October 12, 2018

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

RE:   PETITION FOR APPROVAL OF ELECTRIC VEHICLE PILOT PROGRAMS
       DOCKET NO. E002/M-18-_____

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits the attached Petition for approval of two EV Service Pilot Programs aimed at fleets and public charging infrastructure. In addition to the two primary pilots, the filing presents five forthcoming EV initiatives, forming a portfolio of customer EV services.

We are pleased to present these pilots for approval as a part of Xcel Energy’s efforts to lead the way in electrifying transportation in Minnesota and positioning Minnesota as an electric vehicle leader. Our portfolio of EV initiatives is designed to benefit all drivers, customers, and the state by helping reduce greenhouse gas emissions and air pollution while keeping electric bills low for all customers and benefiting the electric grid.

The pilot programs and planned initiatives presented in this filing cover three main areas: home charging, public charging, and fleet operations. These pilots and initiatives consider equity, accessibility, and fairness, aiming to provide electric mobility services for all, including by supporting the electrification of buses and installation of public EV charging stations that will support transit in low-income communities.

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 Amy Liberkowski at amy.a.liberkowski@xcelenergy.com or (612) 330-6613 if you have any questions regarding this filing.

Sincerely,

/s/

AAKASH H. CHANDARANA
REGIONAL VP, RATES & REGULATORY AFFAIRS

Enclosure
cc: Service List
IN THE MATTER OF THE PETITION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF ELECTRIC VEHICLE
PILOT PROGRAMS

PETITION

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy (Xcel Energy or the Company), submits to the Minnesota Public Utilities Commission (Commission) this Petition presenting a summary of the overall portfolio of new electric vehicle (EV) initiatives the Company is pursuing and requesting Commission approval of two pilot programs, a Fleet EV Service Pilot and a Public Charging Pilot. We also discuss the Company’s expanded EV awareness, education, and outreach efforts, including the development of an online EV Advisor tool.

As discussed in prior dockets, we believe utilities are uniquely situated to help drive the electrification of the transportation sector in the State of Minnesota, and we are committed to advancing this trend through the development of offerings that help our customers overcome barriers to EV adoption. We further believe that utilities are well positioned to develop these offerings in a way that maximizes benefits to the electrical system while minimizing costs to both EV adopters and customers generally. We are therefore excited to launch a number of new pilot programs designed to explore and evaluate the costs, benefits, and impacts of various EV offerings, as well as the role of the utility in EV offerings at scale.

This Petition presents a portfolio of EV initiatives in various stages of development and represents a continuation of our efforts in the EV space. These initiatives will expand our current EV-related offerings—including both our residential EV charging rate and a residential EV pilot program—into the additional market segments of fleet
operators and public charging providers. At the same time, our portfolio will continue to expand the options available to our residential customers.

At this time, the Company seeks approval of two EV-related Pilots:

- **Fleet EV Service Pilot:** Studying Company investment in installing and maintaining EV infrastructure for fleet operators and how reducing upfront costs impacts EV adoption. The pilot also will study the costs and impacts of charging behavior and utilization under time-of-use rates and advisory services related to fleet conversion. The proposed budget for this pilot is $14.4 million over a three-year pilot term.

- **Public Charging Pilot:** Studying Company investment in installing and maintaining EV infrastructure for site hosts and developers of public charging stations along corridors and at community mobility hubs, and how reducing these upfront costs impacts barriers to EV adoption, including range anxiety and the lack of charging solutions for people who cannot charge at home. The proposed budget for this pilot is $9.2 million over a three-year pilot term.

We also are continuing to develop other EV initiatives. The following initiatives will be proposed in the coming months in subsequent petitions that we anticipate filing with the Commission or as modifications to our current Conservation Improvement Program (CIP) plan:

- **Residential EV Subscription Service Pilot:** Offering our residential customers a different rate option for study: a preset monthly subscription fee for dedicated EV charging service during off-peak hours, with additional charges for on-peak charging.

- **Residential Smart Charging Pilot:** Studying how a combination of incentives or rewards encourages smart charging of EVs, enabling the management of EV charging as a demand-response resource. This pilot would be proposed as a modification to our current CIP plan.

- **Workplace Smart Charging Pilot:** Studying the provision of workplace EV charging coupled with distributed energy resources, such as solar generation. The pilot will assess—and explore options to mitigate—the coincidence of workplace charging and system peak.

- **Vehicle-to-Grid Demonstration with School Buses:** Studying the potential
of electric school buses as grid resources. During the school year, daily driving schedules could support off-peak charging during nighttime and weekend hours; during the summer, the buses could operate as grid resources, charging when demand for power is low and discharging power when system demand is high.

Although we are still finalizing the details of these initiatives, we believe it is important for the Commission to have insight into our broader EV strategy as it considers our request to approve the Fleet and Public Charging pilots. Each of our initiatives has been designed to address specific barriers to EV adoption, which include lack of awareness of EV options and benefits, high upfront costs of EV infrastructure installation, and suboptimal signals for off-peak charging. The portfolio as a whole is intended to address a wide range of issues and customers, and it reflects our Company’s overall strategy for piloting offerings and seeking to advance the adoption of EVs in our service territory.

In developing our portfolio, we considered other EV pilots and the experience of utilities around the country, feedback from our customers and other stakeholders, and the comments filed in the Commission’s Inquiry into Electric Vehicle Charging and Infrastructure (Docket No E999/CI-17-897).

With the benefit of these learnings, we developed a set of guiding principles for our work in advancing EV adoption:

- Empower customers with information, tools, and options;
- Increase access to electricity as a transportation fuel in an equitable manner;
- Encourage efficient use of the power grid and integrate renewable energy;
- Improve air quality and decrease carbon emissions;
- Ensure reliability, interoperability, and safety of equipment;
- Leverage public and private funding opportunities;
- Provide benefits to all customers, both EV drivers and non-EV drivers; and
- Ensure transparency and measure results.

As discussed throughout this Petition, we believe our portfolio is consistent with these principles and that each of our proposed initiatives will provide significant learning opportunities that the Company, the Commission, and our stakeholders can use to develop and support a robust EV market in Minnesota.

Cost recovery is an important aspect of these efforts. In this filing, we request approval for Company investment in EV infrastructure under our proposed Fleet EV Service Pilot and Public Charging Pilot. We also request approval to defer the
expenses associated with these pilots via the EV tracker account initially established under the EV statute, and subsequently approved for use to defer certain expenses related to our residential EV pilot. We believe use of this EV tracker account to defer expenses related to new pilots is appropriate and in the public interest because it enables the Company to advance EV pilot efforts, drive significant learnings, and deliver options and programs our customers and stakeholders outside of a rate case cycle. We propose to defer these costs until the Company’s next rate case, at which time they can be reviewed and considered.

Finally, we note that a portion of our work in support of these pilot programs already has begun. We undertook this work in advance of Commission approval of our pilots to help certain customers facilitate their EV programs and initiatives that are already underway. That said, we view the Commission’s support for our proposed initiatives—including our proposal to defer costs associated with this work—as critical to allowing the Company to move forward with these efforts.

In this petition, we respectfully request the Commission:
  • approve our proposal for implementing a Fleet EV Service Pilot;
  • approve our proposal for implementing a Public Charging Pilot;
  • approve our proposed Fleet EV Service Pilot and Public Charging tariffs;
  • approve our proposed accounting treatment and Company ownership of the EV infrastructure as proposed;
  • approve waiver of the Company’s service policy provisions for CIAC and other customer contributions for the EV infrastructure for pilot participants;
  • approve our proposed deferral of pilot expenses in our EV tracker account established in Docket No. E002/M-15-111 for both the Fleet EV Service Pilot and Public Charging Pilot.

Our proposed EV portfolio and requests for approval of the two pilot programs are presented in the following sections:

  • VII. *Xcel Energy’s Proposed EV Portfolio* presents our overall EV portfolio. We discuss the stakeholder process and guiding principles, our individual EV initiatives, proposed pilot evaluations, and public interest considerations.

  • VIII. *EV Pilot Proposals* presents our requests for approval of the Fleet EV Service Pilot and Public Charging Pilot. We describe pilot objectives, operations, and budgets, and present our proposed rate design and tariffs, annual reporting, and cost recovery request.
• IX.  *EV Awareness, Education, and Outreach* describes our expanded mass-market electric vehicle advisory efforts. We outline our current efforts, describe our new EV Advisor online tool, and provide budget and cost recovery information.

I. SUMMARY OF FILING

A one-paragraph summary of the filing accompanies this Petition pursuant to Minnesota Rule 7829.1300, subp. 1.

II. SERVICE ON OTHER PARTIES

Pursuant to Minn. Rule 7829.1300, subp. 2, the Company has served a copy of this filing on the Office of the Attorney General – Antitrust and Utilities Division. A summary of the filing has been served on all parties on the enclosed miscellaneous electric service list.

III. GENERAL FILING INFORMATION

Pursuant to Minn. Rule 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, Minnesota 55401
(612) 330-5500

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

Matt Harris
Principal Attorney
Xcel Energy
401 Nicollet Mall, 8th Floor
Minneapolis, Minnesota 55401
(612) 330-7641
C. Date of Filing

The date of this filing is October 12, 2018.

D. Statute Controlling Schedule for Processing the Filing

Minn. Stat. § 216B.16 subd. 1 requires 60-days 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, because 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, Minnesota 55401
(612) 330-6613

IV. MISCELLANEOUS INFORMATION

Pursuant to Minn. Rule 7829.0700, Xcel Energy requests that the following persons be placed on the Commission’s official service list for this proceeding:

Matt Harris             Lynnette Sweet
Principal Attorney     Records Analyst
Xcel Energy            Xcel Energy
401 Nicollet Mall, 8th Floor  401 Nicollet Mall, 7th Floor
Minneapolis, Minnesota 55401  Minneapolis, Minnesota 55401
matt.b.harris@xcelenergy.com regulatory.records@xcelenergy.com

Any information requests in this proceeding should be submitted to Ms. Sweet 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 during the pilot period. The two pilots proposed in this filing are limited as to overall budget amounts and number of participating customers. The pilot learnings will include assessment of the amount of utilization and revenues that result from these initiatives.

VI. DESCRIPTION AND PURPOSE OF FILING

The Company already has begun investing in EVs through its Residential EV Charging Tariff and Residential EV Service Pilot. In this Petition, we propose further investments that broaden the focus of the Company’s support of EVs. Specifically, we present the Company’s overall portfolio of seven new EV initiatives, we request approval of two of these pilot programs, and we discuss the Company’s expanded EV awareness, education, and outreach efforts. We intend to submit later filings requesting approval of the other initiatives described in this filing.

Our EV portfolio is intended to explore a variety of pilot offerings and initiatives designed to help address some of the barriers to EV adoption, to meet the needs of different customer segments and communities, and to assess the costs, benefits, and system impacts of these initiatives. In developing these pilots, we engaged in extensive work with customers and hosted a series of stakeholder workshops to elicit feedback to inform pilot design and objectives.

The specific pilots requested for approval in this filing will study costs and impacts of various design aspects of EV offerings:

- **Fleet EV Service Pilot** – will study the Company’s fleet advisory services, Company investment in EV infrastructure from the transformer to the “stub” of the charger (make-ready infrastructure) and charging equipment, and charging behavior and utilization under time-of-use rates.
- **Public Charging Pilot** – will study Company investment in make-ready infrastructure, and utilization of corridor fast charging and community charging hub facilities under time-of-use rates.

We believe our EV portfolio and the expected learnings from our pilots will provide a platform for the Company to evaluate models for offering EV services at scale as the market matures and grows. In addition, we intend to provide extensive reporting on the data and learnings from these pilots, which will include evaluation of the pilots by third-party consultants. As a result of these pilot efforts, we seek to provide
information that will be informative and useful as the Commission, other utilities, and stakeholders consider other EV offerings and program designs in Minnesota.

VII. XCEL ENERGY’S PROPOSED EV PORTFOLIO

A. Overview

In this section, we present our overall proposed portfolio of EV initiatives. The Company believes a wide-ranging portfolio of initiatives should be undertaken to establish key learnings based on the needs of different market segments and to inform longer-term EV programs. The Company’s proposed EV portfolio includes initiatives for different market segments and seeks to address key barriers to EV adoption where utility involvement can be especially effective. We believe individual initiatives should be considered within the context of the portfolio, which aligns with our guiding principles.

The new EV initiatives included in the Company’s portfolio are outlined in Section VII.D. below and include:

- Fleet EV Service Pilot
- Public Charging Pilot
- Residential EV Advisor Online Tool
- Residential EV Subscription Service Pilot
- Residential Smart Charging Pilot
- Workplace Smart Charging Study Pilot
- Vehicle to Grid (V2G) Demonstration with School Buses

Although this portfolio is broad in scope, the individual initiatives are modest in scale. We believe this measured approach appropriately recognizes the present EV market in Minnesota and our service territory, and will provide the greatest value for our customers.

B. Stakeholder Process

In March 2018, the Company published its Minnesota EV plan,¹ intended to initiate dialog about potential innovative EV solutions the Company could offer its customers. That document outlined the Company’s intended objectives and guiding principles in developing new EV pilot offerings. The Company then held a series of five stakeholder workshops, between May and August 2018, to elicit feedback on our

stated EV strategy, proposed guiding principles, and potential pilot proposals. The
stakeholder workshops had the following objectives:

- Create a base understanding of transportation electrification and how this topic
  has been evolving over time;
- Gather feedback and input on concepts in the Company’s Minnesota EV plan;
- Develop key metrics for pilots that stakeholders and decision-makers can use
  later to evaluate pilot success and suitability to go to scale; and
- Provide a platform to share ideas regarding transportation electrification
  efforts.

The Company partnered with Great Plains Institute (GPI) to facilitate the intensive
stakeholder engagement involved in the workshops. The Company also engaged
Atlas Public Policy and Plug-In Connect as external subject-matter experts to provide
advisory services and workshop presentations.

Overall, our workshops were attended by representatives from groups with a broad
range of interests in EVs. Participants included regulators, consumer advocates, EV
charging network representatives, environmental advocates, customers, and vehicle
manufacturers. A list of groups with representatives attending one or more of the
workshops is provided as Attachment B.

The specific workshops included:

- Kick-off meeting to provide an overview of the current EV landscape, present
  the Company’s overall Minnesota EV plan, and share and gather input on the
  Company’s proposed guiding principles for EV pilots and initiatives.
- Three deep-dive discussions to share and gather input on proposed solutions
  and potential metrics for scaling pilot projects for Fleets, Fast Charging, and
  Home Charging.
- Synthesis and wrap up meeting to share and reflect on feedback from
  workshops 1-4, present a high-level overview of the Company’s initiatives
  intended to be brought forward this year, and gather input on plans and next
  steps.

We appreciate the time, effort, and input of the workshop attendees. The
stakeholders helped focus and refine the Company’s proposed guiding principles for
EV offerings and provided input to shape additional offerings and initiatives going
forward.
C. Guiding Principles

We synthesized the comments from our first four stakeholder meetings, and at the fifth meeting, we presented the following refined guiding principles:

- Empower customers with information, tools, and options;
- Increase access to electricity as a transportation fuel in an equitable manner;
- Encourage efficient use of the power grid and integrate renewable energy;
- Improve air quality and decrease carbon emissions;
- Ensure reliability, interoperability, and safety of equipment;
- Leverage public and private funding opportunities;
- Provide benefits to all customers, both EV drivers and non-EV drivers; and
- Ensure transparency and measure results.

These guiding principles inform the development of our EV proposals discussed below.

D. Description of EV Initiatives

Below we summarize our EV initiatives, describing the key provisions, objectives, expected benefits and learnings, and status of each initiative.

1. Fleet EV Service Pilot

In this filing, we request approval of a Fleet EV Service Pilot. Under this pilot, the Company would install, own, and maintain EV infrastructure for fleet operators in order to reduce these customers’ upfront costs for EV adoption. Fleet operators participating in the pilot would be required to take service under time-of-use rates for their EV charging. Additionally, the Company would provide advisory services to fleet operators, including information relative to fleet conversion decisions. We estimate this pilot would be able to facilitate installation of over 700 charging ports for fleet customers, serving charging needs for light-duty vehicles and buses.

Customers who operate fleets are a prime market segment for piloting new services for transportation electrification. Several large fleet operators in our Minnesota service territory already have begun converting their fleets to EVs. This pilot offering enables us to work with these early adopters—who are motivated by both economic and environmental considerations—to convert their fleets. Due to the size of fleets, piloting EV services for these customers has the potential to impact the market, especially where improving project economics can support fleet conversion more
quickly than otherwise would have occurred. We are currently working with three fleet customers expected to participate in this pilot if approved by the Commission: Metro Transit, the Minnesota Department of Administration, and the City of Minneapolis. These customers have provided letters of support that are included as Attachment C.

The total pilot budget is $14.4 million over a three-year pilot term. Our request for approval of this pilot is provided in Section VIII.

2. Public Charging Pilot

In this filing, we also request approval of a Public Charging Pilot. Under this pilot, the Company would install, own, and maintain EV infrastructure for developers of public charging stations along corridors and at community mobility hubs. Unlike the Fleet EV Service Pilot, the Company would not own or maintain any charging equipment. The goal of such investments is to increase publicly available charging options by decreasing these customers’ upfront costs. Customers participating in this pilot would be required to pay time-of-use rates for their EV charging. Under this pilot, we estimate we would be able to facilitate installation of approximately 350 charging ports.

Our pilot seeks to support both corridor fast charging and community mobility hubs, leveraging available public and private funding under both scenarios. Specifically, we propose to make this pilot available to applicants who invest in deploying fast-charging stations along corridors in our service territory, specifically targeting applicants seeking funds from Minnesota’s Diesel Replacement Program funded by the Volkswagen Environmental Mitigation Settlement (VW Settlement) and administered by the Minnesota Pollution Control Agency (MPCA). In addition, we plan to partner with the cities of Saint Paul and Minneapolis to support installation of community mobility hubs, for which the cities have selected HOURCAR as the anchor tenant. The cities are pursuing Federal Congestion Mitigation Air Quality (CMAQ) funds to purchase vehicles, chargers, and operating services for this new mobility service. These charging hubs may be utilized by car-sharing services, transportation network companies (e.g., Uber and Lyft), and the public, including customers who do not have EV charging capabilities at home. Saint Paul and HOURCAR have provided letters of support which are included as Attachment D.

Although there has been limited deployment of public charging to date, it is a critical enabler for EV market expansion. Key reasons for including the public charging component in our EV portfolio are that it can support longer distance driving,
address range anxiety, and provide charging solutions for those who are not able to charge at home.

The total pilot budget is $9.2 million over a three-year pilot term. Our request for approval of this pilot is provided in Section VIII.

3. Residential EV Advisor Online Tool

This filing includes a description and budget information for the first phase of an online EV advisory tool (EV Advisor) for residential customers to be available on Xcel Energy’s website. This initiative is part of the Company’s ongoing efforts to inform and educate consumers about EVs. The EV Advisor will expand the availability of general EV information for our residential customers and will provide customer-specific information based on interested customers’ responses to a series of questions. We believe including this initiative as part of our EV portfolio is important to help increase EV awareness and understanding of options for our residential customers.

The EV Advisor is currently under development with expected phased-in implementation beginning in 2019. We are tracking costs for its development and implementation in the EV Tracker account established in Docket No. E002/M-15-111. The EV Advisor is a company-wide tool that will be available to Xcel Energy customers outside of Minnesota, but only the costs attributable to Minnesota will be included in the EV Tracker account. The Minnesota portion of our projected budget for development and launch of the first phase of the EV Advisor includes an initial setup fee of $70,000 and annual license fees. We provide additional detail on the project and costs in Section IX.

4. Residential EV Subscription Service Pilot

We are developing a pilot offering for residential customers that is based on our recently launched Residential EV Service Pilot, but provides a different rate option for study: a monthly subscription fee for dedicated EV charging service during off-peak hours. Under this pilot, customers will charge off-peak for a preset monthly fee, with additional charges for on-peak charging. Like our Residential EV Service Pilot, participating customers will select a pre-approved charger to be provided and installed by the Company, which will serve to meter EV charging separately from home usage. Customers also will have the option to pay for the charger in one upfront charge or through a monthly customer charge.
We are developing this pilot as another residential EV charging option that is focused on providing a rate that makes the cost of powering an EV easier to understand. We believe there is a segment of residential customers for whom a simplified rate option is appealing. A preset monthly fee simplifies assessment of the economics of charging, making it easier to compare to gasoline purchases.

The EV subscription fee for off-peak charging will be developed based on expected usage considering general parameters and available average usage information for residential customers on EV rates. We will provide information, education, and initial timer set up to schedule off-peak charging, where off-peak times are the same as those in our current time-of-use rates. In instances where the customer opts to override the off-peak charging schedule, we are developing a messaging and communication plan to provide customers timely notification and reminders of additional charges for on-peak charging.

This pilot aligns with our overall objectives of helping address barriers to EV adoption, including the high upfront cost of EV charging infrastructure and lack of information about the cost of charging, studying appropriate signals for off-peak charging, and providing customer choice. We intend to track and report the costs of this pilot service, and both on-peak and off-peak usage. We will assess customer interest in this rate structure, charging behavior, and costs to determine whether this offering is appropriate to provide at scale as another residential EV rate option.

We intend to submit our request for approval of this pilot in a filing with the Commission in the coming months.

5. Residential Smart Charging Pilot

As another EV charging option for our residential customers, we are developing a smart charging pilot to be proposed as a modification to our current CIP plan. This pilot will test how the Company can encourage smart charging of EVs (i.e., through technology that is able to receive signals and modify EV charging load) and manage EV charging as a demand response resource. To do this, the Company would remotely manage when a customer charges by shifting charging outside of the times when the Company’s system peak occurs and reducing charging during system emergencies. Residential customers who own or obtain an approved Level 2 charger would be eligible to participate in this pilot, which will be similar to our current AC Rewards Smart Thermostat program.
In exchange for participating in the pilot, customers would receive some combination of incentives or rewards. In addition to the demand response component, the pilot also will evaluate whether eligible chargers save energy.2

The key objectives of this pilot include studying costs, benefits, and impacts of shifting EV charging outside of system peak times. This pilot will provide real-world data on the coincidence between residential charging and system peak and how much regular peak load reduction is available by directly managing EV load. In addition, the pilot allows the Company to understand which customers may prefer the flexibility associated with primarily charging on their current rate, while gaining benefit from allowing the Company to manage their EV charging on select days, and how incentives or rewards impact their decisions.

We intend to propose this pilot in a filing in the coming months as a modification to our current CIP plan. We will keep the Commission informed about pilot operations and learnings, and discussion of this pilot will be included in our periodic reports to the Commission about our EV portfolio.

6. Workplace Smart Charging Pilot

We are currently developing a pilot project to study workplace EV charging and the potential use of distributed energy resources, such as solar generation, at these sites, coupled with smart charging services. Our goal for demonstration projects under this pilot is to support workplace charging as an option for our customers while evaluating distributed energy resources, rate design, and managed charging options. Some of our customers are interested in providing the opportunity for EV charging for their employees during the workday, and some of this workplace charging will occur during our overall system peak. The objective of this pilot is to assess the coincidence of workplace and system peak and explore options to mitigate impacts when the two coincide.

Consistent with this pilot development, we are participating in a collaborative effort administered by the National Renewable Energy Laboratory (NREL) and coordinated by GPI. This effort seeks to identify and demonstrate synergies between EV charging and distributed solar resources and construct a roadmap for joint development of EV

2 Energy Star is issuing a standard that will certify chargers that are able to create energy savings from lower standby power needs. In addition, a study performed by Vermont Energy Investment Corporation (VEIC) demonstrated that Level 2 chargers are more efficient than Level 1 chargers due to lower resistive losses at higher voltages (see the VEIC report at the following link: https://www.veic.org/documents/default-source/resources/reports/an-assessment-of-level-1-and-level-2-electric-vehicle-charging-efficiency.pdf).
charging infrastructure and solar resources. The Company has participated in several stakeholder meetings organized by GPI, and we continue to provide input to the core project team with a particular focus on contributing in areas where the combination of EV charging and distributed solar could have grid impacts and/or benefits.

The Company believes this research can inform understanding of how EV charging equipment can coordinate with on-site or remote solar production. This research also will illuminate some of the key questions regarding solar and EV charging that could inform future Company research and pilots. However, like GPI and their study partners, we believe there is potential to develop pilot opportunities in advance of the conclusion of the NREL/GPI study.

We are working with our customers to develop such a pilot proposal, designed as a research project to study the provision of workplace EV charging options through an innovative combination of technologies, strategic location decisions, and new rate design. We are currently engaging with customers to assess their interest in providing solar EV charging for their employees, to identify potential sites for demonstration projects, and to determine technical requirements for such projects. We believe the NREL/GPI study efforts and our work with our customers provide the basis for a workplace smart charging pilot program, designed to test concepts to optimize load and generation on customer premises using smart charging capabilities. We expect to bring this initiative forward in a filing in the coming months.

7. **Vehicle to Grid (V2G) Demonstration with School Buses**

We intend to develop a small-scale project that will provide learnings around the potential to use electric school bus batteries as grid resources. We seek to work with at least one school district, while partnering with bus and charging infrastructure vendors. During the summer months, we would connect buses to the grid to charge the batteries at times when demand for power is low and discharge the power when system demand is high. This provides the opportunity to study the use of bus batteries as energy storage resources available during the peak system demand in the summer. Further, this pilot would enable the collection of information related to local peak demand, which may or may not align with overall system peak.

This demonstration will seek to study both economic and technical questions, including testing vehicle battery durability, control capabilities (e.g., controlling charging, discharging, and reactive power support), and vehicle range after the

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3 The program description is available at NREL’s website: https://www.nrel.gov/solar/solar-energy-innovation-network.html.
additional charging/discharging cycles over the summer months when the batteries will have been used as grid resources. The project may help to address potential customer concerns about the use of transportation assets for grid services. It may also help demonstrate the operational viability of electric school buses, which are currently in limited use across the country.

School buses are well suited to this study because the typical driving schedule lends itself to providing benefits through use of school bus batteries as a grid resource. During the school year, the daily driving schedule enables charging primarily overnight or on the weekends during off-peak hours, which minimizes system costs for EV charging and supports greater renewable energy use and integration. During the summer months, the batteries of idle school buses could function as energy storage, serving the grid at peak periods, potentially reducing the need for local system upgrades or providing temporary back-up power to a critical customer or small area. In addition, although school buses have not been a primary focus of vehicle electrification efforts in the U.S., this market segment has the potential to provide significant environmental, public, and system benefits. The use of electric buses reduces air pollution exposure to school-age children, who are generally in close proximity to tailpipe emissions from diesel-fueled school buses.

We intend to submit our request for approval of this pilot demonstration project in a filing with the Commission in the coming months.

E. Pilot Evaluation and Stakeholder Feedback

One of the guiding principles for our EV portfolio has been to ensure transparency and measure results, and we spent significant time discussing these topics during our stakeholder workshops. Sharing results and evaluating these pilots will be important as we assess these pilot programs. We have developed a robust process for gathering feedback and input from stakeholders, ensuring transparency and sharing lessons learned, and assessing our customers’ experiences and perceptions about EVs that could lead to increased adoption. If our proposed pilots are approved, we intend to:

- **Host semi-annual advisory group meetings with support from a facilitator.** These meetings are intended to foster discussion about pilot progress, gather ideas for continuing to improve pilots as well as new initiatives, and discuss how the pilots should scale or may be redesigned.

- **Provide data on key metrics in an annual EV compliance report.** Throughout these pilots, we will provide updates on key metrics emphasized in our stakeholder
workshops in our annual June 1 EV compliance report. Key metrics for our Fleet EV Service Pilot and Public Charging Pilot are discussed in Section VIII.

- **Engage third-party evaluators to conduct an interim and final evaluation.** These evaluations of the pilots will provide information on certain metrics highlighted during our stakeholder workshops such as the customer experience, the impact pilot programs have on customer perceptions of electric vehicles, and impacts on EV adoption.

The Company estimates costs for evaluation and stakeholder feedback for the Fleet EV Service and Public Charging pilots will be approximately $600,000 over the three-year pilot term. The facilitator and third-party evaluators would be selected by the Company after the pilots are approved by the Commission.

F. Portfolio Alignment with Guiding Principles

Our full portfolio of proposed EV initiatives aligns with all of the Company’s guiding principles for the development of EV pilots:

- **Empower customers with information, tools and options:** The *Residential EV Advisor* provides digital tools to help residential customers understand how EVs fit their lifestyles. The *Fleet EV Service Pilot* provides analytics offerings designed to assist fleet operators assess the technical and economic aspects of converting fleet vehicles to electric and—along with the *Public Charging Pilot*—is designed for customer choice, enabling fleet operators to choose the chargers that best suit their needs. The *Residential EV Subscription Service* and *Smart Charging* pilots will provide residential customers with options for off-peak charging in addition to our current EV rate, EV Service Pilot, and whole-home time-of-use rates.

- **Increase access to electricity as a transportation fuel in an equitable manner:** Our *Fleet EV Service* and *Public Charging* pilots are targeting the installation of over 1,000 new charging ports across all of our Minnesota service territory. Both pilots also will support low-income communities by, among other things, enabling electric buses and a new, electric one-way car sharing service.

- **Encourage efficient use of the power grid and integrate renewable energy:** Our current EV rate and Residential EV Service Pilot, along with the planned *Residential Subscription Service* and *Smart Charging* pilots, make it easy for
customers to charge off-peak. Customers participating in the *Fleet EV Service* and *Public Charging* pilots are required to participate in time-of-use rates. Pre-qualified charging stations offered by the Company under the *Fleet EV Service Pilot* will be capable of participating in future smart-charging programs. The *V2G Demonstration for School Buses* and *Workplace Smart Charging* initiatives are intended to continue to help the Company and stakeholders assess the impacts new technologies can play to further integrate EV charging with renewables and other distributed energy resources while lowering system costs. *All current and planned initiatives* will include options for customers to participate in renewable energy programs.

- **Improve air quality and decrease carbon emissions:** *All current and planned initiatives* have been developed with the overarching objective of exploring the role of the utility in advancing electrification of the transportation sector and supporting EV adoption by customers, which ultimately can provide significant environmental benefits and support Minnesota’s environmental policy goals. Combining our renewable energy initiatives with transportation electrification can provide significant long-term benefits: A recent study by M.J. Bradley & Associates (M.J. Bradley Study) suggests that Minnesota can reduce carbon emissions by 110 million metric tons through light-duty vehicle electrification alone. These benefits are greater still as buses and other medium- and heavy-duty vehicles electrify.

- **Ensure reliability, interoperability and safety of equipment:** *All current and planned initiatives* include specific provisions to ensure continued safe and reliable provision of service and interoperability of equipment. Rigorous planning and sourcing procedures to ensure design, construction, and maintenance delivers these benefits to Minnesota.

- **Leverage public and private funding opportunities:** The *Public Charging Pilot* seeks to leverage millions in publicly available funds, including from the Minnesota’s Diesel Replacement Program funded by the VW Settlement, Federal Transit Administration, and the EPA’s CMAQ program. The pilot also will leverage additional private and public funds from site hosts who provide land and chargers in ways that maintain customer choice.

- **Provide benefits to all customers, both EV drivers and non-EV drivers:** Increased EV adoption advanced by *all current and planned initiatives* provides benefits to all customers, not just those with EVs. The M.J. Bradley Study suggests that, depending on the level of vehicle electrification in Minnesota, up
to $10.2 billion in benefits could accrue to all electric utility customers in the form of reduced utility bills by 2050.

G. Public Interest Considerations

Our portfolio of EV initiatives is reasonable and in the public interest. This portfolio approach provides the opportunity to study different EV service models, costs, and benefits. Our key objective is to generate and share significant learnings that can inform the development of EV offerings at scale, effectively maximizing the environmental and system benefits of increased EV adoption while minimizing costs.

Our EV portfolio is designed to help overcome barriers to EV adoption that a utility is well suited to address, namely, lack of awareness, high upfront costs, and sub-optimal signals for off-peak charging. The portfolio includes offerings and expands learning opportunities for a variety of market segments, both residential and non-residential. In addition, our initiatives are focused on diverse communities in our service territory, including in underserved areas. We believe it is important that EV initiatives be designed to provide access in an equitable manner and study the needs and opportunities of all communities.

Individual pilot designs draw upon work by utilities in other states and pilots approved by other state commissions, reflecting learnings from those jurisdictions. The portfolio of pilots also is informed by significant stakeholder input and enthusiasm expressed both in workshops and in comments filed in other dockets. At the same time, our pilots are limited in scale, reflecting the current level of EV adoption in Minnesota. In addition, where possible, our pilots leverage other public and private funding opportunities, helping ensure we provide the maximum benefits to our customers.

The EV pilots we propose are designed with parameters intended to balance practicality and scope, and they require commitments from participating customers that ensure protections for our other customers and the system. Limiting the scope of our pilot offerings ensures the Company can test, measure, and verify key assumptions, and then implement learnings from these smaller pilots when rolling out programs on a larger scale. Implementation of the pilots is designed to achieve learnings while minimizing potential impacts during the pilot phase.

Finally, our proposed periodic reporting of data and information on pilot operations will provide transparency on an ongoing basis. In addition, we have proposed pilot evaluation to be conducted by third-party consultants. This independent analysis of pilot results and assessment of how these pilots fare in addressing barriers to EV
adoption will provide significant information and insight into these pilot efforts for the Commission, utilities, and other stakeholders.

For all these reasons, we believe the Company has appropriately balanced these objectives in our pilot design, resulting in a portfolio of EV pilots that is reasonable and consistent with the public interest.

H. Cost-Benefit Considerations

Utility investment in EV infrastructure has the potential to provide economic and societal benefits to all customers, not just those with EVs. The benefits of EVs are documented in the M.J. Bradley Study for Minnesota,\(^4\) as well as other studies conducted for other states and regions.\(^5\) We expect that eventually, once EV programs are sufficiently developed to launch at scale, the cost of any programs will be balanced against all such benefits. At a minimum, any such cost-benefit analysis should consider the potential economic benefits of lower total energy (electricity + gasoline) bills for EV adopters themselves; economic benefits of downward pressure on rates for all ratepayers; and societal benefits from avoided carbon and other pollutant emissions. Any such tests also should focus on the ratepayer and societal costs and benefits of a utility’s entire portfolio of EV offerings, rather than considering each offering in isolation.

At this nascent stage of EV development in Minnesota, however, it is premature to adopt any strict cost-benefit or societal benefit tests. We believe it is appropriate for utilities to focus on developing EV pilots that create a pathway for capturing these benefits over time. During these early stages when EV adoption and pilot costs are modest, the Commission should measure these pilots by their ability to produce learnings, develop capabilities, and by utility efforts to maximize benefits and minimize costs while being accountable to key metrics aligned with guiding principles. The specific learnings and capabilities the Company intends to develop in connection

\(^4\) “Electric Vehicle Cost-Benefit Analysis”, filed as Appendix B with the Comments of Fresh Energy, Natural Resources Defense Council, the Sierra Club, and Minnesota Center for Environmental Advocacy

with the Fleet EV Service Pilot and Public Charging Pilots are discussed in detail below.

**VIII. EV PILOT PROPOSALS**

**A. Introduction and Background**

In this section, we request approval of two specific pilot proposals: Fleet EV Service Pilot and Public Charging Pilot. Although these are two separate pilot offerings for different market segments, there are common elements between the two pilots. As such, we present our request for approval in this single section, first discussing the fleet pilot, then the public charging pilot, followed by the common elements of rate design and tariff sheets, annual reporting, and cost recovery. Our cost recovery proposal includes our requests for approval of the specific infrastructure ownership, accounting, and waiver of certain service policy provisions we propose under the pilots.

As background to our proposed fleet and public charging pilot requests, Attachment E includes a summary discussion of the potential significant benefits of transportation electrification and the barriers to further EV adoption. Attachment E also includes summaries of dockets that have informed the development of our EV pilot offerings, including dockets approving our current EV charging rate and recently launched residential EV pilot, as well as the Commission’s inquiry into EV charging and infrastructure.

While still ongoing, the Commission inquiry has provided the opportunity for interested parties to weigh in on overall EV policy considerations, procedures, and approaches in the evolving EV market. That proceeding has been helpful in shaping our understanding of stakeholder positions as we develop EV pilot offerings, and our proposals in this current filing are consistent with our comments in that docket.

**B. Fleet EV Service Pilot**

1. **Overview**

Customers who operate fleet vehicles are a prime market segment for piloting new services for transportation electrification for reasons including the following:

- **The diversity of vehicles.** Fleet operators do not operate just light-duty vehicles, such as sedans and sports utility vehicles, but larger, medium- and heavy-duty vehicles, including delivery trucks and buses. Piloting services in this space
creates opportunities to learn more about the challenges involved in electrifying a variety of vehicle types.

- **Focus on economics.** When procuring vehicles, fleet operators generally are more motivated by life-cycle costs and project economics than are residential customers. Once the business case is established and EVs show positive economics, we believe fleet operators will begin quickly converting significant portions of their fleets to electric.

- **Opportunity to support first-movers.** In the Company’s Minnesota service territory, several fleet operators already have begun converting their fleets. Motivations include reduced greenhouse gas emissions, improved air quality, and lower maintenance costs. Recently, several of these customers have been working with the Company to explore pilot services that will enable them to convert their fleets more rapidly (see discussion in Section VIIIB3a below).

- **Size of fleets.** Piloting services for fleet operators can move the market quickly. The Company has a significant number of customers operating fleets with more than a hundred and, in some cases, thousand vehicles. By improving the project economics and supporting first-movers, the Company believes many of these customers will convert significant portions of their fleets to electric more quickly than they would have without the Company’s pilot efforts.

The Fleet EV Service Pilot will be available to non-residential customers who operate fleets that include light-, medium-, and/or heavy-duty EVs. The Company is currently working with three customers that operate large fleets and are at different stages of fleet electrification: Metro Transit, the Minnesota Department of Administration, and the City of Minneapolis. The fleet operations of these customers comprise both light-duty vehicles and medium- and heavy-duty vehicles, including buses for public transportation. We have partnered with these customers as they have worked toward transitioning their fleets. If the Commission approves our proposed Fleet EV Service Pilot, we expect these customers will enroll in the pilot service. The Company received letters of support from these customers, outlining their support for Xcel Energy’s pilot development and fleet offerings. The letters of support are provided as Attachment C.

To enable the Company to offer this pilot to these key customers and a modest number of other eligible customers, we propose total pilot funding up to $14.4 million estimated to support development of over 700 charging ports. The proposed pilot
term is three years, with customer enrollment occurring for up to three years after the pilot launch date, or until the funding limit is reached, whichever comes first.

Figure 1 below illustrates the EV charging infrastructure components and describes the key features of the Fleet EV Service Pilot.

**Figure 1: Fleet EV Service Pilot**

Advisory Services:
- The Company will provide advisory services and technical assistance to help inform fleet conversion decisions and engage potential pilot participants.

Make-Ready Infrastructure:
- The Company will install, own, and maintain a dedicated service connection for EV charging, including necessary transformer upgrades, the service conductors, and a new meter.
- The Company will install, own, and maintain the EV supply infrastructure, including new service panels, conduit, and wiring up to the charger stub, with the support of third-party contractors.
• This make-ready infrastructure will be offered to fleet operators with either light-duty or medium- and heavy-duty vehicles who are seeking to convert their fleets to electric.

**Charging Equipment:**
- Customers have the option to acquire, install, and maintain their own chargers.
- Customers may elect to have the Company acquire, install, own, and maintain the chargers for the term of the service agreement. Under this option, customers may choose to pay the installed charging equipment costs through either:
  1. an upfront one-time payment along with a monthly EV charging service charge to cover ongoing costs, including maintenance and data management; or
  2. a monthly charge for the installed charging equipment, bundled with an EV charging service charge to cover ongoing costs, including maintenance and data management.

**Rates and Service:**
- Customers will be required to take service for EV charging under the proposed Fleet EV Service Pilot tariff, which incorporates the Company’s existing time-of-use rates.
- The proposed pilot tariff also includes a minimum monthly charge based on the number of installed ports.
- Customers have the option to elect all or a portion of the supply of electricity from renewable energy resources.
- Smart charging is not required under the pilot; however, Company-owned and installed charging equipment will have demand-response capabilities allowing customers to participate in smart charging programs that would become available over time.
- Customers will sign a service agreement specifying the terms and conditions for pilot participation.

2. **Objectives and Key Learnings**

**Objectives:**
Through this pilot, the Company seeks to learn about bringing cost-effective EV service options to a new customer segment and impacts of this pilot on customer perceptions. Currently, the Company offers an EV charging rate for residential customers only and is piloting a separate Residential EV Service program. With the proposed Fleet EV Service Pilot we seek to gather data to assess non-residential fleet
customer behavior and the overall impacts of fleet charging on our system and other customers.

**Key Learnings:**
Key learnings will be derived from evaluating the cost and utilization of utility-provided EV infrastructure for light-duty vehicles and buses. Having a greater understanding of these costs can help the Company, the Commission, and other stakeholders determine what costs should be borne by an individual customer or segment of customers, and whether overall system benefits are such that it is appropriate to socialize a portion of the costs of this service to all customers.

The Fleet EV Pilot is designed to further our understanding of fleet operator needs and provide information and data to help answer key questions that include:
- What are the costs for providing these services to fleet operators?
- Will fleet operators utilize charging infrastructure sufficiently to justify the level of Company investment?
- How does the pilot affect fleet operators’ perceptions of EVs and their procurement decisions.
- Do the benefits justify costs being borne by other customers?
- How does helping lower the investment barriers faced by customers affect procurement?
- Does simplifying processes for customers to procure and install EV infrastructure encourage more EV adoption and/or support conversion at a faster pace?
- How can infrastructure and fleet services be deployed in a fair and equitable manner?
- Are the Company’s current time-of-use rate schedules sufficient to encourage off-peak charging by fleet operators?

In addition, the Company will seek to determine whether the pilot sufficiently maintains choice, of program options and technology vendors for our customers. The Company also will assess the performance of the equipment in the field to ensure continued provision of safe and reliable service.

3. **Pilot Design and Operation**

In this section we discuss details of the Fleet EV Service Pilot including a) customer eligibility and enrollment, b) ongoing customer engagement and additional enrollment, c) design and engineering, d) infrastructure services.
a) Customer Eligibility and Enrollment

Customers eligible to enroll in the Fleet EV pilot are non-residential customers who operate fleets that include light-, medium-, and/or heavy-duty vehicles. Many of these customers already are transitioning their fleets to EVs, motivated by a desire to reduce overall fleet operating costs and/or to comply with corporate, state, or municipal requirements or goals regarding greenhouse gas emissions reductions.

For nearly a year, we have engaged in significant work with three customers—our initial pilot partners—who operate large fleets and have ongoing fleet electrification initiatives. We have been working closely with these pilot partners to identify potential locations for EV fleet charging infrastructure, determine the access to existing infrastructure, and assess the vehicle use cases and charging needs at each location. Following is a high-level description of the fleet EV initiatives and infrastructure needs for these three customers:

**Metro Transit:** Metro Transit is in the process of procuring eight, sixty-foot articulated electric buses to serve the new C-Line, which will be a rapid bus line connecting Brooklyn Center and Downtown Minneapolis through North Minneapolis. Throughout Metro Transit’s evaluation of new service lines, fairness and equity have been important considerations. Metro Transit, with an awarded grant from the Federal Transit Administration, will be procuring charging equipment at two sites: a large depot garage where the buses will reside overnight and two on-route chargers at a transit center in order to ensure the buses stay charged while operating. To support this project and help defray the upfront costs of infrastructure, the Company has sought to provide make-ready infrastructure for the electric bus charging equipment. We believe it is important to provide these services on the limited basis proposed here to better understand and evaluate the Company’s suitability for providing this infrastructure for buses at scale as Metro Transit evaluates and pursues its long-term vision for advancing electrification of their bus fleet. With the C-Line planned to commence operations in 2019, we have begun some of this work to meet Metro Transit’s needs.

**Minnesota Department of Administration (MDA):** MDA coordinates enterprise fleet management and fleet sustainability of over 10,300 on-road vehicles, and directly manages over 2,500 on-road vehicles. The enterprise fleet is one of the largest in our State and the broader region. To support Governor Dayton’s Executive Order 17-12, focused on reducing greenhouse gas emissions by reducing fossil fuel consumption, the enterprise will procure and expand its fleet of EVs to at least 20 percent, or approximately 1,400 of the state’s light-duty vehicle fleet. To date, MDA has procured 90 light-duty EVs and is planning to procure more. However, one of the
major barriers to adopting EVs that MDA has encountered is the upfront cost of charging infrastructure. As part of our pilot, if approved by the Commission, we will be seeking to provide charging infrastructure for 200 ports that have been identified as near-term needs by the State.

City of Minneapolis: Minneapolis has implemented a Green Fleets Policy that includes encouraging eco-driving best practices, reducing tailpipe emissions, and purchasing, when necessary, new vehicles that provide the best available net reduction in vehicle fleet emissions.6 As of September 2018, the fleet includes two plug-in hybrid electric vehicles, three all-electric vehicles, and 71 gas hybrid vehicles. Recently, Minneapolis commissioned a study to evaluate the economics of converting its entire fleet to EVs and found that transitioning to EVs over the next decade could result in cost savings.7 Like MDA, Minneapolis has found that the upfront cost and the processes for procuring EV charging infrastructure are challenges for adoption. As part of our pilot, if approved by the Commission, we will be seeking to provide charging infrastructure for 90 ports that have been as identified as near-term needs by Minneapolis.

As noted above, the letters of support from these customers indicate their support for Xcel Energy’s pilot development and fleet offerings (see Attachment C), and we expect each of these customers will enroll in our Fleet EV Service Pilot if approved by the Commission. We believe our proposed pilot can factor significantly in the scope and timing of EV conversion for these fleets. Our pilot seeks to understand this impact and the effect of our pilot provisions on fleet decisions and operations, especially as it relates to investment in infrastructure.

Upon Commission approval and the Company’s launch of the pilot program, we will work directly with our three initial customers to begin enrollment. As noted above, with Metro Transit seeking to commence C-Line operations in 2019, we have already begun work that is necessary to support Metro Transit in meeting their implementation schedule. We expect to implement a portion of this work prior to Commission approval of our proposed pilot, because we believe it is important for the Company to help facilitate this project even though the project timing and regulatory process schedule do not align in this case. All other work under our proposed pilot will be implemented upon Commission approval and subsequent

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launch of the pilot program. In addition to assessing the impact on fleet conversion for the three expected initial participants, we seek information on how the pilot provisions affect fleet transition decisions for additional customers. To that end, we are proposing an overall budget that will allow for participation of additional customers who operate fleets (see budget details in Section VIIID6).

b) **Ongoing Customer Engagement and Additional Enrollment**

To increase customer awareness of the pilot, and promote the benefits of electrifying fleets, we will engage directly with fleet operators. Upon approval by the Commission, we intend to raise awareness of our new pilot offering and engage in outreach efforts with our fleet customers through the avenues described below.

- **Fleet advisory services.** This initiative provides information and technical assistance to help inform fleet conversion decisions and engage potential pilot participants. This year, the Company has been piloting this program, working with eleven customers (ten municipal governments and one non-profit) who operate fleets. As part of this service, fleet operators utilize telematics devices that monitor how fleet vehicles are being used and track mileage traveled, fuel efficiency and idling time. This data then is analyzed and assembled into a report and helps identify which vehicles in the customers’ fleets are best suited to be replaced with an EV model, based on operational needs and financial benefits. We implemented this pilot service in advance of filing for Commission approval of our proposed Fleet EV Service Pilot because we believed this timely and targeted effort could impact EV transition decisions of our fleet customers and would provide support for certain initiatives that were already underway.

We propose continued operation of the advisory services initiative be included under our Fleet EV Service Pilot because these services will support customers looking to procure EVs, will necessarily inform pilot operations during the pilot term, and will be instrumental in identifying additional potential pilot participants. The Company seeks to continue to assess the impacts of this service to determine whether future expansion is warranted. If the circumstance arises where the infrastructure aspects of this pilot are fully subscribed, the Company will continue to provide these advisory services in order to educate and support customers pursuing transportation electrification.
opportunities until the budget for advisory services is fully spent. (See budget details in Section VIIID6).

- **Partners, including automobile dealerships, electricians, EV charging providers, and leading customers.** Automobile dealerships, electricians, and EV charging companies have become increasingly important partners for the Company’s EV initiatives, and we will continue partnering with them to promote the pilot. We also have seen that leading fleet operators have been willing to share best practices and lessons learned for converting their fleets to electric, and these customers will be important partners for helping promote the pilot through the various EV forums in Minnesota, including Drive Electric Minnesota and Cities Charging Ahead.

- **Marketing and outreach to promote the pilot.** The Company will pursue additional outreach to engage fleet operators and encourage full enrollment, including:
  > Outreach at Company-hosted events, including round table discussions with fleet operators and meetings with customer account managers;
  > Company-hosted webinars to share information and highlight accomplishments and success stories of our fleet customers; and
  > Web and social media to increase awareness of the pilot among fleet operators.

- **Web.** The Company will rely on a website, which will include a landing page, an enrollment portal, information on the service agreement and tariffs, and a Frequently Asked Questions (FAQ) section to help increase awareness, answer customer questions, and facilitate enrollment. Customers will begin the process for enrollment by submitting an application in the enrollment portal and voluntarily providing site information for the charging infrastructure.

We expect any additional pilot participants would be identified and enrolled in the pilot as described above. Enrollment would be on a first-come, first-served basis for a period of up to three years after launch of the pilot or until the overall budget amount is reached, whichever comes first.

As part of the pilot, we seek to learn what approaches resonate the most with our customers, and we intend to survey customers and seek feedback to continue to improve customer marketing and enrollment processes for EV programs and the fleet advisory services.
c) Design and Engineering

After a customer submits their application to participate in the pilot, either an account manager or a project manager will follow up with the customer and discuss the pilot details, the number of charging stations needed to serve their fleet, and the pilot options, including charger choices and payment options.

The Company will work directly with customers to determine the infrastructure needs for each site and to identify the most suitable locations for the installation of EV infrastructure. The determination will be based on factors such as proximity to transformers, length of trenching, and available transmission and distribution capacity. Through this process, Xcel Energy, with support from third-party contractors, will estimate the cost of providing this infrastructure and complete design and engineering work for EV charging infrastructure. Once the design is complete, the Company will confirm with the customer that the site design meets their needs and is in compliance with all applicable laws, rules, and regulations.

If the customer decides to participate in the pilot, the customer and the Company will execute a service agreement. Details on the service agreements are provided in Section D.

d) Infrastructure Services

One of the primary barriers to EV conversion for fleets—especially for operators of large fleets—is the high upfront cost for the installation of infrastructure necessary for EV charging. We believe utilities can play a critical role in helping overcome this barrier. Our Fleet EV Service Pilot is designed to test that expectation by exploring Company investment in and ownership of the EV charging infrastructure and options for customers regarding ownership of the charging equipment.

We provide our request for approval of Company infrastructure ownership and specific accounting in Section VIIIIF. Below, we describe the infrastructure pilot provisions and how these infrastructure services will be provided to customers.

Make-Ready Infrastructure:
The Company proposes to install, own, and maintain the make-ready infrastructure for the new, dedicated EV service which includes everything from necessary transformer upgrades up to the charger stub (see Figure 1 above). The make-ready infrastructure consists of two segments: the service connection and the electric vehicle supply infrastructure.
• **Service Connections:** For the new service, the Company will install, own, and maintain all equipment on the utility’s traditional side of the point of connection, which includes necessary transformer upgrades, pads, poles, new service conductors, as well as metering equipment for EV charging separate from any existing service at the site. This work will be done by the Company.

• **Electric Vehicle Supply Infrastructure:** The Company will install, own, and maintain new panels, conduit, and wiring up to the charger as well as any necessary civil construction work in compliance with state and local codes. This work, which is generally beyond the traditional point of connection, will be completed by a third-party contractor overseen by the Company.

The Company will establish broad parameters to ensure that costs will be reasonable. The Company reserves the right to reject applications where equipment would be located beyond a reasonable distance from existing distribution facilities or if the cost to serve an individual site are significantly higher than the average cost for make-ready infrastructure approved as part of the program and adjusted for the number of charging ports at the site.

**Charging Equipment:**
Customers can opt to either acquire, install, and maintain their own charging equipment that complies with applicable safety standards, or select chargers from the Company’s pre-qualified list and have the Company acquire, install, own, and maintain the charging equipment for the term of the service agreement.

We believe these options recognize the differing needs of customers who operate large fleets. Some fleet operators and their organizations have access to, or supply agreements for procurement of, specific chargers. We believe it is important to preserve customer choice rather than require these customers to select and purchase charging equipment from Xcel Energy’s pre-qualified list.

The Company’s pre-qualified chargers will have been tested and comply with applicable technical and safety standards. In addition, the pre-qualified chargers will have smart charging capabilities, allowing these customers to participate in smart charging programs that would become available over time.

**Charging Equipment Payment Options:**
Customers opting to have the Company acquire, install, own, and maintain the charging equipment will have two payment options under this pilot. One option is to pay a monthly “bundled” customer charge, which includes recovery of Company-
provided charging equipment and installation costs as well as ongoing costs, including maintenance and data management. This option is available to help reduce upfront costs for the customer. Alternatively, customers can elect to pay the full cost of their charging equipment and installation up front while paying for ongoing costs on a monthly basis. These customers will then pay a reduced “pre-pay option” customer charge that excludes the installed charger cost. Customer charges for this equipment are discussed further in Section VIIID4. In either case, the Company will own and maintain the charging equipment for the term of the service agreement, allowing the Company to test the customer experience with utility ownership of the charging equipment under this pilot. Ownership and disposition of the charging equipment at the end of the pilot will be covered in the terms of the service agreement, as discussed in Section VIIID4.

**Provision of Infrastructure Services:**
Through the pilot, the Company will be responsible for the typical upgrades to install a new service connection and new metering equipment. For infrastructure beyond the traditional point of connection, the Company will select and oversee third-party contractors to perform the necessary electrical and civil work, including design, installation, and ongoing maintenance.

The Company will select third-party contractors through a competitive Request for Proposal (RFP) process for designing, installing, and maintaining the EV supply infrastructure under the pilot. The RFP will require bidders to provide proposed processes for infrastructure deployment, including preparation of architectural and engineering materials and scheduling, to help ensure the contractors are well-positioned to stay aligned with Company operations teams as well as meeting customers’ needs. The selected third-party contractors also will be responsible for commissioning the utility-owned charging stations after installation.

For technology vendors, the Company will issue an RFP to pre-qualify charging equipment, leveraging the existing functional requirements from the Residential EV Service Pilot and tailoring the requirements for fleet operator needs. Pre-qualifying equipment, as described earlier, must also be capable of participating in future smart-charging programs offered by the Company.

**Customer Costs:**
Customers opting into the voluntary Fleet EV Service Pilot will incur various costs for expenses and investments in fleet conversion efforts. These expenses include costs involved in procuring the EVs, the tariffed charges for energy usage, and the costs of the charging stations, whether the customers procure them directly or elect the
Company supplied chargers along with the Company’s prepay or monthly charge options.

4. Terms of Participation and Service Agreement

Customers participating in the EV Fleet pilot will be subject to both the terms and conditions of service included in the proposed pilot tariff as well as a service agreement that will address specific requirements and operational details under the pilot.

Terms of Participation:

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

- qualify as a non-residential customer;
- verify that they are a fleet operator who owns or leases five or more light-, medium-, or heavy-duty vehicles;
- own, lease, or operate a site that provides long dwell-time parking for fleets;
- if participant is not the owner of the premises at which the charging infrastructure is to be installed, participant must obtain express written consent from the property owner, in a form acceptable to the Company, to participate in the pilot;
- commit to installing a minimum four ports per site, or, in cases with less than four ports, a minimum of 50 kW of charging capacity;
- provide the Company with the rights-of-way across public or private property (as applicable) and permits satisfactory to the Company and obtained without cost to or condemnation by the Company, including any necessary license agreements or easements signed by the owner of the premise and approved by the Company;
- provide acceptable proof that they have purchased charging stations as well as dates for expected arrival of charging stations prior to the Company beginning deployment of make-ready infrastructure; and
- all charging-station load must be separately metered from any other load served at the premises.

We note that the Company’s own fleet will be excluded from participating in this pilot.

Site Selection. The Company will be targeting site locations with high utilization and a significant number of charging ports. However, for the pilot, we want to have data points on the costs for varying types of site locations. As a result, the Company has included only modest minimum port requirements.
Pilot Term. The pilot enrollment period will be up to three years. The term of the service agreement for customers participating in the pilot will be ten years. At the end of the term of the service agreements, customers will have the following options:

- Customers can move to different tariff, while the Company retains ownership of, and maintenance obligations for, the EV charging infrastructure for the lives of the assets. Customers would continue to provide all necessary access to the property. At the end of the depreciable lives of the assets, the Charging Infrastructure will be deemed abandoned in place in “AS IS” condition. The customers can have the Company remove any equipment at the customer’s expense.
- Customers can move to a different tariff and purchase all charging equipment and make-ready infrastructure from the Company for a cost equal to the book value of the assets at the end of the term of the service agreements.
- Customers can renew the service agreement or move to any new EV tariffs offered by the Company that are compatible with the infrastructure already in place, as determined by the Company, leaving in place all other terms of the service agreement.

Relatively, if, after the three-year pilot term, the fleet pilot is taken to scale as a program with different terms, pilot participants will be permitted to switch to the fleet tariff as modified for the remainder of their ten-year service agreement.

In the case of early terminations, customers shall pay the Company the book value of the EV charging infrastructure at the customer premises.

Customer Obligations. Participating customers agree to:

- promptly notify Xcel Energy of any problems related to the EV infrastructure of which the customer becomes aware, including in the event that charging infrastructure fails to operate or otherwise requires repair;
- maintain the area surrounding the EV infrastructure, including, but not limited to, pavement maintenance, pruning of vegetation, snow removal, and the repair of security lighting;
- remedy minor issues that do not require qualified technicians to address, such as resetting infrequently tripped circuit breakers;
- consent to and permit both Xcel Energy and any charging equipment manufacturers, vendors, or subcontractors, who provided services in connection with installing and maintaining the EV infrastructure, to access, collect, and share data from the charging equipment with respect to charging activity, vehicle usage, and technical performance for the term of the service agreement; and
• participate in customer surveys and provide feedback about the program.

**Fleet EV Pilot Service Agreement:**
Each pilot participant will sign a service agreement. If the Commission approves our proposed Fleet EV Pilot, we intend to file an example service agreement as a compliance filing prior to launch of pilot operations. We further intend to file executed service agreements (with appropriate trade secret designations) in subsequent compliance filings. Among other things described above, the service agreement will:

• specify customer commitments/terms of participation;
• govern infrastructure and technology procurement, installation, ownership, and maintenance;
• provide Company and/or third-party contractor access to equipment, and any other customer property needed to access and/or service the equipment, as necessary;
• provide terms for relocations and early terminations;
• specify end of pilot transitions and disposition of equipment/infrastructure; and
• clarify permissions for data usage.

5. **Pilot Evaluation**

Evaluation of the impacts of this pilot will focus on the items listed in the pilot objectives and metrics. The primary focus of third-party evaluation research for the Fleet EV Service Pilot will be studying the effect of the pilot on perceptions of EVs and fleet procurement decisions. In addition, the third-party evaluators will assess operational opportunities and challenges for both the Company and its fleet customers. These learnings could be shared with other fleet operators in the Company’s service territory interested in fleet electrification. Research also will be conducted to quantify the number of users (defined as either passengers or drivers for transit or workplaces vehicles) who have an increased awareness or willingness to consider an EV for personal vehicle purchase.

6. **Pilot Budget**

The Company has budgeted $14.4 million for the Fleet EV Service Pilot over the three-year pilot period. This budget is detailed in Table 1 and represents total program costs. We note that the breakdown of the budget into the subcategories below provides our current projected estimates based on installation cost assumptions and
market data. However, while the amounts may shift between categories based on actual installation costs, the total pilot budget will not exceed $14.4 million.

### Table 1

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<tr>
<th>Cost Item</th>
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*Construction management, design engineering, and legal agreement review.

### B. Public Charging Pilot

#### 1. Overview

Although public charging has seen limited deployment to date, it is critical for EV market expansion. Key reasons to support public charging include that it can:

- **Support longer distance driving.** Some public charging is needed for EV drivers to take longer trips between communities. Additionally, drivers who travel a lot of miles each day will need some public charging to enable their vehicle to operate throughout the day away from their homes.

- **Address range anxiety.** Customer studies regularly cite range anxiety as one of the most significant barriers to EV adoption. Although larger batteries help address this concern, the research literature suggests that modest investments in fast charging still will be needed.

- **Provide charging solutions for new mobility services and for those who are not able to charge at home.** There are many customers in our service territory who cannot charge at their homes for a variety of reasons—they may only have access to on-street

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parking, landlords may not have outlets in garages, or, in some cases, they may not have cars, but instead rely on ride-sharing services. With more public charging available, customers can more readily access and rely on EVs to meet their transportation needs.

To support public charging options, we have included a Public Charging Pilot in our EV portfolio. This pilot was developed to support both corridor fast charging and public charging initiatives in cities and communities by lowering the upfront costs of infrastructure installation. We note that our proposal here is for a “public” charging pilot, but this allows for both corridor fast charging (DCFC), and public charging hubs in communities that include both DCFC and Level 2. While these are both public charging installations, these sites serve different needs for EV drivers. The Company recognizes the need for prudence in developing this market, and that there may be an optimal level of public charging deployment. Without enough, adoption will likely be slowed down and may not gain traction, but with too much, there is an increased likelihood that the infrastructure will be under-utilized. There has been, however, broad alignment in our stakeholder workshops that more infrastructure is needed at this time.

This pilot seeks to study how utility investment in public charging infrastructure can help address certain barriers to EV adoption while encouraging utilization and minimizing the impacts on the electric grid. Key components of the pilot include:

- Xcel Energy investment in and ownership of the make-ready infrastructure;
- Charging equipment installed, owned, and maintained by the site host or third-party charging developer;
- Requirement for time-varying rates for EV charging; and
- Leveraging public and private funding sources for deployment of public charging.

Under this pilot, we seek to evaluate the costs and impacts of our efforts to support both corridor and community infrastructure investment by reducing upfront costs and leveraging public and private funding.

**Corridor Fast Charging Infrastructure:**
The Company proposes to make this pilot available to applicants who will invest in deploying DCFC charging stations along corridors in the Company’s service territory. The Company intends to specifically target applicants who are seeking funds from Minnesota’s Diesel Replacement Program funded by the VW Settlement and administered by the MPCA. In addition, this pilot will seek to support other site
hosts and developers utilizing other funds for public charging installation that may be available from other private and public organizations.10

Pairing such funding with Xcel Energy’s proposed investment in the make-ready infrastructure has the potential to accelerate development of fast charging along corridors in Minnesota. Customers may enroll in the Company’s pilot from 2019 to 2021 or until the funding limit is reached, whichever comes first. Customers enrolling in this pilot will be required to take service under one of the Company’s existing time-of-use rates. Customers also will sign a service agreement specifying the terms and conditions for pilot participation.

Community Charging Infrastructure:
Under this pilot, the Company proposes to partner with the cities of Saint Paul and Minneapolis to provide make-ready infrastructure for EV mobility hubs that have DCFC and Level 2 charging service.

In 2017, The McKnight Foundation enlisted the support of the Shared Use Mobility Center to study and make recommendations regarding steps they believe the Twin Cities community should take in preparation for the future. This report outlined ten strategies for the region. The cities’ EV community mobility hub project (see Figure 2 below) was contemplated and is a direct result of the fourth recommendation to Stabilize and Grow Car Sharing: “To prepare for tomorrow’s opportunities, the Twin Cities must act today to expand access to affordable, environmentally sound transportation options for all.”11

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10 Several EV charging companies, such as Chargepoint and EV Box, along with automakers, including BMW and Nissan, recently have made major commitments to invest in charging infrastructure. As part of the Volkswagen Settlement, Volkswagen also has invested $2 billion in “Appendix C” funds for its Electrify America initiative focused on building out EV infrastructure and fostering awareness.

The cities are working with HOURCAR as the anchor tenant for these mobility hubs. HOURCAR, an independent non-profit operating since 2005, is the region’s original car-sharing service and the largest non-profit car-sharing company in the U.S.

Under this project, HOURCAR will provide an expanded, all-electric, one-way car-sharing service with vehicles based at charging locations around the area.

Conceptual charging locations are shown in Figure 3 below. Xcel Energy will provide the make-ready infrastructure and service to the cities or an entity they designate. Although HOURCAR will be the anchor tenant for these mobility hubs, they also will be generally available to:

- the public, including customers who do not have EV charging at home;
- transportation network companies, such as Lyft and Uber; and
- micromobility solutions, including scooters and eBikes licensed to operate in Saint Paul and Minneapolis.
On July 13, 2018, the City of Saint Paul requested Federal CMAQ funds to purchase vehicles, charges, and operating services for this new mobility service totaling $6.7 million. The project estimate also depends on additional investment in the make-ready infrastructure for the mobility hubs. Both Xcel Energy and the City of Minneapolis provided letters of support for Saint Paul’s funding request. Under our proposed Public Charging Pilot, we would provide up to $4.8 million in capital investment in the make-ready infrastructure for the EV mobility hubs. The service could be operational as soon as 2020, but infrastructure installation is contingent on additional sources of funding.
Below we provide Figure 4, illustrating the public charging infrastructure components and describing the key features of the Public Charging Pilot.

**Figure 4**
Components of Public Charging Pilot

Make Ready Infrastructure:
- The Company will install, own, and maintain a dedicated service connection for EV charging, including necessary transformer upgrades, the service conductors, and a new meter.
- The Company will install, own, and maintain the EV supply infrastructure, including new service panels, conduit, and wiring up to the charger stub, with the support of third-party contractors.

Charging Equipment:
- Site hosts and third-party charging developers will acquire, install, and maintain charging equipment, with site hosts responsible for charger use by the public.
Rates and Service:

- Customers will be required to take service for EV charging under the proposed Public Charging Pilot tariff, which incorporates the Company’s existing time-of-use rates.
- The proposed pilot tariff also includes a minimum monthly charge based on the number of installed ports.
- Customers have the option to elect all or a portion of the supply of electricity from renewable energy resources.
- Customers will sign a service agreement specifying the terms and conditions for pilot participation.

2. Objectives and Key Learnings

Objectives:
Through this pilot, we seek to learn about the impact of Company investment in make-ready infrastructure for public charging. We seek to gather data to assess costs and usage of public charging stations under different scenarios and to evaluate the overall impacts to our system and other customers.

Our objectives for this pilot include:

- Increasing access to charging and mobility services for customers in our communities, including low-income communities;
- Helping lower the investment barriers to deployment of corridor fast charging and community mobility services;
- Increasing asset utilization through multiple uses of mobility hubs in communities;
- Leveraging public and private funding sources for both corridor and community charging;
- Maintaining customer choice, encouraging market competition, and ensuring customer protections; and
- Providing safe and reliable electric service.

Key Learnings:
Key learnings will be derived from evaluating the cost and utilization of utility-provided EV infrastructure. Having a greater understanding of these costs can help the Company, the Commission, and other stakeholders determine what costs should be borne by an individual customer or segment of customers, and whether overall benefits are such that it is appropriate to socialize a portion or all of the costs of this
service to all customers. Additionally, the Company seeks to learn whether its current rate design and service policy structure are appropriate for this service.

The Public Charging Pilot is designed to provide information and data to help answer key questions that include:

- What are the costs for providing these services to site hosts and third-party charging developers?
- What level of Company investment in infrastructure is appropriate given utilization and the benefits of public charging availability?
- How does public charging affect customers’ perceptions of EVs?
- Do the benefits of public charging justify costs being borne by other customers?
- How does helping lower the investment barriers affect deployment of public charging stations?
- Does simplifying the processes for site hosts help encourage more deployment or support deployment at a faster pace?
- Are infrastructure services being deployed in a fair and equitable manner?
- Are the Company’s current time-of-use rate schedules sufficient to encourage off-peak charging at public charging stations?

In addition, the Company will seek to determine whether the pilot sufficiently maintains choice of program options and technology vendors for our customers. The Company also will assess the performance of the equipment in the field, to ensure continued provision of safe and reliable service.

3. Pilot Design and Operation

In this section we discuss the Public Charging Pilot provisions, including a) customer eligibility and enrollment, b) development assistance, and c) infrastructure services.

As discussed above, two initiatives comprise our Public Charging Pilot: deployment of corridor DCFC and deployment of EV community mobility hubs. Key pilot provisions generally are the same under either scenario, but we note below any differences in specifics for these initiatives under the pilot.

a) Customer Eligibility and Enrollment

Corridor Fast Charging:
We intend to provide information to potential site hosts and developers, including potential applicants for EV fast charging grants as part of Minnesota’s Diesel
Replacement program, funded by the Volkswagen Settlement. The Company intends to target potential site hosts and third-party charging developers that may meet the pilot’s requirements through low-cost channels such as emails and other customer communications by the Company’s project management team. Customers also will have the opportunity to apply to the pilot, which the Company will promote on its website.

Site hosts and third-party charging developers will begin the process for enrollment by submitting an application in the enrollment portal and voluntarily providing site information for the charging infrastructure. Under the Public Charging pilot, the Company will accept applications for DCFC deployments within its service territory.

**Community Public Charging:**
As noted we have been working with the cities of Saint Paul and Minneapolis. These are the only planned participants in the community public charging portion of the pilot. Depending on the operational structure, we expect the cities (or a joint operating entity) to enroll in the Public Charging Pilot. We note that implementation of this project is contingent on approval of additional funding sources. If the other funding is not approved, the Company does not plan to move forward with this project, even if the Commission approves the pilot.

*b) Development Assistance*

For both corridor fast charging and community public charging, after a potential site host or third-party charging developer submits the application to participate in the pilot, the Company will provide additional guidance on pilot details and discuss EV infrastructure considerations. Relevant considerations including that the third party has considered electric rates as well as details of site plan, such as accessibility requirements and signage.

The Company will work directly with site hosts and third-party developers to determine the infrastructure needs for each site and to identify the most suitable locations for the installation of make-ready infrastructure. Factors to be considered include proximity to transformers, length of trenching, and available transmission and distribution capacity. Through this process, the Company, with support from third-party contractors, will estimate the cost of providing this infrastructure as well as complete the design and engineering work for make-ready infrastructure.

Once the design is complete, the Company will confirm with the site host or third-party charging developer that the site design meets their needs and is in compliance with all applicable laws, rules, and regulations. If the site host or third-party charging
developer decides to participate in the pilot, the customer and the Company will execute a service agreement. Details on the service agreements are provided in Section D. In cases where site hosts or third-party developers do not move forward and execute service agreements, they may be charged costs based on those the Company incurs in designing and engineering the make-ready infrastructure.

c) Infrastructure Services

The design of the infrastructure services provisions of our Public Charging Pilot is similar to our proposed Fleet EV Service Pilot, with provisions for Company investment in and ownership of the make-ready infrastructure, as discussed above in Section VIIIB1. Under the Public Charging Pilot, however, the Company will not own or operate the charging equipment itself. Instead, the charging equipment will be installed, owned, and maintained by site hosts and third-party charging developers.

Our request for approval of Company infrastructure ownership and specific accounting is provided in Section VIIIIF. Below, we describe the pilot provisions related to charging equipment and how the infrastructure services will be provided to customers participating in the Public Charging Pilot.

Charging Equipment:
Under this pilot, the Company will not own or operate the charging equipment itself. The charging equipment will be installed, owned, and maintained by the site hosts and third-party charging developers, who also will be responsible for charger use by the public.

All DCFC charging stations must meet various technical standards, in line with requirements for Minnesota’s Diesel Replacement program, which currently includes coming with a five-year warranty and meeting the minimum requirements for safety testing by a Nationally Recognized Testing Laboratory (NRTL) recognized by the Occupational Safety and Health Administration (OSHA). Charging stations must use both CHAdeMO and SAE CCS charging connector standards to maximize usefulness to all drivers. Chargers must be capable of charging at 50 kW or greater.

For community public charging stations, there will be mobility hubs that only include Level 2 charging and comply with applicable safety standards. These hubs will include multiple ports to enable access for HOURCAR as well as other EV drivers, including drivers for transportation network companies (e.g., Lyft and Uber), and residents in multi-family homes without charging access.
The Company has not provided estimates for the cost of these chargers because that will be borne directly by customer site hosts and third-party charging developers.

**Provision of Infrastructure Services:**
The Company will design, install, own, and maintain the make-ready infrastructure in coordination with the site host or third-party charging developer. Important roles will include, but are not limited to, managing site evaluations and construction as well as handling all aspects of customer management and collaborating with service providers.

Infrastructure installation and maintenance under this pilot is the same as described for the fleet pilot in Section VIII3C above. The Company will select third-party contractors through a competitive RFP process for designing, installing, and maintaining the EV supply infrastructure under the pilot. The RFP will require bidders to provide proposed processes for infrastructure deployment, including preparation of architectural and engineering materials and scheduling, to help ensure the contractors are well-positioned to stay aligned with Company operations teams as well as meeting customers’ needs.

The Company will ensure site hosts and third-party charging developers will be installing charging stations. Prior to beginning deployment of make-ready infrastructure, site hosts will be required to provide acceptable proof that they have purchased, as well as dates for expected arrival of, charging stations prior to the Company beginning deployment of make-ready infrastructure.

We note that for design and engineering of the community mobility hub infrastructure installation, the Company will be working with the cities of Saint Paul and Minneapolis (or their operating entity) to identify appropriate sites, considering distribution system and grid impacts as well as equity and expected site utilization.

**Customer Costs:**
Site hosts and third-party charging developers opting into the voluntary Public Charging Pilot will incur various expenses. These expenses include the tariffed charges for energy usage, and the costs of the charging stations.

4. **Terms of Participation and Service Agreement**

Customers participating in the Public Charging Pilot will be subject to both the terms and conditions of service included in the proposed pilot tariffs as well as a service agreement that will address specific requirements and operational details under the pilot.
Terms of Participation:

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

- qualify as a non-residential customer;
- own or lease the participating site, or be the customer of record associated with the premise meter, where the charging stations will be deployed;
- provide express written consent, in a form acceptable to the Company, from the participating site’s owner to grant the Company appropriate real property rights and continuous access to make-ready infrastructure installed, owned, and maintained by the Company, including any necessary license agreements or easements signed by the owner of the premise and approved by the Company;
- agree to take service on an eligible time-of-use rate;
- ensure all charging station load is separately metered from any other load served at the premises;
- provide acceptable proof that they have purchased charging stations as well as dates for expected arrival of charging stations prior to the Company beginning deployment of make-ready infrastructure; and
- install charging stations that meet various technical and safety standards (DCFC charging equipment must be in line with requirements for Minnesota’s Diesel Replacement program).

Site Eligibility. Eligible sites must:

- be located in the Company’s service territory and on corridors or in high utilization areas, as determined by the Company;
- install at least one DCFC charging station, or, for community mobility hubs, four Level 2 charging station ports;
- plan to install charging stations in public places that generally allow for continual access;
- meet certain minimum safety, accessibility, convenience, and reliability requirements; and
- include an appropriate location to deploy charging stations in a cost-effective manner, based on factors such as proximity to transformers, length of trenching, available transmission and distribution capacity, and ease of access for EV drivers, as determined by the Company in its sole discretion.

Pilot Term. The pilot enrollment period will be up to three years. The term of the service agreement for site hosts and third-party charging developers participating in the pilot will be ten years. At the end of the term, customers will have the following options:
• Customers can move to a different tariff, while the Company retains ownership of, and maintenance obligations for, the EV charging infrastructure for the lives of the assets. Customers would continue to provide all necessary access to the property. At the end of the depreciable lives of assets, the Charging Infrastructure will be deemed abandoned in place in “AS IS” condition. The customer can have the Company remove any equipment at the customer’s expense.

• Customers can move to a different tariff and purchase all make-ready infrastructure from the Company for a cost equal to the book value of the assets at the end of the term of the service agreements.

• Customers can renew the service agreement or move to any new EV tariffs offered by the Company that is compatible with the infrastructure already in place, as determined by the Company, leaving in place all other terms of the service agreement.

Relatedly, if, after the three-year pilot term, the Public Charging Pilot is taken to scale as a program with different terms, pilot participants will be permitted to switch to the public charging tariff as modified for the remainder of their ten-year service agreement.

In the case of early terminations, Customers shall pay the Company the book value of the EV charging infrastructure at the Customer premises.

**Customer obligations.** Participating site hosts and third-party charging developers agree to:

• provide public access to the charging stations, but the site hosts and third-parties may determine EV charging fees at their discretion;

• promptly notify Xcel Energy in the event that charging infrastructure fails to operate or otherwise requires repair;

• guarantee safe and reliable charging equipment operation for the lifespan of the equipment;

• consent to and permit both Xcel Energy and any charging equipment manufacturers, vendors, or subcontractors, who provided services in connection with installing and maintaining the EV infrastructure, to access, collect, and share data from the charging equipment with respect to charging activity and technical performance, including number of charging events, times, and duration;

• maintain the area surrounding the EV infrastructure, including, but not limited to, pavement maintenance, pruning of vegetation, snow removal, and the repair of security lighting; and
• consent to participate in customer surveys and provide feedback about the pilot.

Public Charging Pilot Service Agreement:
Each pilot participant will sign a service agreement. If the Commission approves our proposed Public Charging Pilot, we intend to file an example service agreement as a compliance filing prior to launch of pilot operations. We further intend to file executed service agreements (with appropriate trade secret designations) in subsequent compliance filings. Among other things, the service agreement will:
• specify customer commitments/terms of participation;
• govern infrastructure procurement, installation, ownership, and maintenance;
• provide Company and/or third-party contractor access to equipment, and any other customer property needed to access and/or service the equipment, as necessary;
• provide terms for relocations and early terminations;
• specify end of pilot transitions and disposition of equipment/infrastructure;
• clarify permissions for data usage; and
• detail the operational and cost data and other information the customer will provide to the Company to facilitate pilot assessment and learnings;

4) Pilot Evaluation

Third-party evaluation of the impacts of this pilot will focus on providing insights regarding the effect that public charging infrastructure has on customers’ perceptions of electric vehicles. Research also will examine the factors that site hosts believe are responsible for expansion of regional EV infrastructure, including pilot and non-pilot factors. As resources allow and contact information is available, Xcel Energy, with support from third-party evaluators, would study customer charging behavior and evaluate operational opportunities and challenges for both the Company and site hosts and third-party charging developers.

5) Pilot Budget

The Company’s budget for the Public Charging Pilot is $9.2 million over the three-year pilot period. This budget is detailed in Table 2 and represents total program costs. We note that the breakdown of the budget into the subcategories below provides our current projected estimates based on installation cost assumptions and market data. However, while the amounts may shift between categories based on actual installation costs, the total pilot budget will not exceed $9.2 million.
Table 2

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*Construction management, design engineering, and legal agreement review

D.  Rate Design and Pilot Tariffs

Customers enrolling in either our Fleet EV Service Pilot or Public Charging Pilot will take service for EV charging under the respective proposed pilot tariffs. Our proposed Fleet EV Service Pilot and Public Charging Pilot tariffs are provided in Attachment F.

Key features of the pilot tariffs include:

- **Time-of-use rates** – reflecting the same on-peak and off-peak energy and demand rates, and the monthly customer charge, as in our current non-residential demand metered General Time of Day Service tariff.
- **Minimum monthly bill** – based on the number of ports installed under the pilot.
- **Optional Charger Service** – applicable to the Fleet EV Service Pilot only.

The Fleet EV Pilot Tariff provides for the optional EV Charger Service for those fleet pilot participants who elect to have the Company procure, install, and maintain the chargers for the term of the service agreement.

**Time-of-Use Rates:**

The rate structure for these pilots promotes off-peak charging through the requirement that participating customers take service for EV charging under proposed pilot tariffs, which incorporate the Company’s existing time-of-use rates in our General Time of Day Service tariff. The pilot tariffs also reflect the monthly customer charge for the General Time of Day Service tariff.
Our current time-of-use rates and the associated customer charge are appropriate for service under this pilot, because this pilot is not intended to study new rate design. Rather, this pilot will help the Company understand the cost of providing the make-ready infrastructure service, the utilization of these facilities, and the extent to which costs are recovered through the rates for service under the pilots. We intend to report this information in our annual reports as described in Section VIIIE.

**Minimum Monthly Bill:**
The Company proposes a tiered monthly minimum charge based on the number of EV charging connections or “ports” for both the Fleet EV Service Pilot and Public Charging Pilot. The tiered charges result in a per-port monthly minimum charge range of approximately $8 to $15 in most instances. Each port provides a service connection to charge an EV, and a fleet EV charger typically has two ports. The Company proposes this minimum monthly charge will be effective two years after launch of the pilot program. The purpose of the minimum bill is two-fold. First, it is intended to mitigate potential stranded asset costs should participating customers materially underutilize the facilities provided for under this tariff. Second, the minimum bill provides pilot participants a price signal to operate their electric vehicle fleet since a participant’s incremental cost of operating the fleet is effectively reduced by the monthly minimum bill amount. Overall, the Company’s intent is to provide the fleet and public charging pilot programs price signals and its other customers with protections that produce healthy pilot programs which will help inform further development of these services.

**Optional Charger Service:**
The proposed Fleet EV Service Pilot tariff also provides for the EV Charger Service for those fleet pilot participants who elect to have the Company procure, install, and maintain the chargers for the term of the service agreement. Participating customers have the following EV Charger Service options:

- Customers opting to have the Company acquire, install, and maintain the charging equipment, and who select the “bundled” option, will pay a monthly EV Charger Service charge. The cost of the EV Charging Service will equal the levelized cost of providing, operating, and maintaining the charging equipment and recovery for Company provided and installed charging equipment.
- Customers opting to have the Company acquire, install, and maintain the charging equipment, and who select the “pre-pay” option, will be billed a one-time upfront charge for the installed charger costs. The monthly charge will include the costs of maintaining the charging equipment, but will exclude recovery for Company provided and installed charging equipment, which
recognizes the customer’s upfront payment for the installed charging equipment.

- Instead of selecting the Company’s optional Charger Service, customers may opt to acquire, install, and maintain their own chargers. In such cases, no EV Charging Service rate would be included on the customers’ bills.

The Company will issue an RFP for qualifying chargers. Based on industry data, the Company expects the cost of a pedestal mount fleet charger to be several thousand dollars. With prices changing as this market is evolving, we believe selecting qualifying chargers closer to the time this equipment will be installed will allow us to pursue competitive pricing for our customers. Additionally, this component is optional under our proposed tariff and pilot participants may opt to acquire, install, and maintain their own chargers if more favorable pricing is available to them. Once we have identified the qualified chargers, we will determine the monthly EV Charging Service charges based on the cost of the charger as well as installation, operating, and maintenance costs. The Company will provide a supplement to this filing with the charger costs and monthly EV Charging Service charges once the qualified charging equipment has been identified.

E. Annual Reporting

To answer key questions and assess the overall programs and individual provisions of both the Fleet EV Service Pilot and Public Charging Pilot, the Company will track all cost and usage information for the pilot participants. We propose to report information in our June 1 annual report provided to the Commission in the dockets related to our current EV residential rate (Docket No E002/M-15-111) and our recently launched residential EV pilot (Docket No. E002/M-17-817). Below we list our proposed metrics for the Fleet EV Service Pilot and Public Charging Pilot. We intend to report the data related to these metrics in our annual June 1 reports.

Fleet EV Service Pilot Metrics:

- Evaluating the cost to deploy charging infrastructure on a per port basis, including:
  - program implementation;
  - installation costs (including EV service connection, EV supply infrastructure, and EV charging equipment); and
  - customer service and technical assistance needs.
• Assessing the utilization of charging infrastructure, including:
  > sales on a per port basis;
  > number of vehicles, reported by the customer, utilizing the infrastructure; and
  > total load and non-coincident peak load of combined charging stations.
• Monitoring the proportion of charging that occurs off-peak, including coincident peak demand, summer and winter, of combined charging stations.
• Number of participants and location of fleet sites in the pilot.
• Avoided greenhouse gases and other pollutants, estimating emissions for metered consumption compared against equivalent gas alternative emissions.

Public Charging Pilot Metrics:
• Cost to deploy make-ready infrastructure on a per port and station basis, including:
  > program implementation;
  > installation costs (including EV service connection and EV supply infrastructure);
  > dollars of public and private funds being leveraged; and
  > customer service and technical needs.
• Assessing the utilization of charging infrastructure that receives make-ready infrastructure support, including:
  > sales on at the meter for the new EV service and an average per port or station;
  > number of charging events, times, and duration; and
  > total load and non-coincident peak load of combined charging stations.
• Monitoring the proportion of charging that occurs off-peak, including coincident peak demand, summer and winter, of combined charging stations.
• Number of participants and location of public charging sites in the pilot
• Estimate for dollars of public and private funds being leveraged.

F. Cost Recovery Request

As noted above, we propose to (1) record the Company’s capital investments in the EV infrastructure as utility plant assets, for which cost recovery would begin via inclusion of these investments in rate base in our next rate case; (2) waive service
policy provisions governing Contributions In Aid of Construction (CIAC) and other customer contributions; and (3) defer expenses related to these pilots via our existing EV tracker account, to be recovered in the Company’s next rate case. In this section, we provide reasons we believe this treatment and cost recovery is appropriate for the Company’s proposed pilots, and we detail the specific approvals needed for this treatment. These approvals include the following:

**Approval of Proposed Accounting:**
- We request the Commission approve the use of utility distribution plant accounts to record all investments in the make-ready infrastructure under these pilots, and the optional charging equipment under our fleet pilot. We also request approval to record pilot expenses as identified in Section VIII F1 below.

**Waiver of Service Policy Provisions:**
- We request the Commission approve Company ownership of the make-ready infrastructure components installed up to the stub of the charger under these pilots and the optional charging equipment under the fleet pilot.
- Consistent with the stated objectives of the pilots, we request Commission approval to waive the service policy provisions for CIAC and other customer contributions for the EV make-ready infrastructure for pilot participants.

**Deferred Accounting for Pilot Expenses:**
- We request Commission approval to defer pilot expenses in our EV tracker account established in Docket No. E002/M-15-111. This includes deferral of depreciation expense related to the capital investments in the make-ready infrastructure and O&M expenses associated with the pilots.

1) **Approval of Proposed Accounting**

As noted above, we propose recovery of the capital investments in the make-ready infrastructure under both the Fleet EV Service Pilot and Public Charging Pilot through inclusion in rate base in our next rate case. To allow the Company to include the infrastructure investments under these pilots in rate base, we request Commission approval to record these capital investments in Electric Distribution Plant FERC accounts.

Additionally, under the Fleet EV Service Pilot, we request approval for Company ownership of the charging equipment for customers who opt to select chargers from the Company’s pre-qualified list and have the Company acquire, install, own, and maintain the chargers for the term of the service agreement. We also propose to
record these capital investments in FERC distribution plant accounts, and we intend to include these investments in rate base in our next electric rate case.

We request approval to defer the following via our established EV tracker:
- O&M expenses associated with our proposed pilots; and
- depreciation expense related to the capital investments in the make-ready infrastructure.

The Company would record the O&M expenses in FERC account 182.3 Other Regulatory. We propose to request recovery of these costs in our next general rate case, over an amortization period to be determined in that case. The Company would also record the deferred depreciation on the capital investments in FERC account 182.3 Other Regulatory. We propose to request recovery of these deferred amount in our next general rate case. Further support of our deferral request is included in Section VIIIIF3 below.

2. Waiver of Service Policy Provisions

Customer and Company Ownership Provisions

Although utility ownership and rate base treatment would be normal for a portion of the make-ready infrastructure, the Company requests Commission approval for utility ownership of the portion of the infrastructure that typically would be paid for and owned by the customer under the service policy provisions in Section 6 of our tariff. Section 6 identifies the ownership division as the “point of connection,” which for our non-residential customers can vary depending on the service provided, location, and equipment installed. For the pilots proposed in this petition, the Company is proposing to own property beyond the traditional point of connection. Thus, we request Commission approval of Company ownership of all make-ready infrastructure installed under the pilots and optional charging equipment installed under our proposed fleet pilot.

Allowing the Company to invest in and own this EV infrastructure under these pilots addresses the key barrier to EV adoption of the high upfront costs of EV infrastructure, which will enable key learnings around the provision of EV service for fleets and public charging. We believe utility investment in and ownership of the EV infrastructure is appropriate given the conservative investment amounts under our proposed pilots. This treatment will enable pilot learnings that will inform the design of potential future service offerings at scale.
CIAC and Other Customer Contribution Provisions

We request Commission approval of a waiver of CIAC requirements for the dedicated EV service connection required under this pilot. Specifically, for participating customers, we request waiver of the Standard Installation and Extension Rules on Tariff Sheet Nos. 6-23 to 6-27, Section 5.1(A)(1)(b), Section 5.1 (A)(2) and (3), and Section 5.2, specifying CIAC and other customer contributions for non-residential customers. The calculations under the existing CIAC rules, which are based on costs and expected revenue, can result in a customer bearing a portion of the costs of the service connection installation. We have included a provision reflecting the waiver of CIAC on each of the proposed pilot tariff sheets (see Attachment F).

We believe it is appropriate to waive any CIAC requirements for installation of the dedicated EV service necessary under this pilot. First, the pilot is designed to lead to key learnings about this service model at scale. The pilot seeks data on costs to deploy the EV charging infrastructure and on usage to inform future estimates of revenue from EV fleet operations, which in turn will inform our assessment of the appropriate level of infrastructure investment. Our current service policy provisions include CIAC calculations that have been thoroughly tested and designed for general provision of service. The same is not true for EV service. Because we are only beginning to study EV usage and charging, we do not yet have information to form accurate estimates of expected usage and revenue under these pilots, and it is not reasonably feasible at this time to attempt to calculate an appropriate amount of customer contribution for this service. We believe it is appropriate for this Fleet EV Pilot to run its course to help determine whether specific service policy provisions for fleet electrification are warranted.

Second, requiring CIAC would be contrary to a primary objective of this pilot: helping overcome the key barrier of the high upfront costs for fleet conversion to EVs. Third, we believe the small size of the pilot and the amount budgeted for capital investment in the service connection infrastructure significantly limits any harm to other customers because the costs borne by other customers would be minimal in this case.

The pilot will provide the data and information necessary to assess this service model and its impact on EV adoption for fleets, as well as overall impacts and benefits to the system and other customers. As noted earlier, we intend to track and report all cost, usage, and revenue data under this pilot, providing transparency for assessment of the pilot, and specifically to determine whether the waiver of CIAC is warranted for this offering at scale.
For these reasons, we believe it is appropriate for the Commission to grant waiver of CIAC requirements for the dedicated EV service connection required under this pilot.

3. **Deferred Accounting for Pilot Expenses**

As noted above, we request Commission approval to defer expenses related to our proposed EV pilots via the tracker account that was initially established in Docket No. E002/M-15-111 for communication costs related to our residential EV rate under Minn. Stat. § 216B.1614 (the EV Statute). The Commission subsequently approved the expanded use of the EV tracker account to defer certain costs under our residential EV pilot in Docket No. E002/M-17-817. We propose expanding the use of the EV tracker account to defer pilot costs described in this filing until the Company’s next rate case.¹²

We believe continued and expanded use of this EV tracker account to defer pilot expenses is appropriate because it provides the Company with the ability and incentive to proceed with innovative EV pilot efforts in a timely manner and support EV projects of our customers that already are underway. The Company currently is in a multi-year rate plan, and the costs and investments related to our proposed EV pilots are not included in that plan. The significant level of interest and support for EV projects we have witnessed in our stakeholder meetings and in comments in Docket No. E999/CI-17-879, among other places, was not envisioned at the time of our last rate case. As the EV market evolves due to technology advances and increased EV adoption, we are working to bring forth pilot programs to enable key learnings that will create a platform for providing EV offerings at scale. Establishing a framework that signals the Commission’s support for the Company’s ability to recover these costs is an important factor that will influence the level of investment and speed of development of pilot offerings.

We propose to defer both the O&M expenses related to the individual pilots and the depreciation expense related to capital investments presented in this filing. For O&M costs, we propose to defer these expenses and will request recovery in our next rate case, with an appropriate amortization period to be determined in that case. For capital expenditures, we propose to defer the depreciation expense for any capital assets put into service until our next general rate case. As noted above, recovery of capital investments in our next rate case would occur via inclusions in rate base of the investments as of the inservice dates of facilities. We believe deferral of the

¹² In the event that the Commission establishes through this or another EV-related docket that a separate mechanism is appropriate for recovery of EV program costs, the Company may file for recovery of the deferred EV costs through such a mechanism outside of a rate case.
depreciation expense is appropriate because the Company’s investments in EV pilot programs, at the urging of the Commission and other stakeholders, is outside the Company’s historical course of business. Deferring depreciation expense will effectively avoid recovery lag associated with these investments.

The Commission has broad authority under Minn. Stat. Section 216B.10, and Minn. Rule 7825.0300, subp. 4, to grant accounting exceptions, such as deferrals, for “good cause shown.” Although exceptions for deferred accounting traditionally have “been reserved for costs that are unforeseeable, unusual, and large enough to have a significant impact on the utility’s financial condition,” the Commission also has approved deferred accounting “when utilities have incurred sizeable expense to meet important public policy mandates.”\footnote{In the Matter of a Petition for Approval of Deferred Accounting Treatment of Costs Related to the 2016 Storm Response and Recovery, Docket No. E015/M-16-648, Order Denying Petition for Deferred Accounting Treatment (January 10, 2017), at 4; see also In the Matter of the Application of N. States Power Co. d/b/a Xcel Energy for Auth. to Increase Rates for Elec. Serv. in Minnesota, Docket No. E002/GR-08-1065, Findings of Fact, Conclusions of Law, and Order (October 23, 2009), at 33 n.19 (same, citing In the Matter of Northern States Power Company d/b/a Xcel Energy’s Petition for Approval of Deferred Accounting for Costs Incurred for the Web Tool and Time-of-Use Pilot Project, Docket No. E002/M-03-1462, Order Approving Deferred Accounting (February 25, 2005) at 7-8).} We believe this latter standard applies to and supports our requests in this Petition.

For pilot projects like those proposed here, the Commission previously has approved deferred accounting as being in the interest of important public policy. For example, in Docket No. E-002/M-03-1462, the Commission approved deferred accounting of $2,469,247 in costs incurred by the Company in developing a time-of-use pilot project.\footnote{In the Matter of Northern States Power Company d/b/a Xcel Energy’s Petition for Approval of Deferred Accounting for Costs Incurred for the Web Tool and Time-of-Use Pilot Project, Docket No. E002/M-03-1462, Order Approving Deferred Accounting (February 25, 2005).} Even though the Commission ultimately declined to approve the proposed pilot, it permitted deferred accounting of the costs incurred pursuing the pilot recognizing that “denying the deferred accounting to Xcel would have a chilling effect on other companies’ willingness to work with the Commission in the pursuit of new ideas.”

Deferred accounting for the pilot costs proposed here, similarly, should be approved in order to support the pursuit of new ideas for EVs in Minnesota. The Commission has recognized the potential for rapid EV penetration in Minnesota “as car and truck manufacturers release new, cost-effective models,” and the “substantial[] impact” a “significant increase in EV charging” could have on Minnesota’s electrical system.\footnote{In the Matter of a Commission Inquiry into Electric Vehicle Charging and Infrastructure, Docket No. E999/CI-17-879, Notice of Commission Inquiry Into Electric Vehicle Charging and Infrastructure (December 28, 2017), at 1.} The pilots proposed in this petition are designed to support the important public
policies underlying EV development by analyzing: (1) the development of EV charging infrastructure; (2) support for various segments of customers acquiring EVs; and (3) innovative means to optimize the timing of EV charging and renewable integration.

The EV tracker account is an appropriate vehicle for tracking the deferral of EV pilot costs. Although the EV tracker account initially was established to track the deferral of communication costs related to the Company’s EV tariff, nothing in the EV Statute or the Commission’s precedent disallows use of the EV tracker account for deferral of other costs related to EV pilot programs. In fact, the Commission has already expanded the use of the tracker account to include the deferral of communication costs related to the Company’s residential EV pilot.

Finally, we recognize that deferred accounting treatment may not necessarily work for EV programs or offerings at scale. As the EV market matures, EV infrastructure investment and related O&M expenditures likely will be included in a utility’s general capital and O&M budgets. For now, however, we believe the deferral we propose here is appropriate for the scope and scale of our pilot programs. To support the Commission’s consideration of each pilot’s specific deferral request, for each individual pilot we bring forward, we have included projected budgets for both capital and O&M for the pilot term.

For these reasons we believe it is appropriate for the Commission to approve deferral of our EV pilot expenses as we propose.

**IX. EV AWARENESS, EDUCATION, AND OUTREACH**

Over the last year, the Company has expanded its mass-market electric vehicle advisory efforts. We focus on awareness, outreach, and education. These efforts span multiple communication channels including sponsorship of community events, digital media, and traditional media channels like radio and print, and engagement with trade partners.

Although many customers have general familiarity with EVs, many are not aware of all the facts and benefits of driving electric. Our strategies build EV awareness and promote Xcel Energy’s programs through a number of different channels that are convenient and understandable.

EV-related print and updated web content serve as educational pieces for customers that align with our service offerings. The Company also connects directly with customers through community events which enable education through open dialogue.
Event presence provides the opportunity to share EV information while gathering feedback and learning more about customer perceptions of EVs. Finally, Xcel Energy has promoted its EV driver options to the auto industry and to electricians who install EV chargers.

One specific example of the Company’s expanded advisory efforts for EVs is its development of an online EV advisor tool (EV Advisor) that is designed to be integrated into the Company’s website. The EV Advisor will provide customers with information on what EV options are best for them and the benefits of EVs. The EV Advisor and the Company’s other efforts are described in greater detail below. The Company will continue to track the costs for all awareness, education, and outreach efforts, including those discussed below, in the tracker account established in Docket No. E002/M-15-111 related to our residential EV rate under the EV Statute.

A. **Overview of General EV Awareness, Education, and Outreach Efforts**

1. **Public Events**

Xcel Energy participated in a variety of community events over the past few years. These included large-scale premier showcase events like the Twin Cities Auto Show in Minneapolis in March 2018 and targeted sustainability events like the Energy Fair in Saint Paul in September 2017. The Company also targeted direct customer outreach at local community events like the Eden Prairie Green Fair.

Additionally, Xcel Energy participated in multiple membership meetings and workshops with local stakeholders like Drive Electric Minnesota and the Midwest EVolve campaign with the Twin Cities Clean Cities Coalition. The Company selects events strategically to engage relevant audiences and to align with allies who also support the increased adoption of electric vehicles.

In 2018, the Company has participated in, or plans to participate in, ten community events and one industry luncheon to directly engage with members of the public on the benefits of EVs. The Company estimates that it will have spent $43,000 on this community outreach in 2018. As documented in Table 3 below, the Company has budgeted approximately $143,000 over the next three years for continued involvement in public events and other outreach.

2. **Advertising, Branding, and Media**

Another focus of the Company’s efforts to engage and inform customers about the benefits of EVs is through traditional and digital advertising and media buys.
The Company spearheaded a significant new educational initiative this year, creating two short animated videos to introduce the benefits of clean transportation options. We leveraged our digital media strategy to drive video views through search-engine marketing and social-media posts directing viewers to the video and the Company’s online resources for EV information.

Each month, Xcel Energy picked a timely topic to share real-world experiences and lessons about driving and charging electric vehicles on the Xcel Energy ConnectBlog. The blog provides digestible information in a familiar tone on topics including home and business energy solutions, clean energy, and more. For example, in September 2018, the ConnectBlog featured an EV Myth story that addressed common myths about EVs. The Company promotes EV content in the ConnectBlog through social media links and email notification opportunities. The Company also fields questions on EVs directly from customers through a dedicated email address, ElectricVehicles@Xcelenergy.com, and its call center, where employees have been provided with training to assist customers with EV-specific inquiries.

The EV webpages on xcelenergy.com inform and educate customers about electric vehicles. The content includes information on types of EVs, charging at home, and available rate options. Customers also can find an interactive map of public chargers, an archive of ConnectBlog articles, and an FAQ page. The main EV landing page can be accessed through www.Xcelenergy.com/EV.

In 2018, the Company estimates it will have spent $76,000 on various advertising, brand, and media expenses. These include the efforts discussed above, as well as social media advertisements through Facebook and Instagram, and search-engine optimization with Google and Bing. As documented in Table 3 below, the Company has budgeted approximately $381,000 over the next three years for continued advertising spend through these and other channels.

3. Collateral and Promotional Items

In connection with promoting EVs, the Company has created a variety of pieces of collateral and other promotional items. These include brochures discussing the benefits of driving an EV and the Company’s rate options for EV drivers, as well as EV-specific banners for use at events and other instances of public outreach. The Company estimates that it will have spent $7,000 in 2018 on such material. As documented in Table 3 below, the Company has budgeted approximately $38,000

16 The videos can be viewed at: https://www.youtube.com/watch?v=4F1IrBTRvJw.
over the next three years for the creation of additional collateral and promotional items.

4. Auto Dealer and Electrician Trade Partners

Sellers of EVs are a key information resource for consumers to learn not only about EV models, but also other aspects of the EV experience, including charging options, electricity rates, and renewable offerings. Not all auto dealers, however, are knowledgeable about these topics. In 2018, Xcel Energy worked with a third party to establish partnerships and complete training events with auto dealers in Minnesota. To date, 65 dealerships have been contacted in the Company’s Minnesota service territory. The Company is committed to maintaining a strong relationship with the auto-dealer community in order to provide a positive customer experience from point of sale to charging at home. Communication with dealers is important to ensure that customers receive accurate information about charging options and electric costs at the point of sale of their vehicles. We will continue to conduct sales-team trainings, public education about charging and rate options, and other coordinated EV education and promotion efforts with this trade-ally segment.

Working in parallel with our auto-dealer outreach strategy, we have created an EV Trade Partner Network for electricians who are interested in installing EV equipment and associated components. The Company added electricians to its EV Trade Partner Network who completed a training in 2018. The training included information about the EV market, Xcel Energy rates and renewable programs, and specific metering standards and considerations. Electricians have access to the resources covered in the training and can further join the trade network at www.XcelEnergy.com/EVTrade. Collaboration with this trade ally segment has allowed for improved customer communications and strategies. Customers can view a list of EV electricians to aid home charging installations at www.xcelenergy.com/HomeCharging.

In 2018, the Company estimates that it will have spent $37,000 on auto-dealer and electrician outreach, training, and partnership efforts. As shown in Table 3 below, the Company has budgeted approximately $191,000 over the next three years for continued outreach to and partnership with auto dealers and electricians.

B. EV Advisor Online Tool

In addition to the general EV awareness, education, and outreach efforts described above, we are developing the EV Advisor to be available as a widget on Xcel Energy’s website. We expect to implement the first phase of the EV Advisor in December 2018. The EV Advisor will expand the availability of general EV information for our
residential customers. We believe including this initiative as part of our EV portfolio is important to help increase EV awareness and understanding of options for our residential customers.

In the first phase of its development, the EV Advisor widget will provide customers with recommendations, in the form of a score, about how well they match certain EV options. The recommendations will be based on answers provided by the customers to a series of lifestyle questions. Once the scores are calculated, customers will be able to view the details behind their scores in order to get a better understanding of why they are or are not a good candidate for EVs.

Additionally, the EV Advisor will include content to educate consumers on EVs, including information about:

- EVs available in the market;
- Environmental impact of EVs;
- Costs and benefits of EVs, including about fuel and maintenance costs;
- Available incentives for purchasing or driving an EV; and
- Rate recommendations.

After answering the questions in the EV Advisor, this content will be personalized. An example of what some of this content could look like is included in Figure 5 - below.

Figure 5: Sample Content for EV Advisor On-line Tool

The first phase of the EV Advisor’s development includes a one-time setup fee and annual license fees. The Minnesota portion of the setup fee is $70,000. These costs are consistent with what other utilities have paid to develop similar online tools, as
well as what Xcel Energy paid to develop its Renewable Choice online tool: [https://www.xcelenergy.com/programs_and_rebates/residential_programs_and_rebates/renewable_energy_options_residential](https://www.xcelenergy.com/programs_and_rebates/residential_programs_and_rebates/renewable_energy_options_residential). Because the EV Advisor is a company-wide tool that will be available to Xcel Energy customers outside of Minnesota, only the costs attributable to Minnesota will be included in the tracker account.

Following the first phase of the EV Advisor, we will continue to expand its capabilities by increasing the personalization of EV information offered to customers. This may include the addition of EV materials on the Xcel Energy mobile app, creating deeper customer-specific data, adding EV-specific devices to the storefront, and providing post-purchase content to support the needs of customers. Any such projects in the future will be competitively bid to ensure the Company obtains the best value for ratepayers. Table 3 below reflects the estimated budget for the Minnesota portion of the initial and ongoing phase 1 expenses, as well as for expansion of the EV Advisor capabilities over the next three years.

C. **Budgets and Accounting Treatment**

Table 3 below provides the estimated budgets for our EV awareness, education, and outreach activities for 2018, and for the three-year period 2019-2021.

<table>
<thead>
<tr>
<th>Communication Method</th>
<th>2018 Estimates</th>
<th>2019-2021 Estimated Budgets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Events &amp; Outreach</td>
<td>$43,000</td>
<td>$143,000</td>
</tr>
<tr>
<td>Advertising, Brand &amp; Media</td>
<td>$76,000</td>
<td>$381,000</td>
</tr>
<tr>
<td>Collateral &amp; Promotional Items</td>
<td>$7,000</td>
<td>$38,000</td>
</tr>
<tr>
<td>Auto Dealers &amp; Electricians</td>
<td>$37,000</td>
<td>$191,000</td>
</tr>
<tr>
<td>EV Advisor Online Tool</td>
<td>$70,000</td>
<td>$580,000</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$233,000</strong></td>
<td><strong>$1,333,000</strong></td>
</tr>
</tbody>
</table>

We will defer all expenses incurred in pursuing the EV awareness, education, and outreach efforts described above, including all expenses for the EV Advisor online tool, via the tracker account that was initially established in Docket No. E002/M-15-111 for communication costs related to our residential EV rate under the EV Statute. The EV Statute states that, in connection with establishing a residential EV tariff, a public utility shall include “a mechanism to allow the recovery of costs reasonably necessary to comply with [the EV Statute], including costs to inform and educate customers about the financial, energy conservation, and environmental benefits of...
electric vehicles and to public advertise and promote participation in the customeroptional tariff[.]

As documented in annual filings, the Company has been tracking its costs to inform and educate customers on the benefits of electric vehicles and to advertise and promote the proposed optional Residential EV Service tariff. The Company’s annual filings documenting the costs included each year in the tracker account all have been accepted by the Commission.

The costs for the Company’s expanded awareness, education, and outreach efforts all fall within the EV Statute’s mandate. The Company, therefore, will include all such expenses in the tracker account as it has done historically.

CONCLUSION

The Company is pleased to submit this filing for the Commission’s consideration. We are excited to launch a number of new pilot programs designed to explore and evaluate the costs, benefits, and impacts of various EV offerings, as well as the role of the utility in EV offerings at scale. We look forward to working with the Commission and stakeholders as this proceeding moves forward.

Dated: October 12, 2018

Northern States Power Company
STATE OF MINNESOTA
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 THE PETITION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF ELECTRIC VEHICLE
PILOT PROGRAMS

DOCKET NO. E002/M-18---

PETITION

SUMMARY OF FILING

Please take notice that on October 12, 2018, Northern States Power Company (Company), doing business as Xcel Energy, filed with the Minnesota Public Utilities Commission (Commission) a Petition for approval of two electric vehicle (EV) pilot programs: a Fleet EV Service Pilot and a Public Charging Pilot. The Fleet EV Service Pilot is intended to study utility investment in installing and maintaining EV infrastructure for fleet operators and how reducing upfront costs impacts EV adoption. The pilot also will study the costs and impacts of charging behavior and utilization under time-of-use rates and advisory services related to fleet conversion. The Public Charging Pilot is intended to study utility investment in installing and maintaining EV infrastructure for site hosts and developers of public charging stations along corridors and at community mobility hubs, and how reducing these upfront costs impacts barriers to EV adoption. The Petition also presents the Company’s portfolio of EV initiatives under development, to be proposed in the coming months in subsequent filings.
Paving the way for electric transportation

The way we move in and around town is evolving, with improving technology, declining costs and new business models driving the future of transportation. We are embracing a future that includes more autonomous features in vehicles, new (often shared) mobility services and more electric-powered transportation options than ever before. Because we put the “electric” in electric vehicles (EVs), we are well positioned to work with customers, communities and EV stakeholders to ensure this mobility future benefits all customers, the environment, and the electric grid we all rely upon.

Today, more than two dozen EV models are commercially available and approximately 6,000 Minnesotans drive electric.1 We are planning for a 2030 future in which manufacturers offer compelling EV choices across their portfolio and more than 300,000 could be in our service territory.

While EVs create a significant opportunity for drivers and fleet operators to save on fuel and other costs, there are barriers that exist to wider-scale adoption, including customer awareness, high up-front costs, and the availability of charging infrastructure. Our plans will help overcome those barriers by developing new services, piloting them, then rolling out our most successful ideas to customers on a broader scale.

Clean energy, clean driving

Our nation-leading clean energy initiatives are a perfect complement to our efforts to support the growth of EVs. By 2030, our vision is to have more than 60 percent renewable energy on our system in the Upper Midwest, achieving 85 percent carbon-free energy. EVs that are charged at strategic, convenient times for drivers have the potential to complement investment in renewable energy by making use of the grid when low-cost renewable energy is most available.

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1Plug-In America https://pluginamerica.org/why-go-plug-in
Our Minnesota EV plan

We are currently engaging customers who have an interest in adopting electric vehicles and buses. We hope to better understand their needs and barriers to adoption so we can work collaboratively toward solutions that could benefit all customers down the road. We expect these discussions will provide opportunities for us to pilot a variety of solutions that will inform our stakeholders and policymakers so we can scale solutions best suited to benefit all Minnesotans in the coming years. As we pursue our EV Plan, we are focused on these objectives:

• Empower customers with information, tools, and options
• Increase access to electricity as a transportation fuel
• Encourage efficient use of the power grid
• Improve air quality and decrease carbon emissions
• Ensure reliability, interoperability and safety of equipment
• Leverage public and private funding opportunities
• Provide benefits to all customers, both EV drivers and non-EV drivers

Driving electric: Clean today and even cleaner in the future

Tons of CO₂ per year*

Typical conventional car - 5.2
Electric vehicle charged on Xcel Energy system, 2016 - 1.5
Electric vehicle charged on Xcel Energy system, 2030 - 0.4
Electric vehicle charged solely with Xcel Energy’s renewable energy - 0

*Compares annual tailpipe emissions from a typical car, per EPA data, to an EV charged on the Xcel Energy system at projected annual average CO₂ intensity under our clean energy plans.
Home charging

**Easy, affordable, smart charging**

Home is where it happens. Experts believe more than 80 percent of EV charging will occur at home. And while electricity is already affordable — equating to about $1 per gallon today — there are many decisions to navigate and upfront costs to pay. Customers in multi-family buildings who don’t own their home often encounter additional barriers as they are identifying charging solutions. We will make it easy and affordable for residential customers to charge at home by:

- Educating them about environmental benefits, charging options, set-up costs and available incentives.
- Offering turn-key services that smooth the way from purchasing an EV to installing their charging station of choice.
- Offering renewable energy choices to power vehicles with clean energy.
- Exploring new technologies and program models that integrate vehicle charging with low-cost, abundant clean energy.

Fleet charging

**New services aimed at reducing total cost of ownership**

It’s all about the bottom line. Many of our customers — corporate fleets, transit agencies, and municipalities — are looking at options to reduce cost, meet sustainability goals and prepare for the future. We are preparing to be the trusted advisor and service provider for their fleets just as we are for their facilities. Over time we expect to see fleets from car-sharing services and other mobility options emerge as well. We can help fleets meet their total cost and sustainability goals by:

- Providing expert advice and analytical support to help fleet operators evaluate the business case for electrifying their vehicles.
- Providing make-ready electrical infrastructure from meters to chargers to reduce upfront costs.
- Offering rate options, renewable energy and charging optimization solutions.

Freeway corridor charging

**Increasing access and assuring availability for a developing market**

Range anxiety can be a major barrier for many potential EV owners. We need a basic network of high-powered, fast charging stations between and within our communities before consumers will adopt EVs in large numbers. That network does not exist today. We can play a meaningful role in ensuring such a network is built and maintained here in Minnesota. We will increase access and availability of public charging along corridors by:

- Fostering awareness and consumer protections.
- Providing make-ready electrical infrastructure from meters to chargers to reduce the upfront cost.
- Offering rate options and renewable energy to station hosts.
We will get there faster together

We have a long tradition of supporting our customers and communities in meeting their energy and sustainability goals. As the world of mobility changes, we intend to build on this tradition and lead the way toward a future that is cleaner, more affordable and more convenient for all of us.

We believe now is the time to engage and secure all of the environmental, economic, and social benefits our customers and communities seek. We believe that working together we can get there faster. Join us.

RepoweringTransportation@xcelenergy.com

xcelenergy.com/EV
Workshop Process Stakeholders

- AESL Consulting
- American Lung Association
- Atlas Public Policy
- Center for Energy and Environment
- ChargePoint
- Citizens Utility Board of Minnesota
- City of Edina
- City of Minneapolis
- Ecolab
- Electrotech Inc.
- Elk River Municipal Utilities
- eMotorwerks
- Environmental Initiative
- Environmental Quality Board
- Fresh Energy
- GreenLots
- Health Partners
- HOURCAR
- McKnight Foundation
- Metro Transit
- Minnesota Center for Environmental Advocacy
- Minnesota Department of Administration
- Minnesota Department of Commerce
- Minnesota Department of Transportation
- Minnesota Housing Finance Agency
- Minnesota Office of Enterprise Sustainability
- Minnesota Pollution Control Agency
- Minnesota Power
- Minnesota Public Utilities Commission
- MISO
- MN350
- Mortenson Construction
- Natural Resources Defense Council
- New Flyer of America Inc.
- Office of the Minnesota Attorney General
- Otter Tail Power
- PlugInConnect
- Siemens
- Sierra Club
- Tennant Company
- Tesla
- The Mendota Group, LLC
- Twin Cities Clean Cities Coalition
- University of Minnesota Center for Sustainable Building Research
- University of Minnesota Parking & Transportation Services
- ZEF Energy
September 25, 2018

Minnesota Public Utilities Commission
121 7th Place East #350
St. Paul, MN 55101

Dear Commissioners:

The purpose of this letter is to express Metro Transit’s strong interest in and support for Xcel Energy’s Fleet EV Service Pilot, including Metro Transit’s collaboration with Xcel to provide additional electrical service infrastructure beyond the meter for electric buses. Metro Transit is proud to be among the first agencies procuring 60’ battery electric buses in the nation, leading the way to bring this innovative technology to our community. This pilot is aligned with our strategy and commitment to create clean and equitable mobility solutions. We are excited about the potential of our partnership with Xcel and the foundation it lays for a brighter future for Xcel, Metro Transit and most importantly the community given the immense economic and environmental benefits electric transit buses bring.

In 2017, the Federal Transit Administration awarded a grant to Metro Transit, which included procurement of eight electric buses and the associated charging equipment as part of Metro Transit’s C-line arterial bus rapid transit project. This award led to the proposed pilot project with Xcel Energy for Xcel to go beyond bringing power to the meter, but to have them procure and install additional infrastructure required to operate the eight garage chargers and two on-route chargers procured by Metro Transit.

Metro Transit has a long-term vision for advancing electrification of our bus fleet. Xcel’s partnership in this pilot helps strengthen our ability to bring this vision to fruition. We are not just excited about the opportunities that Xcel’s pilot creates, but believe that these services have the potential to enable greater and more rapid bus electrification for our system.

We encourage the Commission to approve the proposed Fleet EV Service Pilot and look forward to our continued collaboration with Xcel on transit bus electrification. Please contact me with any questions or clarifications.

Sincerely,

Brian J. Lamb
General Manager

A service of the Metropolitan Council
October 5, 2018

Public Utilities Commission of Minnesota
121 7th Place East #350
St. Paul, Minnesota 55101

Dear Commissioners:

The Department of Administration (Admin) supports Xcel Energy’s Fleet Electric Vehicle Service Pilot Program (Pilot Program) proposal.

In support of Governor Dayton’s Executive Order 17-12, Minnesota State government agencies are taking deliberate steps to reduce the State’s greenhouse gas emissions through the electrification of at least 20% of the state’s light vehicle fleet as outlined by the Enterprise Fleet Action Plan. Xcel Energy’s Pilot Program offers a mutually beneficial opportunity to reduce transportation emissions associated with the state fleet while making best use of available renewable energy resources.

Xcel Energy’s Pilot Program offers 100% renewable energy charging in addition to affordable evening charging rates. The Pilot Program also removes barriers such as up-front costs and lack of on-site capacity associated with installing electric vehicle (EV) charging that are holding many agencies back from purchasing EVs.

Admin continues to move fleet vehicles to clean energy choices and promote purchasing of vehicles with an EPA fuel economy and greenhouse gas rating of 7 or higher. As we do so, we are hopeful that this new Pilot Program can be used to charge an increased number of EV and EV-hybrid fleet vehicles to help us meet our enterprise fleet goal of reducing fossil fuel usage by 30% by 2027.

This utility supported initiative will also be critically important for both state and local governments as they strive to meet statutory greenhouse gas reductions identified in the Minnesota Next Generation Energy Act of 2007.

For all these reasons, we are encouraged by and support the goals of this Pilot Program to develop a future path for electrification of governmental fleets throughout Minnesota.

Sincerely,

Matt Massman
Commissioner
September 25, 2018

Daniel Wolf
Executive Secretary
Minnesota Public Utilities Commission
1221 7th Place East
Suite 350
St. Paul, MN 55101-2147

RE: Comments regarding the proposed Northern States Power Company (NSP) Electric Vehicle (EV) Pilot Program

Dear Mr. Wolf,

The City of Minneapolis ("City") enthusiastically submits this letter of support for the NSP Fleet Electrification Pilot Strategy. The City is excited to be partnering with NSP on this pilot program in order to understand the most cost effective and resource efficient strategies to electrify the City's vehicle fleet. Reducing carbon from the transportation sector is critical to the achieving the City's climate action emission reduction goal of 80% by 2050. And nothing less than the future health and well-being of the residents and employees living and working in Minneapolis is at stake if we do not achieve this goal.

The Minneapolis City Council is committed to a long term strategy of electrifying its entire 1,700 vehicle fleet and as a first step has approved on September 30th entering into a Memorandum of Understanding with NSP with the following shared goals and objectives:

- Both parties will work toward an agreement supporting the electrification of the City’s fleet of vehicles; and
- The Fleet Electrification Strategy will provide environmental and economic benefits; and
- The Fleet Electrification Strategy will provide opportunities for NSP to develop electric fleet vehicle demonstration components in pilot programs and accelerate their implementation by the City; and
- The Fleet Electrification Strategy will serve as a showcase, helping the City encourage adoption of electric vehicles; and
- The Parties' work on electric fleet vehicles and vehicle charging infrastructure will provide a scalable model for fleet electrification that provides economic and environmental benefits for all NSP customers; and
- Both parties will work collaboratively to incorporate renewable energy into the Fleet Electrification Strategy to the maximum extent possible so that the City may account for renewable attributes and both parties may encourage future renewable resources.

In conclusion, the City of Minneapolis strongly recommends the MN PUC approve NSP’s proposed EV pilot project and looks forward to realizing the benefits of this unique collaboration.

Sincerely,

Kim W. Havey, AICP, LEED AP
Manager
Division of Sustainability
September 18, 2018

To the Commissioners of the Minnesota Public Utilities Commission:

This letter is offered in support of Xcel Energy’s filing with the Minnesota Public Utilities Commission seeking approval for its new Electric Vehicle Plan. By way of introduction, HOURCAR is the region’s original carsharing service, and the largest nonprofit carsharing company in the US. HOURCAR has had a longstanding partnership with Xcel going back to 2011, when Xcel funded a pilot of plug-in electric hybrid vehicles in our fleet. We strongly support Xcel’s efforts to increase access to electricity as a transportation fuel in an equitable manner. This plan is a major step toward decarbonizing transportation in the region. It will benefit our entire community, especially people living in disadvantaged neighborhoods, who are disproportionately exposed to NOx and particulates due to their proximity to transportation corridors.

For the past year, HOURCAR has been working in partnership with Xcel and the City of Saint Paul on an EV Community Mobility project. This project will create “mobility hubs” with charging stations and electric carshare vehicles that will be available to the public. The project has a focus on providing increased transportation access for disadvantaged communities. Through this project, HOURCAR will be able to expand its service area in neighborhoods like North Minneapolis, the North End, and Dayton’s Bluff. Pending PUC approval of the Electric Vehicle Plan, Xcel has pledged to invest $4 million in the project in the form of make-ready construction for the mobility hubs. The project would not be possible without this investment. MPUC approval of Xcel’s filing will enable us to leverage additional federal and local funds in order to create new transportation options for people who need them most, a real win for the region.

We offer our enthusiastic support for this worthwhile proposal. It’s will leverage additional public and private investment, and provide benefits to all ratepayers. In short, it’s smart, and it’s good for the region.

Please feel free to contact me with any questions or for further information.

Sincerely,

Paul Schroeder
CEO

1754 University Avenue West • Saint Paul, MN 55104 • t: 612-343-CARS • f: 651.221.9831 • www.hourcar.org
September 25, 2018

Public Utilities Commission of Minnesota  
121 7th Place East #350  
St. Paul, MN 55101

To Whom it May Concern,

On behalf of the City of Saint Paul, I am pleased to support the HourCar Mobility Hub Pilot Project and Xcel Energy’s filing with the Public Utilities Commission related to this project. The Mobility Hub plan envisions the installation of 35 electric car-sharing hubs (70 shared EV’s) across Saint Paul beginning in 2020. The ultimate goal is to create a network of low-carbon and carbon-free mobility options such that 90% of Saint Paul residents would be within a 10-minute walk of four to five human-powered, electric, and/or low-carbon mobility options. Additionally, we believe this project will improve access to jobs for tens of thousands of lower-income Saint Paul residents.

The unique and potentially transformative nature of the Mobility Hub Pilot Project is attracting attention from local and national private and public funders. The proposed investment of $4 million by Xcel Energy to bring electricity and related infrastructure to the hub sites is critical to the project’s success. We sincerely value Xcel’s long-term partnership on a host of sustainability initiatives, with the Mobility Hubs Pilot Project being only the most recent.

The electrification of transportation is key to a low-carbon and sustainable future and the Mobility Hub Pilot Project is an important step toward that end. For these reasons, we ask the Public Utilities Commission to favorably consider the Xcel filing on this matter. Thank you.

Sincerely,

Russ Stark  
Chief Resilience Officer  
Office of Mayor Melvin Carter
As background to our proposed fleet and public charging pilot requests, below we provide summary discussion of the potential significant benefits of transportation electrification and the barriers to further EV adoption. We also provide summaries of previous dockets that have informed the development of our EV pilot offerings, including dockets approving our current EV charging rate and recently launched residential EV pilot, as well as the Commission’s inquiry into EV charging and infrastructure.

A. Benefits of Transportation Electrification

The potential benefits of transitioning from gasoline- and diesel-powered vehicles to EVs fall into three broad categories: (1) benefits to the environment by reducing greenhouse gas (GHG) and other pollutant emissions, (2) benefits to EV customers, whose vehicles will be less expensive to both power and maintain, and (3) benefits to all Xcel Energy customers, whose electricity rates could improve based on downward rate pressure from EVs charging at off-peak times. Each of these categories of benefits is discussed below.

1. Environmental Benefits

A typical gasoline-powered light-duty vehicle emits just over five tons of CO₂ per year, based on average miles driven and fuel economy.¹ By 2030—based on the retirement of coal plants, maintenance of nuclear plants, and addition of renewable energy sources—an EV traveling the same miles at 0.3 kWh per mile² could emit only 0.4 tons CO₂ per year, a 93 percent reduction from the gasoline-powered vehicle.³ Emissions of particulate matter and NOₓ, an ozone precursor, are similarly much lower from the electricity charging EVs on our system than from conventional vehicles. Even for the fossil-fuel production facilities, plant-level controls have significantly reduced emissions of these criteria pollutants. According to the Minnesota Pollution Control Agency, power plant emissions have fallen by 70 percent from 1990 to 2014, and mobile source emissions are now a larger source of pollution

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¹ See https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle. The 4.6 metric tons cited there is equivalent to 5.1 short tons. EPA assumes 11,500 miles driven per year and fuel economy of 22 mpg.
² See https://www.fueleconomy.gov/feg/PowerSearch.do?action=noform&path=1&year1=2017&year2=2019&vtype=Electric. Newer EV models are generally in the range of 25-28 kWh per 100 miles, but we conservatively assume 30 kWh per 100 miles.
³ The reduction may in fact be greater because while the electricity charging the EV becomes cleaner over the 13 years from 2017 to 2030, the conventional vehicle it replaces becomes somewhat less efficient, emitting more CO₂ per mile as the engine ages.
than the power sector in Minnesota.\textsuperscript{4} For the Company, NO\textsubscript{x} emissions from our owned power plants have declined by 80 percent since 2005 and particulate matter emissions by 66 percent.\textsuperscript{5}

2. \textit{EV Customer Benefits}

Those customers who choose to adopt EVs likely will see a direct benefit in reduced operating costs for their vehicle or fleet. The electricity powering EVs generally has a gasoline-equivalent cost of less than $1.20 per gallon for at home charging.\textsuperscript{6} On the Company’s system, at our standard residential rate,\textsuperscript{7} we estimate that the total annual fuel cost for driving 12,000 miles per year would be around $553, compared to around $1,336 at current gasoline prices.\textsuperscript{8} Customers on our EV Time of Use (TOU) rate who do 90 percent of their charging during off-peak hours,\textsuperscript{9} and the other 10 percent during on-peak hours,\textsuperscript{10} could reduce that total annual fuel cost to $373. Similar benefits would exist for fleet managers who are attempting to minimize annual fuel budgets and use the savings to help pay for the incremental up-front cost of EV fleets.

In addition, EVs are expected to have lower lifetime operations and maintenance costs than conventional internal combustion engine vehicles. EVs do not require oil changes and, due to the electric drive, lack many parts that are standard in internal combustion engine vehicles, including fuel injectors, radiators, spark plugs, and transmissions. Repairs and maintenance for those parts can lead to expensive bills during the life of an internal combustion vehicle. Even the design of EV brakes results in fewer brake pad and rotor changes over the life of a vehicle. Customers also benefit from reduced purchasing costs due to the federal tax credit when they purchase an EV. At this time, there is no state tax credit in Minnesota.

\textsuperscript{5} See \url{https://www.xcelenergy.com/staticfiles/xcel-responsive/Company/Corporate\%20Responsibility\%20Report/CRR-Performance-Summary.pdf}.
\textsuperscript{7} 10.582¢ per kWh June through September, 9.032¢ all other months.
\textsuperscript{8} Both calculations assume 12,000 miles driven per year. The EV cost calculation assumes 0.32 kWh per mile, per \url{https://www.afdc.energy.gov/vehicles/electric_emissions_sources.html}. The gasoline vehicle cost calculation assumes 24.7 mpg, per \url{https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TGLC.pdf}, and current average Minnesota gasoline price of $2.75/gallon, per \url{https://www.energy.gov/articles/egallon-how-much-cheaper-it-drive-electricity}.
\textsuperscript{9} 4.290¢ per kWh.
\textsuperscript{10} 20.096¢ per kWh June through September, 16.968¢ all other months.
3. **Overall System/Customer Benefits**

In addition to the overall environmental benefits outlined above, which accrue to all members of society, EV adoption and use by some customers has the potential to benefit all customers, regardless of whether they use an EV. Provided that EVs charge primarily during off-peak hours, increased electricity sales due to EV charging could create downward pressure on electricity rates for all customers. This would occur as fixed costs embedded in utility rates are spread across greater electricity sales without increasing the resources needed to support peak demand. A utility can promote the off-peak charging that would create this downward pressure through TOU rates as well as managed or “smart” charging technologies which focus charging during off-peak hours.

**B. Barriers to EV Adoption**

In a 2015 study titled “Overcoming Barriers to Deployment of Plug-in Electric Vehicles,”\(^\text{11}\) the National Academy of Sciences (NAS) highlighted the following barriers to EV adoption:

- a lack of public charging infrastructure;
- a lack of outreach and education around EVs;
- upfront vehicle cost;
- all-electric driving range;
- long battery-charging time;
- uncertainties about battery life;
- few choices of vehicle models; and
- need for charging infrastructure to support EVs whether at home, at work, or in a public space.\(^\text{12}\)

Utilities can play a critical role in mitigating many—but not all—barriers to adoption. Utilities in many states, including California, Hawaii, Michigan, and Maryland have put forward plans and proposals for new EV pilots.\(^\text{13}\) These pilots have different design approaches and will help establish key learnings for utilities, vendors, and stakeholders in other states. The proposed pilots have focused on addressing several important barriers, including:

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\(^\text{13}\) According to Atlas Public Policy, in their EV Hub Quarterly Update (May 2018), more than 33 filings on EV pilots had been filed or recently approved.
• lack of awareness and information on EVs and EV infrastructure;
• upfront costs and access to EV infrastructure; and
• suboptimal incentives on when and how to charge.

Increasing access to EV infrastructure, providing smart charging and meaningful price signals on when to charge EVs, and raising awareness and understanding about EVs are a few examples of ways utilities can be involved in addressing customer barriers and advancing the EV market.

C. Residential EV Charging Tariff

Our residential EV charging rate was approved by the Commission in Docket No. E002/M-15-111. The rate was developed in compliance with Minn. Stat. § 216B.1614, which allows customers to purchase electricity solely for the purpose of recharging an EV. This voluntary rate is available as one option for residential customers who own or lease EVs, and requires a separate meter to provide time-of-day rates for EV charging.

The EV service tariff provides participating customers an incentive to charge EVs during off-peak hours, saving customers money, and shifting electricity demand away from peak periods. The tariff also offers customer choice by providing the option to purchase electricity from the utility’s current mix of energy supply sources or partially or entirely from renewable energy sources.

In approving this tariff, the Commission approved the Company’s proposed deferral of costs related to customer communication and education efforts associated EV charging, so that the Company could petition to recover qualifying costs in a future rate proceeding. The Commission also required the Company to file an annual June 1 EV tariff report to include, among other things, the number of customers taking service under the tariff, the total amount of electricity sold under the tariff, broken down between on- and off-peak periods, and the status of EV tracker account.

The residential EV rate was implemented on August 1, 2015, and, as of April 2018, we had 211 customers taking service under this tariff (as shown in our June 1, 2018, report). The average monthly share of Residential EV Charging Rate usage during the off-peak period (9:00 p.m. to 9:00 a.m., holidays and weekends) has ranged from 90 to 95 percent over the last two years, with an average monthly off-peak share of 92 percent.
D. Residential EV Service Pilot

In connection with developing a residential EV rate, 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.

As a result of experience with our initial residential EV tariff offering and our subsequent work with stakeholders, we developed a Residential EV Service Pilot to enhance our portfolio of customer choices for EV drivers. We filed for approval of this pilot offering in November 2017 in Docket No. E002/M-17-817. The pilot was approved by the Commission in May 2018 and launched on August 29, 2018.

This pilot pairs an off-peak charging incentive through TOU rates with a Company-offered Level 2 charging solution, with pilot participation capped at 100 customers. The pilot was developed in response to customer feedback about potential barriers to accessing the residential EV rate. Under this pilot, rather than installing a separate meter, as required to take service under our initial EV rate, customers select pre-approved chargers to be provided and installed by the Company. Those chargers serve to meter EV charging separately from home usage. Participants can charge off-peak at discounted rates. The pilot 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.

As noted above, this pilot was recently launched to accept applications for customer enrollment. After the launch at 12:00 p.m. Central Time on August 29, 2018, general enrollment closed on August 31, 2018, at 2:00 p.m. We believe the immediate demand for this pilot indicated, at least on a preliminary basis, that defraying the upfront costs and lowering barriers to entry can encourage customers to adopt the Company’s time-of-use rates. As we indicated in our September 3, 2018, update letter to the Commission, once fully implemented, this pilot could increase the number of customers on the Company’s EV rate by about 40 percent compared to current levels. We intend to provide further updates and reporting on this pilot as implementation progresses.
E. PUC Inquiry into EV Charging and Infrastructure

In December 2017, the Commission initiated an inquiry into EV charging and infrastructure in Docket No. E999/CI-17-879. In its initial Notice, the Commission indicated the purpose of the inquiry is to gather information and gain a better understanding of the following:

- the possible impacts of EVs on the electric system, utilities, and utility customers, including the potential electric system benefits;
- the degree to which utilities and utility regulatory policy can impact the extent and pace of EV penetration in Minnesota; and
- possible EV tariff options to facilitate wider availability of EV charging infrastructure.

In March 2018, the Commission held a public workshop featuring both national and local experts on EV charging and infrastructure, with the purpose of informing stakeholders and the Commission about current efforts to advance EV infrastructure deployment throughout the country and outlining the challenges and opportunities of increasing EV adoption in Minnesota.

The Commission also sought comments from utilities and interested parties to further evaluate the Commission’s role in enabling EV infrastructure and adoption. Topics open for comment were related to barriers to EV adoption, guiding principles for EV regulatory policy, evaluation criteria, and regulatory treatment of EV filings. Xcel Energy was among the many stakeholders providing comments and replies in this docket.

While still ongoing, the Commission’s inquiry has provided the opportunity for interested parties to weigh in on overall EV policy considerations, procedures, and approaches in the evolving EV market. As such, that proceeding has been helpful in shaping our understanding of stakeholder positions as we develop EV offerings. Our proposals in this current filing are consistent with our comments in that docket.
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**Date Filed:** 11-02-1510-12-18 | **By:** Christopher B. Clark | **Effective Date:** 10-01-17
**President, Northern States Power Company, a Minnesota corporation**

**Docket No:** E002/GR-15-826M-18 | **Order Date:** 06-12-17
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(Continued on Sheet No. TOC-2)
ENERGY CONTROLLED SERVICE
(CLOSED) ELECTRIC VEHICLE FLEET PILOT SERVICE
RATE CODE A2687, A88, A89

AVAILABILITY
Available while this Pilot Service is in effect to non-residential customers for service only to electric vehicle loads including battery charging and accessory usage. The customer must complete Company-approved documentation verifying ownership or lease of a minimum of five electric vehicles as defined in Section 169.011, subdivision 26a of Minnesota law.

CONTRACT
Customers must contract for this service through an Electric Vehicle Fleet Pilot Service Agreement with the Company. The contract period will be for 120 months.

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. The renewable energy supply option is available subject to the provisions contained in the Voluntary Renewable and High-Efficiency Energy Purchase (Windsource Program) Rider, or other available rate schedule for voluntary renewable energy supply that is applicable.

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 $29.64

Service at Secondary Voltage Oct-May Jun-Sep
Demand Charge per Month per kW
On-Peak Period Demand $11.00 $15.54
Off-Peak Period Demand in Excess of On-Peak Period Demand $2.35 $2.35

Energy Charge per kWh
On-Peak Period Energy $0.05098
Off-Peak Period Energy $0.02458

Energy Charge Credit per Month per kWh
All kWh in Excess of 400 Hours Times the On-Peak Period Billing Demand, Not to Exceed 50% of Total kWh $0.01593

Voltage Discounts per Month January - December
Primary Voltage Per kW Per kWh
$0.80 $0.00108

Date Filed: 11-02-0510-12-18 By: Cynthia L. Lesher, Christopher B. Clark Effective Date: 02-01-07
President and CEO of Northern States Power Company, a Minnesota corporation
Order Date: 09-01-06

Docket No. E002/GR-05-1428M-18
OPTIONAL CHARGER SERVICE
Charging equipment may be supplied and installed either by customer or by the Company through an optional charger service. Optional charger service by Company is available as a Bundled Option that includes a monthly charge for the installed cost of charging equipment or as a Pre-Pay Option to customers electing to pay Company for the installed cost of charging equipment prior to beginning service with this tariff. Customers electing the Pre-Pay Option are separately invoiced at the time of installation and are subject to the Pre-Pay Option service charge in place of the Bundled Option service charge.

Service Charge per Month per Port

<table>
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<td>Bundled Option (A88)</td>
<td>$XX.XX</td>
<td>$XX.XX</td>
<td>Per Project</td>
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<tr>
<td>Pre-Pay Option (A89)</td>
<td>$XX.XX</td>
<td>$XX.XX</td>
<td>Per Project</td>
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In addition, customer bills under this rate are subject to the following adjustments and/or charges.

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.

ENVIRONMENTAL IMPROVEMENT RIDER
Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

MONTHLY MINIMUM CHARGE
For the first two years after the original effective date establishing this tariff, the minimum charge shall be equal to the Customer Charge. Effective two years after the original effective date establishing this tariff, the minimum charge shall be the total of the Customer Charge and a Facilities Charge based on the number of installed charging ports.

<table>
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<td>10-19</td>
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<td>30-39</td>
<td>40+</td>
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<td>Monthly Minimum Charge</td>
<td>$75</td>
<td>$150</td>
<td>$300</td>
<td>$450</td>
<td>$600</td>
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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.

(Continued on Sheet No. 5-51.2)
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.

DETERMINATION OF ON-PEAK PERIOD DEMAND
The actual on-peak period demand in kW shall be the greatest 15-minute load for the on-peak period during the month for which the bill is rendered. The adjusted demand in kW for billing purposes shall be determined by dividing the actual on-peak demand by the power factor expressed in percent but not more than 90%, multiplying the quotient so obtained by 90%, and rounding to the nearest whole kW. In no month shall the on-peak period demand to be billed be considered as less than the current month's adjusted on-peak period demand in kW, or 50% of the greatest monthly adjusted on peak period demand in kW during the preceding 11 months. In no month shall the on-peak billing demand be greater than the value in kW determined by dividing the kWh sales for the billing month by 100 hours per month.

The greatest monthly adjusted on-peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

DETERMINATION OF OFF-PEAK PERIOD DEMAND IN EXCESS OF ON-PEAK PERIOD DEMAND
The actual off-peak period demand in kilowatts shall be the greatest 15-minute load for the off-peak period during the month for which the bill is rendered rounded to the nearest whole kW. In no month shall the off-peak period demand for billing purposes be considered as less than the current month's actual off-peak period demand in kW, or 50% of the greatest monthly actual off-peak period demand in kW during the preceding 11 months.

The greatest monthly adjusted off-peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

The off-peak period demand in excess of on-peak period demand in kW to be billed shall be determined by subtracting the billing on-peak period demand from the actual off-peak period demand as defined above, but only if the off-peak period demand is greater than the on-peak period demand.

POWER FACTOR
For three phase customers with services above 200 amperes, or above 480 volts, the power factor for the month shall be determined by permanently installed metering equipment. For all single phase customers and three phase customers with services 200 amperes or less, a power factor of 90% will be assumed.

(Continued on Sheet No. 5-1.3)
MINIMUM DEMAND TO BE BILLED
The monthly minimum on-peak period billing demand shall not be less than provided above.

TERMS AND CONDITIONS OF SERVICE
1. Electric Vehicle Fleet Pilot Service shall be served through wiring connected to customer's dedicated-meter.

2. Company may require customer to provide access for Company-owned equipment for the recording and wireless communication of energy usage.

3. The rate contemplates that this service will require the installation of new facilities to provide electric service to the electric vehicle charger.


5. Customer must retain a minimum four ports per site, or, in cases with less than four ports, a minimum of 50 kW of charging capacity.

6. Company waives CIAC requirements for non-residential customers under the Standard Installation and Extension Rules under Section 5.1(A)(1)(b), Section 5.1(A)(2) and (3) and Section 5.2 of the General Rules and Regulations on Tariff Sheets No. 6-23 through 6-27.

7. Alternating current service is provided at the following nominal voltages:
   a. Secondary Voltage: Single or three phase from 208 volts up to but not including 2,400 volts.
   b. Primary Voltage: Three phase from 2,400 volts up to but not including 69,000 volts.

Service voltage available in any given case is dependent upon voltage and capacity of Company lines in vicinity of customer's premises.

RIGHT TO REFUSE SERVICE
The Company reserves the right to refuse applicants for service under this Pilot service if it determines that excessive additional capital expenditures will be required to provide service to that applicant.
ENERGY CONTROLLED SERVICE (CLOSED)  
ELECTRIC VEHICLE PUBLIC CHARGING PILOT SERVICE (Continued)  
RATE CODE A2690

CANCELED

AVAILABILITY
Available while this Pilot Service is in effect to non-residential customers for service only to electric vehicle loads including battery charging and accessory usage for the express purpose of providing public charging service to electric vehicles.

CONTRACT
Customers must contract for this service through an Electric Vehicle Public Charging Pilot Service Agreement with the Company. The contract period will be for 120 months.

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. The renewable energy supply option is available subject to the provisions contained in the Voluntary Renewable and High-Efficiency Energy Purchase (Windsource Program) Rider, or other available rate schedule for voluntary renewable energy supply that is applicable.

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  $29.64

Service at Secondary Voltage

<table>
<thead>
<tr>
<th>Demand Charge per Month per kW</th>
<th>Oct-May</th>
<th>Jun-Sep</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Peak Period Demand</td>
<td>$11.00</td>
<td>$15.54</td>
</tr>
<tr>
<td>Off-Peak Period Demand</td>
<td>$2.35</td>
<td>$2.35</td>
</tr>
<tr>
<td>of On-Peak Period Demand</td>
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<td></td>
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</table>

Energy Charge per kWh

<table>
<thead>
<tr>
<th>Off-Peak Period Energy</th>
<th>$0.02458</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Peak Period Energy</td>
<td>$0.05098</td>
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</tbody>
</table>

Energy Charge Credit per Month per kWh

| All kWh in Excess of 400 Hours Times the On-Peak Period Billing Demand, Not to Exceed 50% of Total kWh | $0.01593 |

Voltage Discounts per Month

<table>
<thead>
<tr>
<th>Per kW</th>
<th>Per kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Voltage</td>
<td>$0.80</td>
</tr>
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</table>

(Continued on Sheet No. 5-52.1)

Date Filed: 11-02-0510-15-18  By: Cynthia L. Lecher Christopher B. Clark  Effective Date: 02-01-07
President and CEO of Northern States Power Company, a Minnesota corporation
Docket No. E002/GR-05-1428M-18  Order Date: 09-01-06
In addition, customer bills under this rate are subject to the following adjustments and/or charges.

**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.

**ENVIRONMENTAL IMPROVEMENT RIDER**
Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

**MONTHLY MINIMUM CHARGE**
For the first two years after the original effective date establishing this tariff, the minimum charge shall be equal to the Customer Charge. Effective two years after the original effective date establishing this tariff, the minimum charge shall be the total of the Customer Charge and a Facilities Charge based on the number of installed charging ports.

<table>
<thead>
<tr>
<th>Facilities Charge</th>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
<th>Tier 4</th>
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<td>Number of Charging Ports</td>
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<td>10-19</td>
<td>20-29</td>
<td>30-39</td>
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<td>Monthly Minimum Charge</td>
<td>$75</td>
<td>$150</td>
<td>$300</td>
<td>$450</td>
<td>$600</td>
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</table>

**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.

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(Continued on Sheet No. 5-52.3)
MINIMUM DEMAND TO BE BILLED
The monthly minimum on-peak period billing demand shall not be less than provided above.

TERMS AND CONDITIONS OF SERVICE
1. Electric Vehicle Fleet Pilot Service shall be served through wiring connected to customer's dedicated-meter.
2. Company may require customer to provide access for Company-owned equipment for the recording and wireless communication of energy usage.
3. The rate contemplates that this service will require the installation of new facilities to provide electric service to the electric vehicle charger.
5. Customer must retain a minimum four ports per site, or, in cases with less than four ports, a minimum of 50 kW of charging capacity.
6. Company waives CIAC requirements for non-residential customers under the Standard Installation and Extension Rules under Section 5.1(A)(1)(b), Section 5.1 (A)(2) and (3) and Section 5.2 of the General Rules and Regulations on Tariff Sheets No. 6-23 through 6-27.
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   b. Primary Voltage: Three phase from 2,400 volts up to but not including 69,000 volts.

Service voltage available in any given case is dependent upon voltage and capacity of Company lines in vicinity of customer's premises.

RIGHT TO REFUSE SERVICE
The Company reserves the right to refuse applicants for service under this Pilot service if it determines that excessive additional capital expenditures will be required to provide service to that applicant.
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SECTION 5 RATE SCHEDULES (Continued)

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<td>Rules for Application of Peak Controlled Services</td>
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<td>Electric Vehicle Fleet Pilot Service</td>
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<td>Electric Vehicle Public Charging Pilot Service</td>
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<td>Street Lighting Energy Service (Closed)</td>
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<td>Street Lighting Energy Service - Metered</td>
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<tr>
<td>Rules for Application of Street Lighting Rates</td>
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<tr>
<td>Small Municipal Pumping Service</td>
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<td>Municipal Pumping Service</td>
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<tr>
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<td>Residential Electric Vehicle Pilot Service</td>
<td>5-7</td>
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<td>Limited Off Peak</td>
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<td>Rules for Application of Residential Rates</td>
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<td>Small General Time of Day (Metered and Non-Metered)</td>
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<td>General</td>
<td>5-26</td>
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<tr>
<td>General Time of Day</td>
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<td>5-51</td>
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<td>5-64</td>
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<td>Light Rail Line Tariff</td>
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<td>Street Lighting Energy (Metered)</td>
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<td>5-87</td>
</tr>
<tr>
<td>Fire and Civil Defense Siren</td>
<td>5-89</td>
</tr>
</tbody>
</table>

(Continued on Sheet No. TOC-2)
Available while this Pilot Service is in effect to non-residential customers for service only to electric vehicle loads including battery charging and accessory usage. The customer must complete Company-approved documentation verifying ownership or lease of a minimum of five electric vehicles as defined in Section 169.011, subdivision 26a of Minnesota law.

**CONTRACT**

Customers must contract for this service through an Electric Vehicle Fleet Pilot Service Agreement with the Company. The contract period will be for 120 months.

**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. The renewable energy supply option is available subject to the provisions contained in the Voluntary Renewable and High-Efficiency Energy Purchase (Windsource Program) Rider, or other available rate schedule for voluntary renewable energy supply that is applicable.

**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**

<table>
<thead>
<tr>
<th>Service at Secondary Voltage</th>
<th>Oct-May</th>
<th>Jun-Sep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Charge per Month per kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Peak Period Demand</td>
<td>$11.00</td>
<td>$15.54</td>
</tr>
<tr>
<td>Off-Peak Period Demand in Excess of On-Peak Period Demand</td>
<td>$2.35</td>
<td>$2.35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy Charge per kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Peak Period Energy</td>
</tr>
<tr>
<td>Off-Peak Period Energy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy Charge Credit per Month per kWh</th>
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</thead>
<tbody>
<tr>
<td>All kWh in Excess of 400 Hours Times the On-Peak Period Billing Demand, Not to Exceed 50% of Total kWh</td>
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<table>
<thead>
<tr>
<th>Voltage Discounts per Month</th>
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</thead>
<tbody>
<tr>
<td>Per kW</td>
</tr>
<tr>
<td>Primary Voltage</td>
</tr>
</tbody>
</table>

(Continued on Sheet No. 5-51.1)
OPTIONAL CHARGER SERVICE
Charging equipment may be supplied and installed either by customer or by the Company through an optional charger service. Optional charger service by Company is available as a Bundled Option that includes a monthly charge for the installed cost of charging equipment or as a Pre-Pay Option to customers electing to pay Company for the installed cost of charging equipment prior to beginning service with this tariff. Customers electing the Pre-Pay Option are separately invoiced at the time of installation and are subject to the Pre-Pay Option service charge in place of the Bundled Option service charge.

Service Charge per Month per Port

<table>
<thead>
<tr>
<th></th>
<th>Wall-Mount</th>
<th>Pedestal</th>
<th>Transit Bus</th>
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<tbody>
<tr>
<td>Bundled Option (A88)</td>
<td>$XX.XX</td>
<td>$XX.XX</td>
<td>Per Project</td>
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<tr>
<td>Pre-Pay Option (A89)</td>
<td>$XX.XX</td>
<td>$XX.XX</td>
<td>Per Project</td>
</tr>
</tbody>
</table>

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

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.

ENVIRONMENTAL IMPROVEMENT RIDER
Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

MONTHLY MINIMUM CHARGE
For the first two years after the original effective date establishing this tariff, the minimum charge shall be equal to the Customer Charge. Effective two years after the original effective date establishing this tariff, the minimum charge shall be the total of the Customer Charge and a Facilities Charge based on the number of installed charging ports.

<table>
<thead>
<tr>
<th>Facilities Charge</th>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
<th>Tier 4</th>
<th>Tier 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Charging Ports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-9</td>
<td>$75</td>
<td>$150</td>
<td>$300</td>
<td>$450</td>
<td>$600</td>
</tr>
</tbody>
</table>

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.

DETERMINATION OF ON-PEAK PERIOD DEMAND
The actual on-peak period demand in kW shall be the greatest 15-minute load for the on-peak period during the month for which the bill is rendered. The adjusted demand in kW for billing purposes shall be determined by dividing the actual on-peak demand by the power factor expressed in percent but not more than 90%, multiplying the quotient so obtained by 90%, and rounding to the nearest whole kW. In no month shall the on-peak period demand to be billed be considered as less than the current month's adjusted on-peak period demand in kW, or 50% of the greatest monthly adjusted on peak period demand in kW during the preceding 11 months. In no month shall the on-peak billing demand be greater than the value in kW determined by dividing the kWh sales for the billing month by 100 hours per month.

The greatest monthly adjusted on-peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

DETERMINATION OF OFF-PEAK PERIOD DEMAND IN EXCESS OF ON-PEAK PERIOD DEMAND
The actual off-peak period demand in kilowatts shall be the greatest 15-minute load for the off-peak period during the month for which the bill is rendered rounded to the nearest whole kW. In no month shall the off-peak period demand for billing purposes be considered as less than the current month's actual off-peak period demand in kW, or 50% of the greatest monthly actual off-peak period demand in kW during the preceding 11 months.

The greatest monthly adjusted off-peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

The off-peak period demand in excess of on-peak period demand in kW to be billed shall be determined by subtracting the billing on-peak period demand from the actual off-peak period demand as defined above, but only if the off-peak period demand is greater than the on-peak period demand.

POWER FACTOR
For three phase customers with services above 200 amperes, or above 480 volts, the power factor for the month shall be determined by permanently installed metering equipment. For all single phase customers and three phase customers with services 200 amperes or less, a power factor of 90% will be assumed.
Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

ELECTRIC VEHICLE FLEET PILOT SERVICE
RATE CODE A87, A88, A89

MINIMUM DEMAND TO BE BILLED
The monthly minimum on-peak period billing demand shall not be less than provided above.

TERMS AND CONDITIONS OF SERVICE
1. Electric Vehicle Fleet Pilot Service shall be served through wiring connected to customer’s dedicated-meter.

2. Company may require customer to provide access for Company-owned equipment for the recording and wireless communication of energy usage.

3. The rate contemplates that this service will require the installation of new facilities to provide electric service to the electric vehicle charger.


5. Customer must retain a minimum four ports per site, or, in cases with less than four ports, a minimum of 50 kW of charging capacity.

6. Company waives CIAC requirements for non-residential customers under the Standard Installation and Extension Rules under Section 5.1(A)(1)(b), Section 5.1 (A)(2) and (3) and Section 5.2 of the General Rules and Regulations on Tariff Sheets No. 6-23 through 6-27.

7. Alternating current service is provided at the following nominal voltages:
   a. Secondary Voltage: Single or three phase from 208 volts up to but not including 2,400 volts.
   b. Primary Voltage: Three phase from 2,400 volts up to but not including 69,000 volts.

Service voltage available in any given case is dependent upon voltage and capacity of Company lines in vicinity of customer’s premises.

RIGHT TO REFUSE SERVICE
The Company reserves the right to refuse applicants for service under this Pilot service if it determines that excessive additional capital expenditures will be required to provide service to that applicant.

Date Filed: 10-12-18
By: Christopher B. Clark
Effective Date: President, Northern States Power Company, a Minnesota corporation
Docket No. E002/M-18-
AVAILABILITY
Available while this Pilot Service is in effect to non-residential customers for service only to electric vehicle loads including battery charging and accessory usage for the express purpose of providing public charging service to electric vehicles.

CONTRACT
Customers must contract for this service through an Electric Vehicle Public Charging Pilot Service Agreement with the Company. The contract period will be for 120 months.

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. The renewable energy supply option is available subject to the provisions contained in the Voluntary Renewable and High-Efficiency Energy Purchase (Windsource Program) Rider, or other available rate schedule for voluntary renewable energy supply that is applicable.

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.

<table>
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<tr>
<th>RATE</th>
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<tr>
<td>Customer Charge per Month</td>
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<td>Service at Secondary Voltage</td>
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<td>Demand Charge per Month</td>
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<td>Energy Charge Credit per Month</td>
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<td>the On-Peak Period Billing Demand, Not to Exceed 50% of Total kWh</td>
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<td>Voltage Discounts per Month</td>
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(Continued on Sheet No. 5-52.1)
In addition, customer bills under this rate are subject to the following adjustments and/or charges.

**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.

**ENVIRONMENTAL IMPROVEMENT RIDER**
Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

**MONTHLY MINIMUM CHARGE**
For the first two years after the original effective date establishing this tariff, the minimum charge shall be equal to the Customer Charge. Effective two years after the original effective date establishing this tariff, the minimum charge shall be the total of the Customer Charge and a Facilities Charge based on the number of installed charging ports.

<table>
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<tr>
<th>Facilities Charge</th>
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<td>Number of Charging Ports</td>
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<td>10-19</td>
<td>20-29</td>
<td>30-39</td>
<td>40+</td>
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<td>Monthly Minimum Charge</td>
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<td>$150</td>
<td>$300</td>
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**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.

DETERMINATION OF ON-PEAK PERIOD DEMAND
The actual on-peak period demand in kW shall be the greatest 15-minute load for the on-peak period during the month for which the bill is rendered. The adjusted demand in kW for billing purposes shall be determined by dividing the actual on-peak demand by the power factor expressed in percent but not more than 90%, multiplying the quotient so obtained by 90%, and rounding to the nearest whole kW. In no month shall the on-peak period demand to be billed be considered as less than the current month's adjusted on-peak period demand in kW, or 50% of the greatest monthly adjusted on-peak period demand in kW during the preceding 11 months. In no month shall the on-peak billing demand be greater than the value in kW determined by dividing the kWh sales for the billing month by 100 hours per month.

The greatest monthly adjusted on-peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

DETERMINATION OF OFF-PEAK PERIOD DEMAND IN EXCESS OF ON-PEAK PERIOD DEMAND
The actual off peak period demand in kilowatts shall be the greatest 15-minute load for the off peak period during the month for which the bill is rendered rounded to the nearest whole kW. In no month shall the off-peak period demand for billing purposes be considered as less than the current month's actual off-peak period demand in kW, or 50% of the greatest monthly actual off-peak period demand in kW during the preceding 11 months.

The greatest monthly adjusted off-peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

The off-peak period demand in excess of on-peak period demand in kW to be billed shall be determined by subtracting the billing on-peak period demand from the actual off-peak period demand as defined above, but only if the off-peak period demand is greater than the on-peak period demand.

POWER FACTOR
For three phase customers with services above 200 amperes, or above 480 volts, the power factor for the month shall be determined by permanently installed metering equipment. For all single phase customers and three phase customers with services 200 amperes or less, a power factor of 90% will be assumed.
MINIMUM DEMAND TO BE BILLED
The monthly minimum on-peak period billing demand shall not be less than provided above.

TERMS AND CONDITIONS OF SERVICE
1. Electric Vehicle Fleet Pilot Service shall be served through wiring connected to customer’s dedicated-meter.

2. Company may require customer to provide access for Company-owned equipment for the recording and wireless communication of energy usage.

3. The rate contemplates that this service will require the installation of new facilities to provide electric service to the electric vehicle charger.


5. Customer must retain a minimum four ports per site, or, in cases with less than four ports, a minimum of 50 kW of charging capacity.

6. Company waives CIAC requirements for non-residential customers under the Standard Installation and Extension Rules under Section 5.1(A)(1)(b), Section 5.1 (A)(2) and (3) and Section 5.2 of the General Rules and Regulations on Tariff Sheets No. 6-23 through 6-27.

7. Alternating current service is provided at the following nominal voltages:
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   b. Primary Voltage: Three phase from 2,400 volts up to but not including 69,000 volts.

Service voltage available in any given case is dependent upon voltage and capacity of Company lines in vicinity of customer’s premises.

RIGHT TO REFUSE SERVICE
The Company reserves the right to refuse applicants for service under this Pilot service if it determines that excessive additional capital expenditures will be required to provide service to that applicant.
CERTIFICATE OF SERVICE

I, Lynnette Sweet, 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.  Xcel Energy’s Miscellaneous Electric Service List

Dated this 12th day of October 2018

/s/

____________________________
Lynnette Sweet
Regulatory Administrator
<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Email</th>
<th>Company Name</th>
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<th>Service List Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>David</td>
<td>Aafedt</td>
<td><a href="mailto:daafedt@winthrop.com">daafedt@winthrop.com</a></td>
<td>Winthrop &amp; Weinstine, P.A.</td>
<td>Suite 3500, 225 South Sixth Street Minneapolis, MN 554024629</td>
<td>Electronic Service</td>
<td>No</td>
<td>GEN_SL_Northern States Power Company dba Xcel Energy-Elec_XcelMisclElectric</td>
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<tr>
<td>Christopher</td>
<td>Anderson</td>
<td><a href="mailto:canderson@allele.com">canderson@allele.com</a></td>
<td>Minnesota Power</td>
<td>30 W Superior St Duluth, MN 558022191</td>
<td>Electronic Service</td>
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<td>Alison C</td>
<td>Archer</td>
<td><a href="mailto:aarcher@misoenergy.org">aarcher@misoenergy.org</a></td>
<td>MISO</td>
<td>2985 Ames Crossing Rd Eagan, MN 55121</td>
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<td>James J.</td>
<td>Bertrand</td>
<td><a href="mailto:james.bertrand@stinson.com">james.bertrand@stinson.com</a></td>
<td>Stinson Leonard Street LLP</td>
<td>50 S 6th St Ste 2600 Minneapolis, MN 55402</td>
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<td>Jeanne</td>
<td>Cochran</td>
<td><a href="mailto:Jeanne.Cochran@state.mn.us">Jeanne.Cochran@state.mn.us</a></td>
<td>Office of Administrative Hearings</td>
<td>P.O. Box 64620 St. Paul, MN 55164-0620</td>
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<tr>
<td>John</td>
<td>Coffman</td>
<td><a href="mailto:john@johncoffman.net">john@johncoffman.net</a></td>
<td>AARP</td>
<td>871 Tuxedo Blvd. St. Louis, MO 63119-2044</td>
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<td>Riley</td>
<td>Conlin</td>
<td><a href="mailto:riley.conlin@stoel.com">riley.conlin@stoel.com</a></td>
<td>Stoel Rives LLP</td>
<td>33 S. 6th Street Suite 4200 Minneapolis, MN 55402</td>
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<td>Corey</td>
<td>Conover</td>
<td><a href="mailto:corey.conover@minneapolismn.gov">corey.conover@minneapolismn.gov</a></td>
<td>Minneapolis City Attorney</td>
<td>350 S. Fifth Street City Hall, Room 210 Minneapolis, MN 554022453</td>
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<td>George</td>
<td>Crocker</td>
<td><a href="mailto:gwillac@nawo.org">gwillac@nawo.org</a></td>
<td>North American Water Office</td>
<td>PO Box 174 Lake Elmo, MN 55042</td>
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<td>Carl</td>
<td>Cronin</td>
<td><a href="mailto:Regulatory.records@xcelenergy.com">Regulatory.records@xcelenergy.com</a></td>
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<td>414 Nicollet Mall FL 7 Minneapolis, MN 554011993</td>
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<tr>
<td>Ian</td>
<td>Dobson</td>
<td><a href="mailto:residential.utilities@ag.state.mn.us">residential.utilities@ag.state.mn.us</a></td>
<td>Office of the Attorney General-RUD</td>
<td>1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130</td>
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<td>John</td>
<td>Farrell</td>
<td><a href="mailto:jfarrell@ilsr.org">jfarrell@ilsr.org</a></td>
<td>Institute for Local Self-Reliance</td>
<td>1313 5th St SE #303 Minneapolis, MN 55414</td>
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<td>AESL Consulting</td>
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<td>Gonzalez</td>
<td><a href="mailto:Janet.gonzalez@state.mn.us">Janet.gonzalez@state.mn.us</a></td>
<td>Public Utilities Commission</td>
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<td>2265 Roswell Road Suite 100 Marietta, GA 30062</td>
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<td><a href="mailto:linda.s.jensen@ag.state.mn.us">linda.s.jensen@ag.state.mn.us</a></td>
<td>Office of the Attorney General-DOC</td>
<td>1800 BRM Tower 445 Minnesota Street St. Paul, MN 551012134</td>
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<td>Richard</td>
<td>Johnson</td>
<td><a href="mailto:Rick.Johnson@lawmoss.com">Rick.Johnson@lawmoss.com</a></td>
<td>Moss &amp; Barnett</td>
<td>150 S. 5th Street Suite 1200 Minneapolis, MN 55402</td>
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<td>Sarah</td>
<td>Johnson Phillips</td>
<td><a href="mailto:sarah.phillips@stoel.com">sarah.phillips@stoel.com</a></td>
<td>Stoel Rives LLP</td>
<td>33 South Sixth Street Suite 4200 Minneapolis, MN 55402</td>
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<td>Mark J.</td>
<td>Kaufman</td>
<td><a href="mailto:mkaufman@ibewlocal949.org">mkaufman@ibewlocal949.org</a></td>
<td>IBEW Local Union 949 South</td>
<td>12908 Nicollet Avenue South Burnsville, MN 55337</td>
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<td>Thomas</td>
<td>Koehler</td>
<td><a href="mailto:TGK@IBEW160.org">TGK@IBEW160.org</a></td>
<td>Local Union #160, IBEW</td>
<td>2909 Anthony Ln St Anthony Village, MN 55418-3238</td>
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<td>Michael</td>
<td>Krikava</td>
<td><a href="mailto:mkrikava@briggs.com">mkrikava@briggs.com</a></td>
<td>Briggs And Morgan, P.A.</td>
<td>2200 IDS Center 80 S 8th St Minneapolis, MN 55402</td>
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<td>Peder</td>
<td>Larson</td>
<td><a href="mailto:plarson@larkinhoffman.com">plarson@larkinhoffman.com</a></td>
<td>Larkin Hoffman Daly &amp; Lindgren, Ltd.</td>
<td>8300 Norman Center Drive Suite 1000 Bloomington, MN 55437</td>
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<td>Douglas</td>
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<td><a href="mailto:dlarson@dakotaelectric.com">dlarson@dakotaelectric.com</a></td>
<td>Dakota Electric Association</td>
<td>4300 220th St W Farmington, MN 55024</td>
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<td>Kavita</td>
<td>Maini</td>
<td><a href="mailto:kmaini@wi.rr.com">kmaini@wi.rr.com</a></td>
<td>KM Energy Consulting LLC</td>
<td>961 N Lost Woods Rd Oconomowoc, WI 53066</td>
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<tr>
<td>Pam</td>
<td>Marshall</td>
<td><a href="mailto:pam@energycents.org">pam@energycents.org</a></td>
<td>Energy CENTS Coalition</td>
<td>823 7th St E St. Paul, MN 55106</td>
<td>Electronic Service</td>
<td>No</td>
<td>GEN_SL_Northern States Power Company dba Xcel Energy-Elec_Xcel Misc Electric</td>
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<tr>
<td>David</td>
<td>Moeller</td>
<td><a href="mailto:dmoeller@allete.com">dmoeller@allete.com</a></td>
<td>Minnesota Power</td>
<td>30 W Superior St Duluth, MN 558022093</td>
<td>Electronic Service</td>
<td>No</td>
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<td>Andrew</td>
<td>Moratzka</td>
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<td>Stoel Rives LLP</td>
<td>33 South Sixth St Ste 4200 Minneapolis, MN 55402</td>
<td>Electronic Service</td>
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<td>David</td>
<td>Niles</td>
<td><a href="mailto:david.niles@avantenergy.com">david.niles@avantenergy.com</a></td>
<td>Minnesota Municipal Power Agency</td>
<td>220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402</td>
<td>Electronic Service</td>
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