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 2024-2026 TRANSPORTATION ELECTRIFICATION PLAN.	**)** **)** **)** **)** **)**	**PROCEEDING NO. 23A-____E**

DIRECT TESTIMONY AND ATTACHMENTS OF DEBORAH E. ERWIN

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

May 15, 2023

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

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TABLE OF CONTENTS

LIST OF ATTACHMENTS

Attachment DEE-1	Xcel Energy, EV Public Charging Perceptions Survey Research (April 4, 2022)
Attachment DEE-2	Martec Commercial EV Charging Quantitative Research prepared for Xcel Energy
Attachment DEE-3	Market-Based DCFC Rate Workbook
Attachment DEE-4	Letters of Support

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DIRECT TESTIMONY AND ATTACHMENTS OF DEBORAH E. ERWIN

I. INTRODUCTION, QUALIFICATIONS, PURPOSE OF TESTIMONY, AND RECOMMENDATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Deborah E. Erwin. My business address is 10 East Doty Street, Suite 511, Madison, Wisconsin 53703.

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

A. I am employed by Xcel Energy Services, Inc. ("XES") as Director of Clean Transportation Policy and Planning. XES is a wholly owned subsidiary of Xcel Energy Inc. ("Xcel Energy") and provides an array of support services to Public Service Company of Colorado ("Public Service" or the "Company") and the other utility operating company subsidiaries of Xcel Energy on a coordinated basis.

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

A. I am testifying on behalf of Public Service.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.

A. As Director of Clean Transportation Policy and Planning, I am responsible for helping to support Xcel Energy's clean transportation policy and conduct clean transportation program planning for all of Xcel Energy's four operating companies. My qualifications and experience are more fully described in my Statement of Qualifications at the conclusion of my testimony.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to support the new and expanded programs Public Service proposes to include in its 2024-2026 Transportation Electrification Plan ("TEP") under the Public Charging Acceleration Network and Clean Vehicles portfolios and support the continuation of the Equity Performance Incentive Mechanism ("PIM") from the Company's 2021-2023 TEP. The new and expanded programs I support through my Direct Testimony, including equity-focused EV rebate programs and the increased deployment of public charging, are designed to address two of the most significant barriers to electric vehicle ("EV") adoption. First, is the up-front cost associated with procuring an EV. Second, is range anxiety, representing a customer's concern that they will not have sufficient access to convenient and affordable EV charging when they are away from their charging home base. Related to the Company's public fast charging stations, I also support Public Service's proposal for a new rate applicable to these stations.

Q. AT A HIGH LEVEL, WHY IS THE COMPANY INCLUDING THESE PROPOSALS IN THE 2024-2026 TEP?

A. The new and expanded programs in the Clean Vehicles and Public Charging Acceleration Network portfolios will enhance the Company's ability to achieve the goals established in Senate Bill 19-077 ("SB 19-077"), including for electric utilities to increase access to electricity as a transportation fuel and increase access to EVs and their benefits for all customers. While the Company's first TEP marked an historical first and comprehensive step to support EV adoption and all the associated benefits, the Company has learned through its experiences working closely with customers that there are some market segments that could benefit from new and/or expanded support to help overcome barriers to greater EV adoption. Additionally, the Company's Public Charging Acceleration Network provides an opportunity for the Commission to ensure there is a reliable, cost-effective backbone of public charging infrastructure designed to provide access for everyone (versus only high utilization and/or affluent areas), with that core network remaining under the Commission's oversight through its regulatory authority.

Q. HOW IS YOUR DIRECT TESTIMONY ORGANIZED?

A. After this introductory section, in Section II of my Direct Testimony, I support Public Service's proposal to accelerate the deployment of equitable and accessible public charging that is necessary to support the State of Colorado's EV adoption goals. In that section, I also support a new rate for the Company's public fast charging stations.

In Section III, I present new and expanded programs that are designed to address cost-related barriers to EV adoption for residential customers, including income-qualified ("IQ") customers and customers in disproportionately impacted ("DI") communities, as well as programs to make EVs more accessible to individual drivers for Transportation Network Companies ("TNC") and Delivery Network Companies ("DNC"). I also support a rebate program to address cost-related barriers that are unique to state and local governments.

In Section IV, I support Public Service's continuation of the Equity PIM for the 2024-2026 TEP period, which was approved by the Commission to apply under the 2021-2023 TEP.

Finally, in Section V, I restate the Company's recommendations and conclude my Direct Testimony.

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

A. Yes, I am sponsoring Attachments DEE-1 through DEE-4, which were prepared by me or under my direct supervision. The attachments are as follows:

- Attachment DEE-1: Xcel Energy, EV Public Charging Perceptions Survey Research (April 4, 2022);
- Attachment DEE-2: Martec Commercial EV Charging Quantitative Research prepared for Xcel Energy; and
- Attachment DEE-3: Market-Based DCFC Rate Workbook
- Attachment DEE-4: Letters of Support

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

A. I recommend that the Colorado Public Utilities Commission ("Commission"):

- Approve Public Service's proposed Public Charging Acceleration Network and Clean Vehicles portfolios;
- Approve Public Service's revised rate for Company-owned public fast charging stations and direct Public Service to implement this rate through a compliance advice letter filed after a final Commission decision in this proceeding;
- Approve Public Service's request to build out Company-owned public fast charging approved through this proceeding on a rolling basis beyond the 2026 plan year, to the extent not all authorized public fast charging is constructed during this TEP period; and
- Approve continuation of the current Equity PIM.

II. AN ACCESSIBLE AND EQUITABLE PUBLIC CHARGING NETWORK

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

A. The purpose of this section of my testimony is to present the Company's plans to expand on the public charging buildout approved in the first TEP, through which Public Service develops, owns, and operates public fast chargers across our service territory. In this section, I also discuss certain challenges the Company has encountered in implementing the rollout of Company-owned public fast charging and support Public Service's revised charging rate applicable to all Company-owned public fast charging.

Q. CAN YOU BRIEFLY SUMMARIZE YOUR TESTIMONY REGARDING THE PUBLIC CHARGING ACCELERATION NETWORK?

A. Public Service recommends that the Commission approve the Company's proposal to develop the Public Charging Acceleration Network as it directly addresses range anxiety, a primary barrier to EV adoption facing customers today, and is intended to be a catalyst for the step change in investment needed to drive vehicle electrification and meet future charging demands. Prospective EV drivers frequently cite a lack of access to public fast charging as a primary barrier to an EV purchase. Currently, less than five percent of the fast charging necessary to meet the State's 2030 goals exists, with the majority of identified charging needs located within the Company's service territory.

In order to increase charging infrastructure access to all EV drivers and truly address range anxiety and accelerate adoption, two things need to happen: public fast charging stations need to be built in many locations and charging stations need

to be constructed in anticipation of demand rather than in response to it. Even with support from State and federal funding initiatives, the non-regulated market will be very challenged to meet these needs on its own based on current EV adoption trends and the realities of their business model. Because of this, the State is not likely to meet its EV adoption goals in the absence of robust regulated utility support.

The Company is uniquely positioned to address this "chicken-and-egg" problem through its public fast charging network. By building in anticipation of, and to accelerate, demand, consumer confidence in the State's public fast charging network will increase and EV adoption will accelerate across the Company's service territory, helping the State reach its 2030 EV adoption goals.

Public Service therefore proposes to build upon the public fast charging investments it has started under the Company's inaugural TEP by establishing a Public Charging Acceleration Network to ensure sufficient access to convenient, reliable, and affordable public fast charging throughout its service territory. This proposed Public Charging Acceleration Network will be developed to serve EVs of all sizes, with stations at certain locations designed to fulfill the unique charging demands of medium- and heavy-duty ("MD" and "HD") EVs, which have proven relatively more challenging to electrify than light-duty EVs. This proposal aligns with the legislative declaration of SB 19-077 that calls on utilities to "increase access to electricity as [a] transportation fuel, including for low- and moderate-income and underserved communities."[1] To this end, Public Service recommends that the

[1] SB 19-077, legislative declaration (d).

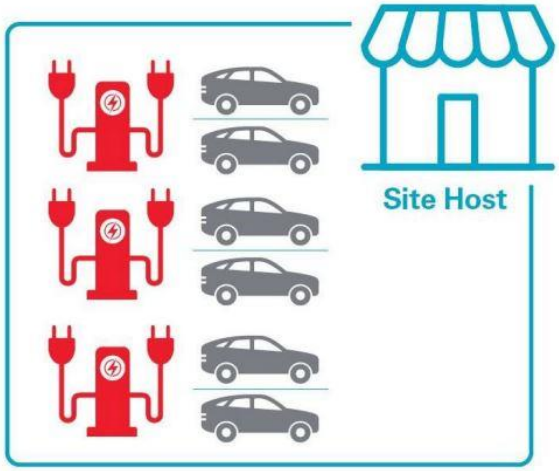
Commission approve its proposal to site public charging where it is needed across the Company's service territory, without artificial buffers or geographic constraints, and to adopt a market-based rate structure, to ensure equitable and affordable access to public fast charging for customers and communities.

Q. FOR BACKGROUND, WHAT ARE THE BASIC COMPONENTS OF A TYPICAL EV CHARGING STATION?

A. I use the term "charging station" throughout my testimony, generally in a broad sense to refer to a group of chargers, their supporting equipment and the area in the immediate vicinity of those chargers.[2] The basic components of a typical device and location where a driver can charge an EV in public include the port, charger, and hub. A "port" is a connector that can be plugged into an EV to charge the vehicle. A "charger" is a piece of equipment providing energy at a given capacity (also referred to as EV Supply Equipment or "EVSE"). A charger can have one or more ports. Finally, a "hub" is an accessible location consisting of charging equipment, including one or more chargers. Figure DEE-D-1, below, illustrates a three-charger hub, where each charger has two ports.

[2] This is consistent with the definition of "charging station" per the National Electric Vehicle Infrastructure Standards and Requirements in 23 CFR 680.104, stating a charging station "means the area in the immediate vicinity of a group of chargers and includes the chargers, supporting equipment, parking areas adjacent to the chargers, and lanes for vehicle ingress and egress. A charging station could comprise only part of the property on which it is located." I note that for purposes of the report provided by Guidehouse, which I discuss later in my testimony, Guidehouse uses the term charging station to also refer to a charger. See Attachment JLJ-1 at D-16.

Figure DEE-D-1: Three Charger Hub with Two Ports Per Charge



A. The Role of Public Charging In Supporting the State's Transportation Electrification Goals

Q. WHAT IS THE ROLE OF PUBLIC CHARGING IN ENSURING THAT THE STATE OF COLORADO IS POSITIONED TO MEET ITS EV ADOPTION GOALS?

A. Access to affordable and reliable public charging is frequently cited by drivers as a primary factor in their decision to purchase an EV.[3] To meet the State's goal to electrify 940,000 light-duty vehicles ("LDV") by 2030,[4] a rapid expansion of public charging is necessary not only to meet the charging demand of vehicles already purchased, but to decrease range anxiety among prospective EV purchasers and accelerate the adoption of EVs. Research has found that increases in the amount of installed public charging are associated with a statistically significant increase in

[3] Consumer Reports, Battery Electric Vehicles and Low Carbon Fuel: A Nationally Representative Multi-Mode Survey, January/February 2022 Results, p. 4, available at https://article.images.consumerreports.org/prod/content/dam/surveys/Consumer_Reports_BEV percent20AND percent20LCF percent20SURVEY_18_FEBRUARY_2022.
[4] Attachment JWI-1 at 3.

the rate of EV adoption.[5] According to modeling conducted by Guidehouse, which forecasts EV adoption and charging needs and is discussed further below, the State requires significant public fast charging build-out to support Colorado's EV adoption target. Through continued direct investment in the Public Charging Acceleration Network, the Company will increase access to public fast charging across our service territory, increase consumer confidence in the viability of EVs, and help Colorado achieve its transportation electrification goals.

Q. HOW IS EXPANDED ACCESS TO PUBLIC CHARGING A KEY ELEMENT OF INCREASED EV ADOPTION?

A. Expanded access to convenient and affordable public charging is critical to address a leading barrier to EV adoption: range anxiety. An EV driver, or prospective EV driver, may fear becoming stranded during a trip or on a particular route if their EV battery depletes its state of charge without sufficient access to a convenient and reliable charging source.

As evidenced by numerous customer surveys, range anxiety is a top concern among prospective EV purchasers.[6] For example, a recent nationwide survey conducted by Consumer Reports found that the top barrier cited by drivers

[5] *See* Li et al, "The Market for Electric Vehicles: Indirect Network Effects and Policy Design," Journal of the Association of Environmental and Resource Economists, March 2017, concluding that a 10 percent increase in EV chargers results on average in an 8.4 percent increase in EV adoption.

[6] *E.g.*, JD Power, *Majority of Electric Vehicle Owners Are Intent on Purchasing Another One in the Future* (January 21, 2021), available at https://www.jdpower.com/business/press-releases/2021-us-electric-vehicle-experience-evx-ownership-study (last visited March 24, 2023); Consumer Reports, *More Americans Would Buy an Electric Vehicle, and Some Consumer Would Use Low-Carbon Fuels*, Survey Shows, Jeff S. Barlett (July 7, 2022), available at https://www.consumerreports.org/cars/hybrids-evs/interest-in-electric-vehicles-and-low-carbon-fuels-survey-a8457332578/ (last visited March 24, 2023); *Consumer Reports, Battery Electric Vehicles and Low Carbon Fuel: A Nationally Representative Multi-Mode Survey*, January/February 2022 Results, p. 4, available at https://article.images.consumerreports.org/prod/content/dam/surveys/Consumer_Reports_BEV%20AND%20LCF%20SURVEY_18_FEBRUARY_2022 .

considering the purchase of an EV or that are opposed to doing so was charging logistics (61 percent), with insufficient public charging and no place to charge at home being the main concern.[7] The second most selected concern among this group was the number of miles a vehicle can travel between charges (55 percent).[8] Both of these concerns were cited more frequently than vehicle price when assessing barriers to EV adoption.[9]

Ensuring that our customers and communities have sufficient access to convenient, reliable, and affordable public charging is a critical priority for the Company as we work collaboratively with stakeholders to address customer concerns and support the State's ambitious EV adoption and emission reduction goals.

Q. HOW DOES PUBLIC CHARGING AVAILABILITY INTERACT WITH HOME CHARGING HABITS?

A. The vast majority of today's EV drivers have access to home charging: 92 percent of EV drivers responded to a Plug In America survey[10] that they most often charge at home; and roughly 80 percent of EV drivers report charging at home in a recent Xcel Energy survey, included with my Direct Testimony as Attachment DEE-1. Importantly, however, many customers do not live in a single-family home that can accommodate home charging, so in reality many customers lack this option. Given this reality and as EV adoption grows, more charging is expected to take place

[7] Id.
[8] Id.
[9] Id.
[10] Plug In America, *The Expanding EV Market: Observations in a year of growth* (February 2022), available at https://pluginamerica.org/wp-content/uploads/2022/03/2022-PIA-Survey-Report.pdf (last visited March 24, 2023); Attachment DEE-1 (Xcel customer survey), p. 13.

outside of the home.[11] Additional public charging solutions will be necessary to accommodate this growing demand. As noted above, a lack of sufficient access to convenient and reliable public charging often deters prospective EV drivers from purchasing an EV, thus limiting the market to consumers with access to home charging. To expand EV adoption to customers that may not have access to home charging, such as residents in multifamily housing or drivers without access to a garage, public charging needs to become more widely available and reliable.

Q. HOW DOES PUBLIC CHARGING AVAILABILITY IMPACT THE ELECTRIFICATION OF MEDIUM- AND HEAVY-DUTY VEHICLES?

A. While the electrification of light-duty vehicles is well underway and continues to accelerate, the electrification of MD and HD vehicles continues to lag. Vehicle unavailability is one reason, and another reason for the lack of MD and HD EVs on the road today is the high utilization of these vehicles and the charging certainty necessary for fleet operators to commit to making an EV purchase. Public charging networks can help provide the certainty necessary for fleets to make the switch to EVs. Coordinated planning with fleet operators will be needed to ensure that public charging stations are designed and sited to accommodate the unique requirements of *en route* fueling for electrified MD and HD fleets. Publicly available charging for MD and HD vehicles is a significant gap in current public charging investment plans,

[11] International Council of Clean Transportation, Charging Up America: Assessing the Growing Need for U.S. Charging Infrastructure through 2030, Gordan Bauer, Chih-Wei Hsu, Mike Nicolas, and Nic Lutsey (July 2021), p. 22, available at https://theicct.org/wp-content/uploads/2021/12/charging-up-america-jul2021.pdf (last visited April 24, 2023).

as evidenced by the State's stated goal of developing plans for this charging infrastructure, and is necessary to support the electrification of these vehicles.[12]

Q. IS THE PUBLIC FAST CHARGING BUILDOUT IN THE COMPANY'S SERVICE AREA ON PACE TO MEET THE CHARGING NEEDS ASSOCIATED WITH THE STATE'S EV ADOPTION GOALS?

A. No. Public Service retained consultant Guidehouse to conduct an EV adoption forecast under current market conditions and calculate the additional public fast charging support Colorado will need to help the State reach its transportation electrification goals. Guidehouse's report presenting the results of this study is filed as Attachment JLJ-1 to the Direct Testimony of Jean-Baptiste Jouve. According to Guidehouse, the statewide public fast charging infrastructure necessary to support 940,000 electric[13] LDVs in Colorado by 2030 is 2,285 MW, with 1,403 MW (over 60 percent) of that public fast charging needed within the Company's service territory. Considering there were 59,410 electric LDVs and only 44 MW of public fast charging in the Company's service territory in 2022, the analysis indicates that 1,359 MW (or 96 percent) of additional public fast charging capacity is needed in the Company's service territory in the next eight years.

Having forecasted the amount of additional public charging needed to meet the State's 2030 goal, Guidehouse also conducted a second analysis to provide a bottom-up market forecast as of September 2022. As explained in the Guidehouse report, Attachment JLJ-1, the purpose of this analysis was to estimate the level of

[12] ICCT Working Paper 2021-08, *Colorado Charging Infrastructure Needs to Reach Electric Vehicle Goals*, p. 14, available at https://theicct.org/sites/default/files/publications/colorado-charging-infra-feb2021.pdf (last visited May 1, 2023); Attachment JWI-1 (2023 Colorado EV Plan), p. 6, 9, 29, 36.
[13] "Electric" includes plug-in hybrid electric vehicles (PHEV) and battery electric vehicles (BEV)

EV adoption expected in Colorado under market equilibrium conditions by 2030, as achieving the State's 940,000 electric LDV adoption goal is not a foregone conclusion. This forecast enables stakeholders to understand the likelihood of Colorado achieving the State target, based on market conditions at the time of the analysis. The Guidehouse forecast projects that under current market conditions as of September 2022, Colorado is on track to have roughly 760,000 electric LDVs on the road in 2030, *about 20 percent short of the State's goal*. This demonstrates a need for increased Company investment to support widespread transportation electrification, including in the public charging space.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE PUBLIC FAST CHARGING MARKET IN COLORADO TODAY.

A. According to the Alternative Fuels Data Center, as of March 2023, Colorado has 270 public fast charging locations across the State with 745 direct current fast charging ("DCFC") ports available. Of those 745 ports, 324 are Tesla stations currently available to Tesla drivers, meaning only 421 non-proprietary fast charging ports are available statewide.

Table DEE-D-1: Statewide Charging Ports

Charging Network	Charging Ports
Blink Network	5
CHARGELAB	1
ChargePoint Network	132
Electrify America	150
EV Connect	6
EVGATEWAY	4
EVgo Network	88
Non-Networked	24
Rivian Adventure	10
Tesla	324
Volta	1
Total	**745**

Q. WHAT IS THE CURRENT STATE OF PUBLIC FAST CHARGING AVAILABILITY IN THE COMPANY'S SERVICE TERRITORY AND HOW DOES IT COMPARE TO THE PROJECTED NEED?

A. As of 2022, within the subset of the State that is the Company's service territory, there were 246 non-proprietary charging ports with a combined charging capacity of 44 MW. Based on Guidehouse's analysis, the current public fast charging network will need to expand by a factor of 30 between now and 2030 to meet the charging needs associated with the State's EV goals. The difference between the

fast charging network as it exists today and what is needed for the future will require new investment in infrastructure to support EV drivers' travel needs. This enhanced and accelerated investment will need to come from a diverse set of stakeholders, requiring coordination between the utility and non-regulated entities to ensure that public fast charging is available and affordable to all Public Service customers. A notable element of Guidehouse's analysis illustrates that *the majority of the charging needs in the State are located within the Company's service territory*. Consequently, increased public fast charging investment within our service territory will have an outsized impact on achieving the State's EV adoption goals. The table below shows currently installed non-proprietary public fast charging ports and capacity alongside what is needed in 2030 to support Colorado's goals, and the resulting challenge for all to address.

Table DEE-D-2: 2030 Fast Charging Needs

2030 Fast Charging Needs	Statewide	PSCo Territory
Charging Capacity Today (MW)	71	44
Charging Capacity Needed (MW)	2,285	1,403
DC Fast Chargers Today (Ports)	421	246
DC Fast Chargers Needed (Ports)	10,271	6,313
Additional Charging Capacity Needed (MW) to Support 2030 Goal	**2,214**	**1,359**
Additional Charging Ports Needed to Support 2030 Goal	**9,850**	**6,067**

Q. IS THIS CHARGING NEED ANALYSIS ARGUABLY CONSERVATIVE BASED ON RECENT POLICY INITIATIVES?

A. Yes. Guidehouse's analysis does not factor in the potential for heightened growth of charging needs due to more current and ongoing initiatives. For instance, Guidehouse's analysis does not consider the impact of the recently approved Colorado Air Quality Control Commission ("AQCC") Advanced Clean Trucks rule. This rule requires manufacturers of trucks, buses, and vans to make a certain percentage of new sales in Colorado zero-emission vehicles starting in 2026 for model year 2027 vehicles.[14] The rules are expected to significantly increase the availability of affordable heavy- and medium-duty commercial EVs, which will drive

[14] Colorado Department of Public Health and the Environment, Colorado adopts new measures to increase availability of zero-emission trucks that offer lower operating and fuel costs (April 24, 2023), available at https://cdphe.colorado.gov/press-release/colorado-adopts-new-measures-to-increase-availability-of-zero-emission-trucks-that.

up demand for public charging.[15] Similarly, the Guidehouse analysis does not consider the impact associated with the AQCC's potential new rules to implement an Advanced Clean Cars II standard,[16] which will further increase charging needs for zero-emissions cars.

These recent developments are not included in Guidehouse' analysis because they were not final, legal requirements at the time of the analysis.

Q. WHAT SOURCES OF FEDERAL FUNDING ARE AVAILABLE FOR THE DEPLOYMENT OF PUBLIC FAST CHARGING?

A. The recent federal Infrastructure Investment and Jobs Act ("IIJA") included the National Electric Vehicle Infrastructure ("NEVI") Formula Program that will distribute funds to states to build public fast charging primarily along designated Alternative Fuel Corridors ("AFCs"). Colorado is expected to receive $57 million over the next five years to support the buildout of a public fast charging network primarily along AFCs. Additionally, the IIJA establishes a second, $2.5 billion nationally competitive grant program, known as the Charging and Fueling Infrastructure ("CFI") Discretionary Grant Program, that is meant to complement the NEVI funds. The program can support the adoption and use of alternative fuels, including but not limited to electricity. This competitive funding has the potential to fund EV charging in communities and along corridors other than AFCs and interstate highways. However, unlike the NEVI Program, there is no specific amount of

[15] ICCT White Paper, Near-Term Infrastructure Deployment to Support Zero-Emission Medium- and Heavy-Duty Vehicles in the United States, Pierre-Louis Ragon, Sara Kelly, Nicole Egerstrom, Jerold Brito, Ben Sharpe, Charlie Allcock, Ray Minjares, and Felipe Rodríguez (May, 2023) at iii, available at https://theicct.org/wp-content/uploads/2023/05/infrastructure-deployment-mhdv-may23.pdf.
[16] More information is available at: https://cdphe.colorado.gov/coloradocleancars

funding set aside for projects in Colorado given its competitive nature. The Federal Highway Administration on March 14, 2023, issued its first notice of a grant funding opportunity under the CFI Discretionary Grant Program, offering an estimated total of $700 million for applications received by May 30, 2023.[17] Eligible applicants include local governments, transportation planning organizations, and tribal governments.

Q. IS THE FEDERAL FUNDING ALLOCATED TO COLORADO THROUGH THE NEVI PROGRAM SUFFICIENT TO ADDRESS THE PUBLIC FAST CHARGING NEEDS IDENTIFIED FOR 2030?

A. No. Based on Guidehouse's analysis of the amount of charging necessary to meet the State's 2030 goal, and budget assumptions included in this filing, the estimated NEVI funding available in Colorado will cover only a small portion of the additional public charging needed. By 2030, the State will need roughly 2,200 MW or 10,000 ports of additional public charging. This represents an investment of roughly $2 billion in public fast charging. Assuming that Colorado provides about 60 percent of the cost of a public charging station with NEVI funds, the estimated NEVI funding will cover less than five percent of the public fast charging Colorado will need to add by 2030. Significant investment above and beyond what is available through the NEVI program is necessary to meet the State's electrification goals.

[17] See Funding Opportunity Number 693JJ323NF00004, available at https://www.grants.gov/, last accessed April 15, 2023.

Q. DOES THE STATE OF COLORADO HAVE OTHER INITIATIVES IN PLACE TO SUPPORT PUBLIC FAST CHARGING DEPLOYMENTS?

A. Yes. As further described in Colorado's 2023 EV Plan, Attachment JWI-1 to Company witness Jack Ihle's Direct Testimony,[18] the State and its agencies administer multiple programs that are designed to advance the deployment of public fast charging, including the Colorado Energy Office's ("CEO") Charge Ahead Colorado program, CEO's DCFC Plazas program, CEO's EV Fast-Charging Corridors program, and CEO's Fleet-ZERO Emission Resource Opportunity ("Fleet-ZERO"). Table DEE-D-3 below provides an overview of these key initiatives.

In addition to these initiatives, pursuant to Senate Bill 21-260, the State has established multiple entities that are dedicated to promoting its transportation electrification efforts, including the Community Access Enterprise ("CAE"), the Clean Fleet Enterprise ("CFE"), and the Clean Transit Enterprise ("CTE"), and these entities also work to support related efforts.[19]

[18] Attachment JWI-1, p. 16-17.
[19] The CAE is housed in the Colorado Energy Office ("CEO"), the CFE is housed in the Colorado Department of Public Health and Environment ("CDPHE"), and the CTE is housed in the Colorado Department of Transportation ("CDOT").

Table DEE-D-3: Overview of State Programs that Support Public Charging

Program	Description
Charge Ahead Colorado	Provides grants for community-based L2 and DCFC stations across the State. Since 2013, it has made awards for more than 2,000 EV charging stations. Provides funding for 80 percent of the cost of supported DCFC stations, up to $35,000 for 50-99 kW DCFC stations and up to $50,000 for higher-capacity DCFCs.[20]
DCFC Plazas	Increases access to high-speed charging in communities and along highway corridors across the State, funded through the federal NEVI program and the CAE. Per port incentives range from $90,000 to $140,000 depending on region, with enhanced incentives available for DI Communities/Disadvantaged Communities, and for sites with battery integrated and/or standalone storage components.[21]
EV Fast-Charging Corridors	Partnership between CEO, ChargePoint, participating site hosts, utilities, and private companies to install fast charging stations at 34 sites across six corridors throughout the State comprising Interstate, State and U.S. Highways.[22]
Fleet-ZERO	Offers competitive grant funding to support charging for fleet owners and operators seeking to electrify their vehicles, as well as public and semi-public fleet charging sites and providers offering EV charging-as-a-service to fleets, with enhanced incentives for DI Communities and other eligible entities. Funds can cover costs directly associated with the purchase and installation of EV charging equipment and infrastructure for fleets, as well as costs associated with the five-year networking and five-year warranty requirements for the program. The maximum award per applicant, per round for standard applications is likely $250,000-$500,000. [23]

[20] CEO, Charge Ahead Colorado, https://energyoffice.colorado.gov/transportation/grants-incentives/charge-ahead-colorado.
[21] CEO, DCFC Plazas, https://energyoffice.colorado.gov/zero-emissions-vehicles/dcfc-plazas.
[22] CEO, EV Fast-Charging Corridors, https://energyoffice.colorado.gov/transportation/grants-incentives/ev-fast-charging-corridors.
[23] CEO, Fleet-ZERO, https://energyoffice.colorado.gov/fleet-zero.

Q. DOES THE COMPANY PROVIDE SUPPORT TO NON-REGULATED COMPANIES TO DEVELOP PUBLIC CHARGING?

A. Yes. Through its Commercial EV Supply Infrastructure ("EVSI") program, charger rebates for qualifying communities, and S-EV rate design, the Company currently provides solutions to reduce the two primary barriers to third party public fast charging implementation: high upfront costs and high operating costs, specifically demand charges.

The EVSI program supports make-ready infrastructure, the charger rebates help defray charging equipment costs for qualifying communities, and the S-EV rate is specifically designed to meet the needs of public fast charging stations through reduced demand charges.

Q. WITH ALL OF THIS SUPPORT FROM FEDERAL AND STATE FUNDING AND THE COMPANY'S EVSI PROGRAM AND RATE DESIGN, CAN NON-REGULATED MARKET ACTORS ALONE BE EXPECTED TO PROVIDE SUFFICIENT, EQUITABLE ACCESS TO PUBLIC FAST CHARGING IN THE COMPANY'S SERVICE TERRITORY TO SUPPORT THE STATE'S EV ADOPTION GOALS?

A. Respectfully, no. As shown in Table DEE-D-1, the vast majority of the public fast charging stations in service today are operated by private charging network providers. These are generally unregulated, private companies that in contrast to a public utility, are not subject to Commission regulation or a duty to serve the general public on just, reasonable, and transparent terms. Their economic interests rationally drive their decision-making, particularly around the siting of charging

stations and the rate of charging station buildout. To maximize station profitability, private firms are likely to prioritize areas with higher EV adoption and therefore higher charger utilization. This dynamic predictably results in charging networks that cater to existing demand and are typically clustered in areas that already have a larger share of EVs on the road. This behavior by rational economic actors is perfectly normal and responsive to demonstrated rising charging demand; however, *it tends to lead to an inequitable distribution of charging availability*. As noted above, to meaningfully accelerate EV adoption and address range anxiety, EV drivers need to be able to readily access convenient, reliable, and affordable public charging throughout our service territory. This means that to make a meaningful impact towards advancing EV adoption, more public fast charging stations need to be built and charging stations need be constructed in anticipation of demand, rather than in response to it. Based on Guidehouse's bottom-up EV adoption market forecast and the realities of non-regulated company business models, Public Service does not expect that State and federal funding initiatives will be sufficient to spur the private market to build the amount of public fast charging infrastructure at the pace and in the locations needed to support equitable access to public fast charging and achieve the State's 2030 EV adoption goals.

B. <u>The Public Charging Acceleration Network</u>

Q. HOW DOES THE COMPANY PROPOSE TO HELP ADDRESS COLORADO'S PUBLIC FAST CHARGING NEEDS?

A. The proposed Public Charging Acceleration Network will enable the Company to do its part to support the State's EV adoption goals through expanding our existing

public fast charging program into its own stand-alone portfolio of investments in public fast charging. This portfolio will build upon previous efforts and materially increase the Company's focus on developing a network of public fast charging stations that are built, owned, and operated by the Company across its service territory. The Company's public charging network will continue addressing barriers to implementation of public DCFC by offering turnkey solutions to site hosts, affordable charging rates to drivers, and a reliable and efficient charging experience. As noted earlier in my testimony, a significant amount of additional investment in public DCFC is required to provide the public fast charging needed to support and drive adoption at the rate necessary to electrify 940,000 LDVs statewide by 2030. To support this goal, the Company is planning to invest approximately $120 million and deploy up to 460 chargers (roughly 580 ports) across about 130 charging hubs.

Q. HOW MUCH OF COLORADO'S PUBLIC FAST CHARGING NEED WILL BE MET BY THIS INVESTMENT?

A. The Company expects that an investment of approximately $120 million will enable the development of roughly 580 ports, representing less than 10 percent of the 6,067 additional fast charging ports necessary to support the State's 2030 goal in our service territory. That leaves more than 90 percent of the additional fast charging need in our service territory to be met by other efforts, including by the non-regulated market. The Company has designed the Public Charging Acceleration Network portfolio to help jumpstart the step change in investments necessary to support the State's transportation electrification goals, providing

increased certainty that the State will have the fast charging infrastructure it needs, while leaving ample room for other investors to continue to remain active in this space.

Q. HOW WILL THIS PROPOSAL IMPACT THE ADOPTION OF MEDIUM- AND HEAVY-DUTY VEHICLES?

A. Through efficient siting, affordable charging rates and providing pull-through charging at certain locations, the Company's public fast charging network will provide convenient and efficient MD/HD vehicle charging away from fleet depots. This availability is crucial to the adoption of MD and HD electric vehicles as these often have higher duty cycles (meaning vehicle utilization or miles driven) than LDVs and require charging availability beyond traditional depot charging. Certainty around the price and timing of vehicle fueling is an essential component of fleet management and a necessity for a fleet manager to commit to vehicle electrification. By providing convenient charging locations that can accommodate fleet vehicles at a stable and affordable rate, the Company believes that its public charging network will help provide that certainty and encourage the adoption of MD and HD EVs.

Q. HOW WILL THE COMPANY'S PUBLIC CHARGING PLAN AFFECT PUBLIC FAST CHARGING MARKET DYNAMICS?

A. The proposed Public Charging Acceleration Network will increase customer choice, drive EV adoption, increase competition, enhance customers' confidence in a growing market, and benefit the non-regulated market in the long-term. With the goals of addressing public fast charging needs and driving EV adoption, the

Company's public charging network will induce incremental EV adoption, thereby increasing public fast charging demand long-term across the Company's service territory. The Company's unique ability to build to induce and support future demand rather than react to existing demand will support an environment where an EV purchase is viable for a larger portion of prospective drivers who are concerned about range anxiety. By addressing range anxiety and accelerating adoption in areas where some public fast charging is currently available, the Company's public charging network will facilitate future investment by the non-regulated market by increasing demand for public fast charging throughout the Company's service territory. The Company's public charging network will increase charging options for customers, instill confidence that charging will be available when needed and create a positive feedback loop accelerating EV adoption. Plus, as the Commission retains jurisdiction and oversight, this will help reduce significant risks that the State will fall short of the public fast charging infrastructure it needs to support EV adoption goals and lack equitable access to public fast charging.

Q. HOW IS THE COMPANY UNIQUELY POSITIONED TO PROVIDE ADEQUATE, EQUITABLE ACCESS TO PUBLIC FAST CHARGING THROUGH ITS PUBLIC CHARGING ACCELERATION NETWORK?

A. Due to the regulated nature of this program, the Company recognizes it has the ability to build charging stations in various locations, including areas of our service territory that risk being neglected by non-regulated charging entities. As I noted earlier, non-regulated charging companies acting in their own rational economic interest will build charging stations in areas of higher utilization and therefore higher

profitability. While this dynamic tends to support public fast charging installation in areas of high adoption, it also tends to leave large geographic areas with inadequate public fast charging infrastructure, which discourages adoption in these locations. The Company has forecasted charging needs across all parts of its service territory, as described in more detail later in my testimony, in an effort to build charging stations that will not just meet the demand of EV adopters but also reduce range anxiety of hesitant potential EV buyers and encourage vehicle electrification statewide.

C. Public Charging Acceleration Network Operational Plan

Q. WHAT TYPES OF CHARGING HUBS IS THE COMPANY PROPOSING TO BUILD?

A. The Company is proposing to continue to implement its Market and Connector Charging Hub concepts, with modifications to siting parameters discussed later, but will update the site designs to accommodate an increase in charging demand and more diverse charging needs. The current program consists of Market and Connector Hubs, with Market Hubs meant to provide fast charging at destinations within an urban setting and Connector Hubs meant to provide fast charging in rural communities or along major travel corridors to enable long distance travel. Under the current program, a uniform site design of two dual-port chargers is being implemented across most sites regardless of site type. The Company is modernizing its site designs for future installations to address the unique needs of drivers at each location type.

Market Hubs will prioritize accessibility and amenities and are anticipated to consist of four to six chargers between 150 kW and 180 kW. These will be located at destinations such as retail stores, grocery stores, and restaurants in urban settings and allow drivers to charge while conducting other business. Connector Hubs will prioritize efficiency and convenience. They are anticipated to consist of two to four high-capacity (e.g., 350 kW) chargers and will be located along major highways and in rural areas to facilitate long distance travel and meet rural charging needs. Connector Hubs will also be equipped with pull-through charging where possible and will strive to accommodate medium- and heavy-duty vehicles. Market Hubs will also use pull-through site designs to the extent feasible, depending on site specific considerations. These site designs will be used where possible in an attempt to standardize the deployment process and provide a uniform experience across charging sites. The designs are also subject to change based on individual site characteristics such as space or capacity availability.

Q. HOW WILL PUBLIC CHARGING SITES BE SELECTED?

A. The Company will seek to partner with site hosts wherever feasible with access to amenities that can provide a convenient charging experience for drivers. The Company may also use Company-owned property or acquire land rights in locations where charging is needed and there is not a site host match. Public Service will actively recruit site hosts in tandem with open application periods that will be open to all Public Service commercial customers. Potential sites will be scored based on the following criteria with a focus on ensuring adequate access to public fast

charging across our service territory and meeting customer's charging expectations:[24]

- Charging need met (as quantified by the Guidehouse analysis filed as Attachment JLJ-1 to Company witness Jean-Baptiste Jouve's Direct Testimony and updated with each TEP)
- Interconnection costs and capacity availability
- Site readiness
- Equitable access to charging
- Access to amenities
- Practical considerations such as space availability, overall site layout, access to 3-phase power, etc.

In determining where to develop public fast charging, Public Service will prioritize the highest areas of need based on forecasted EV charging needs.

Other considerations in the site selection process center around cost and customer experience. Based on direct customer research, which is included with my Direct Testimony as Attachment DEE-1, the top site-related factors that inform customer charging decisions beyond charging speed and costs are convenient locations, site safety, and nearby amenities.[25] The Company will seek to locate charging stations in well-lit locations that have access to amenities. Ideal businesses for fast charging as identified by surveyed customers are grocery stores, retail stores or shopping malls and at rest areas or gas stations along

[24] In addition to the survey conducted by Xcel Energy, included with my Direct Testimony as Attachment DEE-1, customers' charging expectations have been explored through multiple studies. *See e.g.*, PlugIn America, *The Expanding EV Market: Observations in a year of growth* (February 2022), p. 14, available at https://pluginamerica.org/wp-content/uploads/2022/03/2022-PIA-Survey-Report.pdf(last visited April 11, 2023).

[25] *See also, e.g.*, Plug In America, *The Expanding EV Market: Observations in a year of growth* (February 2022), p. 14, available at https://pluginamerica.org/wp-content/uploads/2022/03/2022-PIA-Survey-Report.pdf (last visited April 11, 2023).

interstates or highways.[26] The Company will prioritize these types of locations to meet customer expectations and create a positive charging experience.

Q. DOES PUBLIC SERVICE PROPOSE TO OWN, OPERATE, AND MAINTAIN THE CHARGING STATIONS?

A. Yes. Based on customer surveys conducted by the Company, there is a strong interest amongst commercial customers in hosting EV charging on their premises.[27] However, many of these customers are unsure of the maintenance responsibilities and costs associated with operating EV charging stations, while others do not have the upfront capital for charger installations or budget available for charger upkeep.[28] The Company's Public Charging Acceleration Network can help customers overcome these barriers through the Company building, owning, and maintaining DCFC hubs on the site host premise at no cost to them for the infrastructure and infrastructure maintenance. Site hosts will receive the benefit of increased foot traffic to their locations, while being able to offer their patrons an important, additional service in addition to their normal operations. Site hosts will not be responsible for day-to-day operations of the charging stations or maintenance costs associated with them. While Public Service will own, operate, and maintain the public charging stations, site hosts will be required to provide 24/7 access to the charging stations, ensure that the spaces are used exclusively for EV charging and not for general parking, and conduct basic site maintenance such as snow removal and vegetation management to ensure safe accessibility.

[26] Attachment DEE-1 at p. 17.
[27] Attachment DEE-2, Martec Commercial EV Charging Quantitative Research prepared for Xcel Energy (January 2023).
[28] *Id.*

Q. WHAT ADDITIONAL DESIGN ELEMENTS WILL BE CONSIDERED IN DEVELOPING PUBLIC CHARGING SITES?

A. The Company will design charging stations with the goals of increasing accessibility and reliability of public fast charging. Drivers have consistently cited charging speed as the most important characteristic of an EV charging station.[29] The Company's charging sites are anticipated to consist of chargers with a capacity of 150 kW and higher with a preference for higher output chargers where practical. The Company's preferred site designs will primarily offer single port charging to accommodate higher charging output more cost effectively; however, dual port charging will be installed as needed based on space limitations and/or site host preference. All charging locations will be designed to provide charging that complies with the requirements of the Americans with Disabilities Act ("ADA") to ensure accessibility. When feasible, and especially for Connector Hubs, charging will be designed to accommodate pull-through charging, meaning vehicles can pull alongside the charger rather than pulling into a parking space. This will enable the charging of MD and HD vehicles as well as LDVs with towing capabilities.

Q. HOW WILL THE COMPANY OPERATE THE CHARGING STATIONS?

A. The Company will operate and maintain the chargers throughout the lifetime of the charging stations through a partnership with its Charging Network Provider ("CNP"). The Company will use a Request for Proposal ("RFP") process for charger hardware, software, construction and maintenance services that will support its public charging stations. A single vendor may provide all these services, or the

[29] *See e.g.*, Attachment DEE-1 at *p. 8.*

Company may partner with a variety of vendors depending on cost effectiveness and operational efficiency. The CNP will supply the Company with charger monitoring software and customer-facing digital tools to allow for site monitoring and maintenance, customer payments, and payment processing. This same entity may also provide maintenance services, although charger maintenance services may be contracted out to a separate provider, depending on the results of the RFP. The Company will monitor utilization, charger uptime, and other operations data through the charger monitoring software and work with its CNP and maintenance providers to conduct preventative maintenance and dispatch repair crews when necessary. Site hosts and EV drivers will be provided with Company and/or CNP contact information to report outages and address questions regarding the Company's public charging stations. Multiple secure payment options will be made available to customers, as applicable and available. These payments will be processed by the CNP and transferred to the Company as revenues that will offset costs of the charging network.

Q. HOW WILL EV DRIVERS LOCATE CHARGERS AND PAY FOR CHARGING SERVICES?

A. EV drivers can find the Company's charging stations through the mobile application that will be provided by the CNP as well as other third-party EV charger applications (e.g., PlugShare). This mobile application will show charger locations, prices, and availability. Each charging hub in the Public Charging Acceleration Network will be clearly identified through site signage and charger wrapping identifying it as a Company-owned charging site.

Q. HOW WILL THE COMPANY OVERCOME RELIABILITY AND DRIVER EXPERIENCE CONCERNS PREVALENT IN THE INDUSTRY TODAY?

A. Charger downtime and unsatisfactory driver experience are major challenges impacting the public charging industry today[30] that the Company plans to help remedy through a strong partnership and service level agreements ("SLAs") with its CNP. While some of these challenges are inevitable due to the maturity of the industry, Public Service will not only have SLAs with the CNP, but will look for innovative avenues to leverage utility expertise and assets, where appropriate and relevant. The network provider and/or the Company's maintenance provider will be responsible for all charger maintenance, with regularly scheduled preventative maintenance as well as repairs. The CNP will provide the Company with charger monitoring software that the Company will utilize to monitor charger utilization and faults and dispatch maintenance crews when necessary. The site host will also be provided with contact information to report any issues or repair needs with the charging stations. Through these measures and multiple reporting sources to identify charging station issues, the Company believes it will be able to effectively identify and respond to issues and deliver a charging network supported by SLAs requiring at least 97 percent uptime. With this being a regulated program, charger performance and uptime data will be regularly reported by the Company providing a level of transparency not provided by the non-regulated market today.

[30] American Public Power Association, Study Finds Electric Vehicle Owners Are Frustrated By Charging Station Reliability, Sept. 8, 2022, available at: https://www.publicpower.org/periodical/article/study-finds-electric-vehicle-owners-are-frustrated-charging-station-reliability.

III. Key Learnings From Current Public Charging Program

Q. PLEASE PROVIDE AN OVERVIEW OF THE CURRENT COMPANY-OWNED PUBLIC CHARGING PROGRAM, SITE ELIGIBILITY REQUIREMENTS, AND DCFC CHARGING RATES.

A. Under the 2021-2023 TEP, the Company received Commission approval to invest a maximum of $5 million to develop up to 25 Company-owned public fast chargers in underserved areas of our service territory.[31] Underserved in this context was determined to be areas that lack access to public fast charging. The Company worked with stakeholders to specifically define underserved communities and locations where the program's charging stations could be built. Through stakeholder workshops, parameters were established for the Company's DCFC program relating to proximity to other DCFC stations and to establish geographic limitations that varied by hub type. More specifically, in the context of the feedback and given the Company's knowledge at the time, for the 2021-2023 TEP the Company agreed to develop Market Hubs at least one-half mile away from existing DCFC stations and to strive to maintain a two-mile buffer for those sites, and Connector Hubs would not be built within 10 miles of an existing DCFC station. In response to a 2022 petition for declaratory judgment initiated by a public charging provider, the Commission subsequently ordered that only five of the chargers could be built as part of Market Hubs, while the remaining 20 chargers would need to be built as part of Connector Hubs during the 2021-2023 TEP. [32]

[31] Commission Decision No. C21-0117 (mailed Mar. 2, 2021), ¶ 39 in Proceeding No. 20A-0204E.
[32] Commission Decision No. C22-0255 (mailed April 26, 2022), Ordering ¶ 2 in Proceeding No. 22D-0069E.

In 2022, the Commission also determined the rates that EV drivers will pay to use the Company's public fast charging stations through Proceeding No. 21AL-0494E. Through that proceeding, the Commission approved a time varying rate based on a stipulation by certain intervenors, which Public Service argued against as substantially above-market.[33]

The rates charged to customers at Company owned DCFC hubs are currently $0.55 per kWh during peak times, defined as 4 pm to 10 pm on non-holiday weekdays, and $0.42 per kWh during off peak times.

Q. WHAT HAS THE COMPANY LEARNED THROUGH ITS IMPLEMENTATION OF THE COMPANY-OWNED PUBLIC CHARGING PROGRAM APPROVED IN THE 2021-2023 TEP?

A. Implementation of the Company-owned public charging program has provided many insights and learnings in a short period due to a number of factors, some tied to the challenging siting requirements and above-market rate discussed above and some due to supply chain constraints and other factors. The Company currently has sites selected and in design for the approved charging stations. Depending on final design, the capital funds approved for the program are expected to support six or seven locations and a total of 14 to 16 chargers. While the program is on track to complete construction of these approved charging stations by the end of the year, finding viable site hosts willing to participate has proven difficult. This difficulty is primarily due to the geographic constraints of the hubs and the rates charged to drivers, which are not in line with the current market need. With the vast majority

[33] Decision No. R22-0378 (mailed June 24, 2022), ¶¶ 112-123 in Proceeding No. 21AL-0494E.

of chargers required to be at Connector hubs, and a 10-mile buffer requirement for those hubs, the Company had to exclude locations that otherwise better aligned with site host objectives, community goals, customer expectations, and the Company's site selection criteria.

These geographic constraints also operate as a barrier to the development of public fast charging in communities of need, undermining the program's ability to advance State equity objectives. This result runs counter to the policies advanced in Colorado's enacted Environmental Justice Act (HB 21-1266), which provides that regulated utility programs should "ensure that low-income customers and disproportionately impacted communities will have at least proportionate access to the benefits of such programs, incentives, and investments."

Site hosts have been hesitant to offer charging on their premises at above-market rates, with multiple potential hosts expressing concerns when the charging rates were communicated to them. In order to expand the Company's public charging network and meaningfully increase access to affordable, reliable, and convenient public fast charging for drivers throughout our service territory, it is important for the Commission to evaluate and modify the siting restrictions that have proven to significantly limit the program's ability to serve its intended purpose and adjust the rates to reflect the current charging market.

Finally, as referenced above, the Company has learned that the time it takes to build out public fast charging hubs can be longer than previously expected for a variety of reasons, including supply chain and labor challenges, the time it takes to

negotiate and execute site host agreements, as well as the potential for a construction delay due to permitting delays or other factors.

Q. HOW DO CURRENT GEOGRAPHIC RESTRICTIONS ON SITING LIMIT THE COMPANY'S ABILITY TO ADDRESS PUBLIC FAST CHARGING NEEDS WITHIN ITS SERVICE TERRITORY?

A. The geographic restrictions imposed on the Company's public fast charging program have had a negative impact to the program's stated intent to leverage the Company's unique business model to develop public fast charging in underserved areas, an approach which aligns with the legislative declaration in SB 19-077 calling for public utilities to "increase access to electricity as a transportation fuel, including for low- and moderate-income and underserved communities."[34] The Company identified public fast charging needs across its service territory; however, sites with a clear need were disqualified due to an existing charging station being available within miles of the interested site. While expedient, using a simple mileage radius around existing infrastructure to define communities as being with or without sufficient access to public fast charging does not accurately identify where charging is most needed.

A hypothetical example based on the Company's experience is a mountain town with a single fast charging port available, but significant demand for EV charging from residents and tourists passing through. In this example, EV charging demand clearly outstrips availability, and a need for additional public fast charging exists. However, under the program's currently applicable siting restrictions, this

[34] SB19-077 legislative declaration (d).

community would be deemed "adequately served" and to have no need for additional public fast charging. The Company believes that public fast charging needs should be identified based, in part, on the supply of fast charging and the demand for EV charging within a given area, rather than a simple mileage buffer around existing infrastructure.

Q. CONSIDERING THE AMOUNT OF LEAD TIME THAT CAN BE REQUIRED TO DEVELOP THESE INVESTMENTS, DOES PUBLIC SERVICE ANTICIPATE THAT IT WILL BE ABLE TO CONSTRUCT ALL OF ITS PLANNED PUBLIC CHARGING STATIONS BY THE END OF 2026?

A. This result is the Company's intent, but it will not necessarily occur due to multiple factors, including those reasonably outside of the Company's control. Given the need to educate potential site hosts about this opportunity, identify appropriate locations, and complete necessary processes related to contracting, design, engineering, land rights, construction, and interconnection processes, Public Service anticipates that it may not be practicable to complete construction of all the hubs contemplated in this proposal before the end of 2026. Fortunately, the structure of the TEP, with annual budget updates for the Transportation Electrification Programs Adjustment ("TEPA") rider coupled with the requirement to bring forward a TEP every three years provides a structure that supports ambitious long-term plans and provides the flexibility to adjust those plans year to year, and to update them with each TEP.

Because the Company believes its planned public charging hub investment is appropriately sized to support the State's policy goals in the near term and the

Company needs sufficient regulatory certainty to adequately plan for these investments, Public Service requests that the Commission approve the full scope of its proposed public fast charging investment and authorize the Company to continue the buildout of public fast charging approved through this proceeding into future TEPs to the extent Public Service does not construct all approved public fast charging during the 2024-2026 TEP period. In this manner, in future TEPs, the Commission will continue to be able to consider the Company's status in developing, and the implications associated with, the Public Charging Acceleration Network. At the same time, the Company will have direction to engage its resources to efficiently develop the network, with confidence that it can engage in the often long-lead time necessary to develop public fast charging stations.

Q. WHY IS THIS REQUEST REASONABLE?

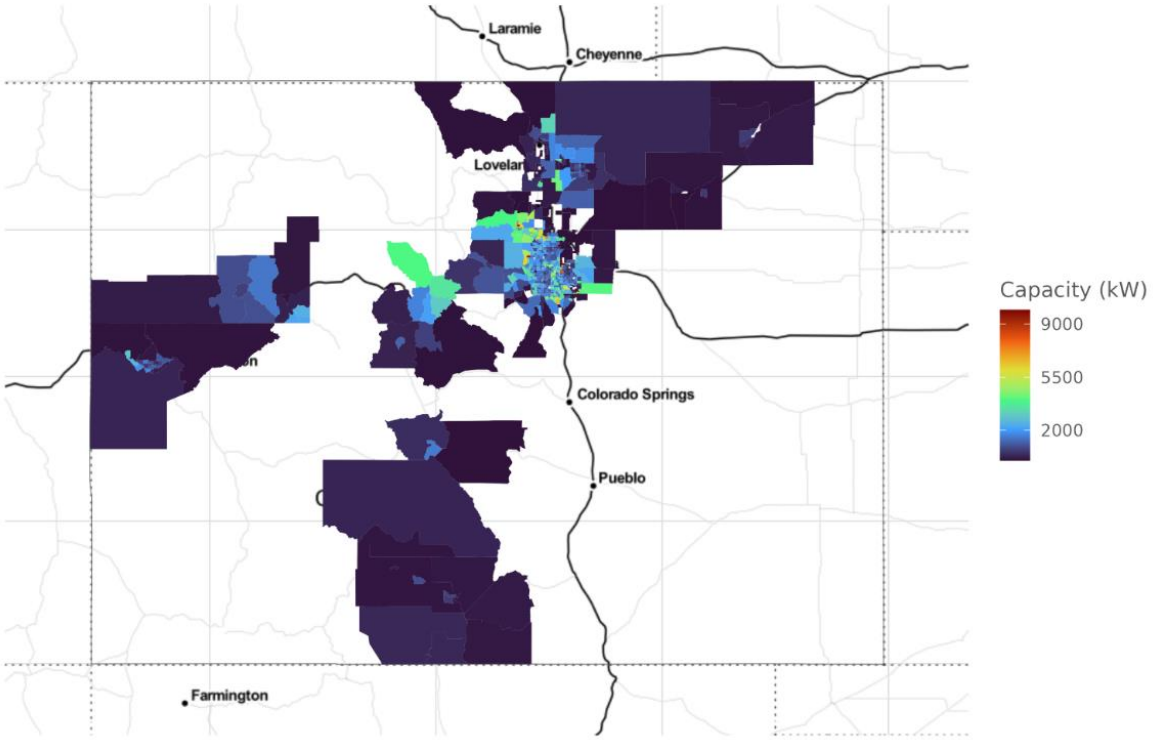
A. As discussed above, many of the potential circumstances that may lead to delay in the full buildout of the Public Charging Acceleration Network are outside of the Company's reasonable control, and these considerations do not warrant limiting Public Service's ability to support the market need based on a statutory triennial filing deadline. Public Service asserts that supporting the State of Colorado's ability to meet its 2030 EV adoption goals in a thoughtful and efficient way that best meets the needs of our customers and communities justifies the potential extension of its investments beyond the three-year period of this TEP proceeding.

A. Key Changes for Company-Owned Public Charging in 2024 and Beyond

Q. HOW DOES THE COMPANY PROPOSE TO QUANTIFY CHARGING NEEDS WHEN ASSESSING POTENTIAL SITES FOR THE PUBLIC CHARGING ACCELERATION NETWORK SUPPORTED BY THIS TEP?

A. Public Service proposes to use a supply and demand approach and the State's 2030 LDV adoption goal to identify areas of charging need, as reflected in Guidehouse's analysis and described further in Attachment JLJ-1. Specifically, the Company has quantified the additional public charging needed at the census tract level by forecasting the projected EV adoption and traffic within each tract for 2030 at the State's desired EV adoption scenario. This quantification allows the Company to identify the fast charging needed in the future as compared to today's infrastructure. The difference in port counts and/or charging capacity between the necessary public fast charging buildout and installed infrastructure today within each census tract shows the geographic areas of quantified public fast charging need across the Company's service territory. Figure DEE-D-2 shows the additional fast charging capacity that is needed to support the State's LDV target in 2030 within each census tract served by the Company. As shown, a material amount of additional public fast charging is needed in every census tract within the Company's service territory to support the state's LDV adoption goal.

Figure DEE-D-2: Additional DCFC Charging Needed to Support CO 2030 Goal



Q. WHAT CHANGES IS THE COMPANY PROPOSING TO THE CURRENT DISTANCE RESTRICTIONS?

A. The Company proposes to remove all geographic restrictions from the program, and to allow the Public Charging Acceleration Network to be built across the entirety of the Company's service territory regardless of proximity to other fast charging stations. As shown in Figure DEE-D-2, the fast charging need is in fact most prominent in urban settings due to the much higher expected rate of EV traffic in those areas. As it currently stands, these areas are not on pace to build fast charging at the rate necessary to support the State's EV adoption goals. Under current program requirements, the Company is severely restricted from building Company-owned public fast charging in both urban and rural population centers,

which would likely leave the State without sufficient public fast charging to support its ambitious transportation electrification goals. To position the State to achieve its goals and expand access to public fast charging for our customers and communities in a way that both meets and increases market demand, the Company-owned public fast charging stations must be both allowed and encouraged in all areas served by Public Service.

While the overall magnitude of charging need in rural areas is not as large as that identified in urban areas, the Company does recognize its unique ability to offer charging in locations that are not being pursued by non-regulated entities. Because of this, and the Company's goal of driving EV adoption in all areas of its service territory, the Company will continue to prioritize rural locations with a lack of access to public fast charging in the site selection process, as described previously.

Q. HOW DO THE GEOGRAPHIC AREAS WITH THE MOST PUBLIC CHARGING NEEDS OVERLAP WITH TEP EQUITY-ELIGIBLE COMMUNITIES?

A. Public Service estimates that approximately 48 percent of the Company's residential customers meet the Company's revised equity eligibility criteria, discussed by Company witness Nadia El Mallakh. Public Service expects that its DCFC siting approach could reasonably result in up to 50 percent of its planned charging hubs being located in equity-eligible communities. This estimate is based on the geographic charging needs analysis shown in Figure DEE-D-2. By prioritizing areas with a high charging need as quantified through the methodology

outlined in my testimony, the Company will also be prioritizing equity-eligible communities and providing public fast charging investment in these areas.

Q. HOW IS THE COMPANY PLANNING TO OVERCOME SITE HOST RECRUITMENT BARRIERS RESULTING FROM ABOVE MARKET DCFC CHARGING RATES?

A. To expand the Company's public charging network, meet site host expectations, and ensure affordable charging options, the Company proposes to bring its driver-facing rates in line with those offered by other charging providers. Specifically, the Company proposes a time of use ("TOU") rate structure applicable to all EV drivers utilizing Company public fast charging stations under which the blended rate equivalent is equal to the average rate charged by other public fast charging providers in Colorado. By bringing charging rates in line with the market, site hosts will not be disincentivized from hosting the Company's public fast charging hubs, and the Company will be able to expand its public charging network to support the State's vehicle electrification goals. The Company will maintain the existing time varied approach to these rates to encourage customers to charge off-peak and continue to send managed charging price signals across all charging use-cases. Table DEE-D-4 shows the proposed charging rate.

Table DEE-D-4: Proposed Public Charging Acceleration Network Rates

Time Period	Driver-Facing Rate
On-Peak[35]	$0.44/kWh
Off-Peak[36]	$0.33/kWh

Q. HOW DOES THE COMPANY PLAN TO ADDRESS AFFORDABILITY OF ITS PUBLIC CHARGING ACCELERATION NETWORK FOR INCOME QUALIFIED CUSTOMERS?

A. The Company recognizes the need to provide public charging solutions that benefit all customers, especially its IQ customers. A key goal of this proposal is to equitably increase charging access and do so in a way that provides affordable public fast charging options to all customers. The Company is working to identify ways to reduce the financial burden of using public fast charging for its IQ customers. The Company plans to engage directly with its customers and stakeholders to understand the needs of IQ customers related to public fast charging, identify specific barriers for IQ customers, and identify potential solutions to those barriers. The Company plans to conduct this outreach as part of the IQ/DI Community Engagement and Outreach Plan discussed by Company Witness Jack Ihle.

[35] This period applies to 4 pm. – 10 p.m., and non-holiday weekdays.
[36] This period applies to all times that are not on-peak hours.

Q. DOES COLORADO LAW ADDRESS THE RATES THAT SHOULD BE INCLUDED IN TEPS?

A. Yes. Colorado Senate Bill 19-077, as codified in § 40-5-107(b)(III), C.R.S. provides that TEPs may include "rate designs, or programs, that encourage vehicle charging that supports the operation of the electric grid." This provision expressly contemplates that TEP rates should not focus solely on cost causation principles, but also on the policy of supporting the operation of the electric grid.

Section 40-5-107(2)(b), C.R.S., further provides that the Commission should consider TEP alignment with a number of additional policy goals, including *increasing access to transportation electrification*, contributing to air quality standards, stimulating innovation and customer choice, promoting transparency, and *providing reasonable access for low-income customers*. This provision's focus applies in its totality to the Company's TEP rate design proposals and is critical to make charging more accessible for customers that do not have in-home charging options.

Q. DO YOU BELIEVE THAT PUBLIC CHARGING RATES ALSO AFFECT PUBLIC SERVICE'S ABILITY TO ADVANCE THESE POLICIES?

A. Yes. Above-market rates at the Company's public fast charging stations both can discourage EV charging generally and impair the development of adequate convenient and affordable public charging. The Company's current above-market rates are not reasonably targeted to support any of these key policy goals. A regulated, transparent utility-provided public fast charging option, with an affordable charging rate, will support customer choice and promote the beneficial operation of

the grid by encouraging and supporting EV adoption. Further, time-varying rates in line with current market conditions support the efficient operation of the grid by ensuring that customers can receive and respond to appropriate price signals in charging their vehicles, rather than incentivizing customers to avoid the Company's charging stations altogether because they are overpriced. Public Service is also concerned that charging hubs with above-market rates do not provide sufficient access to affordable public fast charging for its customers and communities. Therefore, in line with the policy objectives of SB 19-077, it is appropriate to adjust the rate that applies to the Company's public fast charging stations to ensure that its TEP can support equitable access to convenient, affordable, and reliable public charging throughout the Company's service territory in support of the State's transportation electrification goals.

Q. PLEASE PROVIDE AN OVERVIEW OF HOW THE COMPANY DETERMINED THE REVISED RATE.

A. Average market rates were determined based on an analysis conducted by Guidehouse that compiled all the publicly available fast charging rates in Colorado as of February 2023. Across all fast-charging stations, the average volumetric price was $0.36 per kWh. The Company then analyzed meter data from public fast charging stations in its service territory to determine the split between on- and off-peak charging. This data was then applied to the average Colorado volumetric price to determine the on- and off-peak rates. Attachment DEE-3 provides support for how the revised rate was determined.

Q. DOES THE REVISED RATE SUPPORT THE PUBLIC INTEREST?

A. Yes. Our experiences thus far indicate that the current above-market rate at the Company's public fast charging stations is limiting our ability to support widespread transportation electrification and provide the affordable charging that our customers need. The revised rate reflects current market prices, which balances competition concerns with non-regulated entities. In addition, as the revised rate is implemented, the Commission will retain its jurisdiction and authority to make further revisions, as necessary, to ensure the public interest is best served and widespread transportation electrification continues to take place. The Company requests the Commission approve the revised rate as part of our comprehensive proposals to ensure the State develops the EV charging infrastructure that is consistent with the 2030 EV goal.

B. <u>Public Charging Acceleration Network Budget</u>

Q. WHAT ARE THE FORECASTED CAPITAL AND OPERATIONS AND MAINTENANCE ("O&M") EXPENSES FOR THE PUBLIC CHARGING NETWORK?

A. Program capital expenses will cover the costs of EVSI, charging equipment or EV Supply Equipment ("EVSE") and all site design, permitting, land acquisition (as applicable) and construction costs. Program O&M will be spent on education and awareness, infrastructure maintenance, Information Technology ("IT"), and program administration costs.

Q. PLEASE DESCRIBE THE CAPITAL EXPENSES FOR THE PUBLIC CHARGING ACCELERATION NETWORK.

A. Capital expenses include two primary categories: EVSI and EVSE. EVSE expenses represent the costs of the charging equipment to be installed. EVSI covers all supply infrastructure equipment such as conduit, wire, meter boxes, and switchgear as well as all other design, permitting, and construction costs associated with DCFC hubs.

Q. PLEASE DESCRIBE THE O&M EXPENSES FOR THE PUBLIC CHARGING ACCELERATION NETWORK.

A. O&M expenses will cover all costs necessary for program implementation and infrastructure maintenance. Infrastructure maintenance includes all costs associated with ongoing maintenance and monitoring of the charging stations and EVSI. This includes software subscription fees, preventative maintenance, and repairs, etc. Program administration costs primarily cover internal staff time necessary to implement and manage the program. IT expenses will include costs associated with customer payment processing and systems integrations. Education and awareness costs include outreach efforts to attract potential site hosts.

Q. WILL PUBLIC SERVICE USE STATE OR FEDERAL FUNDING TO DEVELOP ITS PUBLIC FAST CHARGING NETWORK?

A. The Company plans to pursue external competitive funding opportunities where it is eligible for funding, when it aligns with project needs, including timing and terms and conditions that are consistent with Company requirements and policies, and

where it sees an opportunity to submit a compelling, competitive proposal. To the extent the Company is successful in securing these funds, outside funding sources can potentially reduce the costs of the Company's public fast charging network and minimize customer bill impacts.

Q. IS IT THEREFORE POSSIBLE THAT FEDERAL FUNDING COULD AFFECT THE ACTUAL COSTS OF THE COMPANY'S PUBLIC FAST CHARGING STATIONS?

A. Yes, and Public Service plans to pursue these potential opportunities to support its public charging investments as noted above. Company witness Jack Ihle discusses that to the extent the Company receives grants, tax credits, and/or support from other funding opportunities that decrease the amount the Company ultimately needs to spend on these investments, such funding will accordingly decrease the costs otherwise recovered from customers through the TEPA rider. The Company's annual updates to the TEPA rider will reflect and show the cost mitigation associated with any IRA, IIJA, or similar funding received by the Company.

Q. HOW DOES THE COMPANY PROPOSE TO ADDRESS SOURCES OF UNCERTAINTY IN THE ACTUAL COST OF DEVELOPING AND OPERATING THE PUBLIC CHARGING ACCELERATION NETWORK?

A. While the Company has made best efforts to forecast the costs associated with building and operating a public fast charging network, it acknowledges that there is some uncertainty associated with both the capital and O&M costs forecasted in this filing. As evidenced through current program implementation, as well as third party charging installation efforts, DCFC installation costs vary significantly by site and

are heavily dependent on site-specific factors.[37] While the costs associated with these investments will not exceed the Company's proposed budget and flexibility provisions, until sites are selected and designed, the true cost of each individual charging hub installation is unknown. Through active recruitment and pre-screening, the Company will manage costs by selecting sites that can support preferred design characteristics and those that will involve minimal distribution modifications. Moreover, by developing and managing a broad portfolio of public fast charging sites, the Company can achieve its goals to support public fast charging throughout its service territory, while also staying within approved annual budgets. The Company currently forecasts that the filed budget will deploy roughly 460 chargers across about 130 charging hubs. These numbers may vary depending on the viability of the sites selected and actual material and labor costs.

C. Evaluation and Reporting

Q. WHAT DATA DOES THE COMPANY PLAN TO COLLECT AND REPORT ON REGARDING THE PUBLIC CHARGING ACCELERATION NETWORK?

A. Through its monitoring software, the Company will track the total number of unique charging sessions, average charging session duration, average kWh used for charging sessions, and average session costs billed to drivers. The Company and stakeholders will be able to use this data to better understand where there is relatively greater need for public charging within its service area, including by comparing information across a variety of locations and various site design types.

[37] Case Studies on Transport Policy, Vol. 11, *The costs and challenges of installing corridor DC Fast Chargers in California*, Tisura Garmage, Gil Tal, and Alan T. Jenn (March 2023), available at https://www.sciencedirect.com/science/article/pii/S2213624X23000238 (last visited April 28, 2023).

The Company will also monitor the amount of charging that occurs on- and off-peak to better understand the extent to which demand for public fast charging may be responsive to price signals. The Company will include this data in its annual TEP report as discussed in the testimony of Company witness Huma Seth and will provide program updates to stakeholders during its quarterly TEP stakeholder meetings.

Additionally, charger uptime will be monitored through the Company's backend monitoring software provided by its CNP. The Company may also contract with a separate Maintenance or Measurement and Verification ("M&V") provider. The Company plans to include information regarding charger uptime in its TEP annual report.

Q. ARE THERE OTHER INSIGHTS THE COMPANY EXPECTS TO GAIN FROM ITS PUBLIC FAST CHARGING NETWORK?

A. Through operation of its public fast charging network, the Company will gain insight into driver charging patterns and the utilization patterns of public fast charging and how it relates to other charging use cases. This information will inform the Company's efforts to support transportation electrification in subsequent TEP filings. Operation of the Company's public fast charging network will also provide the Company insight into the difficulties facing the EV charging industry today around reliability and customer experience, providing valuable hands-on experience to inform how utilities and non-regulated entities can work together to overcome these barriers.

IV. CLEAN VEHICLES PORTFOLIO

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

A. In this section, I present the Company's Clean Vehicles portfolio. This portfolio is designed to mitigate cost-related barriers that prevent customers from choosing and acquiring EVs. Through this portfolio, Public Service will expand the breadth of the Company's ability to assist customers in addressing the high upfront costs associated with acquiring EVs.

Q. PLEASE BRIEFLY SUMMARIZE YOUR TESTIMONY REGARDING THE COMPANY'S CLEAN VEHICLE PROGRAMS.

A. Through implementing our inaugural TEP, Public Service has learned that many of its customers and communities still face significant barriers to EV adoption. While the current TEP limits EV rebates to residential IQ customers, in the 2024-2026 TEP, the Company is expanding residential EV rebate access to all residential customers who qualify as equity eligible, including those residing in equity-eligible communities. Expansions to the Residential EV Rebate program will enable customers and communities that face heightened barriers to EV adoption to equitably share in the benefits of Colorado's clean transportation transition. New rebates for TNC and DNC vehicles through the TNC and DNC High-Mileage Rebate Program and the TNC Rental Fleet Electrification Program will support drivers that often confront heightened financial and logistical barriers in transitioning to an EV, while further leveraging the outsized emissions reduction benefits associated with electrifying high-mileage and heavily utilized vehicles. Additionally, a new Governmental EV Rebate program will empower the Company's State and local

government entities to lead by example in the clean energy transition and accelerate the attainment of their emissions reduction goals. Finally, the Company is removing restrictions from its EV rebate programs that would limit the ability of customers to receive other State incentives. In this manner, the Company's EV rebates are stackable with other available incentives.

Q. WHY IS IT APPROPRIATE TO ALLOW CUSTOMERS TO STACK EV REBATES WITH STATE AND FEDERAL TAX CREDITS?

A. In implementing the Residential EV Rebate Program under the 2021-2023 TEP, the Company found that its EV rebate alone is not sufficient to financially motivate or enable many customers to choose an EV without the availability of additional financial incentives. Making the Company's EV rebates stackable with other State incentives also helps avoid the potential for customer confusion regarding the incentives that are or are not available (to date, they have only been stackable with federal incentives). Based on this experience, the Company's programs will now allow eligible customers to stack their Company EV rebates with all available tax credits to help maximize the benefits these incentives can provide and make EV adoption financially accessible.

Q. DOES THE GUIDEHOUSE FORECAST YOU DESCRIBE IN THE SECTION ABOVE ALSO SUPPORT THESE PROPOSALS?

A. Yes. As noted above, Guidehouse's bottom-up market forecast projects that under current market conditions as of September 2022, Colorado is on track to have roughly 760,000 electric LDVs on the road in 2030, about 20 percent short of the

State's goal. This demonstrates a need for increased Company support to reduce the upfront costs of vehicles.

Q. DOES THIS FORECAST CONSIDER RECENTLY PASSED COLORADO LEGISLATION THAT WILL EXPAND UPON CURRENTLY AVAILABLE TAX CREDITS FOR PURCHASING AN EV?

A. It does not, due to the timing of Guidehouse's analysis. However, Public Service does not expect this very recent change to Colorado law to fully address this EV adoption gap, as explained further below.

Q. PLEASE PROVIDE SOME BACKGROUND ON THE RECENTLY SIGNED LAW.

A. Through House Bill 23-1272, which was recently passed by the General Assembly and signed into law by Governor Polis on May 11, 2023, Colorado will extend the current $2,000 state tax credit that applies to LDVs and make it worth up to $5,000 through 2024, after which point it would ramp down to $500 in 2028 and increase available state tax credits for MD and HD EVs, which are currently $4,000 and $8,000, respectively, to $12,000 for both through 2025. This law will also increase tax credits for the purchase or lease of an EV costing less than $35,000 by an additional $2,500.

Q. HOW DOES PUBLIC SERVICE EXPECT THAT THESE PROPOSED ENHANCEMENTS TO COLORADO TAX CREDITS FOR EVS WILL IMPACT AFFORDABILITY OF EVS?

A. While the Company expects that increased tax credits will potentially help support and incentivize a broader subset of its customers to electrify their vehicles than would be the case in the absence of such support, Public Service anticipates that

these adjustments are needed to address significant inflationary pressures and supply chain challenges that have impacted the EV market.[38] These increased tax credits will still not be sufficient to make EVs a more affordable option for customers than ICE vehicles considering the average $18,000 price difference that has been reported between EVs and ICE vehicles as of July 2022.[39]

Q. WHAT IS THE TOTAL BUDGET FOR THE CLEAN VEHICLES PORTFOLIO?

A. As presented by Mr. Jouve, the portfolio budget is a three-year cost of $35 million. Of that budget, the Company has not yet made any assumptions regarding O&M costs, but instead is representing the $35 million as capital expenses. The Company has not yet made any O&M assumptions, as it is continuing to partner and work with TNCs and DNCs to finalize program proposals, including on the reasonable O&M costs. The Company will continue to refine its O&M cost assumption for the Clean Vehicles portfolio, and it likely will be able to provide an updated estimate during the course of this proceeding. That said, for purposes of budget consideration, the Company commits that it will manage overall TEP O&M costs such that it will not increase the overall TEP O&M budget proposal, regardless of O&M costs for the Clean Vehicles portfolio.

[38] CNBC, Raw material costs for electric vehicles have doubled during the pandemic, Michael Wayland (June 22, 2022), available at https://www.cnbc.com/2022/06/22/electric-vehicle-raw-material-costs-doubled-during-pandemic.html (last visited April 24, 2023).
[39] U.S. News and World Report, Why Are Electric Cars So Expensive?: Electric cars were supposed to be cheaper by now, but they aren't. Here are some reasons why EVs are actually becoming more expensive, Cherise Threewitt (Nov. 3, 2022), available at https://cars.usnews.com/cars-trucks/advice/why-are-electric-cars-so-expensive (last visited April 24, 2023).

Q. HOW IS THE REMAINDER OF THIS SECTION OF YOUR TESTIMONY ORGANIZED?

A. I begin by discussing our expansion of the Residential EV Rebate program, as supported by our enhanced efforts to promote equity. Next, I address the new High-Mileage Rideshare Vehicle Rebate program. I then discuss the new TNC Rental Fleet Electrification program. Lastly, I address the new Governmental EV Purchase and Lease Rebate program.

A. Expansion of the Residential EV Rebate Program

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

A. The purpose of this section of my testimony is to support the Company's plan to enhance and expand the current Residential EV Rebate Program to all residential customers that are equity eligible. As explained by Company witness Ms. El Mallakh, our proposed equity eligibility criteria move beyond traditional IQ eligibility to also encompass customers in DI Communities and Tribes.

Q. HOW DOES THE CURRENT RESIDENTIAL EV REBATE PROGRAM WORK?

A. The current Residential EV Rebate Program provides a rebate of $5,500 for purchasing or leasing a new EV and $3,000 for purchasing or leasing a used EV, with rebates available for vehicles with a manufacturer suggested retail price ("MSRP") up to $50,000. These rebates cover roughly 10 percent of the average cost of a new or used EV. Under current program rules, the EV rebate is only available to residential IQ customers. To receive the rebate, qualifying customers must purchase or lease a new or used EV and complete an income verification process to establish that they are eligible for the program. Under current program

rules, customers who receive a Residential EV Rebate from the Company are not permitted to also claim State tax credits for purchasing an EV.

Q. HOW MANY IQ CUSTOMERS HAVE RECEIVED A VEHICLE PURCHASE OR LEASE REBATE?

A. As of March 1, 2023, the Company has issued 103 rebates for new EVs and 37 rebates for used EVs.[40]

Q. HOW DOES PUBLIC SERVICE PLAN TO EXPAND THE RESIDENTIAL EV REBATE PROGRAM?

A. Public Service will make EV rebates available to all residential customers meeting the equity eligibility criteria for the Clean Vehicles portfolio, as defined in Section 2.B. of the 2024-2026 TEP (Attachment HS-1), which includes customers in equity eligible communities. Expanding eligibility in this manner will help to increase EV adoption throughout the Company's service territory and provide support to the State in achieving its emissions reductions and transportation electrification goals. Public Service proposes to maintain the same rebate amounts currently offered.

Q. WHY DOES PUBLIC SERVICE PLAN TO EXPAND ELIGIBILITY FOR THE EV PURCHASE AND LEASE REBATES?

A. The Company plans to broaden eligibility for residential EV purchase and lease rebates for multiple reasons. First, the current program has not been able to have a significant impact on EV adoption. By broadening eligibility and by allowing the rebates to be stacked with State and federal incentives, the Company can seek to

[40] See the Company's April 2023 Semi-Annual TEP Report filed with the Commission in Proceeding No. 20A-0204E.

greatly grow EV adoption. Second, this proposal also aligns with the policies advanced through the Colorado Environmental Justice Act. As addressed by Ms. El Mallakh, this act establishes public policy goals for supporting DI Communities and recognizes that DI communities require enhanced support and consideration to provide equitable access to the benefits of utility programs. Third, it is important to recognize that the benefits of EV adoption are not limited to the customers that directly acquire EVs. The Company's plan to expand eligibility for its EV rebate program is designed to ensure that equity-eligible communities where many of our customers have experienced historical inequities and the burden of living in an area with high levels of pollution also have equitable access to the public health and environmental benefits associated with reduced emissions.

Q. DOES PUBLIC SERVICE PROPOSE ANY OTHER CHANGES TO THE EV REBATE PROGRAM?

A. Yes. The Company also proposes increasing the eligible vehicle MSRP caps for this TEP from the $50,000 cap approved in the first TEP to $55,000 for new passenger vehicles and $80,000 for new sport utility vehicles ("SUVs"), vans, and pick-up trucks, and $50,000 for previously-owned LDVs. This proposal aligns with the vehicle MSRP caps in the IRA.

B. TNC and DNC High-Mileage Rebate Program

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

A. The purpose of this section of my testimony is to introduce and describe the Company's new vehicle rebate for high-mileage drivers working for TNCs and DNCs.

Q. PLEASE DESCRIBE THE CUSTOMER CHALLENGES THE COMPANY HAS IDENTIFIED THAT LED TO THIS PROGRAM.

A. Rideshare drivers can encounter heightened financial barriers to EV adoption compared to an average residential customer. TNC and DNC drivers in Colorado tend to earn a relatively low income compared to other residential customers in our service territory, and purchasing or leasing an EV can be more costly than either maintaining one's own ICE vehicle or purchasing a new or used ICE vehicle.[41] Even despite the lower maintenance and fuel costs associated with EVs, the up-front costs associated with purchasing or leasing an EV still keeps them out of reach, especially as many customers are not familiar with these benefits.

Concerns about range anxiety and the logistics associated with EV charging may also loom larger for TNC and DNC drivers than the average residential customer considering the relatively more frequent need to fuel their vehicles *en route* rather than primarily relying on home charging. TNC and DNC drivers can also face additional perceived financial risks in adopting EVs, as they often rely on personal vehicles to earn a living, and therefore, may be hesitant to make significant changes to their driving routine to accommodate charging.

Q. PLEASE EXPLAIN THE HIGH-MILEAGE RIDESHARE VEHICLE REBATE PROGRAM GOALS.

A. This new rebate aims to make EVs the more economically beneficial vehicle choice for high-mileage TNC and DNC drivers—those that log more than 25,000 miles per

[41] Colorado Jobs with Justice, the Gig Gap: The Reality of Denver Gig Workers 2022 Report, Eric Leverage and Samantha Dalal (October 2022), available at

year. By helping these high-mileage TNC and DNC drivers choose EVs, the program will in turn deliver disproportionately large greenhouse gas emissions reductions and air quality benefits to the public, as compared to the impact of switching an average personal vehicle to an EV.

Q. HOW WILL THE HIGH-MILEAGE RIDESHARE REBATE WORK?

A. The Company plans to work directly with TNCs and DNCs, who will identify high-mileage drivers on their platforms in the Company's service territory and notify them of eligibility. Drivers will then apply for the rebate through the Company's website and be given a unique code to be used at a Colorado Auto Dealers Association ("CADA") dealership in Colorado for a time-of-purchase rebate for an EV. The Company proposes a new vehicle rebate amount of $6,500 and a used vehicle rebate amount of $3,500.

Q. WHY SHOULD THE TEP INCLUDE A PROGRAM FOCUSED ON HIGH-MILEAGE RIDESHARE DRIVERS?

A. High mileage DNC and TNC drivers, traveling at least 25,000 miles per year, account for a disproportionate number of vehicle miles driven compared to the average passenger vehicle. The EPA estimates that a typical passenger vehicle traveling 11,500 miles annually emits about 4.6 tons of carbon dioxide per year.[42] Based on this estimate, a typical high mileage rideshare ICE vehicle, which travels at least 25,000 per year, emits 10 tons of carbon dioxide per year, more than double

[42] EPA, Greenhouse Gas Emissions from an Average Passenger Vehicle, available at: https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle#:~:text=typical percent20passenger percent20vehicle percent3F-,A percent20typical percent20passenger percent20vehicle percent20emits percent20about percent204.6 percent20metric percent20tons percent20of,8 percent2C887 percent20grams percent20of percent20CO2.

the typical driver. By providing a targeted rebate to high mileage rideshare drivers, the Company can address driver cost barriers and deliver significant greenhouse gas reductions to our customers. I am also providing in Attachment DEE-4 letters of support from two TNCs, Lyft and Uber, on the Company's TEP, including support for this program.

Q. WHY IS PUBLIC SERVICE PROPOSING GREATER REBATE AMOUNTS UNDER THIS PROGRAM THAN THOSE THAT APPLY UNDER THE RESIDENTIAL EV REBATE PROGRAM?

A. The Company proposes larger rebates for high-mileage TNC and retail delivery drivers due to the larger emissions and air pollution reduction benefits and associated barriers these drivers can encounter in adopting an EV.

C. TNC Rental Fleet Electrification Program

Q. WHAT IS THE PURPOSE OF THIS PART OF YOUR DIRECT TESTIMONY?

A. The purpose of this section of my testimony is to present a TNC rental fleet electrification program, which will defray the costs to rideshare drivers renting EVs.

Q. PLEASE DESCRIBE THE TNC RENTAL FLEET ELECTRIFICATION PROGRAM.

A. This program includes a new $5,500 midstream vehicle rebate available to TNC rental car partners (*e.g.*, Hertz, Flexdrive) that will allow rental car companies to acquire new EVs and in turn lease them to TNC drivers at ten percent lower weekly rental rates than comparable hybrid or ICE vehicles, for a term of three years.

Q. WHY IS PUBLIC SERVICE PROPOSING THIS PROGRAM?

A. Rental vehicles dedicated to TNCs will experience relatively high utilization rates, in the range of 80 percent, and they also log relatively high mileage compared to typical rental vehicles.[43] The average rideshare driver drives 140 to 200 miles per day, compared to 35 miles driven each day by the average American.[44] Due to their high mileage and utilization, supporting TNC rental fleet electrification has the potential to yield large greenhouse gas reductions to customers.

Q. WHAT MARKET BARRIERS DOES THIS PROGRAM SEEK TO ADDRESS?

A. TNC drivers that rent vehicles to provide rideshare services may be reluctant to rent EVs because they can have higher weekly rental costs than comparable hybrid or ICE vehicles. The TNC Rental Fleet Electrification Rebate will make electric rental vehicles the lower-cost option for TNC drivers as compared to hybrid or ICE rental vehicles. By addressing upfront cost barriers for both vehicle rental companies and drivers, the program will both grow the number of electric rental vehicles available and boost electric rental vehicle utilization rates. The Company anticipates that this program has the potential to support the deployment of hundreds more electric rental vehicles in its service territory.

[43] *See e.g.,* Auto Rental News, Understanding Hertz's First-Mover Advantages with EV Rentals, Chris Brown (May 6, 2022), available at: (last visited April 7, 2023).
[44] Lyft, Rideshare Drivers are Saving the Sedan, Carl Franzen (Feb. 3, 2023), available at https://www.lyft.com/rev/posts/rideshare-drivers-are-saving-the-sedan (last visited April 7, 2023).

Q. IS THE COMPANY AWARE OF ANY SIMILAR INITIATIVES AROUND THE COUNTRY TO ADDRESS THESE BARRIERS?

A. Yes. Several other utility providers—including Peninsula Clean Energy, Baltimore Gas and Electric, and DTE Energy—have successfully supported this sector through similar programs.[45] Notably, in March 2022, Peninsula Clean Energy, in San Mateo County, California, launched a successful TNC rental vehicle program in partnership with Lyft to lower electric rental vehicles' weekly costs for TNC drivers below comparable hybrid or ICE rental vehicles' weekly costs. The program's 100 vehicles have supported more than 200 driver partners that have logged more than 2,000,000 EV miles traveled and completed more than 130,000 rides.

Q. IN ADDITION TO ADDRESSING THE COST MARKET BARRIER, DOES PUBLIC SERVICE ANTICIPATE ADDITIONAL BENEFITS?

A. This rebate will yield benefits beyond driver savings by expanding access to the benefits of transportation electrification to passengers of such vehicles who may not directly purchase, lease, or rent an EV. Also applicable to our proposed TNC and DNC High-Mileage Rebate Program, converting TNC drivers to EVs will also help promote EV adoption and address information-related barriers by giving potentially thousands of Coloradan rideshare customers an opportunity to participate in Colorado's clean transportation transition as passengers of supported

[45] Lyft, Peninsula Clean Energy Launch Electric Vehicle Ride-Hailing Program, https://www.peninsulacleanenergy.com/lyft-peninsula-clean-energy-launch-electric-vehicle-ride-hailing-program/ (last visited April 3, 2023); BGE launches an EV ride-hailing program with Lyft - BGE Now, (last visited April 3, 2023); DTE, Hertz and Uber team up to bring more electric vehicles to Michigan - Empowering Michigan, https://empoweringmichigan.com/dte-hertz-and-uber-team-up/ (last visited April 3, 2023).

vehicles.[46] Finally, considering Lyft's recent statistic that the average rideshare driver travels 140 to 200 of vehicle miles per day compared to 35 miles driven by the average American, the emissions reductions that will result from converting TNC drivers to EVs will also yield outsized environmental and public health benefits for the communities where these vehicles traverse.[47]

Q. HOW WILL THE TNC RENTAL FLEET ELECTRIFICATION PROGRAM WORK?

A. TNC rental car partners will receive a rebate of $5,500 when they purchase or lease new EVs and make them available for use solely by TNC drivers for a term of three years per vehicle. The Company will limit eligibility to new EVs, and include MSRP caps of $55,000 for passenger cars and $80,000 for SUVs and light-duty trucks. These MSRP caps are consistent with the MSRP caps that apply to EV tax credits under the IRA.

A. As described further in the TEP, to ensure that benefits of the program flow to the TNC drivers, the rental car companies must pass 100 percent of the rebate value through to TNC drivers in the form of a discount on the weekly rental rate for EVs, anticipated to be about a 10 percent discount as compared to the rental rate for hybrid or ICE vehicles. The amount of the rebate is consistent with the rebate available for new vehicles under the Company's Residential EV Rebate Program.[48]

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[46] The Gender Earnings Gap in the Gig Economy: Evidence from Over a Million Rideshare Drivers, John A. List and Paul Oyer, p. 11 (May 2020), available at https://web.stanford.edu/~diamondr/UberPayGap.pdf (last visited April 25, 2023) (a recent showing that Uber drivers averaged approximately 30 rides per week, which translates to more than 1,500 rides annually).

[47] Lyft, Rideshare drivers are saving the sedan, Carl Franzen (Feb. 3, 2023), https://www.lyft.com/rev/posts/rideshare-drivers-are-saving-the-sedan (last visited April 25, 2023).

[48] The Company is assuming an average cost of $51,765 for new EVs. See JD Power EV Index Average MSRP for New EV Cars (Sedans) under $55K and Average MSRP for New EV SUV/Trucks under $80K, from J.D. Power Information Network, January-February 2023

D. Governmental EV Purchase and Lease Rebate

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

A. In this section of my testimony, I support Public Service's plan to offer a new Governmental EV Rebate Program for State and local government entities to purchase or lease new EVs.

Q. PLEASE DESCRIBE PUBLIC SERVICE'S PLAN TO OFFER EV PURCHASE AND LEASE REBATES FOR STATE AND LOCAL GOVERNMENT CUSTOMERS.

A. Public Service will offer a new $6,500 rebate for State and local governmental customers to purchase or lease new EVs. The Company estimates this rebate will cover approximately 10 percent of the average cost of a new LDV for a government entity.[49] Under the program, State and local government entities can receive rebates for up to a maximum of 20 new EVs between 2024-2026 with no restrictions on vehicle classes eligible for the rebate. This program aligns with State energy policies reflected in Governor Jared Polis' 2022 Executive Order. That executive order directed State agencies and departments to ensure that EVs are the default vehicle type for all LDVs for future vehicle purchases, and to work to select MD and HD zero emissions vehicles for agency and/or department fleets where they are cost-effective, meet operational needs, and are available in the marketplace.[50]

[49] The Company is assuming an average cost of $67,300 per LDV for government entities See JD Power EV Index Average MSRP for All New EV Cars (Sedans), from J.D. Power Information Network, January-February 2023

[50] Executive Order D 2022 016, p. 6 (April 22, 2022), available at https://drive.google.com/file/d/1ip_uhAXPAJYmZ9zGysJLR0ZlFJO8ynlA/view.

Q. WHY DID PUBLIC SERVICE DEVELOP THIS PROGRAM?

A. Public Service developed this program to incentivize State and local government entities to accelerate their transportation electrification efforts and to help address heightened financial barriers that State and local government customers can encounter in electrifying their vehicles. As tax-exempt entities, State and local governmental customers can face a higher financial barrier in electrifying their vehicles than other commercial fleets, since they cannot utilize certain incentives, including the Colorado Electric Vehicle Tax Credit, and may only be able to access certain federal clean vehicle credits (30D and 45W) in limited circumstances.

The Governmental EV Rebate will make vehicle electrification a more affordable option for State and local governmental customers and expedite achievement of decarbonization goals, which will result in environmental and public health benefits for communities throughout the Company's service territory.

Q. DOES PUBLIC SERVICE ANTICIPATE ANY ADDITIONAL BENEFITS THAT WILL RESULT FROM THIS PROGRAM?

A. Yes. In addition to the emissions reduction, environmental and public health benefits associated with electrifying State and government fleets, and addressing financial barriers, this program will help achieve education and awareness objectives of the TEP by helping state and local government entities lead by example with EV adoption.

V. CONTINUATION OF THE EQUITY PERFORMANCE INCENTIVE

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

A. In this section of my testimony, I support Public Service's plan to continue the Equity Performance Incentive Mechanism ("PIM"), which was previously approved by the Commission.

Q. WHAT IS THE PUBLIC POLICY RATIONALE BEHIND PIMS?

A. PIMs are a solution to a misalignment of societal goals and utility financial goals under the traditional cost of service recovery model. Traditional utility regulation ties utility revenue to costs and a return on capital expenses, while PIMs link utility compensation to a specific performance target. Well-designed PIMs can provide utilities with the motivation to use their specialized experience and capabilities to help achieve complex public policy goals. SB 19-077 provides that the rates and charges for services provided by a TEP may allow performance-based incentive returns or similar investment incentives.

Q. WHAT IS THE GOAL OF THE EQUITY PIM?

A. The objective of the Equity PIM is to incentivize Public Service to prioritize participation in TEP equity-based programs consistent with the State's goal of ensuring that low/moderate-income and underserved communities have equitable access to the benefits of transportation electrification.[51]

[51] See Hearing Exhibit 102, Direct Testimony of Jason J. Peuquet, in Proceeding No. 21AL-0494E at 28:14 through 29:2.

Q. HOW DOES THE EQUITY PIM WORK?

A. The Commission approved the Equity PIM, which applies under the Company's current TEP, in Proceeding No. 21AL-0494E. Under the Equity PIM, Public Service earns a set award for each port installed, or non-port-associated rebate issued, through TEP equity-based programs, to the extent participation in the program exceeds five percent of the program's targeted participation level. Incentives under the current TEP are subject to a cap of 150 percent of the targeted participation level for each program and a total award limit of $1.5 million. The targeted customer participation level under the PIM is based on the initial participation estimates reflected in the approved TEP's annual budget.

Q. PLEASE DESCRIBE PUBLIC SERVICE'S CURRENT PROGRESS TOWARDS EQUITY PROGRAM PARTICIPATION TARGETS.

A. Public Service is eligible for but has not yet received any rewards from the Equity PIM. As of March 1, 2023, the Company supported 117 L2 ports, four DCFC ports, and delivered 250 rebates through our TEP Equity programs.

Q. WHY DOES THE COMPANY PROPOSE TO CONTINUE THE EQUITY PIM?

A. The Company proposes continuation of the Equity PIM because it appropriately incentivizes Public Service to prioritize increased customer enrollment in TEP equity supporting programs in line with Colorado energy policies reflected in SB 19-077 and the more recently enacted Environmental Justice Act, House Bill 21-1266. Driving increased enrollment in these programs will be critical to ensure an equitable and affordable clean transportation transition for all our customers. In the absence of an Equity PIM, there may potentially be more of a financial incentive for

Public Service to focus resources on pursuing lower-hanging fruit (*i.e.*, programs for which it is easier to drive enrollment based on lower customer and/or community barriers to EV adoption).

Q. DOES PUBLIC SERVICE BELIEVE THE EQUITY PIM SHOULD APPLY ACROSS ALL TEP EQUITY REBATE PROGRAMS?

A. Generally, yes. During the 2021-2023 TEP, Public Service temporarily suspended application of the Equity PIM to the Income Qualified Multifamily Housing Shared Parking Program based on its mid-course adjustment to raise the rebate amount for that program. The Company agreed to do so in response to intervenor concerns about the magnitude of the mid-course rebate increase in the absence of a fully litigated Commission proceeding.[52] While the Company is proposing increased rebate amounts for certain TEP equity programs, it has carefully designed all proposed rebate amounts to establish the level of support needed to incentivize meaningful levels of participation and maximize the benefits associated with each program.

[52] See the Company's Nov. 4, 2022 60-Day Notice, available at https://www.xcelenergy.com/company/rates_and_regulations/filings/transportation_electrification_plan. In that notice the Company provided the following explanation: "The Company also proposes to waive the additional per-port incentives for qualifying MFH rebates or ports that would be made available to the Company through the Equity Performance Incentive Mechanism ("PIM"), as recently approved by the Commission in Proceeding No. 21AL-0494E. The Company proposes this as a result of principled discussions with some stakeholders regarding the interaction between specific rebate levels in the TEP and incentives provided via the Equity PIM, as contemplated at the time the Equity PIM was approved. The Company and all stakeholders can revisit the topic of rebate levels and any equity-focused PIMs more generally in the next three-year TEP, to be filed in 2023."

Q. DOES PUBLIC SERVICE BELIEVE THE AWARD LIMIT FOR THE EQUITY PIM SHOULD REMAIN THE SAME FOR THE 2024-2026 TEP?

A. Yes. The amount of award limit for the 2024-2026 TEP should remain the same as what was established for the 2021-2023 TEP. The Company is proposing a direct continuation of the Equity PIM including maintaining the five percent minimum participation threshold required before an incentive can be earned, the award amount per port/rebate in each category, the maximum incentive amount allowed in each category to be set at 150 percent of the participation target, and a total incentive not to exceed $1.5 million.

Q. PLEASE PROVIDE AN ILLUSTRATION OF THE EQUITY PIM AS APPLICABLE TO THE 2024-2026 TEP.

A. In the below table, I provide the Equity PIM for the 2024-2026 TEP, as updated with the Company's revised programming and targeted participation levels. As is observable from the below table, the total PIM allowed amount of $1.5 million is smaller than the sum of the individual program caps.[53] While it is possible to conclude that the total PIM allowed amount should increase to match the individual program caps, the Company is continuing the total PIM cap of $1.5 million, so as to attempt to limit controversy in this proceeding on the need to raise the total PIM cap amount.

[53] Note that other equity-supportive programs could also arguably be included in the below table, such as the TNC and DNC High-Mileage Rebate program, but to promote simplicity the Company has excluded other programs.

Table DEE-D-5: 2024-2026 EQUITY PIM

Program	Target	5% of Target Eligibility	150% of Target Cap	Award per Port or Rebate	Program Incentive Cap
Residential	3043	152	4565	$200/port	$913,000
IQ Multifamily Housing (Rebate)	141	7	212	$1,050/port	$222,600
Commercial EVSI (L2)	499	25	749	$300/port	$224,700
EV Purchase/Lease Rebates	1181	59	1772	$500/rebate	$886,000
Total PIM Cap					**$1,500,000**

VI. CONCLUSION

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. I recommend that the Commission:

- Approve Public Service's Clean Vehicles and Public Charging Acceleration Network portfolios, as described in my Direct Testimony and in Public Service's proposed TEP;
- Approve Public Service's revised rate for Company-owned public fast charging stations and direct Public Service to implement this rate through a compliance advice letter filed within 15 business days of final Commission decision in this proceeding;
- Approve Public Service's request that the Commission authorize the buildout of Company-owned public fast charging on a rolling basis beyond the 2026 plan year, to the extent not all authorized public fast charging is constructed during the 2024-2026 TEP; and
- Approve continuation of the Equity PIM, as applies under the 2021-2023 TEP, throughout the 2024-2026 TEP.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Deborah E. Erwin

Director, Clean Transportation Policy and Planning

Ms. Deborah Erwin is the Director, Clean Transportation Policy and Planning at Xcel Energy Service, Inc., and is responsible for supporting Xcel Energy's clean transportation policy positions, regulatory proceedings and stakeholder engagement, and conducting clean transportation program planning for all of Xcel Energy's four operating companies. Prior to this role, from 2014-2021, Ms. Erwin was Manager, Regulatory Policy for Northern States Power Company, a Wisconsin corporation, in the areas of regulatory strategy related to economic and environmental regulation, industry structure, customer programs, and management and operational planning and requirements in Wisconsin and Michigan.

Ms. Erwin previously worked in energy policy and regulation at the Public Service Commission of Wisconsin from 2008-2014, where she advised the Commission and stakeholders on a variety of matters including renewable energy, distributed generation, interconnection and regional energy markets.

In 2006-2008, Ms. Erwin was an Associate Attorney with Jeffery C. Paulson & Associates, Ltd., in the area of renewable energy law, representing wind project owners, developers and landowners. Ms. Erwin holds a Bachelor of Arts in Political Science and a Law degree from the University of Minnesota-Twin Cities. Ms. Erwin was admitted to the Minnesota State Bar Association in October 2006.

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF COLORADO

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

AFFIDAVIT OF DEBORAH E. ERWIN
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

I, Deborah E. Erwin, 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 Lake Mills, Wisconsin, this 12th day of May 2023.

Deborah E. Erwin
Director, Clean Transportation Policy and Planning

Subscribed and sworn to before me this 12TH day of MAY, 2023.

JAKE COUTURE NOTARY PUBLIC STATE OF WISCONSIN

Notary Public

My Commission expires 07-14-2025