414 Nicollet Mall
Minneapolis, Minnesota 55401

May 31, 2019

—Via Electronic Filing—

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

RE: COMPLIANCE FILING
RESIDENTIAL ELECTRIC VEHICLE CHARGING TARIFF
DOCKET NO. E002/M-15-111 AND E002/M-17-817

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits this filing in compliance with the Minnesota Public Utilities Commission's June 22, 2015 ORDER APPROVING TARIFFS AND REQUIRING FILINGS in Docket No. E002/M-15-111, Orders dated October 26, 2017 and September 11, 2018 in Docket No. E002/M-15-111, Order dated May 9, 2018 in Docket No. E002/M-17-817 and Order dated February 1, 2019 in Docket No. E002/M-17-879. As specified by Order point 8 in the June 22, 2015 Order, Xcel Energy is to provide the following:

8. Annually, by June 1st, each utility must file an Electric Vehicle Tariff Report in its electric vehicle tariff docket. Each utility must include, on a per-quarter basis and in addition to the information required by Minn. Stat. § 216B.1614, subd. 3(1) and (2), the following information in its reports:

   a. The amount of energy sold in on- and off-peak periods, if applicable;
   b. A brief description of all development and promotional activities and their costs;
   c. The number of customers choosing the renewable-source option;
   d. The status of the communications costs tracker account, if applicable; and
   e. Copies of any EV promotional materials distributed to customers.

In addition, Order point 2 of the Commission's September 11, 2018 ORDER ACCEPTING 2018 ANNUAL REPORTS AND ESTABLISHING REQUIREMENTS FOR NEXT ANNUAL REPORTS required the Company to provide a breakdown of costs by educational and outreach initiatives, including where possible, a separation of costs used to promote the off peak charging tariff versus EV adoption in general.

Attachment A filed with this report provides a reference guide highlighting where all required order points are discussed in the annual report.

We have electronically filed this document with the Commission, and copies have been served on the parties on the attached service list.

If you have any questions regarding this filing, please contact Carl Cronin at carl.cronin@xcelenergy.com or (612) 215-4669.

Sincerely,

/s/

AMY A. LIBERKOWSKI
DIRECTOR, REGULATORY PRICING & ANALYSIS

Enclosure
cc: Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Dan Lipschultz	Commissioner
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
John A. Tuma	Commissioner

IN THE MATTER OF NORTHERN STATES POWER COMPANY'S ANNUAL REPORT ON RESIDENTIAL ELECTRIC VEHICLE (EV) CHARGING TARIFF AND RESIDENTIAL EV SERVICE PILOT	DOCKET NOS. E002/M-15-111 E002/M-17-817 **ANNUAL REPORT**

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this Annual Report regarding our Residential Electric Vehicle (EV) Charging Tariff and Residential EV Service Pilot for the period ending April 30, 2019. We submit this Report pursuant to the Commission's Orders dated June 22, 2015 and October 26, 2017 in Docket No. E002/M-15-111 and Order dated May 9, 2018 in Docket No. E002/M-17-817. We request the Commission accept our 2019 Annual Report.

In its 2015 Order in Docket No. E002/M-15-111, the Commission required that each utility file an Annual EV Tariff Report, including the following information on a per quarter basis:

- the number of customers who have arranged to purchase electricity under the tariff;
- the total amount of electricity sold under the tariff;
- the amount of energy sold in on- and off-peak periods, if applicable;
- a brief description of all development and promotional activities and their costs;
- the number of customers choosing the renewable-source option;
- the status of the communications costs tracker account, if applicable; and
- copies of any EV promotional materials distributed to customers.

Order point 2 of the Commission's September 11, 2018 ORDER ACCEPTING 2018 ANNUAL REPORTS AND ESTABLISHING REQUIREMENTS FOR NEXT ANNUAL REPORTS in Docket No. E002/M-15-111 required the Company to provide a breakdown of costs by educational and outreach initiatives, including where possible, a separation of costs used to promote the off peak charging tariff versus EV adoption in general.

Our Residential EV Service Pilot was launched in 2018 as an additional EV charging option that leverages smart charging technology to lower initial costs of participating in the dedicated EV Charging Rate. 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.

Order point 8 in the Commission's May 9, 2018 ORDER APPROVING PILOT PROGRAM, GRANTING VARIANCE, AND REQUIRING ANNUAL REPORTS required the Company to file an annual report on the pilot, including the following information:

- The number of participating customers and amount of electricity sold in the program, reported on a monthly basis;
- Tracker balances;
- Analyses of customer cost savings;
- Lessons learned regarding customer experience and pilot performance under Xcel's safety and reliability standards;
- The number of customers choosing the bundled option;
- The costs and revenues associated with the bundled option;
- The types of electric vehicle supply equipment (EVSE) that are chosen by the participants;
- The contractors' estimated second-meter installation costs;
- The extent to which wireless connections impacted pilot participation;
- How often wireless connectivity issues prevented billing under the Pilot; and
- Analysis of the effectiveness of car-dealer incentives

Order Point 9 in the Commission's May 9, 2018 Order also required the Company to include a plan to transition the pilot into a permanent EV Service option in this Annual Report.

Order Point 12 in the Commission's February 1, 2019 ORDER MAKING FINDINGS AND REQUIRING FILINGS in Docket No. 17-879, the Commission required the Company to file, as a part of this annual EV report, an EV promotional cost recovery mechanism.

For ease of reviewing this filing, the Company provides a compliance matrix as Attachment A. This attachment lists the various order points mentioned above and where the information required by each order point can be found in this annual report.

Included with this filling are the following attachments:

Attachment A	Compliance Matrix
Attachment B	EV Promotional Materials
Attachment C	Upfront Cost Savings Details
Attachment D	Bill Savings Calculation Details

ANNUAL REPORT

I. EV CHARGING RATE TARIFF

Our Residential EV Charging Service (EV Rate or EV Charging Rate) was launched on August 1, 2015 as a voluntary option to provide residential customers an incentive to charge their EVs during off-peak hours. This rate requires the installation of a second meter at the customer's premises and provides customers with on-peak and off-peak electric rates for EV charging. This section provides the annual report of required information related to the operations under this tariff.

A. Customer Participation and Usage

Customers billed on the Residential EV Charging Rate and the corresponding energy usage history by month is summarized below in Table 1.

Table 1
Total Customer Participation and Energy Usage[1]

		Monthly KWH		
Date	Customers	On-Peak	Off-Peak	Total
Oct-15	8	0	1,741	1,741
Nov-15	7	77	1,967	2,044
Dec-15	9	128	3,008	3,136
Jan-16	14	404	5,883	6,287

[1] Monthly information shown in Table 1 is based on general billing month indicator from our billing system. This is consistent with the presentation of monthly participation and energy usage from previous reports.

Feb-16	13	189	5,497	5,686
Mar-16	17	314	6,959	7,273
Apr-16	20	528	6,779	7,307
May-16	31	896	9,230	10,126
Jun-16	32	663	11,563	12,226
Jul-16	34	987	12,219	13,206
Aug-16	43	749	15,426	16,175
Sep-16	44	708	14,406	15,114
Oct-16	58	1,289	17,764	19,053
Nov-16	54	1,605	17,963	19,568
Dec-16	66	2,482	23,288	25,770
Jan-17	78	2,697	33,871	36,568
Feb-17	79	2,132	31,805	33,937
Mar-17	102	3,144	36,046	39,190
Apr-17	93	1,734	29,733	31,467
May-17	103	2,452	34,036	36,488
Jun-17	111	2,231	38,674	40,905
Jul-17	117	2,992	37,505	40,497
Aug-17	137	2,705	39,750	42,455
Sep-17	140	5,345	48,673	54,018
Oct-17	161	3,761	51,198	54,959
Nov-17	151	4,443	54,809	59,252
Dec-17	193	5,804	66,058	71,862
Jan-18	189	8,385	87,471	95,856
Feb-18	164	6,821	70,404	77,225
Mar-18	217	9,135	80,902	90,037
Apr-18	206	4,771	68,931	73,702
May-18	226	6,114	68,988	75,102
Jun-18	229	5,266	69,401	74,667
Jul-18	243	4,875	72,610	77,485
Aug-18	260	4,348	74,174	78,522
Sep-18	258	5,023	76,492	81,515
Oct-18	301	5,777	95,406	101,183
Nov-18	302	8,239	107,968	116,207
Dec-18	322	10,914	136,044	146,958
Jan-19	375	13,637	164,208	177,845
Feb-19	346	15,931	151,111	167,042
Mar-19	428	15,322	169,253	184,575
Apr-19	473	10,522	155,319	165,841

Table 2 below provides the EV Charging Rate customer counts by quarter (and for the single month of April 2019).

Table 2
Total Customer Participation by Quarter[2]

Date	Customers
Dec-15	9
Mar-16	17
Jun-16	32
Sep-16	46
Dec-16	64
Mar-17	94
Jun-17	112
Sep-17	139
Dec-17	157
Mar-18	201
Jun-18	232
Sep-18	261
Dec-18	325
Mar-19	418
Apr-19	446

The monthly average percentage of charging during the off-peak period (9:00 p.m. to 9:00 a.m., holidays and weekends), under the Residential EV Charging Rate, has ranged from 90 to 94 percent for the last two years, with an average monthly off-peak share of 93 percent.

B. Development and Promotional Activities

In the last year, the Company has made EV-related proposals in order to support continued EV penetration in our service territory and develop greater options for our customers. The proposals included a Fleet EV Service Pilot and a Public Charging Pilot.[3] The Company has also proposed a Residential EV Subscription Service Pilot[4] and a Residential Smart Charging Pilot (*Charging Perks)*[5] since our last Annual Report, and both pilots are pending regulatory review.

[2] Customer count in Table 2 is based on calendar month at the end of each listed quarter.
[3] Submitted in Docket No. E002/M-18-643.
[4] Submitted in Docket No. E002/M-19-186
[5] Submitted as a modification to our current CIP Plan in Docket No. E,G002/CIP-16-115

Beyond the development of new EV-related offerings, the Company has continued its educational campaigns about EVs. The Company's EV-related educational efforts span multiple communication channels including sponsorship of public events, digital media, and dynamic communications. In general, digital outreach creates awareness about Xcel Energy's offerings and the EV market, and public events enable education through an accessible format that addresses complex questions. Our education campaigns supply useful information on the benefits of EV ownership and Xcel Energy's EV offerings to customers who are considering buying an EV or already own an EV. In compliance with the Commission's Order, copies of our EV promotional materials distributed to customers are provided in Attachment B.

Industry outreach is also a key component of the Company's promotional strategy for EV resources. By engaging industry partners directly, the Company aims to enable a positive customer experience by coordinating communications with two key groups: auto dealers and electricians.

1. *Public Events*

The Company selects events strategically to engage relevant audiences. Xcel Energy promoted our EV service options at nearly ten public events since our last compliance filing. These included large-scale showcase events such as the Twin Cities Auto Show in Minneapolis in March 2019 and local community gatherings such as Edina Open Streets and White Bear Lake Marketfest in 2018. Xcel Energy also sponsored the first ever dedicated Electric Vehicle Test Drive at the Twin Cities Auto Show. Teaming up with the Company's industry partners, White Bear Lake Mitsubishi, Nissan, Midwest EVOLVE, and Carsoup.com, the Xcel Energy Electric Test Drive provided over 1,000 test drives to customers. Additionally, Xcel Energy participated in multiple meetings and workshops with local stakeholders such as Drive Electric Minnesota and Cities Charging Ahead.

2. *Digital Media*

The Company has developed a number of digital educational initiatives, including the creation of short animated videos to introduce the benefits of electric vehicle options. The 60-second videos can be found on YouTube[6]. We sought to drive engagement through search engine marketing and social media posts directing customers to the video and the Company's online resources for EV information. The EV Rate

[6] https://www.youtube.com/watch?v=4F1IrBTRvlw

webpage on the Company's website provides information about the EV charging rate, equipment installation guidelines, and provides an online enrollment option at: www.xcelenergy.com/EVElectricPricing.

Through our Xcel Energy ConnectBlog, the Company has provided timely, useful information to inform the public on EV-related issues. The blog provides digestible information in a familiar tone on topics including home and business energy solutions, clean energy, and more. In December 2018, the blog featured a discussion about the growth in EV model options and improvements in EV driving range, recapped the various charging options offered by the Company, and increases in public charging locations.[7] In September 2018, a post on the blog shared information to refute common myths about EVs.[8] The Company promotes EV content in the ConnectBlog through social media links. The Company also fields questions on EVs directly from customers through a dedicated email address, ElectricVehicles@xcelenergy.com.

3. EV Advisor Online Tool

New to Xcel Energy's communications portfolio as of January 2019, the Company's EV Advisor tool fosters awareness and education of electric vehicles by providing personalized recommendations for EV models and rate options that are a best fit.

The EV Advisor widget provides 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

[7] https://stories.xcelenergy.com/Clean%20Energy/Electric%20Vehicle%20Recap%202018:%20Paving%20the%20Road%20Ahead

[8] https://stories.xcelenergy.com/Clean%20Energy/Five%20Electric%20Car%20Myths%20Shattered

- Rate recommendations.

After answering the questions in the EV Advisor, this content will be personalized to the individual customer's situations.

Xcel Energy will continue to enhance this current online resource as it expands its service offerings with an easy customer experience. The EV Advisor can be found at: www.xcelenergy.com/EV.

4. Auto Dealer Outreach

Sellers of electric vehicles are a key information resource for consumers to learn not only about electric vehicles models, but also other aspects of the electric vehicle experience, including charging options, rates, and renewable offerings. In 2019, concurrent with the Twin Cities Auto Show, the Company partnered with Mitsubishi and Nissan dealerships in the Twin Cities area to offer special incentives on the purchase of EV and plug-in hybrid EV models to Xcel Energy customers. This special incentive was advertised at the auto show, through dealer websites, and by communications from sales personnel at the dealerships. As a result, we were able to leverage the dealers as an additional source of information to encourage EV purchases. This collaboration was the first of-its-kind for Mitsubishi, and our dealer partner White Bear Lake Mitsubishi sold 43 units of the plug-in hybrid Outlander as a part of this special incentive.

Xcel Energy is committed to maintaining strong relationships with dealers. Over the last year, the Company has met with and established a community of over 75 dealerships to create the Xcel Energy EV Trade Partner Network. Partnering and communicating with dealers is important to ensure that customers receive accurate information about charging options and electric costs, and will continue to be a key part of Xcel Energy's EV initiatives.

5. Electrician Trade Allies and Trainings

Working in parallel with our auto dealer outreach strategy, we hosted an on-site training for electricians who were interested in installing EV equipment and associated components. The training included information about the EV market, Xcel Energy rates and renewable programs, and specific metering standards and considerations. On a rolling basis, this training content is also available online to electricians who are interested in joining Xcel Energy's EV Trade Partner Network but were unable to

attend in person.[9] We have incorporated feedback from the electricians into customer communications and will continue to work with these allies to streamline our service offerings. Customers can now access the list of over 10 EV knowledgeable electricians on the portion of the Company's website dedicated to EV information.[10]

C. Renewable Program Participation

As of March 2019, 38 customers were enrolled in Windsource along with the EV Charging Rate. As of March 2019, no EV rate customers were enrolled in the Company's Renewable*Connect program.

D. Electric Vehicle Program Cost Tracker

Costs associated with EV Rate education and outreach activities are recorded to a tracker account that was established in 2015, of which $285,998 was attributed to the EV Tracker account between May 1, 2018 and April 30, 2019. These costs support the strategies described in the Development and Promotional Activities section above including sponsorship and participation in community events, digital media and videos, print materials, and other customer and industry communications.

Consistent with Minn. Stat. Section 216B.1614, subd. 2(2), the Company expanded the message of educational initiatives to include general EV information, as well as EV Rate specific information. Costs associated with this outreach were attributed to the EV Tracker. As EV adoption increases, the Company will continue to tailor messaging and educational efforts to provide relevant information about EVs through appropriate channels.

In compliance with Order Point 2 of the Commission's September 11, 2018 Order, Table 3 below provides our promotional education and outreach costs, broken down by major activities. In addition, we also separate general education and outreach costs from costs related to our Residential EV Service Pilot.

[9] https://www.xcelenergy.com/energy_portfolio/innovation/electric_vehicles/ev_trade_partner_resource_center
[10] https://www.xcelenergy.com/energy_portfolio/innovation/electric_vehicles/charging_your_electric_vehicle

Table 3
EV Tracker Balance Costs – May 1, 2018 – April 30, 2019

Public Events	$81,948
Digital Media	$17,842
EV Advisor Online Tool	$142,500
Collateral	$5,853
Trade Allies (Dealers and Electricians)	$34,500
EV Service Pilot Education	$3,355
Total	**$285,998**

Costs that are added to the tracker are currently being deferred for future rate recovery consideration.

II. Residential EV Service Pilot

The Company's Residential EV Service Pilot offers an opportunity for customers who own or lease an EV to save upfront costs that are normally required to take service under the EV Rate tariff. With EVSE that can provide billing quality data of on and off peak charging, customers are able to avoid the high cost of having a second meter on their premises. The pilot seeks opportunities for cost savings compared to the Company's current customer offerings and also seeks to improve the customer experience while maintaining safe and reliable electric service. This offering is a key feature of the Company's broader activities related to transportation electrification.

A. Customer Participation and Usage

As ordered by the Commission, participation in the Residential EV Service Pilot was capped at 100 customers. From the launch of the pilot in August 2018, interest in participation was strong with 81 applications submitted in the first two days. Enrollment ultimately was closed in February 2019 after we received over 160 applications for participation. 100 of those applicants were accepted and 99 are currently participating in the pilot. Table 4 below summarizes the number of participating customers and amount of energy usage, by month, since the pilot launch.

Table 4
Total Pilot Participation and Energy Usage

		Monthly KWH Usage		
Date[11]	Customers	On-Peak	Off-Peak	Total
Oct-18	12	23	2,134	2,157
Nov-18	40	249	13,213	13,462
Dec-18	54	542	19,129	19,671
Jan-19	87	1,989	39,193	41,182
Feb-19	87	1,772	33,599	35,371
Mar-19	97	1,785	38,850	40,635
Apr-19	97[12]	977	32,423	33,400
Total		7,337	178,541	185,878

B. Residential EV Service Pilot Cost Tracker

In connection with Pilot operations, we have added $3,355 in costs to the EV Cost Tracker authorized by the Commission. Of those costs, $2,455 are related to events and collateral, and $900 are for our dealer referral incentive.

C. Customer Cost Savings

1. Upfront Costs

One goal of the Residential EV Service Pilot is to study the program's effectiveness in reducing the upfront costs needed to participate in our EV Charging Rates. Our current EV Charging Tariff requires the installation of a second meter and service. The pilot does not, reducing the upfront costs of a second meter and second service installation.

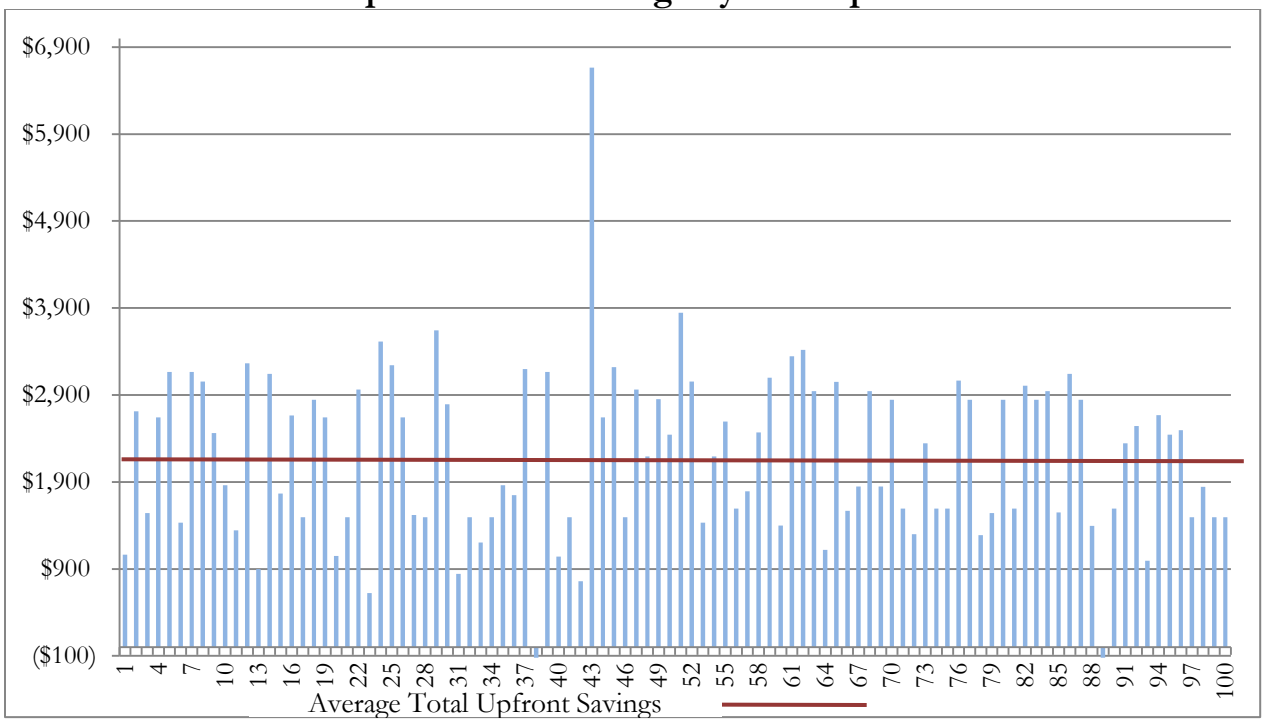
At the time of charging equipment installation, the contracted electrician installers were asked to estimate the cost of premises wiring and other hardware that would be necessary to participate in the traditional separately-metered EV Charging Rate. To determine the upfront cost savings, these estimates were compared to the actual cost of installation[13] for the Residential EV Service Pilot. Data from the electrician

[11] Date represents billing month
[12] Only 97 customers were invoiced in April 2019. Two customers did not have bills in April due to billing cycle timing and one customer left the program since they moved out of our service territory. Additionally, some customers joined the program prior to acquiring an EV, and therefore have had zero kWh usage for some months over the course of the pilot.
[13] Premises wiring, EVSE, and hardwiring

estimates for the separately metered EV Charging service and actual costs to install EVSE for the pilot were analyzed for each participant to understand what the typical costs are for a given installation scenario, and identify upfront cost savings provided by the pilot's delivery model.

Average upfront cost savings are displayed at a comprehensive level for all 100 pilot participants in Figure 1. Cost savings varied due to differences in installation scenario. Some major differences included availability of an existing 240 volt dedicated circuit needed to power the level 2 charger, installation in an attached or detached garage, and the general location of the nearest supply panel in comparison to the charging location. However, under each of these different types of scenarios, customers experienced upfront cost savings in aggregate.

Figure 1
Upfront Costs Savings by Participant



In all, the pilot saved participants $219,618 in upfront costs. The average savings per customer was $2,196. It is important to note the distribution in the upfront cost savings data. The upfront cost savings realized for each project is entirely determined on the participants' garage type (attached versus detached), panel location (basement versus garage), and circuit pathway (trenching, furnished or unfurnished walls).

Attachment C provides figures showing the average estimated installation costs for installations related to the standard EV Charging Rate and actual installation costs for

the pilot, broken down by scenario. These figures highlight the variability in customer costs savings based on specific installation parameters, but also that the Residential EV Service Pilot can provide significant upfront cost savings to customers.

a. Outlier Installation Experiences

There are a handful of atypical situations shown in Figure 1. One installation showed an estimated upfront cost savings of $6,664, over three times the average savings. This home did not have an existing dedicated circuit to the installation site and did not have a basement to run new conduit. The nearest supply panel to the installation site was 100 feet away from the attached garage on the opposite side of the house. These issues contributed to difficulty in setting up the home with a second meter for the standard EV Charging Rate. The contractor was able to retrofit an existing circuit pathway that allowed for installation of the EVSE equipment in a much simpler alignment and for much lower install costs than would have been incurred under the standard EV Charging Rate.

There also were two situations where installation of the EVSE for the Residential EV Service pilot appears to be slightly more expensive (around $200 each) than the installation of a second meter. Both scenarios were installations in detached garages, where the separately metered option was impractical but estimated to be a lower cost for electrical work on the customer's side of the meter. For instance, for one location, the nearest overhead utility service pole was over 300 feet away and across the street from the detached garage. Because of that distance, a new utility pole would most likely need to be dropped behind the garage. Although the customer's cost for electrical work on the customer's side of the meter would have been lower, this solution was impractical and would have resulted in significant expense on the utility's side of the meter. In these situations, the customer was comfortable with the expense and opted to participate in the pilot.[14]

2. Electric Rate Savings

The Residential EV Service Pilot tariff offers time-of-use charging rates for participating customers. As was shown in Table 4 above, approximately 96 percent of customers' charging occurred during off-peak times. Based on that usage profile, the Company expects customers to see a fair level of savings compared to what they would have been billed on the standard residential rate. Table 5 summarizes this

[14] In some cases, based on assessments by contracted installers, applicants were recommended to instead set up home charging via the EV Rate Service since the respective install costs were less than those identified for participating in the pilot.

savings expectation based the program-to-date level of off-peak charging and a wide range of monthly kWh usage levels. Based on the assumption of 350 kWh of usage per month and the current level of average off-peak charging, customers enrolled in the pilot would save $9.76 per month or $117.12 per year. Attachment D contains the calculation supporting this bill saving summary. The analysis in Table 5 excludes the upfront cost of the charger and installation to facilitate an apples-to-apples cost comparison of the tariffed pricing.

Table 5
Bill Savings of EV Charging on the EV Service Pilot Tariff

Monthly EV Usage Assumption (kWh)	150	275	350	425	500
Monthly Bill of EV Charging on the Standard Residential Tariff	$19.80	$36.31	$46.23	$56.14	$66.04
Monthly Bill of EV Charging on the EV Service Pilot Tariff	$19.70	$30.18	$36.47	$42.76	$49.06
Bill Savings per Month[15]	$0.10	$6.13	$9.76	$13.38	$16.98
Annual Savings Per Customer	$1.20	$73.56	$117.12	$160.56	$203.76

D. Customer Experience and Pilot Performance Lessons Learned

1. Customer Experience

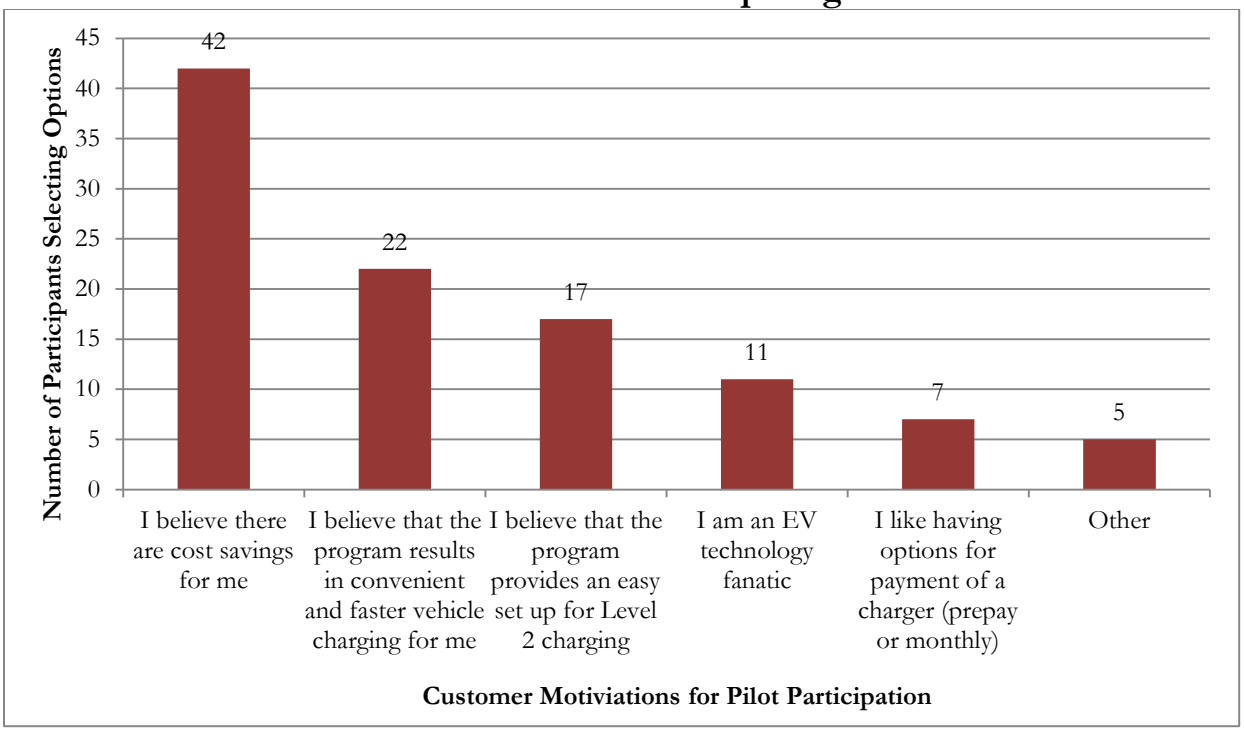
The Company solicited feedback concerning the pilot from customers via a post-installation survey. This allowed for the immediate collection of customer feedback when the experience was most top of mind for the participants. 63 of 100 Pilot participants responded to the survey. The post-installation survey measured customer satisfaction on a number of pilot elements, including education about the pilot, how the pilot works, and quality of equipment installation. The learnings will inform our customer communications on EV adoption, charging services, and rate options.

[15] Assumes monthly service charge for Pre-Pay option. This represents costs that all customers pay. Bundled option additional cost is for installation and EVSE equipment.

a. Customer motivations for Pilot enrollment

As shown in Figure 2 below, our survey results revealed that customers participating in the Residential EV Service Pilot were motivated by the costs savings they hoped to realize, along with the opportunity for faster, more convenient charging.

Figure 2
Customer Motivations for Participating in the Pilot

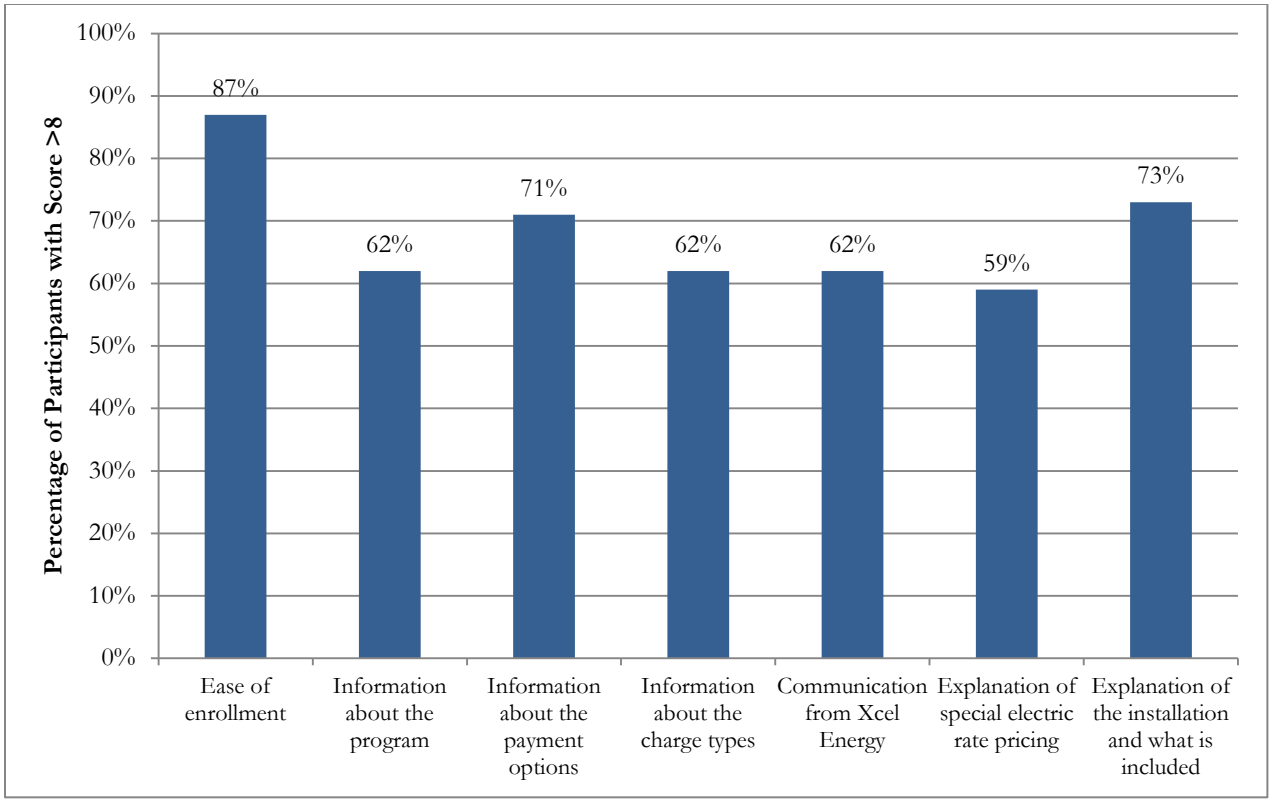


b. Online Enrollment Experience

Figure 3 below shows satisfaction scores related to online enrollment.[16] The overall "Ease of enrollment" was well received with a satisfaction score of 87 percent. Although all elements of the online enrollment experience received positive scores overall, the scores for certain aspects, including "Explanation of special electric rate pricing," "Communication from Xcel Energy," and "Information about the charger types," reveal opportunities for improvement. These scores and related comments show that some customers were confused by the TOU rate prices, charger types, and had a desire for more communication from Xcel Energy.

[16] Satisfaction score represents the percentage of customers who rated a factor as an eight or higher on a scale from one to ten.

Figure 3
Satisfaction with Online Enrollment

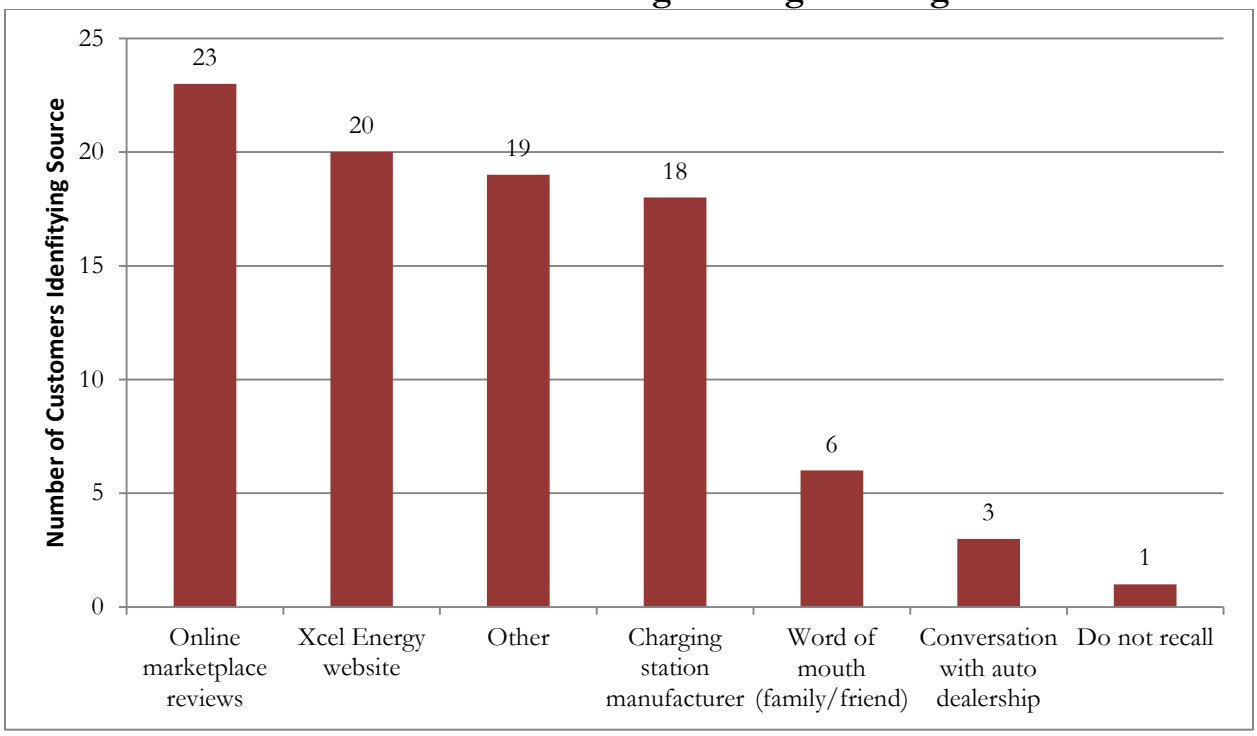


For example, "Explanation of special electric rate pricing" with only a 59 percent satisfaction score is one of the more notable improvement areas for future EV services. This element of the pilot was a focal point in correspondence with customers. Our general summary of direct customer feedback through the surveys and follow-up phone and email conversations is that participants understood and recognized the pricing signal, in that charging their electric vehicle during off-peak hours is cheaper and provides benefit. However, confusion surrounded how the pricing works, components of the rate and on-bill presentation, as well as what could be expected for fuel savings and an overall payback timeframe.

Some participants developed their own calculations and assumptions for their electric fueling scenario and rate participation, and sought accuracy confirmation from the Company. Based on this experience, we believe that pilot participants as a group likely have an interest in understanding more details on the costs and benefits of the Company's various rates. Moving forward from the pilot to a full scale offering, and as the industry builds a deeper understanding of EV charging behavior, the Company plans to leverage digital tools and more comprehensive energy consumption data in order to provide customers with better data regarding the possible benefits they could realize through different Company offerings and rates.

In selecting their charging stations, pilot participants sought information from various sources, including online market place reviews and Xcel Energy's pilot website. The sources of information customers used to select charging equipment are shown in Figure 4 below.

Figure 4
Source of Information for Selecting a Charger during Enrollment

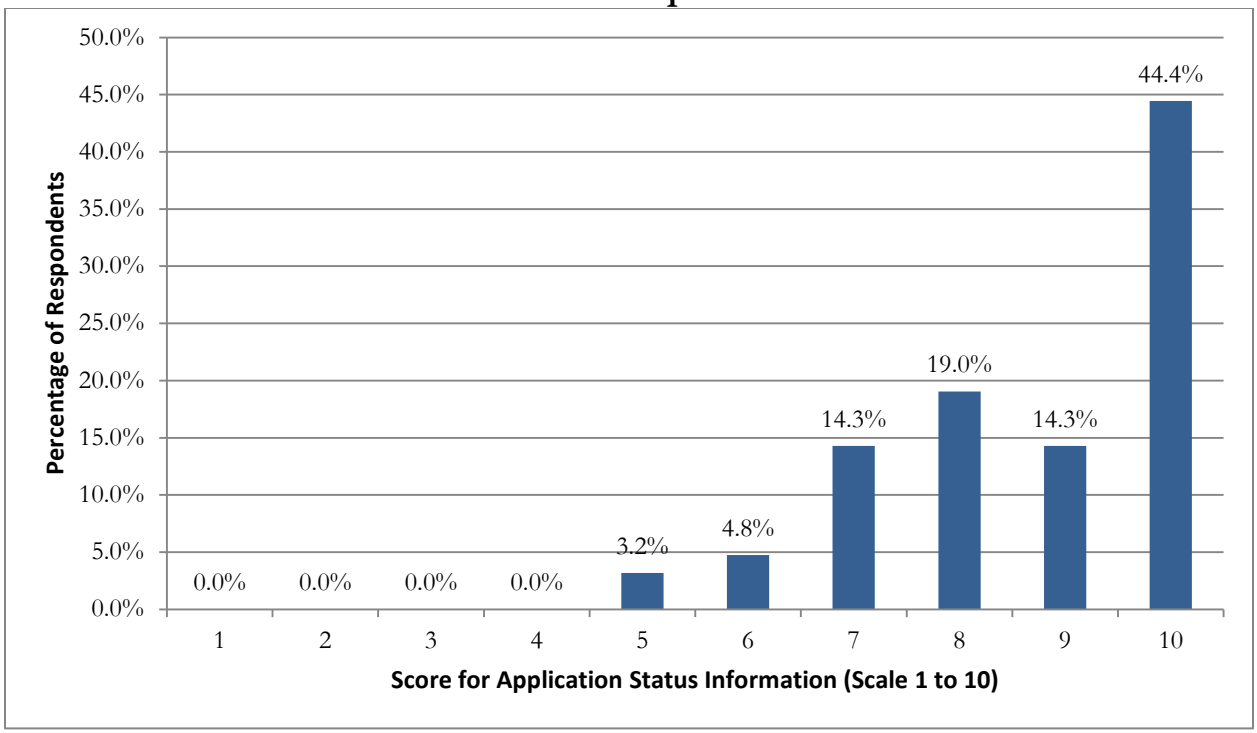


Finally, we are continuing to work on improving the experience for our customers who are exploring acquiring an EV. For example, the Company has deployed an EV Advisor tool that helps customers understand their EV and rate options available to them. The findings and data collected in this pilot will be layered into the tool to better educate customers about charging in the home, rate options and benefits, to provide them with accurate information that informs their choices.

c. Participation and Installation Timeline Experience

Participants received an application status notification after their enrollment was accepted. 78 percent of respondents gave a score eight or higher on a scale from one to ten that the information they received about their application status met their expectations. The overall results of this score are shown in Figure 5 below.

Figure 5
Timeliness of Pilot Acceptance Notification



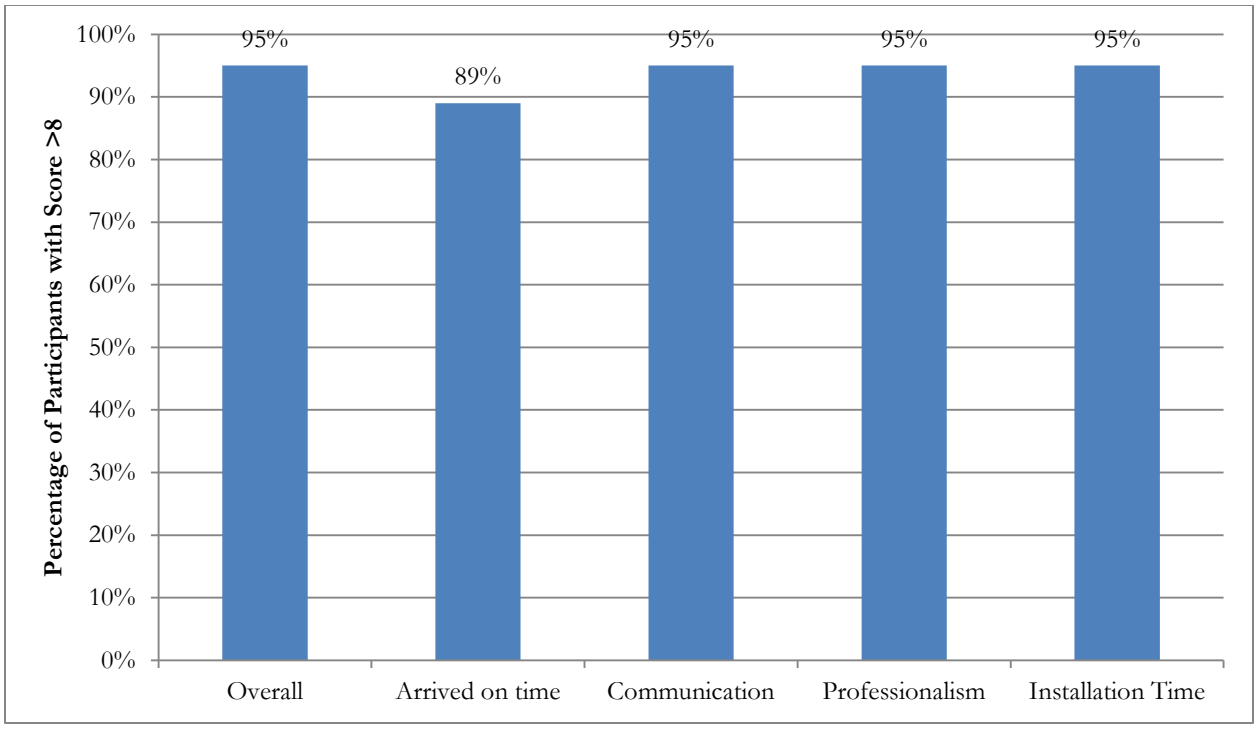
Throughout the six-month enrollment period, we received 164 online applications, and ultimately enrolled 100 customers in the pilot. Although the pilot was limited to 100 participants, we accepted more than 100 applications because some applicants withdrew before having any EVSE installed. Of the 64 applicants who withdrew their applications, 19 did so based on advice from the installers that the existing EV Rate Service was a better economic option for them. The other applicants who withdrew did so for a variety of reasons, including because they (1) already had and were using a level 2 charger, (2) decided their EV charging behavior did not warrant faster charging with a level 2 charger, (3) perceived program costs as being too high, (4) were ineligible,[17] and (5) simply did not respond to the installer. 99 of the 100 customers who were initially enrolled in the pilot are still participating at this time. The one customer who no longer is enrolled moved out of our service territory and was removed from the pilot at that time. In this case, the Company was able to efficiently work with the customer to uninstall the equipment and return it to the Company's possession.

[17] Reasons for a customer ineligibility included having participating in net-metering programs, residing in mutli-family housing, and not having an EV.

In regards to time of enrollment to time of install, we note that the Company was able to decrease the average number of days from enrollment to installation of equipment by 33 days, and the last wave of installs occurred on average within 23 days of enrollment. This was due primarily to a clearing of the backlog from the first two days of pilot launch. In addition, we were able to solve firmware issues that caused some early delays in completing installations in the first wave.

The two installers used by the Company for the pilot both received high satisfaction scores from respondents. Customer satisfaction scores related to installation are shown in Figure 6 below. As the Company continues to administer this pilot and bring forward future EV programs, the Company intends to continually measure and improve customer satisfaction by working closely with industry partners and contractors.

Figure 6
Installation Satisfaction Scores



d. Operational challenges

In connection with our assessment of pilot operations, we discovered that a particular electric car model was not compliant with standard electrical connector standards for electric vehicles in North America, and occasionally the vehicle would charge less than expected after being plugged in for a full night. The Company worked with charging equipment vendors to develop a workaround to this issue. Affected customers

disengaged the TOU schedule from the charging equipment's mobile application and, instead, scheduled their charging through their vehicle's interface. This workaround has resolved the issue by bypassing a possible communication gap between the charging equipment and vehicle. All participants who may be impacted have been informed of this issue and the workaround.

2. Safety and Reliability

The Company conducted a request for proposal (RFP) process for charging equipment that met detailed technical requirements necessary for maintaining safety, reliability, and billing accuracy. Both vendors selected through the RFP process were able to demonstrate documentation that their products were certified by UL, LLC, a global safety certification company. This listing is an industry standard that indicates charging equipment has met specific and defined requirements of UL's published and nationally recognized safety standards. The vendors also implemented controls that prevent energy consumption data tampering, ensuring proper data security and safety. Prior to pilot launch, they both successfully integrated into a secure data transfer process that enabled 15-minute interval energy usage data to be securely exchanged from the vendor's server to the Company's billing system. Currently, once data files from the charging vendors are received by the Company, they are manually uploaded into the billing system. As we move from pilot to scale, this process will be automated and simplified in order to achieve efficient program administration.

All of the charging equipment deployed through the pilot was installed by the program's contract installers who complied with industry best practices and National Electric Code Standards. For installations that required premises wiring with the installation of a new 240 volt circuit, contract installers received permits when required by local building codes.

The pilot relied on participant Wi-Fi networks for billing purposes. Upon installation, charging equipment was set up and connected to the premises' Wi-Fi by the contract installers. Using customer Wi-Fi for billing purposes continues to appear to be a reasonable option going forward. Only one customer had any notable difficulty, and ultimately we were able to resolve that issue. That participant's Wi-Fi network had a firewall enabled that blocked the equipment vendor's application from successfully obtaining energy usage data for billing purposes. The equipment vendor's customer support was able to troubleshoot with the participant to resolve the issue so that accurate billing data can be exchanged.

Additionally, on some occasions, low Wi-Fi strength at the charging location made it difficult for contract installers to connect the equipment to the network, resulting in

longer installation times. Moving forward, the Company will explore ways in which Wi-Fi strength can be measured on-site during installation, as well as work with the equipment vendors to proactively report on Wi-Fi readings to alleviate potential issues that impact participation or inhibit program benefits.

In the event that the charging equipment is not connected to Wi-Fi or transmitting energy usage data, both equipment vendors did commit to enabling their devices with capacity for 90 days of data storage. This minimum requirement is currently being confirmed through on-site product testing in the Company's facilities. Results of this testing will be conveyed at a later time.

3. Billing Accuracy

Through on-site product testing, both vendors' charging equipment met the requirement for metering data at an accuracy of plus or minus two percent, a standard that is enforced by the Commission for traditional metering technology.

Although the data provided by the charging equipment is sufficiently accurate, formatting the data so that it can be received by the Company and successfully uploaded to the billing system required significant collaboration between the Company and vendors. In some situations these issues initially resulted in delayed billing. The issues were generally resolved in less than three weeks from when they were identified.

The pilot also uncovered charging equipment firmware issues that required remediation and impacted the Company's ability to retrieve energy usage data for billing purposes. These firmware issues also resulted in billing delays and either slight over or undercharging of customers since the issue inhibited accurate time-stamped energy usage data transmittance. We encountered this firmware issue in late October and early November 2018. It was remediated by the vendor in February 2019 with a firmware update over-the-air. We were able to recover the data from this period and we are in process crediting customer accounts accordingly. For the 23 customers impacted, this equates to nearly $114 in bill adjustments in total.

Moving forward, the Company will identify pathways to better assimilate data formatting so that procedures are consistent and robust to ensure accurate and timely billing for EV programs at scale. In the near-term, we can begin scaling with our existing architecture as we have now successfully integrated with these two vendors and have been able to deal with the handful of issues that have arisen. However, as participation increases to 1,000+ units, and as we add equipment options, we will need more automation, resources, and most likely a different solution. We also expect

that when we identify a solution that enables easier upfront integration with the needs listed above, we will be able to bring in additional vendors and partners that can bring additional choice to customers.

4. EVSE Equipment Choice

The selected charging equipment vendors for the pilot are ChargePoint and eMotorWerks. Initially, the Company purchased 50 home charging devices from each vendor, totaling 100 units. Customers were able to choose their preferred vendor as long as we still had units available. Customers chose the units from each vendor at roughly the same rate, so we did not notice a strong preference for one type of equipment over the other.

5. Effectiveness of Car-Dealer Incentives

The Company partnered with four dealerships to refer new EV buyers to the pilot program. These dealerships agreed to and signed the referral incentive program agreement, and their sales personnel underwent pilot-specific training in order to properly describe the program to their customers at the point-of-sale.[18]

Overall, the point-of-sale experience was successful, and twelve participants were referred to the pilot during their EV purchase by dealerships. One dealership in particular demonstrated notable success accounting for two-thirds of the total referrals.

Three of the twelve referrals came from dealers who were not participating in the incentive program. These dealers were a part of the Company's EV Trade Partner Network. This experience suggests that dealers support this customer solution and the Company's EV services, and that the Company's efforts to train dealer sales personnel about electric transportation and utility EV programs are valuable to customers.

The Company plans to enhance this element of the customer experience by bringing additional advisory services to dealers, including tools that can help customers calculate their savings from driving electric and choose the EV option that is right for

[18] During the sales process, dealerships referred customers to the pilot and filled out an EV Service Pilot Information Form. The dealerships made copies of these forms and sent them to the Company for documentation. Upon enrolling in the pilot, customers were asked if a dealership referred them, and if so, they were instructed to specify which dealership. This customer entry confirmed the referral. If a referred customer participated in the pilot with a charger install, the dealership received a $100 incentive.

their needs. We will also continue to forge new industry alliances while expanding existing relationships. Through the pilot and other experiences we will continue to measure and assess the viability of dealer incentives.

E. Bundled Option Statistics

Generally, participants in the EV Service Pilot preferred to pay for the charging equipment and installation through a bundled monthly charge instead of the pre-payment option. 73 participants chose to pay for the equipment through the bundled monthly charge. Although a limited sample, this data indicates that customers prefer a bundled approach for their EV services that reduces upfront cost barriers and simplifies participation. Moving forward, the Company plans to incorporate this feedback into its pilot and program designs and experiment with subscription and bundled payment models to align with our customers' preferences.

To date, the Company has incurred $77,119[19] in costs related to operating the pilot for customers who chose the bundled option. Table 6 below shows costs broken down by capital, operations and maintenance (O&M) costs, marketing and communication costs, and research and development (R&D) costs. The marketing and communications costs will be added to the EV Tracker Account.

Table 6
Bundled Option Costs

Capital Costs	$67,529
O&M Costs	$5,425
Marketing and Communications	$2,449
R&D Costs[20]	$1,716
Total Costs	**$77,119**

During pilot operations, the Company brought in $6,010 in revenues from the monthly service charge from customers who chose the bundled option. In addition, we brought in $6,787 in revenues from energy usage charges.

F. Pre-Pay Option Statistics

As noted above, customers preferred the bundled option to pay for the EVSE over the pre-pay option. Only 27 customers chose to pre-pay for the EVSE at installation.

[19] To arrive at the split costs between the Bundled and Pre-pay options, the total costs were multiplied by the percentage of customers who participated in each option.
[20] Includes costs for equipment testing and installer training

To date, the Company has incurred $28,523 in costs related to operating the pilot for customers who chose the bundled option. Table 7 below shows costs broken down by capital, O&M costs, marketing and communication costs, and R&D costs. The marketing and communications costs will be added to the EV Tracker Account.

Table 7
Pre-Pay Option Costs

Capital Costs[21]	$24,977
O&M Costs	$2,006
Marketing and Communications	$906
R&D Costs	$635
Total Costs	**$28,523**

In addition to the pre-payment for installed charging equipment, during pilot operations, the Company brought in $951 in revenues from the monthly service charge from customers who chose the pre-pay option. In addition, we brought in $2,232 in revenues from energy usage charges.

G. Plan to Transition from Pilot to Permanent Offering

In the May 9, 2018 Order approving our Residential EV Service Pilot, the Commission ordered the Company to include in this Annual Report a plan to transition the pilot to a permanent offering.

Based on the results of the pilot to date and the learnings discussed in this report, the Company is in position to bring an expanded Residential EV Service offering forward. We intend to bring forward a proposal to expand our Residential EV Service to more customers in summer 2019.

III. Cost Recovery Mechanisms

Order Point 12 of the Commission's February 1, 2019 Order in Docket No. 17-879 requires the Company to file an EV promotional cost recovery mechanism consistent with Minn. Stat. § 216B.1614, subd. 2(c)(2). The Statute states that the Commission may approve EV tariff as long as the tariff includes a mechanism to allow the recovery of costs, including,

[21] Capital costs included here as they were initially incurred by the Company. Customers under pre-pay option have paid for all applicable capital costs at their enrollment and the Company will not include any of these capital costs in rate base.

> *costs to inform and educate customers about the financial, energy conservation, and environmental benefits of electric vehicles and to publicly advertise and promote participation in the customer-optional tariff.*

The Company's approved Residential EV Service tariff notes that these costs are being deferred in a tracker account, but we have yet to present a recovery mechanism for these costs.

In the February 1, 2019 Order, the Commission acknowledged that the Statute allows for utilities to recover the cost of education efforts beyond just encouraging enrollment in an EV tariff. The Commission also stated that utilities are "uniquely situated" to provide education to the public about EV adoption benefits.[22]

In light of the important role the Commission sees utilities playing in educating the public, the Company intends to seek recovery of our EV promotional costs in our next general electric rate case.

CONCLUSION

We respectfully request the Commission accept this 2019 Annual Report in compliance with its June 22, 2015, October 26, 2017, and September 11, 2018 Orders in this Docket.

Dated: May 31, 2019

Northern States Power Company

[22] See Page 6 of the Order

Docket No.	Order Date	Order Point Requirement	Reference in Annual Report
15-111	June 22, 2015	Annually, by June 1st, each utility must file an Electric Vehicle Tariff Report in its electric vehicle tariff docket. Each utility must include, on a per-quarter basis and in addition to the information required by Minn. Stat. § 216B.1614, subd. 3(1) and (2), the following information in its reports: a. The amount of energy sold in on- and off-peak periods, if applicable; b. A brief description of all development and promotional activities and their costs; c. The number of customers choosing the renewable-source option; d. The status of the communications costs tracker account, if applicable; e. Copies of any EV promotional materials distributed to customers.	Subd.3 (1) – Customers on Tariff & Electricity Sold on Tariff – Tables 1 and 2 a: Table 1 b: Activities – Section I.B Costs – Section I.D c: Section I.C d: Section I.D e: Attachment C
15-111	October 26, 2017	Xcel shall file in next year's annual report a compliance report with correction of data anomalies within 30 days and an assessment of current and forecasted EV penetration in Xcel's service territory, including an analysis of current and forecasted tariffs in use and charging practices.	Filed with 2018 Annual Report – Submitted June 1, 2019
15-111	September 11, 2018	2. Required the utilities, in subsequent reports, to provide a breakdown of costs by educational and outreach initiatives, including, where possible, a separation of costs used to promote the off peak charging tariff versus EV adoption in general.	Attachment B
17-817	May 9, 2018	8. Beginning in 2019, Xcel shall file, by June 1, an annual report on the pilot, including at a minimum: a. the number of participating customers and amount of electricity sold in the program, reported on a monthly basis; b. tracker balances; c. analyses of customer cost savings; d. lessons learned regarding customer experience and pilot performance under Xcel's safety and reliability standards; e. the number of customers choosing the bundled option; f. the costs and revenues associated with the bundled option; g. the number of customers choosing the pre-pay option; h. the costs and revenues associated with the pre-pay option;	 8a. Section II.A 8b. Section II.B 8c. Section II.C, Attachment D 8d. Sections II.D.1 and II.D.2 8e. Section II.E 8f. Section II.E 8g. Section II.F 8h. Section II.F

Docket No.	Order Date	Order Point Requirement	Reference in Annual Report
		i. the types of EVSE equipment that are chosen by the participants; j. the contractors' estimated second-meter installation costs; k. the extent to which wireless connections impacted pilot participation; l. how often wireless connectivity issues prevented billing under the pilot; and m. analysis of the effectiveness of car-dealer incentives. 9. Xcel shall, in its June 1, 2019 annual report, include a plan to transition the pilot into a permanent program.	8i. Section II.D.4 8j. Section II.C 8k. Section II.D.2 8l. Section II.D.2 8m. Section II.D.5 9. Section II.G
17-879	February 1, 2019	12. Minnesota Power, Otter Tail Power, and Xcel Energy shall file EV promotional cost recovery mechanisms consistent with Minn. Stat. § 216B.1614, subd. 2(c)(2), and the Commission's above Findings in this docket, as part of their annual EV reports filed June 1, 2019.	Section III

Ex. AA-D-41

Xcel Energy®

Get plugged in

Discover the benefits of driving an electric vehicle

More than a new way to drive, a better way to drive

With the growth of clean energy, the future of sustainable living is becoming a reality in your home, at businesses and now on the road. Fueling your car with electricity can be a fresh approach to driving, and Xcel Energy supports your electric vehicle (EV) goals by offering low-cost pricing and renewable energy options.

You're in the driver's seat, and we want to empower you with the information you need to drive electric.

There’s an EV that’s right for you

When shopping for an EV, there are two main categories of plug-in electric vehicles to consider: plug-in hybrid electric vehicles (PHEVs) or all-electric vehicles, which are also known as battery electric vehicles (BEVs).

Plug-In EVs

All-Electric EV
A battery-electric vehicle is a pure EV that is powered solely by electricity. When the battery depletes it is recharged using electricity, from a Level 1, 2, or 3 charger.

Plug-in Hybrid EV
A plug-in hybrid can operate on electric battery power as well as on gasoline. When the battery depletes, the gas-powered engine turns on.

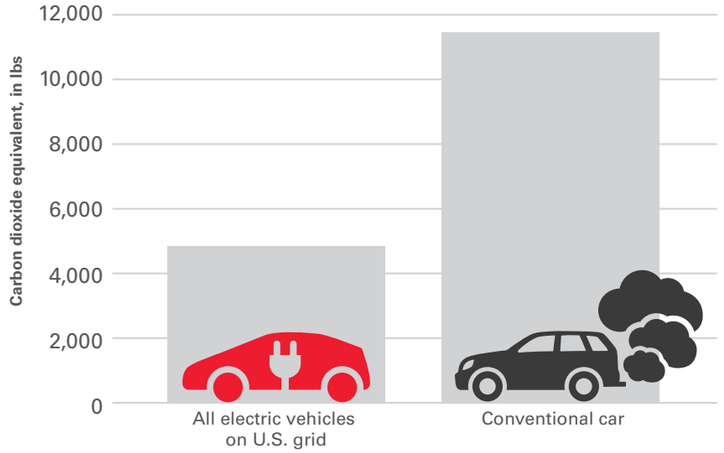
Top three reasons to drive electric

1 Your options keep growing

- With manufacturers making more EV and hybrid models, you have a wider selection which helps create more competitive pricing.
- Public charging options are increasing in retail locations, town centers and freeway corridors.
- EV drivers will tell you they are smooth shifting, quiet and offer an invigorating driving experience.

2 A clean break for our environment

- Fueling your car with electricity can reduce emissions to about one-third of conventional vehicles.*
- When you add renewable energy or enroll in one of Xcel Energy's renewable energy programs, you can drive with 100-percent clean energy.



* National averages as reported at www.afdc.energy.gov/afdc/vehicles/electric_emissions.php.

3 Cost savings that add up

- Federal tax credits, local vehicle incentives and a growing inventory of used vehicles help make EVs more affordable.
- Reduced maintenance costs for EVs saves you money on oil changes, tune-ups and other standard maintenance.
- With our low, off-peak prices, driving electric equates to spending about $1 per gallon of gasoline.

Compare costs

regular gasoline 2.50

electric eGallon 1.16

Department of Energy www.energy.gov/eGallon
The eGallon price is calculated using the most recently available state by state residential electricity prices. The state gasoline price above is either the statewide average retail price or a multi-state regional average price reported by EIA.

Home charging made easy

Once you purchase an EV, there are a few steps you can take to charge your vehicle at home.

1. Determine your charging level

2. Select your pricing plan

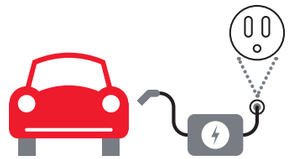
3. Install your charging station

We have EV charging plans to suit your lifestyle

When you become an EV owner, you may pay more attention to electric prices — and your energy usage — to get that extra savings over gasoline. Choose from the electric pricing plans we have available to suit your lifestyle and charging needs. To help you choose the best plan for, visit **xcelenergy.com/EVHomeCharging**.

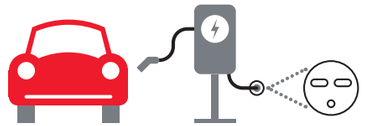
Getting charged up

For charging at home, Level 1 and 2 chargers are common household options that offer various charging speeds to accommodate your lifestyle and vehicle type. Level 3 fast charging stations are typically used for public charging, which are commonly accessible near retail or city center locations.



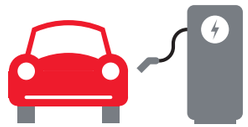
Level 1 Charger

- 120-volt cord plugs into the wall
- Dedicated circuit recommended
- Can provide around 40 miles of range after charging overnight[1]



Level 2 Charger

- Requires 208/240-volt service
- An electrician is required to set up electrical wiring for a new outlet or breaker — and service panel upgrade if necessary
- Can provide 30-80 miles of range for every hour of charging[1]



Level 3 DC Fast Charger

- Typically used for public charging
- Not for plug-in hybrids or certain battery-electric vehicles
- Typically requires 480-volt service
- Can provide up to 40 miles of range for every 10 minutes of charging[1]

[1] Range depends on vehicle, speed, cargo weight and other factors.

Fuel up with clean energy

Currently, more than a quarter of the energy you use comes from renewable sources. If you're interested in 100-percent carbon free driving, an easy way to feel good about reducing emissions is to fuel it with clean wind energy through our Windsource® program.

Windsource subscriptions are available for a small additional premium.

We're here to help

Our energy advisors can answer questions and guide you to the right pricing plan and charger installation options.

Visit **xcelenergy.com/EV** for more on EV electric pricing and ways to get started. If you would like to speak to us about pricing or installation, call **800.895.4999** or email us at **ElectricVehicles@xcelenergy.com**.

Xcel Energy®

RESPONSIBLE BY NATURE®

Ex. AA-D-41

Xcel Energy®

Electric Pricing Options
for EV Drivers

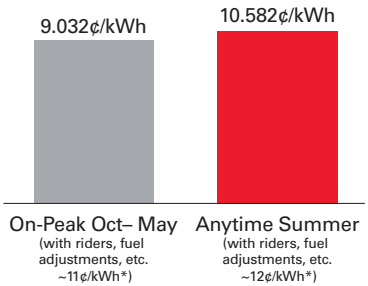
MN

Xcel Energy's affordable electric prices provide a significant savings opportunity compared to gasoline for our electric vehicle (EV) customers. We offer three different plans, providing flexibility to charge at a time and price that's convenient for you.

Standard Residential Pricing

Provides flexibility to charge anytime with the same price during the day and at night.

- One meter for home and vehicle electric use



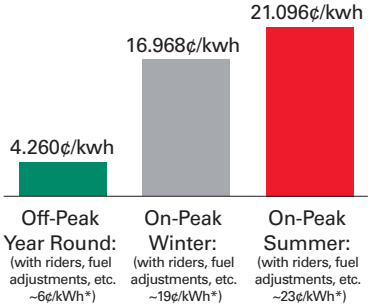
*Prices are subject to resource and/or fuel adjustments, city fees and taxes where applicable. Plans may change upon PUC approval.

For more information, visit xcelenergy.com/EV

Time of Day Pricing

Your off-peak plan (between 9 p.m. and 9 a.m. daily, plus holidays and weekends) is less than half of the standard residential prices, which is great for charging at night.

- One meter for home and vehicle electric use
- Monthly charge: $2 premium over standard plans

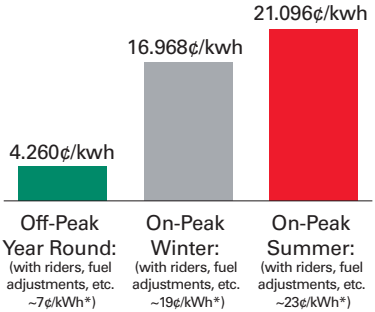


Trial period: three months — If you're not satisfied, we'll recalculate your bill at the standard pricing. There is a $20 charge to remove the off-peak meter if you cancel.

EV Pricing Plan

If you can charge your vehicle after 9 p.m., but can't shift your home energy to the evening hours, this is a great plan for saving on your driving costs.

- Two meters: one for home and one for vehicle electric use
- Monthly charge: $4.95, plus the home service charges

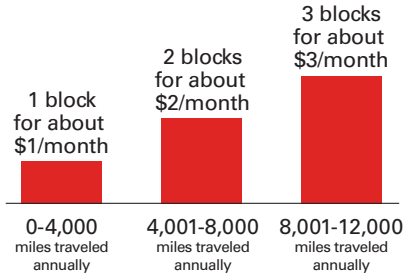


Customer must hire a licensed electrician to install a meter socket — and potentially an additional breaker — to connect appliances to the off-peak meter.

Power your EV with renewable energy! Windsource® for EVs*

Take your environmentally-friendly vehicle to the next level and support renewable energy by purchasing Windsource to power it.

- When you do, you're supporting:
  - Lower vehicle fuel and operating costs
  - Air quality and environmental improvements because EVs produce lower greenhouse gas and tailpipe emissions
  - Affordable and domestic renewable energy production that promotes electricity price stability



*Windsource is sold in block of 100 kWh. The cost per block is $3.53/month, less a credit for fuel costs. In 2017, the average fuel cost credit for a residential customer was $2.53, making the net charge for Windsource $1.00 per block. For more information visit xcelenergy.com/Windsource.

Xcel Energy®

Electric Vehicle Pricing Plan

Contractor Set-Up Guide

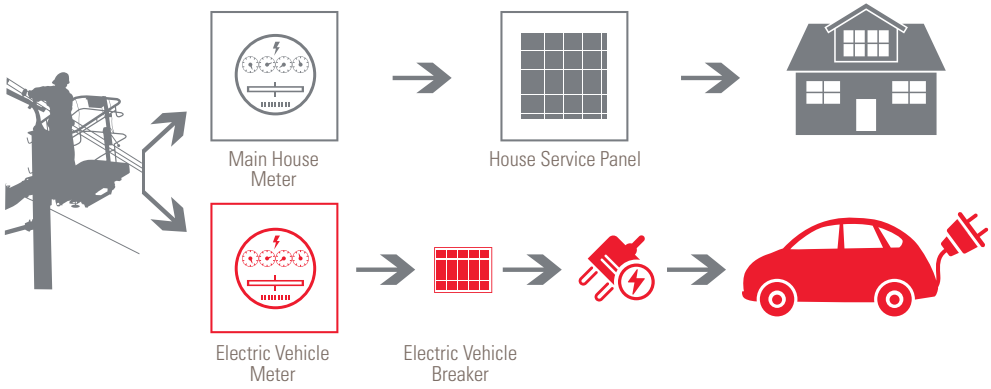
Contractor's Set-Up Guide: Overview

Pricing Plan Summary

Our special EV Pricing plan makes it easy for electric vehicle owners to save on charging costs. Customers who participate will get a reduced price for the electricity they use to charge their vehicle during off-peak hours (between 9:00 p.m. and 9:00 a.m. on weekdays, or anytime on weekends and holidays).

	Metering Set-Up	Monthly Charge	Off-Peak (9 p.m.–9 a.m., holidays & weekends)	On-Peak (9:00:01 a.m.–8:59:59 p.m., weekdays)
EV Pricing Plan	Separate Meter for the EV Only	$4.95	$0.04260/kWh	$0.16968/kWh (other months) $0.21096/kWh (June–Sept.)

*Prices apply to single phase – secondary voltage use only. Prices are subject to resource and/or fuel adjustments, city fees and taxes where applicable. Prices may change upon PUC approval. Prices include the Variable Fuel Cost Charge.



Customer enrollment process:

1. Customer calls Xcel Energy at **800.895.4999** so we can help determine which pricing plan will work best.
2. If a fast charger is being installed, customer contacts builders.call.line@xcelenergy.com to check the load increase.
3. Customer contacts an electrician for an estimate on the meter housing equipment installation.
4. When the meter housing is installed, inspected and energized, customer visits xcelenergy.com/EVElectricPricing and completes the application form.
5. Customer sends the completed inspection document to builders.call.line@xcelenergy.com.
6. We'll visit the customer's home and install an off-peak meter next to the existing meter.
7. Once the meter is installed the customer can start charging and saving.

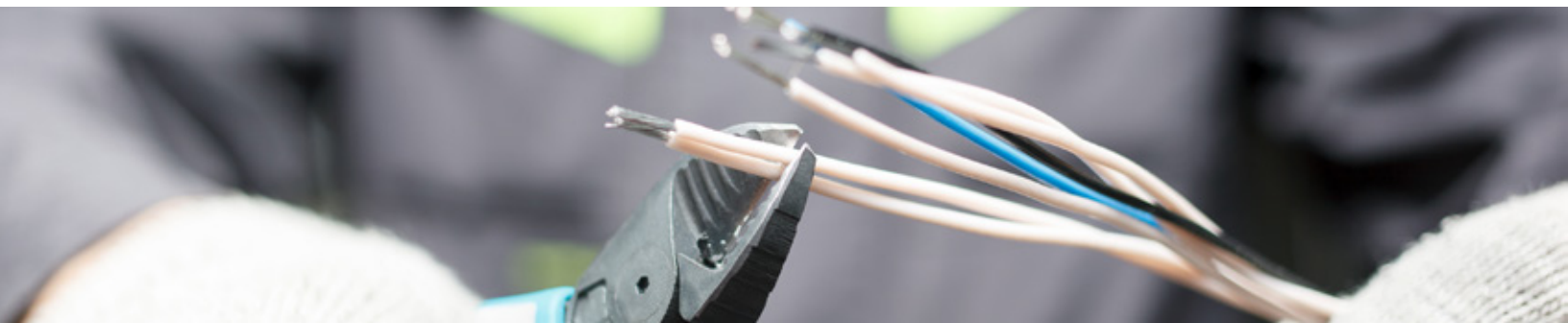
Who provides what for the installation?

Xcel Energy provides:

- EV Billing Meter

Customer installs:

- Meter socket(s) (with a lever bypass)
- Conduit and wiring
- EV charger or dedicated wall outlet



Quick Reference Guide for Service Connection:

1. Choose a service connection option.
2. Contact the Builder's Call Line at **800.628.2121** to schedule a line drop and reconnect. If there is a large load increase, speak with a designer to determine if the service entrance conduit is still valid.
   a. Duplex meter sockets require a simple disconnect and reconnect.
   b. Overhead service requires a splice in the conductor past the weather head, which is made by Xcel Energy. Customers need to provide an adequate length of wire to make this connection.
   c. Underground service requires a connection in the wire below the meter sockets, in the same location that the conduit entered the meter socket. Customers need to supply the junction and route conductor from the point of delivery to the two individual meter sockets. The junction box requires a sealable hasp.
3. Customer visits xcelenergy.com/EVElectricPricing and completes the application form, and sends a completed inspection form to the Builder's Call Line, builders.call.line@xcelenergy.com.

Service Connection Option 1:
Duplex Meter Socket, Underground or Overhead Service

DRAWING EV-10

EV SERVICE METERING MN ONLY

Duplex Underground/Overhead

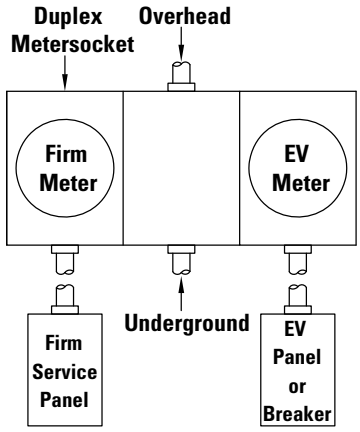


Table of Responsibility

Drawing EV-10

Item material or work description	Party to furnish, own and maintain	Party to install
Permits and Inspections	Customer	N/A
Service Entrance Conductor*	Customer	Customer
Underground Service Lateral	Xcel Energy	Xcel Energy
Service Entrance Conduit	Customer	Customer
Duplex Meter Socket	Customer	Customer
Billing Meter	Xcel Energy	Xcel Energy
Load Side Conduit/ Conductor/Panels	Customer	Customer

Point of Delivery:

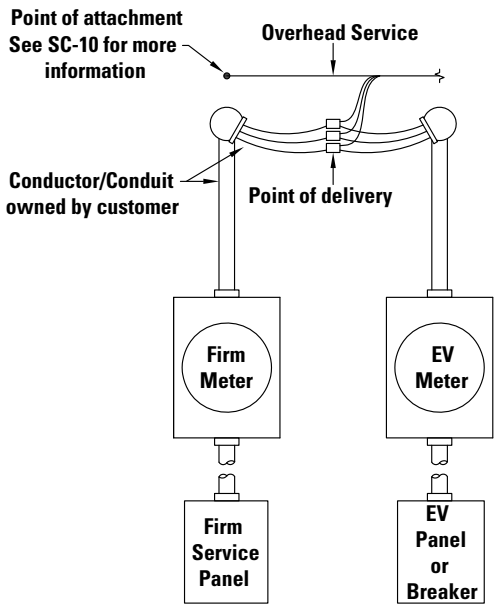
- Point where Xcel Energy's facilities are first connected to the electric facilities of the customer.

*The service entrance conductor refers to the conductor going through the mast between the line side of the meter socket, through the weather head, and to the point of delivery.

Service Connection Option 2:
Separate Socket, Overhead Service

DRAWING EV-20

OVERHEAD SERVICE



SEPARATE SOCKET OPTION

NOTES:

1. Riser conduit and conductor supplied and installed by customer/electrician.
2. Point of delivery in service loop.

Table of Responsibility

Drawing EV-20

Item material or work description	Party to furnish, own and maintain	Party to install
Permits and Inspections	Customer	N/A
Service Entrance Conductor*	Customer	Customer
Junction in Drip Loop	Xcel Energy	Xcel Energy
Self-Contained Meter Socket	Customer	Customer
Billing Meter	Xcel Energy	Xcel Energy
Load Side Conduit/ Conductor/Panels	Customer	Customer

Point of Delivery:

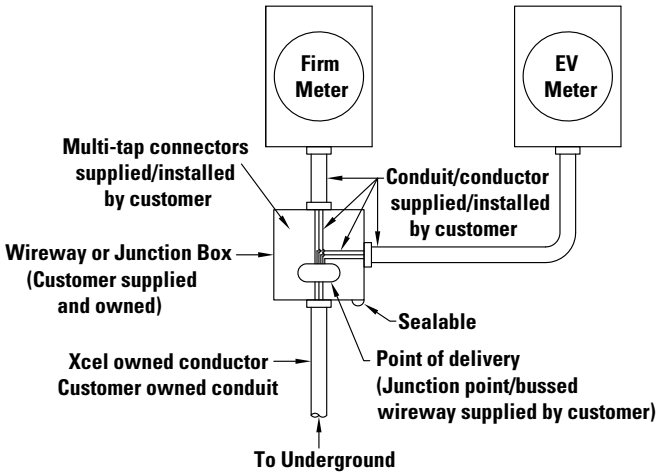
- Overhead Service Residential – Point where Xcel Energy's facilities are first connected to the electric facilities of the customer.
- The junction is made in the drip loop between the conductor exiting the weather head and the overhead service drop. The connection will be made by Xcel Energy.

*The service entrance conductor refers to the conductor going through the mast between the line side of the meter socket, through the weather head, and to the point of delivery.

Service Connection Option 3:
Separate Socket, Underground Service

DRAWING EV-30

UNDERGROUND SERVICE



NOTES:

1. Need to coordinate disconnect/reconnect with Xcel builders line.
2. Point of delivery in wireway, conductors after that point supplied by customer.
3. Junction point or bussed wireway supplied by customer.

Table of Responsibility

Drawing EV-30

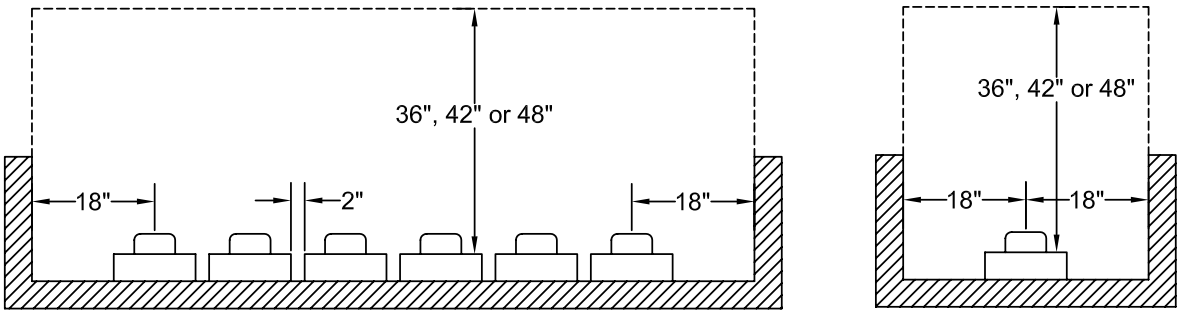
Item material or work description	Party to furnish, own and maintain	Party to install
Permits and Inspections	Customer	N/A
Underground Service Lateral	Xcel Energy	Xcel Energy
Junction Box/ Wire way	Customer	Customer
Point of Connection	Customer	Customer
Self-Contained Meter Socket	Customer	Customer
Billing Meter	Xcel Energy	Xcel Energy
Load Side Conduit/ Conductor/Panels	Customer	Customer

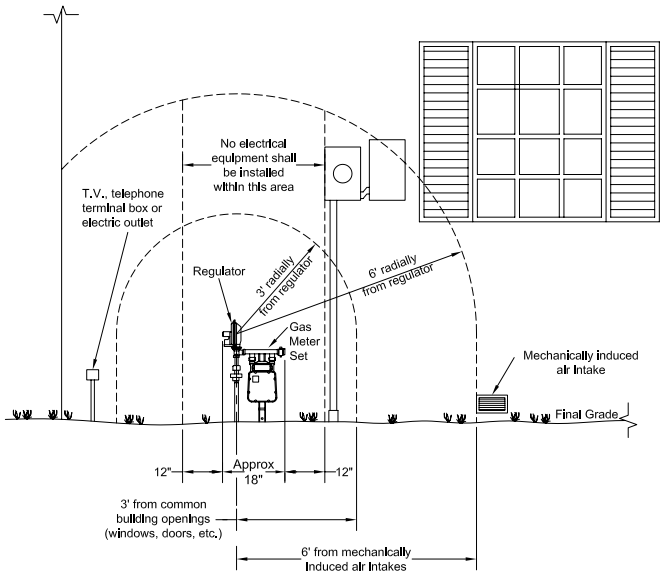
Point of Delivery:

- Underground Service Residential – Point where Xcel Energy's facilities are first connected to the electric facilities of the customer.
- Occurs inside wireway or junction box. Connection is made via connectors supplied and installed by the customer.

Where do I install the meter socket and service box?

The second meter socket or duplex meter socket must be installed outside and grouped by the existing meter socket at a vertical height of 4'–6', measured from final grade to the center of the meter. The minimum horizontal dimensions of the platform shall meet the National Electrical Code® requirements for working space, as specified under "Meter Clearances" in the Standards for Electric Installation and Use manual. Additionally, clearances around the gas meter should be met. Refer to the following diagrams and Drawing CR-10, in that publication for reference.





1. Area within dashed lines shall be clear of all obstructions.
2. 18" clearance shall be maintained to either side of the center line of the meter socket per NEC.
3. 36", 42" or 48" clearance shall be maintained in front of meter socket per NEC.
4. Height of working clearance shall be per NEC.
5. The meter socket must be located within 2' of the existing meter.

Does it have to be a duplex meter socket?

No. For new construction, a duplex meter socket may be a good option. But, it is not required on an existing premises. If two separate sockets are being used, they should be next to each other with the two masts for an overhead service as close to each other as possible. The second meter socket should be vertically aligned, (from the center point) with the existing socket and within 24" horizontally, from the main house meter.

Installation FAQs

Can I install this as a sub-meter?

No. Industry best practice for safety is a dedicated service.

Is a lever bypass meter socket required?

Yes. The meter socket for the EV must be a lever bypass from a manufacturer on our approved list. It must also conform to all other standards as depicted in section 4.13 from our Standard for Electrical Installation and Use.

What voltage charging equipment can I install for the EV Pricing Plan?

EV chargers that use 120V, 240V or 208V (network) are all allowed. Available voltage will be dependent on existing distribution facilities in the area.

Can I install the meter socket on a detached garage?

There are two options for customers wishing to charge their vehicle in a detached garage:

1. The customer may participate in the EV Pricing Plan by installing the EV meter within 2' of the existing meter. If the main-house meter is not on the garage, a line can be run to the detached garage.

2. The customer may participate in Time of Day pricing instead of the EV Pricing Plan, and install a Time of Day meter on the detached garage. In this case, the panel can be used for additional charges besides an electric vehicle. A second service would need to be requested and started at an extra cost to the customer.

Can I install a fast charger?

Yes. Prior to installing a DC fast charger or an AC Level 2 charger, please call the Builder's Call Line at 800.628.2121 to check if a significant load increase will necessitate a service upgrade. With prior notification, we can make the necessary system modifications to continue to reliably serve the EV customer and surrounding community.

Who do I call at Xcel Energy to confirm the meter specifications?

- **Technical metering questions? Call 800.422.0782.**
- **General questions?** We're available 24 hours a day at **800.895.4999.**

Need more guidance? Consult the Standard for Electric Installation and Use manual.

Key sections related to the EV Pricing Plan including (but are not limited to):

- 4.10.3 Meter installation & Ownership
- 4.13 Meter Sockets
- 4.14.2 Meter Installation
- 4.15.5 Meter Socket Identification Requirements
- 4.15 Meter Mounting Heights

Get the latest details and information. Visit **xcelenergy.com/EVElectricPricing**.

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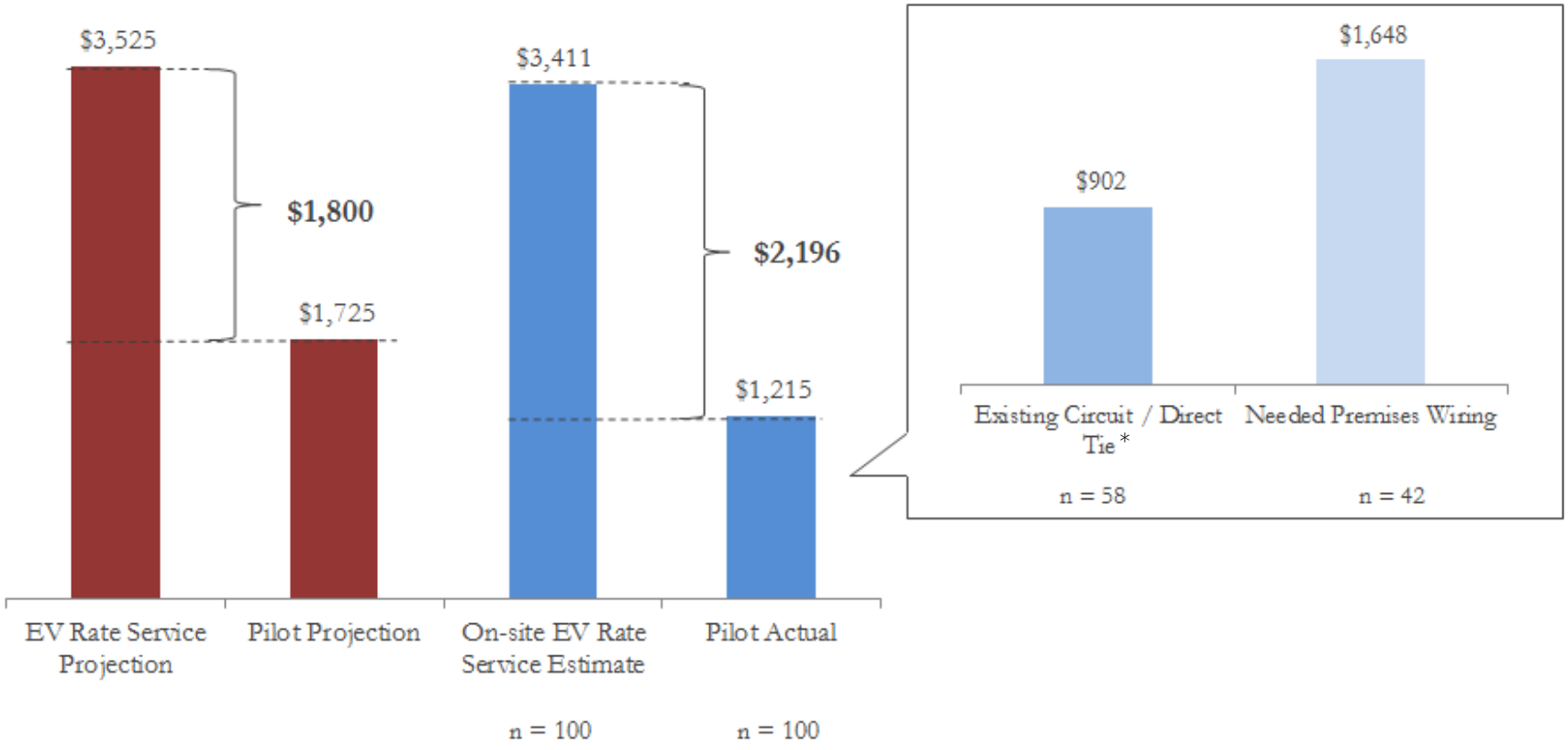
RESPONSIBLE BY NATURE®



*Direct tie refers to an install scenario in which a customer's charging location was adjacent to their service panel, allowing the charger to be directly hardwired into the panel.

Bill Savings of EV Charging on EV Service Pilot tariff compared Standard Residential tariff

In dollars, except where specified

EV Service Pilot Tariff - Average Bill Calculation - 350 kWh

	Rate	KWh	EV Service Pilot	Notes
Level 2 Charger Cost			Pre-Paid	
Incremental Customer Charge			$7.10	
Energy Charges				
Off-Peak	$0.043780	336.0	$14.71	
On-peak (Summer)	$0.215200	4.5	$0.97	
On-peak (Winter)	$0.173280	9.5	$1.64	
Sub-Total Energy Charges		350.0	$17.32	
Fuel Clause Rider	$0.027353	350.0	$9.57	
Other Riders Charges				
Transmission Cost Recovery	$0.003503	350.0	$1.23	
Renewable Development Fund	$0.001417	350.0	$0.50	
Conservation Improvement Program	$0.001813	350.0	$0.63	
Renewable Energy Standard	0.497%		$0.12	
Sub-Total Other Rider Charges			$12.05	
Total Monthly Charge			$36.47	(A)

Standard Residential Tariff - Average Bill Calculation - 350 kWh

	Rate	KWh	Standard	Notes
Level 2 Charger Cost			Pre-paid	
Incremental Customer Charge			$0.00	
Energy Charges				
Summer	$0.108150	113.1	$12.23	
Winter	$0.092410	236.9	$21.90	
		350.0	$34.13	
Fuel Clause Rider	$0.027353	350.0	$9.57	
Other Riders Charges				
Transmission Cost Recovery	$0.003503	350.0	$1.23	
Renewable Development Fund	$0.001417	350.0	$0.50	
Conservation Improvement Program	$0.001813	350.0	$0.63	
Renewable Energy Standard	0.497%		$0.17	
Sub-Total Other Rider Charges			$12.10	
Total Monthly Charge			$46.23	(B)
Bill Savings			$9.76	(B) - (A)

CERTIFICATE OF SERVICE

I, Paget Pengelly, hereby certify that I have this day served copies or summaries of the foregoing documents 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 No. E002/M-15-111 & E999/CI-17-879

Dated this 31st day of May 2019

/s/

_____

Paget Pengelly
Regulatory Administrator

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