

SG-TOU PILOT DESIGN & IMPLEMENTATION PLAN

1. Introduction

In Decision No. C21-0536 (the “Decision”) by the Colorado Public Utilities Commission (“Commission”) in Proceeding No. 20AL-0432E, the Commission ordered Public Service Company of Colorado (“Public Service” or the “Company”) to implement a Secondary General Time-of-Use (“SG-TOU”) Pilot.

As described in the Commission’s Decision, the Pilot is intended to evaluate the effectiveness of the SG-TOU alternative rate design to “incentivize off-peak usage that reflects actual system economics and facilitate cost-effective distributed generation and/or electrification opportunities”¹ for the Company’s Secondary General (“SG”) rate class. The purpose of this SG-TOU Pilot Design and Implementation Plan (“Plan”) is to:

- Describe the design of the SG-TOU pilot rate;
- Explain the Company’s proposed implementation of the customer eligibility criteria and other guardrails ordered by the Commission;
- Discuss the Company’s planned customer outreach with the goal of recruiting pilot participants representing a broad sampling of the SG rate class;
- Describe the pilot evaluation methods that are expected to be utilized in an upcoming pilot evaluation report, which will be filed by the end of 2024 as ordered by the Commission; and
- Summarize the collaborative stakeholder process utilized to support the design of the SG-TOU pilot.

Consistent with the Commission’s Decision, the Company hosted four virtual meetings with stakeholders to review and discuss the design of the SG-TOU pilot. The Company sent notice of the meetings to all intervenors from the Company’s Phase II rate case² and allowed participation from other entities, consistent with the Commission’s Decision. These meetings were held on November 17, 2021, January 6, 2022, March 1, 2022, and March 11, 2022. The meetings were attended by representatives from the Commission Staff, the Colorado Solar and Storage Association and the Solar Energy Industries Association (“COSSA/SEIA”), Western Resource Advocates (“WRA”), Walmart, Colorado Energy Consumers (“CEC”), the City and County of Denver, the City of Boulder, Energy Outreach Colorado (“EOC”), and Kroger (collectively, “Stakeholders”). Stakeholder feedback was considered and generally incorporated into the design of this pilot. The Company is authorized to represent that Commission Staff and COSSA/SEIA agree with this Plan and the framework of the SG-TOU Pilot as outlined herein. No other Stakeholder has communicated any opposition.

¹ Decision No. C21-0536, ¶23.

² Proceeding No. 20AL-0432E.

2. Pilot Rate Design

The Commission's Decision required the Company to calculate a SG-TOU rate with the following characteristics:

(1) peak period from 3:00 p.m. to 7:00 p.m. and shoulder periods from 1:00 p.m. to 3:00 p.m., and from 7:00 p.m. to 9:00 p.m.; (2) peak to off-peak and shoulder to off-peak price ratios proposed by COSSA/SEIA and Staff (*e.g.*, a peak to off-peak ratio of 3.87 in the summer and 2.35 in the winter); (3) the S&F charge of \$36.80 per month; and (4) the distribution demand charge of \$1.01 per kW.³

To comply with the Commission's Decision, the Company updated the SG-TOU rate design proposed by COSSA/SEIA in the Phase II case⁴ to reflect the final Cost of Service study underlying the rates approved in Proceeding No. 20AL-0432E and to account for the peak, off-peak, and shoulder periods included in the Commission's Decision. In doing so, the Company calculated a rate with the ordered demand charge, TOU periods, and TOU price ratios, but it was necessary to update the S&F charge to the final approved S&F charge for the SG class of \$41.13 per month (which includes the Electric Affordability Program charge).

The energy rates in the final SG-TOU rate are higher than those originally proposed by COSSA/SEIA because of additional costs allocated to the SG class between the timing of COSSA/SEIA's proposal and the final rates approved in Proceeding No. 20AL-0432E. Like the original rate design proposed by COSSA/SEIA, the Company's proposed SG-TOU rate is designed to be revenue neutral when compared to the Company's standard SG rate. In other words, the average SG customer will pay the same amounts under either rate. Table 1 below shows the adjustments made to the final SG-TOU rate as compared to the original proposal by COSSA/SEIA.

³ Decision No. R21-0400. ¶117.

⁴ Answer Testimony of Justin R. Barnes, Rev.1 in Proceeding No. 20AL-0432E.

Table 1: SG-TOU Rate Adjustment

	COSSA/SEIA Original Proposal	Final SG-TOU
S&F	\$36.80	\$41.13
Distribution Demand	\$1.01/kW	\$1.01/kW
<u>Energy</u>		
Summer On-Peak	\$0.15191/kWh	\$0.15634/kWh
Summer Shoulder	\$0.06454/kWh	\$0.06642/kWh
Summer Off-Peak	\$0.03930/kWh	\$0.04044/kWh
Winter On-Peak	\$0.09251/kWh	\$0.09521/kWh
Winter Shoulder	\$0.04972/kWh	\$0.05117/kWh
Winter Off-Peak	\$0.03930/kWh	\$0.04044/kWh
<u>Price Ratios</u>		
Summer Peak:Off	3.87	3.87
Summer Shoulder:Off	1.64	1.64
Winter Peak:Off	2.35	2.35
Winter Shoulder:Off	1.27	1.27

The Company also proposes to amend its Demand Side Management Cost Adjustment (“DSMCA”), Purchased Capacity Cost Adjustment (“PCCA”), Transmission Cost Adjustment (“TCA”), Electric Commodity Adjustment (“ECA”), and Transportation Electrification Programs Adjustment (“TEPA”) to include new rates for SG-TOU pilot participants. The new rider rates for SG-TOU pilot participants will be calculated as a percent of base rate energy charges to enhance the time-of-use price signals of the SG-TOU pilot. Any difference between the revenues collected from SG-TOU Pilot participants under these percent-based riders compared to the standard rider charges will be included in the normal true-up processes for these riders. The associated tariff amendments to the DSMCA, PCCA, TCA, ECA, and TEPA are included with the instant advice letter filing, and the SG-TOU rider rates will be updated with the Company’s regular rider rate changes.

3. Pilot Participant Eligibility

The Commission’s Decision included guardrails to protect non-participating customers from potential rate arbitrage that could lower SG-TOU participant bills without respective cost savings for all customers. Pilot participants will be required to have a load factor of at least 30 percent, and overall pilot participation will be capped at 30 MW. These requirements have been included in the proposed SG-TOU tariff.

Additionally, the Commission Decision included a requirement that a pilot customer's demand be no greater than 2 MW in order to ensure broad participation of the SG class. The Company shares this goal to fill the 30 MW of Pilot capacity with a broad representative sample of the SG class and to avoid fully subscribing the Pilot cap with a small number of large customers. To further support this goal, the Company proposes to divide the 30 MW of available capacity into three different tranches to ensure that customers of different sizes have the ability to participate in the Pilot.

Table 2: SG-TOU Available Capacity

Customer Demand	Total Peak Demand (MW)	Distribution	Calculated MW caps	Proposed MW caps*
Large (greater than 500kW but no greater than 2MW)	735	22%	6.7	8.0
Medium (greater than 250 but no greater than 500kW)	705	21%	6.4	8.0
Small (no greater than 250kW)	1,850	56%	16.9	14.0

*Proposed caps are based on the Peak Demand Distribution with the Large and Medium tranches adjusted upward to increase the sample size for those tranches to better understand full rate class impacts.

The Commission Decision considers that the Commission may revisit the 30 MW cap before the conclusion of the Pilot. If the 30 MW cap becomes fully subscribed, the Company will make a filing to notify the Commission that the Pilot capacity has been filled, provide details on the level of participation compared to the number of eligible customers, and include a recommendation on whether or not to expand the cap. If the Company is not recommending expansion of the 30 MW cap, then such filing will be in the form of a notice filed in the instant advice-letter proceeding. Company and Stakeholders agree that interested Stakeholders will have 30 days after that filing to file written comment. Alternatively, if the Company recommends an expansion of the cap, the Company will make a separate advice letter filing with associated proposed tariff changes.

In addition to the above requirements, SG customers will be eligible to participate in the SG-TOU pilot once they receive an Advanced Meter as part of the Company's Advanced Metering Infrastructure ("AMI") deployment.

4. Pilot Participant Targeting and Outreach

Although any SG customer who meets the Tariff eligibility criteria will be allowed to opt in to participate in the SG-TOU pilot up to the applicable cap, Public Service will conduct targeted outreach to eligible SG customers to recruit a broad representative sample of the SG class with the potential to contribute to rate class cost savings.

Targeting

In order to recruit customers who can contribute to rate class cost savings, the Company will reach out to business customers with operations conducive to load shifting, *e.g.*, batch processing manufacturers, water-wastewater treatment facilities, facilities with back-up generation, mining operations, communications, data centers, and those with pre-cooling opportunities. The Company will also target customers who have expressed prior interest in load shifting or have previously participated in the Company's electric load management offerings.

The Company plans to recruit these customers from a diverse sampling of the SG class. The capacity availability tranches described earlier in this Plan will ensure a broad sampling of SG customer sizes. Additionally, the Company will target customers with a broad range of customer characteristics, including different business types, facilities with and without onsite solar generation, with and without battery storage, and with and without electric vehicle charging stations, different load profiles, and load factors.

Outreach

The targeted customer outreach will occur around the same time as the AMI outreach when these customers are informed of their Advanced Meter installation. In addition to the AMI information, the Company will provide the targeted customers with information on the Pilot rate and how to participate in the Pilot. For eligible customers who choose to participate in the Pilot, the Company will provide tips for shifting load, information on Company Demand Side Management ("DSM") programs that could help participants with shifting their load, and tips and suggestions explaining how customers can take advantage of the new rate structure. In addition to the targeted customers, the SG-TOU pilot rate is available for all eligible SG customers to opt in. Public Service will train its account representatives for SG class customers to explain the rate option and help an interested eligible customer to opt in.

A web page will be used to communicate the Pilot overview, rate eligibility, pricing, and enrollment information. This web page will include anticipated frequently asked questions, contact information, and links to further resources.

Pilot participants, as well as all other customers with Advanced Meters, will be able to view their Advanced Meter data on the Company's My Account portal. This will help Pilot participants understand their load profile, see where they have opportunities to shift their load to off-peak hours, and see the results of their attempts to shift load.

5. Pilot Evaluation

Consistent with the Commission's Decision, the Company will evaluate the effectiveness of the SG-TOU pilot at incentivizing off-peak usage and facilitating cost-effective distributed generation and/or electrification opportunities.⁵ In the fourth quarter of 2024, the Company will file an advice letter containing an evaluation of the SG-TOU pilot along with a request to continue, amend, or terminate the Pilot.⁶ The Pilot will be available starting July 1, 2022, and will remain open until authorized to be terminated by the Commission. As described above, the Pilot is available to customers once they have received their Advanced Meter as part of the Company's AMI deployment. The July 1, 2022 start date aligns with the expected start of the AMI deployment to the majority of SG customers and will allow the Company sufficient time to build and test the new rate in its billing system.

In the Pilot evaluation, the Company will:

- Measure the load shift of SG-TOU pilot customers;
- Determine whether the SG-TOU pilot rate resulted in any beneficial electrification or cost-effective distributed generation added by Pilot participants;
- Quantify cost impacts for the SG class resulting from the Pilot;
- Calculate bill impacts for SG-TOU pilot customers compared to the electric charges they would have paid under the standard SG rate;
- Determine the amount of cost shift within the SG class; and
- Analyze customer behaviors in response to the Pilot rate.

In order to quantify Pilot participants' load shift arising from the Pilot rate, Public Service will compare the hourly load profiles of Pilot participants to a control group of similar customers who take service under the standard SG rate. For this comparison, Public Service will utilize a matched control group approach for Pilot participants where a customer who enrolls in the SG-TOU Pilot will be matched with SG class customers with similar customer characteristics (*e.g.*, industry type, on-site solar, battery storage, electric vehicle charging, load factor). Because Advanced Meters will be installed for all SG customers, there is no need to randomly select a small subset of customers for a control group. Instead, the control group will be comprised of all SG customers with those similar characteristics who have received an Advanced Meter. However, given the relatively small size of the SG rate class and the ongoing deployment of Advanced Meters to the SG class throughout the Pilot, the Company may need to conduct this analysis using broader customer segments in order to gather meaningful results. For certain SG-TOU Pilot participants, the Company will have an additional dataset to help determine the participant's load shift under the pilot rate. Some SG customers already have interval meters that can be used to develop individual customer baselines to better understand the resulting load shifts during the Pilot. This analysis will allow the Company to estimate the impacts of the SG-TOU Pilot on the hourly load profiles of participating customers.

The Company will send surveys to all Pilot participants, and to a subset of the control group customers randomly selected to broadly represent the SG class, to better understand customer

⁵ Decision No. C21-0536, ¶23

⁶ Decision No. R21-0400, ¶121

behavior in response to the Pilot rate. The surveys will include questions that will help the Company understand how customers manage their energy use and what goals they plan to meet with their energy use during the Pilot period. Pilot participants and randomly-selected control group customers will receive an initial survey at the start of the Pilot to determine the baseline customer behavior and will receive ongoing surveys during the duration of the Pilot after each heating and cooling season. Finally, Pilot participants and randomly-selected control group customers will receive a final survey prior to the evaluation report to be filed with the Commission in Q4 2024. Surveys will include questions to help the Company understand the following:

1. Is the pilot incentivizing load shift behavior? What are those behaviors?
 - a. Changing hours of operations?
 - b. Creating new processes to shift usage?
 - c. Purchasing equipment or optimizing load through system control or automation?
 - d. Beneficial electrification?
 - e. New installations of distributed generation and/or battery storage?
2. What customer characteristics support the ability to shift load?
 - a. Energy or environmental goals?
 - b. Presence of an energy management function within the company?
 - c. Are they facilities with onsite solar generation, battery storage, electric vehicle charging stations?
3. What is overall customer satisfaction with the Pilot rate?

Using data from the statistical comparison of Pilot participants to control groups, baseline load comparisons for those Pilot participants with pre-Pilot interval meter history, and survey data, the Company will quantify the impacts for the SG class. The exact method of quantification is unknown at this time, but the Company expects to calculate the cost impacts for the SG class in a Class Cost-of-Service study given the changes to the class's load profile, including any changes to Transmission, Distribution, and Production costs.

The Company will also calculate bills for the Pilot participants under both the SG-TOU rate and the standard SG rate to determine the bill savings for SG-TOU participants and the resulting cost shift to the remainder of the SG class. These bill impacts will be compared to the estimated cost impacts due to the load shift to determine whether the bill impacts for the pilot participants were justified by the resulting cost impacts. The Company will also estimate the cost to serve the SG-TOU participants as a separate rate class for comparison with the revenues collected from Pilot participants under the SG-TOU rate. This analysis is for informational purposes only.

The Company will share additional details on the Pilot evaluation methodology at future Stakeholder meetings as more specifics of the evaluation methodology will be known at that time.

As ordered by the Commission, the Company will track any revenue excesses or shortfalls resulting from the Pilot rate for future cost recovery from the SG class.⁷ The Company will also track the costs associated with implementing the SG-TOU Pilot for deferred recovery.⁸

⁷ Decision No. R21-0400, ¶120.

⁸ Decision No. C21-0536, ¶93.

6. Ongoing Stakeholder Engagement

The Company will continue to hold meetings with Stakeholders to provide informational updates on the SG-TOU Pilot. The purpose of these meetings is to convey the Pilot status with stakeholders, including enrollment figures and updates on the evaluation methodology, and engage stakeholders in discussion as to whether the Pilot is on track to meet the goals stated above. For 2022, one additional Stakeholder meeting will be held in the second half of the year. For 2023 and 2024, the Company will hold two meetings per year.