

➤ **Summary of 60-Day Notice: Electric Vehicle Optimization**

The following 60-Day Notice summarizes Public Service Company of Colorado's (the "Company") action to update the program design in the Electric Vehicle Optimization product.

The Company is including with this Notice:

- Updated Technical Assumptions worksheets; and
- Updated cost-benefit analyses

A copy of this notice is available on our website at:

https://www.xcelenergy.com/company/rates_and_regulations/filings/colorado_demand-side_management

The Electric Vehicle Optimization product was launched in 2021 with an initial cap of 600 participants in the Charging Perks pilot offering because the Company had limited IT bandwidth to manage the pilot. The pilot requires several manual procedures, but the Company has integrated new IT resources throughout 2023. Consequently, the Company wants to lift the 1,000 participant cap thanks to the new IT bandwidth.

Lift 1,000 Participant Cap

As the Company learned more about the IT infrastructure, file types, and technical procedures required to maintain the operations of Charging Perks - the team drafted some Visual Basic for Application (VBA) codes to expedite a few of the manual processes. The result was increased efficiency that led the Company to expanding the cap from 600 to 1,000 participants in the 2023 DSM & Beneficial Electrification plan. The Company has since integrated Python code to Charging Perks to remove most of the manual procedures and therefore accelerate the overall operations. This new Python automation saves the company several workhours and optimizes Charging Perks efficiency. Based on these new IT efficiencies, the Company would like to remove the 1,000 participant cap.

Charging Perks has proven successful at shifting EV load off-peak, avoiding additional capacity, savings of CO₂ emissions, and avoid renewable curtailment. The bullet points below summarize some preliminary findings based on 2022 customer data but we expect the numbers to improve with larger sample sizes of customers from 2023 data.

- **Avoided Capacity:** Between 9-10 PM MST, average charging demand was *reduced* by 0.18 kW per vehicle – this would reduce capacity need
- **Marginal CO₂ Emissions Savings:** Demand was shifted from higher marginal carbon emissions intensity to lower marginal carbon emissions intensity hours, thereby leading to emissions savings of 0.20 lbs of CO₂ per vehicle
- Between 2-3 AM MST, average charging demand *increased* by 0.17 kW per vehicle – this would reduce the need to curtail wind resources

Charging Perks has increased in popularity as the pilot approaches the 1,000 customer goal. When the 1,000 goal is achieved, the Company currently plans to put new applicants on a

waitlist. However, the Company wishes to instead allow these customers into the pilot program rather than potentially frustrate them with a waitlist. The Company wants to enhance the customer experience, so the Company would like to accept participants beyond 1,000.

Table 1: Summary of Forecasted Impacts: Electric Vehicle Optimization

	2023	
	<i>As Filed</i>	<i>Revised per 60-day</i>
Electric Savings (kWh)	0	0
Electric Demand Reduction (kW)	3,727	3,758
Budget*	\$285,000	\$290,750
MTRC Test Ratio	0.77	0.77

*Rebates only. While the anticipated expenditure impacts are forecasted, the Company acknowledges that this Notice does not change the filed budget.

ELECTRIC VEHICLE OPTIMIZATION

2023 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test (\$Total)	Utility Test (\$Total)	Rate Impact Test (\$Total)	Modified Total Resource Test (\$Total)
Benefits				
Avoided Revenue Requirements				
Generation Capacity	N/A	\$376,588	\$376,588	\$376,588
Trans. & Dist. Capacity	N/A	\$0	\$0	\$0
Marginal Energy	N/A	\$78,896	\$78,896	\$78,896
Avoided Emissions (CO2)	N/A	N/A	N/A	\$83,844
Subtotal				\$539,328
Non-Energy Benefits Adder (20.0%)				\$91,097
Subtotal	N/A	\$455,484	\$455,484	\$630,425
Participant Benefits				
Bill Reduction - Electric	\$0	N/A	N/A	N/A
Participant Rebates and Incentives	\$290,750	N/A	N/A	\$290,750
Incremental Capital Savings	\$0	N/A	N/A	\$0
Incremental O&M Savings	\$0	N/A	N/A	\$0
Subtotal	\$290,750	N/A	N/A	\$290,750
Total Benefits	\$290,750	\$455,484	\$455,484	\$921,175
Costs				
Utility Project Costs				
Program Planning & Design	N/A	\$0	\$0	\$0
Administration & Program Delivery	N/A	\$840,000	\$840,000	\$840,000
Advertising/Promotion/Customer Ed	N/A	\$60,000	\$60,000	\$60,000
Participant Rebates and Incentives	N/A	\$290,750	\$290,750	\$290,750
Equipment & Installation	N/A	\$0	\$0	\$0
Measurement and Verification	N/A	\$0	\$0	\$0
Subtotal	N/A	\$1,190,750	\$1,190,750	\$1,190,750
Utility Revenue Reduction				
Revenue Reduction - Electric	N/A	N/A	\$0	N/A
Subtotal	N/A	N/A	\$0	N/A
Participant Costs				
Incremental Capital Costs	\$0	N/A	N/A	\$0
Incremental O&M Costs	\$0	N/A	N/A	\$0
Subtotal	\$0	N/A	N/A	\$0
Total Costs	\$0	\$1,190,750	\$1,190,750	\$1,190,750
Net Benefit (Cost)	\$290,750	(\$735,266)	(\$735,266)	(\$269,575)
Benefit/Cost Ratio	INF	0.38	0.38	0.77

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.

2023 ELECTRIC

GOAL

Input Summary and Totals

Program "Inputs" per Customer kW and per Participant		
Lifetime (Weighted on Generator kWh)	A	N/A
T & D Loss Factor (Energy)	B	N/A
T & D Loss Factor (Demand)	C	9.13%
Net-to-Gross (Energy)	D	N/A
Net-to-Gross (Demand)	E	100.00%
Installation Rate (Energy)	F	N/A
Installation Rate (Demand)	G	100.00%
Net coincident kW Saved at Generator	H	0.84 kW
Gross Annual kWh Saved at Customer	I	0.00 kWh
Net Annual kWh Saved at Generator	J	0.00 kWh

Program Summary All Participants

Total Budget	K	\$1,190,750
Net coincident kW Saved at Generator	L	3,758 kW
Gross Annual kWh Saved at Customer	M	0 kWh
Net Annual kWh Saved at Generator	N	0 kWh
Total MTRC Net Benefits with Adder	O	(\$269,575)
Total MTRC Net Benefits without Adder	P	(\$360,672)

Utility Program Cost per kWh Lifetime	K/(A x N)	N/A
Utility Program Cost per kW at Gen	K/L	\$317

Avoided Lifetime CO2 Emissions, Total Program (tons CO2)		1,084
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