period of time through a fixed monthly charge, further reducing upfront costs.

In addition, Xcel has endeavored to ease the process of EVSE acquisition and installation by negotiating with a handful of competitively selected vendors to supply and install utility-approved charging equipment.

The Company intends to enroll up to 100 customers in the pilot for two-year terms. After the pilot ends, Xcel hopes to evaluate, among other things, the extent to which the pilot's rate

¹ *In the Matter of the Petition of Northern States Power Company for Approval of a Residential Electric Vehicle Charging Tariff*, Docket No. E002/M-15-111. The current residential EV tariff can be found at section 5, sheets 5–6 of Xcel's Minnesota Electric Rate Book.

² Generally, off-peak hours include weekends, holidays, and weekdays from 9 p.m. to 9 a.m. *See* Minnesota Electric Rate Book, section 5, sheet 6.

structure and other features entice customers to participate, the pilot’s cost compared to the existing EV service option, and the billing reliability of wireless-capable EVSE.

Outreach

If the pilot is approved, Xcel will invite residential customers who own or lease an EV to enroll in the program. The Company will also use targeted marketing, such as search-engine advertising, and social media to reach potential pilot participants. Finally, Xcel plans to incentivize car dealers to promote the pilot program by offering them a \$100 referral payment for each customer that enrolls in the program.

Rate Options

The pilot program, like the current EV tariff, offers a lower per-kilowatt-hour (kWh) rate during off-peak hours. Participants may choose to pay for EVSE either through the monthly customer charge under a “bundled service” rate option, or up front under a “prepay” option, which has a correspondingly lower customer charge.

Table 1 summarizes the various pilot costs and rate options as currently proposed:

Table 1
EV Pilot Rate Options and Costs

<u>Rate Option</u>	<u>Upfront Expenses</u>	<u>Customer Charge³</u>	<u>Energy Charge</u>	<u>Illustrative Monthly Bill⁴</u>
Bundled Service	<ul style="list-style-type: none"> • Premises wiring 	\$17–\$19	<ul style="list-style-type: none"> • On-peak, summer \$0.21096/kWh • On-peak, winter \$0.16968/kWh • Off-peak \$0.04260/kWh 	\$41.64–\$43.64
Prepay Option	<ul style="list-style-type: none"> • Purchase and installation of EVSE • Premises wiring 	\$7–\$8		\$31.64–\$32.64

EVSE Installation and Ownership

Pilot participants will be able to choose an EVSE unit from a list of equipment that meets Company requirements. Xcel will then purchase the EVSE and have it installed at the customer’s home by a qualified contractor. The contractor will also provide an estimate of the cost to install a second meter, which will be used to determine the cost savings associated with the pilot.

³ Xcel initially proposed a customer charge of \$27.45 per month for bundled service and \$13.88 per month for prepay service. However, at the Commission meeting, the Company stated that, through further negotiations with its equipment vendors and as a result of a federal tax cut, it anticipated final customer charges in the ranges shown above.

⁴ Assuming 1,000 miles of driving per month at 3.3 kWh per mile and 95% of charging off-peak. See Xcel’s petition, at 16.

The Company proposes to own all EVSE during the term of the pilot, with the equipment vendor responsible for collecting customer energy usage through the customer's home wireless network and transferring the data to Xcel. At the end of the pilot's two-year term, customers paying for EVSE through the customer charge will have three options with respect to ownership of the equipment:

- Have the EVSE removed at no cost and return to their previous rate;
- Purchase the EVSE for a cost equal to its undepreciated balance and either (a) move back to their previous rate or (b) move to any new EV charging tariff offered by Xcel that is compatible with the EVSE; or
- Have the EVSE replaced or upgraded if Xcel offers a new tariff requiring different technology.

Customers who prepaid for the EVSE will have two options:

- Take ownership of the EVSE at no cost and move back to their previous rate or to any new EV charging tariff offered by Xcel that is compatible with their EVSE; or
- Have the EVSE replaced or upgraded if Xcel offers a new EV charging tariff requiring different technology.

III. Pilot Program Approved

A. Positions of the Parties

Commenting parties were generally supportive of the pilot, viewing it as a valuable step toward integrating more EV load into Xcel's system.

Fresh Energy, MCEA, and the Sierra Club praised the pilot for removing a major cost barrier to participation. And they maintained that the pilot would allow Xcel, the Commission, and stakeholders to gain familiarity with a new EVSE technology while offering customers a simple process for installing the equipment.

The Institute for Local Self-Reliance (ILSR) expressed concern that the pilot's monthly customer charges would erase most of the savings that an EV customer might hope to realize by charging a vehicle off peak. It recommended that the Commission approve the pilot without the monthly charge as a further incentive for customers to participate.

Xcel opposed eliminating the monthly customer charge, arguing that doing so would prevent the pilot from achieving one of its key goals, which is to evaluate how customers respond to the price signals associated with spreading out upfront costs.

Finally, the Department recommended that the Commission approve the pilot and add the following language to the proposed tariff for consistency with Xcel's existing EV tariff:

Customers have the option to elect all or a portion of the supply of electricity under this schedule from renewable energy resources. The renewable energy supply option is available subject to the provisions contained in the Voluntary Renewable and High-Efficiency Energy Purchase (Windsor Program) Rider, or other available rate schedule for voluntary renewable energy supply that is applicable.

B. Commission Action

The Commission agrees with the parties that Xcel's EV pilot proposal is in the public interest and will approve it with the conditions discussed below.

Xcel's current EV-service tariff provides a time-of-use rate designed to incentivize off-peak charging; however, the tariff's second-meter requirement and the associated upfront costs may deter some customers from selecting EV service. The pilot will test whether and to what extent limiting these upfront costs spurs adoption of time-of-use rates by EV customers. It will therefore benefit all ratepayers by aiding Xcel in its efforts to integrate EV load as cost-effectively as possible.

The Commission appreciates Xcel's efforts to negotiate more favorable EVSE prices with its vendors, which will allow the Company to offer lower customer charges than it identified in its initial filing. Negotiations are ongoing, but Xcel expects that the bundled customer charge will end up between \$17 and \$19 and the prepay customer charge between \$7 and \$8.

At hearing, the Company committed that the final customer charges would not exceed the high end of these ranges. The Commission accepts this commitment and expects the Company to continue negotiating to keep the charges as low as possible.

ILSR argues that the terms of the pilot are not favorable enough to attract a significant number of customers, and it advocates eliminating the customer charges entirely. However, the purpose of the pilot program is not to subsidize EV charging; it is to learn how customers respond to an EV tariff that reduces upfront costs. Even if ILSR is correct, and Xcel is unable to fully subscribe the pilot, the Company will have learned something about the incentives needed to drive adoption of time-of-use rates for EV charging.⁵

The EV pilot will require customer usage data to be shared with third-party contractors and transmitted to the Company via the internet. Such information sharing, while necessary to achieve the goals of the pilot, also carries a risk that unauthorized parties may gain access to customer data. The Commission expects Xcel to immediately notify customers of any unauthorized access to data obtained through the pilot, consistent with its existing obligations to customers to protect their data.

⁵ To help derive the greatest possible benefit from the pilot, the Commission will require Xcel to identify, as part of its compliance filing, a set of evaluation criteria to assess the outcome of the pilot and what success would entail.

Finally, the Commission will require Xcel to standardize the proposed tariff language pertaining to a customer's option to select a renewable-energy supply, as recommended by the Department. This change will help ensure that related service offerings have consistent terms and conditions.

IV. Accounting Treatment Approved

Xcel proposed to own all EVSE during the term of the pilot program, to capitalize the EVSE costs as distribution plant, and to earn a return upon the capitalized amounts. In the case of bundled service, the Company also proposed to recover a carrying charge on the unpaid balance of the EVSE purchase price during the term of the pilot.

In addition, Xcel expects to incur the following costs for its planned customer-outreach initiatives:

Table 2
EV Pilot Education and Information Budget, Year One

	Estimated Amount
Dealer and Trade Outreach	\$10,000
Dealer Referral Incentive	\$10,000
Events/Collateral	\$7,000
Digital Channels	\$6,700
Direct Mail	\$4,500
Bill Inserts	\$3,000
	<u>\$41,200</u>

The Company sought permission to include these costs in the communications-cost tracker account for its existing EV tariff.⁶ Xcel stated that it intends to request recovery of qualifying costs from this account in a future rate proceeding.

The Department agreed with Xcel's proposed accounting treatment of both EVSE costs and communications costs and recommended approval. The Commission, likewise, finds this accounting treatment reasonable and will approve it.

V. Rule Variance Granted

A. Introduction

In lieu of a traditional electric meter, the pilot program will rely on wireless-capable EVSE and a customer's home wireless network to gather electricity-usage data. This data will then be used to separately calculate charges for EV usage on the customer's bill.

Xcel's proposed Customer Agreement requires participants to maintain the connection between the EVSE and an internet service provider, and provides that "[l]ate, incomplete, or inaccurate EVSE usage information will be disregarded where the lack of Wi-Fi service is the cause of the

⁶ See Docket No. E-002/M-15-111.

data transmission failure” and that “any actual EV charging during these intervals will be billed at the Participant’s current rate and will not be adjusted in any future bills if any EV usage data is subsequently received.”

Xcel requested that the pilot EVSE units be exempted from the Commission’s metering and billing-error rules, Minn. R. 7820.3700 and .3800, which set forth the remedies for inaccurate metering and other billing errors by electric utilities.

The Department found the terms of Xcel’s Customer Agreement reasonable and recommended that the Commission grant a variance to Minn. R. 7820.3700 and .3800, limited to errors occurring due to the pilot participant’s wireless internet connection. The Department also requested that Xcel provide reporting on the extent to which wireless connections impact pilot participation, including billing.

B. Commission Action

The Commission must grant a variance to its rules when the following requirements are met:

1. enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
2. granting the variance would not adversely affect the public interest; and
3. granting the variance would not conflict with standards imposed by law.

The Commission finds that the three requirements for a variance have been met in this case and will therefore grant Xcel’s request to vary Minn. R. 7820.3700 and .3800. Specifically, the Commission finds as follows:

Enforcing Minn R. 7820.3700 and .3800 in this case would impose an excessive burden upon Xcel by holding the Company responsible for the reliability of its customers’ wireless networks and internet service. Moreover, granting a variance limited to this pilot program would not adversely affect the public interest but rather would further the public interest by making it possible for Xcel to offer an innovative program that will provide useful information about the reliability of a novel metering method, and whose success will benefit all ratepayers. And, finally, varying these rules would not conflict with any standards imposed by law.

Accordingly, the Commission will grant Xcel’s request to vary Minn R. 7820.3700 and .3800 for purposes of the EV pilot program. The Commission will require Xcel to report on wireless connectivity issues as detailed in the following section.

VI. Annual Reporting

A. Introduction

In its initial filing, Xcel proposed to file annual reports by June 1, beginning after the first full year of the pilot, with the following information:

- number of participating customers and amount of electricity sold in the program;

- tracker balances;
- analyses of customer cost savings; and
- lessons learned regarding customer experience and pilot performance under Xcel's safety and reliability standards

The Department recommended that Xcel be required to provide additional detail in its reports, including the number of customers choosing the bundled option and the associated costs and revenues, the number of customers choosing the prepay option and the associated costs and revenues, the types of EVSE chosen by participants, and the estimated cost of installing a second meter instead of wireless-enabled ESVE. Xcel did not object to providing this information.

Fresh Energy, MCEA, and the Sierra Club recommended that Xcel be required to include a plan in its 2019 report to transition the EV pilot to a permanent program no later than June 2020. They argued that the sooner the program is opened to wider participation, the sooner Xcel can realize greater benefits from new EV load.

Xcel responded that it would prefer to keep the scope of the pilot focused and consider the appropriate next steps for future developments after gaining experience with this program. The Company stated that ultimately it hopes to work with stakeholders on scaling the pilot offering to something broader.

B. Commission Action

To ensure that the Commission and stakeholders benefit from the data that Xcel gleans from the EV pilot, the Commission will require the Company to make the annual reports it proposed, adding the following items to the reports:

- the number of customers choosing the bundled option and the costs and revenues associated with this option,
- the number of customers choosing the pre-pay option and the associated costs and revenues,
- the types of EVSE equipment chosen by pilot participants,
- contractors' estimated second-meter installation costs,
- the impact of wireless connectivity issues on pilot participation and billing, and
- an analysis of the effectiveness of car-dealer incentives.

Moreover, the Commission agrees with Fresh Energy, MCEA, and the Sierra Club that Xcel's first annual report should include a plan to transition the pilot to a permanent program. Xcel, understandably, would like to gain experience with the pilot before moving toward a broader, permanent service offering. However, the Commission concludes that one year will give the Company and stakeholders enough experience with the pilot to inform a discussion about how to transition to a permanent offering.

The Commission will so order.

ORDER

1. Xcel Energy's proposal for implementing a residential EV-service pilot is hereby approved.
2. The pilot's monthly customer charge shall be no higher than \$19 for bundled service and \$8 for prepay service.
3. Xcel shall immediately notify customers of any unauthorized access to data obtained through the pilot, consistent with its existing obligations to customers to protect their data.
4. Xcel shall modify its proposed tariff to add the following sentence to the Renewable Energy Supply Option section: "The renewable energy supply option is available subject to the provisions contained in the Voluntary Renewable and High-Efficiency Energy Purchase (Windsor Program) Rider, or other available rate schedule for voluntary renewable energy supply that is applicable."
5. Xcel's proposed accounting treatment of EVSE costs is approved.
6. Xcel is authorized to place costs incurred for customer education and information initiatives in the communications-cost tracker account for its existing EV tariff.
7. Xcel's request to vary Minn. R. 7820.3700 and .3800 is granted.
8. Beginning in 2019, Xcel shall file, by June 1, an annual report on the pilot, including at a minimum:
 - a. the number of participating customers and amount of electricity sold in the program, reported on a monthly basis;
 - b. tracker balances;
 - c. analyses of customer cost savings;
 - d. lessons learned regarding customer experience and pilot performance under Xcel's safety and reliability standards;
 - e. the number of customers choosing the bundled option;
 - f. the costs and revenues associated with the bundled option;
 - g. the number of customers choosing the pre-pay option;
 - h. the costs and revenues associated with the pre-pay option;
 - i. the types of EVSE equipment that are chosen by the participants;
 - j. the contractors' estimated second-meter installation costs;
 - k. the extent to which wireless connections impacted pilot participation;
 - l. how often wireless connectivity issues prevented billing under the pilot; and
 - m. analysis of the effectiveness of car-dealer incentives.

9. Xcel shall, in its June 1, 2019 annual report, include a plan to transition the pilot into a permanent program.
10. Within 45 days of the date of this order, Xcel shall submit compliance filings in the current docket and updated tariff sheets to reflect the Commission's decisions. As part of that filing, Xcel shall identify a set of evaluation criteria to assess the desired outcomes of the pilot and what success would entail.
11. This order shall become effective immediately.

BY ORDER OF THE COMMISSION

Daniel P. Wolf
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing loss or speech disabilities may call us through their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

SERVICE DATE
Jul 16, 2020

PSC REF#: 393776

Public Service Commission of Wisconsin
RECEIVED: 07/16/2020 1:25:01 PM

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Northern States Power Company-Wisconsin, as an
Electric Public Utility, for Approval of Electric Vehicle Home Service
Programs

4220-TE-104

FINAL DECISION

This is the Final Decision in the investigation conducted by the Public Service Commission of Wisconsin (Commission) to consider the request of Northern States Power Company-Wisconsin (NSPW) for approval of three electric vehicle (EV) service programs. The application is APPROVED, as conditioned by this Final Decision.

Introduction

On November 20, 2019, NSPW filed an application with the Commission for approval of three EV service programs. ([PSC REF#: 379775](#).) The Commission issued a Notice of Investigation on December 19, 2020. ([PSC REF#: 381205](#).) Citizens Utility Board of Wisconsin (CUB), RENEW Wisconsin, Wisconsin Industrial Energy Group (WIEG), and ChargePoint requested to intervene and were granted intervenor status. ([PSC REF#: 382775](#).) None of the parties requested a hearing, and no hearing was required or held.

A memorandum and letter requesting comments on NSPW's request for approval of three EV service programs was served on May 20, 2020. ([PSC REF#: 389765](#).) The Commission received comments from the parties of NSPW, CUB, WIEG, and ChargePoint. ([PSC REF#: 390839](#), [PSC REF#: 390847](#), [PSC REF#: 390843](#), [PSC REF#: 390834](#).) The Commission also received several public comments from local economic development corporations, state representatives, other organizations, and members of the public. On June 24, 2020, the

Commission solicited additional comments. ([PSC REF#: 392545](#).) The Commission discussed this matter at its open meetings of June 18, 2020 and July 16, 2020.

Findings of Fact

1. NSPW filed an application with the Commission for approval of three EV service programs on November 20, 2019.

2. It is reasonable to authorize NSPW to implement the proposed EVR-1, EVR-2, and Commercial Program programs, as pilot programs, as modified and conditioned by this Final Decision.

3. It is reasonable to direct NSPW to work with Commission staff to agree on accounting procedures to track program costs and revenues, and ensure there is no cross-subsidization from other non-participating customers. NSPW shall provide accounting treatment and procedures for the programs within 60 days of this Final Decision.

4. It is reasonable to direct NSPW to provide annual reporting for the EVR-1 and EVR-2 programs on the following:

- a. Number of customers and selected options (bundled vs. prepay);
- b. Total amount of electricity sold by time-of-day (TOD);
- c. Program budget and spending; and
- d. Survey results regarding customer satisfaction and installation experiences.

5. It is reasonable to direct NSPW to provide reporting for the EVR-1 and EVR-2 programs on aggregated interval data, analysis of customer cost savings, and analysis of load

management. This information shall be filed in September 2022 and in September 2024, respectively.

6. It is reasonable to direct NSPW to provide annual reporting for the Commercial Program on the following:

a. Number of customers participating in revenue-based extension rules, including each customer's estimated load, total allowance, customer contribution, and total extension costs for both distribution extension and make-ready infrastructure with a comparison to current extension rules;

b. When actuals are available, the annual reports shall include a comparison of actual and estimated load showing how distribution revenues record the revenue-based distribution allowance; and

c. Number of customers under each of the Optional Charger Service options.

7. It is reasonable to direct NSPW to report for the Commercial Program on the number of customers who do not meet their anticipated load level within two -years and who receive a true-up; on the number of customers who do not pay the true-up bill prior to NSPW writing it off and the amounts NSPW writes off after approximately 180 days; and on the amount of bills issued to customers at the end of the two-year true-up period.

8. It is reasonable to direct NSPW to file to continue, modify, expand, replace, or close out the EVR-1, EVR-2, and Commercial Program pilot programs by April 1, 2025.

9. It is reasonable to grant NSPW, with conditions, waivers of the following Wisconsin Administrative Code and NSPW tariff provisions as they pertain to the EVR-1 program charging unit sub-meter:

- a. Wisconsin Admin. Code § PSC 113.0406(1)(a)3., 4., and 5. pertaining to information displayed on customer bills;
- b. Wisconsin Admin. Code § PSC 113.0406(1)(c) and Schedule Ex.-15, Section 3.3 pertaining to marking bills based on usage measured by the EV charging unit sub-meter as estimated; and
- c. Wisconsin Admin. Code § PSC 113.0406(3) pertaining to identifying credits and original charges for meter inaccuracies, errors in billing, or misapplication of rates.

10. It is reasonable to direct NSPW to modify its tariff provisions to make the tariff language more explicit in informing customers that in the event of an error in the charging unit sub-meter's ability to track EV charging usage, such usage will be billed at the Rg-1 or Fg-1 rate.

11. It is reasonable to deny NSPW's rescinded request for a waiver of Wis. Admin. Code § PSC 113.0407 and Schedule Ex.-13, Section 2.8 for the EVR-1 program.

12. It is reasonable to grant NSPW, with conditions, a limited waiver of the following Wisconsin Administrative Code and NSPW tariff provisions as they pertain to the EVR-1 program charging unit sub-meter:

- a. Wisconsin Admin. Code § PSC 113.0811(1)(c) pertaining to meter accuracy requirements;
- b. Wisconsin Admin. Code §§ PSC 113.0901, 113.0903, 113.0905, 113.0924, and Schedule Ex.-16, Section 3.4 pertaining to meter testing standards and recalculating bills for inaccurate meters; and

c. NSPW tariff Schedule Ex.-19, Section 4.4 pertaining to a prohibition against installing additional meters under any one account.

13. It is reasonable for the Commission to establish an initial meter accuracy and testing standard for the charging unit sub-meter requiring initial accuracy as shown by the manufacturer to be within 2 percent, to direct NSPW to work with Commission staff on developing an ongoing meter accuracy and testing standard, and to require NSPW to propose such standards by September 1, 2022. The Commission delegates to the Administrator for the Division of Digital Access, Consumer and Environmental Affairs the authority to modify the initial meter accuracy and testing standard authorized by the Commission in this docket.

14. It is reasonable to direct NSPW to provide and include updated tariff language explaining that over- or under-registration of charging use will result in more or less usage being billed at a new TOD rate specifically designed for EVs (EV TOD) and that bill adjustments will not be made for charging unit sub-meter inaccuracy.

15. It is reasonable to grant a waiver of customers' billing adjustment rights under Wis. Admin. Code § PSC 113.0406(4) and to approve NSPW's tariff language referencing customers' waiver of billing adjustment rights, including rights under Wis. Admin. Code § PSC 113.0406(4), in its EVR-1 and EVR-2 optional program tariffs.

16. It is reasonable to grant NSPW, with conditions, waivers of the following Wisconsin Administrative Code and NSPW tariff provisions for the Commercial Program, to the extent such waivers are required:

- a. Wis. Admin. Code § PSC 113.1005(1)
- b. Wis. Admin. Code § PSC 113.1007(1)

- c. Wis. Admin. Code § PSC 113.1008(3)
- d. Schedule Ex.-25, Section 5.32
- e. Schedule Ex.-26, Section 5.33
- f. Schedule Ex.-30, Section 5.342
- g. Schedule Ex.-31, Section 5.343
- h. Schedule Ex.-34, Section 5.6

Conclusions of Law

1. NSPW is an electric public utility under Wis. Stat. § 196.01(5).
2. The Commission has authority under Wis. Stat. §§ 196.02, 196.025, 196.03, 196.19, 196.20, and 196.37 to authorize NSPW to implement EV service programs, and to determine that the rates and rules in the tariffs are reasonable and just as a matter of law.
3. The Commission may impose any term, condition, or requirement necessary to protect the public interest pursuant to Wis. Stat. §§ 196.02 and 196.395.
4. No hearing under Wis. Stat. §§ 196.20(1) or (2m) was required in this matter as the EV service programs, as conditioned by this Final Decision, do not curtail the obligation or undertaking of NSPW, or constitute an increase in rates to consumers.

Opinion

NSPW proposed two residential EV programs and one pilot commercial EV program. NSPW currently serves the EV charging needs of its residential customers through whole-house TOD rates, which facilitate savings for EV owners charging their vehicles during off-peak periods at night. The two residential EV programs proposed in the application would combine providing customers with EV charging equipment with a TOD rate design, and attempt to address the upfront

charging infrastructure cost barrier to EV adoption. The two residential EV programs are similar, but would allow residential customers with EVs to participate in different ways.

The first residential EV program, which NSPW calls the Residential EV Home Service Program (EVR-1), would allow customers to contract with NSPW to install an EV charger, in which household usage would continue to be billed at the residential or farm flat energy charge rate (Rg-1 or Fg-1), while the EV charger usage would be measured and billed at a new TOD rate specifically designed for EVs (EV TOD). The second residential program proposed by NSPW, referred to as the Voluntary EV Charger Service Program (EVR-2), is for residential customers who want to contract with NSPW for an EV charger, and who also wish to keep their household energy use metered on NSPW's existing TOD rate (Rg-2).

Under both residential EV programs, customers would have two options to pay for the installed charging unit plus associated ongoing service costs, including maintenance and administrative costs. The two options would be “bundled” or “prepay.” The bundled option has no upfront fee; participating customers would pay a monthly fixed charge that would enable NSPW to recover all costs of the EV charger and associated services over the course of the contract. Upon the end of contract, customers who choose the bundled option would be able to sign a new 10-year contract, under which NSPW would continue to own and maintain the existing charger or replace it with another charger if needed. NSPW plans to redeploy EV chargers among customers electing service under the bundled option if a customer terminates its contract early, or if the charger is still usable after the end of the 10-year term.

Under the second option—prepay—participating customers would pay the costs of the EV charging unit upfront, and would also be required to pay a monthly fixed charge for the

remaining associated service costs. Under NSPW's proposal, only customers electing service under the prepay option are guaranteed to receive a new EV charger. Prepay comes with the additional option for the customer to keep the EV charger after the contract is complete, or sign another contract with NSPW that would include a new EV charger. NSPW proposes to continue to maintain and repair the EV charger after ownership is transferred to the customer, but would require the customer to replace this EV charger if it breaks by signing a 10-year contract if the customer wishes to continue to participate in the program. NSPW designed both payment options in order to collect all EV charger and service costs, and to hold all other non-participating customers harmless to ensure there is no cross-subsidization.

In its application, NSPW describes how these residential programs were designed based on experience gleaned from its sister utility, Northern States Power Company-Minnesota (NSPM), and NSPM's own EV charger pilot program that was implemented in Minnesota. NSPW also describes proposed accounting treatment, marketing considerations, annual reporting, and experience NSPW would gain in order to better understand load management that would be needed in future EV high penetration scenarios.

NSPW also proposed in this application a Commercial Electric Vehicle Service Program pilot (commercial program) which aims to address high upfront costs that may be faced by commercial class customers creating EV charging infrastructure for their own business purposes. The commercial program would be an alternative option for customers who must pay NSPW for extension services, and would allow NSPW the ability to own and maintain "make ready" EV charging equipment (equipment up to the charger but not including the charger) for commercial customers who

wish NSPW to do so. Commercial customers would also have the option to have NSPW own both the “make-ready” equipment and the EV chargers on the customers’ premises for a fee.

NSPW proposes an alternative “revenue-based extension allowance” for its commercial program. The costs for NSPW to install, own, and maintain equipment and wiring on a commercial customer’s premises would be part of the extension costs.

The proposed contract between participating residential customers and NSPW contains several terms and conditions, and for EVR-1, NSPW specifically requests that the Commission grant waivers of specific requirements of the Wisconsin Administrative Code. These waiver requests for the residential program are related to certain billing, consumer complaint, and metering requirements of the Code. NSPW did not expressly request any waivers of Wisconsin Administrative Code requirements to implement the EVR-2 program, but the tariff sheets for each of the residential options includes language stating that customers choosing the rate schedule waive rights to billing adjustments, including any rights under Wis. Admin. Code § PSC 113.0406(4). Accordingly, a waiver for EVR-2 program may also be necessary. In connection with the proposed commercial program, NSPW requested that the Commission grant a waiver of specific requirements in Wis. Admin. Code §§ PSC 113.1005(1), 113.1007(1), 113.1008(3), and rules found in NSPW’s tariffs. These waiver requests for the commercial program are related to the embedded extension allowance methodology that is required by the code and tariff provisions. The waiver requests for the EVR-1, EVR-2, and commercial programs will be discussed in detail later in this Final Decision, following the analysis of the proposed programs.

The Commission commends NSPW for working with stakeholders before filing its application, and for designing EV programs to meet both residential and commercial customer needs as well as hold non-participating customers harmless. The Commission approves of NSPW's proposed residential EVR-1 and EVR-2 programs and commercial program, all as pilot programs, with modifications and conditions described below.

EVR-1 Program

As described above, NSPW's proposed EVR-1 program would allow customers to contract with NSPW to install an EV charger using a new three-tiered TOD rate. Household usage would continue to be billed at the residential or farm flat energy charge rate (Rg-1 or Fg-1), while the EV charger usage would be measured and billed at this new TOD rate specifically designed for EVs. All usage for the property, both house usage and EV charger usage, would pass through and register on the primary house meter at the property. However, the EV chargers also contain sub-meters that NSPW proposes to use to parse out and subtract the EV charger energy use from the total house usage for the application of the respective Rg-1 or Fg-1 versus EV TOD usage rates.

Commission staff's Memorandum presented an analysis of NSPW's proposed three-tiered TOD rate designed for the EVR-1 program. The analysis included application of NSPW's Minnesota participants' charging data with NSPW's proposed EVR-1 TOD rate. Commission staff concluded that since the NSPW Minnesota EV tariff uses different TOD periods than the proposed EVR-1 tariff, a direct comparison is difficult to make. Commission staff did not make suggestions to alter NSPW's proposed EVR-1 TOD rate structure. Comments received by NSPW and CUB also concluded that Minnesota charging behavior, and potential bill

impacts, could not be compared with the proposed EVR-1 as these Minnesota participants received different price signals.

Commission staff's Memorandum also provided analysis of potential system impacts of future EV load profiles. In response to Commission staff data requests, NSPW stated that current forecasts do not expect the load increase due to EVs to be significant in its Wisconsin service territory within a short-term forecast. In terms of distribution system impacts, NSPW's preliminary analysis indicates that the likelihood of EV clusters in neighborhoods and cities could require extensive upgrades to equipment at the grid edge (i.e. transformers and service conductors). EV impacts will likely vary by feeder, based on current loading, ability to tie with other feeders, and the operating parameters of the EV charging stations. Faster charging and medium- and heavy-duty vehicles may introduce more impacts and variability into the power system due to their intermittency and large amounts of energy consumption.

Commission staff's Memorandum also outlined utility ownership of EV infrastructure as a policy issue discussed within Wisconsin and across the nation. In its comments on Commission staff's Memorandum, WIEG expressed general concerns with utilities owning EV infrastructure that is behind the customer's meter. WIEG did not take a position that the Commission should deny NSPW's application for these program because of NSPW's ownership of EV infrastructure. Instead, WIEG notes that should the Commission approve of the programs, costs should be tracked to prevent cross-subsidization, and that NSPW should work with Commission staff on accounting procedures and reporting requirements to ensure non-participating customers are held harmless. The Commission fully supports the principle of holding non-participating ratepayers harmless with new utility programs that create optional

products in which customers can voluntarily participate and agree to pay all costs associated with the revenue requirements. Designating these new programs as pilot programs, and requiring robust accounting and reporting requirements, will allow the Commission to ensure other customers are held harmless.

In consideration of Commission staff's Memorandum and comments received, the Commission finds that it is reasonable to approve of NSPW's proposed EVR-1 program, as a pilot, with accounting, reporting, and waiver conditions further described in the sections below.

EVR-2 Program

NSPW proposed the EVR-2 program for residential customers who want to contract with NSPW for an EV charger, and who wish to sign up for or keep their household energy use metered on NSPW's existing TOD rate (Rg-2). Customers participating in one of NSPW's parallel generation programs, such as customers who own solar photovoltaic panels and interconnect with NSPW's system, may also sign up for NSPW's proposed EVR-2 program. Rather than separate household usage as applied with the flat Rg-1 rate, such as with the EVR-1 program, the EV load and household load would not be separated under EVR-2. All load, including household and EV charging, would be subject to NSPW's current two-tiered Rg-2 rate.

The Commission did not receive additional comments specific to the EVR-2 proposal. With consideration of its decision regarding the EVR-1 program, and the additional participating options that the EVR-2 program affords NSPW's residential customers, the Commission finds that it is reasonable to approve NSPW's proposed EVR-2 program, as a pilot, with accounting, reporting, and waiver conditions further described in the sections below.

In response to the Commission's request for additional comments, NSPW stated that customers would be able to transition between EVR-1 and EVR-2 programs if they choose consistent with the program's design that EVR-1 is not available to customers who have a parallel generation system interconnected to the same meter.

Commercial Program

NSPW stated in its application that its commercial program aims to address the high upfront costs faced by commercial class customers that wish to create EV charging infrastructure for their own business purposes. Currently, customers must pay upfront for utilities to build extensions to serve the customers' new load, but customers receive an embedded extension allowance, which is determined by the Commission on a class-by-class basis in every utility rate case. The embedded allowance is based on class-average distribution infrastructure costs, which are embedded in utility charges that the customer pays continually once service is established. The embedded allowance essentially credits the customer for average costs of distribution extensions that are paid by all customers on an ongoing basis. The embedded extension allowance methodology is required by Wisconsin Administrative Code and NSPW's tariffs.

For its commercial program, NSPW proposed to offer a program that provides commercial customers with a choice to replace the embedded extension allowance methodology with an optional revenue-based extension allowance, which is based on future revenues that NSPW would receive from commercial customers based on distribution (customer) demand charges. The commercial program would also allow NSPW to incorporate the costs of utility-owned and maintained make-ready equipment into the total cost of the extension. The make-ready equipment would include service panels, conduit, wiring, and other equipment

needed to support EV chargers on the customers' premises. Finally, the commercial program would provide an additional option for NSPW to own and maintain EV chargers and associated equipment for a monthly service charge.

NSPW's proposal for calculating the revenue-based extension allowance follows a similar methodology that is used by natural gas utilities,¹ where the average annual carrying costs would be recovered by the additional distribution demand revenue from the new load growth. Although there are similarities between NSPW's proposed revenue-based extension allowance and existing revenue-based extension allowance used for natural gas service, Commission staff's Memorandum did not identify similar proposals from Wisconsin electric utilities.

NSPW claims that this revenue-based extension allowance would hold non-participating customers harmless because: (1) the additional distribution demand revenue would cover the costs of the larger extension allowance, (2) distribution demand charges would not encapsulate all of the costs associated with distribution, and (3) this new growth would provide marginal benefits to all customers as the total system demand grows. Commission staff's Memorandum notes that while in the long run non-participating customers may be held harmless, in the initial years the additional credit for the revenue-based allowance (assuming it is larger than the embedded cost allowance) would be funded by all other ratepayers in NSPW's territory. Only after NSPW collects future distribution demand revenues from the new load that equals the revenue-based allowance would both NSPW and all its ratepayers be made whole.

NSPW recognizes that the forecasted load and actual load will not always align, so it is including a refund provision for the first two years after a customer receives a revenue-based

¹ Natural gas utilities are governed by a different section of the Wisconsin Administrative Code. *See* Wisconsin Administrative Code ch. PSC 134.

extension allowance. If actual demand falls below 25 percent of what was expected and installed for, the customer will be responsible for refunding NSPW any excessive allowance that they should not have received given their actual demand.

In its comments on Commission staff's Memorandum, NSPW stated that while it is true that in the initial years the additional credit for the revenue-based allowance would be funded by all other ratepayers in NSPW's territory, the levelized annual revenue requirement approach used is similar to other utility ratemaking. NSPW provides the example of lighting tariffs, which have fixed investment charges for lighting customers that allows the utility to recover small monthly payments in order to fulfil the revenue requirement and hold other customers harmless. In its comments CUB concurred that the NSPW proposed design for the revenue-based extension allowance would satisfy revenue requirements of extension costs and hold other customers harmless.

In its comments, ChargePoint suggested that the 25 percent load threshold for customer refund to NSPW should be removed, noting the difficulty of forecasting new customer demand loads. If the Commission would not consider removing the true-up requirement, ChargePoint alternatively suggested a five-year period for true-up instead of the two-year period as proposed by NSPW. The Commission was not convinced, as the 25 percent threshold for the refund provision, and associated two-year true-up period, holds non-participating customers harmless should load not materialize and NSPW not receive expected distribution demand charge revenue.

ChargePoint also commented on additional minimum technical requirements of EV chargers that it proposed NSPW should require in its selection of EV products and vendors as offered to commercial customers in this program. In particular, ChargePoint suggested that

NSWP-offered EV chargers must have the ability to connect to a network, be Underwriters Laboratory certified, have smart energy management and data storage capabilities, and low standby power consumption (which may be demonstrated by ENERGY STAR® certification). Additionally, ChargePoint identified a vendor competition concern. ChargePoint believes NSPW should not preclude any charging equipment's eligibility for participation under the tariff based on price, provided that it meets the necessary technical specifications. The Commission discussed these additional minimum technical requirements, and the possibility of preclusion of commercial program charging equipment based on price, and directed Commission staff to issue a request for utility and stakeholder comments regarding ChargePoint's suggestions.

The Commission had similar concerns for ensuring the proposed commercial program holds non-participating ratepayers harmless as discussed above with the residential EV programs. NSPW proposed the commercial program as a pilot, with a 30 megawatt pilot cap. The Commission agrees that designating these new programs as pilot programs, and requiring robust accounting and reporting requirements will allow the Commission to ensure other customers are held harmless. In consideration of Commission staff's Memorandum and comments received, the Commission finds that it is reasonable to approve of NSPW's proposed commercial program, as a pilot, with accounting, reporting, and waiver conditions further described in the sections below. After review of the utility and stakeholder comments regarding ChargePoint's suggestions, the Commission finds it is reasonable to require EV chargers provisioned through the Commercial "Optional Fleet Charger Service" to meet the additional technical requirements proposed by ChargePoint. NSPW in their final comments also stated that their "proposed EV chargers for the Commercial Program's Optional Charger Service already meet

all of ChargePoint's recommended requirements." ChargePoint also requested that NSPW not preclude any charging equipment's eligibility based on price alone. The Commission finds NSPW's approach, which includes a choice amongst multiple vendors offering single-port and dual-port chargers spanning three cost options in the Commercial Optional Fleet Charger Service, and their intention to update and realign the list of equipment over time, to be reasonable.

Accounting Treatment

NSPW proposed that all EVR-1 charging equipment would be recorded in Federal Energy Regulatory Commission (FERC) Account 101 Plant In Service (FERC Plant Account 370 Meters) and all EVR-2 charging equipment would be recorded in FERC Account 101 Plant In Service (FERC Plant Account 371 Installations on Customers' Premises). Prepaid equipment costs for EVR-1 and EVR-2 would be recorded with a value of \$0, as the equipment would be prepaid by the customer. Customers who choose the bundled option would have their equipment recorded at cost in plant. Depreciation expense would be recorded to FERC Account 403 Depreciation Expense, and NSPW would record cost in the same manner as other mass distribution assets. Assets purchased would be capitalized as an electric distribution asset to FERC Account 101 and would be further classified into FERC Plant Account 370 or 371 in vintage groups for the purpose of depreciation rather than as individual equipment.

Commission staff's Memorandum noted that recording the bundled equipment in plant raises concerns that costs could be socialized to all ratepayers rather than being included in participant fees, and that by recording the plant at cost NSPW could also earn a return on rate base for double recovery. Since the customer would pay for the charging equipment either by prepaying or financing the equipment over its expected life, in which case NSPW would earn a

return through the monthly fixed charge, Commission staff suggested that the Commission could reasonably address these concerns by instead requiring NSPW to record the assets as \$0, or below the line, regardless of how the customer would pay for the equipment.

In its comments on Commission staff's memorandum, NSPW did not agree that double recovery was a possibility, and opposed a Commission requirement to record assets as \$0, or below the line. NSPW stated that program costs (revenue requirements) and program revenues would offset with no risk of double recovery. CUB agreed that there was no risk for double recovery in its comments. The Commission finds that it is reasonable for NSPW to record the assets as proposed, and this will be affirmed as part of the next rate case. In addition, the Commission believes appropriate accounting procedures should be established to protect against cross-subsidization from non-participating customers as described below.

NSPW states that cost recovery issues will be fully addressed in the next rate proceeding, and envisions that any revenue requirement impact associated with the program would be recovered from participants through the program's pricing. However, Commission staff's Memorandum stated that it is unclear exactly how NSPW would track all of the costs related to this program. The Memorandum also suggested that NSPW would need to institute procedures so the costs associated with EVR-1 and EVR-2 would be directly assigned to the appropriate class so there would not be cross-subsidization from other customer classes. Additionally, the Memorandum stated that program costs and revenues would have to be separated from non-participating customers during rate case cost-of-service study (COSS) reviews in order to ensure non-participants are not allocated program costs in rate design.

With regard to the proposed commercial program, NSPW stated that distribution extension costs, including make-ready infrastructure costs, under the commercial program will be treated identically to NSPW's current extension policy. Extension costs would be added to rate base in the appropriate FERC account and offset by customer contribution in aid of construction. If the customer does not meet the availability criteria in the first two years, the commercial program's allowance refund provision would be exercised, and the customer would be required to pay any additional customer contribution in aid of construction, which would offset rate base. The Commission staff Memorandum section on accounting concluded that the Commission may wish to direct NSPW to work with Commission staff on accounting procedures, and COSS approach, to better track program costs and revenues, and ensure there is no cross-subsidization from other non-participating customers.

In its comments on Commission staff's Memorandum, NSPW stated that although procedures have been established with experience gained from the NSPM Minnesota pilot, that it is not opposed to working with Commission staff on accounting procedures, but that the COSS issues could be handled during the next rate case. Both CUB and WIEG supported Commission staff suggestions to direct NSPW to work with Commission staff on accounting procedures. The Commission finds that it is reasonable to direct NSPW to work with Commission staff to find an agreement on accounting procedures. This will ensure that program costs and revenues are appropriately tracked, and that there is no cross-subsidization from other non-participating customers. NSPW shall provide accounting treatment and procedures for the programs to Commission staff within 60 days of this Final Decision. Other reporting requirement conditions, related to program costs and other issues, are detailed in the next section of this Final Decision.

Marketing, Performance Metrics, and Reporting

With regards to marketing, NSPW stated in its application and in responses to Commission staff data requests that it intends to make customers aware of all new EV service offerings through existing marketing channels used for all service offerings, as well as through EV-specific outreach efforts. NSPW already operates an Electric Vehicle page on its website providing general educational information on EV purchasing options and relevant electric rates, which would be updated to provide specific information on approved NSPW offerings. NSPW also reports that it will seek to make customers aware of the offerings through targeted email outreach and participation in EV-oriented community events.

NSPW identified three goals for the operation of its EV offerings: (1) maintaining safety, reliability, and billing accuracy; (2) achieving effective customer service; and (3) reducing costs for customers, including both upfront costs of charger installation and ongoing bill savings compared to other rate options.

Commission staff's Memorandum described how NSPW proposed to collect data on its customer service through surveys to measure customer satisfaction and collect information on their experiences with installation, maintenance, and ongoing charging. In its application, NSPW proposed that it would prepare and file an annual report identifying the number of participants in each EV program and the total amount of electricity sold by TOD.

The Commission Memorandum described additional performance reporting for the Commission's considerations, which could include:

- Program budget and spending;
- Survey results regarding customer satisfaction and installation experiences;

- Interval data;
- Analysis of the cost savings experienced by participating customers, including savings related to charger purchase and installation and monthly customer bills; and
- Analysis of the load management impacts associated with the growth in EV use on NSPW's electric system.

In its comments on Commission staff's Memorandum, NSPW agreed that it could include annual reporting on program budget and spending, as well as survey results. However, NSPW recommended it could provide interval data at an aggregate level, as well as load management analysis in two incremental reports, with suggested deadlines of September 2022 and September 2024. CUB supported Commission staff's reporting conditions in general, but was concerned about utility burden of frequent reports, and ultimately suggested NSPW staff work with Commission staff on reporting improvements. WIEG likewise suggested NSPW work with Commission staff on this issue.

The Commission finds that it is reasonable for NSPW to report annually for the EVR-1 and EVR-2 programs on the following:

- a. Number of customers and selected options (bundled vs. prepay);
- b. Total amount of electricity sold by TOD;
- c. Program budget and spending; and
- d. Survey results regarding customer satisfaction and installation experiences annually.

Additionally, the Commission finds that it is reasonable for NSPW to provide reporting for the EVR-1 and EVR-2 programs on aggregated interval data, analysis of customer cost savings, and analysis of load management. This information shall be filed in September 2022 and in September 2024.

For the Commercial Program, the Commission finds that it is reasonable for NSPW to provide annual reports on the following:

- a. Number of customers participating in revenue based extension rules, including each customer's estimated load, total allowance, customer contribution, and total extension costs for both distribution extension and make-ready infrastructure with a comparison to current extension rules;
- b. When actuals are available, the annual reports shall include a comparison of actual and estimated load showing how distribution revenues record the revenue-based distribution allowance; and
- c. Number of customers under each of the Optional Charger Service options.

Additional reporting requirements for the Commercial Program, associated with waiver requests, costs, and the true-up refund provision is discussed in sections below.

In order to assess all three of these NSPW EV programs as pilots, the Commission would like to discuss these programs at a future date that would enable NSPW, Commission staff, and all stakeholders enough time to analyze NSPW's reports and data made available. The Commission finds that it is reasonable to direct NSPW to file to continue, modify, expand, replace, or close out the EVR-1, EVR-2, and Commercial Program pilot programs by April 1, 2025.

EVR-1 Waivers Related to Billing

NSPW requested a waiver of specific administrative code and tariff provisions in order to implement its EVR-1 proposal. Wisconsin Admin. Code § PSC 113.01(2) provides:

Nothing in this chapter of the Wisconsin Administrative Code shall preclude special and individual consideration being given to exceptional or unusual situations and upon due investigation of the facts and circumstances therein involved, the adoption of requirements as to individual utilities or services which shall be lesser, greater, other, or different than those provided in said rules.

The provisions identified by NSPW relate to billing, customer complaints, and metering requirements, specifically as each relates to the sub-meter found on the EVR-1 charging unit, which would be used to parse out EV charging load from the overall house load for purposes of billing the charging load at the EV TOD rate. NSPW requested that the EV charging unit not be considered a “meter” for purposes of these requirements. NSPW does not request a waiver of these requirements as they relate to the primary electric meter, through which all service, house and charger usage cumulatively, would run. NSPW asserted, however, that the application of these requirements to both the primary meter and the charging unit’s sub-meter would prove administratively burdensome to the extent that the new optional program design would not be practical. Accordingly, NSPW requested that meter-related provisions in the code and its tariffs that are inconsistent with its proposal not apply to the EVR-1 charging unit’s sub-meter, including waivers related to billing:

- a. Wisconsin Admin. Code § PSC 113.0406(1)(a)3., 4., and 5. pertaining to information displayed on customer bills;
- b. Wisconsin Admin. Code § PSC 113.0406(1)(c) and Schedule Ex.-15, Section 3.3 pertaining to marking bills based on usage measured by the EV charger as estimated.; and

c. Wisconsin Admin. Code § PSC 113.0406(3) pertaining to identifying credits and original charges for meter inaccuracies, errors in billing, or misapplication of rates.

Among other things, a utility bill is required to include: present and last preceding meter readings; the date of the present meter reading; and the date of the next scheduled meter reading. These requirements are generally intended to ensure that each electric bill includes the necessary information for a customer to check the calculation of the bill. NSPW requested a waiver of these requirements in Wis. Admin. Code § PSC 113.0406(1)(a)3., 4., and 5., so these items would not show on the bill separately for the charging unit's sub-meter. These items would continue to show on the bill for the property's primary or house electric meter. NSPW requests that for Wis. Admin. Code § PSC 113.0406(1)(c), this program's approach to using EVR-1 charging unit measurement for parsing out EV load not be considered to be billing "without an actual meter reading" which would require a bill designation that the bill is "estimated." NSPW also requested a waiver of its tariff, Schedule Ex.-15, Section 3.3 Billing, which also cites the requirement to identify estimated bills.

A waiver of the billing requirements found in Wis. Admin. Codes §§ PSC 113.0406(1)(a)3., 4., and 5., and PSC 113.0406(1)(c) with regard to the charging unit's sub-meter may reduce EVR-1 customers' ability to verify bills for accuracy as that ability relates to the allocation of EV TOD versus Rg-1 or Fg-1 usage. Commission staff's Memorandum discussed a potential Commission condition for this waiver request that ensures the customer understands and accepts the possible range of billing outcomes should the charging unit sub-meter over- or under-register. As one option, the customer could be provided an insert or fact sheet with information showing the range

of billing impacts for various customer load profiles should there be an under- or over-allocation of usage to the EV TOD rate versus to the Rg-1 or Fg-1 rate. Another option could include requiring NSPW to make its tariff language more explicit in informing customers that in the event of an error in the sub-meter's ability to track EV charging usage, such usage will be billed at the Rg-1 or Fg-1 rate. This could alleviate potential concerns that the tariff as drafted might not reflect the charges to be billed to the customers.² Alternatively, Commission staff suggested the Commission could find that the materials NSPW proposes to provide to the customer, including print and web marketing materials, conversations with call center staff, and the tariff as drafted, are sufficient for customers to verify their bills, and to understand potential risks and the range of potential billing impacts should the customer choose to opt in to the program.

In its comments on Commission staff's Memorandum, NSPW stated that it already planned to include language informing customers what would happen in the event of sub-meter errors in tracking EV charging usage, in the Customer Service Agreement for the program, and would agree to modify its tariff sheets to also include this language.

The Commission finds the program design required to offer customers the option of a separate TOD rate for charging without the expense of a second meter installation to be an exceptional or unusual situation meriting the waivers. Residential EV charging was not contemplated when the administrative code requirements were developed, nor had a similar program design been proposed at the time. Not only is high upfront cost a barrier to EV adoption, but so may be a requirement to switch the entire property to a TOD rate. Because

² Wisconsin Stat. § 196.22 provides: "No public utility may charge, demand, collect or receive more or less compensation for any service performed by it within the state, or for any service in connection therewith, than is specified in the schedules for the service filed under s. [196.19](#), including schedules of joint rates, as may at the time be in force, or demand, collect or receive any rate, toll or charge not specified in the schedule."

NSPW's proposal addresses those barriers, and given the optional nature of the program and the potential intermittency of the Wi-Fi connection which could affect NSPW's ability to accurately measure the timing of usage, the Commission finds that it is reasonable to grant NSPW waivers of the following Wisconsin Administrative Code and NSPW tariff provisions for the EVR-1 program, with conditions:

- a. Wisconsin Admin. Code § PSC 113.0406(1)(a)3., 4., and 5. pertaining to information displayed on customer bills;
- b. Wisconsin Admin. Code § PSC 113.0406(1)(c) and Schedule Ex.-15, Section 3.3 pertaining to marking bills based on usage measured by the EV charger as estimated; and
- c. Wisconsin Admin. Code § PSC 113.0406(3) pertaining to identifying credits and original charges for meter inaccuracies, errors in billing, or misapplication of rates. The Commission finds it is reasonable to condition these waivers on the requirement that NSPW modify its tariff provisions to make the tariff language explicit in informing customers that in the event of an error in the sub-meter's ability to track EV charging usage, such usage will be billed at the Rg-1 or Fg-1 rate. Additionally, the Commission finds that it is reasonable to require NSPW to provide and include updated tariff language explaining that over- or under-registration of charging use will result in more or less usage being billed on EV TOD and that bill adjustments will not be made for charging unit sub-meter inaccuracy.

EVR-1 Waivers Related to Dispute Resolution

With regards to customer dispute resolution, in its application NSPW requested a waiver of Wis. Admin. Code § PSC 113.0407 and Schedule Ex.-13, Section 2.8 Dispute Procedures, as

they relate to the charging unit sub-meter. This administrative code section requires electric utilities to investigate customer disputes and participate in the Commission's complaint process. NSPW asserts it would be administratively burdensome to follow the complaint process for disputes related to the amount of electricity showing on the charging unit's sub-meter.

Commission staff's Memorandum described how, pursuant to statutory and Wisconsin Administrative Code requirements, a customer may contact the Commission to complain about an aspect of service. When that situation arises, Commission staff assesses the customer's stated concerns in light of the Commission's areas of jurisdiction and the relevant, applicable requirements of the statutes, administrative code, tariffs, and Commission orders in its determination regarding whether to open a complaint investigation.

In its comments on Commission staff's Memorandum, NSPW states that to the extent the Commission believes that Wis. Admin. Code PSC § 113.0407 does not invoke the other applicable provisions in the administrative code that NSPW has requested be waived, NSPW is comfortable rescinding its request for a waiver of Wis. Admin. Code § PSC 113.0407 and the corresponding section in its tariff. In consideration of Commission staff's Memorandum and NSPW's offer to rescind its request for this waiver, the Commission finds it reasonable to not grant NSPW a waiver of Wis. Admin. Code § PSC 113.0407 and Schedule Ex.-13, Section 2.8 for the EVR-1 program.

EVR-1 Waivers Related to Metering, Accuracy, and Testing

NSPW requested that the Commission waive the meter accuracy and testing requirements of the Wisconsin Administrative Code that are inconsistent with the EVR-1 proposal. These include waivers for the following:

- a. Wisconsin Admin. Code § PSC 113.0811(1)(c) pertaining to meter accuracy requirements;
- b. Wisconsin Admin. Codes §§ PSC 113.0901, 113.0903, 113.0905, 113.0924, and Schedule Ex.-16, Section 3.4 pertaining to meter testing standards and recalculating bills for inaccurate meters; and
- c. NSPW tariff Schedule Ex.-19, Section 4.4 pertaining to a prohibition against installing additional meters under any one account.

NSPW noted that the load monitoring and charging equipment used in the Minnesota pilot all tested with an accuracy within two percent. NSPW proposes to use this same equipment and testing standard to evaluate charging equipment used in its Wisconsin pilot.

Wisconsin Stat. § 196.16(2) requires that “[t]he [C]ommission shall establish reasonable rules, regulations, specification and standards to secure the accuracy of all meters and appliances for measurement of public utility service.” Wisconsin Stat. § 196.17 further provides that the “[C]ommission shall provide for the examination and testing of every appliance used for measuring any product or service of a public utility.” Because the statutory language refers to “appliances for measurement of public utility service,” not just meters, granting a complete waiver of any accuracy standards or testing requirements for the EVR-1 charging units could be problematic under these statutes.

As EV charging equipment is new technology that postdates the creation of these administrative codes, however, rather than a full waiver of the requirements or a broad finding that EV chargers are not meters, Commission staff’s Memorandum suggested that the Commission may find it reasonable to conclude that the one percent accuracy requirements

prescribed for standard meters in Wis. Admin. Code § PSC 113.0811 need not be applied to the EV chargers to be used as part of the EVR-1 program. Commission staff's Memorandum suggested the Commission could impose a potential alternative accuracy standard, such as NSPW's suggested two percent threshold, specifically for this program, as well as an alternative testing standard.

In its comments on Commission staff's Memorandum, NSPW states that it could work with the industry and Commission staff to propose, by September 1, 2022, an accuracy and testing standard to be used for the EV chargers under the EVR-1 rate.

The Commission finds there are unique and exceptional circumstances presented by this program, and the new technology involved with EV charging equipment, which did not exist at the time the code was created, that justify deviation from the meter accuracy and testing standard requirements of the Wisconsin Administrative Code and tariff provisions identified by NSPW.

The Commission finds it is reasonable to establish an initial meter accuracy and testing standard requiring initial accuracy, as shown by the manufacturer of the EV charging equipment, to be within two percent. The Commission further finds it reasonable to direct NSPW to work with Commission staff on an ongoing meter accuracy and testing standard that could be used beyond initial installation, with NSPW to propose such standards by September 1, 2022. Additionally, the Commission delegates to the Administrator for the Division of Digital Access, Consumer and Environmental Affairs the authority to modify the initial meter accuracy and testing standard and to approve the ongoing meter accuracy and testing standards authorized by the Commission in this docket.

With these conditions, the Commission finds that it is reasonable to grant NSPW a limited waiver of the following Wisconsin Administrative Code and NSPW tariff provisions for the EVR-1 program:

- a. Wisconsin Admin. Code § PSC 113.0811(1)(c) pertaining to meter accuracy requirements;
- b. Wisconsin Admin. Code §§ PSC 113.0901, 113.0903, 113.0905, 113.0924, and Schedule Ex.-16, Section 3.4 pertaining to meter testing standards and recalculating bills for inaccurate meters; and
- c. NSPW tariff Schedule Ex.-19, Section 4.4 pertaining to a prohibition against installing additional meters under any one account.

Residential Program Tariff Language Waiving Billing Adjustment Rights

Under the EVR-2 program, all household and EV charging usage would be billed on a single Rg-2 TOD rate, using NSPW's existing meter, so NSPW is not requesting the waivers discussed above for EVR-1 for that program. Both the EVR-1 and the EVR-2 schedules include the following language, however: "Any customer choosing to be served on this rate schedule waives all rights to any billing adjustments arising from a claim that the bill for the customer's service would be cheaper on any alternative rate schedule for any period of time, including any rights under Wis. Adm. Code section PSC 113.0406(4)."

The relevant portions of Wis. Admin. Code § PSC 113.0406(4) require utilities to compute customer bills at the proper filed rate, and notify customers of lower cost rate options unless the customer has opted into an applicable rate. Rate schedules for various investor-owned utilities, including some of NSPW's existing rate schedules, have identical language to NSPW's

tariff waiver language on TOD and various pricing riders. Commission staff's Memorandum suggested that the Commission may determine that NSPW's language is appropriate in these tariffs as well because customers will have opted into the residential EVR-1 or EVR-2 program, and NSPW is still obligated to bill customers at the proper filed rate by Wis. Stat. § 196.22. The Commission previously found this waiver language in an optional utility tariff to be reasonable, as it ensures the common sense outcome that when a customer voluntarily chooses to go onto an optional rate the customer cannot later request a refund if they could have been on a lower rate schedule. ([PSC REF#: 295820](#) at 51.)

In its comments on Commission staff's Memorandum, NSPW noted that tariff language relating to customers waiving their right to billing adjustments by taking service from a voluntary rate is common place and appropriate. No other commenting parties raised issues with the language. The Commission finds that given the exceptional circumstances presented by these programs, and customers' voluntary choice to enroll in the optional programs, it is reasonable to grant a waiver of customers' billing adjustment rates under Wis. Admin. Code § PSC 113.0406(4), and for NSPW to include the tariff language referencing customers' waiver of billing adjustment rights, including rights under Wis. Admin. Code § PSC 113.0406(4), in its EVR-1 and EVR-2 optional program tariffs.

Commercial Program Waivers

To implement its commercial program, NSPW requested a waiver of specific administrative codes and tariff provisions as they relate to the use of an embedded cost allowance. NSPW has stated these waivers would apply narrowly to this program and would not

apply to any other NSPW programs. The Commission may grant waiver requests where unusual or exceptional circumstances are presented. Wis. Admin. Code § 113.01(2).

The provisions NSPW requests a waiver for are:

- a. Wis. Admin. Code § PSC 113.1005(1)
- b. Wis. Admin. Code § PSC 113.1007(1)
- c. Wis. Admin. Code § PSC 113.1008(3)
- d. Schedule Ex.-25, Section 5.32
- e. Schedule Ex.-26, Section 5.33
- f. Schedule Ex.-30, Section 5.342
- g. Schedule Ex.-31, Section 5.343
- h. Schedule Ex.-34, Section 5.6

Wisconsin Admin. Code § PSC 113.1005(1) states that customers shall pay the estimated cost of distribution facilities, which is greater than the average embedded cost allowance for existing distribution facilities. As participants in the pilot would receive a revenue-based extension allowance, rather than an average embedded cost allowance, a waiver of this code section would be necessary for NSPW to implement its program.

Under Wis. Admin. Code § PSC 113.1007(1), customers would receive a refund of the contributed extension when NSPW makes an extension to a second customer that does not require a contributed extension. This refund would equal the greater of either the embedded cost allowance in effect at the time the extension was installed or the current embedded cost allowance. NSPW requests a waiver of this code section, as it refers to the use of an embedded cost allowance.

Lastly, Wis. Admin. Code § PSC 113.1008(3) addresses upgrades to distribution facilities. Wisconsin Admin. Code § PSC 113.1008(3)(d) states in relevant part that “customers who are served under a demand rate schedule shall receive an embedded cost allowance.” This allowance is calculated by using the customer’s average billed demand after the upgrade less the customer’s average billed demand before the upgrade. The embedded cost allowance is also used to calculate refunds due to both customers transferring to a different energy-only classification or a demand classification under Wis. Admin. Code §§ PSC 113.1008(3)(c) and (d). These sections would not apply under NSPW’s proposed pilot.

The portions of NSPW’s tariff that refer to the embedded cost allowance, and thus that NSPW would need to be waived, include Schedule Ex.-25, Section 5.32 and Schedule Ex.-26, Section 5.33 which define the allowance and how it is calculated, and list the allowances assigned to each rate class for extensions intended to serve permanent customers. The embedded cost allowance is referred to in Schedule Ex.-30, Section 5.342 of NSPW’s tariff, which is utilized in calculating the amount demand customers shall pay in advance of construction. The embedded cost allowance is also referred to in Schedule Ex.-31, Section 5.343, which addresses how to calculate the amount billed in advance of construction for commercial and industrial developments. Lastly, NSPW seeks a waiver of Schedule Ex.-34, Section 5.6 as it references the embedded cost allowance in calculating the construction credits allotted to customers who require an upgrade in distribution facilities due to a change in customers’ load requirements.

As the commercial program differs from the typical practice of utilizing an embedded cost allowance that is detailed in portions of Wis. Admin. Code ch. PSC 113 and NSPW’s tariff, NSPW proposes to communicate with customers throughout this new process. Additionally,

NSPW will communicate with customers throughout the two-year true-up period. NSPW plans to notify customers of their actual incremental load in relation to their estimated load after 12 months, which would allow the customers an additional 12 months to make any necessary adjustments before the true-up period ends.

While the current extension rules require payment in advance of construction, customers would potentially not receive a bill until two years into the program. With utility facilities already in place, customers may lack some incentive to pay this bill. NSPW does not plan to utilize disconnection to collect unpaid bills that result from a true-up, but would instead apply its non-commodity collections treatment process. Customers would receive a notice when owed amounts are 30, 60, and 90 days past due. A deferred payment agreement would be offered to customers who require one, and amounts still owed after approximately 180 days would be written off. Commission staff's Memorandum suggested that the Commission may also wish to require reporting on the number of customers who do not pay the true-up bill prior to NSPW writing it off, and the amounts NSPW writes off after approximately 180 days, so as to evaluate these additional costs to the program.

As the proposed commercial pilot program is a new offering which aims to balance cost savings for participating customers, costs to non-participating customers, and administrative costs, the Commission staff's Memorandum suggested that the Commission may wish to condition approval of NSPW's requested waivers by requiring reporting on the following:

- The number of customers whose actual load is more than 25 percent less than its estimated load by the end of the two-year true-up period;
- The amount of bills issued to customers at the end of the two-year true-up period;

- The number of customers who have received a true-up bill but have not paid it prior to write-off at approximately 180 days; and
- The amount of true-up bills written off after approximately 180 days.

In its comments on Commission staff's Memorandum, NSPW stated it supports Commission staff's suggested reporting requirements for the Commercial Program to be reported as part of NSPW's 2024 test-year rate case (filed in 2023), or no later than January 1, 2024.

The Commission finds that given the exceptional circumstances presented by this program, including the high cost barriers to EV charging infrastructure, the overall program design which avoids costs to non-participating customers, and customers' voluntary choice to enroll in it, there is good cause for a deviation from the requirements of the Wisconsin Administrative Code and NSPW tariff provisions. The Commission finds that it is reasonable for NSPW to report for the Commercial Program on the number of customers who do not meet their anticipated load level within two years and who receive a true-up bill; on the number of customers who do not pay the true-up bill prior to NSPW writing it off and the amounts NSPW writes off after approximately 180 days; and on the amount of bills issued to customers at the end of the two-year true-up period.

With these conditions, the Commission finds that it is reasonable to grant NSPW waivers of the following Wisconsin Administrative Code and NSPW tariff provisions for the Commercial Program:

- a. Wis. Admin. Code § PSC 113.1005(1)
- b. Wis. Admin. Code § PSC 113.1007(1)³

³ In its comments on Commission staff's Memorandum, NSPW suggested it no longer believes a waiver of this provision is necessary. The Commission grants a waiver to the extent it is required.

- c. Wis. Admin. Code § PSC 113.1008(3)⁴
- d. Schedule Ex.-25, Section 5.32
- e. Schedule Ex.-26, Section 5.33
- f. Schedule Ex.-30, Section 5.342
- g. Schedule Ex.-31, Section 5.343
- h. Schedule Ex.-34, Section 5.6

Order

1. NSPW's request to implement the proposed EVR-1, EVR-2, and Commercial Program programs, as pilot programs, and as modified and conditioned by this Final Decision, is approved.

2. NSPW shall file the EV service program tariffs under Amendment Number 761, and make the tariffs available to the public pursuant to Wis. Stat. § 196.19 and Wis. Admin. Code § PSC 113.0501(1).

3. NSPW shall work with Commission staff to agree on accounting procedures to track program costs and revenues, and ensure there is no cross-subsidization from other non-participating customers. NSPW shall provide accounting treatment and procedures for the programs within 60 days of this Final Decision.

4. NSPW shall provide annual reporting for the EVR-1 and EVR-2 programs on the following:

- a. Number of customers and selected options (bundled vs. prepay);

⁴ In its comments on Commission staff's Memorandum, NSPW suggested it no longer believes a waiver of this provision is necessary. The Commission grants a waiver to the extent it is required.

- b. Total amount of electricity sold by time-of-day;
- c. Program budget and spending; and
- d. Survey results regarding customer satisfaction and installation experiences annually.

5. NSPW shall provide reporting for the EVR-1 and EVR-2 programs on aggregated interval data, analysis of customer cost savings, and analysis of load management. This information shall be filed in September 2022 and in September 2024.

6. NSPW shall provide annual reporting for the Commercial Program on the following:

- a. Number of customers participating in revenue based extension rules, including each customer's estimated load, total allowance, customer contribution, and total extension costs for both distribution extension and make-ready infrastructure with a comparison to current extension rules;
- b. When actuals are available, the annual reports shall include a comparison of actual and estimated load showing how distribution revenues record the revenue-based distribution allowance; and
- c. Number of customers under each of the Optional Charger Service options.

7. NSPW shall report for the Commercial Program on the number of customers who do not meet their anticipated load level within two years and who receive a true-up; on the number of customers who do not pay the true-up bill prior to NSPW writing it off and the amounts NSPW writes off after approximately 180 days; and on the amount of bills issued to customers at the end of the two-year true-up period.

8. NSPW shall file to continue, modify, expand, replace or close out the EVR-1, EVR-2, and Commercial Program pilot programs by April 1, 2025.

9. NSPW shall, with conditions, be granted waivers of the following Wisconsin Administrative Code and NSPW tariff provisions as they pertain to the charging unit sub-meter for the EVR-1 program:

a. Wisconsin Admin. Code § PSC 113.0406(1)(a)3., 4., and 5. pertaining to information displayed on customer bills;

b. Wisconsin Admin. Code § PSC 113.0406(1)(c) and Schedule Ex.-15, Section 3.3 pertaining to marking bills based on usage measured by the EV charging unit sub-meter as estimated; and

c. Wisconsin Admin. Code § PSC 113.0406(3) pertaining to identifying credits and original charges for meter inaccuracies, errors in billing, or misapplication of rates.

10. NSPW shall modify its tariff provisions related to the EVR-1 program to make the tariff language explicit in informing customers that in the event of an error in the sub-meter's ability to track EV charging usage, such usage will be billed at the Rg-1 or Fg-1 rate.

11. NSPW shall not be granted a waiver of Wis. Admin. Code § PSC 113.0407 and Schedule Ex.-13, Section 2.8 for the EVR-1 program.

12. NSPW shall, with conditions, be granted a limited waiver of the following Wisconsin Administrative Code and NSPW tariff provisions for the EVR-1 program:

a. Wisconsin Admin. Code § PSC 113.0811(1)(c) pertaining to meter accuracy requirements;

b. Wisconsin Admin. Codes §§ PSC 113.0901, 113.0903, 113.0905, 113.0924, and Schedule Ex-16, Section 3.4 pertaining to meter testing standards and recalculating bills for inaccurate meters; and

c. NSPW tariff Schedule Ex.-19, Section 4.4 pertaining to a prohibition against installing additional meters under any one account.

13. NSPW shall establish an initial meter accuracy and testing standard for its EV charging units used in the EVR-1 program, requiring initial accuracy, as shown by the manufacturer, to be within two percent. NSPW shall work with Commission staff to propose, by September 1, 2022, an ongoing meter accuracy standard. The Commission delegates to the Administrator for the Division of Digital Access, Consumer Affairs and Environmental Affairs the authority to modify the initial accuracy and testing standards and to approve the ongoing meter accuracy and testing standards authorized in this Final Decision.

14. NSPW shall provide and include updated tariff language related to the EVR-1 program explaining that over- or under-registration of charging use will result in more or less usage being billed on EV TOD and that bill adjustments will not be made for charging unit sub-meter inaccuracy.

15. NSPW is granted a waiver of customers' billing adjustment rights under Wis. Admin. Code § PSC 113.0406(4) and is authorized to include tariff language referencing customers' waiver of billing adjustment rights, including rights under Wis. Admin. Code § PSC 113.0406(4), in its EVR-1 and EVR-2 optional program tariffs.

16. NSPW shall, with conditions, be granted waivers of the following Wisconsin Administrative Code and NSPW tariff provisions for the Commercial Program:

- a. Wis. Admin. Code § PSC 113.1005(1)
- b. Wis. Admin. Code § PSC 113.1007(1)
- c. Wis. Admin. Code § PSC 113.1008(3)
- d. Schedule Ex.-25, Section 5.32
- e. Schedule Ex.-26, Section 5.33
- f. Schedule Ex.-30, Section 5.342
- g. Schedule Ex.-31, Section 5.343
- h. Schedule Ex.-34, Section 5.6

17. This Final Decision takes effect one day after the date of service.

18. Jurisdiction is retained.

Dated at Madison, Wisconsin, the 16th day of July, 2020.

By the Commission:

A handwritten signature in black ink that reads "Steffany Powell Coker". The signature is written in a cursive, flowing style.

Steffany Powell Coker
Secretary to the Commission

SPC:AMK;jlt:pc DL: 01747234

See attached Notice of Rights

PUBLIC SERVICE COMMISSION OF WISCONSIN
4822 Madison Yards Way
P.O. Box 7854
Madison, Wisconsin 53707-7854

**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

PETITION FOR REHEARING

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of the date of service of this decision, as provided in Wis. Stat. § 227.49. The date of service is shown on the first page. If there is no date on the first page, the date of service is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

PETITION FOR JUDICIAL REVIEW

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of the date of service of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of the date of service of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission serves its original decision.⁵ The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: March 27, 2013

⁵ See *Currier v. Wisconsin Dep't of Revenue*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.



414 Nicollet Mall
Minneapolis, MN 55401

November 17, 2017

—Via Electronic Filing—

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

RE: PETITION FOR APPROVAL OF A RESIDENTIAL EV SERVICE PILOT PROGRAM
DOCKET NO. E002/M-17-_____

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits the attached Petition for approval of a residential EV Service Pilot Program.

Pursuant to Minn. Stat. § 216.17, Subd. 3, we have electronically filed this document with the Minnesota Public Utilities Commission, and a copy of the Summary of Filing has been served on the parties on the attached service lists. Please contact Cyndee Harrington at cynthia.d.harrington@xcelenergy.com or (612) 330-5953 if you have any questions regarding this filing.

Sincerely,

/s/

AMY A. LIBERKOWSKI
DIRECTOR, REGULATORY PRICING & ANALYSIS

Enclosure
cc: Service Lists

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie J. Sieben	Commissioner
John Tuma	Commissioner

IN THE MATTER OF THE PETITION OF
NORTHERN STATES POWER COMPANY FOR
APPROVAL OF A RESIDENTIAL EV SERVICE
PILOT PROGRAM

DOCKET NO. E002/M-17-_____

PETITION

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this Petition for approval of a Residential Electric Vehicle (EV) Service Pilot project. Our proposal is consistent with the requirements of the EV Charging Tariff Statute, Minn. Stat. § 216B.1614, as well as the administrative rules governing this request, Minn. R. 7829.3200 and 7829.1300.

As described in this Petition, the Company currently serves some customers with EV charging needs through whole-house Time of Use (TOU) rates, which enable savings by all energy sales during off-peak periods at night, as well as the Residential EV Service tariff, which provides favorable rates for off-peak energy use by EV chargers by segregating EV energy use separately from the rest of the home.

The Company's existing EV Service rate was driven in part by a Legislative mandate and the Commission found that the Company's proposal satisfied the statute and approved the tariff. Today's proposal arises differently – in this case from the Company's desire to refine our suite of customer choices and to increase customer satisfaction through a tailored service option. To that end, the Company wishes to pilot a refined EV charging service with customers on a limited basis in order to test key questions that have surfaced in connection with the Company's current offers. The pilot—which is informed by substantial engagement between the Company and our stakeholders over the past year—is designed to test the potential for cost savings and customer experience improvements through a combination of new equipment deployment and off-peak rate design. The Company hopes to leverage these pilot

learnings going forward as it considers broader opportunities to serve our customers who drive EVs.

We respectfully request that the Commission:

- approve our proposal for implementing a Residential EV Service Pilot Program;
- approve our proposed Customer Agreement and Residential EV Service Pilot Tariff;
- approve our proposed accounting treatment; and
- approve our request for a rule variance.

The balance of this filing describes key pilot program features, including:

- *Pilot program description*— the Company will furnish control equipment commonly referred to as Electric Vehicle Supply Equipment (EVSE)¹ to meter EV charging separately from home usage.² Participants can charge off-peak at discounted rates;
- *Pilot program background & objectives* — the Company aims to seek and confirm cost savings compared to the existing EV Service option; improve customer service and experience; and maintain safety, reliability and billing accuracy;
- *Terms of participation* —customers will sign up for the EV Service pilot, choose their preferred equipment, and choose whether to pay upfront for the installed device or pay monthly for its use. The tariff and Agreement detail the terms of service; and
- *Cost recovery proposal* —qualifying pilot costs will be recorded under our existing Tracker account and installed devices will be recovered by participants through a surcharge.

The Company includes the following Attachments in support of its Petition:

Attachment A	EVSE Configuration and Power Flow
Attachment B	Sample Billing Statement
Attachment C	EV Service Pilot Customer Agreement
Attachment D	Residential EV Service Pilot Tariff
Attachment E	PV Rooftop Configuration

¹ EVSE is charging equipment that communicates with the vehicle in order to safely supply an appropriate amount of electricity.

² For more information on this technology see https://www.afdc.energy.gov/uploads/publication/pev_consumer_handbook.pdf.

I. SUMMARY OF FILING

A one-paragraph summary is attached pursuant to Minn. R. 7829.1300, subp. 1.

II. SERVICE ON OTHER PARTIES

Pursuant to Minn. R. 7829.1300, subp. 2 and Minn. Stat. § 216.17, subd. 3, Xcel Energy has electronically filed this document. A summary of the filing has been served on all parties on the enclosed service lists for Docket No. E002/M-15-111, and our Miscellaneous Electric Service list.

III. GENERAL FILING INFORMATION

Pursuant to Minn. R. 7829.1300, subp. 3, the Company provides the following information.

A. Name, Address, and Telephone Number of Utility

Northern States Power Company doing business as:
Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401
(612) 330-5500

B. Name, Address, and Telephone Number of Utility Attorney

Ryan Long
Principal Attorney
Xcel Energy
401 Nicollet Mall, 8th Floor
Minneapolis, MN 55401
(612) 215-4659

C. Date of Filing

The date of this filing is November 17, 2017.

D. Statute Controlling Schedule for Processing the Filing

Minn. Stat. § 216B.16 subd. 1 requires 60-days of notice to the Commission of a proposed tariff change. Under the Commission's rules, the proposed tariff change

discussed in this Petition falls within the definition of a miscellaneous tariff filing under Minn. R. 7829.0100, subp. 11, since no determination of Xcel Energy's general revenue requirement is necessary. Minn. R. 7829.1400, subps. 1 and 4 permit comments in response to a miscellaneous filing to be filed within 30 days and reply comments to be filed no later than 10 days thereafter.

E. Utility Employee Responsible for Filing

Amy Liberkowski
Director, Regulatory Pricing & Analysis
Xcel Energy
401 Nicollet Mall, 7th Floor
Minneapolis, MN 55401
(612) 330-6613

IV. MISCELLANEOUS INFORMATION

Pursuant to Minn. R. 7829.0700, the Company requests that the following persons be placed on the Commission's official service list for this proceeding:

Ryan Long
Principal Attorney
Xcel Energy
401 Nicollet Mall, 8th Floor
Minneapolis, MN 55401
ryan.j.long@xcelenergy.com

Carl Cronin
Records Analyst
Xcel Energy
401 Nicollet Mall, 7th Floor
Minneapolis, MN 55401
regulatory.records@xcelenergy.com

Any information requests in this proceeding should be submitted to Mr. Cronin at the Regulatory Records email address above.

V. EFFECT OF CHANGE UPON XCEL ENERGY REVENUE

No significant revenue effect net of incremental costs is expected. The proposed pilot energy charges are the same as the current Residential Electric Vehicle Service Tariff. The higher proposed customer charges for the pilot are designed to recover additional services provided through the pilot such as the provision of EVSE equipment and energy usage measurement expenses.

VI. DESCRIPTION AND PURPOSE OF FILING

In this Petition, we enhance our portfolio of customer choices for EV drivers with a new option: a pilot that pairs an off-peak charging incentive through TOU rates with a Company-offered Level 2 charging solution.³ The pilot was developed in response to customer feedback about potential barriers to accessing benefits under the Company's existing options. The pilot will seek opportunities for cost savings compared to the Company's current customer offers and will also seek to improve the customer experience while maintaining safe and reliable electric service.

VII. BACKGROUND

In 2014, the Minnesota Legislature passed the Electric Vehicle Charging Tariff Statute, which directed each public utility to file a tariff with the Commission enabling customers to purchase electricity solely for the purpose of recharging an electric vehicle and incorporating either a time-of-day or off-peak rate.⁴ In 2015, the Company petitioned the Commission for approval of its proposed Residential Electric Vehicle Service tariff, which provided for a Time of Use rate for metered EV usage.⁵ The Commission approved the Company's proposed tariff on June 22, 2015. The Residential Electric Vehicle Service tariff joined the Company's "whole-house" Time of Use rate to provide an additional customer option for off-peak charging.

In Docket No. E002/M-15-111, the Company introduced a plan to file an EV Service pilot to explore and evaluate EV charging technology options for our customers who wished to take advantage of a dedicated EV rate option but perceived the upfront cost of this option to be a barrier. We committed to work with stakeholders to explore solutions that would support the success of the EV Service tariff and determine the feasibility of providing reliable and secure billing quality data using EV charging technologies.

A. Stakeholder Engagement

To that end, we facilitated three initial stakeholder meetings in October 2016, February 2017, and September 2017. The purpose of these stakeholder meetings was

³ AC Level 2 EVSE is based on SAE J1772 which allows charging at 208/240 V AC up to 80 A. A typical Level 2 EVSE recharges a vehicle at 3.3 kW to 6.6 kW. EVs take between 1.3 to 2.7 hours to recharge with a Level 2 after the average daily driving distance of 29 miles.

⁴ Minn. Stat. § 216B.1614, Subd. 2.

⁵ *In the Matter of the Petition of Northern States Power Company for approval of a Residential Electric Vehicle Charging Tariff*, MPUC Docket No. E002/M-15-111 (Jan. 1, 2015).

to provide a forum for pilot plan communication, feedback exchange, and to encourage stakeholder participation in the development of the Company's pilot plan.

B. Request for Information / Request for Proposal

The Company issued a Request for Information (RFI) to EV charging and/or metering equipment vendors on October 31, 2016 to gain a greater understanding of the market and available technologies. We received responses from seven providers that included detailed information on two technology types: EVSEs with embedded load-monitoring and load-monitoring solutions external to EVSEs.⁶

We analyzed the responses and again convened stakeholders prior to issuing a Request for Proposals (RFP) in March 2017. The Company's RFP set forth detailed technical requirements and sought bids from eligible respondents. In response to the RFP, we received a total of seven bids representing the two technology types.

The Company reviewed the RFP results, and invited five of the seven vendors to participate in on-site product testing at a Company facility between May and July 2017.⁷ As a result of the testing, two of the five vendors—including those with load-monitoring solutions—were eliminated from consideration because they failed to meet the requirements established in the RFP. The remaining three vendors were invited to continue participating in the Company's pilot development, and the Company is currently in the process of negotiating terms, conditions, and pricing for these vendors' participation in the pilot.

The Company understands that some customers would prefer to see the inclusion of non-EVSE technologies and/or the use of customers' existing charging equipment within the scope of the pilot.⁸ While we had hoped to include other technology solutions in this pilot, the technology procurement process did not yield any solutions currently capable of fulfilling the Company's metering accuracy, billing, and data requirements. Rather than delay our pilot proposal, we decided to move forward with a single technology format but to include multiple EVSE vendors. We believe this

⁶ For this petition, we have defined these technologies as: an **EVSE with embedded load monitoring** is an EV charger that is able to accurately capture electric load data and securely upload that data to a head end. A **load-monitoring solution external to EVSEs** is equipment that operates downstream of the utility meter, and can enhance an existing EVSE by accurately capturing electric load for charging an EV and securely uploading that data to a head end.

⁷ Two of the vendors were eliminated from consideration as a result of not meeting the RFP's threshold criteria.

⁸ We likewise understand that some of our customers who own electric vehicles live in apartments or condominiums and would like to see a similar rate offering for multi-family residents. However, the complexities associated with multi-family billing and parking (for example, ensuring that we can identify who is using the EVSE to charge their vehicle) present an entirely different set of issues that we believe would have significantly delayed our proposal. Thus, while we will certainly continue to explore offering such a rate in the future, we are not able to do so as part of this pilot.

approach is reasonable given the size of the pilot, and has the benefits of preserving some amount of customer choice while also fulfilling stakeholder interest in bringing the pilot forward as efficiently as possible. That said, we will continue exploring new EV-related technology solutions during the term of the pilot. And to the extent we find new and workable solutions, we do not intend to wait for the conclusion of the pilot before pursuing those opportunities and potentially offering them to our customers in connection with future rate offerings.

VIII. Pilot Program Description

A. Overview & Objectives

Residential Service customers who own or lease an EV will be invited to enroll in the Company's pilot. Customers will choose their preferred EVSE from participating vendors whose equipment meet Company requirements. The Company will purchase the EVSE unit and have it installed at the customer's home by a qualified contractor. While on site, the contractor will also provide an estimate for informational purposes of the cost to install a second metered service at the customer's premise according to the current EV tariff, which will be used to evaluate cost savings associated with the pilot compared to the existing EV Service rate option. A customer may choose to pay the installed EVSE unit cost through its inclusion in the monthly customer charge for Bundled Service, or upfront prior to beginning service with the Pre-Pay Option that has a correspondingly lower monthly customer charge. The pilot includes TOU energy rates that provide participants an incentive for scheduling their EV charging needs during the off-peak rate period. The Company will pilot this offer to up to 100 customers for two-year terms over a 30-month period.

1. Seek and confirm cost savings compared to the existing EV Service option

Through this pilot, the Company hopes to learn more about bringing cost-effective options to our customers. Currently, enrollment in our existing EV Service tariff requires customers to fund the installation of a second meter in addition to the costs of charging equipment. Some customers have indicated that this requirement has been a barrier to taking service under the Company's dedicated EV Service rate. Meanwhile, among customers likely to purchase or lease an EV, our surveys show that 60 percent would be interested in TOU rates for EV charging if upfront costs for enrollment are reduced.⁹ EVSEs that embed load monitoring technology with billing-

⁹ The Company conducted an online customer survey about EV charging and EV rates, with 89 respondents. Additionally, the Company reviewed market research conducted in other states on EV drivers, including: California Center for Sustainable Energy. "California Plug-in Electric Vehicle Driver Survey Results." May, 2013.

quality accuracy, in lieu of a second meter, could reduce participation costs for customers.

Through the pilot we expect to also confirm that customers on the EV Service rate will experience bill savings with a nighttime off-peak charging option compared to costs under our traditional residential tariff. Surveys suggest that customers are highly interested in charging during off-peak times and the most important motivator for enrolling in an EV charging rate is bill savings.¹⁰

2. *Improve customer service and experience*

A key objective of the EV Service Pilot is to improve customers' experiences with EV charging. Today, customers taking service under the existing EV Service tariff only see their on-peak and off-peak energy usage on their bill at the end of the month. In the proposed pilot, customers will have access to significantly more information and use the EVSE web portals to access their usage data on a more granular basis, which will provide an important channel for learning and engagement. Additionally, selecting chargers and installing them is not an easy process for customers, and market research consistently cites the "hassle factor" as a major barrier to adoption for electric vehicles.

Our goal is to increase awareness and interest in the EV charging TOU rate, and to make the decision-making process simpler for customers by:

- Helping customers gain reliable information on EV rates and EVSE equipment, providing customers relevant content via the web and e-mail, and sharing the information when it is most timely and pertinent. Customers looking for charger and EV rate information rely heavily on online searches and the Company's website, according to our customer research;¹¹
- Offering customer choices for EVSEs while maintaining a reasonable level of simplicity, based on a pre-approved list of EVSE vendors that met the Company's performance requirements;
- Providing options for customers to choose between paying upfront for the EVSE equipment and installation or through a bundled monthly charge, as customers, in surveys, have been split on which option they prefer;¹²
- Enabling an easier installation process, working with a qualified contractor who is well-equipped to help customers install EVSEs safely and obtain permits while facilitating enrollment and online connection for the EV rate; and

¹⁰ Ibid., see footnote 9.

¹¹ Ibid., see footnote 9.

¹² Ibid., see footnote 9.

- Leveraging support from the broader electric vehicle community and providing opportunities to capture value by offering incentives for referrals in order to encourage auto dealers to promote the pilot.

The pilot will provide key learnings that will not only benefit participants but also the Company's other customers by helping inform future products that enhance the customer experience. As electric vehicle adoption continues to grow, we are evaluating additional strategies and programs that could unlock additional value for our customers.

3. Maintain safety, reliability, and billing accuracy

In developing this pilot, the Company performed an assessment of market-available EV charging products that meet minimum functional requirements. Some of those requirements include the following:

- Metering and billing accuracy of plus or minus 2 percent;
- Ability to retrieve 15-minute interval energy usage data;
- Secure data transfer between the customer and the Company;
- Secure onboard data storage for 15 minute interval data for minimum of 90 days;
- 10 watt standby power consumption maximum;
- Charging device must be UL Listed;
- Compatible metering data format (XML, MV90, OCPP and CNMP);
- Certain administrative privileges that enable the Company to access charging data and to receive information from the EVSE; and
- Editing controls that prevent data tampering.

These requirements were vetted throughout the Company's vendor selection process, including the RFP response assessment and the on-site product demonstrations. Because learnings from this pilot are important to inform future customer offers, the Company intends to review and report on the performance of the technology with respect to these important standards.

B. Technology Procurement

Through the process described above, the Company has identified potential vendors for our proposed residential EV Service Pilot that meet the Company's requirements. Vendors selected to participate will form contracts with the Company to supply EVSE units for the pilot. The Company will purchase the devices from the vendors

and offer customers the option to pay for the installed unit cost upfront or through a monthly charge. The Company will own all units during the term of the pilot¹³ and the vendors will be responsible for collecting customer energy usage through the customer's home Wi-Fi network, and providing the data to the Company on a daily basis and in a standard format through a secure and encrypted process. Attachment A provides a diagram illustrating the equipment configuration for residential EV Service Pilot participants.

C. Pilot Design

1. *Marketing, Customer Enrollment and Support*

The most significant barrier to both electric vehicle adoption and enrollment in new rate structures, like the EV rate, is awareness. To raise awareness, we intend to incorporate best practices from market research, our own experiences with the EV rate and a smart charging pilot in Colorado, and other utilities and industry partners, by making our marketing, outreach, and enrollment effort:

- **Compelling** to motivate customers to take action;
- **Personalized** to draw customers in and demonstrate how the program could address their needs; and
- **Simple** and **convenient** to ensure customers understand the program and minimize the “hassle factor” that could be driving away potential participants.

Program outreach will rely on a combination of approaches that we anticipate will reinforce each other in order to encourage participation, including:

- **Targeted Marketing.** Customers will receive personalized communications from the Company inviting them to participate in the pilot. In addition, the Company will pay for search advertisements targeting key points of the customer learning process, particularly when they are evaluating options before purchasing an EV and also after they start driving their EV and may be looking to learn more about charging and potential rate options;
- **Social media and word-of-mouth promotion.** Our service territory has a dedicated community of EV enthusiasts who share information about new technologies, promotions, and programs, and peer-to-peer recommendations will be an important approach for recruitment. Our marketing plan includes initiatives to provide promotional materials and tools for sharing information,

¹³ While customers have the option to pay for the unit on an upfront basis, the Company will maintain ownership over all units during the term of the pilot to ensure that it maintains maintenance responsibilities for the equipment and prohibit participating customers from modifying, moving, or tampering with the EVSEs during the pilot. The Company will transfer ownership of the EVSE to customers who paid upfront at the end of the pilot or following any termination of the customer's participation in the pilot for any reason.

and the Company will continue to seek input from stakeholders on promoting the program; and

- **Incentives for referrals.** In order to encourage others to promote the program, the Company intends to offer a referral incentive so auto dealers are rewarded for helping recruit pilot participants.

For enrollment, customers will go to the Company’s website to initiate the process. Customers will then be able to choose an EVSE technology, and schedule an install, review the customer service agreement, and then complete the enrollment online.

As part of the pilot, we seek to learn more about what approaches resonate the most with our customers, and intend to survey customers and seek feedback to continue to improve customer marketing and enrollment processes for electric vehicle programs and the EV charging rate.

2. Customer Commitment and EVSE Installation

Customers may enroll in the EV Service Pilot for six months after the launch, or until the maximum of 100 pilot participants is reached, whichever is earlier. Eligible participants in the EV Service Pilot will sign a customer agreement as discussed in Section D below, and then arrange to have their EVSE installed by a Company-approved contractor.

The Company will coordinate scheduling, install, and inspect each EVSE with support from contractors selected through a competitive process. We believe this straightforward and simple customer experience will reduce the “hassle factor” while also ensuring required permitting and safety measures are performed.

The contractor will provide the customer and the Company with detailed cost estimates. The contractor will invoice the Company for EVSE installation costs, and it will be the customer’s obligation to pay for the premise wiring and associated permits.

3. Customer Costs

As discussed, to take service under the current EV charging rate, customers incur several out-of-pocket expenses. These expenses include:

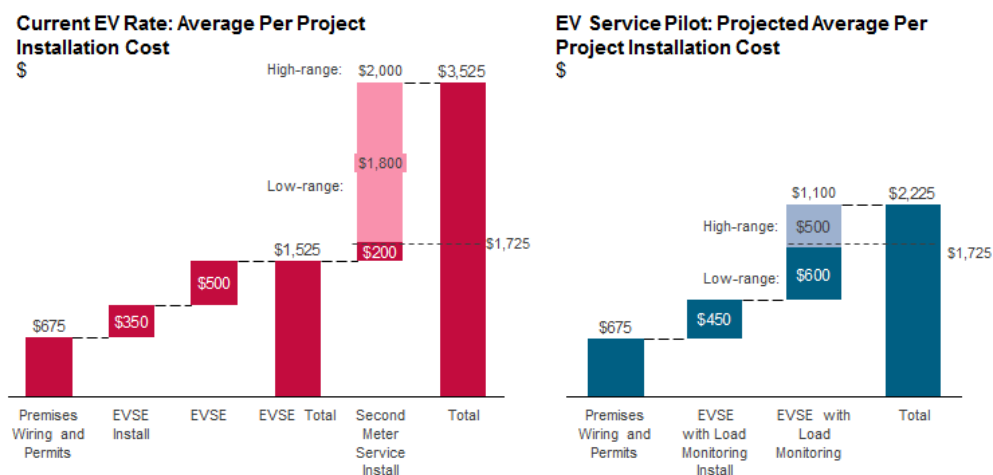
- The acquisition and installation of a parallel service line and meter housing

equipment for a second, parallel meter;¹⁴

- The acquisition and installation of a charging device and/or a dedicated wall outlet;¹⁵ and
- Premise wiring and permit costs, including upgrades to the service panel and new conduit wiring.¹⁶

On average, the Company and participants in this proceeding have estimated that these total costs may range from \$1,725 to \$3,525 per customer,¹⁷ with the cost of the acquisition of the second metered service being between \$200-\$2,000.¹⁸ As illustrated below in Figure 1, the EV service pilot could reduce the initial cost to participate in an EV charging rate option.

FIGURE 1: Cost Comparison Estimates of Installations for Current EV Charging Tariff and Proposed EV Service Pilot



¹⁴ Includes an additional meter socket for the second meter and, depending on the service connection, an upgraded service entrance conductor (the conductor going through the mast between the line side of the meter socket, through the weather head, and to the point of delivery), new service entrance conduit, and upgrades to junction box/wire way for dedicated service.

¹⁵ Includes all means and devices to deliver electricity from the premises wiring to the electric vehicle (e.g. EVSE or dedicated wall outlet). The installed costs can also include ungrounded, grounded, and equipment grounding conductors, the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatuses associated with the installed device.

¹⁶ Includes upgrades or installations of a new service panel and/or breaker, wiring, final junction box, receptacle, and all attachments and connections.

¹⁷ Average cost estimates were derived from various data sources: Electric Power Research Institute. "Electric Vehicle Supply Equipment Installed Cost Analysis" 2013. Report No. 3002000577; Avista. "Docket No. UE-160082 – Avista Utilities Quarterly Report on Electric Vehicle Supply Equipment Pilot Program;" Aug 2017; Docket No. UE-160082; and Docket No. E-002/M-15-111; Xcel Energy Analysis.

¹⁸ Based on the record developed in Docket No. E-002/M-15-111. Other utilities with EV rates requiring a second meter suggest installation costs could be even higher than \$2,000. For instance, So Cal Edison advises its customers that a second meter for their electric vehicle rate could cost as much as \$3,000:

<https://www.sce.com/wps/portal/home/residential/electric-cars/residential-rates> (accessed Oct 2017).

While the EVSE with embedded load monitoring capabilities may cost incrementally more than a non-networked option, customers will avoid the cost of upgrades for installing a second meter. Total cost reductions for equipment and installation could be as high as \$1,800.¹⁹

Upfront cost savings for customers could be even greater since the Company will offer customers the option to pay for the equipment through a fixed monthly charge. As a result, customers could save \$1,050 upfront, significantly alleviating the upfront cost barrier. Total upfront cost savings between enrollment in the current EV rate and the new EV Service Option could be \$2,850.²⁰

Because seeking and confirming the potential for cost savings is a key objective of this pilot, the Company will be analyzing both the contractor's actual costs for installing and wiring the device at the customer's home, as well as the contractor's estimate for installing a second metering device as is required under the Company's current EV Service rate option. In offering this pilot, the Company will not modify or discontinue the terms of the current EV Service rate option, and therefore will avoid introducing further variables into the cost analysis.

4. *Pilot Operations*

Participants in the pilot will include existing EV drivers and new EV drivers, all of whom will be Xcel Energy customers. Regular reviews, adaptive management, and adjustments during the 30-month period are expected. Further details are provided below.

Customer EVSE selection: customers will choose their EVSE from a pre-approved list of vendors that met the Company's performance requirements. The Company will work with each vendor to highlight the features of each vendor's EVSE technology on the Company's website.

EVSE Payment Options: customers will have two payment options under this pilot. First, customers can elect to receive EVSE charging equipment and have that

¹⁹ Average cost estimates were derived from various data sources: Electric Power Research Institute. *"Electric Vehicle Supply Equipment Installed Cost Analysis."* 2013. Report No. 3002000577; Avista. "Docket No. UE-160082 – Avista Utilities Quarterly Report on Electric Vehicle Supply Equipment Pilot Program." Aug 2017; Docket No. E002/M-15-111 (Jan. 1, 2015); Xcel Energy RFP (trade secret); Docket No. E-002/M-15-111; and Xcel Energy Analysis

²⁰ Average cost estimates were derived from various data sources: Electric Power Research Institute. *"Electric Vehicle Supply Equipment Installed Cost Analysis."* 2013. Report No. 3002000577; Avista. "Docket No. UE-160082 – Avista Utilities Quarterly Report on Electric Vehicle Supply Equipment Pilot Program." Aug 2017; Docket No. E002/M-15-111 (Jan. 1, 2015); Xcel Energy RFP (trade secret); Docket No. E-002/M-15-111; and Xcel Energy Analysis

equipment installed at their home without making any upfront payment for the equipment or installation. These customers will pay the “bundled” service customer charge, which includes cost recovery of Company-provided EVSE charging equipment and installation costs. Alternatively, customers can elect to pay the full cost of their EVSE charging equipment and installation. These customers will then pay a reduced “pre-pay option” service customer charge that excludes the installed EVSE cost. In both cases, customers will be responsible for the costs of premises wiring and permits for the EVSE install.

Evaluation: the pilot will seek to confirm cost savings. As part of the installation, the contractor will provide a quote on what the cost of installing a second metered service would be. In other words, contractors will estimate the cost of the participant enrolling in the existing EV Service rate (via the installation of a second meter). At the end of the pilot, the Company will compare the average cost per install to the contractor estimates of what it would have cost customers to participate in the current EV Service rate. Additionally, the Company will assess the performance of the equipment in the field, including the equipment’s ability to store, manage, and transfer data consistent with the Company’s needs for billing purposes.

Activation and Billing Cycles: when the Company and EVSE vendor have confirmed that the EVSE is installed and operational, the EVSE will be considered activated. Activations must be received by the Company at least 5 business days prior to the start date of the customer’s next billing cycle to become effective on that date. If activation is received less than 5 days prior, Participants will become effective on the stated date of the Participant’s subsequent billing cycle.

Data Records: the Company will work with EVSE vendors to ensure EVSE load monitored data is properly formatted, accurate, and timely submitted to the Company.

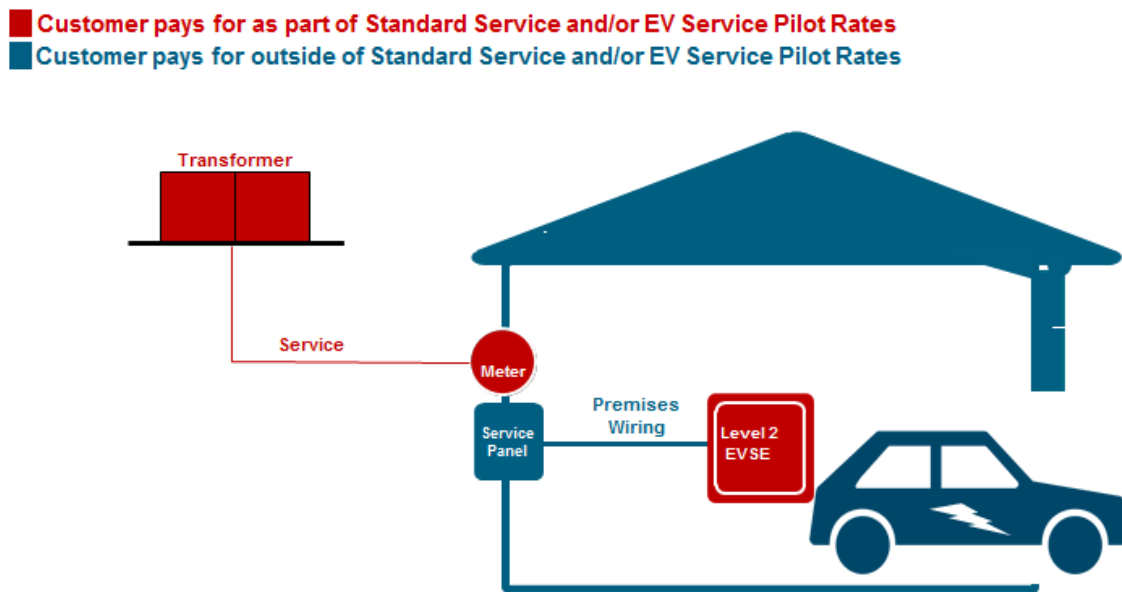
Primary Meter and EVSE Bill Calculation: the customer’s primary metered usage is billed according to the customer’s current tariff, and the EVSE usage is billed according to the residential electric vehicle pilot rate schedule. The primary meter billed amount will subtract the EVSE usage, assuming the EVSE timely submits accurate usage information, as described below.

Sample Bill: see a sample bill provided as Attachment B, which illustrates how a participant would see, via a clear and transparent statement, the amount of energy consumed under the tariff as required by the statute.

5. Rate Design

Pilot customer charges for both bundled and pre-pay option (EVSE upfront payment) service include metering costs as required by statute by recognizing the costs associated with acquiring EV energy usage. The bundled monthly customer charge for the pilot is \$27.45 and includes cost recovery for Company provided and installed EVSE equipment. The pre-pay option monthly customer charge for the pilot is \$13.88 and excludes cost recovery for Company provided and installed EVSE equipment, which recognizes the customer upfront payment for the installed EVSE equipment. Figure 2 below depicts the equipment costs that the customer is paying for as part of the Company's standard service and the EV Service Pilot.

FIGURE 2: Summary of Cost Allocations



The pilot includes on-peak and off-peak energy rates that are the same as those in both the current Residential Electric Vehicle Service tariff and the current whole house Residential Time of Day Service tariff. Table 1 below summarizes the rate options, including this proposed Residential EV Service Pilot that the Company offers customers with electric vehicles.

Table 1: Comparison of Rate Options for Residential Customers with Electric Vehicles

Rate Options		Customer upfront out- of-pocket expenses	Customer monthly charge for EV Service (\$)	Services included in monthly charge for EV Service	Illustrative monthly usage charges for EV driving* (\$)
Dedicated Electric Vehicle Rates	Existing Residential Electric Vehicle Service Rate Code: A08	<ul style="list-style-type: none"> • EVSE and Installation** • Premise Wiring • Housing for second meter 	\$4.95	<ul style="list-style-type: none"> • Second, Parallel Meter • Customer Service • Customer accounting 	\$24.64
	Proposed Electric Vehicle Service Pilot Bundled Service Proposed Rate Code: A80	<ul style="list-style-type: none"> • Premise Wiring 	\$27.45	<ul style="list-style-type: none"> • EVSE and Installation payment • Customer Services • Customer accounting • Load Monitoring and Data Management • Maintenance Service 	\$24.64
	Proposed Electric Vehicle Service Pilot with Pre-pay Option Proposed Rate Code: A81	<ul style="list-style-type: none"> • EVSE with load monitoring technologies and Installation • Premise Wiring 	\$13.88	<ul style="list-style-type: none"> • Customer Services • Customer accounting • Load Monitoring and Data Management • Maintenance Service 	\$24.64
“Whole Home” Rates	Residential Service Rate Codes: A00, A01, A03	<ul style="list-style-type: none"> • EVSE and Installation** • Premise Wiring 	\$0.00	N/A	\$38.53
	Residential Time-of-Day Rate Rate codes: A02,A04	<ul style="list-style-type: none"> • EVSE and Installation** • Premise Wiring 	\$0.00	N/A	\$24.64

*Assumes 1,000 miles of driving per month; 3.3 kWh per mile; 95% of charging off-peak. Includes fuel and rider charges.

**In some cases, residential customers will use a dedicated wall outlet instead of an EVSE for charging.

6. *Annual Reporting*

The Company will file annual reports on or before June 1st after the first full year following pilot implementation, which will be included as part of our annual report in Docket No. E002/M-15-111. Our reports will note progress from key indicators, including the number of customers who have arranged to purchase electricity under the tariff and the total amount of electricity sold under the tariff (shown on a quarterly basis), as required by statute. The annual report will also include the tracker balances as well as key learnings from the pilot. The Company will report progress on its key objectives, including an analysis of any cost savings for pilot participants compared to two-meter alternatives. The Company will also report on learnings regarding the customer experience and pilot performance under our safety and reliability standards. As the learnings may be beneficial to all parties in real time, the Company will continue to pursue innovations in providing services to meet EV driver needs, even as the pilot is in progress.

D. **Terms of Participation**

The EV Service Pilot Customer Agreement (Attachment C) and Tariff (Attachment D) address the specific terms and conditions for participation in the EV Pilot program.

Some of the key terms for customer participation include the following:

Eligibility and Availability: to be eligible to participate in the pilot, participants must:

- receive residential electric service from Xcel Energy in Minnesota with no past due bills;
- live in a single-family home, defined as a detached single family home, townhome/row house, or duplex;
- have possession of an electric vehicle, through ownership or lease;
- have wireless internet (WiFi) service at Site;
- not participate in the current Residential EV Service Rate;²¹
- not participate in the Residential Time of Day Service Rate;²²

²¹ Rate Code A08.

- not participate in the Time of Use Rate Design Pilot Program; and
- not participate in the Company's net metering tariffs.²³

Pilot Term: 24-month term. At the end of the term, customers who are paying the bundled service customer charge will have the following options:

- Customers can have the EVSE removed at no cost and move back to their previous rate;
- Customers can purchase the EVSE from the Company for a cost equal to the undepreciated balance of the EVSE and either (i) move back to their previous rate or (ii) move to any new EV charging tariff offered by the Company that is compatible with the EVSE already in place;²⁴ and
- Customers can have the EVSE replaced or upgraded if the Company offers a new EV Charging tariff involving a different technology.

Customers who paid for the EVSE upfront and are paying the pre-pay option service customer charge will have the following options at the end of the term:

- Customers can elect to have the Company transfer ownership of the EVSE to the customer at no cost and either (i) move back to their previous rate or (ii) move to any new EV charging tariff offered by the Company that is compatible with the EVSE already in place; and
- Customers can have the EVSE replaced or upgraded if the Company offers a new EV Charging tariff involving a different technology.

Site Selection: all residential site locations shall qualify if the customer meets all eligibility criteria of the program and the site has sufficient space for locating and maintaining the EVSE.

Ownership of EVSE: all equipment installed will be owned and maintained by the Company for the duration of the Pilot. Following termination of the pilot, the Company will continue to own all EVSE equipment subject to the bundled service customer charge (*i.e.*, that which has not been paid for by the customer on an upfront basis). For customers paying the pre-pay option service customer charge (*i.e.*, those

²² Rate Code A02 and AO4.

²³ We understand some customers with rooftop solar may wish to participate in the Company's pilot. Those customers are not eligible at this pilot stage, however, as metering configurations frustrate the requirement to bill customers accurately. Specifically, when a solar PV installation is generating power (regardless of how much load it is supplying), there will be a billing discrepancy for EV charging. The EV charger is incapable of differentiating its supply from power supplied by the grid versus the customer's generation. When the energy per time period is measured later, a larger proportion of the actual house load will appear as EV load, since the solar is not separately accounted for. See Attachment E for a diagram illustrating configurations for rooftop solar customers.

²⁴ Customers moving to any new EV charging tariff offered by the Company would need to sign a new Customer Agreement.

who paid for equipment and installation on an upfront basis), the Company will transfer ownership of the EVSE equipment to each customer at the end of the pilot or following any termination of the customer's participation in the pilot for any reason.

Customer obligations: all customers agree to:

- participate in customer surveys and provide feedback about the Program;
- provide access and assistance to facilitate random meter testing;
- be responsible for routine inspection, maintenance, and troubleshooting not requiring technicians (e.g. resetting the circuit breaker);
- operations and maintenance of the EVSE requiring technician support will be accomplished by qualified contractors, who will be selected through a competitive process conducted by the Company; and
- receive communications from the Company related to the Program by e-mail.

E. Accounting Treatment

The purchase and installation of the EV charging and metering equipment will be capitalized as an Electric Distribution asset to FERC Account 101, Plant in Service in plant account 370 Meters. The EV bundled service customer charge (see Rate Design discussion in Section C-5 above) will be designed to recover the carrying cost for this asset during the pilot. The Company also requests that the capitalized costs be allowed in rate base and receive a return on investment. Treatment of these assets at the end of the pilot will be dependent on the pilot's outcome and end-of-life accounting treatment will be made at that time. The EV bundled service customer charge is also designed to recover the costs for customer accounting, customer services, including load-monitoring and data management and maintenance of the EVSE charging equipment. The pre-pay option service customer charge (see Rate Design discussion in Section C-5 above) is designed to recover the same costs with the exception of the installed EVSE unit cost.

Additionally, the Company expects to incur certain costs for customer education and information initiatives associated with the pilot program. We are requesting that these costs be included in the existing tracker account under our EV Service tariff in Docket No. E002/M-15-111 used for the recovery of communications costs. The Company will petition the Commission to recover qualifying costs in a future rate proceeding. This proposed approach recognizes uncertainty in the cost of our preliminary marketing plans and the costs that will qualify for a tracker account. Including EV communication costs only in a rate component for the proposed Residential EV Service Pilot Tariff would make it an inconsistent and uneconomic

alternative to existing tariffs that are also used for EV charging. Table 2 below provides a budget for the customer education and information initiatives we propose for the tracker.

TABLE 2: Customer Education and Information Budget for Tracker

Year 1 Electric Vehicle Service Pilot: Education and Information Budget	Estimated Amount
Dealer and Trade Outreach	\$ 10,000
Dealer Referral Incentive	\$ 10,000
Events/Collateral	\$ 7,000
Digital Channels	\$ 6,700
Direct Mail	\$ 4,500
Bill Onserts	\$ 3,000
Total	\$ 41,200

The estimated amounts above have been produced through experience performing the same or similar activities for other programs, including the current EV Service tariff. At times, actual execution of the promotion plans will vary based on new opportunities that present themselves or market responses that are different than anticipated. A more detailed of activities that are currently planned include:

Dealer & Trade Outreach – The Company, with support from third-party vendors, will conduct outreach and training events to inform auto dealers and electricians about rates and charging options.

Dealer Referral Incentive – The Company will offer a referral incentive to dealers who drive enrollment in the EV Service Pilot.

Events/Collateral – The Company will sponsor or host community events to distribute information about electric vehicles, such as the National Drive Electric Week events at the Mall of America and the St. Paul Farmers Market.

Digital Channels – XcelEnergy.com will continue to be the central resource for most of the electric vehicle information. Additionally, paid social media advertising will be used to target customers that may likely drive or be interesting in driving electric vehicles.

Direct Mail – Information brochures mailed to known electric vehicle drivers.

Bill Inserts – A bill message with information about the Electric Vehicle Rate will be targeted to customers that may likely drive or be interesting in driving electric vehicles.

F. Public Interest

The proposed pilot is designed to refine the terms of service to better serve EV drivers, and to provide a learning opportunity for the Company, its customers, regulators, and other stakeholders. As discussed, the goals of the pilot are to reduce the initial barriers of entry inherent in EV charging rate adoption, improve the EV driving customer's experience, and to ensure safe and reliable service consistent with our standards through the provision of a tailored EV service platform. Additionally, the Company will gain important insight into how this type of service would affect utility operations in the event of a more wide spread roll-out of the service.

We believe the Company's proposal is reasonable in its approach. Because the pilot is designed to improve upon our existing tariffed offer, we believe the overall scale is appropriate. The pilot is size-aligned with our current EV charging offer and positioned to provide a meaningful opportunity to test assumptions about equipment performance, installation costs, and service options. We believe the investments made pursuant to this pilot will benefit all customers and represent an efficient opportunity to prepare for future growth in EV market penetration.

We also believe the Company's proposal is supported by the public interest, as there are numerous public benefits promoted by the pilot design. These include promoting customer optionality with the inclusion of alternative vendors. The pilot design also encourages shifting energy loads to off-peak times, which benefits the system as a whole.

The Company's proposal to purchase the EVSE and offer customers a choice of a service options—either paying upfront or through inclusion in the monthly customer charge—preserves optionality we understand is important to customers. The Company's proposal benefits from learnings in other jurisdictions, such as in Washington State where Avista Corporation is piloting a model which includes a similar depreciation treatment for assets as proposed by the Company here.

G. Request for Exception to Minnesota Rules for Pilot Equipment

As already discussed, we intend to deploy multiple equipment options that will be used to measure each customer's EV-related usage. All of these devices will rely on

an internet connection—and more specifically, a customer’s home Wi-Fi network—to transmit this usage data to the Company for billing purposes. Thus, unlike traditional meters used by the Company, the pilot equipment’s functionality will depend on the customer’s maintenance of a stable and adequate Wi-Fi network, as well as other connectivity issues that do not apply to traditional meters. The reliability of these technologies and their reliance on the customer’s home network are among the issues we hope to explore through this pilot.

To that end, we are requesting that the EV charging equipment be exempted from the Commission’s meter-related rules—including Rules 7820.3700 and 7820.3800—as well as Section 3 of the Company’s Electric Rate Book Section 6 tariff (Metering and Billing). In effect, we propose not to define the EV charging equipment as “metering equipment” for purposes of this pilot and the above-cited rules and tariff, and instead that the equipment be governed by the specific provisions in our proposed tariff and Customer Agreement for this pilot. We believe this request is reasonable given the limited nature of the pilot, our interest in using new technologies to enhance our customer’s experience with the EV Service rate, and our efforts to specifically address equipment functionality issues in our proposed tariff for this pilot.

CONCLUSION

The Company submits this filing for Commission consideration and respectfully requests its approval to:

- approve our proposal for implementing a Residential EV Service Pilot Program;
- approve our proposed Customer Agreement and Residential EV Service Pilot Tariff;
- approve our proposed accounting treatment; and
- approve our request for a rule variance.

Dated: November 17, 2017

Northern States Power Company

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie J. Sieben	Commissioner
John Tuma	Commissioner

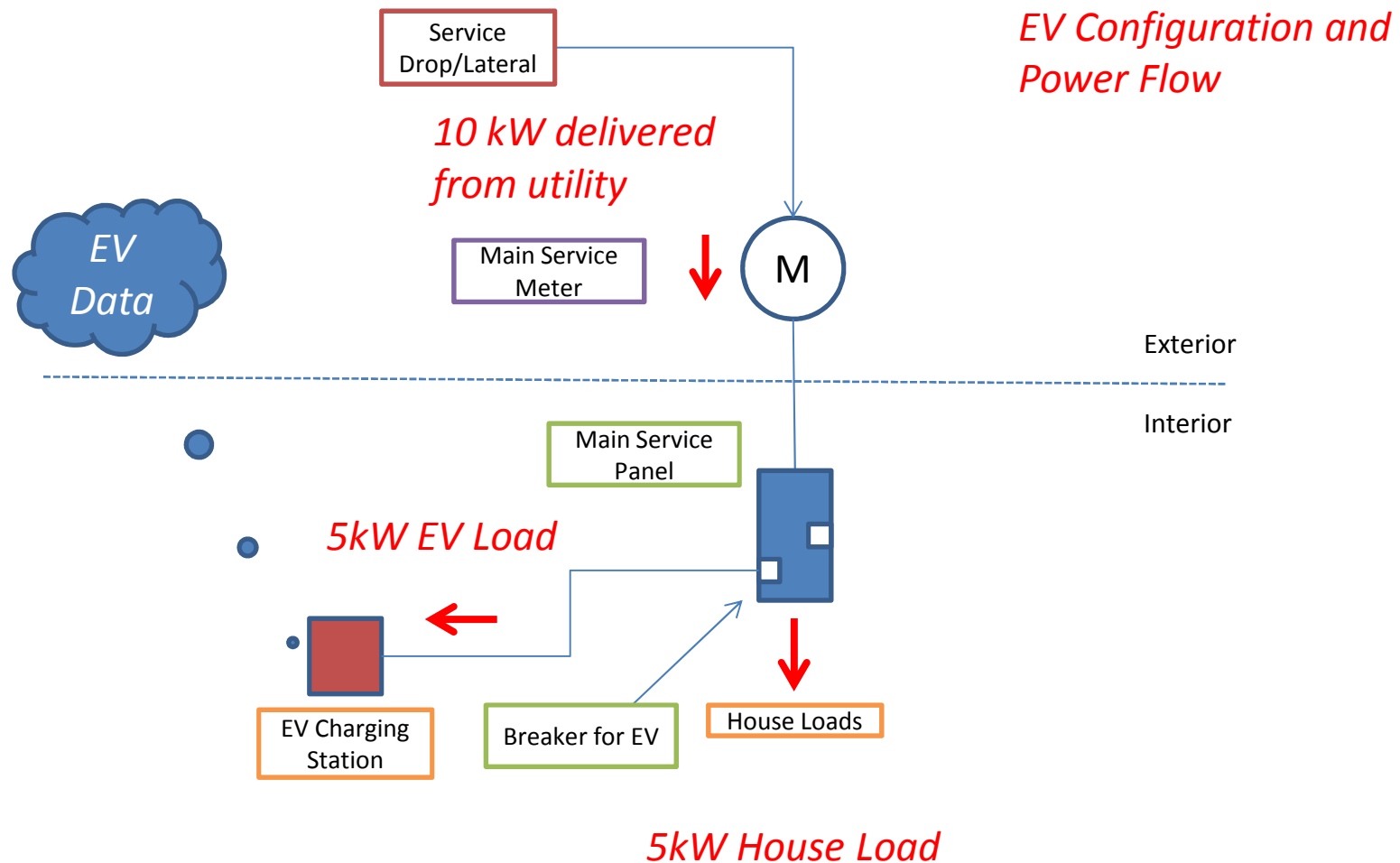
IN THE MATTER OF THE PETITION OF
NORTHERN STATES POWER COMPANY FOR
APPROVAL OF A RESIDENTIAL EV SERVICE
PILOT PROGRAM

DOCKET NO. E002/M-17-_____

PETITION

SUMMARY OF FILING

Please take notice that on November 17, 2017, Northern States Power Company, doing business as Xcel Energy, filed with the Minnesota Public Utilities Commission a Petition for approval of a Residential EV Service Pilot Program. The Company proposes to offer customers a pilot that pairs an off-peak charging incentive through Time of Use rates with a Company-offered Level 2 charging solution. The pilot will seek opportunities for cost savings compared to the Company's current customer offers. The pilot will also seek to improve the customer experience while maintaining safe and reliable electric service.



Example with numbers (assume constant loads for 1 hour).

- 10kW delivered over 1 hour equals 10kWh (energy = power x time, kW x hour =kWh)*
- The charger has received 5kWh over the hour period*
- The house load has received the other 5kWh of energy over the hour period*

The bill will indicate that 5kWh was drawn by the EV charger while the other 5kWh was for the house loads, enabling the proper rates to be billed per usage.



MAILING ADDRESS	ACCOUNT NUMBER	DUE DATE
J. SMITH 5555 MAIN STREET CITY MN 55XXX-XXXX	XX-XXXXXXX-X	05/18/2017
	STATEMENT NUMBER	STATEMENT DATE
	XXXXXXXXXX	4/09/2017
		AMOUNT DUE
		\$180.09

DAILY AVERAGES	Last Year	This Year
Temperature	32° F	32° F
Electricity kWh	32.3	41.9
Electricity Cost	\$3.61	\$5.83

QUESTIONS ABOUT YOUR BILL?See our website: xcelenergy.comEmail us at: Customerservice@xcelenergy.com

Call 24 hours a day, 7 days a week

Please Call: 1-800-895-4999

Hearing Impaired: 1-800-895-4949

Español: 1-800-687-8778

Or write us at: XCEL ENERGY

PO BOX 8

EAU CLAIRE WI 54702-0008



Like us on Facebook



Follow us on Twitter

**SUMMARY OF CURRENT CHARGES** (detailed charges begin on page 2)

Electricity Service	03/08/17 - 04/08/17	1300 kWh	\$180.59
Current Charges			\$180.59

ACCOUNT BALANCE

Previous Balance	As of 03/08	\$110.10
Payment Received	Check 03/29	-\$110.10 CR
Balance Forward		\$0.00
Current Charges		\$180.09
Amount Due		\$180.09

INFORMATION ABOUT YOUR BILL

Thank you for your payment.

RETURN BOTTOM PORTION WITH YOUR PAYMENT • PLEASE DO NOT USE STAPLES, TAPE OR PAPER CLIPS



ACCOUNT NUMBER	DUE DATE	AMOUNT DUE	AMOUNT ENCLOSED
XX-XXXXXXX-X	05/18/2017	\$180.09	

To avoid a late pay charge of 1% of the unpaid balance,
payment of total amount must be received by due date.
Make your check payable to XCEL ENERGY

MAY						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

----- manifest line -----

J. SMITH
5555 MAIN STREET
CITY MN 55XXX-XXXX

XCEL ENERGY
P.O. BOX 9477
MPLS MN 55484-9477



MAILING ADDRESS	ACCOUNT NUMBER	DUE DATE
J. SMITH 5555 MAIN STREET CITY MN 55XXX-XXXX	XX-XXXXXXX-X	05/18/2017
	STATEMENT NUMBER	STATEMENT DATE
	XXXXXXXXXX	04/09/2017
		AMOUNT DUE
		\$180.09

SERVICE ADDRESS: 5555 MAIN STREET CITY MN 55XXX-XXXX
NEXT READ DATE: 05/08/17

ELECTRICITY SERVICE DETAILS

PREMISES NUMBER: 123456789
INVOICE NUMBER: XXXXXXXXXX

METER READING INFORMATION

METER 12345678

Read Dates: 03/08/17 - 04/08/17 (31 Days)

DESCRIPTION	CURRENT READING	PREVIOUS READING	MEASURED USAGE	BILLED USAGE
Total Energy	9300 Actual	8000 Actual	1300	1300 kWh
Energy	9000 Actual	Actual	1000	1000 kWh

ELECTRICITY CHARGES

RATE: Residential Service

DESCRIPTION	USAGE UNITS	RATE	CHARGE
Basic Service Chg			\$ 8.00
Energy Charge Winter	1000 kWh	\$0.090320	\$ 90.32
Fuel Cost Charge	1000 kWh	\$0.030000	\$ 30.00
Total			\$128.32

METER READING INFORMATION

EVSE (Possible ID#)

Read Dates: 03/08/17 - 04/08/17 (31 Days)

DESCRIPTION	CURRENT READING	PREVIOUS READING	USAGE
Total Energy	300 Actual	Actual	300 kWh
On-Pk Energy	20 Actual	Actual	20 kWh
Off-Pk Energy	280 Actual	Actual	280 kWh

ELECTRICITY CHARGES

RATE: EV Pilot Service

DESCRIPTION	USAGE UNITS	RATE	CHARGE
Basic Service Chg			\$27.45
Off-Peak Energy Chg	280 kWh	\$0.04260	\$11.93
On-Peak Energy Chg Winter	20 kWh	\$0.16968	\$3.39
Fuel Cost Charge	300 kWh	\$0.03000	\$9.00
Total			\$51.77

EV Service Pilot Customer Service Agreement

Xcel Energy is excited to offer the Electric Vehicle Service Pilot (“Pilot”) to its Minnesota residential rate electric customers.

As part of the Pilot, Xcel Energy will offer participant Customers (individually, “Participant” or, collectively, “Participants”) installation of Electric Vehicle Supply Equipment (“EVSE”) and enrollment in the Electric Vehicle Rate. The Pilot is described in more detail in the General Rules and Regulations and/or in the Rate Schedules of Xcel Energy’s Electric Rate Book for Customer’s specific service, as they now exist or may hereafter be changed, on file with Minnesota Public Utility Commission. Unless otherwise defined in the Service Agreement, the definitions, terms, and conditions set forth in the Electric Vehicle Service Pilot, General Rules and Regulations and Rate Schedules are applicable to this Service Agreement, summarized in the following chart, as if fully set forth herein.

EV Service Pilot Offerings

Rate Options	Customer upfront out-of-pocket expenses	Customer monthly charge for EV Service (\$)	Services included in monthly charge for EV Service	Monthly usage billed
Electric Vehicle Service Pilot Bundled Service Rate Code: A80	•Premise Wiring	\$27.45	<ul style="list-style-type: none"> •EVSE and Installation payment •Customer Services •Customer accounting •Load Monitoring and Data Management •Maintenance Service 	EV charging is billed at on-peak and off-peak-rates
Electric Vehicle Service Pilot with Pre-pay Option Rate Code: A81	<ul style="list-style-type: none"> • EVSE with load monitoring technologies and Installation • Premise Wiring 	\$13.88	<ul style="list-style-type: none"> •Customer Services •Customer accounting •Load Monitoring and Data Management •Maintenance Service 	EV charging is billed at on-peak and off-peak-rates

In order to enroll in the Pilot, please review these terms and indicate your understanding and agreement below by selecting the appropriate check box on the Program enrollment page at

[link to be generated at xcelenergy.com]. Xcel Energy will notify the Customer (a) that Customer's eligible EVSE has been installed, and (b) Xcel Energy and the EVSE vendor have confirmed that the EVSE is operational and activated, by e-mail (the date of the e-mail will be the "Activation Date").

Definitions

"Electric Vehicle" means a vehicle that uses at least one method of propulsion that is capable of being reenergized by an external source of electricity, is designed to have the capability to drive at a speed of more than 35 miles per hour, and is licensed to drive on state and federal highways.

"Electric Vehicle Supply Equipment" means the installed device used to deliver electricity from the Premises Wiring to the electric vehicle, meeting Standard J1772 of the Society of Automotive Engineers International and listed under applicable UL Standards and requirements or equivalent listing by a nationally recognized testing laboratory. This device includes the ungrounded, grounded, and equipment grounding conductors, the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets or apparatuses associated with the installed device, but does not include Premises Wiring.

"Premises Wiring" means a dedicated 208/240VAC, 40 ampere or lower circuit that supplies electricity directly to the installed Electric Vehicle Supply Equipment. This includes the protective breaker at the supply panel, wiring, final junction box, receptacle and all attachments and connections. The Participant retains ownership and is wholly responsible for the Premises Wiring, including that it meets all workmanship standards and applicable requirements in the National Electric Code, Minnesota law and Administrative Rules, and local municipal codes.

"Site" means the enclosed garage or other area approved by Xcel Energy on single-family home property, (defined as a detached single home, townhome/rowhouse, or duplex) owned by Participant

1. Eligibility and Availability

To be eligible to participant in the EV Service Pilot, Participants must:

- have an active Xcel Energy service account in Minnesota with no past due bills.
- live in a single-family home, defined as a detached single family home, townhome/row house, or duplex;
- represent that the Site is owned by Participant, is located within Xcel Energy's Minnesota regulated electrical service territory, and corresponds with a Xcel Energy residential electrical account on which the EVSE will be installed
- complete Xcel Energy-approved documentation verifying possession, through ownership or lease, of an electric vehicle as defined in Section 169.011, subdivision 26a of Minnesota law

- have an approved EVSE installed by Xcel Energy, or an authorized third-party independent contractor on its behalf, for the exclusive use of tracking the energy used to charge their electric vehicle.
- have wireless internet ("Wi-Fi") service at Site.
- not be on current Residential EV Service Rate (RATE CODE A08). If participant is already enrolled, they must unenroll for the duration of their participation on the new EV Service Pilot.
- not participate in the Residential Time of Day Service Rate (RATE CODE A02, A04). If Participant is already enrolled, they must unenroll for the duration of their participation on the new EV Service Pilot.
- not participate in the Time of Use Rate Design Pilot Program. If Participant is already enrolled, they must unenroll for the duration of their participation on the new EV Service Pilot.
- not participate in the Company's Net Metering tariffs.

2. EVSE Installation, Maintenance, and Title

- 2.1 Xcel Energy, through its network of authorized third party independent contractors and at its expense, shall provide, install, maintain, repair or replace (collectively the "Work") the EVSE on property owned by Participant (the "Site"). The EVSE shall include a vehicle charging station and associated cords, electrical lines, wires, conduit, cables and equipment. Xcel Energy shall provide electric utility services to Participant, and Participant shall pay for such service consistent with the applicable electric utility tariff in force and effect. Xcel Energy, in Xcel Energy's sole discretion, shall have the right to repair, modify, or replace the EVSE at any time during the Term of this Agreement.
- 2.2 Upon completion of installation and at all times during the Term of this Agreement, ownership of and title to the EVSE shall remain with Xcel Energy. Participant shall ensure that any EVSE shall not be subject to any lien, security interest or other claim asserted by any creditor of Participant, and any sale of the Site by Participant shall not include the EVSE.
- 2.3 Participant shall maintain the connection between the EVSE and an Internet Service Provider via Wi-Fi connection, for the operation of the EVSE under this Agreement. Late, incomplete, or inaccurate EVSE usage information will be disregarded where the lack of Wifi service is the cause of the data transmission failure. As a result, any actual EV charging during these intervals will be billed at the Participant's current rate and will not be adjusted in any future bills if any EV usage data is subsequently received.

3. Participant's EVSE Obligations and Duties

Throughout the Term of this Agreement:

- 3.1 Participant shall grant to Xcel Energy such access to the Site and sufficient space for locating the EVSE at the Site as may be deemed necessary or desirable by Xcel Energy for the Work. Installations must conform to the Company's specifications.
- 3.2 Until the EVSE (in Xcel Energy's sole discretion) is deemed non-functional, Participant hereby consents to and shall permit both Xcel Energy and any underlying EVSE manufacturer, vendor or subcontractor to the underlying manufacturer or vendor to access, collect and share with their respective parent, affiliates, subsidiaries and subcontractors all data from the EVSE with respect to vehicle charging activity, vehicle usage and technical performance (the "Data") of the vehicle and EVSE. Xcel Energy shall comply with all federal, state, and local laws, as applicable, in the access, collection, and sharing of the Data. In the event the EVSE fails to operate or otherwise requires repair, Participant shall promptly notify Xcel Energy.
- 3.3 Participant, Xcel Energy and its authorized EVSE manufacturers, vendors, and subcontractors shall comply with all applicable rules and regulations of federal, state or city regulatory agencies relating to the Work and operation of the EVSE, including environmental requirements associated therewith.
- 3.4 Participant shall maintain the area surrounding the EVSE and will promptly notify Xcel Energy of any problems related to the EVSE that Participant becomes aware of. Such maintenance includes, but is not limited to, pavement maintenance, pruning of vegetation, and snow removal. For avoidance of doubt, Participant is not responsible for the ongoing maintenance of the EVSE, itself.
- 3.5 Participant agrees to remedy minor issues that do not require qualified technicians to address, such as resetting infrequently tripped circuit breakers.
- 3.6 Participant agrees to provide access and assistance to facilitate random EVSE testing, if selected. Such cooperation may include, but not be limited to, periodic inspection of the EVSE and the addition of monitoring hardware or software at Xcel Energy's expense.
- 3.7 Participant agrees to participate in surveys and provide feedback about the Program as well as cooperate with Xcel Energy in fulfilling Xcel Energy's reporting requirements to any federal, state or local regulatory or governing entities.
- 3.8 Customer consents to receive communications from Xcel Energy relating to the Program in electronic form sent to Customer's email address.
- 3.9 If Participant who has opted into Electric Vehicle Service Pilot Bundled Service or Xcel Energy fails to meet any of its obligations under this Agreement, Xcel Energy may remove the EVSE. If Participant who has opted into Electric Vehicle Service Pilot with Pre-pay Option or Xcel Energy fails to meet any of its obligations under this Agreement, Xcel Energy may move Participant back to their previous rate.

4. Pilot Term, Withdrawal, and Termination

- 4.1 This Agreement shall be effective as of the Enrollment Date by both Parties. The term shall commence on the date when the EVSE is installed, and Xcel Energy and the EVSE vendor have confirmed that the EVSE is operational. The Agreement shall continue for two (2) years (the “Term”) unless sooner terminated or extended by written agreement between the Parties.
- 4.2 All fees, rates, and charges applicable to Participant shall be assessed as provided in the General Rules and Regulations and/or in the Rate Schedules of Xcel Energy’s Electric Rate Book for Customer’s specific service, as they now exist or may hereafter be changed, on file with the Commission. All fees, rates and charges assessed by Xcel Energy under this Service Agreement shall be set forth on the retail electric bill of the Participant and be billed and collected similar to other retail electric charges.
- 4.3 The service hereunder shall be supplied for Participant’s use as provided in the General Rules and Regulations in the applicable Rate Schedules of Xcel Energy’s Electric Rate Book for Customer’s specific service, as they now exist or may hereafter be changed, on file with the Commission. A Copy of such Rules and Regulations and applicable Rate schedules are available from Xcel Energy. Customer will not assign this Agreement except upon written consent of Xcel Energy.
- 4.4 Activations must be completed by Xcel Energy at least 5 business days prior to the start date of the customer’s next billing cycle to become effective on that date. If activation is less than 5 days prior, Participants will become effective on the stated date of the Participant’s subsequent billing cycle.
- 4.5 At the end of the term, customers who are paying the bundled service customer charge will have the following options:
 - Customers can have the EVSE removed at no cost and move back to their previous rate;
 - Customers can purchase the EVSE from the Company for a cost equal to the undepreciated balance of the EVSE and either (i) move back to their previous rate or (ii) move to any new EV charging tariff offered by the Company that is compatible with the EVSE already in place;¹ and
 - Customers can have the EVSE replaced or upgraded if the Company offers a new EV Charging tariff involving a different technology.

Customers who paid for the EVSE upfront and are paying the pre-pay option service customer charge will have the following options at the end of the term:

- Customers can elect to have the Company transfer ownership of the EVSE to the customer at no cost and either (i) move back to their previous rate or (ii) move to any new EV charging tariff offered by the Company that is compatible with the EVSE already in place; and

¹ Customers moving to any new EV charging tariff offered by the Company would need to sign a new Customer Agreement.

- Customers can have the EVSE replaced or upgraded if the Company offers a new EV Charging tariff involving a different technology.
- 4.6 If Participant requests termination of the Agreement prior to the expiration of the Term for convenience, then following notification from Participant to Xcel Energy advising Xcel Energy of Participant's intent to withdraw, Xcel Energy or a Xcel Energy third party independent contractor shall remove and take possession of the EVSE within sixty (60) days of Participant's notification at no cost to Participant, and this Agreement shall be terminated upon such removal. Xcel Energy or its authorized third party independent contractor's removal and possession of the EVSE shall not include any removal or possession of Premises Wiring. All such ancillary hardware will be disconnected by Xcel Energy or its authorized third party independent contractor and left in place at the Site.
- 4.7 If, due to a physical relocation of the Site within Xcel Energy's regulated service territory, Participant requests to relocate the EVSE (but not to terminate the Agreement before the end of the Term), then following at least a sixty (60) days' notification from Participant to Xcel Energy advising Xcel Energy of Participant's relocation request, Participant shall thereafter exclusively utilize Xcel Energy's third party independent contractor to install an EVSE at the new location at Participant's sole expense. Any removal and/or relocation of the EVSE at the original site shall be determined solely by Xcel Energy, utilizing Xcel Energy's third party independent contractor. In both cases, this Agreement shall remain in effect for the remainder of the Term. Participant acknowledges that failure to utilize Xcel Energy's third party independent contractor for EVSE installations or relocations under this Section 4.7 may result in voiding any EVSE warranty and/or maintenance support that may transfer to Participant at the end of the Term.
- 4.8 Xcel Energy, in its sole discretion, may terminate the Agreement prior to the end of the Term, in which case Xcel Energy will provide Participant with sixty (60) days' prior written notice and the option to (i) purchase the EVSE pursuant to Section 5 below, or (ii) have the EVSE removed at no cost to the Participant within sixty (60) days of termination. Participants may continue using the EVSE after termination, before it is purchased or removed.

5. Taxes on Sale of EVSE

- If Xcel Energy opts to sell the EVSE to Participant at the then undepreciated balance of the EVSE and Participant agrees to purchase the EVSE, then Xcel Energy will deliver to Participant a Bill of Sale for the undepreciated balance of the EVSE. Participant further agrees that in accordance with federal and state laws in effect at the time of the sale of the EVSE from Xcel Energy to Participant, that: (i) Participant shall be responsible for and shall pay transfer taxes, either directly to a taxing authority or to Xcel Energy, as required by law, related to the undepreciated balance of the EVSE as stated on the Bill of Sale; and (iii) Xcel Energy agrees to complete a Form W-9, "Request for Taxpayer Identification Number and Certification" in the event of such sale.

6. Title to Equipment and Data

- At all times under this Agreement where Xcel Energy shall own and maintain title to the EVSE, the Participant shall not make any alterations, changes or modifications to the EVSE without first securing prior written permission from Xcel Energy and/or any applicable underlying manufacturer. All rights, title and interest in the EVSE Data and related information collected from the EVSE shall also immediately vest in Xcel Energy.

Xcel Energy shall therefore have the right to use, copy, and distribute such Data and information as necessary and helpful to evaluate electric vehicles and electric vehicle support equipment and for any other Xcel Energy business purpose. To the extent applicable, Xcel Energy shall indemnify and hold harmless the Participant from any and all claims whatsoever for the use and distribution of said Data.

7. Insurance Coverage

- Customer shall have in full force and effect a standard fire and homeowner's insurance policy with amounts sufficient to cover the full replacement cost of the Site. The Parties hereby waive any and all claims and rights of action (by way of subrogation or otherwise) against the other (and against any insurance company insuring the other Party) which may hereafter arise on account of bodily injury or damage to the EVSE or to the Site, resulting from any fire, or other perils or claims of the kind covered by standard fire and homeowner's insurance policies with extended coverage (Causes of Loss Special Form) regardless of whether or not, or in what amounts, such insurance is now or hereafter carried by the Parties, or either of them. Customer agrees that Xcel Energy selfinsures against any loss or damage which could be covered by a commercial general public liability insurance policy and or a property policy. **Customer shall give written notice of this mutual waiver to each insurance company which issues insurance policies to Customer with respect to the items covered by this waiver, and shall have Customer's insurance policies properly endorsed, if necessary, to prevent the invalidation of any of the coverage provided by such insurance policies by reason of such waiver.**

8. Indemnification

- To the extent permitted by applicable law (but except to the extent waived in Section 10 below), each Party shall indemnify and hold the other Party harmless against any third party claim of liability or loss from bodily injury (including mental or emotional or death of any person) or property damage (real, personal, tangible or intangible including without limitation real or personal property of any third party, the EVSE and any associated EVSE hardware) resulting from or arising out of the use of the Site by the Party, its servants or agents, except however, such claims or damages as may be due to or caused by the acts or omissions of the other Party, its servants, or agents.

9. Warranty

- 9.1 Xcel Energy warrants that EVSE work performed by Xcel Energy's network of authorized Third party independent contractors will be free from defects in materials and workmanship during the term of the agreement.

In the event that any EVSE work performed is found to be defective in either materials or workmanship, Xcel Energy shall repair or replace such defective EVSE or work. The repair or replacement of such defective work is Participant's sole and exclusive remedy under this warranty for any failure of Xcel Energy to comply with Xcel Energy's Warranty Obligations, and Xcel Energy expressly disclaims any and all other warranties including any warranties of merchantability or fitness for a particular purpose, whether expressed or implied. For avoidance of doubt, repair, or replacement of non-conformities in the manner and for the period of time provided above shall constitute Xcel Energy's sole liability and Participant's exclusive remedy for failure of Xcel Energy to meet Xcel Energy's warranty obligations, whether any claims of host are based in contract, in tort (including negligence or strict liability), or otherwise.

- 9.2 At the end of the term of this agreement and should Participant opt to purchase the EVSE from Xcel Energy, then for all EVSE devices (including all associated EVSE cords and internal wiring), the sale will be as-is with no warranties and host assumes sole risk and responsibility for any remaining warranty action (if any).

10. Limits of Liability

- A. Notwithstanding anything herein to the contrary, under no circumstances or legal theory, whether arising in contract, tort, strict liability, warranty, infringement or otherwise, shall either party be liable to the other party or any other person or entity for any indirect, consequential, secondary, incidental, special, reliance, exemplary or punitive damages, which includes but is not limited to: i) any property damage (real, personal, tangible or intangible) or personal injury (including mental or emotional distress) arising from or alleged to have arisen under this agreement; ii) any claims or causes of action that arise or are alleged to have arisen as a result of any required space ventilation not made known in writing to Xcel Energy or Xcel Energy's authorized third party independent contractor in writing prior to any work; iii) any damages arising or alleged to have arisen from any electrical malfunction or the repair or replacement of such malfunctioning items; or iv) any environmental claims, damage or causes of action.
- B. Under no circumstances will Xcel Energy or any Xcel Energy authorized third party independent contractor be held liable to Customer or any other person or entity for matters involving the purchase, lease, use, non-use, or devaluation of any electric vehicle, plug-in hybrid vehicle or any vehicle of any nature, any EVSE or associated EVSE infrastructure when applicable codes or standards prohibit the installation or use of such vehicle or equipment. Xcel Energy will not pay for any costs incurred or damages sustained by customer for purchasing any vehicle or equipment or otherwise in reliance upon Xcel Energy being able to provide an EVSE to customer. Notwithstanding anything set forth in this agreement to the contrary, under no circumstances shall Xcel Energy's total liability under this agreement exceed the total cost of the EVSE plus

installation costs made by Xcel Energy under this agreement. This section shall survive the termination of this agreement.

11. Miscellaneous Provisions

A. Compliance with Laws. Performance under this Agreement is subject to all valid laws and regulations of courts or regulatory bodies having jurisdiction, including compliance with the Americans With Disabilities Act, as amended, if Participant is offering the EVSE to the general public.

B. Assignment. This Agreement shall not be assigned except with the prior written consent of all parties hereto. The terms and conditions of this Agreement shall bind any permitted successors and assigns of the parties.

C. Status of Parties. This Agreement shall not be construed as creating a partnership, joint venture, agency relationship, franchise or association, nor shall this Agreement render Xcel Energy and Participant liable as partners, co-venturers or principals. It is agreed that nothing shall operate to change or alter such relationship, except a further agreement in writing between them.

D. Severability. If any term or provision of this Agreement is held illegal or unenforceable by a court with jurisdiction over the Agreement, all other terms in this Agreement will remain in full force and the illegal or unenforceable provision shall be deemed struck. In the event that the stricken provision materially affects the rights, obligations or duties of either party, Xcel Energy and Participant shall substitute a provision by mutual agreement that preserves the original intent of the Parties as closely as possible under applicable law.

E. Governing Law. This agreement shall be governed by the laws of the state of Minnesota, except that the Minnesota conflict-of-law provisions shall not be invoked in order to apply the laws of any other state or jurisdiction.

F. Dispute Resolution. If any dispute arises between the Parties regarding issues of interpretation of the Agreement or the services performed pursuant to the Agreement, Customer may call the Xcel Energy Representative identified in Section 12 below during business hours Monday-Friday 8 a.m. to 5 p.m. If further follow-up is required, Customer shall provide Xcel Energy with written notice explaining the dispute and associated documentation. Xcel Energy will consider all disputes and respond within fifteen (15) days of receiving notice of a dispute. In the event Participant is dissatisfied with the resolution of the dispute, Participant has the right to file an informal or formal complaint with the Commission by contacting the Minnesota Public Utility Commission. Xcel Energy will take no other action to enforce this Agreement until any complaint filed with the Commission is resolved.

G. Public Communication. Participant agrees to cooperate with Xcel Energy in maintaining good community relations. Xcel Energy will issue all public statements, press releases, and similar publicity concerning the EVSE and the Work (including its progress, completion and characteristics). Participant shall not make or assist anyone to

make any such statements, releases, photographs, or publicity without prior written approval of Xcel Energy.

H. Non-waiver. Xcel Energy's failure to insist on performance of any of the terms and conditions herein or to exercise any right or privilege or Xcel Energy's waiver of any breach hereunder shall not thereafter waive any of Xcel Energy's rights or privileges under this Agreement or at law. Any waiver of any specific breach shall be effective only if given expressly by Xcel Energy in writing.

I. Merger. This Agreement embodies the entire agreement between Xcel Energy and Participant. The Parties shall not be bound by or liable for any statement, writing, representation, promise, inducement or understanding not set forth above. No changes, modifications or amendments of any terms and conditions of this Agreement are valid or binding unless agreed to by the Parties in writing and signed by their authorized agents.

J. Privacy Law. Participant further acknowledges and agrees that Participant is knowingly consenting to and authorizing: i) Xcel Energy to release and share Customer's name, address, telephone number, charging data and any charging or electrical usage patterns concerning the Work with Xcel Energy's authorized third party independent contractors, in order for the authorized third party independent contractors to provide the EVSE to Participant; and ii) Xcel Energy's authorized third party independent contractors to retain all of the aforementioned Customer data (following any transfer of EVSE ownership from Xcel Energy to Customer) for all EVSE warranty and maintenance support obligations only.

K. Survival. The following sections shall survive the expiration or termination of this Agreement: Section 6 (Title To Equipment And Data); Section 7 (Insurance Coverage); Section 8 (Indemnification); Section 9 (Warranty); Section 10 (Limits of Liability); Section 11 (a) (Compliance With Laws) and Section 11 (j) (privacy Law).

12. Questions

If you have questions regarding these Program terms, please call 1-800-895-4999.

Redline

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2**TABLE OF CONTENTS**

Section No. 1

~~7th~~^{8th} Revised Sheet No. 1

Section	Item	Sheet No.
TITLE SHEET	Title Sheet
SECTION 1	TABLE OF CONTENTS	1-1
SECTION 2	CONTACT LIST	2-1
SECTION 3	INDEX OF COMPANY'S SERVICE AREA	3-1
SECTION 4	TECHNICAL AND SPECIAL TERMS AND ABBREVIATIONS	
	Definition of Symbols	4-1
	Classification of Customers	4-2
SECTION 5	RATE SCHEDULES	
	Table of Contents	TOC
	<u>RESIDENTIAL</u>	
	Residential Service	5-1
	Residential Time of Day Service	5-2
	Residential Electric Vehicle Service	5-5
	<u>Residential Electric Vehicle Pilot Service</u>	<u>5-7</u>
	Energy Controlled Service (Non-Demand Metered)	5-9
	Limited Off Peak Service	5-11
	Rules for Application of Residential Rates	5-13
	Automatic Protective Lighting Service	5-14
	<u>GENERAL</u>	
	Energy Controlled Service (Non-Demand Metered)	5-9
	Limited Off Peak Service	5-11
	Automatic Protective Lighting Service	5-14
	Small General Service	5-21
	Small General Time of Day Service	5-23

N

(Continued on Sheet No. 1-2)

Date Filed:	11-02-15 ¹¹⁻¹⁷⁻¹⁷	By: Christopher B. Clark	Effective Date:	10-01-17
		President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/ GR-15-826 ^{M-17-}		Order Date:	06-12-17

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2**RATE SCHEDULES
TABLE OF CONTENTS**Section No. 5
~~9th~~10th Revised Sheet No. TOC-1ItemSheet No.**RESIDENTIAL**

1. Residential	5-1
2. Residential Time of Day	5-2
3. Residential Electric Vehicle Service	5-5
Residential Electric Vehicle Pilot Service	5-7
4. Energy Controlled (Non-Demand Metered)	5-9
5. Limited Off Peak	5-11
6. Rules for Application of Residential Rates	5-13
7. Automatic Protective Lighting	5-14

GENERAL

8. Small General	5-21
9. Small General Time of Day (Metered and Non-Metered)	5-23
10. General	5-26
11. General Time of Day	5-29
12. Peak Controlled	5-40
13. Peak Controlled Time of Day	5-44
14. Rules for Application of Peak Controlled	5-48
15. Real Time Pricing	5-64

MUNICIPAL

16. Light Rail Line Tariff	5-71
17. Street Lighting System	5-74
18. Street Lighting Energy (Closed)	5-76
19. Street Lighting Energy (Metered)	5-78
20. Street Lighting City of St. Paul	5-80
21. Rules for Application of Street Lighting Rates	5-82
22. Small Municipal Pumping	5-85
23. Municipal Pumping	5-87
24. Fire and Civil Defense Siren	5-89

(Continued on Sheet No. TOC-2)

Date Filed:	11-02-15 <u>11-17-17</u>	By: Christopher B. Clark	Effective Date:	10-01-17
		President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/ GR-15-826 <u>M-17-</u>		Order Date:	06-12-17

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2**RATE SCHEDULES****TABLE OF CONTENTS (Continued)**

Section No. 5

~~14th~~15th Revised Sheet No. TOC-2ItemSheet No.**RIDER**

24. Fuel Clause Rider	5-91
25. Conservation Improvement Program Adjustment Rider	5-92
26. Surcharge Rider	5-93
27. Franchise and Other City Fees	5-93.1
28. Interim Rate Surcharge Rider	5-94
29. Low Income Energy Discount Rider	5-95
30. Residential Controlled Air Conditioning and Water Heating Rider	5-97
31. Commercial and Industrial Controlled Air Conditioning Rider	5-99
32. Off Season Load Rider	5-100
33. Standby Service Rider	5-101
34. Supplemental Generation Service Rider	5-108
35. Tier 1 Energy Controlled Service Rider	5-115
36. Revenue Decoupling Mechanism Rider	5-117
37. Area Development Rider	5-119
38. Competitive Response Rider	5-122
39. Tier 1 Peak Controlled Short Notice Rider	5-126
40. City Requested Facilities Surcharge Rider	5-131
41. Voluntary Renewable and High-Efficiency Energy Purchase (Windsor Program) Rider	5-134
42. WAPA Bill Crediting Program Rider	5-135
43. Mercury Cost Recovery Rider	5-136
44. Environmental Improvement Rider	5-137
45. Business Incentive and Sustainability Rider	5-139
46. State Energy Policy Rate Rider	5-142
47. Renewable Development Fund Rider	5-143
48. Transmission Cost Recovery Rider	5-144
49. Renewable Energy Standard Rider	5-146
50. Voluntary Renewable*Connect Rider	5-149
51. Voluntary Renewable*Connect Government Rider	5-154

Date Filed: ~~11-02-15~~11-17-17

By: Christopher B. Clark

Effective Date: ~~10-01-17~~

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/~~GR-15-826~~M-17-Order Date: ~~06-12-17~~

Northern States Power Company, a Minnesota corporation
and wholly owned subsidiary of Xcel Energy Inc.
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

PROPOSED

RESIDENTIAL ~~TIME OF DAY~~

Section No. 5

~~SERVICE - UNDERGROUND~~ ELECTRIC VEHICLE PILOT~~2nd~~3rd Revised Sheet No. 7**SERVICE (Continued)****RATE CODE A0480, A81****CANCELED AVAILABILITY**

Available while this Pilot Service is in effect to Residential Service customers for service only to electric vehicle loads including battery charging and accessory usage. Bundled service includes Company installed and provided charging equipment. Pre-Pay Option service is available to customers electing to pay Company for the installed cost of charging equipment prior to beginning service with this tariff. Customers electing Pre-Pay Option service are separately invoiced at the time of installation. The customer must complete Company-approved documentation verifying possession, through ownership or lease, of an electric vehicle as defined in Section 169.011, subdivision 26a of Minnesota law.

CONTRACT

Customers must contract for this service through an Electric Vehicle Pilot Electric Service Agreement with the Company. The initial contract period will normally be for 24 months.

CHARACTER OF SERVICE

Single-phase 60-Hertz service at approximately 120 or 120/240 volts will be provided hereunder. Three-phase service or other service upgrade requests will be provided in accordance with Company service regulations.

RENEWABLE ENERGY SUPPLY OPTION

Customers have the option to elect all or a portion of the supply of electricity under this schedule from renewable energy resources.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and /or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE**Customer Charge per Month**

Bundled (A80)	\$27.45
Pre-Pay Option (A81)	\$13.88

On-Peak Period Energy Charge per kWh

June - September	\$0.21096
Other Months	\$0.16968

Off-Peak Period Energy Charge per kWh \$0.04260**PRE-PAY OPTION**

The Pre-Pay Option Customer Charge per Month applies in place of the Bundled Customer Charge per Month to customers that have paid the installed cost of charging equipment to the Company.

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

(Continued on Sheet No. 5-8)

Date Filed: ~~11-02-05~~11-17-17 By: ~~Cynthia L. Leshner~~Christopher B. Clark Effective Date: 02-01-07
President, and CEO of Northern States Power Company, a Minnesota Corporation
Docket No. E002/~~GR-05-1428~~M-17- Order Date: 09-01-06

N

N

Northern States Power Company, a Minnesota corporation
~~and wholly owned subsidiary of Xcel Energy Inc.~~
 Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

PROPOSED

RESIDENTIAL ELECTRIC VEHICLE PILOT
SERVICETIME OF DAY SERVICE-
UNDERGROUND (Continued)
RATE CODE A0480, A81

Section No. 5
~~2nd~~3rd Revised Sheet No. 8

CANCELED FUEL CLAUSE

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

RESOURCE ADJUSTMENT

Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider.

MONTHLY MINIMUM CHARGE

Customer Charge.

SURCHARGE

In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

LATE PAYMENT CHARGE

Any unpaid balance over \$10.00 is subject to a 1.5% late payment charge or \$1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

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 Saturday, the preceding Friday will be designated a holiday. When a designated holiday occurs on Sunday, the following Monday will be designated a holiday. The off-peak period is defined as all other hours. Definition of on-peak and off-peak period is subject to change with change in Company's system operating characteristics.

COMMUNICATION COSTS

The Company will maintain separate accounting of the information, education, advertising and promotion costs associated with electric vehicles as provided in Minn. Stat. §216B.1614, subd.2, paragraph (c) 2 by deferring the costs to a tracker account, and will petition the Minnesota Public Utilities Commission to recover the qualifying costs.

TERMS AND CONDITIONS OF SERVICE

1. Residential Electric Vehicle Pilot Service shall be served through wiring connected to customer's single meter provided for Residential Service. Consumption under this rate schedule will be subtracted from the main meter for purposes of billing customer's non-Electric Vehicle electricity usage.
2. The customer shall supply, at no expense to the Company, premises wiring and a suitable location for connection of charging and associated equipment.
3. Company may require customer to provide access for Company-owned equipment for the recording and wireless communication of energy usage.
4. The rate contemplates that this service will utilize existing facilities with no additional major expenditures. Customer shall reimburse Company for any expenditure for facilities necessary to serve this load which would not otherwise be required to serve customer's load.
5. This schedule is also subject to provisions contained in Rules for Application of Residential Rates.
6. Customer must execute an Electric Vehicle Pilot Service Agreement with the Company.

Date Filed: 44-02-0511-17-17By: Cynthia L. LesherChristopher B. ClarkEffective Date: 02-01-07President, ~~and CEO of~~ Northern States Power Company, a Minnesota CorporationDocket No. -E002/GR-05-1428M-17-Order Date: 09-01-06

N

N

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2**RULES FOR APPLICATION OF RESIDENTIAL RATES**

Section No. 5

~~5th~~6th Revised Sheet No. 13

1. The Residential Service and Residential Time of Day Service are the only rates available to residential customers for domestic purposes in a single private residence. Energy Controlled Service (Non-Demand Metered), Limited Off Peak Service, Residential Electric Vehicle Service, Residential Electric Vehicle Pilot Service and Automatic Protective Lighting Service rate schedules are also available to qualifying residential customers. N
N
2. Normal service under the Residential Service and Residential Time of Day Service rate schedules is single phase service rendered through one meter. Three phase service or service through more than one meter will be provided upon a one-time payment of an amount to reimburse Company for the additional investment. If customer is served through more than one meter, each meter will be separately billed.
3. Electric space heating charges are applicable only when customer's electric space heating equipment is used as customer's primary heating source.
4. Underground service charges will apply where the underground facilities are owned by Company, and Company has not been fully reimbursed for the added cost of such underground facilities.
5. Standby and Supplementary Service is available for any residential customer subject to the provisions in the General Rules and Regulations, Section 2.4. The Company's meter will be ratcheted to measure the flow of power and energy from Company to customer only.
6. A customer using electric service for domestic and non-domestic purposes jointly may combine such use through one meter on such rates as are available to general service customers.
7. The Residential Service and Residential Time of Day Service rate schedules are available to farm installations which were served on the separate Farm Service rate schedule prior to its cancellation on November 1, 1988. Residential Service and Residential Time of Day Service to these qualifying farm customers is limited to 120/240 volts single phase service rendered through one meter. Motors and other equipment which interfere with service to neighboring customers and all transformer type welding machines larger than 25 kilovolt-amperes are not permitted as part of this service.

Date Filed: ~~11-02-15~~11-17-17

By: Christopher B. Clark

Effective Date: ~~10-01-17~~

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/~~GR-15-826~~M -17-Order Date: ~~06-12-17~~

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

FUEL CLAUSE RIDER (Continued)

Section No. 5
~~11th~~^{12th} Revised Sheet No. 91.3

RATE SCHEDULES BY SERVICE CATEGORY

Residential

Residential (A00, A01, A03)
Residential TOD (A02, A04)
Energy Controlled (A05)
Limited Off-Peak (A06)
Residential Electric Vehicle (A08)
Residential Electric Vehicle Pilot (A80, A81)

Commercial and Industrial Demand – Non-TOD

General (A14)
Peak Controlled (A23)
Municipal Pumping (A41)

Commercial and Industrial Non-Demand

Energy Controlled (A05)
Limited Off Peak (A06)
Small General (A09, A10, A11, A13)
Small General TOD (A12, A16, A18, A22)
Small Municipal Pumping (A40)
Fire and Civil Defense Siren (A42)

Commercial and Industrial Demand – TOD

General TOD (A15, A17, A19)
Peak Controlled TOD (A24)
Tier 1 Energy Controlled Rider (A27)
Real Time Pricing (A62, A63)
Light Rail Line (A29)

Outdoor Lighting

Automatic Protective (A07)
Street Lighting System (A30)
Street Lighting Energy (Closed) (A32)
Street Lighting Energy – Metered (A34)
Street Lighting - City of St. Paul (A37)

PROVISION OF FORECAST DATA

To assist commercial and industrial customers in budgeting and managing their energy costs, the Company will annually make available on October 1st a 24-month forecast of the fuel and purchased energy costs applicable to demand billed C&I customers under this Rider. The forecast period begins January 1st of the following year. This forecast will be provided only to customers who have signed a protective agreement with the Company. Quarterly forecasts of the fuel and purchased energy costs will also be available.

Date Filed: ~~11-02-15~~¹¹⁻¹⁷⁻¹⁷

By: Christopher B. Clark

Effective Date: ~~10-01-17~~

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/~~GR-15-826~~^{M-17-}

Order Date: ~~06-12-17~~

**VOLUNTARY RENEWABLE*CONNECT PILOT PROGRAM
RIDER (Continued)**

Section No. 5
~~Original~~1st Revised Sheet No. 150

RATE

The R*C Price for the pilot phase R*C Resources of each R*C Service Type shall be as follows based on year of production, unless otherwise provided for in this tariff:

Month-To-Month R*C or Single Event R*C Service Type (2017) \$0.03555 per kWh

5-Year and 10-Year R*C Service Type

Year	5-Year Contract (\$/kWh)	10-Year Contract (\$/kWh)
2017	\$0.03243	\$0.03193
2018	\$0.03280	\$0.03230
2019	\$0.03317	\$0.03267
2020	\$0.03330	\$0.03280
2021	\$0.03345	\$0.03295
2022	\$0.03361	\$0.03349
2023	\$0.03429	\$0.03404
2024	\$0.03497	\$0.03460
2025	\$0.03569	\$0.03519
2026	\$0.03642	\$0.03580

NEUTRALITY CHARGE

The R*C Price includes a neutrality charge to mitigate the impact of the R*C Pilot program on non-participating customers. The standard neutrality charge is \$0.00472 per kWh in year 1. Customers receiving service under the Company's Business Incentive and Sustainability Rider, Competitive Response Rider, ~~or~~ Residential Electric Vehicle Service (Rate Code A08), or Residential Electric Vehicle Pilot Service (Rate Code A80, A81) shall not be subject to the neutrality charge portion of the R*C Price.

TRACKER ACCOUNT

Due to the variability of renewable resources, the Renewable*Connect program tracker account may have an excess or shortage of supply in any given hour or month. The Company will balance Renewable*Connect program usage at the end of the program year in accordance with the expected resource blend. As a result, the program may require more or less of a share of the expected program allocation. Energy produced by the R*C Resources that is not associated with any R*C Service subscription and therefore not allocated to an R*C Customer will be sold to all customers at the delivered cost through the Fuel Clause Adjustment. The Company will maintain accounting of the monthly balance of total R*C Resources production, total program usage, total revenues collected under the program and the expenses associated with offering the R*C Service, including the renewable energy purchases, marketing and other costs for this program. The Company may petition the Commission annually to true up the marketing and administrative cost tracker balance and apply the resulting true-up factors to the Month-To-Month R*C Price.

(Continued on Sheet No. 5-151)

Date Filed:	11-12-16 11-17-17	By: Christopher B. Clark	Effective Date:	02-27-17
		President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/M- 15-98517-		Order Date:	02-27-17

Clean

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2**TABLE OF CONTENTS**Section No. 1
8th Revised Sheet No. 1

Section	Item	Sheet No.
TITLE SHEET	Title Sheet
SECTION 1	TABLE OF CONTENTS	1-1
SECTION 2	CONTACT LIST	2-1
SECTION 3	INDEX OF COMPANY'S SERVICE AREA	3-1
SECTION 4	TECHNICAL AND SPECIAL TERMS AND ABBREVIATIONS	
	Definition of Symbols	4-1
	Classification of Customers	4-2
SECTION 5	RATE SCHEDULES	
	Table of Contents	TOC
	<u>RESIDENTIAL</u>	
	Residential Service	5-1
	Residential Time of Day Service	5-2
	Residential Electric Vehicle Service	5-5
	Residential Electric Vehicle Pilot Service	5-7
	Energy Controlled Service (Non-Demand Metered)	5-9
	Limited Off Peak Service	5-11
	Rules for Application of Residential Rates	5-13
	Automatic Protective Lighting Service	5-14
	<u>GENERAL</u>	
	Energy Controlled Service (Non-Demand Metered)	5-9
	Limited Off Peak Service	5-11
	Automatic Protective Lighting Service	5-14
	Small General Service	5-21
	Small General Time of Day Service	5-23

N

(Continued on Sheet No. 1-2)

Date Filed: 11-17-17

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-17-

Order Date:

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2**RATE SCHEDULES
TABLE OF CONTENTS**Section No. 5
10th Revised Sheet No. TOC-1

<u>Item</u>	<u>Sheet No.</u>
<u>RESIDENTIAL</u>	
Residential	5-1
Residential Time of Day	5-2
Residential Electric Vehicle Service	5-5
Residential Electric Vehicle Pilot Service	5-7
Energy Controlled (Non-Demand Metered)	5-9
Limited Off Peak	5-11
Rules for Application of Residential Rates	5-13
Automatic Protective Lighting	5-14
<u>GENERAL</u>	
Small General	5-21
Small General Time of Day (Metered and Non-Metered)	5-23
General	5-26
General Time of Day	5-29
Peak Controlled	5-40
Peak Controlled Time of Day	5-44
Rules for Application of Peak Controlled	5-48
Real Time Pricing	5-64
<u>MUNICIPAL</u>	
Light Rail Line Tariff	5-71
Street Lighting System	5-74
Street Lighting Energy (Closed)	5-76
Street Lighting Energy (Metered)	5-78
Street Lighting City of St. Paul	5-80
Rules for Application of Street Lighting Rates	5-82
Small Municipal Pumping	5-85
Municipal Pumping	5-87
Fire and Civil Defense Siren	5-89

T
|
T
N
T
|
T

(Continued on Sheet No. TOC-2)

Date Filed:	11-17-17	By: Christopher B. Clark	Effective Date:
		President, Northern States Power Company, a Minnesota corporation	
Docket No.	E002/M-17-		Order Date:

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2**RATE SCHEDULES****TABLE OF CONTENTS (Continued)**Section No. 5
15th Revised Sheet No. TOC-2

<u>Item</u>	<u>Sheet No.</u>
<u>RIDER</u>	
Fuel Clause Rider	5-91
Conservation Improvement Program Adjustment Rider	5-92
Surcharge Rider	5-93
Franchise and Other City Fees	5-93.1
Interim Rate Surcharge Rider	5-94
Low Income Energy Discount Rider	5-95
Residential Controlled Air Conditioning and Water Heating Rider	5-97
Commercial and Industrial Controlled Air Conditioning Rider	5-99
Off Season Load Rider	5-100
Standby Service Rider	5-101
Supplemental Generation Service Rider	5-108
Tier 1 Energy Controlled Service Rider	5-115
Revenue Decoupling Mechanism Rider	5-117
Area Development Rider	5-119
Competitive Response Rider	5-122
Tier 1 Peak Controlled Short Notice Rider	5-126
City Requested Facilities Surcharge Rider	5-131
Voluntary Renewable and High-Efficiency Energy Purchase (Windsor Program) Rider	5-134
WAPA Bill Crediting Program Rider	5-135
Mercury Cost Recovery Rider	5-136
Environmental Improvement Rider	5-137
Business Incentive and Sustainability Rider	5-139
State Energy Policy Rate Rider	5-142
Renewable Development Fund Rider	5-143
Transmission Cost Recovery Rider	5-144
Renewable Energy Standard Rider	5-146
Voluntary Renewable*Connect Rider	5-149
Voluntary Renewable*Connect Government Rider	5-154

Date Filed: 11-17-17

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-17-

Order Date:

Northern States Power Company , a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2**RESIDENTIAL ELECTRIC VEHICLE PILOT SERVICE
RATE CODE A80, A81**Section No. 5
3rd Revised Sheet No. 7**AVAILABILITY**

Available while this Pilot Service is in effect to Residential Service customers for service only to electric vehicle loads including battery charging and accessory usage. Bundled service includes Company installed and provided charging equipment. Pre-Pay Option service is available to customers electing to pay Company for the installed cost of charging equipment prior to beginning service with this tariff. Customers electing Pre-Pay Option service are separately invoiced at the time of installation. The customer must complete Company-approved documentation verifying possession, through ownership or lease, of an electric vehicle as defined in Section 169.011, subdivision 26a of Minnesota law.

CONTRACT

Customers must contract for this service through an Electric Vehicle Pilot Electric Service Agreement with the Company. The initial contract period will normally be for 24 months.

CHARACTER OF SERVICE

Single-phase 60-Hertz service at approximately 120 or 120/240 volts will be provided hereunder. Three-phase service or other service upgrade requests will be provided in accordance with Company service regulations.

RENEWABLE ENERGY SUPPLY OPTION

Customers have the option to elect all or a portion of the supply of electricity under this schedule from renewable energy resources.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and /or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

Customer Charge per Month	
Bundled (A80)	\$27.45
Pre-Pay Option (A81)	\$13.88
On-Peak Period Energy Charge per kWh	
June - September	\$0.21096
Other Months	\$0.16968
Off-Peak Period Energy Charge per kWh	
	\$0.04260

PRE-PAY OPTION

The Pre-Pay Option Customer Charge per Month applies in place of the Bundled Customer Charge per Month to customers that have paid the installed cost of charging equipment to the Company.

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

(Continued on Sheet No. 5-8)

Date Filed: 11-17-17

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota Corporation

Docket No. E002/M-17-

Order Date:

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2**RESIDENTIAL ELECTRIC VEHICLE PILOT SERVICE**

Section No. 5

(Continued)

3rd Revised Sheet No. 8

RATE CODE A80, A81**FUEL CLAUSE**

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

RESOURCE ADJUSTMENT

Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider.

MONTHLY MINIMUM CHARGE

Customer Charge.

SURCHARGE

In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

LATE PAYMENT CHARGE

Any unpaid balance over \$10.00 is subject to a 1.5% late payment charge or \$1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

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 Saturday, the preceding Friday will be designated a holiday. When a designated holiday occurs on Sunday, the following Monday will be designated a holiday. The off-peak period is defined as all other hours. Definition of on-peak and off-peak period is subject to change with change in Company's system operating characteristics.

COMMUNICATION COSTS

The Company will maintain separate accounting of the information, education, advertising and promotion costs associated with electric vehicles as provided in Minn. Stat. §216B.1614, subd.2, paragraph (c) 2 by deferring the costs to a tracker account, and will petition the Minnesota Public Utilities Commission to recover the qualifying costs.

TERMS AND CONDITIONS OF SERVICE

1. Residential Electric Vehicle Pilot Service shall be served through wiring connected to customer's single meter provided for Residential Service. Consumption under this rate schedule will be subtracted from the main meter for purposes of billing customer's non-Electric Vehicle electricity usage.
2. The customer shall supply, at no expense to the Company, premises wiring and a suitable location for connection of charging and associated equipment.
3. Company may require customer to provide access for Company-owned equipment for the recording and wireless communication of energy usage.
4. The rate contemplates that this service will utilize existing facilities with no additional major expenditures. Customer shall reimburse Company for any expenditure for facilities necessary to serve this load which would not otherwise be required to serve customer's load.
5. This schedule is also subject to provisions contained in Rules for Application of Residential Rates.
6. Customer must execute an Electric Vehicle Pilot Service Agreement with the Company.

Date Filed: 11-17-17

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota Corporation

Docket No. E002/M-17-

Order Date:

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

RULES FOR APPLICATION OF RESIDENTIAL RATES

Section No. 5
6th Revised Sheet No. 13

1. The Residential Service and Residential Time of Day Service are the only rates available to residential customers for domestic purposes in a single private residence. Energy Controlled Service (Non-Demand Metered), Limited Off Peak Service, Residential Electric Vehicle Service, Residential Electric Vehicle Pilot Service and Automatic Protective Lighting Service rate schedules are also available to qualifying residential customers.
2. Normal service under the Residential Service and Residential Time of Day Service rate schedules is single phase service rendered through one meter. Three phase service or service through more than one meter will be provided upon a one-time payment of an amount to reimburse Company for the additional investment. If customer is served through more than one meter, each meter will be separately billed.
3. Electric space heating charges are applicable only when customer's electric space heating equipment is used as customer's primary heating source.
4. Underground service charges will apply where the underground facilities are owned by Company, and Company has not been fully reimbursed for the added cost of such underground facilities.
5. Standby and Supplementary Service is available for any residential customer subject to the provisions in the General Rules and Regulations, Section 2.4. The Company's meter will be ratcheted to measure the flow of power and energy from Company to customer only.
6. A customer using electric service for domestic and non-domestic purposes jointly may combine such use through one meter on such rates as are available to general service customers.
7. The Residential Service and Residential Time of Day Service rate schedules are available to farm installations which were served on the separate Farm Service rate schedule prior to its cancellation on November 1, 1988. Residential Service and Residential Time of Day Service to these qualifying farm customers is limited to 120/240 volts single phase service rendered through one meter. Motors and other equipment which interfere with service to neighboring customers and all transformer type welding machines larger than 25 kilovolt-amperes are not permitted as part of this service.

N
N

Date Filed: 11-17-17

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M -17-

Order Date:

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

PROPOSED

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2**FUEL CLAUSE RIDER (Continued)**Section No. 5
12th Revised Sheet No. 91.3**RATE SCHEDULES BY SERVICE CATEGORY****Residential**Residential (A00, A01, A03)
Residential TOD (A02, A04)
Energy Controlled (A05)
Limited Off-Peak (A06)
Residential Electric Vehicle (A08)
Residential Electric Vehicle Pilot (A80, A81)**Commercial and Industrial Demand – Non-TOD**General (A14)
Peak Controlled (A23)
Municipal Pumping (A41)**Commercial and Industrial Non-Demand**Energy Controlled (A05)
Limited Off Peak (A06)
Small General (A09, A10, A11, A13)
Small General TOD (A12, A16, A18, A22)
Small Municipal Pumping (A40)
Fire and Civil Defense Siren (A42)**Commercial and Industrial Demand – TOD**General TOD (A15, A17, A19)
Peak Controlled TOD (A24)
Tier 1 Energy Controlled Rider (A27)
Real Time Pricing (A62, A63)
Light Rail Line (A29)**Outdoor Lighting**Automatic Protective (A07)
Street Lighting System (A30)
Street Lighting Energy (Closed) (A32)
Street Lighting Energy – Metered (A34)
Street Lighting - City of St. Paul (A37)

N

PROVISION OF FORECAST DATA

To assist commercial and industrial customers in budgeting and managing their energy costs, the Company will annually make available on October 1st a 24-month forecast of the fuel and purchased energy costs applicable to demand billed C&I customers under this Rider. The forecast period begins January 1st of the following year. This forecast will be provided only to customers who have signed a protective agreement with the Company. Quarterly forecasts of the fuel and purchased energy costs will also be available.

Date Filed: 11-17-17

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-17-

Order Date:

**VOLUNTARY RENEWABLE*CONNECT PILOT PROGRAM
RIDER (Continued)**

Section No. 5
1st Revised Sheet No. 150

RATE

The R*C Price for the pilot phase R*C Resources of each R*C Service Type shall be as follows based on year of production, unless otherwise provided for in this tariff:

Month-To-Month R*C or Single Event R*C Service Type (2017) \$0.03555 per kWh

5-Year and 10-Year R*C Service Type

Year	5-Year Contract (\$/kWh)	10-Year Contract (\$/kWh)
2017	\$0.03243	\$0.03193
2018	\$0.03280	\$0.03230
2019	\$0.03317	\$0.03267
2020	\$0.03330	\$0.03280
2021	\$0.03345	\$0.03295
2022	\$0.03361	\$0.03349
2023	\$0.03429	\$0.03404
2024	\$0.03497	\$0.03460
2025	\$0.03569	\$0.03519
2026	\$0.03642	\$0.03580

NEUTRALITY CHARGE

The R*C Price includes a neutrality charge to mitigate the impact of the R*C Pilot program on non-participating customers. The standard neutrality charge is \$0.00472 per kWh in year 1. Customers receiving service under the Company's Business Incentive and Sustainability Rider, Competitive Response Rider, Residential Electric Vehicle Service (Rate Code A08), or Residential Electric Vehicle Pilot Service (Rate Code A80, A81) shall not be subject to the neutrality charge portion of the R*C Price.

N

TRACKER ACCOUNT

Due to the variability of renewable resources, the Renewable*Connect program tracker account may have an excess or shortage of supply in any given hour or month. The Company will balance Renewable*Connect program usage at the end of the program year in accordance with the expected resource blend. As a result, the program may require more or less of a share of the expected program allocation. Energy produced by the R*C Resources that is not associated with any R*C Service subscription and therefore not allocated to an R*C Customer will be sold to all customers at the delivered cost through the Fuel Clause Adjustment. The Company will maintain accounting of the monthly balance of total R*C Resources production, total program usage, total revenues collected under the program and the expenses associated with offering the R*C Service, including the renewable energy purchases, marketing and other costs for this program. The Company may petition the Commission annually to true up the marketing and administrative cost tracker balance and apply the resulting true-up factors to the Month-To-Month R*C Price.

(Continued on Sheet No. 5-151)

Date Filed: 11-17-17

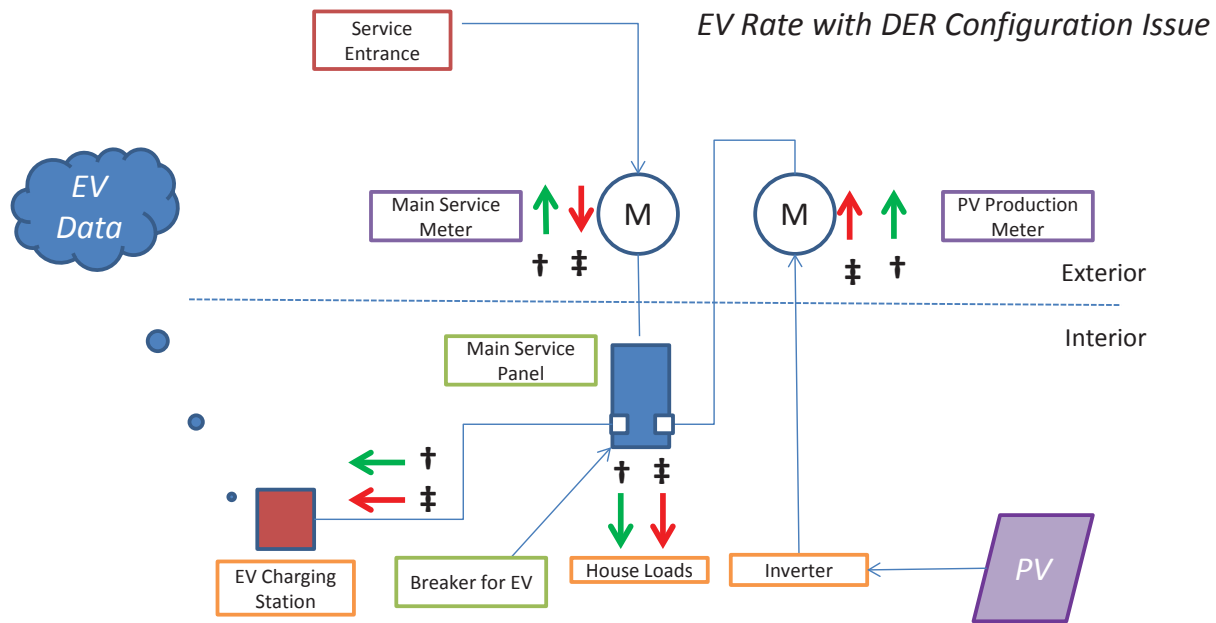
By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-17-

Order Date:



† PV generating higher than total load

‡ PV generating lower than total load

**When the PV installation is generating power regardless of how much load it is feeding, there will be a billing discrepancy. The EV charger will not differentiate this supply from power supplied by the grid versus what is being supplied by the customer's generation. When the energy per time period data is measured later, a larger proportion of the actual house loads will be seen as EV since the solar isn't accounted for versus what the house loads are supplying.*

CERTIFICATE OF SERVICE

I, Carl Cronin, hereby certify that I have this day served copies or summaries of the foregoing document on the attached list(s) of persons.

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

or

xx electronic filing

**DOCKET NOS. E002/M-15-111 AND
 XCEL ENERGY'S MISCELLANEOUS ELECTRIC SERVICE LIST**

Dated this 17th day of November 2017

/s/

Carl Cronin
Regulatory Administrator

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022191	Electronic Service	No	OFF_SL_15-111_Official
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	No	OFF_SL_15-111_Official
Alison C	Archer	aarcher@misoenergy.org	MISO	2985 Ames Crossing Rd Eagan, MN 55121	Electronic Service	No	OFF_SL_15-111_Official
James J.	Bertrand	james.bertrand@stinson.com	Stinson Leonard Street LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-111_Official
Carl	Cronin	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_15-111_Official
Leigh	Currie	lcurrie@mncenter.org	Minnesota Center for Environmental Advocacy	26 E. Exchange St., Suite 206 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_15-111_Official
Ian	Dobson	Residential.Utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	OFF_SL_15-111_Official
John	Farrell	jfarrell@ilsr.org	Institute for Local Self-Reliance	1313 5th St SE #303 Minneapolis, MN 55414	Electronic Service	No	OFF_SL_15-111_Official
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_15-111_Official
Kimberly	Hellwig	kimberly.hellwig@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-111_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Michael	Hoppe	il23@mtn.org	Local Union 23, I.B.E.W.	932 Payne Avenue St. Paul, MN 55130	Electronic Service	No	OFF_SL_15-111_Official
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	OFF_SL_15-111_Official
Richard	Johnson	Rick.Johnson@lawmoss.com	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-111_Official
Mark J.	Kaufman	mkaufman@ibewlocal949.org	IBEW Local Union 949	12908 Nicollet Avenue South Burnsville, MN 55337	Electronic Service	No	OFF_SL_15-111_Official
Thomas	Koehler	TGK@IBEW160.org	Local Union #160, IBEW	2909 Anthony Ln St Anthony Village, MN 55418-3238	Electronic Service	No	OFF_SL_15-111_Official
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_15-111_Official
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	OFF_SL_15-111_Official
Ryan	Long	ryan.j.long@xcelenergy.com	Xcel Energy	414 Nicollet Mall 401 8th Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_15-111_Official
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	OFF_SL_15-111_Official
Kevin	Miller	kevin.miller@chargepoint.com	ChargePoint, Inc.	254 E. Hacienda Avenue Campbell, California 95008	Electronic Service	No	OFF_SL_15-111_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Andrew	Moratzka	andrew.moratzka@stoel.com	Steel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-111_Official
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_15-111_Official
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_15-111_Official
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	OFF_SL_15-111_Official
Anne	Smart	anne.smart@chargepoint.com	ChargePoint, Inc.	254 E Hacienda Ave Campbell, CA 95008	Electronic Service	No	OFF_SL_15-111_Official
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	OFF_SL_15-111_Official
Byron E.	Starns	byron.starns@stinson.com	Stinson Leonard Street LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-111_Official
James M.	Strommen	jstrommen@kennedy-graven.com	Kennedy & Graven, Chartered	470 U.S. Bank Plaza 200 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-111_Official
Eric	Swanson	eswanson@winthrop.com	Winthrop & Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_15-111_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Andrew	Twite	twite@fresh-energy.org	Fresh Energy	408 St. Peter Street, Ste. 220 St. Paul, MN 55102	Electronic Service	No	OFF_SL_15-111_Official
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_15-111_Official
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_15-111_Official

[illegible]

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Corey	Conover	corey.conover@minneapolismn.gov	Minneapolis City Attorney	350 S. Fifth Street City Hall, Room 210 Minneapolis, MN 554022453	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Carl	Cronin	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Joseph	Dammel	joseph.dammel@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	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Ian	Dobson	Residential.Utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
John	Farrell	jfarrell@ilsr.org	Institute for Local Self- Reliance	1313 5th St SE #303 Minneapolis, MN 55414	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Edward	Garvey	edward.garvey@AESLconsulting.com	AESL Consulting	32 Lawton St Saint Paul, MN 55102-2617	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Janet	Gonzalez	Janet.gonzalez@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 55101	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Kimberly	Hellwig	kimberly.hellwig@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Michael	Hoppe	il23@mtn.org	Local Union 23, I.B.E.W.	932 Payne Avenue St. Paul, MN 55130	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julia	Jazynka	jjazynka@energyfreedomcoalition.com	Energy Freedom Coalition of America	101 Constitution Ave NW Ste 525 East Washington, DC 20001	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
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	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Richard	Johnson	Rick.Johnson@lawmoss.com	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Sarah	Johnson Phillips	siphillips@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Mark J.	Kaufman	mkaufman@ibewlocal949.org	IBEW Local Union 949	12908 Nicollet Avenue South Burnsville, MN 55337	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Thomas	Koehler	TGK@IBEW160.org	Local Union #160, IBEW	2909 Anthony Ln St Anthony Village, MN 55418-3238	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Peder	Larson	plarson@larkinhoffman.com	Larkin Hoffman Daly & Lindgren, Ltd.	8300 Norman Center Drive Suite 1000 Bloomington, MN 55437	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Paula	Maccabee	Pmaccabee@justchangela w.com	Just Change Law Offices	1961 Selby Ave Saint Paul, MN 55104	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Peter	Madsen	peter.madsen@ag.state.mn.us	Office of the Attorney General-DOC	Bremer Tower, Suite 1800 445 Minnesota Street St. Paul, Minnesota 55101	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Kavita	Maini	kmains@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
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	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric
Carol A.	Overland	overland@legalelectric.org	Legalelectric - Overland Law Office	1110 West Avenue Red Wing, MN 55066	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Miscl Electric

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jeff	Oxley	jeff.oxley@state.mn.us	Office of Administrative Hearings	600 North Robert Street St. Paul, MN 55101	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Inga	Schuchard	ischuchard@larkinhoffman.com	Larkin Hoffman	8300 Norman Center Drive Suite 1000 Minneapolis, MN 55437	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Zeviel	Simpser	zsimpser@briggs.com	Briggs and Morgan PA	2200 IDS Center80 South Eighth Street Minneapolis, MN 554022157	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Byron E.	Starns	byron.starns@stinson.com	Stinson Leonard Street LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
James M.	Strommen	jstrommen@kennedy-graven.com	Kennedy & Graven, Chartered	470 U.S. Bank Plaza 200 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Eric	Swanson	eswanson@winthrop.com	Winthrop & Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Joseph	Windler	jwindler@winthrop.com	Winthrop & Weinstine	225 South Sixth Street, Suite 3500 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Cam	Winton	cwinton@mncchamber.com	Minnesota Chamber of Commerce	400 Robert Street North Suite 1500 St. Paul, Minnesota 55101	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric
Patrick	Zomer	Patrick.Zomer@lawmoss.com	Moss & Barnett a Professional Association	150 S. 5th Street, #1200 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misl Electric

**OFFICIAL FILING BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN**

Application of Northern States Power Company,
a Wisconsin corporation, for Approval
of Electric Vehicle Service Programs

Docket 4220-TE-104

**NORTHERN STATES POWER COMPANY, A WISCONSIN CORPORATION,
COMMENTS ON THE APPLICATION OF NORTHERN STATES POWER COMPANY-
WISCONSIN, AS AN ELECTRIC PUBLIC UTILITY, REQUEST FOR APPROVAL OF
ELECTRIC VEHICLE SERVICE PROGRAMS**

A. Introduction

Northern States Power Company – Wisconsin (“NSPW”) files these comments in response to the Public Service Commission of Wisconsin (“Commission”) staff May 20, 2020 memorandum concerning the application for approval of its electric vehicle (“EV”) service programs. NSPW thanks Commission staff for the detailed review of its proposed EV programs and appreciates the opportunity to provide comments on the memorandum. NSPW notes that Commission staff’s memorandum provides detailed descriptions of many aspects of its proposed programs. The Company focuses its comments here primarily on articulating its position on each of the decision alternatives set forth in the memorandum, and on providing additional information where clarification is needed. NSPW looks forward to the opportunity to offer its proposed EV programs to Wisconsin customers consistent with these comments.

B. Utility Ownership of EV Charging Infrastructure

NSPW would like to offer a couple of minor clarifications to Commission staff’s description of the EV programs.

First, Commission staff’s memo on p. 7 notes that “NSPW proposes to own and maintain all make-ready equipment and EV chargers installed for” the residential EVR-1 and EVR-2 programs. To clarify, NSPW is not proposing to own or maintain make-ready equipment as part of the EVR-1 or EVR-2 programs. These residential programs only contemplate utility ownership of the charging equipment itself, with the customer being responsible for the necessary wiring from their service panel to the charger. NSPW will allow customers the option of coordinating the installation of the wiring with the vendor who is installing the charging equipment; however, the customer will solely be responsible for the cost of the wiring, and the customer will own this make-ready wiring.

The only program in which NSPW proposes to own and maintain make-ready equipment is the Commercial EV Service pilot.

Additionally, Commission staff note that customers choosing the prepay option would be provided with the “option for NSPW to transfer the ownership of the EV charger and equipment to the customer at the end of the 10-year term, at which point the customers could continue to use the EV Time of Day (“TOD”) rates without additional EV charger fixed costs from NSPW going forward.” A few corrections are necessary to this statement. First, prepay customers have the option of leaving the program whenever they wish without penalty, at which point charger ownership is transferred from NSPW to the customer (not only at the end of the 10-year term). However, once charger ownership is transferred to the customer, the customer is no longer enrolled in the applicable program. It is not an option to transfer ownership of the charger and stay enrolled in the program (i.e. for the EV TOD rate to still apply). In order to continue applying the EV TOD rate, the customer would need to continue paying for the administrative costs associated with the EVR-1 program. At no point will a customer enrolled in EVR-1 or EVR-2 be allowed to take service from the program without the charger being owned by NSPW. All customers enrolled in the programs will be assessed the fixed charges on the EVR-1 and EVR-2 tariff sheets while they are under contract to participate in the program. At the end of the 10-year term, prepay customers who wish to stay enrolled have the option to sign a new contract and purchase a new charger from NSPW, continue to use their current charger, or enroll as a bundled customer. If a prepay customer chooses not to stay enrolled in the program and instead opts to have ownership of the charger transferred, they will own and can use the charger but will not have either the costs or benefits of the EVR-1 or EVR-2 programs going forward.

Finally, on this topic, NSPW wishes to address Commission staff’s description on pp. 8-9 regarding some of the concerns raised by stakeholders in other venues about utility ownership of charging units. As Commission staff notes, these concerns are typically voiced in discussions about utility ownership of public charging infrastructure, where individual customers are not the ones requesting and paying for the equipment. NSPW’s proposals will not interfere with private market, but support it, as NSPW’s proposals provide options and choices in charging service providers to customers and encourage adoption of smart charging technologies. Customers who choose other charging options can still benefit from off-peak charging by enrolling in other time-varying rates. There also should not be concern about overbuilding infrastructure associated with NSPW’s proposals, as the infrastructure to be built is at the customer’s request.

C. Residential Programs: EVR-1 and EVR-2

In this section of Commission staff’s memorandum, NSPW supports Commission staff Alternative Two for both EVR-1 and EVR-2. The Company’s comments on the staff’s discussion on the EVR-1 and EVR-2 Residential Programs are below.

Residential Programs-EV TOD Rates

NSPW is proposing a new three-part TOD rate for the EVR-1 program. EVR-1 customers will have their chargers pre-programmed to begin charging at midnight corresponding with the beginning of the off-peak period. Customers can override this pre-programming to charge during peak or shoulder times, as necessary to meet the customer's charging needs. NSPW would like to draw attention to the limitations of Commission staff's analysis of the proposed EV TOD rate using the load profiles from customers participating in the Minnesota program pilot. As staff notes, the sample size is small, and it is difficult to draw conclusions due to the Minnesota EV tariff utilizing different TOD periods than the proposed EVR-1 tariff. Despite that qualification, staff states on page 10 that "[a]nalysis of the Minnesota pilot data reveals that customer behavior did not closely track [the] price signals" from the Minnesota pilot's TOD pricing. This statement is incorrect and appears to be based on the assumption that the hours of the day or night that Wisconsin customers will charge their EVs will be the same hours of the day or night Minnesota customers have charged their EVs. The different TOD periods, combined with the pilot pre-programming charging to occur specifically in conjunction with those different TOD periods, make it inappropriate to conclude that Wisconsin customers will display the same charging patterns by hour as were experienced in the Minnesota pilot.

In addition to having a different, two-part TOD rate, the Minnesota pilot pre-programmed charging equipment to begin charging corresponding with Minnesota's off-peak TOD period, which began at 9 pm. This pre-programming, not customer action, is the cause of customers charging their EVs in the Minnesota pilot between 9 pm and midnight. Commission staff notes on p. 10 that charging in this sample data occurred "particularly . . . during the shoulder period hours of late morning or during the evening before midnight." Pre-programming chargers is a passive type of load control that was demonstrated in the Minnesota pilot to be a successful factor in influencing customer charging behavior, with more than 95 percent of charging occurring during off-peak times. NSPW expects to see this passive load control approach work as well in Wisconsin and result in charging that primarily occurs between midnight and 8 am, the off-peak hours for the proposed EV TOD rate.

Minnesota pilot customers were billed the same rate for charging at 9 pm as they would be for charging at midnight. There is no reason to conclude that customers in Wisconsin using a three-part TOD rate will charge their vehicles at 9 pm instead of midnight, when their rate is substantially lower at midnight and their charger is pre-programmed to begin charging at midnight. While Commission staff's analysis shows what would happen if a Wisconsin customer chooses to charge their vehicle during the same hours that Minnesota pilot customers did, NSPW believes there is no evidence to suggest that they will do so.

However, NSPW designed the three-part rate design to be cost-based for all customers. The programs do not seek to prevent charging during peak or shoulder times, but the programs do require that customers participate in a time-of-day rate to participate in the programs. Time-of-day rates incentivize off-peak charging and assess a cost-based rate to those customers choosing to charge during peak or shoulder times.

Analysis of Minnesota Pilot Data Using Proposed EV TOD Rate

Making use of the Minnesota pilot data set provided to Commission staff, a more appropriate approach would be to evaluate what percentage of charging occurred during the off-peak periods associated with the TOD rate used by Minnesota pilot customers and used by the chargers as pre-programmed defaults. Using that approach, 81 percent of charging for the 15-customer data set occurred during the off-peak, pre-programmed charging hours of 9 pm to 9 am and 96 percent of charging occurred during all off-peak hours (which include all-hours during weekends and holidays). NSPW's proposed EV TOD rate has fewer off-peak hours (12 pm to 8 am compared to 9 pm to 9 am). If NSPW's off-peak window were shortened to account for this shorter off-peak time period, 71 percent of charging in this data set occurred in the first 8 off-peak hours (9 pm to 5 am for the Minnesota pilot). This 71 percent better represents the pre-programmed off-peak charging times from the Minnesota pilot adjusting for the fewer off-peak hours associated with the proposed EV TOD rate. It is more reasonable to expect the first 8 pre-programmed hours (9 pm to 5 am) in the Minnesota pilot to match what will be the off-peak and pre-programmed hours in the proposed EV TOD rate (12 pm to 8 am).

The proposed EV TOD rate also has a shoulder period during the 4 hours before and after the off-peak period (8 pm to 12 am and 8 am to 12 pm) which also persists during weekends, holidays, and during on-peak hours in the winter months (October through May). To approximate this shoulder period from the Minnesota pilot data, a shoulder period can be assumed for the 4 hours before and after the "adjusted" eight-hour Minnesota off-peak window (9 pm to 5 am), and all the non-off-peak hours during the weekends, holidays, and winter months can also be treated as shoulder hours consistent with the proposed EV TOD. This shoulder period, as applied to the data set provided to Commission staff, represents 29 percent of charging, leaving less than 1 percent of charging during on-peak times.

If 71 percent of charging occurred during off-peak hours under the proposed EV TOD rate, 29 percent occurred during the shoulder hours, and the remaining <1 percent occurred during on peak hours, a customer using 350 kWh monthly would see the energy costs relating to their EV charging shown in Table 1. Table 1 also shows the 90 percent off-peak, 6 percent shoulder, and 4 percent on-peak billing impacts anticipated based on the full customer data set from the first year of the Minnesota pilot, as noted in NSPW's Application.

Table 1
Proposed EV TOD Applied to MN Pilot Customer Data Set
EV Charging Cost Estimates

	15-Customer Data Set	All Pilot Customers
	71% Off-Peak	90% Off-Peak
Rg-1: EV Energy Costs	\$41	\$41
EVR-1 EV Energy Costs	\$28	\$24
EVR-2 EV Energy Costs	\$38	\$31

Although the 15 customer load profiles from the Minnesota pilot indicate an off-peak usage of 71 percent, when adjusted to best fit the proposed EV TOD rate, their actual off-peak charging on the TOD rate associated with the Minnesota pilot was 96 percent. This off-peak charging percentage exceeding 90 percent is confirmed by the Minnesota pilot compliance filing referenced on page 6 of NSPW’s Application, which reflects data from all customers in the Minnesota pilot. The primary conclusion the Minnesota pilot data shows is that, when properly incentivized through TOD rates and passively managed through pre-programming, customers charged off-peak more than 90 percent of the time.

System Impacts of EV Load Profiles

Commission staff note that NSPW’s program participation forecast appears high when compared against the Minnesota pilot, which was capped at 100 customers. The Minnesota program cap was established as Xcel Energy felt it allowed for adequate testing of upfront costs, customer satisfaction, and scalability for this new, innovative EV service model. The Minnesota pilot cap was reached after just two days of the program being available, and since the cap was reached, Xcel Energy has had over 300 Minnesota customers express interest on a waiting list to participate in the program. NSPW’s forecast is based on zip-code level data about EV ownership in its Wisconsin service territory and assumptions about the portion of the market NSPW believes it can reasonably support with the proposed programs.

D. Commercial Program-Proposal Description

In this section of Commission staff’s memorandum, NSPW supports Commission staff Alternative Two.

Commission staff’s memo states that their “analysis suggests that in the initial years the additional credit for the revenue-based allowance... would be funded by all other customers in NSPW’s territory.” Staff’s statement also applies to the current embedded cost extension rules. The embedded cost allowance customers receive today is based on the average distribution costs embedded within base rates, justified by the fact that the customer will essentially be paying these costs back to the utility over time. This is inherent to the concept of providing a customer allowance towards plant investments needed to bring the customer online, regardless of whether the allowance calculation is based on embedded cost or revenue-based.

Additionally, this approach is consistent with standard cost recovery methods for utility infrastructure investments. All utility capital investments are recovered over time by being placed in rate base, accumulating depreciation, and ultimately being included in customer rates. Due to depreciation, the revenue requirement of a utility capital investment declines over the life of the asset. In other words, customers pay more for the investment early in its life.

The Levelized Annual Revenue Requirement (“LARR”) approach used in the proposed revenue-based extension allowance results in customers paying the same in each year of the asset’s book life. It is also worth noting that the LARR calculation accounts for the time value of money. In this sense, the LARR approach underlying the revenue-based extension rules in this proposal results in different timing for the recovery of utility investments when compared to the normal ratemaking treatment (with the amount being recovered declining over time) but ultimately results in the same present value revenue requirement.¹ As staff’s memo notes, this approach matches the procedures used by many natural gas utilities, where revenue-based allowances are allowed by the administrative code.

Further, it is worth noting that this is not a new approach to pricing electric utility service as it is common-place pricing for lighting services. Lighting tariffs may be priced using a LARR approach to derive a fixed charge over the life of a specific wattage of lamp. For example, see NSPW’s approved application for LED lighting in docket number 4220-TE-101 (PSCW REF #233949) which based “LED Street Lighting pricing... on our current HPSV prices less the LED savings based on the difference in energy... and maintenance costs... plus the levelized return on the capital costs associated with each fixture type.” Finally, averaging the revenue requirement among customers is also a common rate design practice. For example, a residential customer with a new undepreciated meter and service pays the same rates as an existing customer with a fully depreciated meter and service because the total revenue requirement is averaged over all residential customers.

Staff also states that “only after NSPW collects future distribution demand revenues from the new load that equals the revenue-based allowance would both NSPW and all its customers be made whole.” This statement is true only when considering future distribution demand revenues in isolation. Firstly, distribution costs are not fully captured by distribution demand charges as discussed on page 6 of NSPW’s application. Secondly, the customer is paying other charges which contain fixed production, transmission, and customer costs. As new load is added as part of this program, distribution demand charges from participants will pay for the revenue-based extension allowance incentive

¹ The LARR method results in the customer paying the same price each month for the book life of the asset where typical ratemaking results in a declining payment over the book life of the asset reflecting accumulated depreciation as a reduction to plant in service. The LARR example from the residential programs provided to Commission staff in NSPW’s response to CCD-1.6 Attachment 3 illustrates how a LARR compares to a traditional revenue requirement.

provided over time as described by staff, and the other charges on their bill will help reduce fixed costs for non-participating customers immediately.

E. Accounting Treatment

In this section of Commission staff's memorandum, NSPW supports Commission staff Alternative One. NSPW is not opposed to working with Commission staff on accounting procedures as proposed in Alternative Two but believes developing a cost-of-service approach is best left until NSPW's next rate proceeding. NSPW is strongly opposed to the requirement that NSPW record the customer charging equipment assets as \$0, or below the line, for bundled customers who will pay for the equipment over time. The Company's comments on two aspects of the staff's discussion on the Accounting Treatment are below.

Issue of Double Recovery

On p. 19, Commission staff suggests that NSPW's proposed approach to recording bundled charging equipment in rate base would result in double recovery. NSPW does not agree that recording the charging equipment at cost in plant in service as part of the bundled options within the proposed residential EVR-1 or EVR-2 programs or as part of the Optional Charger Service within the commercial EVC-1 program would result in socialized costs to all ratepayers or that NSPW could earn double recovery.

Participating customers will pay for charging equipment based on a levelized revenue requirement over the life of the equipment. This levelized equipment cost is embedded within the pricing of the EVR-1, EVR-2, and EVC-1 programs. In NSPW's next rate case, these revenues will be included within revenue at present rates. NSPW also proposes to include the cost of the charging equipment and installation in rate base and program O&M expense in its revenue requirement in future rate cases. The revenues from the EV programs will offset the revenue requirement of the program and there will be no double recovery. In fact, including all program revenues and costs in NSPW's revenue requirement provides transparency to the Commission that there is no double recovery. Furthermore, there is no risk of double recovery in the time leading up to NSPW's next rate case because the costs of this charging equipment that will be recorded will not impact rates currently in effect.

NSPW's proposed accounting and pricing approach for the EV programs is identical to treatment of street lighting previously approved by the Commission. See the previously referenced approval of NSPW's LED lighting in docket number 4220-TE-101 (PSCW REF #233949) which based "LED Street Lighting pricing... on our current HPSV prices less the LED savings based on the difference in energy... and maintenance costs... plus the levelized return on the capital costs associated with each fixture type." The LED Street Lighting revenue is included in revenue at present rates and the capital and O&M costs for the street light are included in the NSPW's revenue requirement in rate cases, without earning a double recovery.

NSPW opposes Staff's recommendation to require NSPW to record the charging equipment assets as \$0, or below the line for all customers, regardless of how the customer would pay for the equipment. NSPW already plans to record the assets as \$0 for prepay customers paying up-front, however, this approach is problematic to use for the assets of bundled customers paying over time. If this approach is taken, the revenues from the program would also have to be below the line, otherwise EV program revenues will offset the Company's revenue requirements that are not related to the EV programs in NSPW's next rate case. If only the costs are below the line for bundled customers, NSPW's EV customers will be subsidizing base utility service and NSPW's shareholders will be paying for the EV program costs. Further, if both program costs and revenues are below the line, the programs should not be regulated by the Commission. However, unregulated service is not the path NSPW is pursuing with this customer offering. The proposed regulated EV products fit within NSPW's core business strategy to be our customers' trusted energy provider by meeting both their conventional and evolving energy needs. A regulated program provides several key benefits to both participating and non-participating customers, including the ability to separately bill EV charging using a TOD rate and the ability to encourage charging behavior that results in spreading the fixed costs of the electric system over more load to the benefit of all customers.

Issue of Cost Socialization

On p. 19, Commission staff raises concerns that NSPW's approach to recording bundled equipment could result in socialization of these costs to all ratepayers. NSPW proposes to address the concerns over cost socialization through the utilization of previously established ratemaking and cost of service methods. As previously mentioned, there are several components to the EV program revenue requirement; revenues, return on rate base, O&M, and other expenses such as taxes. NSPW is proposing to address issues of recovery, including cost of service treatment, in its next rate proceeding but is likely to treat the program in the following way.

Within its cost of service study, NSPW would likely direct assign program revenue to the appropriate underlying customer class; residential for EVR-1 and EVR-2 and the appropriate commercial and industrial customer class for the EVC-1 program. Rate base and depreciation expense related to the charging equipment would be direct assigned in a similar manner.

Rate base and depreciation expense related to the distribution extension costs within the EVC-1 program would be treated identically as extension costs today and allocated according to the distribution allocators in the study. Rate base and depreciation expense related to make-ready costs within the EVC-1 program would be direct assigned to the appropriate commercial and industrial rate class when identifiable or allocated based on distribution allocators. For reference, distribution costs are allocated based on the application of a minimum system study which separates distribution costs into customer and demand related components. Customer portions are allocated based on allocators tied to number of customers, and demand portions are allocated based on allocators related to

the non-coincident peak demand of each customer class, accounting for voltage and phase of service. As EVC-1 load is added to specific commercial and industrial classes, it is reasonable to assume that those customer class customer counts will grow and their contributions to non-coincident peak will increase, resulting in a greater allocation of cost to those classes.

Program O&M costs, such as program management expense, will also be direct assigned to the applicable underlying customer class when those expenses are material and identifiable. Some common and general utility program costs, such as billing, IT support, and customer support, will not be directly identifiable. These costs are typically allocated to rate class and programs, and NSPW proposed this same treatment by including an average administration and general (“A&G”) cost within the EV program pricing. These A&G costs are typically allocated within the cost-of-service study based on labor allocators. As labor related to the electric vehicle programs is allocated to the appropriate classes, it is reasonable to assume that an appropriate amount of A&G expense will be allocated to those classes.

NSPW is not opposed to working with staff to establish accounting procedures; however, accounting procedures already exist to accomplish Commission staff’s goals, as they were created as part of the Minnesota pilot. The Minnesota pilot compliance filing referenced in NSPW’s application on page 6 serves an example of the reporting that will be available and existing accounting procedures. NSPW also proposes that cost-of-service issues are addressed in NSPW’s next rate proceeding, as the detailed cost allocation issues are best discussed with updated cost of service information and with detailed EV program budgets.

F. Marketing, Performance Metrics, and Reporting

In this section of Commission staff’s memorandum, NSPW supports Commission Alternative Two modified to reflect that program budgeting and survey results will be provided annually in addition to NSPW’s proposed reporting requirements. Further, NSPW supports modifying Commission staff’s proposed requirements to reflect that aggregated interval data, analysis of customer cost savings, and analysis of load management will be filed in September 2022 with a second and final filing in September 2024. Finally, NSPW recommends that all annual reporting requirements end after 2024.

NSPW proposed the following reporting requirements in its application.

EVR-1 and EVR-2 annual reporting for:

- Number of customers and selected options (bundled vs prepay)
- Total amount of electricity sold by time-of-day

EVC-1 annual reporting for:

- Number of customers participating in revenue-based extension rules including each customer's estimated load, total allowance, customer contribution, and total extension costs for both distribution extension and make-ready infrastructure with a comparison to the current extension rules
- When actuals are available, the annual reports will include a comparison of actual and estimated load showing how distribution revenues recover the revenue-based distribution allowance
- Number of customers under each of the Optional Charger Service options

Commission Staff have proposed the following additional reporting requirements.

EVR-1 and EVR-2:

- Program budgeting and spending
- Survey results regarding customer satisfaction and installation experiences
- Interval data
- Analysis of the cost savings experienced by participating customers, including savings related to charging purchase and installation and monthly customer bills
- Analysis of the load management impacts associated with the growth in EV use on NSPW's electric system

NSPW can support Commission staff's proposed additional reporting requirements with minor revisions. Program budgeting and spending, as well as survey results of customer satisfaction and installation experiences, can be provided as part of the annual reporting proposed by NSPW. However, NSPW believes that providing interval data and analysis related to cost savings and load management on an annual basis is burdensome and producing this information annually would not provide significant benefit to the Commission and other stakeholders. Further, the interval data can be voluminous, and aggregated interval data can be more easily provided to support the desired reporting outcomes. NSPW proposes providing aggregated interval data and analysis on cost savings and load management in September 2022 with a second report filed September 2024. This timing allows for adequate time for the program to launch in 2020 and a full year worth of data in 2021 to be included in the 2022 filing. With this in mind, staff may request any of this information as part of ongoing or future electric vehicle general dockets or during any of NSPW's rate proceedings. NSPW is not proposing the EVR-1 and EVR-2 programs as pilots, as NSPW believes that the cost savings and other benefits of the programs have already been adequately demonstrated in the Minnesota pilot. However, given there are differences, particularly regarding the EV TOD rate, NSPW sees value in additional annual and periodic reporting during the initial years of these programs. After several years of experience with these programs, NSPW believes the Commission, stakeholders and the Company will have a clear understanding of how these programs are working and continued reporting at this level will not be necessary.

G. Program Waivers

EVR-1 Program Waiver Requests Relating to Billing

In this section of Commission staff's memorandum, NSPW supports Commission staff Alternative Two with the modification that NSPW provides the customer with useful information on anticipated bill impacts, and include explicit language in the tariff informing customers that in the event of an error in the charger's ability to track EV charging use such usage will be billed at the Rg-1 or Fg-1 rate.

Commission staff recommends that customers be provided with an insert or fact sheet with information showing the range of billing impacts under various load profiles and allocation of usage to different rate options. NSPW already plans to provide customers with information about how to select the best rate for their charging needs based on how many miles they typically drive, as described in NSPW's response to JF-1.1. NSPW believes that providing billing impacts based on load profiles or allocation of usage to different rate options as suggested by Commission staff would be overly complex for typical residential customers. For customers considering enrolling in EVR-1 or EVR-2, as described in NSPW's response to JF-1.1, information will be available on NSPW's website through Xcel Energy's online customer interface, the EV advisor tool, which will include a calculator to estimate the potential savings to find the best charging and rate options available for the customer's lifestyle and behavior. Additionally, program managers will be available to customers asking for more detailed information about the program than what will be initially provided by NSPW. Commission staff implies on p. 28 that without additional detail regarding the previous billing units, the date the present bill is based on and the date of the next scheduled meter reading that customers would be challenged to verify the accuracy of their bill. Customers participating in EVR-1 will have access to additional data about their usage through a mobile application ("app") provided by respective charging equipment vendors, which will provide convenient and useful information such as the customer's estimated EV consumption and potential cost.

Commission staff also recommends on pp. 28-29 that NSPW modify its proposed tariff language to be explicit about informing customers that in the event of an error in the charger's ability to track EV charging usage, such usage will be billed at the Rg-1 or Fg-1 rate. NSPW already planned to include this language in the Customer Service Agreement for the program, and NSPW would propose to modify its tariff sheets to also include this language.

EVR-1 Program Waiver Requests Relating to Dispute Resolution

In this section of Commission staff's memorandum, NSPW supports any of the Commission staff Alternatives, with some modification, and wishes to offer clarification regarding its request.

Wis. Admin. Code PSC § 113.0407 sets forth a dispute procedure for several specific types of disputes, including a dispute regarding billing. As NSPW is requesting waivers of several of the preceding provisions of the administrative code relating to billing, the Company believed that this specific process may not be appropriate for billing disputes relating to its proposed programs. NSPW's primary intent regarding its waiver requests overall was to ask for the waivers necessary to carry out the programs it has proposed. NSPW does not seek to discourage or prevent customers from seeking resolution of a complaint through the Commission's general complaint resolution process.

Commission staff describes one option in which a variety of waivers are granted pursuant to NSPW's Application, but the general complaint process and ability to file a complaint at the Commission remains intact. This is consistent with NSPW's assumptions regarding how its proposed programs would interact with the Commission's complaint process. Alternatively, Commission staff suggest that additional reporting obligations relating to complaints NSPW receives could provide transparency to the Commission if the Commission is not directly involved in the complaint resolution process. NSPW does not oppose including information regarding complaints in an annual reporting requirement, however, the Company believes this is not necessary if customers have the ability to file a complaint with the Commission.

NSPW's chief concern relating to the applicable dispute resolution provisions of the administrative code relates to the process for resolving traditional disputes relating to standard meters. To the extent the Commission believes that Wis. Admin. Code PSC § 113.0407 does not invoke the other applicable provisions in the administrative code that NSPW has requested be waived, NSPW is comfortable with rescinding its request for a waiver of Wis. Admin. Code PSC § 113.0407 and the corresponding section in its tariff. NSPW believes its proposal in the next section relating to metering, accuracy, and testing resolves the primary concern.

In the event the Commission does require reporting on complaints, NSPW notes that the size of the program will not likely be large in the near future and finds quarterly reporting to be unwarranted. NSPW proposes that any reporting be included in the annual reporting requirements previously discussed and expire the requirement after 2024.

EVR-1 Program Waiver Requests Relating to Metering, Accuracy, and Testing

In this section of Commission staff's memorandum, NSPW supports Commission staff Alternative Two modified to require NSPW to work with the industry and Commission staff to propose by September 1, 2022 an accuracy and testing standard to be used for the EV chargers under the EVR-1 rate. NSPW also asks that an additional administrative code waiver be granted, as noted by Commission staff in the memorandum.

NSPW believes that existing meter accuracy and testing administrative rules are not only administratively burdensome to apply to the charging units but also impractical to enforce and implement given the current nascent state of the EV charging marketplace. NSPW appreciates Commission staff's suggestion on p. 34 to work towards proposing an

alternative accuracy and testing standard or process over time and believes this is the appropriate way to resolve the Commission's obligation to establish reasonable standards for accuracy in the EVR-1 program.

As part of the request for proposal ("RFP") process, which selected the two residential charger options, testing was conducted to ensure RFP applicants met Xcel Energy's metering requirements, including accuracy within 2%. The testing was conducted within Xcel Energy's metering shop by Xcel Energy employees. Xcel Energy also relies on the vendors who certify that their equipment meets industry specifications. NSPW believes this process ensures that the charging equipment is accurate to within 2% when it is installed.

While NSPW is satisfied that the chargers are accurate when they are installed, there is currently no industry standard for field testing chargers. NSPW believes this should not present many challenges while the chargers are relatively new; however, as the equipment ages, testing will become more important. As such, NSPW is supportive of Commission staff's recommendation that a testing standard be established but recommends that NSPW be given two years to work with the industry and Commission staff to establish the standard. The need for such a standard is not unique to Wisconsin, rather, this is an issue facing the EV charging industry across the United States, and the industry is actively involved in developing appropriate standards and equipment necessary to meet customer needs.

Prior to adoption of industry-wide standards, NSPW is comfortable relying on manufacturer assurance of accuracy to within 2% combined with language in its Customer Service Agreement and tariff which will explain to customers how inaccuracies in the charging equipment will result in more or less consumption being billed at the whole-home Rg-1 or Fg-1 rate as previously discussed.

Additionally, NSPW appreciates that Commission staff has identified another administrative code provision, Wis. Admin. Code PSC § 113.0911, noted in Commission staff's memorandum in footnote 13, which may also need to be waived in order to fully waive all code provisions applicable to electrical meters. NSPW respectfully requests that this provision be added to the list of requested waivers, consistent with the Company's request in Data Request Response PSCW-KC-4 for a waiver from any other provision identified that conflicts with its proposal.

Residential Programs-Tariff Language Waiving Rights to Billing Adjustments

In this section of Commission staff's memorandum, NSPW supports Commission staff Alternative One.

As noted by Commission staff, tariff language relating to customers waiving their right to billing adjustments by taking service from a voluntary rate is common place and appropriate. Customers will be well informed of their options and provided sufficient information to make an informed decision prior to enrollment. Allowing customers who

choose to participate in optional programs to make a claim for billing adjustments due to cheaper rate options being available potentially imposes a considerable amount of uncertainty and administrative burden on the program.

Commercial Program-Waiver Requests

In this section of Commission staff's memorandum, NSPW supports Commission staff Alternative Two as discussed below.

On p. 40 Commission staff discuss the waiver to Wis. Admin. Code § PSC 113.1007(1) on customer contributed extension refunds when an extension is made to a second customer that does not require a contributed extension. Upon further evaluation, NSPW does not believe a waiver is required for this section of the administrative code. In the case a service to an EVC-1 customer requires a distribution extension or upgrade, the revenue-based extension allowance would be used to calculate the customer's allowance toward that project as part of the EVC-1 program. If a separate customer subsequently takes service from that extension or upgrade, the EVC-1 customer would receive a refund, at the embedded cost allowance according to this section. NSPW is comfortable clarifying this in the EVC-1 tariff at the Commission's request.

Commission staff also discuss the waiver to Wis. Admin. Code § PSCW 113.1008(3) (d), which addresses refunds to customers transferring from an energy-only class to a demand class. NSPW does not believe a waiver is required for this section, as all EVC-1 customers will be demand class customers as required in the tariff eligibility requirements.

On p. 42, Commission staff states "[w]hile the current extension rules require payment in advance of construction, customers would potentially not receive a bill until two years into the program." NSPW wishes to clarify that both current extension rules and NSPW's proposed revenue-based extension rule approach would require payment in advance of construction. The main difference is that payment under NSPW's proposal is based on a different formula. While it is true that the proposed two-year refund mechanism provides an opportunity to request additional payment from the EVC-1 customer if the anticipated load does not materialize, this protection is unique to the pilot and no similar ability to collect additional money from a customer exists under current rules if the anticipated load does not materialize.

NSPW supports Commission staff's proposed additional reporting requirements for EVC-1 to be reported as part of NSPW's 2024 Test Year rate case (filed in 2023), or no later than January 1, 2024:

- The number of customers whose actual load is more than 25 percent less than its estimated load by the end of the two-year true-up period
- The amount of bills issued to customers at the end of the two-year true-up period
- The number of customers who have received a true-up bill but have not paid it prior to write-off
- The amount of true-up bills written off

Additionally, consistent with NSPW's response to the Staff recommendation regarding its proposed Economic Development Rider in docket number 4220-TE-105, NSPW proposes to file to continue, modify, expand, replace, or close the EVC-1 pilot program as part of its 2024 Test Year rate case (filed in 2023), or no later than January 1, 2024, or sooner if appropriate.

H. Conclusion

NSPW appreciates Commission staff's detailed approach to reviewing its EV proposals. NSPW believes its proposed programs will provide customer benefits to those customers who choose to participate as noted by Commission staff on p. 36, but the benefits of these programs do not end there. These programs will provide NSPW real world experience serving the electric transportation needs of its customers in a way that is more tailored to that specific market's needs without burdening other customers. This experience will give NSPW the chance to learn and improve its ability to serve the electric transportation needs of its customers over time, including experience needed to better understand the impact EVs may have on the electric grid, and experience that will be valuable in meeting the needs of other EV market segments not addressed by these programs. NSPW looks forward to providing the Commission and other stakeholders with useful information about these programs and working to fine tune and expand upon them in the future as the EV market grows. NSPW respectfully requests that the Commission consider these comments and approve the proposed EV service programs as filed, with only those modifications described in these comments.

Respectfully Submitted,

NORTHERN STATES POWER COMPANY,
a Wisconsin corporation

A handwritten signature in black ink, appearing to read "Karl J. Hoesly", written over a horizontal line.

Dated: June 3, 2019

By: _____

Karl J. Hoesly
Regional Vice President, Rates and Regulatory Affairs