

➤ Electric Vehicle Critical Peak Pricing Pilot

A. Description

The Electric Vehicle Critical Peak Pricing (“EV-CPP”) Pilot will operationalize a new schedule introduced by Public Service Company of Colorado (“the Company”) to its No. 8 electric tariff as Secondary Voltage Time-Of-Use Electrical Vehicle Service (“S-EV”) through an Advice Letter¹ to the Public Utilities Commission on May 24, 2019. Among other things, the S-EV tariff includes a Critical Peak Pricing (“CPP”) signal that can be used to provide a price signal to reduce system costs, including reducing system peak, ultimately reducing costs for all customers.

Critical peak pricing products attempt to strongly encourage – rather than require – customers to reduce their usage during periods when forecasts indicate the electric grid will experience high system loads as a percentage of available generation capacity. The nomenclature “critical peak” is a reference to such periods. The term “pricing” indicates that, rather than requiring load reductions, the Company will charge a high price for usage during these hours that will encourage customers to reduce their usage. During all other hours customers are assessed lower charges compared to non-participants.

The EV-CPP Pilot would be available to commercial and industrial (“C&I”) customers where the electric power and energy from the electric service is used to charge Electric Vehicles (“EVs”), or for Ancillary Usage. This will require a separate interval meter for said EV and ancillary loads. This offering will provide an additional customer choice, provide customers an opportunity to reduce their bill by managing their energy usage, and contribute to reducing system costs by reducing system peak via the response price signals. This pilot provides an alternative for customers who cannot or chose not to participate in the Company’s other demand response (“DR”) products such as ISOC.

Participating customers will receive day-ahead notification of when “critical peak” periods will occur. Critical peak events will be no more than four hours in duration. These events will always occur on non-holiday weekdays between the hours of noon and eight p.m. MST. A maximum of 15 events can be called in any calendar year.

To better manage their energy usage during peak events participants which agree to the terms and conditions of the EV-CPP Pilot will be provided with access to their electric load profile data in near real time. Access to this data will not only allow participants to monitor their performance during events, but also provide insight into their energy use throughout the year.

The S-EV tariff is designed to be “revenue neutral” for the class average customer. That means a customer with the average load profile within a given rate class would pay the same amount for electricity on an annual basis whether they were on the standard rate or the S-EV rate if they do

¹ Advice Letter No. 1798

not modify their consumption. This design provides a strong incentive for reducing usage with little inherent risk of an overall increase in electric bills.

B. Targets, Participants & Budgets

Targets and Participants

The EV-CPP Pilot will be targeted to larger C&I customers with EV fleets and the sophistication to manage or ability to curtail their energy consumption. Customers would be recruited by the Company. Market segments which may be interested in this pilot include:

- Municipalities
- Public transit service providers
- Public charging facilities

The Company anticipates approximately 38 participants to join in 2020 providing a total demand reduction of 177 kW.

Budgets

All administrative and implementation costs are included in the annual budget. Unlike other DSM products there is no monetary incentive associated with this pilot. Pilot costs are attributed to the following areas:

Administration – This category covers costs associated with day-to day operations of the pilot as well as monitoring equipment at the participant’s facility.

Advertising & Promotion – This category is for marketing campaigns and associated collateral.

M & V – Measurement and verification of pilot performance will largely be automated through the Company’s Demand Response Management System (“DRMS”). Periodic sampling of participant’s data will be done to ensure automated processes are performing correctly.

C. Application Process

Account Management will act as the primary channel for delivering this pilot to market. Account Managers will discuss the EV-CPP pilot option with customers. Those customers wishing to participate will request to be placed on the new S-EV tariff. After verifying eligibility with the product manager, the account manager will initiate the tariff change process for the customer.

Once a customer has elected to be on the S-EV tariff and agrees to the terms and conditions of the EV-CPP pilot, monitoring equipment will be installed to provide the participant with near real time access to their load profile data. Though each participant’s configuration may vary

depending on their unique circumstance, in general this equipment will consist of a “pulse” device to transmit data pulse outputs from the customer’s revenue meter and a data logger to record and translate the pulse outputs and communicate this data back to the Company’s DRMS. This process is estimated to take 60 days.

D. Marketing Objectives & Strategies

A critical part of the pilot’s success will be the Company’s ability to locate potentially eligible customers and assist them in becoming a part of the pilot. A requirement of this pilot is separate interval metering of EV and ancillary loads with no other customer usage on the rate. The anticipated customer base is made up primarily of “managed accounts”. Potential customers will be contacted by the Company to discuss the pilot. The objective of the meeting is to introduce the customer to the pilot, discuss tariff requirements, and assist the customer in identifying loads which would be eligible for the pilot, and next steps to obtain the necessary metering.

Marketing and communication materials will be created to communicate the features and benefits of the pilot.

A key asset enabling this pilot is the Company’s DRMS. This system provides the platform from which all its demand response products are managed. In addition to managing events and providing customer notifications the system will provide pilot participants with near real time access to their load profile data. Having this data will allow participants to manage their energy use during events to help them maximize their savings.

Overall pilot success will be tracked and managed by a designated product manager. This individual will work with account managers to insure pilot participation and demand response capacity forecasts are being met. The product manager will work with additional internal employees including product developers, marketers, technicians, and other product managers to track the progress of the pilot and meet the pilot’s goals and objectives. This goal measurement process consists of monitoring several indicators, including the number of customers participating, event load reduction data, forecasting demand response capacity expected during events, and calculating rate savings being achieved by participants.

The pilot will require the need for ongoing customer support and communication to insure the pilot delivers reliable results year over year. Therefore, marketing is a continuous process—not a single event—which includes initial discussion to recruit participants, then ongoing communication to ensure customers know and can continue to evaluate the benefits of the pilot in order to retain these customers, and ongoing communication/education about how the pilot works.

E. Product-Specific Policies

Qualification:

The EV-CPP pilot is available to all Colorado business customers receiving secondary voltage electric service, including Net Metering service, with the following qualifiers:

- Electric power and energy from the electric service is used solely to charge Electric Vehicles, or for Ancillary Usage;
- Electric Service on the rate will be separately metered. The Company will install, own, operate, and maintain the necessary metering; and
- Electric service on the EV-CPP rate is not eligible for the ISOC, CPP or PPR products.

Contract Term:

All service under this schedule shall be for a minimum period of twelve consecutive months and monthly thereafter until terminated. Customers will be required to sign a contract verifying that the only loads on the service are for EVs or ancillary usage.

Events:

Events are triggered whenever forecasts indicate the electric grid will experience high system loads as a percentage of available generation capacity. Based on historical system peaking conditions, events are most likely to be called during the summer months of June through September, but events may occur in any month throughout the year.

Events may be called between the hours of 12:00 p.m. and 8:00 p.m. MST. Events will be no less than one-hour duration and no more than four hours duration within this time period. Customers will be subject to no more than one event in any 24-hour period. No individual customer will experience more than 15 events per calendar year, for a maximum of 60 critical peak hours per year.

Load Reductions:

Load reduction during an event will be determined by subtracting the participant's actual demand during an event from the participant's baseline demand for the same time period. The aggregate of participant's load reductions during critical peak events will be used to determine the amount of demand capacity provided.

Baseline Consumption:

For purposes of determining a participant's load reduction the customer's load during an event will be compared to the customer's baseline load. The baseline methodology being proposed for this pilot is an adaptation of baseline calculations the Company has used in other products. The Company updated its historical approaches by reviewing "Measurement and Verification for Demand Response" (2013). This document, commissioned by the National Action Plan on Demand Response Measurement and Verification Working Group, focuses on providing "best DR M&V practices in various market and program contexts." This report provided valuable context on different baseline approaches, and a number of recommendations contained within the report have been incorporated into the baseline.

Specifically, for this pilot, the baseline usage for any 15-minute interval during an event will be calculated as the average of the measured demand during the same interval of the customer's five (5) highest energy consumption days within the last ten (10) non-holiday, non-weekend, non-event days.

An event day correction will be made to each 15-minute interval during the event to reflect the impact of weather or other operational changes which could cause substantive differences between the event day and the baseline calculation. This event day correction will be the average 15-minute kW difference between the baseline calculation and the participant's actual load during the hour prior to event notification.

As customer baselines are inherently unobservable, one cannot measure usage which never took place, a poor baseline methodology can lead a systematic bias. To help mitigate this problem, the Company will regularly evaluate baseline calculations. This can be done by selecting sample participants, calculating their baseline consumption for a simulated event day, and evaluating the difference between the calculated baseline and actual loads. Should these simulations show significant bias that is leading to inaccurate baseline assumptions, then the Company will develop and recommend changes to the baseline methodology. It is proposed that such an evaluation be done annually prior to the summer event season. Should any changes be warranted, updates to the pilot would be made through a 60-Day Notice.

Incentives:

A participant's "incentive" is the opportunity to save money by reducing usage during high priced critical peak events. Additionally, participants will receive the benefit of having access to their electric load profile data in near real time. Access to this data will not only allow participants to monitor their performance during events, but also provide insight into their energy use throughout the year. Data will be provided in "near real time" with updates occurring at least every fifteen minutes through a customer portal feature of the DRMS. Performance data will be available to individual participants through the customer portal feature of the DRMS. Customers can view their usage at any time using their unique username and password to log into the system.

Notification:

Participating customers will receive advance notice of events. Notifications will be delivered a minimum of 22 hours prior to an event and always during normal business hours between 8:00 a.m. and 5:00 p.m. MST. Notifications will be sent to the customer's designated contact(s) via e-mail, text, voice message, or combination thereof as specified by the customer. Customers are responsible for insuring contact information is kept current and notifying the account or product manager if any changes are necessary.

F. Stakeholder Involvement

Rate development outreach included representatives from the Colorado Energy Office ("CEO"), Colorado Energy Consumers ("CEC"), the City and County of Denver ("Denver"), the City of Boulder ("Boulder"), the Regional Transportation District ("RTD"), Tesla, Inc. ("Tesla"), ChargePoint, Inc. ("ChargePoint"), and Electrify America, LLC ("Electrify America"). The Company will continue to meet and interact frequently with these stakeholders through the rate filing process.

G. Rebates & Incentives

As previously mentioned, there are no rebates or incentives associated with this pilot comparable to other DSM products. The pilot participant's incentive is avoiding high priced energy charges during critical peak periods. These charges were established through the S-EV tariff introduced through Advice Letter No. 1798 and which became effective June 24, 2019. During critical peak periods participating customers will be charged the following:

- EV-CPP \$1.50/kWh

These rates were established in order to provide a strong incentive for customers to reduce their usage during these critical periods. Additionally, the Company believes customers must see the opportunity to make a substantial impact on their annual electric bill to entice their participation. As pilot events are limited to 60 hours a year the effective price per kWh was set quite high to present an opportunity for substantial bill savings.

Furthermore, participants face limited risk of increased electric bills as compared to the standard tariff as the S-EV tariff is designed to be revenue neutral on an annual basis.

H. Evaluation, Measurement, & Verification Plan

The Company will collect interval data from each participant in the pilot from monitoring equipment installed as part of enrollment and/or interval data metering installed as part of their regular electric service. This data will be stored and analyzed within the DRMS. Pilot performance for each event will be calculated by subtracting the actual aggregated usage of all customers from the aggregated baseline usage during the event window. The amount of demand reduction supplied for a given event is calculated by subtracting the actual aggregated usage of all customers from the aggregated baseline usage during the event window. This calculation, both on the portfolio level and for individual customers, will be automated through the functionality of the Company's DRMS.