

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO**

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IN THE MATTER OF THE APPLICATION)
OF PUBLIC SERVICE COMPANY OF)
COLORADO FOR APPROVAL OF ITS) PROCEEDING NO. 23A-____E
2024-2026 TRANSPORTATION)
ELECTRIFICATION PLAN.)

DIRECT TESTIMONY AND ATTACHMENTS OF DEREK S. KLINGEMAN

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

May 15, 2023

BEFORE THE PUBLIC UTILITIES COMMISSION
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1 I. **INTRODUCTION, QUALIFICATIONS, PURPOSE OF TESTIMONY, AND**
2 **RECOMMENDATIONS**

3 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A. My name is Derek S. Klingeman. My business address is 1800 Larimer Street,
5 Denver, Colorado 80202.

6 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?**

7 A. I am employed by Public Service Company of Colorado ("Public Service" or the
8 "Company") as Principal Pricing Analyst.

9 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

10 A. I am testifying on behalf of Public Service.

11 **Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.**

12 A. As Principal Pricing Analyst, I am responsible for quantitative analyses, cost
13 allocation, and rate design, in addition to policy support on a number of Colorado
14 regulatory issues. A description of my qualifications, duties and responsibilities is
15 set forth in my Statement of Qualifications at the conclusion of my testimony.

1 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

2 A. The purpose of my Direct Testimony is to provide support for a new off-peak
3 subscription charging proposal introduced in this 2024-2026 Transportation
4 Electrification Plan (“TEP”), address new cost methodologies applicable to
5 equipment monthly rental rates and the Company’s proposed process for updating
6 these rates, walk through the methodology used to allocate TEP costs to customer
7 classes, evaluate the overall retail rate impact resulting from the proposed TEP
8 budget, and introduce TEP-related tariff changes.

9 **Q. ARE YOU SPONSORING ANY ATTACHMENTS AS PART OF YOUR DIRECT**
10 **TESTIMONY?**

11 A. Yes, I am sponsoring Attachments DSK-1 through DSK-5, which were prepared
12 by me or under my direct supervision. The attachments are as follows:

- 13 • Attachment DSK-1: Marginal Energy Costs
- 14 • Attachment DSK-2: Load Net Renewables
- 15 • Attachment DSK-3: Retail Rate Impact
- 16 • Attachment DSK-4: Bill Impacts
- 17 • Attachment DSK-5: Tariff Revisions

18 **Q. WHAT RECOMMENDATIONS ARE YOU MAKING IN YOUR DIRECT**
19 **TESTIMONY?**

20 A. I recommend that the Colorado Public Utilities Commission (“Commission”)
21 approve the following:

- 1 • An off-peak subscription pricing option that provides a discounted, flat-bill
2 option for customers with electric vehicles (“EV”) to charge their vehicles
3 during a six hour “super off-peak” charging window;
- 4 • New cost methodologies to apply to the Company’s calculation of the
5 monthly rental rates associated with charging equipment and customer-
6 sited batteries and the process for updating these rates;
- 7 • The retail rate impacts analysis that shows the costs and net benefits arising
8 from this proposed TEP;
- 9 • Recovery of TEP-related costs using a revised class cost allocation that
10 splits the total revenue requirements into Residential and Non-Residential
11 parts and then uses non-coincident peak demand to further allocate the
12 Non-Residential related costs; and
- 13 • The tariff changes that are necessary to effectuate the rates and programs
14 proposed in this TEP.

1 **II. OFF-PEAK SUBSCRIPTION PRICING**

2 **Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

3 A. In this section I describe the Company's proposal for a new Off-Peak Subscription
4 Pricing option for customers that wish to have a fixed price bill option for charging
5 their EVs.

6 **Q. WHAT TARIFF RATE OPTIONS CURRENTLY EXIST FOR RESIDENTIAL
7 CUSTOMER EV CHARGING?**

8 A. Currently, there are no EV-specific rate options for residential customers.
9 Residential customers with EVs may take service under any of the rate schedules
10 applicable for residential use – Schedule RE-TOU (default), Schedule R-OO, or
11 Schedule RD.

12 **Q. DOES THE COMPANY ASSESS A RATE OPTION GAP FROM ITS EXISTING
13 TARIFF OPTIONS?**

14 A. Yes. It is my perception that some customers prefer price certainty when it comes
15 to total bill costs over volumetric-based bills, which can be volatile based on
16 varying usage throughout the year. It is also my perception that it can be difficult
17 for customers to assess the economics of EV charging, especially when
18 considering Time of Use ("TOU") rates. Based on these observations, I believe
19 some customers would prefer a fixed-price subscription rate option.

1 **Q. WHAT TYPE OF A RATE OPTION COULD ADDRESS THE GAP?**

2 A. I propose a rate that has a flat monthly charge that does not vary according to
3 usage during the month. The charge will remain flat throughout the year in order
4 to provide the customer with price certainty.

5 **Q. IS THE COMPANY AWARE OF ANY SUBSCRIPTION-BASED CHARGING**
6 **OPTIONS OFFERED BY OTHER UTILITIES?**

7 A. Yes. The Company's Minnesota affiliate, Northern States Power Minnesota, has
8 a Residential Electric Vehicle Subscription pilot. In the Company's 2024-2026 TEP
9 (Attachment HS-1), additional information is provided about the Minnesota
10 subscription pilot. Other utilities offering a subscription pricing option for EVs
11 include Florida Power & Light, Duke Energy, Liberty Utilities, and CPS Energy.

12 **Q. WHAT PROPOSAL IS THE COMPANY MAKING IN THIS PROCEEDING FOR A**
13 **SUBSCRIPTION-BASED CHARGING OPTION?**

14 A. The Company is proposing a subscription-based charging option that will allow
15 customers to pay a flat monthly fee for all EV charging during a specified off-peak
16 window. The rate will be optional for customers with EVs. It will not impact a
17 participating customer's bills for non-EV related use; the flat monthly charge will
18 simply be added to the bills under the customer's base tariff. The proposed flat
19 monthly charge is a bundled charge that includes meter-related costs and covers
20 all energy use during the off-peak window, up to a specified cap. The off-peak
21 charging window will be shorter compared to the off-peak window under schedule
22 RE-TOU, allowing the Company to charge a lower flat rate under the subscription
23 (as compared to the otherwise applicable charges under schedule RE-TOU). All

energy consumed outside of the off-peak window will be charged separately according to the prevailing energy rates under the customer's base tariff.

Q. CAN YOU PROVIDE AN ILLUSTRATIVE TABLE SHOWING THE PRICING ELEMENTS OF THE SUBSCRIPTION PRICING PROGRAM?

A. Yes, see below.

Table DSK-D-1: Subscription Pricing Elements

Assumed Monthly Charging (kWh)		372
<u>Shadow Bill Calculation under RETOU</u>		
RETOU Off-Peak (\$/kWh)	\$0.06387	\$23.76
GRSA-E (\$/kWh)	\$0.01249	\$4.65
ECA (\$/kWh)	\$0.03078	\$11.45
DSMCA (\$/kWh)	\$0.00188	\$0.70
PCCA (\$/kWh)	\$0.00384	\$1.43
TCA (\$/kWh)	\$0.00186	\$0.69
TEPA (\$/kWh)	\$0.00011	\$0.04
EGCRR (\$/kWh)	\$0.00239	\$0.89
Subtotal		\$43.61
RESA/CEPA	2.0%	\$0.87
Total Shadow Bill		\$44.48
(+) EVAAH Charge ¹		\$13.29
Subscription Fee - No Discount		\$57.77
(-) Off-Peak Discount (\$/kWh)	(\$0.02088)	-\$7.77
Proposed Subscription Fee		\$50.00
Effective Off-Peak Rate (\$/kWh)		\$0.04299

¹ This reference regards the Company's EV Accelerate At Home program.

1 **Q. IS THERE A CAP ON EV CHARGING UNDER THIS PROGRAM?**

2 A. Yes. The Company is proposing a cap of 1,000 kWh per month, such that any
3 usage in excess of the cap will be tracked and billed separately. The existence of
4 the cap allows the Company to set a lower fixed charge and is estimated to capture
5 the monthly charging demands of 96 percent of EV customers.

6 **Q. HOW WERE THE PEAK AND OFF-PEAK PERIODS DETERMINED?**

7 A. The off-peak period is from 12:00 a.m. to 6:00 a.m. on weekdays and non-holidays.
8 The 6-hour, off-peak window is significantly shorter than the 18-hour, off-peak
9 window under schedule RE-TOU. The Company is proposing a more
10 concentrated off-peak window under the subscription pricing rate to support a
11 lower price-point and highly incentivize charging during “super off-peak” hours.
12 The Company identified this window using forecasted load net of renewable
13 generation, which helped to pinpoint the hours when the cost to serve load is
14 lowest. This analysis is covered in more detail below. The on-peak period, which
15 includes all hours that fall outside of the off-peak window specified above,
16 represents the times that EV charging would not be covered by the subscription.

17 **Q. HOW WERE THE PRICING ELEMENTS DETERMINED?**

18 A. The goal at the outset of designing this subscription program was to keep the price
19 lower than \$50 per month considering both energy cost and charger rental costs.
20 As explained in the TEP document (Attachment HS-1), the Company is familiar
21 with survey results that indicate customer willingness to participate in an off-peak
22 home charging subscription. These survey results indicate step change reductions
23 in customer willingness to participate as the price increases, particularly over \$50

1 per month. Given that information, and estimated average monthly EV charging
2 use of 372 kWh, I calculated a proxy bill under schedule RE-TOU. This proxy bill
3 includes the monthly Electric Vehicle Accelerate At Home (“EVAAH”) charge for
4 renting the charger. As shown in Table DSK-D-1 above, this analysis revealed
5 that rates would have to be somewhat lowered from current RE-TOU rates to keep
6 the price below \$50 per month. Assuming current riders and adjustments, I solved
7 for the off-peak energy rate that achieves an average monthly bill of approximately
8 \$50. This resulted in an off-peak energy rate of approximately \$0.043, which is 33
9 percent lower than the current RE-TOU off-peak rate. The lower off-peak energy
10 charge, as compared to the RE-TOU off-peak charge, is supported by the lower
11 cost associated with the more concentrated super-off-peak hours, as explained in
12 more detail below.

13 To summarize, the subscription price is a bundled charge that includes the
14 cost of renting the charger and is based on average customer use, as well as
15 somewhat discounted volumetric rates as compared to RE-TOU rates.

16 **Q. IS THE SUBSCRIPTION PRICING PROGRAM INTENDED TO BE REVENUE**
17 **NEUTRAL?**

18 A. No. As described above, the subscription price was designed to be lower than
19 customer bills under the otherwise applicable schedule RE-TOU in order to incent
20 charging in a more confined charging window. The lower revenue from customers
21 in this program is supported by the lower cost to serve these customers during the
22 super off-peak hours. The proposed off-peak rate, though lower than the RE-TOU

1 off-peak rate, is still above the marginal cost to serve during these hours. The
2 analysis of marginal costs is provided in Attachment DSK-1.

3 **Q. DOES SENATE BILL 19-077 ALLOW FOR THE COMPANY TO IMPLEMENT**
4 **NEW RATES THAT SUPPORT VEHICLE CHARGING AND WIDESPREAD**
5 **TRANSPORTATION ELECTRIFICATION?**

6 A. Yes. I am not an attorney, but I am aware that sections 40-5-107(1)(a) and 40-5-
7 107(1)(b)(III), C.R.S., provide that the Company's TEP must be filed with regulated
8 activities to support widespread transportation electrification, and that the TEP may
9 include "rate designs, or programs that encourage vehicle charging that supports
10 the operation of the electric grid." The Company's subscription pricing program is
11 a new rate design proposal in our TEP, and it both supports vehicle charging and
12 the operation of the electric grid. In particular, it provides a lower and more definite
13 rate to promote customer ease and is acceptable of EV charging, and it supports
14 the grid by focusing EV charging price signals during a super off-peak window.

15 **Q. WHAT CUSTOMER ELIGIBILITY REQUIREMENTS DOES THE COMPANY**
16 **PROPOSE?**

17 A. The eligibility requirement is that the customer must participate in the EVAAH
18 program, where they rent the EV charger from the Company. This requirement is
19 necessary, rather than allowing the customer to supply their own charger, in order
20 to ensure that the charger can provide meter-quality charging data for billing
21 purposes.

1 **Q. WILL THE COMPANY ADJUST THE SUBSCRIPTION RATE OVER TIME?**

2 A. Yes. The Company plans to adjust the rate annually based on updates to the
3 underlying assumptions that were used to price the program. Because the
4 subscription price is designed to incorporate current rider rates and assumes an
5 average use per customer, updates may need to be made to both the rate and the
6 usage assumption as these components evolve over time. Specifically, the
7 Company will propose a change to the rate if the marginal cost of energy exceeds
8 the effective discounted rate paid by the customer. The Company commits to
9 assess the rate annually and, if necessary, update the rate to ensure it remains
10 above the marginal cost of energy. The update to the subscription price will be
11 filed in an advice letter in October, which will generally align with the annual
12 Transportation Electrification Programs Adjustment (“TEPA”) filing.

13 **Q. DOES THE COMPANY HAVE ANY INFORMATION ON HOW THE**
14 **SUBSCRIPTION PRICING PROGRAM WILL ASSIST IN INTEGRATING**
15 **RENEWABLES OR REDUCING RENEWABLE CURTAILMENT?**

16 A. Yes. Attachment DSK-2 provides a heatmap showing the Company’s projected
17 load, net of renewable energy generation, for 2025. The load net renewables
18 heatmap conveys when and to what degree the Company expects to need non-
19 renewable energy generation to meet load on an average hour per month basis.
20 The hours with higher net loads indicate when full deployment of renewable
21 generation will not be sufficient to meet load and non-renewable generation will be
22 needed, on average. Conversely, the hours with lower net loads indicate times
23 when renewable generation is nearly sufficient to meet load, on average. It is

1 during these hours that the Company may encounter renewable generation in
2 excess of load from time to time, which is a driver of curtailments. The Company
3 has oriented the 6-hour, super-off-peak window around the hours that are shown
4 to have the lowest load net renewables year-round. In the future, as the
5 Company's system generation resources continue to change with increasing
6 amounts of renewable generation, the Company may propose changes to the
7 hours of the off-peak portion of the rate.

8 **Q. WHERE IS THE COMPANY PROVIDING THE TARIFF CHANGES NECESSARY**
9 **TO IMPLEMENT THE SUBSCRIPTION RATE?**

10 A. The Company is providing tariffs changes in the Residential Electric Vehicle
11 Charging Subscription Service section of its Schedule-EVC tariff at Sheet 119. My
12 Attachment DSK-5 provides these, and other, tariff changes, as further addressed
13 below.

1 **III. COST METHODOLOGIES FOR RENTAL PROGRAMS**

2 **Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

3 A. In this section of my testimony, I address cost methodologies to apply to the
4 Company's monthly rates for charging equipment and Battery Energy Storage
5 Systems ("BESS"). The purpose of this cost approach is to give the Commission
6 and parties clarity in the manner in how we will update our monthly rates in the
7 future, according to a new process, which the Company is seeking Commission
8 approval of. The Company's cost methodologies and related process to use the
9 methodologies will reduce unnecessary and future litigation, as well as give the
10 Company direction as it moves forward with updates to its rental program rates.

11 **Q. WHAT MONTHLY RATES FOR CHARGING EQUIPMENT AND BESS ARE YOU**
12 **REFERENCING?**

13 A. In the inaugural TEP, the Commission approved the Company's program offerings
14 of charging equipment rentals. In these programs, the Company owns, installs
15 and maintains rental charging equipment, and customers pay a monthly fee that
16 represents the costs associated with the equipment, as amortized over a 10-year
17 period. After the costs are fully amortized, the customer can own the equipment.
18 The Company's tariff at Sheet No. 119 provides these existing monthly rates. The
19 rates are currently applicable to residential, multifamily, and fleet/workplace
20 charging equipment services.

21 In the 2024-2026 TEP, the Company is continuing its rental programs that
22 provide charging equipment to customers at a monthly rate. Additionally, the

1 Company is expanding the rental program to also include customer-sited BESS.

2 The 2024-2026 TEP (Attachment HS-2) explains these programs.

3 **Q. IS THE COMPANY PROPOSING IN THIS PROCEEDING TO UPDATE THE**
4 **EXISTING MONTHLY RATES?**

5 A. No. Rather than seek Commission approval in this proceeding of new or changed
6 monthly rental rates, the Company is instead seeking approval of cost
7 methodologies to determine those rates. The Company will use the methodologies
8 in the future to update the monthly rates outside of this proceeding.

9 **Q. WHY IS THE COMPANY SEEKING APPROVAL OF A COST APPROACH**
10 **RATHER THAN SPECIFIC, NEW RATES?**

11 A. The Company is in the process of hosting competitive solicitations to determine
12 the costs of charging equipment and BESS that it will offer through its 2024-2026
13 TEP rental programs. The Company thus does not currently have firm information
14 on the actual costs of the equipment. Once the solicitations are complete, the
15 Company will have that cost information, and it will be able to update the monthly
16 rental rates accordingly. By receiving Commission approval of a cost methodology
17 in this proceeding, the Company will have an efficient process to update the rental
18 rates in the future, once it has firm equipment cost information.

19 **Q. WHAT ARE THE COST METHODOLOGIES THE COMPANY SEEKS**
20 **COMMISSION APPROVAL OF?**

21 A. The Company is proposing two similar, yet distinct, methodologies applicable to
22 rental offerings. With one exception, for all rental offerings the Company is using

1 the same methodology it used in the first TEP to establish its monthly rental rates
2 that are included in current Tariff Sheet No. 119. That methodology is as follows:

3
$$\text{Customer Charge} = C \times I / 12 + \text{O\&M}$$

4 C = Capital Cost of Company-Owned Equipment

5 I = Annual Average Carrying Charges for the Company-Owned Equipment

6 O&M = Monthly routine operations and maintenance expenses

7 Concerning the one exception, it is for Customer Sited Batteries, which are
8 BESS for commercial customers paired at direct current fast charging stations. For
9 Customer Sited Batteries, the methodology has been slightly changed as follows:

10
$$\text{Customer Charge} = (C - \text{CIAC}) \times 0.8 \times I / 12 + \text{O\&M}$$

11 C = Capital Cost of Company-Owned Equipment

12 CIAC = Optional Contribution in Aid of Construction

13 I = Annual Average Carrying Charges for the Company-Owned Equipment

14 O&M = Monthly routine operations and maintenance expenses

15 As shown, the Customer Sited Batteries cost methodology is different than
16 that for all of the other rentals because it includes a Contribution in Aid of
17 Construction ("CIAC"), as well as a capital cost allocation factor. The customer will
18 be given the option to pay a down payment, referenced here as the CIAC. Per the
19 capital cost factor, the customer will pay 80 percent of the capital cost of the
20 system, as well as 100 percent of the O&M. Company witness Andre Gouin
21 explains, in his Direct Testimony, the Company's proposal for the customer being
22 responsible for 80 percent of the system's capital cost.

1 **Q. WHAT PROCESS WILL THE COMPANY USE TO APPLY THE COST**
2 **METHODOLOGIES?**

3 A. Once the Company's capital costs become known, the Company will submit advice
4 letter filings to the Commission to update or establish new monthly rental rates for
5 its programs. The Company's advice letter filings will use the Commission-
6 approved methodologies from this proceeding to update the rental rates. That
7 process seeks to avoid unnecessary litigation that would otherwise result without
8 Commission approved methodologies, as well as provide more transparency to
9 the Commission and stakeholders on the Company's plans.

10 **Q. HOW OFTEN WILL THE COMPANY UPDATE THE MONTHLY RENTAL RATES**
11 **THROUGH USE OF THE COST METHODOLOGIES?**

12 A. The Company does not intend to file updates to these rates frequently, as
13 customers desire price stability and certainty. The Company will update the rates
14 upon significant cost increases or decreases to the equipment for these programs,
15 so as to ensure that participating customers are fairly paying monthly rates that
16 recover the costs of the equipment.

IV. RETAIL RATE IMPACT

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section, I address the statutory retail rate impact cap included in Senate Bill 19-077, and I explain how the Company's 2024-2026 TEP will comply with that cap.

Q. PLEASE EXPLAIN HOW THE COMPANY'S 2021-2023 TEP COMPLIED WITH THE STATUTORY RETAIL RATE IMPACT CAP.

A. As approved in Decision No. C21-0017, the retail rate impact is calculated given the annual TEP revenue requirements, as offset by an estimate of net annual revenues from EV charging in the Company's territory and weighed against total retail revenues to determine the percentage impact on overall retail rates. When the first TEP was filed, the retail rate impacts were forecast to be negative due to the net revenues (or benefits) from EV charging outweighing the TEP costs. In other words, there was a forecast of downward pressure on rates.

To estimate net revenues from EV charging, the Company must estimate the number of EVs connected to its system, as well as EV load patterns to estimate rate revenues and the cost to serve. The net of the two is the net revenues from EV charging that gets credited against the TEP revenue requirements. Notably, the methodology only includes incremental EV load above a 2020 baseline – that is, the EV load that existed prior to 2021, and the associated net revenues from that load, do not count towards the benefit that gets credited against the TEP revenue requirements.

1 **Q. DURING PROGRAM YEARS 2021-2023, DID THE COMPANY'S TEP**
 2 **ACTUALLY PUT DOWNWARD PRESSURE ON ELECTRIC RATES?**

3 A. Yes. As explained above, the TEP can result in downward rate pressure if net
 4 annual revenues from EV charging exceed the annual TEP revenue requirements.
 5 The retail rate impact analysis completed thus far shows an estimated reduction
 6 of 0.04 percent to retail rates during 2021 and 0.11 percent during 2022. The
 7 forecasted retail rate impact for 2023 provides a reduction of 0.48 percent. In
 8 aggregate, the first TEP is estimated to have a retail rate impact of negative 0.21
 9 percent. This retail rate impact analysis for the 2021-2023 TEP is provided in
 10 Attachment DSK-3 and summarized in the table below. As the table shows, the
 11 negative retail rate impacts have tracked quite closely with what the Company
 12 forecasted during its first TEP, albeit at lower magnitudes.

13 **Table DSK-D-2: Retail Rate Impact Results for First TEP**

	<u>2021</u>	<u>2022</u>	<u>2023</u>
Revenue from EV Charging	(\$5,659,963)	(\$16,450,377)	(\$36,481,068)
+ Cost to Serve EV Charging	<u>\$2,189,377</u>	<u>\$5,914,891</u>	<u>\$12,464,232</u>
= Net Revenue from EV Charging	(\$3,470,587)	(\$10,535,486)	(\$24,016,836)
+ 2021-2023 TEP Costs	\$2,383,284	\$6,956,748	\$7,744,288
= Retail Rate Impact	(\$1,087,302)	(\$3,578,738)	(\$16,272,548)
÷ Approximate Total Retail	\$3,049,509,26	\$3,324,650,32	\$3,365,475,93
Revenues	5	9	8
= Retail Rate Impact - Percentage	-0.04%	-0.11%	-0.48%
<i>Compare to Forecast</i>	-0.4%	-0.6%	-0.9%

1 **Q. IS THE COMPANY PROPOSING ANY CHANGES TO THE METHODOLOGY**
2 **USED TO DETERMINE THE RETAIL RATE IMPACT CAP FOR ITS 2024-2026**
3 **TEP?**

4 A. No, the Company is not proposing changes to the methodology itself, but it has
5 revised several key inputs and data sources to account for updated data and
6 improved assumptions since the first TEP. These key data revisions include
7 updates to marginal cost assumptions to reflect more recent estimates of costs,
8 updates to the EV count and EV load forecast to reflect current Company
9 forecasts, and improved load shape assumptions for EV charging based on further
10 Company experience with serving EVs.

11 **Q. WHAT SERVES AS THE BASIS OF THE COMPANY'S EV LOAD FORECAST?**

12 A. The Company used the EV load forecast undertaken by Guidehouse, Inc.
13 ("Guidehouse"), as supported by Company witness Mr. Jean-Baptiste Jouve and
14 explained in Attachment JLJ-1. Specifically, that EV load forecast reflects the EV
15 adoption that is consistent with Colorado's goal of 940,000 light-duty EVs on the
16 road by 2030.

17 **Q. BASED ON THE COMPANY'S METHODOLOGY, WHAT IS THE FORECAST**
18 **OF THE RETAIL RATE IMPACT FOR THE 2024-2026 TEP?**

19 A. The table below provides the forecasted retail rate impacts of the Company's 2024-
20 2026 TEP, including ongoing costs associated with capital investment from its first
21 TEP. As the table shows, the Company continues to forecast negative retail rate
22 impacts through its next TEP. This outcome is driven by net revenues from EV
23 charging that exceed the TEP revenue requirements.

1 **Table DSK-D-3: Retail Rate Impact Forecast for Proposed TEP**

2024-2026 TEP Forecast	<u>2024</u>	<u>2025</u>	<u>2026</u>
Revenue from EV Charging	(\$64,023,268)	(\$98,111,279)	(\$134,875,294)
+ Cost to Serve EV Charging	<u>\$22,047,114</u>	<u>\$33,584,231</u>	<u>\$45,908,322</u>
= Net Revenue from EV Charging	(\$41,976,154)	(\$64,527,048)	(\$88,966,972)
+ TEP Revenue Requirement	\$21,446,674	\$44,043,724	\$77,690,521
+ 2021-2023 TEP Costs ²	\$5,219,220	\$5,042,827	\$4,787,322
+ PIM	<u>\$500,000</u>	<u>\$500,000</u>	<u>\$500,000</u>
= Retail Rate Impact	(\$14,810,260)	(\$14,940,498)	(\$5,989,129)
÷ Approximate Total Retail Revenues	\$3,506,303,721	\$3,631,575,844	\$3,770,038,444
= Retail Rate Impact - Percentage	-0.42%	-0.41%	-0.16%

2 **Q. DO YOU HAVE CONCERNS THAT LOWER EV ADOPTION THAN AS**
3 **FORECASTED TO MEET THE STATE'S GOAL WILL LEAD TO TEP COSTS**
4 **EXCEEDING EV REVENUES?**

5 **A.** No, I do not share that concern for two reasons. First, the Company's TEP is
6 intended to support Colorado in meeting its EV goals, mitigating risk that EV
7 adoption will be less than that necessary to meet Colorado's goals. Company
8 witnesses Mr. Ihle and Ms. El Mallakh address those issues.

9 Second, in the event there is less than forecasted EV load and thus less EV
10 revenue, there will be a natural decrease in the Company's TEP costs. The
11 decrease in costs will result due to lower participation rates in the TEP programs.
12 The lower TEP costs will assist in ensuring that the TEP continues to place
13 downward pressure on rates, even with lower than forecasted EV load and

² The Company notes that 2021-2023 TEP costs provided here also include the EVSI deferred asset capital revenue requirements from Proceeding No. 19A-0471E.

revenue. As an example of this, I explained previously that during our inaugural TEP, there has been actual downward pressure on rates, and that has occurred even though EV load and revenue has been less than originally forecasted.

Q. DOES THE COMPANY'S ESTIMATE OF THE RETAIL RATE IMPACT ESTIMATE BILL IMPACTS?

A. No. The Company differentiates between the retail rate impact analysis that is used to show compliance with the statute and the bill impacts of the TEPA rider. Unlike the statutory retail rate impact discussed above, bill impacts in terms of the TEPA rider reflects only costs, not corresponding increases in revenue.

Q. ARE YOU PROVIDING AN ESTIMATE OF BILL IMPACTS OF THE COMPANY'S 2024-2026 TEP?

A. Yes. Attachment DSK-4 provides the annual forecasted bill impacts of the 2024-2026 TEP. The average annual bill impacts across all three years of the TEP are summarized by customer class in the table below. The below bill impacts are compared to current rates, including the current TEPA. Attachment DSK-4 contains estimated bill impacts for each year individually

Table DSK-D-4: Average Annual Bill Impacts

	Current Bills	Bill With TEPA	Monthly \$ Change	Monthly % Change
Residential - R	\$88.00	\$88.77	\$0.77	0.88%
Commercial - C	\$132.45	\$134.94	\$2.49	1.88%
Secondary General - SG	\$2,570	\$2,616	\$46.04	1.79%
Primary General - PG	\$43,593	\$44,134	\$541.53	1.24%
Transmission General - TG	\$592,355	\$592,918	\$562.76	0.10%

V. CLASS COST ALLOCATION

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section I explain the method for allocating TEP costs to the Company's various customer classes.

Q. WHAT CLASS COST ALLOCATION DID THE COMMISSION APPROVE FOR THE COMPANY'S FIRST TEP?

A. The Commission approved several cost allocation methods depending on the category of cost. These categories and the corresponding allocations are provided in the table below.

Table DSK-D-5: Class Cost Allocation for First TEP

Cost Allocation Method	TEP Costs Category
Non-Coincident Peak Excluding TG & Lighting	<ul style="list-style-type: none">• EV Supply Infrastructure Capital• Amortized Infrastructure Rebates
TEP Budget Share of Charger Capital	<ul style="list-style-type: none">• Charger Service Capital
Residential Direct Assignment	<ul style="list-style-type: none">• Residential & Multifamily Housing Charger Operation & Maintenance ("O&M")• Residential & Multifamily Housing Charging Service Revenue
Commercial Direct Assignment	<ul style="list-style-type: none">• Fleet/Workplace Charger Service O&M• Commercial Charging Service Revenue
Base Rate Revenue	<ul style="list-style-type: none">• Innovation• Advisory Services• Evaluation

Q. IS THE COMPANY PROPOSING ANY CHANGES TO THE ALLOCATION?

A. Yes. The Company is eliminating the categorization and unique allocation of certain costs and is instead proposing a two-step allocation process, which is uniformly applied to all costs in the TEP.

The first step of the new allocation is to directly assign costs as being Residential or Non-Residential. Certain costs that are not directly related to either Residential or Non-Residential are split between the two categories based on the resulting split from the directly assigned costs. An example of this is Innovation portfolio costs, and the use of this allocation for these costs suggests that the split of these costs are proportional to the split of the other costs in the TEP. The table below shows the allocated results of the total TEP revenue requirement between Residential and Non-Residential, and how the resulting percentage split is applied to allocate Innovation portfolio costs.

Table DSK-D-6: Example of Derived Allocation for the Innovation Portfolio Costs

	<u>Total</u>	<u>Residential</u>	<u>Non-Residential</u>
Total TEP revenue requirement	\$37,902,607	\$8,883,881	\$29,018,727
<i>% Allocation</i>		23%	77%
Innovation capital costs			
Rebates	\$568,184		
Company-owned	\$427,904		
IT	\$263,013		
Total capital costs	\$1,259,102	\$295,117	\$963,985
<i>% Allocation</i>		23%	77%

After the Residential/Non-Residential split is determined, the Company allocates Non-Residential costs to customer classes using a class Non-Coincident

1 Peak ("NCP") allocation. The NCP methodology has been used to allocate costs
2 resulting from the Company's first TEP, and I believe this remains the most
3 appropriate way to allocate costs between customer classes. This methodology
4 has been used to allocate distribution costs in rate case Phase II proceedings
5 previously, and because the EV infrastructure investments closely resemble
6 distribution assets, it is appropriate to use the same cost allocation methodology.

7 **Q. ARE THERE ANY COSTS THAT RECEIVE A SEPARATE TREATMENT FOR**
8 **CLASS COST ALLOCATION?**

9 A. Yes. There is a small portion of EV Supply Infrastructure ("EVSI") program funding
10 for fleet and workplace charging that would be available to Commercial and
11 Industrial ("C&I") Transmission customers. Because this is the only TEP
12 programming that applies to these customers, I have carved out these costs from
13 the revenue requirement and allocated them directly to the C&I Transmission
14 class.

15 **Q. WHY IS THE COMPANY PROPOSING THIS NEW ALLOCATION**
16 **METHODOLOGY?**

17 A. The previous allocation methodology was overly complicated, as it required
18 grouping of costs into several cost categories, and these cost categories do not
19 map very well to the costs at issue in this 2024-2026 TEP. The budget for this
20 TEP is neatly segmented into Residential and Non-Residential costs, so rather
21 than parsing out different types of costs, I propose simplifying the grouping of costs
22 into these two segments. I believe the new allocation methodology more closely

1 follows cost causation, promotes ease of understanding, and will promote stable
2 results.

VI. TARIFF CHANGES

1

2 **Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

3 A. The purpose of this section is to introduce Attachment DSK-5, which provides all
4 tariff changes resulting from this TEP filing, and identify which tariff changes I am
5 personally sponsoring.

6 **Q. ARE YOU PRESENTING AS AN ATTACHMENT ALL OF THE TARIFF**
7 **CHANGES THE COMPANY IS PROPOSING IN THIS PROCEEDING?**

8 A. Yes, for simplicity, I am providing all the tariff changes in one attachment.

9 **Q. OF THE CHANGES, WHAT SPECIFIC TARIFF CHANGES ARE YOU**
10 **SPONSORING, AS OPPOSED TO OTHER COMPANY WITNESSES?**

11 A. I am sponsoring the Off-Peak Subscription Pricing option described earlier in my
12 testimony, which impacts Schedule EVC in the tariff. All other tariff changes are
13 sponsored by other witnesses.

VII. CONCLUSION

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. I recommend that the Commission approve: (1) the Off-Peak Subscription Pricing option that provides a discounted flat-bill option for customers with EVs, (2) the new cost methodologies to apply to the Company's calculation of the monthly rental rates associated with charging equipment and customer-sited batteries and the process to update these rates, (3) the assessment of retail rate impacts provided along with my testimony showing compliance with statute, (4) the cost recovery mechanism proposed for this TEP, including revisions to class cost allocation, and (5) the tariff changes needed to implement the rates and programs proposed in this TEP.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Derek S. Klingeman

Derek Klingeman is a Principal Pricing Analyst for Xcel Energy's Colorado jurisdiction. As an analyst in the Pricing and Planning department his responsibilities include quantitative analyses, cost allocation, and rate design, in addition to policy support on a number of Colorado regulatory issues. Mr. Klingeman started this role in April of 2021.

Prior to taking his current position, Mr. Klingeman worked as a consultant for NewGen Strategies and Solutions where he advised on utility cost of service and rate design and provided various financial modeling support for municipal electric utilities across the country. Derek has a Bachelor of Science degree in Finance from the University of New Mexico, where he graduated summa cum laude, and a Master of Science degree in Mineral and Energy Economics from the Colorado School of Mines.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

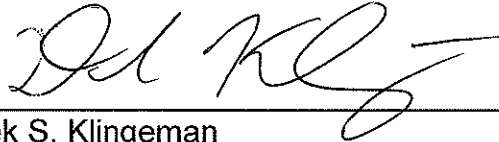
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IN THE MATTER OF THE APPLICATION)
OF PUBLIC SERVICE COMPANY OF)
COLORADO FOR APPROVAL OF ITS) PROCEEDING NO. 23A-XXXXE
2024-2026 TRANSPORTATION)
ELECTRIFICATION PLAN.)

AFFIDAVIT OF DEREK S. KLINGEMAN
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

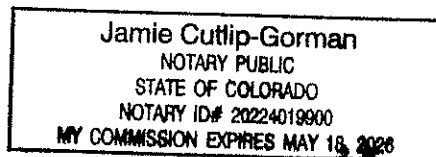
I, Derek S. Klingeman, being duly sworn, state that the Direct Testimony and attachments were prepared by me or under my supervision, control, and direction; that the Direct Testimony and attachments are true and correct to the best of my information, knowledge and belief; and that I would give the same testimony orally and would present the same attachments if asked under oath.

Dated at Denver, Colorado, this 15th day of May, 2023.



Derek S. Klingeman
Principal Pricing Analyst

Subscribed and sworn to before me this 15th day of May, 2023.


Notary Public

My Commission expires May 18, 2026