BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2021-2023 TRANSPORTATION ELECTRIFICATION PLAN	**)**	**PROCEEDING NO. 20A-XXXXE**

DIRECT TESTIMONY AND ATTACHMENT OF JACK W. IHLE

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

May 15, 2020

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

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SUMMARY OF DIRECT TESTIMONY AND ATTACHMENT OF JACK W. IHLE

Mr. Jack W. Ihle is Director of Regulatory and Strategic Analysis of Xcel Energy Services, Inc. In this position, he is responsible for providing direction and regulatory leadership on a number of regulatory processes and functions for Public Service Company of Colorado ("Public Service" or "Company"). In his Direct Testimony, Mr. Ihle presents the policy context for the Company's first Transportation Electrification Plan ("TEP" or "Plan"). He also provides an overview of the TEP, as well as analysis of how the enabling legislation found in Senate Bill 19-077 ("SB 19-077") drives this TEP and creates relevant criteria for approval of the TEP.

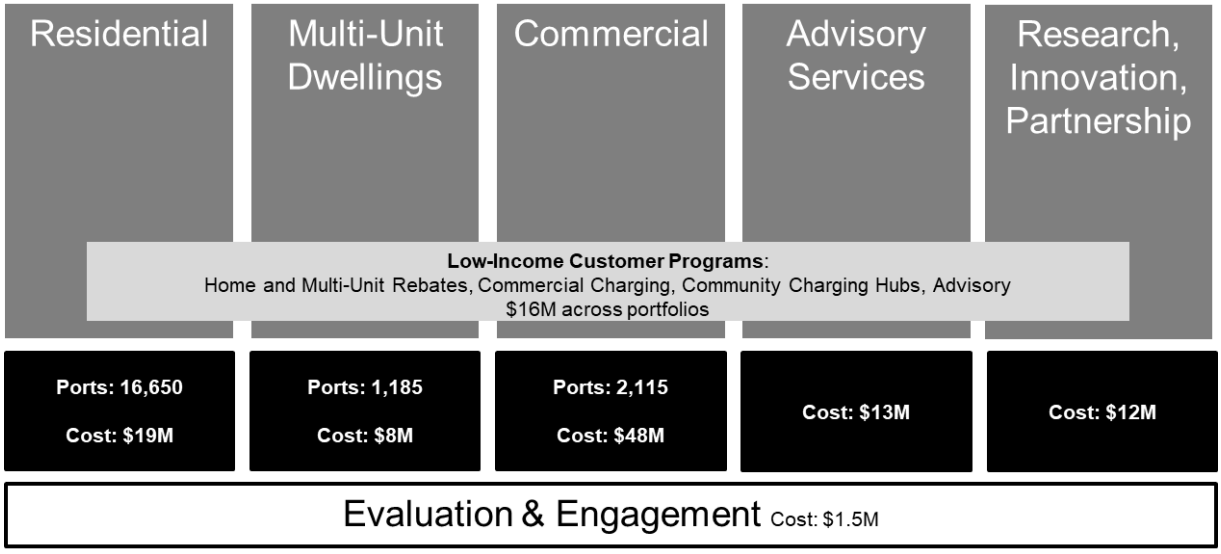
Public Service's first TEP proposes the creation of a comprehensive suite of electrification programs intended to complement the set of policies that the State of Colorado has enacted to promote electric vehicles ("EV"). The TEP also advances broader state climate policy—namely, the state's efforts to meet economywide greenhouse gas emission ("GHG") reduction goals established by House Bill 19-1261 ("HB 19-1261"). These policies include a goal of 940,000 EVs by 2030, a nation-leading state tax incentive for EVs, and the newly-enacted Zero Emissions Vehicle

("ZEV") rule. The TEP also builds on efforts already undertaken by the Company, such as updating its line extension policy to more equitably interconnect EV charging, creating a smart charging pilot program, implementing a new commercial charging rate, and deploying an early round of EV supply infrastructure. The Company's first TEP addresses three primary challenges or gaps in the EV market, which are lack of information and awareness regarding EVs, upfront costs associated with purchasing EVs and charging infrastructure, and suboptimal incentives for EV charging when it is most beneficial to the electric grid. It creates twenty programs across the following five portfolios:

- Residential;
- Commercial;
- Multi-unit dwellings ("MUD");
- Advisory Services; and
- Research, Innovation, and Partnerships.

All of these portfolios are intended to provide options to mitigate the three primary market challenges for most types of Public Service customers, and they all have low-income targeted programming to ensure equitable access to the benefits of electrification.

Transportation Electrification Plan Overview



To support the state's goals, the Company's TEP proposes $102 million of investment (capital and O&M) during the years 2021 to 2023. These investments and expenditures are targeted at advancing a rapidly-growing EV market in our service territory. The Company forecasts EV penetration to increase from approximately 24,000 vehicles in our service territory today to 100,000 vehicles by 2023, but this TEP, in conjunction with future TEPs, will also continue to support anticipated further growth of EVs to over 450,000 by 2030. This growth in vehicle electrification will in turn drive positive results across society, our customers at large, and EV drivers, including potential downward pressure on electricity rates, as detailed in analyses presented as part of this TEP. Vehicle electrification will also bring substantial environmental benefits, notably the avoidance of 1.2 million short tons of carbon dioxide emissions in 2030. Finally, EVs represent an exciting new choice for customers across our service territory, who can enjoy reduced

energy costs, lower emissions, and a new, and in many ways better, motoring experience.

The Company proposes this TEP based on its experience in developing and operating EV programs in Colorado and in several other states, but also notes that this TEP is the largest EV plan Xcel Energy has proposed in any state so far. The public interest for utility EV programming efforts is strong, as exemplified by SB 19-077, which states that (emphasis added) "widespread adoption of electric vehicles *requires* that public utilities increase access to electricity as transportation fuel…." As a leader in the clean energy transition, this TEP demonstrates the Company's commitment to further decarbonize the power sector by advancing the transportation sector as well. The Company respectfully asks the Commission to approve the first Transportation Electrification Plan of Public Service Company of Colorado.

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Attachment JWI-1	Electric Vehicle Stakeholder Group

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
AQCC	Air Quality Control Commission
CAA	Clean Air Act
CDPHE	Colorado Department of Public Health and Environment
CEP	Clean Energy Plan
CEO	Colorado Energy Office
COCDE	Cost of Carbon Dioxide Emissions
Commission	Colorado Public Utilities Commission
COVID-19	Coronavirus Disease 2019
CPCA	Customer Program Cost Adjustment
DCFC	Direct Current Fast Charge
DSM	Demand-Side Management
DSMCA	Demand-Side Management Cost Adjustment
E3	Energy+Environmental Economics
ERP	Electric Resource Plan
EV	Electric Vehicle
GHG	Greenhouse Gas
HB 19-1261	House Bill 19-1261
ICE	Internal Combustion Engine
IT	Information Technology
kWh	Kilowatt hours
MUD	Multi-Unit Dwelling

Acronym/Defined Term	**Meaning**
NPV	Net Present Value
NOx	Nitrogen Oxides
O&M	Operations and Maintenance
PIM	Performance Incentive Mechanisms
Public Service or the Company	Public Service Company of Colorado
RAQC	Regional Air Quality Council
REC	Renewable Energy Credit
RFP	Request for Proposal
RTD	Regional Transportation District
SB 19-077	Senate Bill 19-077
SB 19-236	Senate Bill 19-236
Schedule RE-TOU	Residential Energy Time-of-Use Rate
Schedule S-EV	Secondary Voltage Time-of-Use- Electric Vehicle Rate
Schedule SG	Secondary General Service Rate
Schedule SGL	Secondary General Low-Load Factor Rate
Schedule STOU	Secondary Time-of-Use Rate
SRCS	Solar Rewards Community Service Schedule
TAVRR	Total Aggregate Variable Retail Rate
TEP or Plan	Transportation Electrification Plan
WACC	Weighted Average Cost of Capital
Xcel Energy	Xcel Energy Inc.
XES	Xcel Energy Services Inc.

Acronym/Defined Term	**Meaning**
ZEV	Zero Emission Vehicle
ZEV Executive Order	Executive Order B-2019-002

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DIRECT TESTIMONY AND ATTACHMENT OF JACK W. IHLE

I. INTRODUCTION, QUALIFICATIONS, PURPOSE OF TESTIMONY, RECOMMENDATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jack W. Ihle. My business address is 1800 Larimer, Suite 1100, Denver, Colorado 80202.

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

A. I am employed by Xcel Energy Services Inc. ("XES") as Director, Regulatory and Strategic Analysis. 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 and the other utility operating company subsidiaries of Xcel Energy on a coordinated basis.

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

A. I am testifying on behalf of Public Service.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.

A. As Director, Regulatory and Strategic Analysis, I am responsible for overseeing the Company's regulatory filings and strategy as they pertain to resource planning, renewable energy policy, retail product policy, EVs, and other policy-driven issues. Related to this filing, I was the Company's lead policy witness on the filing to establish the S-EV rate for fleet and public charging (Proceeding No. 19AL-0290E), and also on the filing seeking deferred accounting treatment for initial EV supply infrastructure projects (Proceeding No. 19A-0471E). These were the Company's first two EV-focused proceedings in Colorado, and both were resolved through settlement agreements approved by the Commission. A description of my qualifications, duties, and responsibilities is set forth after the conclusion of my Direct Testimony in my Statement of Qualifications.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to provide an overview of Public Service's first TEP including an introduction of the Company witnesses filing testimony in support of the Plan. I provide the goals and themes of our Plan. My Direct Testimony will also provide a description of the EV policy and market landscape, focusing on key policy drivers of our plan including the regulatory factors that the Colorado Legislature guides the Commission to consider in approving a TEP. I also cover the guidance that Commission Staff has provided for the TEP. I further provide testimony on certain policy issues related to the TEP such as our stakeholder engagement efforts, our approach to providing equitable access to

transportation electrification, and a summary of emissions benefits created by the TEP.

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

A. Yes. In Attachment JWI-1, I provide a list of stakeholders and interested parties who participated in our stakeholder outreach efforts.

Q. PLEASE SUMMARIZE THE REQUESTS OF PUBLIC SERVICE IN THIS PROCEEDING.

A. In its Application and as supported by the Direct Testimony referenced below, Public Service requests that the Commission:

- Approve Public Service's proposed 2021-2023 TEP (filed as Attachment KDS-1) to the Direct Testimony of Company witness Kevin D. Schwain and find that it is reasonable, prudent, and in the public interest;
- Approve Public Service's proposed annual TEP budgets for 2021, 2022, and 2023, as provided in Mr. Schwain's Direct Testimony;
- Approve Public Service's annual TEP budget flexibility proposal and requested presumption of prudence for actual expenditures within its parameters, as described in the TEP and Mr. Schwain's Direct Testimony;
- Approve Public Service's proposed framework for managing TEP portfolios, programs, and related budgets over the course of the TEP and process to make mid-course adjustments, as proposed in Mr. Schwain's Direct Testimony and described in the TEP;

- Approve Public Service's proposed Schedule EVC, and the rates and charges included therein, as supported by Company witness Steven W. Wishart in his Direct Testimony;
- Approve Public Service's proposed adjustment to Schedule S-EV to accommodate the Company's installation, ownership, and maintenance of EV chargers for its proposed EV charging services under Schedule EVC as discussed in Mr. Wishart's Direct Testimony;
- Approve Public Service's proposed depreciation rate for Company-owned EV chargers as proposed by Company Witness Arthur P. Freitas in his Direct Testimony;
- Approve Public Service's proposed amortization rate for TEP rebates as proposed in Mr. Freitas's Direct Testimony;
- Approve Public Service's proposed revisions to its current electric Demand-Side Management Cost Adjustment ("DSMCA") rider to facilitate cost recovery for TEP expenditures through the renamed Customer Program Cost Adjustment ("CPCA") rider, including rates effective January 1, 2021 as supported by Mr. Wishart and Mr. Freitas and filed as Attachment SWW-3 to Mr. Wishart's Direct Testimony;
- Approve Public Service's proposed revision to its current Solar Rewards Community Service Schedule SRCS's reference to the DSMCA in the calculation of the Total Aggregate Variable Retail Rate ("TAVRR") to reflect the renamed CPCA rider, filed contemporaneously as Attachment SWW-4 to Mr. Wishart's Direct Testimony and addressed by Mr. Wishart;

- Approve Public Service's proposed class cost allocation methodology as proposed in Mr. Wishart's Direct Testimony;
- Approve Public Service's proposal to apply proceeds from its sale of carbon offsets and Renewable Energy Credits ("RECs") to support the electrification of school buses as part of the TEP's Research, Innovation, and Partnerships portfolio as proposed in my and Mr. Schwain's Direct Testimony;
- Approve Public Service's proposal to use EV chargers to measure customers' energy usage and bill customers for that energy usage for its proposed MUD Personal Parking Service under Schedule EVC as supported by Mr. Schwain's Direct Testimony;
- Approve Public Service's proposed TEP performance incentive mechanisms ("PIMs") proposed in my and in Mr. Schwain's Direct Testimony; and
- Approve Public Service's proposal for an independent evaluation of our TEP portfolios, ongoing stakeholder outreach, and reporting to ensure transparency and oversight as discussed in my and in Mr. Schwain's Direct Testimony.

Q. WHICH OF THESE REQUESTS DO YOU SUPPORT IN YOUR DIRECT TESTIMONY?

A. While I support all of Public Service's requests in this proceeding, my Direct Testimony particularly focuses on supporting Public Service's request that the Commission approve our proposed TEP and find that it is prudent, in the public interest, and consistent with the requirements of SB 19-077; our requested PIMs as further described in Mr. Schwain's Direct Testimony; our proposal to support

school bus electrification with proceeds from the sale of carbon offsets and RECs as further discussed in Mr. Schwain's Direct Testimony; and our proposal for ongoing stakeholder engagement and reporting to the Commission, as also discussed in Mr. Schwain's Direct Testimony.

Q. ON WHAT TIMELINE ARE YOU REQUESTING APPROVAL OF THE TEP AND RELATED APPROVALS?

A. We respectfully request a final Commission decision on our TEP application by the end of 2020. Receiving a final Commission decision by the end of 2020 would allow the Company to proceed with implementing the TEP beginning in calendar year 2021 as proposed. This timing, in turn, would allow us to continue to engage further in the EV market, expand on the EV infrastructure efforts and implement the new commercial EV rate that the Commission has supported over the last year.

II. INTRODUCTION OF TESTIMONY

Q. DO YOU HAVE ANY GENERAL COMMENTS TO BEGIN YOUR TESTIMONY?

A. Yes. Public Service is pleased to propose to the Commission its first TEP. This Plan follows from requirements developed in SB 19-077. But it also follows from and supports much more than that. The global EV ecosystem is growing rapidly and dynamically, with auto manufacturers investing billions in new EV models and technologies, exponential growth in EV sales, and new business models being built in manufacturing, vehicle ownership, and charging. Colorado has created a supportive policy environment for EVs with aggressive state goals, attractive state tax incentives, and a ZEV sales mandate. Our customers, communities and stakeholders have sent a clear message that Public Service needs to engage strongly in the EV market. With this TEP, the Company positions itself as a key partner to advance state climate policy in both the power and transportation sectors. At the same time, the Company is actively developing its next Electric Resource Plan ("ERP") to meet the clean energy targets set forth in Senate Bill 19-236 ("SB 19-236"). This TEP and the forthcoming ERP, will continue to demonstrate that fully regulated utilities like Public Service are foundational to state climate policy, including the state's efforts to meet economywide GHG emission reduction goals established by HB 19-1261 not just in the power sector but across the economy.

This Plan is a first-of-a-kind effort from the Company, and as the enabling legislation requires this effort every three years, the Plan also initiates what will be a series of plans going forward. But we are not starting from scratch - for many

years we have proposed and implemented Demand Side Management ("DSM") and Renewable Energy Standard ("RES") plans that have influenced our thinking on how to structure this first TEP. Accordingly, this Plan and its architecture developed through this proceeding will inform future plans that will further overall state EV and GHG emission reduction strategies, programs, and efforts. Therefore, the Company, the Commission, interested stakeholders, and intervening parties will together shape this Plan to establish a new phase in Colorado's EV market: a phase anchored by the proactive and comprehensive engagement and participation by this investor-owned utility.

Q. HOW DOES THE PROPOSED TEP FIT PUBLIC SERVICE'S OVERALL APPROACH TO OPERATING ITS BUSINESS AND STRATEGIC OBJECTIVES?

A. The TEP fits our strategic objectives very well. The main objectives of Public Service and the holding company Xcel Energy Services, Inc., are to lead the clean energy transition, enhance the customer experience, and keep bills low. The proposed TEP accomplishes all three objectives.

First, EVs can help us lead the clean energy transition by leveraging our ambitious corporate clean energy targets. Xcel Energy is proud of its leadership efforts that are perhaps best represented by our industry-leading December 4, 2018 announcement to reduce carbon dioxide emissions on our electric system 80 percent by 2030 and to achieve 100 percent clean energy by 2050. In Colorado, we have already reduced carbon dioxide emissions by 42 percent from 2005 levels. The Colorado Energy Plan approved by the Commission in 2018 will

further reduce those emissions to 60 percent below 2005 levels by 2026. Additionally, under the direction of SB19-236 and Commission Rules, the Company plans to initiate in March of 2021 an ERP that will propose a Clean Energy Plan ("CEP") that will, in combination with many earlier efforts since the mid-2000s, reduce Public Service's emissions by a total of 80 percent from 2005 levels by 2030. We expect to maintain this trend of increasing clean energy while maintaining affordability and reliability, which are crucial to all of our customers, but equally crucial in supporting the growing EV transition. Indeed, as our generating system becomes progressively cleaner, so do EVs relative to internal combustion engines ("ICE"), making them an even more attractive option for drivers and fleet operators.

Second, EVs are one of the most compelling new energy choices to come along in decades. Since the Ford Model T was introduced in 1909, Americans' choice for their automobiles' energy source has been essentially one: petroleum. Over the last decade, however, battery and vehicle technology has advanced and created a new and very different choice for consumers – EVs powered from many different types of generation. These vehicle choices are now expanding as new models and vehicle types are introduced, from electric scooters to heavy-duty trucks. For EV owners, electrifying their transportation needs can reduce their vehicle maintenance budget and their personal emissions footprint. In partnership with the Company, EV owners can also have more control of their household energy bills through participation in TEP programs and through advancements in the Company's pricing structures. EVs can also offer appealing new experiences

in smooth, quiet, responsive personal transportation that require much less frequent trips to fueling stations. In short, EVs offer a highly compelling customer experience.

Finally, EVs can help to keep utility bills low for all customers. For electric customers who do not own EVs, or even cars, EVs represent a new and complementary load that can help to share some of the fixed costs on our system, which offers the potential to create downward pressure on rates over time.

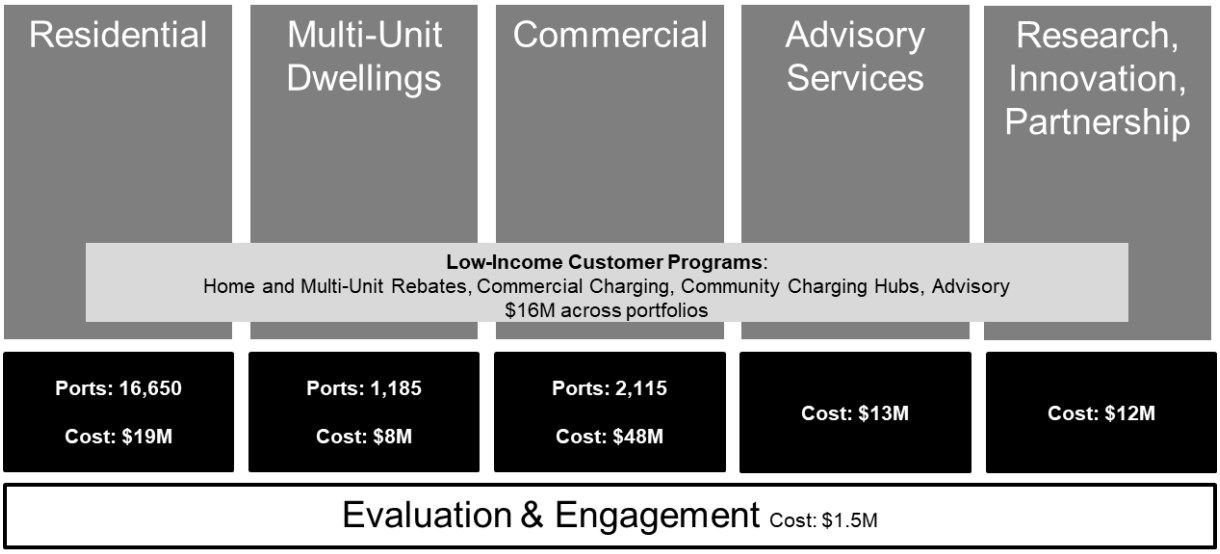
Q. WHAT ARE THE CORE ELEMENTS OF THE PLAN?

A. Public Service's first TEP proposes the creation of a comprehensive suite of electrification programs intended to complement the set of policies that the State of Colorado has enacted to promote EVs and to reduce emissions. The TEP addresses three primary challenges or gaps in the EV market: (1) lack of information and awareness regarding EVs, (2) upfront costs associated with purchasing EVs and charging infrastructure, and (3) suboptimal incentives to EV charging when it is most beneficial to the electric grid. This plan creates twenty programs across the following five portfolios:

- Residential;
- Commercial;
- Multi-unit dwellings;
- Advisory; and
- Research, Innovation, and Partnerships

All of these portfolios are intended to provide options to mitigate the three primary market challenges for most types of Public Service customers. The following chart provides a high-level overview of the TEP and its five portfolios.

Figure JWI-D-1-2021-2023 Transportation Electrification Plan Overview



Q. HOW DOES THE CORONAVIRUS DISEASE 2019 ("COVID-19") PANDEMIC AFFECT HOW THE COMPANY PROPOSES THIS PLAN?

A. We recognize that our TEP proposal launches at a very difficult moment for Colorado, the United States and the world. COVID-19 has created significant new challenges for public health and significant uncertainties in the economy. At the time of this writing, broad swaths of Colorado's economy are paused or significantly slowed, unemployment has hit record high levels, and, new vehicle sales of all types have plummeted. The short-term economic outlook is highly uncertain, to say the least.

Notwithstanding this uncertainty, the Company's Plan must look forward to 2023 and beyond; it must develop programs that will support EV adoption, improve

air quality and reduce emissions; and it must target a lasting impact on our state's transportation sector. We believe our Plan accomplishes these objectives and that approval of our Plan remains in the public interest for several reasons despite the pandemic and its attendant economic uncertainty.

First, EVs are expected to provide long-term economic benefits not only for owners and drivers of EVs but also for all customers of Public Service and society generally. We provide significant analysis on the topic of costs and benefits in my testimony and in the Direct Testimony of Company witness Steven W. Wishart. In this way, I believe our TEP can be a driver of, as opposed to a drag on, the state's economic recovery. Put another way, working under the auspices of SB19-077 to "stimulate … competition" and "attract private capital investments," our TEP-which includes approximately $100M of investment over three years-can act as a form of stimulus to the Colorado economy and can contribute to a growth trend in a critical transitioning sector.

Second, the potential impact on customer bills is relatively small. The magnitude of TEP investments is limited by the actions of the General Assembly, as SB19-077 establishes a 0.5 percent retail rate impact threshold for utility infrastructure expenditures for EVs. Moreover, the Company will not collect any revenues in connection with the TEP until 2021. The budget numbers in Mr. Wishart's testimony further show that the revenue requirement for the TEP in 2021 is a relatively modest $7.7 million, which amounts to $0.23 on the average monthly residential customer bill.

Third, delaying the TEP now could lead to a missed opportunity to further advance the EV market just when the economy is recovering, and vehicle sales are resuming. While there is little certainty with respect to the trajectory of future recovery, it is plausible that the economy could begin to recover as early as 2021, which is only the first year of our TEP. And while the recovery may come faster or slower, we believe it is reasonable to stay the course with respect to transportation electrification and begin taking necessary steps so that we are positioned to advance the adoption of EVs once the recovery takes hold.

Fourth, we have designed significant flexibility in this proposed TEP to allow the Company, program-by-program, to meet the EV market where it is at the time. While we have proposed an upward expenditure ceiling on the overall TEP, we have proposed no expenditure floor. We have also proposed significant flexibility to move funds between programs. Altogether, under our proposal, if the market or certain segments of it continue to pause and/or slow as a result of the economic impacts from COVID-19, we can respond accordingly. If they accelerate, we can match that pace. Nobody can predict with certainty the pace of the EV market or segments within it, and our Plan allows us to be flexible and responsive to that reality.

For all of these reasons, I believe that now is not the time to wait, but to proceed prudently and in a well-timed, flexible way. Our proposed TEP is built to do just that.

III. WITNESS INTRODUCTIONS

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

A. In this section of my Direct Testimony, I provide a summary of the Company's witnesses also submitting Direct Testimony in this proceeding.

Q. PLEASE INTRODUCE THE OTHER COMPANY WITNESSES.

A. The following witnesses are providing testimony in support of this application.

- Mr. Kevin D. Schwain, Director of Transportation Electrification, sponsors the Company's Plan document provided as Attachment KDS-1. He presents the Company's proposed portfolio and program structure and describes the programs proposed under the TEP in detail. As Xcel Energy is now undertaking transportation electrification programs in several states, he also provides some experiences with EV programs from our other states. He describes the Company's EV and charging infrastructure forecasts and how they relate to the proposed programs in this Plan. Finally, he discusses the details of the Company's proposed Performance Incentive Mechanisms and he provides our proposed evaluation of our programs over time.
- Mr. Steven W. Wishart, Manager of Pricing and Planning, proposes new rate design components of the TEP, including charges for a home charging service, a MUD charging service, and a proposed pricing structure for Company-owned direct current fast charging ("DCFC") chargers. He also sponsors our proposed Customer Program Cost Adjustment ("CPCA") rider to recover TEP costs and addresses Public

Service's proposed class cost allocation methodology. He also sponsors analysis that the energy consulting firm Energy+Environmental Economics ("E3") performed for the Company in the areas of cost-benefit analysis and emissions forecasting.

- Arthur P. Freitas, Manager, Revenue Analysis, provides the revenue requirements analysis for the Company's TEP. He also supports our proposed depreciation rate for EV chargers and our proposed amortization period for TEP rebates.

IV. POLICY AND REGULATORY LANDSCAPE

Q. IS THERE POLICY SUPPORT FOR TRANSPORTATION ELECTRIFICATION IN COLORADO?

A. Yes. There is strong policy support for EVs in Colorado. As I think about it, there are policies that support EVs, and then policies that the advancement of EVs in turn support. Here, I focus on policies that support EVs, but it is always important to also view these policies—and the TEP for that matter—in the context of the key role EVs play in economywide GHG reduction as described earlier in my Direct Testimony.

Since 2017, the State of Colorado has offered tax credits to incentivize the purchase and lease of a wide range of EVs from light duty passenger vehicles to heavy duty trucks. These tax credits, currently worth $4,000 on many EVs, are among the strongest in the United States. There have also been multiple executive orders targeted at promoting more widespread EV adoption in the state. For example through Executive Order D 2017-015, "Supporting Colorado's Clean Energy Transition," Governor Hickenlooper declared a statewide goal of reducing GHGs by more than 25 percent by 2025 compared to 2005 levels, and this Executive Order directed the Colorado Energy Office ("CEO") to work with the Regional Air Quality Council ("RAQC") and the Colorado Department of Public Health & Environment ("CDPHE") to develop a statewide EV Plan by January 1, 2018, to build out key charging corridors to "facilitate economic development and boost tourism across the state while reducing harmful pollution." The resulting Colorado Electric Vehicle Plan included five objectives to promote more

widespread transportation electrification: (1) increase adoption of EVs in the light duty sector to achieve 940,000 EVs in Colorado by 2030 as projected in the Colorado "EV Implementation Study"; (2) increase the number of electric public transit vehicles to 500 by 2050; (3) increase the number of public and private employers in Colorado that provide workplace charging to employees; (4) develop strategies and partnerships that prepare property owners for future investments in EV charging infrastructure and electrify challenging facility types, such as multifamily dwellings and parking infrastructure; and (5) electrify state agency fleets.

An additional source of funding for increased EVs in Colorado is the highly publicized Volkswagen settlement in which Volkswagen entered consent decrees admitting that it violated the federal Clean Air Act ("CAA") from 2009 to 2016 by selling 580,000 vehicles that emit more air pollution than the CAA allows. These consent decrees require Volkswagen to make a $2 billion National ZEV Investment. Colorado has begun receiving $68.7 million to fund certain eligible projects to reduce emissions of nitrogen oxides ("NOx") from the transportation sector, has developed a plan to administer these funds, and has begun to disperse them.

Q. HAS POLICY SUPPORT FOR EVs INCREASED IN 2019 AND 2020?

A. Yes, I believe it has. In early 2019, Governor Polis issued Executive Order B-2019-002 ("ZEV Executive Order'"), "Supporting a Transition to Zero Emissions Vehicles," which identifies the public health, climate, and economic benefits of widespread EV adoption and encourages "electric utilities and the Public Utilities

Commission to work towards implementing policy and programming to support widespread transportation electrification."

The ZEV Executive Order also directed the Air Quality Control Commission ("AQCC") to consider a rule that would create a ZEV program similar to other several other states' ZEV programs for adoption into the Code of Colorado Regulations before October 30, 2019. The AQCC adopted this rule on August 16, 2019. Colorado's ZEV rule requires that beginning with the 2023 model year, auto manufacturers must retire ZEV credits that cover a percentage of their sales of passenger cars and light-duty trucks in Colorado. ZEV credits are earned based on vehicle technology type; for example, credits are awarded to EVs depending on range, and fewer credits are awarded to plug-in hybrid electric vehicles.[1]

In May 2019, the Colorado Legislature also extended the attractive EV income tax credits until January 1, 2026, through the enactment of House Bill 19-1159.

The CEO also recently released its 2020 Colorado Electric Vehicle Plan with a continued dedication to transitioning the state's transportation system to ZEVs. The 2020 Plan has a long-term goal of 100 percent of light-duty vehicles being electric and 100 percent of medium-duty and heavy-duty vehicles being zero emission. The EV Plan established five goals to allow this vision to be achieved: (1) remain committed to the state goal of 940,000 light-duty electric vehicles on

[1] Recent federal actions create regulatory uncertainty for the ZEV rule in Colorado – in September 2019, the Environmental Protection Agency and National Highway Traffic Safety Administration issued a rule that preempts the state from enforcing the ZEV program. Colorado is currently challenging this rule in federal court, and the final outcome for Colorado's ZEV rule is unknown.

Colorado roads by 2030; (2) create plans for the transition of medium-duty, heavy-duty, and transit vehicles to ZEVs; (3) perform a gap analysis to identify charging station needs throughout Colorado to achieve its goals across all vehicle classes; (4) work with State agencies to aid in achieving the EV goals in the Greening State Government Executive Order; and (5) develop a roadmap to full light duty vehicle electrification in Colorado.

Finally, and most notably for this filing, the Colorado General Assembly enacted SB19-077 in May of 2019. SB19-077 is not the first of its kind; indeed, prior iterations had been brought before the General Assembly in the two preceding legislative sessions and failed to make it to the finish line. These prior attempts underscore the importance of SB 19-077 and the careful consideration elected officials gave to this issue over the course of what was essentially three years before enacting the bill into law. SB 19-077 recognizes that utilities have a critical role in bringing Colorado's transportation electrification goals to fruition and requires utilities to submit TEPs for Commission approval by May 15, 2020. *See* C.R.S. § 40-5-107. I provide significant further discussion on SB19-077 below.

Q. PLEASE DESCRIBE YOUR UNDERSTANDING OF THE LEGISLATIVE PURPOSE OF SB 19-077.

A. I believe the legislative declaration at the beginning SB 19-077 provides helpful insight into its legislative purpose. In this section, the General Assembly explains that the bill is intended to support the widespread adoption of electric vehicles to "diversify transportation fuel mix, improve national security, and protect air quality." The General Assembly further elaborates that this "growth will be assisted by

investments in infrastructure necessary to maximize the benefits of expanding the electric vehicle market." As I state above, from the legislative declaration and S.B. 19-077 as a whole, it is quite apparent that the Colorado legislature envisions a critical role for utilities in realizing Colorado's goals for more widespread transportation electrification. For example, the legislative declaration expresses that the widespread adoption of EVs "*requires that public utilities increase access to electricity as a transportation fuel*, including for low- and moderate-income and underserved communities" (emphasis added). Finally, the legislature recognizes that coordinated transportation electrification initiatives and the increased adoption of EVs "should improve an electric public utility's electrical system efficiency and operational flexibility, including ability of the electric public utility to integrate variable renewable energy generation resources and to make-use of off-peak generation resources" and offer "electric utility customers with potential cost-saving benefits" in turn. S.B. 19-077 identifies several regulated activities utilities can undertake to effectuate these goals, which I describe below.

Q. YOU NOTE THAT SB19-077 CALLS FOR UTILITIES TO HAVE MORE OF A CENTRAL ROLE IN SUPPORTING COLORADO'S TRANSPORTATION ELECTRIFICATION GOALS. DO YOU BELIEVE THAT UTILITY ENGAGEMENT NEEDS TO INCREASE?

A. Yes. I believe that it is time for utility support for transportation electrification to step forward to match other aspects of state EV and clean energy policy. In saying this, I consider the historical statutory landscape of Colorado. Specifically, prior to S.B. 19-077, investor-owned utilities could not own EV chargers as regulated

assets. Further, it was an unsettled question of Colorado law as to whether utilities could invest in EV supply infrastructure (up to the charger). Prior to SB 19-077, these two related factors together led to the perception from our standpoint that the General Assembly may not welcome investor-owned utility investment in the EV charging supply chain.

Q. FOLLOWING THE PASSAGE OF SB 19-077, HAS THE COMPANY BEEN WORKING TO ADDRESS THIS GAP?

A. Yes. At the direction of SB 19-077, and nearly a year ahead of the SB 19-077 mandated deadline to do so, we proposed and then established a new rate schedule, Schedule S-EV (Proceeding No. 19AL-0290E), specifically for public chargers, through a settlement agreement that featured a diversity of interests, from public charging companies to customers to Trial Staff of the Commission. This settlement agreement was approved by the Commission and brought the new rate to the market on January 1, 2020. We are pleased to report that transit fleet and public charging customers are now beginning to use the S-EV rate.

Also, we recognized that a full TEP would be a comprehensive filing requiring substantial program development across several program areas and different segments of the EV market. Such a comprehensive plan takes time to develop and will take time to settle at the Commission. With that recognition, and with knowledge that certain key state and municipal customers had plans that could benefit from more short-term actions, in August of 2019 we proposed deferred accounting treatment for up to $9 million in capital costs and incremental operations and maintenance ("O&M") expenditures to be incurred toward EV

supply infrastructure. Again, working with intervening stakeholders and the Commission, we settled this case (Proceeding No. 19A-0471E). As result of that filing, projects proposed by the State of Colorado, the City and County of Denver, Regional Transportation District ("RTD"), and the City of Lone Tree are now moving forward with the Company's support. Further, an additional $5 million in EV supply infrastructure support is available for projects, for which we have now issued a request for proposals ("RFP") and received applications that we are reviewing. Put simply, this infrastructure filing has enabled the Company to support a limited set of EV supply infrastructure projects almost a year sooner than the TEP would have. And here again, we are pleased with the early evidence of strong interest – we have received dozens of applications we are now reviewing for funding at this point.

Even before SB 19-077 became law, the Company had been taking actions to support transportation electrification. For example, we proposed and received approval for a revised line extension policy that treated EVs more fairly, and also proposed the Charging Perks managed charging pilot under our demand-side management ("DSM") program.

Q. WILL THE PROPOSED TEP CLOSE THE GAP AND BRING PUBLIC SERVICE'S ENGAGEMENT IN EVs INTO FULL ALIGNMENT WITH THE SUPPORTIVE EV POLICY OF COLORADO?

A. Yes, I believe it will. I address the Plan in overview form in the next section. Company witness Kevin Schwain addresses the Plan in full detail in his testimony.

Q. ARE THERE OTHER POLICY OBJECTIVES THAT THE TEP WILL INTERACT WITH?

A. Yes. In 2019, the Colorado legislature passed two notable, if not landmark, bills that set very strong GHG reduction goals to address climate change. HB 19-1261 established economywide GHG reduction goals of 26 percent by 2025, 50 percent by 2030 and 90 percent by 2050. For the power sector, specifically, SB 19-236 established clean energy targets for Public Service to achieve an 80 percent reduction in carbon dioxide emissions associated with electricity sales by 2030, and the provision of energy generated from one hundred percent clean energy resources by 2050.[2]

The TEP will accelerate vehicle electrification, which in turn will be a critical emissions reduction strategy to achieve the aggressive economy-wide GHG targets of HB 19-1261. Transportation-related emissions are the second largest source of GHGs in Colorado, and the state's goal of 940,000 EVs by 2030 is in part motivated by the objective of reducing vehicular emissions. Electrification is one of the most significant and viable ways to reduce vehicular emissions.

However, the emissions accounting with respect to SB19-236 and EVs is more complicated and it is important that the policy architecture surrounding the implementation of these two landmark bills does not create headwinds for electrification generally—including transportation electrification. Indeed, both transportation and beneficial electrification will be important in meeting the economywide GHG emission reductions required by HB 19-1261.

[2] Other utilities may opt into the clean energy targets of SB19-236.

Q. WHAT ADDITIONAL POLICY COMPONENT NEEDS TO BE REFLECTED IN YOUR VIEW TO AVOID THESE HEADWINDS?

A. Electrification generally causes a "shift" in emissions from other sectors into the power sector—a shift that can further overall emission reductions by resulting in a net positive emission impact on an economywide basis. For example, as EVs create an emissions "shift" across sectors, they nearly always reduce emissions in a net sense, and similarly the analysis we present in this TEP supports this net reduction for EVs charging in the Public Service system. To put a finer point on that notion, in 2030 the analysis projects that the 454,000 EVs in our service territory would cause 388,000 tons to be emitted from the Company's generation, while the equivalent 454,000 of ICE vehicles would emit 1,582,000 tons, more than five times as much. The Company believes that some form of equitable attribution of the net carbon reduction benefits of EVs is merited in the form of recognition of those emissions in a manner such that utility customers are not punished by having to pay for a more stringent CEP for supporting electrification of vehicles. The Company draws the Commission's attention to this issue in advance of a 2021 ERP filing that will be intended to achieve the 80 percent by 2030 reduction target. Also, the Company is working with stakeholders, including the CDPHE, to establish a framework for equitable attribution of electrification (including transportation) of emissions as CDPHE undertakes its role on advising the Commission on CEP targets under SB 19-236. In my view, CDPHE nicely summarized the issue and state of play in comments filed on May 7, 2020 in Proceeding No. 19R-0096E:

As the Department's October 2019 comments in this proceeding addressed, it is likely that widespread electrification of transportation, buildings, and industry will be necessary in order to meet the goals of HB 1261. Accordingly, the Department encourages the PUC to require utilities to incorporate policies and investments that spur electrification. If the State and utilities are successful in achieving widespread electrification, this will lead to increased demand for, and thus additional generation from, the electric utilities, while significantly decreasing net GHG emissions across the economy as a whole. As part of the CEP Guidance document under development, the Department intends to incorporate an emissions accounting approach that does not disincentivize utility investment in electrification by penalizing additional electric sector emissions resulting from increased electrification results in economy-wide net reductions of GHG emissions.

V. OVERVIEW OF THE TRANSPORTATION ELECTRIFICATION PLAN

Q. WHAT ARE THE BARRIERS TO ELECTRIFICATION THAT UTILITIES CAN HELP TO ADDRESS?

A. There are three principal barriers to transportation electrification that utilities can help address. The first is a lack of information and awareness regarding EVs, their operation, and their benefits. The second is the upfront costs associated not only with purchasing an EV but also the necessary charging infrastructure. And the third barrier relates to suboptimal incentives when it comes to EV charging and ensuring that EV load growth benefits, rather than burdens, the electric grid. I believe utilities are uniquely positioned to address each of these barriers, and the Company's Plan does this.

Q. WHAT ARE THE MARKETS THE PLAN IS INTENDED TO SERVE?

A. The Plan is comprehensive and includes five portfolios comprised in total of over 20 separate programs. The variety of programs reflects our intent to address the specific needs and challenges of each customer category, including (1) residential customers who live in either single-family home or MUD; (2) owners of MUDs who are interested in offering EV charging to tenants; (3) transit providers; (4) communities, municipalities, and other governmental agencies; (5) public charging developers and site hosts; (6) commercial customers who operate light-, medium-, and heavy-duty fleets; and (7) workplaces that are interested in offering EV charging for employees. Company witness Kevin Schwain describes the portfolios and programs in greater detail in his Direct Testimony.

Q. HOW DOES THE PLAN REDUCE UPFRONT COSTS FOR THESE CATEGORIES OF CUSTOMERS?

A. For residential customers, we will offer rebates to defray the upfront costs of wiring a home for EV charging and also offer an optional bundled charging service where the Company will install, own, and maintain the charging station and the customer will pay a bundled service charge on their monthly bill. For MUD, commercial customers, and communities, the Company will install, own, and maintain EV supply infrastructure, which includes new service panels, conduit, and wiring that runs from the meter up to the charger stub. The Company will also offer bundled charging service for multi-unit dwellings and for light-duty fleets. Additionally, the Company is proposing to own and operate a limited number of public fast charging stations that will serve the needs of communities not currently being adequately served by third parties. Finally, the Company is offering additional rebates for low-income customers, as well as landlords, non-profits, and other organizations that primarily serve low-income customers.

Q. HOW DOES THE COMPANY'S PLAN ENCOURAGE OPTIMAL CHARGING PRACTICES?

A. The Plan encourages optimal charging practices through a combination of managed charging programs, time-differentiated rates, and other financial incentives—all of which are intended to incentivize EV charging in ways that will minimize overall costs and maximize overall benefits to the grid.

Q. WHAT IS THE COMPANY'S BUDGET FOR THE PLAN?

A. In total, the Company proposed a budget of approximately $102 million, which includes both capital investments and O&M expenditures that will be made in years 2021, 2022, and 2023. I note here that $100 million of this budget is recovered through the "Customer Program Cost Adjustment" mechanism as discussed in Company witness Arthur Freitas' testimony, while the approximately an additional $2.2M is sourced from a regulatory liability on the Company's books that originally stemmed from historic REC sales and proceeds on carbon offsets sales. I further describe this regulatory liability later in my testimony.

Q. DOES THAT IMPLY THAT THE PLAN ONLY WOULD AFFECT VEHICLE SALES BETWEEN 2021 AND 2023?

A. No. The Plan brings into fruition a variety of actions that will last far beyond the Plan years. Our Advisory Services are intended to sow seeds for electrification far into the future. Charging infrastructure installed or incentivized by programs under the Plan, for example could last for years or even decades in the case of make-ready or supply infrastructure. Research projects performed during this first plan, likewise, will pay dividends far into the future. The Company, in turn, has considered that the Plan's actions could be a driver of accelerated transportation electrification through EV purchase decisions through 2030.[3] Light-duty electric vehicles in Colorado can be considered to have an approximate life cycle of twelve years, and the Company presents some analysis for effects from EVs extending

[3] Plan programs such as infrastructure investments could drive EV adoption long past 2030, but the Company and consultant E3 stopped the analysis of benefits for any EVs purchased past 2030.

through 2041.[4] This is described in more detail in Company witness Steven Wishart's testimony.

Q. PLEASE DISCUSS THE COSTS AND BENEFITS OF THE TEP.

A. Certainly. First, EVs are projected to benefit those that drive or provide transportation services by reducing the cost of fueling and maintenance. Analysis performed by E3 suggest the Net Present Value ("NPV") of driver savings per light-duty vehicle of $1,149.[5] The aggregate benefit to all vehicles that could be charging on Public Service system would total over $350 million dollars. Second, electric utility customers will benefit as we increase usage of the grid and spread fixed costs; E3 analysis suggests the NPV of this to exceed $3,589 per vehicle and an aggregate benefit of approximately one billion dollars. Finally, as already discussed, there are clear environmental benefits associated with electric transportation. We expect the vehicles charged on Public Service system to reduce GHG by 1.3 million short tons and reduce NOx by 327 tons in 2030. Factoring in these environmental benefits, each light-duty EV achieves over $5,000 in NPV in net societal benefits. Company witness Steven Wishart's Direct Testimony and the E3 analysis provided as Attachment SWW-7 to his testimony provides more detail on the cost and benefit analysis that the Company submits with this Plan. Company witness Kevin Schwain describes how this plan was designed to reach the State's EV goal and achieve these significant benefits.

[4] Twelve year vehicle life based on data from the Alliance of Automobile Manufacturers at https://autoalliance.org/in-your-state/CO

[5] NPV values in this section reflect costs and benefits from 2020 to 2041 based on EVs purchased and used on the Public Service system from 2020 to 2030. Vehicle life is assumed at twelve years.

Specifically, he will describe how our TEP both reduces customer barriers and accelerates the benefits quantified by E3.

VI. STATUTORY ASPECTS OF THE TRANSPORTATION ELECTRIFICATION PLAN

Q. WHAT ARE THE MAIN IMPLICATIONS OF SB 19-077?

A. I am not a lawyer, but in this section I do want to set forth and address the key requirements of SB 19-077 as they are fundamental to Commission review of our plan. First, SB 19-077 requires triennial TEP filings. Specifically, SB 19-077 directs that by May 15, 2020 and every three years thereafter, electric public utilities are to file with the Commission "an application for a program for regulated activities to support widespread transportation electrification" within their service territories. *See* C.R.S. § 40-5-107. I elaborate on SB 19-077's TEP-specific elements more below.

Second, as part of a TEP and outside the context of a TEP, SB 19-077 allows electric public utilities to own and invest in EV infrastructure as a regulated activity. *See* C.R.S. § 40-3-116.

Third, SB 19-077 requires that on or before May 15, 2020, an electric public utility must submit to the Commission a proposal for a specific rate or rates for electricity supplied to commercial and industrial facilities used to charge EVs that encourage EV charging and that support the operation of the electric grid. Public Service has addressed this requirement in Proceeding 19AL-0290E, in which the Commission approved its Secondary Voltage Time-of-Use Electric Vehicle Service tariff ("Schedule S-EV").

Q. DOES SB 19-077 IDENTIFY ANY SPECIFIC ACTIVITIES UTILITIES CAN INCLUDE IN THEIR TEPs?

A. Yes. SB 19-077 offers a wide variety of regulated activities a utility can undertake to support its TEP. These activities include "investments or incentives to facilitate the deployment of customer-owned or utility-owned charging infrastructure, including charging facilities, make-ready infrastructure, and associated equipment that support transportation electrification"; "investments or incentives to facilitate the electrification of public transit and other vehicle fleets"; "rate designs, or programs that encourage vehicle charging that supports the operation of the grid"; and "customer education, outreach, and incentive programs that increase awareness of the programs and benefits of transportation electrification and encourage greater adoption of electric vehicles."

Q. HOW DOES SB 19-077 ADDRESS COST RECOVERY FOR TEPs?

A. SB 19-077 authorizes the Commission to allow utilities to earn a return on TEP investments and rebates at the electric public utility's weighted average cost of capital ("WACC") including the most recent rate of return on equity approved by the Commission. *See* C.R.S. § 40-3-116. SB19-077 provides that the Commission may authorize rate recovery mechanisms that allow earlier recovery of costs, including the use of riders, as well as "performance-based incentive returns or similar investment incentives." See C.R.S. § 40-3-116.

Q. AS STATED ABOVE, THE STATUTE MAKES MENTION OF THE OPTION FOR PERFORMANCE-BASED INCENTIVES. PLEASE DISCUSS THIS AND ANY OTHER RECENT LEGISLATON ON PERFORMANCE-BASED INCENTIVES.

A. In addition to discussing the ability of electric utilities to recover costs and earn a return on investments, as deemed prudent by the Commission, SB 19-077 also

makes mention of the option of using performance-based incentives. Section 3 of the legislation states that:

> "1) The rates and charges schedule for services provided by a program created under Section 40-5-107 [i.e. applications to support transportation electrification] may allow…(c) Performance-based incentive returns or similar investment incentives."

It is also worth highlighting that Colorado lawmakers enacted a separate piece of legislation in 2019, Section 11 of SB 19-236, that more directly addressed performance-based rates. In that legislation, lawmakers directed the Commission to investigate "financial performance-based incentives and performance-based metric tracking to identify mechanisms for aligning utility operations, expenditures, and investments with various public benefit goals" and to submit its findings in a report.[6] As a result, the Commission has initiated Proceeding No. 19M-0661EG to investigate how performance incentives could help align utility operations and investments with "safety, reliability, cost efficiency, emissions reductions, and expansion of distributed energy resources", along with the "quality of customer service".[7]

Q. WHAT FACTORS DOES SB 19-077 INDICATE THE COMMISSION SHOULD CONSIDER IN EVALUATING A TEP?

A. First, C.R.S. § 40-5-107(1)(b) states that an application must seek to "minimize overall costs and maximize overall benefits." C.R.S. § 40-5-107(2) then provides fairly detailed and multi-faceted considerations for the Commission to consider

[6] C.R.S. 40-3-117.
[7] Decision No. C19-0969, paragraph 13, Proceeding No. 19M-0661EG.

when evaluating transportation electrification programs and issues of cost recovery. The considerations are whether the TEP expenditures are:

(a) Reasonably expected to improve the use of the electric grid, including improved integration of renewable energy;

(b) Reasonably expected to increase access to the use of electricity as a transportation fuel;

(c) Designed to ensure system safety and reliability;

(d)(I) Reasonably expected to contribute to meeting air quality standards, improving air quality in communities most affected by emissions from the transportation sector, and reducing statewide emissions of greenhouse gases by forty percent below 2005 levels by 2030 and eighty percent below 2005 levels by 2050. (II) This subsection (2)(d) is repealed, effective July 1, 2031.

(e) Reasonably expected to stimulate innovation, competition, and increased consumer choices in electric vehicle charging and related infrastructure and services; attract private capital investments; and utilize high-quality jobs and skilled worker training programs as defined in section 8-83-303;

(f) Transparent, incorporating public reporting requirements to inform design and commission policy; and

(g) Reasonably expected to provide access for low-income customers, in the totality of the utility's transportation electrification programs, which may include community-based and multi-family charging infrastructure, car share programs, and electrification of public transit, while giving due consideration to the effect on low-income customers.

Q. HOW DOES THE COMPANY'S PROPOSED TEP ADDRESS THOSE STATUTORY APPROVAL CRITERIA?

A. I believe our proposed TEP meaningfully addresses these detailed multi-faceted criteria and is thus an approvable Plan with respect to the considerations. I provide more discussion below for each of the considerations.

Q. HOW DOES THE PROPOSED TEP "SEEK TO MINIMIZE OVERALL COSTS AND MAZIMIZE OVERALL BENEFITS?"

A. First, the E3 analysis confirms the perspective that the EVs that this plan seeks to encourage create positive effects from the perspective of the car owner, society and the general utility customer. I find it compelling that the ratepayer analysis E3 provides is positive, meaning that even customers who do not own EVs, or any vehicle, should see benefit from EVs on the grid. Also, as the Company heard consistently from stakeholders, managing EV charging on the grid is one of the most powerful ways to minimize costs. Our plan focuses on managed charging across all parts of the EV market, generally through time-varying rates combined with optimization programs. This is explained briefly in the next Q&A, in the Plan, and Mr. Schwain's testimony provides much further information on our efforts to maximize benefits to the grid. Such efforts to optimize charging both minimize overall costs and maximize overall benefits. Further to the cost minimization point, the Company will use competitive solicitation processes to administer programs where appropriate, such as for charging equipment, contracting of electricians, and for program evaluation services. We will also be using an application process for EV infrastructure programs, and part of the application award criteria will be based on costs or economics of the projects.

Q. HOW IS THE PROPOSED TEP "REASONABLY EXPECTED TO IMPROVE THE USE OF THE ELECTRIC GRID, INCLUDING IMPROVED INTEGRATION OF RENEWABLE ENERGY?"

A. Our goal is to encourage most customers supported by the TEP to participate in time-varying rates and also incentivized managed charging options. In general, most TEP programs are expected to improve the use of the electric grid by incentivizing customers to charge their EVs during off-peak periods so that we can integrate the additional load these EVs will bring to our system while minimizing the need to ramp up additional peaking generation to accommodate it.

More specifically, we are providing a strong focus on the charging use cases most important to management of the grid and integration of renewable energy. We are proposing comprehensive programs that provide personalized advice, support for charging infrastructure, and energy optimization for single and multi-unit dwellings and fleet operators. These use cases are critical in that they both support the vast majority of vehicles and also experience long "dwell times," meaning vehicles are typically parked for long periods of time.

For example, we propose to require customers participating in our Residential programs to participate in either time-of-use rates or managed charging programs so as to ensure these utility investments meet this intent of SB19-077. Programs in our TEP's Commercial Portfolio and Multi-Unit Dwelling Portfolio will charge most participating customers for their electric service under the S-EV, SG, or SGL rates, all of which incentivize off-peak charging.

Overall, many TEP programs also have a managed charging component, which will similarly help avoid on-peak charging, and managed charging can also play an important role in improving the integration of renewable energy. For example, all prequalified chargers for our MUD Charging Service and Commercial

Portfolio have smart charging capabilities that site hosts can leverage, and for Commercial customers using their own charging equipment with Company-owned EV supply infrastructure, we will require that charging equipment have managed charging capabilities.

We are also planning a fleet smart charging pilot as part of our Research, Innovations, and Partnerships portfolio to demonstrate how different market solutions integrate with vehicle and charging station data sources and can control them to help the customer manage their rate, while also participating in demand management programs that help the Company manage the grid.

Q. HOW IS THE PROPOSED TEP "REASONABLY EXPECTED TO INCREASE THE USE OF ELECTRICITY AS A TRANSPORTATION FUEL?"

A. The Company's proposed Plan includes multiple programs across five portfolio areas, covering most major customer types of EV implementation as described further in the Plan document in this filing and in Company witness Kevin Schwain's Direct Testimony. The Plan is aimed to address three key barriers the Company has identified in transportation electrification, those being a lack of awareness and information on EVs, initial upfront costs, and suboptimal incentives to charge when most beneficial to the grid. Finally, the Plan is calibrated to support a trajectory of EV adoption in Public Service's service territory that is consistent with the Colorado Electric Vehicle Plan goal of 940,000 EVs by 2030.

Q. HOW IS THE PROPOSED TEP "DESIGNED TO ENSURE SYSTEM SAFETY AND RELIABILITY?"

A. Public Service has a long-standing commitment to protect the safety of its workers and customers in all aspects of its business, and the Company will always plan to ensure safety and reliability as we implement new uses of our utility system. In all undertakings involving new electric installations, Public Service will ensure complete compliance with the National Electric Safety Code and Xcel Energy Standard for Electric Installation and Use. We will also ensure that all charging equipment prequalified for use in our TEP program meets our technical and safety requirements. This will include evaluation for cyber security concerns. We will ensure that all EV infrastructure work on the customer side of the meter be performed by a licensed master electrician, licensed journeyman electrician, licensed residential wireman, or properly supervised electrical apprentice in addition to complying with all other safety requirements under SB19-077 for the installation, design planning, and engineering of the infrastructure.

Through our Research, Innovations and Partnerships portfolio, we also plan to undertake a study on the distribution system impacts of electric transportation, which will identify areas to improve EV integration on our distribution system, and the Company would install a small secondary loop and connect chargers to help understand how secondary voltage equipment, including transformers, perform under various charging scenarios. This study could help further improve our ability to safely and reliably serve EVs and all other electric distribution customers as EV load continues to build on our system.

Q. HOW IS THE PROPOSED TEP "REASONABLY EXPECTED TO CONTRIBUTE TO MEETING AIR QUALITY STANDARDS, IMPROVING AIR QUALITY IN COMMUNITIES MOST AFFECTED BY EMISSIONS FROM THE TRANSPORTATION SECTOR, AND REDUCING STATEWIDE EMISSIONS OF GREENHOUSE GASES BY FORTY PERCENT BELOW 2005 LEVELS BY 2030 AND EIGHTY PERCENT BELOW 2005 LEVELS BY 2050?"

A. This is a complex consideration, with three somewhat distinct requirements. Taking these in turn, the TEP is supportive of a trajectory to achieve Colorado's 940,000 EV goal by 2030. Notably, the Company's service territory has a significant overlap with the Denver Metro Area and Northern Front Range non-attainment area for ground-level ozone. The 454,000 EVs we forecast by 2030 in our service territory will emit zero NOx, a precursor of ground-level ozone. The NOx emitted from our power system as a result of incremental electric usage to charge electric vehicles are lower than would be emitted by ICE vehicles, and in many cases would be emitted outside of the non-attainment area, as many of our emitting plants such as Comanche, Hayden, Pawnee and the Rocky Mountain Energy Center lie outside the non-attainment area. I discuss the net NOx emissions savings further in a dedicated portion of this testimony later.

Turning to communities most affected by emissions from the transportation sector, I would argue again that all EV implementation occurring in the non-attainment area meets that criteria. Because vehicles are a significant source of NOx emissions, all communities in the non-attainment area meet this requirement. The TEP addresses this consideration by spurring electrification in these areas.

More specifically to communities near highways and high-traffic roadways, the broad coverage of the Plan and its expected contribution to electrification across a significant portion of Colorado's light-duty vehicles (approximately 17 percent of the light-duty vehicles in the Company's service territory) will reduce emissions from such vehicles, which will tend to reduce emissions from highways and high-traffic roadways near such communities. We also expect the community mobility hub component of our plan to be helpful in reducing emissions and increasing access to electrification in emissions-affected communities. Further, the Plan will create infrastructure opportunities for transit agencies, which will reduce transit emissions within more-impacted communities and should also improve air quality for users of transit vehicles. Finally, the proposed EV School Bus program, described later, will seek to address the challenges of communities most affected by emissions from the transportation sector.

Transportation electrification is a key component of Colorado's strategy to achieve significant GHG reductions. Analysis conducted by the State of Colorado shows that the 940,000 electric vehicle goal could lead to up to 3 million tons of reduced GHG emissions.[8] Based on the analysis by E3 provided in this Plan, we expect the EVs in our service territory in 2030 will create a net reduction of 1.2 million short tons of carbon dioxide as compared to equivalent ICE vehicles. I note here that the GHG targets listed in SB19-077 (*e.g.*, EVs contributing to a forty percent reduction in statewide GHG by 2030) are less stringent than the more strict

[8] 2018 Colorado Electric Vehicle Plan, based on analysis conducted by the Regional Air Quality Council using the GREET model.

emissions targets of 50 percent reduction by 2030 and 90 percent reduction by 2050 in HB 19-1261. I am not a lawyer and therefore do not weigh in on which GHG emission standard controls here, but here is what I do know: EV deployment is fundamental to reducing GHG emissions on an economywide basis, and our TEP is fundamental to advancing EV deployment.

Q. HOW IS THE PROPOSED TEP "REASONABLY EXPECTED TO STIMULATE INNOVATION, COMPETITION, AND INCREASED CONSUMER CHOICES IN EV CHARGING AND RELATED INFRASTRUCTURE AND SERVICES; ATTRACT PRIVATE CAPITAL INVESTMENTS; AND UTILIZE HIGH-QUALITY JOBS AND SKILLED WORKING TRAINING PROGRAMS AS DEFINED IN SECTION 8-83-303"?

A. We expect that our TEP will stimulate innovation, competition, and increased consumer choices in EV charging and related infrastructure and services in multiple ways. Regarding innovation, we have specifically designed our Research, Innovation, and Partnerships Portfolio to advance the entire EV ecosystem with partnerships, technology, and innovation. We are currently planning new and innovative ways to promote electrification of shared mobility, reduce DCFC charging costs through energy storage, offer workable smart charging solutions for fleets, use AMI to detect the presence of EVs to support grid planning efforts, and electrify school buses. Our proposed TEP modification process will enable us to work with stakeholders to develop new pilots in an agile and transparent manner as the EV market evolves and more areas for potential innovation are identified.

Regarding competition and customer choice, in the use cases where we provide a purely financial incentive like a rebate, customers will choose the electrician to perform the wiring for their charger and select and procure their own charging equipment from among the qualifying options in the program. Even when we provide and own EV supply infrastructure, in many instances, customers will choose and procure their own charging equipment. I would also argue that offering customers the option of a turn-key solution promotes consumer choice because not every customer wants to make these decisions in a piecemeal fashion.

Our TEP is designed to drive increased investment in residential EVs and commercial and government fleets. We have every reason to expect that our TEP will attract private capital investments because with more EVs will come more vendors aiming to serve them and spur even more demand.

Through our TEP, we are targeting areas where barriers exist that we are particularly well-positioned to help address and where there is a strong consensus that the EV market lacks adequate support. One useful example is public charging. Public fast charging could play a critical role in increasing awareness, adoption, and utilization of EVs. However, there is a gap between the amount of public fast charging that is necessary to support future adoption and that which exists today. Our understanding is that there are only a limited number of use cases where these investments economically justify themselves. More could become economically viable with support from the Company's EV Supply Infrastructure service. However, access to fast public charging may not be equitable, or may not be sufficiently distributed across our service territory. To

address this concern, the Company is proposing to own and operate a limited number of public fast charging stations that serve the needs of otherwise underserved communities and can enable more adoption. Public Service will work with stakeholders to ensure that these are designed in a way that maintains a healthy and competitive charging market.

Public Service also plans to use high quality jobs and skilled worker training programs, as further described below.

Q. HOW IS THE PROPOSED TEP "TRANSPARENT, INCORPORATING PUBLIC REPORTING REQUIREMENTS TO INFORM DESIGN AND COMMISSION POLICY?"

A. Sharing TEP results and evaluating programs will be important as we scale these services and look to make improvements over time. We have developed a robust process for gathering feedback and input from stakeholders, ensuring transparency and sharing lessons learned, and assessing our customers' experiences and perceptions about EVs that could lead to increased adoption. If our TEP is approved, we intend to host quarterly stakeholder workgroup meetings, create a brief quarterly overview of TEP implementation updates, expenditures and any milestones achieved each quarter, participate in other stakeholder processes such as the Colorado Electric Vehicle Coalition, and provide an annual EV compliance report. The annual compliance report will be filed by April 1 of each year following the first year of operation, and will provide updates on key metrics, report on any true-ups to the proposed CPCA rider to go into effect on July 1 of each year. Additionally, The Company will file a TEP budget and cost forecast on

or before October 1 each year for inclusion of amounts to be collected in the CPCA rider for the upcoming year. Finally, the Company will engage third-party evaluation on certain metrics such as the customer experience and the impacts of the Company's activities on EV adoption. These reporting and evaluation activities are described in more detail in the TEP Plan document.

Q. HOW IS THE PROPOSED TEP "REASONABLY EXPECTED TO PROVIDE ACCESS FOR LOW-INCOME CUSTOMERS, IN THE TOTALITY OF THE UTILITY'S TRANSPORTATION ELECTRIFICATION PROGRAMS, WHICH MAY INCLUDE COMMUNITY-BASED AND MULTI-FAMILY CHARGING INFRASTRUCTURE, CAR SHARE PROGRAMS, AND ELECTRIFICATION OF PUBLIC TRANSIT, WHILE GIVING DUE CONSIDERATION TO THE AFFECT ON LOW-INCOME CUSTOMERS?"

A. As more thoroughly described in the TEP, across our TEP portfolios, we propose a variety of solutions to build on our other initiatives to more directly address the access challenges that low-income customers encounter. These solutions include supporting community charging hubs in low-income communities, partnering with ride sharing services that are seeking to electrify and supporting micro-mobility initiatives, electrifying ride-hailing services, facilitating the electrification of public transit, and providing rebates to lower the upfront costs of charging infrastructure and charging equipment for low income customers. We have a goal to direct 15 percent of our 2021-2023 TEP spending on low income programs embedded across all portfolios of the TEP. Speaking to the "totality" of the Company's EV programs, we note that our first two filings, for the S-EV commercial rate and the

EV supply infrastructure program, both had direct benefits for the electrification efforts of the RTD, which has a significant role in serving lower-income customers in the Denver metropolitan area. The Company believes that this "totality" language in statute indicates evaluation of this regulatory criteria across all of the Company's EV programs and not just those in the TEP itself. Finally, our plan has the potential to put downward pressure on customer rates, which would benefit all low-income customers by reducing their electric bill.

Q. DOES SB19-077 PLACE ANY LIMITS ON THE LEVEL OF UTILITY INVESTMENT TO SUPPORT A TEP?

A. Yes. SB 19-077 provides that the "retail rate impact from the development of electric vehicle infrastructure must not exceed one-half of one percent of the total annual revenue requirements of a utility." See C.R.S. § 40-1-103.3 (6). However, SB19-077 also directs that the "Commission shall consider revenues from electric vehicles in the utility's service territory in evaluating the retail rate impact." The Company's proposed TEP would not exceed this limit. In fact, the Company believes that under the retail rate impact test created by statute, the retail rate impact is potentially negative. Company witness Steven Wishart analyzes the retail rate impact in his Direct Testimony.

Q. DID COMMISSION STAFF PROVIDE GUIDANCE FOR THE TEP IN PROCEEDING NO. 19M-0574E?

A. Yes. Under 19M-0574E, the Commission gathered input on TEP-related subjects from many parties, including the Company. In a report summarizing the

comments, Staff provided several suggestions for TEP applications. I list the factors and how our filing addresses them below:

- Detailed descriptions of proposed transportation electrification programs, budgets and expenses, and quantifiable and non-quantifiable benefits resulting from proposed programs;
    - The Plan document in this filing provides these details. The E3 analysis provides information on benefits.
- Estimated cost impacts of transportation electrification programs to ratepayers and recommended cost recovery mechanisms, with justification;
    - The Direct Testimony of Mr. Wishart and Mr. Freitas cover these aspects.
- Any appropriate cost-effectiveness metrics for the Commission to consider in transportation electrification, with justification, despite SB 19-077 not explicitly requiring a specific cost-benefit test;
    - The E3 analysis provides cost-effectiveness analysis for EVs supported by this Plan.
- A social cost of carbon analysis pursuant to SB 19-236;
    - My testimony provides the social cost of carbon analysis in Section VIII.
- Analyses of how proposed transportation electrification programs meet statutory requirements in SB 19-077;
    - My testimony provides a comprehensive analysis of SB 19-077, primarily in Section VI.

- Recommendations for stakeholders to meet on a regular basis, similar to Public Service's quarterly DSM stakeholder meetings;
    - My testimony describes our plan to meet with stakeholders quarterly, along with other reporting proposals.
- Ways in which the Commission's consideration of transportation electrification applications should and should not be analogous to other existing Commission processes, with justification.
    - Mr. Schwain's testimony provides background on how our Plan uses some of the flexibility concepts from demand-side management plans.

VII. EQUITABLE ACCESS TO TRANSPORTATION ELECTRIFICATION

Q. IS EQUITY AN AREA OF FOCUS IN THIS TEP?

A. Yes. Equity and the issue of access to transportation electrification for lower-income customers are a strong focus of the Company's proposed Plan. This is for several reasons. First, stakeholders have made it very clear that equity would need to be a strong consideration in the development of our plans. In fact, I believe this was one of the most frequently-voiced themes in our comprehensive outreach efforts. Second, SB 19-077, as outlined above, speaks to equity and lower-income access issues in several places, including in the legislative declaration. Third, the Company's programmatic efforts in energy efficiency and renewable energy have moved toward greater focus on this issue over the years, and it made sense that the first TEP should start out with this consideration solidly in mind. Indeed, the EV supply infrastructure program the Company is now implementing, and the new S-EV commercial rate both strongly considered the needs of transit agencies such as RTD in their design. Transit is one of the ways in which lower-income residents might reap benefits from transportation electrification. Finally, it is the right thing to do. The Company's program costs, from renewable energy to DSM and now EVs, are collected from all customers, and it makes sense that there should be a considered focus on ensuring that all customers have reasonable access to realize the benefits of those programs.

Q. DO YOU BELIEVE THAT PROVIDING ACCESS TO TRANSPORTATION ELECTRIFICATION IN AN EQUITABLE WAY IS A CHALLENGING ISSUE?

A. Yes, I do. First of all, one of the primary if not dominant ways to access electrified transportation is by owning or leasing one's own car. This is often not feasible for lower-income customers. Second, a common way to engage with EVs is by buying a new EV. Indeed, the state and federal tax credits are built around lowering the cost of *new* vehicles. Lower-income customers, however, may not have either the capital or access to financing that enables buyers to overcome the higher up-front cost of EVs. I note here that E3's analysis included with this Plan shows that new EVs are today about $9,000 more expensive (before factoring in tax credits) than their ICE-equivalent.[9] Further, lower-income customers likely lack the income to use or maximize the federal and state tax credits for new EV purchases. Another challenge is that many lower-income customers may live in MUDs, a sector which itself has been a challenge for EV charging due to higher retrofit costs, differing incentives between building owners and tenants, and additional challenges with shared parking arrangements.

Q. HOW DOES THE PLAN ADDRESS THE CHALLENGE OF PROVIDING EQUITY IN ITS EFFORTS TO ENCOURAGE TRANSPORTATION ELECTRIFICATION?

A. The Company's Plan takes a holistic approach, with low-income focused programs in each of the five portfolios in the Plan: residential, MUD, commercial, Research, Innovation, and Partnerships, and Advisory services. We did not necessarily build separate low-income-only programs, but rather sought to include low-income-targeted efforts in the programs where it made sense to do so, so the low-income

[9] "Benefit-Cost Analysis of Transportation Electrification in the Xcel Energy Colorado Service Territory," Table 10, page 26, April 2020.

program efforts are interwoven into the Plan. Altogether, we estimate that roughly fifteen percent of the total Plan budget will address low-income and equity issues. This level of effort is consistent with other EV plans in the U.S. that we are aware of. Please see Table JWI-D-1 below.

Table JWI-D-1: Addressing Low-income Access in Utility EV Plans

Utility	Low-income EV Plan or Program
Southern California Edison (CA)	• Charge Ready & Market Education Program: Pilot required 10% of charging infrastructure in DAC[10] (2019 quarterly report[11] shows currently at 49%) • Charge Ready DCFC Pilot: Participant site must be in or near (<1.5 miles) a DAC with MUD nearby[12] (resulted in 60% spending in DAC according to interim report)
SDG&E (CA)[13]	• Requires 10% of EV site installations and EV charging station in DAC • Currently at 35%
PG&E (CA)[14]	• EV Charge Network Program deployment target of 15% in DAC • Reported at 18%
National Grid (MA)[15]	• Develop 10% of Level 2 charging sites in DAC with 100% of rebate for EVSE to participants at these locations
Eversource (MA)[16]	• 10% of Level 2 EV charging stations to be located in low-income communities
New York[17]	• 20% of DCFC budget directed to stations within 10 miles of DACs • Public DCFC within 10 miles of DACs get 100% and priority treatment by utilities

[10] http://www3.sce.com/sscc/law/dis/dbattach5e.nsf/0/B6A17CA10F3C77558825840A00826BAA/$FILE/A1410014-SCE%20Quarterly%20Charge%20Ready%20Pilot%20Program%20Report%202019Q1.pdf
[11] https://www.sce.com/sites/default/files/inlinefiles/SCE%20Quarterly%20Charge%20Ready%20Pilot%20Program%20Report%202018Q4_0.pdf
[12] http://www3.sce.com/sscc/law/dis/dbattach5e.nsf/0/D6DC6FEFB3125BEB8825839400076A9F/$FILE/A1701020%20et%20al-SCE%20PRP%20Interim%20Report%20on%20Priority%20Review%20Projects.pdf
[13] https://www.sdge.com/regulatory-filing/10676/sdge-electric-vehicle-grid-integration-pilot-program
[14] https://www.pge.com/pge_global/common/pdfs/solar-and-vehicles/your-options/clean-vehicles/charging-stations/program-participants/PGE-EVCN-Quarterly-Report-Q3-2019.pdf
[15] https://www.nationalgridus.com/media/pdfs/our-company/dpu-17-13-notice.pdf
[16] https://www.sierraclub.org/compass/2017/12/approval-electric-vehicle-utility-proposal-massachusetts-sign-what-s-coming-down
[17] http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=56005 see EVSE Whitepaper filed on January 13, 2020

	• Staff see no need to direct L2 to DACs as EVs too costly for this market segment, few used EVs • In other TE proceedings staff plan to prioritize areas that solutions to problems that disproportionately affect EJ communities: public transit, school buses, trucks
APS & TEPco (AZ)[18]	• Encouraged to minimize the financial impacts on low-income customers, but funding percent no yet specified
Maryland[19]	• Reserve 30% of L2 chargers for buildings where residents are confirmed low-income customers
HECO (HI)[20]	• Initiative #3 of Electrification of Transportation Strategic Roadmap: "Work with partners to find ways to lower EV purchase costs" to make EVs affordable or accessible to low- and middle- income residents • No specific target yet
AEP (OH)[21]	• At least 10% of the 300 level 2 charging stations (approximately 30 charging stations) will be set aside for low-income geographic areas • The level 2 rebates will be designed to cover up to 100% of the EVSE costs and customer make-ready work for locations within low-income geographic areas. • The DCF rebate program will be funded up to $5.8 million. At least 10% of the 75 DCF charging stations (approximately 8 charging stations) will be set aside for locations within low-income geographic areas. • The DCF rebates will be designed to cover up to 100%) of the EVSE costs and customer make-ready work for locations within low-income geographic areas.
New Jersey[22]	• Plug-In Electric Vehicle Incentive Fund: 20% allocated to reduce electricity demand or cost to LMI customers OR to support light duty PEV incentive program/incentive program for in-home EVSE • Zero emission buses prioritized for low-income, urban, or EJ communities
Portland General Electric (OR)[23]	• Offer technical assistance & EV chargers to non-profits that support the low-income community • PGE will install, maintain, and operate level-2 charging infrastructure for up to 3 non-profit organizations that buy or otherwise secure access to an EV for a minimum of a 3-year period. The organizations will pay only for the energy that the chargers use

[18] https://docket.images.azcc.gov/0000199128.pdf
[19] https://www.psc.state.md.us/wp-content/uploads/Order-No.-88997-Case-No.-9478-EV-Portfolio-Order.pdf
[20] https://www.hawaiianelectric.com/documents/clean_energy_hawaii/electrification_of_transportation/201803_eot_roadmap.pdf
[21] http://dis.puc.state.oh.us/TiffToPDf/A1001001A17H25B71429I00966.pdf
[22] https://www.njleg.state.nj.us/2018/Bills/S2500/2252_U2.HTM
[23] https://edocs.puc.state.or.us/efdocs/HAA/haa144052.pdf

Q. WHAT SPECIFIC PROGRAMS IN THE PLAN WILL TARGET ACCESS FOR LOW-INCOME CUSTOMERS?

A. Several programs will do so. The Plan provides higher levels of wiring rebate funding for low-income-qualified customers in single-family housing. The Plan also provides a strong focus on the MUD sector, which may tend to reach a higher level of lower-income customers whether a program is lower-income-focused or not. The Plan also seeks to help catalyze the development of Community Mobility Hubs, which provide access to electric transportation options that can serve markets and customers who may not own their own vehicle. Finally, the proposal for Company-owned DCFC is aimed to place such chargers into underserved areas, including low-income areas. Company witness Kevin Schwain provides more low-income program detail in his Direct Testimony.

Q. IS FLEXIBILITY IN THE PLAN HELPFUL TO SERVING LOW-INCOME CUSTOMERS?

A. Yes. As with other elements of the plan, serving low-income customers and markets is going to require some adaptation over time. Our stakeholder outreach efforts confirmed that this is an important market to serve, but also a challenging one. We have structured our low-income efforts comprehensively across our programs to find the best ways to serve this market, but we seek the same flexibilities as we do in other parts of the plan to adapt our approaches as appropriate during the Plan years.

VIII. EMISSIONS ASPECTS OF THE TRANSPORTATION ELECTRIFICATION PLAN

Q. IS THE COMPANY REQUIRED TO CONSIDER THE COST OF CARBON DIOXIDE EMISSIONS ("COCDE") AVOIDED IN THIS TEP?

A. Yes. SB19-236 requires the Commission to require the Company to consider the COCDE as discussed at 40-3.2-106(1), C.R.S. and 40-3.2-106(1)(d), C.R.S. in these types of plans filed with the Commission.

Q. HOW DID THE COMPANY CONSIDER THESE COSTS?

A. Based on emissions analysis developed by E3, which in turn is based on EV forecasts and generation emissions rates on the Company's system, we obtain net avoided emissions. The net avoided emissions represent the difference between emissions that would have been emitted by conventional ICE vehicles and emissions from the Company's generation system as projected for EV charging. We multiply the net avoided emissions by the COCDE per ton to obtain costs, or perhaps more accurately, a representation of the value of avoided emissions. We present these costs for consideration in Table JWI-D-2 below. A similar calculation of these costs was used by E3 in calculating its social cost test results, which are strongly influenced by the value of avoided emissions.

Table JWI-D-2: Cost of Carbon Dioxide Emissions

	2021	2023	2025	2030	2035	2041
Emissions Savings (Million Short Tons)	0.044	0.143	0.237	1.194	0.933	0.250
Cost of Carbon Dioxide Emissions ($/ton, nominal)	$48	$52	$57	$68	$83	$104
Cost of Carbon Dioxide Emissions ($Million, nominal)	$2	$8	$14	$82	$77	$26

Q. HOW DID THE COMPANY ESTABLISH THE COCDE TO BE APPLIED TO THE NET EMISSIONS REDUCTIONS ASSOCIATED WITH THIS TEP?

A. SB19-236 guides the Commission to establish the COCDE. The Commission is in the process of developing Rules to implement this section of statute, including the process to establish the COCDE, but has not yet established this cost. The Company provides here what it believes to be a reasonable estimate of the COCDE, and this is the same set of forecast values we have used in the 2020-21 Renewable Energy Standard Plan (Proceeding No. 19A-0369E), the EV supply infrastructure deferral filing (Proceeding No. 19A-0471E), and the Certificate of Public Convenience and Necessity filing (Proceeding No. 19A-0409E) for two combustion turbine gas facilities approved under the Colorado Energy Plan Portfolio. All three cases with these values have been approved by the Commission.

To develop the COCDE, we referenced the federal government's most recent assessment of the social cost of carbon, using the value calculated at a 3 percent discount rate, labeled as "3% Average" in the federal Technical Support Document.[24] We used the values that are expressed in constant 2007 dollars per metric ton, and converted those to nominal dollars per short ton to reflect the values we use in resource planning. After the conversion, the lowest value was $47 per nominal short ton, so we did not have to use the statute's floor value of $46 per short ton.

[24] *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866*, page 25, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, August 2016.

Q. DO YOU HAVE ANY OTHER OBSERVATIONS ABOUT CARBON DIOXIDE EMISSIONS RELATED TO THE TEP?

A. Yes. First, the analysis above speaks to net economywide emissions savings arising from transportation electrification. I will point out that EVs, as discussed earlier in my testimony, increase emissions in the power sector. The E3 analysis supports this fact. In 2030, the total carbon dioxide emissions from the Company's system resulting from EV charging will be 388,000 tons. This results from the 454,000 EVs expected in our system.

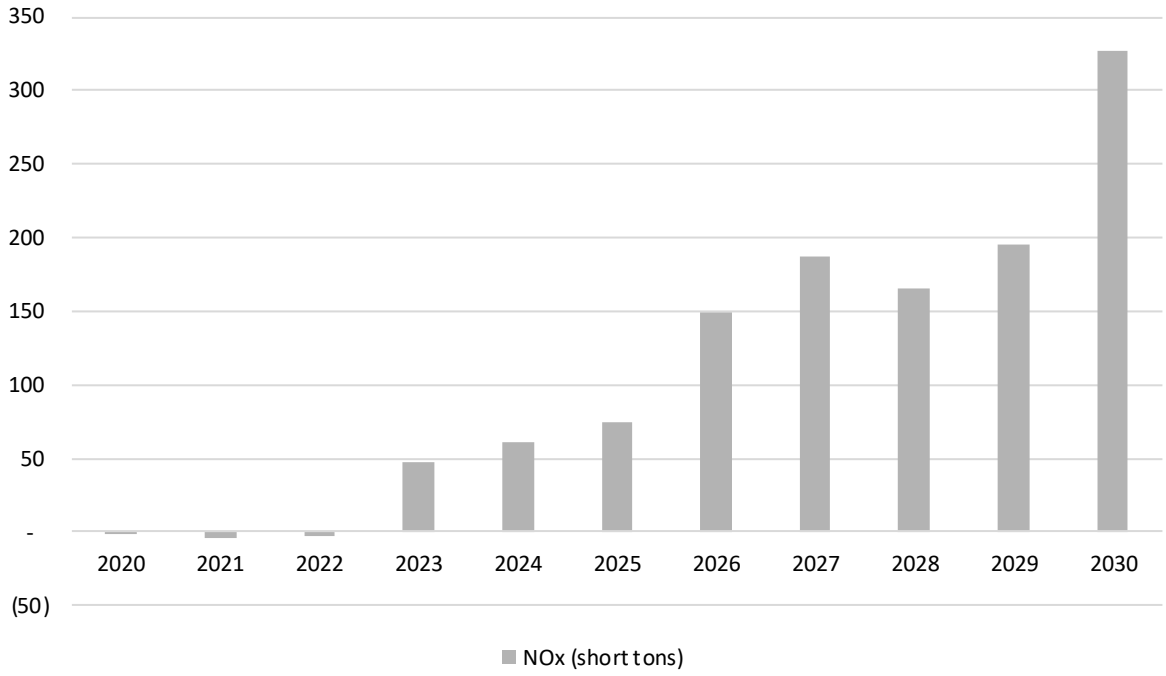
Second, as I outlined earlier in my testimony, carbon dioxide emissions from EVs can actually create an effectively more stringent target under SB19-236 if these tons are not attributed equitably. Or—put another way—the lack of any established attribution policy creates an electrification headwind, making it difficult to pursue aggressive system decarbonization and robust electrification initiatives together as they can potentially work at cross-purposes with one another. I do not say this critically and previously discussed that work is ongoing with CDPHE and other stakeholders to establish an equitable attribution policy. But I point it out again here because it is important and something we need to get right to maximize the contributions that fully-regulated utilities like the Company can make to economywide GHG reductions across multiple sectors. Further, this more stringent target can increase costs to customers, including customers who do not drive EVs and are also helping to fund the programs we are proposing under this TEP. The policy environment here is dynamic and that requires flexible and equitable policy structures to avoid any detrimental impacts on our electrification

efforts. To illustrate this dynamism, at the time of our corporate announcement to achieve an 80 percent carbon dioxide emission reduction by 2030 our internal EV forecast showed only 46,216 EVs in 2030. Based partially on stronger policy since then, plus EV market trends, we now forecast that the TEP would support a market that will advance 454,000 EVs in our service territory by 2030—but without equitable carbon attribution associated with these efforts, moving forward the Company is left to manage actions that work at cross-purposes with one another from a decarbonization policy perspective.

Q. DO THE EVS SUPPORTED BY THE PLAN REDUCE NOX EMISSIONS?

A. Yes. By 2030, the EVs supported by the TEP in the Company's service territory would reduce NOx by 327 tons per year. This occurs in a "net" sense: EVs add load and increase generation, which emits NOx, but no NOx is emitted from the EV itself, as it would be if the vehicle were powered by an ICE. The NOx reductions are shown below in Figure JWI-D-2.

Figure JWI-D-2: Net NOx Reduction under the TEP



IX. THE COMPANY'S STAKEHOLDER OUTREACH AND PROPOSED REPORTING EFFORTS

Q. WHAT EFFORTS HAS THE COMPANY MADE TO RECEIVE INPUT FROM STAKEHOLDERS?

A. The Company began a coordinated stakeholder outreach effort in 2018 and hosted its first stakeholder workshop in February 2019. These efforts have included workshops, smaller focused group listening sessions, conversations with municipal leaders and individual meetings with stakeholders. To date, the Company has conducted five EV workshops and three focused group listening sessions.

Q. HAS THE COMPANY HAD PARTICIPATION FROM A VARIETY OF STAKEHOLDER GROUPS IN THE WORKSHOPS AND LISTENING SESSIONS?

A. Yes. The Company has seen wide ranging participation from state and local government agencies, environmental groups, other utilities, public charging companies, non-governmental organizations, auto dealers, auto manufacturers, and several private companies involved with EVs. A full list of workshop participants is included as Attachment JWI-1.

Q. WHAT WERE THE OBJECTIVES OF THE WORKSHOP SERIES?

A. The Company's approach to the workshop series was concentrated on creating a refined understanding of transportation electrification from a variety of stakeholders with diverse interests, gathering feedback and input on the concepts in the Company's approach to EVs, and providing a platform where stakeholders

could share ideas and provide input about the future of transportation electrification. The Company recognizes that there is significant interest regarding transportation electrification in Colorado, and the workshop series was an opportunity to learn and create a dialogue with and amongst our valued stakeholders. They were very engaged, and we experienced high levels of participation in all of the workshops.

Q. WILL YOU BRIEFLY DESCRIBE THE TOPICS COVERED IN THE INITIAL WORKSHOP?

A. Yes. The first workshop, held in late February 2019, provided an overview of the current state of EVs in Colorado and the Company's strategy to increase transportation electrification. The Company engaged in a discussion with stakeholders that refined the guiding principles for transportation electrification. The Company also discussed its rate design principles and how they are being applied to EVs.

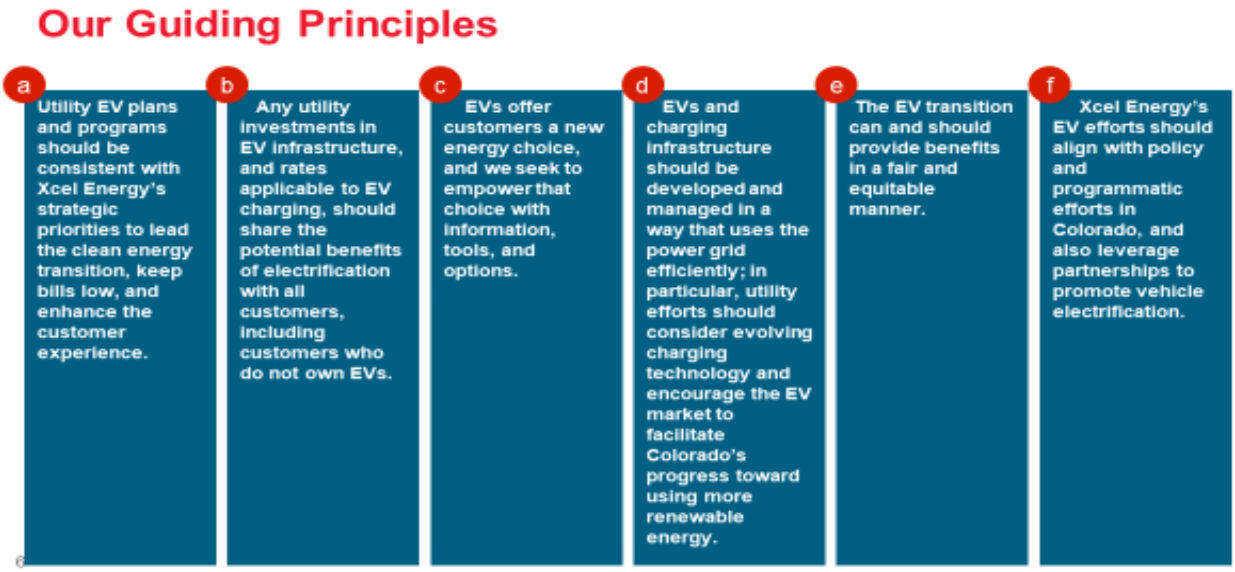
Q. YOU MENTIONED GUIDING PRINCIPLES IN THE COMPANY'S APPROACH TOWARDS TRANSPORTATION ELECTRIFICATION, CAN YOU ELABORATE ON THESE PRINCIPLES?

A. Yes. The Company saw that establishing a set of principles to help guide its approach to transportation electrification was a fundamental first step. There was significant discussion with stakeholders about the principles and general, though not universal, agreement with the final list. The principles create goals and reminders for the Company's approach to new programs. The Company sought

agreement on the principles which will provide a guide for the Company's increased involvement in the electric transportation transition.

First, we felt that our EV plan should be consistent with Xcel Energy's goals to lead the clean energy transition while keeping bills low and continuing to enhance the customer experience. The Company also recognizes that any investment in transportation electrification should be made to provide benefits to all customers not just EV drivers. We also understand that EVs offer a different energy choice for EV drivers and it is our desire to enhance that choice with information, tools, and options for EV adopters. Next, the Company realizes that increased EV adoption needs to be managed in a manner which increases grid efficiency and allows for the further integration of renewable energy. We also acknowledge the importance of this EV transition to provide fair and equitable benefits to all customers. Finally, the Company's efforts should leverage partnership opportunities across the state. These principles, as discussed during the first workshop and edited and finalized in the second workshop, can be found in Figure JWI-D-3 below.

FIGURE JWI-D-3



Q. WHAT TOPICS WERE COVERED IN THE SECOND WORKSHOP?

A. The second workshop, held in March of 2019, began to gather stakeholder input on the Company's proposed line extension policy filing (Proceeding 18AL-0852E) and the potential benefits that could be provided to EV charging stations through the proposed policy. We also began to discuss ideas regarding rate design for fleets and public charging. This conversation included comparisons of the Company's rates with EV rates of other utilities. Lastly, the meeting included a conversation about smart charging and various pilot programs the Company was in the process of evaluating.

Q. HOW DID THE CONVERSATION BEGIN TO EVOLVE IN THE THIRD WORKSHOP AND HOW DID THIS WORKSHOP DIFFER FROM THE PREVIOUS TWO WORKSHOPS?

A. The third workshop, held in June 2019, came after the Colorado state Legislature's passage of SB 19-077 which directed the utilities to become actively involved in the increased electrification of transportation. This workshop also came after the Company's initial filing of a new S-EV rate designed for commercial EV charging needs. The discussion during this workshop focused on this recently filed S-EV rate, discussed the potential for near term Company investments in EV supply infrastructure, and took a deeper dive into the smart charging pilot soon to be proposed through a modification to our DSM plan. This workshop differed from the other two previous workshops as the Company had begun taking an active role in expanding transportation electrification in Colorado. The direction of SB19-077 was clear and within a month of its passage we had filed our first EV rate and were planning for an infrastructure filing as well. Due to the requirements of SB 19-077, the Company was also beginning to think about its approach to its initial TEP.

Q. HOW DID THE FOCUS OF THE WORKSHOPS CHANGE IN 2020?

A. As we moved into 2020, the Company's efforts were concentrated squarely on the construction of its initial TEP. The workshops and stakeholder outreach efforts were focused on informing our stakeholders of how we were approaching the TEP filing, what programs and market segments would be included, and how the TEP would align with the requirements of SB19-077. We actively sought feedback and input from all stakeholders, specifically requesting ideas based upon their experiences in other states and opportunities unique to Colorado where they thought there could be the potential for enhancement or improvement.

The fourth workshop, in March 2020, was a high-level overview of the current state of our TEP. We began to take a closer look into the programs that would be offered, the Company's plans for ongoing engagement with stakeholders, how the Company can ensure the 5th Principle, fair and equitable EV benefits, could best be realized and finally, we discussed ways to determine success as a part of our evaluation and reporting process.

During this time, the Company also began to meet with smaller more focused groups to hold listening sessions and to learn from stakeholders directly involved in specific areas that the TEP would impact.

Q. WHAT WERE THE TOPICS DISCUSSED IN THE LISTENING SESSIONS?

A. We held three separate listening sessions. These were smaller groups which included stakeholders with direct experience in the featured topic. The first was focused on low income issues and how these could be appropriately addressed in our TEP. The conversation discussed potential barriers to success, lessons learned from other jurisdictions, and potential metrics for success. Our second listening session focused on innovation and charging optimization. The Company recognizes that this is a nascent and rapidly evolving market, and we understand the need to embrace innovation and encourage vehicle charging optimization as part of this TEP. This discussion again sought feedback from stakeholders directly involved in innovative programs and optimization of charging. Our final listening session was aimed at an audience representing interests and communities outside of the Denver metropolitan area. We engaged with communities throughout our service territory, including many western slope, mountain area and southern

Colorado stakeholders, to understand their community's specific needs and challenges and how they can best be addressed through the Company's TEP.

Q. WERE THE SMALLER FOCUS GROUPS HELPFUL IN THE DEVELOPMENT OF THE TEP?

A. Yes. The Company found all of our stakeholder outreach efforts beneficial, but the focus groups allowed us to thoroughly evaluate one issue and hear directly from those stakeholders with experience addressing the issue. The smaller group size allowed for increased dialogue with and amongst various stakeholders. We also found that the format allowed for input from all in attendance. The topics covered in these focus groups are crucial to the Company and we want to start out strong in these areas for the first TEP. It was our belief that going to those with the most direct experience would help us achieve that goal.

Q. HOW WAS FEEDBACK FROM STAKEHOLDERS INCORPORATED INTO THE COMPANY'S TEP?

A. As we listened to stakeholders during both the larger workshops and the more focused listening sessions, we identified common themes that we heard from our stakeholders. I summarize these themes as:

- **Lower the gates -** identify barriers and help customers overcome them;
- **Now is the time**- the Company needs to invest and lead for EVs to meet Colorado goals;
- **Partnering is key** – the Company should work with our agencies and programs who are seeking to promote EVs;

- **Make it easy** - that includes easy to understand programs, service upgrades, getting a charger, getting on the right rate, and a positive customer experience;
- **For everyone** - the benefits of transportation electrification should reach all customers;
- **Optimize right** - focus on fleets and residential while preserving the customer fast charging expected experience;
- **Spend wisely** – keep the programs cost-effective and make wise investments on behalf of customers and businesses paying the bills;
- **Provide advice** - create a positive customer experience; help customers with their plans and usage estimates;
- **Map it out** - for public stations, provide siting support with maps and ensure a smooth operational and interconnection process; and
- **Recognize differences** - support Colorado's diverse communities and different use cases

The Company listened to these common themes and we have designed programs in multiple market segments that attempt to overcome barriers and address the concerns that our stakeholders have expressed.

Q. CAN YOU PROVIDE SPECIFIC EXAMPLES OF HOW THESE THEMES HAVE BEEN ADDRESSED IN THIS TEP?

A. Yes. The programs that the Company is proposing in this TEP are addressing all these themes. The entire Plan represents our effort to act now to bring full engagement of the utility to the EV sector. In doing so, we are seeking to reduce

the three key barriers of high upfront customers, lack of awareness, and lack of optimized charging incentives. Our residential program is making charging easy by bringing the charger to the home and offering rebates to make this transition more affordable for residential customers. We will further simplify the transition to EV by providing the option to pay for charging equipment through a monthly charge on the customer's bill. Most EV drivers are residential customers and our residential program will reduce the upfront costs for installing chargers and the necessary infrastructure for these customers; while also encouraging charging during off-peak times.

The Company's approach to MUDs will increase access for a market segment that has been traditionally challenging to serve and could benefit significantly from utility involvement in transportation electrification. We have seen significant growth in MUDs in our service territory, but this market lacks access to EV charging infrastructure. Our program will provide EV supply infrastructure for existing buildings and provide incentives to developers for new construction. This program will also allow for customer choice on charging equipment and, similar to our residential customers, will include the option to pay for the charging equipment on the customer's monthly bill.

For fleets within our service territory, we will provide services aimed at reducing the total cost of EV ownership and system costs. Fleets that choose to electrify have the potential for improved economics through the Company's Commercial S-EV rate and can benefit from load management. The Company will help reduce the upfront costs for fleet conversion by offering EV supply

infrastructure and the ability to pay for charging equipment on their monthly bill. The electrification of fleets also has the additional benefit of contributing to improving air quality in those areas disproportionality impacted by poor air quality.

Our approach to public charging will address several issues that we have heard from stakeholders. First, the Company aims to address charging infrastructure gaps in rural and underserved areas while also reducing the common concerns associated with “range anxiety.” By expanding the public charging infrastructure, we will also provide charging options for those EV drivers that do not have the option to charge at home. Through offering EV supply infrastructure for community mobility hubs we see an opportunity to provide solutions to communities where they have identified a need. These community hubs could support public charging for a variety of electric mobility choices such as ride hailing services, ride sharing, electric bikes, and electric scooters. We believe that these efforts have the potential to support equitable benefits for all customers and not just EV drivers.

We are also offering a wide array of advisory services to help customers who are thinking about transitioning to EVs. These services will provide the information that customers need. The Company will conduct outreach to trade partners such auto dealers and electricians to get them engaged and aware of our program offerings. We will also support our fleet customers to understand which vehicles are well-suited for their needs and provide advice on rates and infrastructure. The Company will also work with community partners to provide

resources to engage their residents, support their fleets, and evaluate opportunities for the proper siting of public charging.

To the point of spending wisely, we have provided in this case robust testimony on our efforts to maximize the value of EVs on the grid. We have also provided evidence of benefits to all customers from supporting transportation electrification. The Company appreciates that even stakeholders who might be skeptical of some utility EV program spending were constructive participants in the workshops and provided useful insights.

Q. DOES THE COMPANY INTEND TO CONTINUE THE PRACTICE OF HOSTING STAKEHOLDER MEETINGS GOING FORWARD?

A. Yes, it does. The Company is proposing to meet on a quarterly basis with stakeholders to provide program updates and receive feedback. The EV workshop series has been informative and has allowed for us to engage directly with stakeholders outside of formal proceedings. The dialogue and discussion held in these workshops has helped us with the development of this initial TEP. We see the continuation of these workshops as an opportunity to share success stories and lessons learned during program implementation and to provide a platform for stakeholders to inform the Company's future TEP filings. The Company also views the workshop series as an opportunity to gather ideas on potential improvements to current programs and discuss thoughts on new initiatives.

Q. DOES THE COMPANY ENVISION ANY REPORTING DURING THE CURRENT TEP PERIOD?

A. Yes. The Company is offering to provide annual updates in a report filed with the Commission that will discuss the progress made in the TEP, lessons learned, and a review of stakeholder engagement activities. The report would provide information on metrics used to determine program success and the current state of active programs. The Company also plans to provide more brief quarterly updates, likely in presentation format, that will accompany the quarterly stakeholder meetings. These updates would focus on ongoing progress of programs. These would be posted on the Company's website. The Company is also proposing to engage a third-party evaluator to provide the Company with an independent evaluation of the programs, initiatives, and innovative projects currently underway. This evaluation will provide the Company with valuable insights into the customer experience and will allow the Company to have a better understanding of the impact that programs and initiatives have on customer's perceptions and the increased adoption of EVs.

Q. DOES THE COMPANY RECOGNIZE VALUE IN PROVIDING ANNUAL REPORTS?

A. Yes. Our proposal for annual reporting is consistent with our annual summary reporting on RES plans, DSM plans, and the Innovative Clean Technology program. Through reporting and program evaluation the Company will increase its own awareness into the effectiveness of its TEP approach. We see an opportunity to learn from this reporting. These learnings will include the effectiveness of advisory services and their impact on program participation and provide a better understanding of customer attitudes and perceptions of EVs. From

an operations perspective, reporting and evaluation activities will provide actual costs of charging infrastructure and analyze EV load and charging patterns. We also see an opportunity to assess the effectiveness of rates and charging optimization on our customer's charging behavior and the impact to peak demand. As this market continues to grow, we will need these tools and learnings to evaluate future needs and inform the potential for program enhancements.

Q. WHAT METRICS DOES THE COMPANY PLAN TO REPORT ON IN ITS ANNUAL REPORTING?

A. The Company plans to report on the following metrics in its proposed annual report:

- Estimated number of EVs in service territory, by type (e.g. light-, medium-, heavy-duty) where possible
- Estimated number and capacity of known charging stations and ports in service territory
- Number of participants in TEP programs
- TEP spending, broken out by portfolio and program category
- TEP revenue, broken out by portfolio and program category
- Estimated consumption of electricity (in kilowatt-hours) by EVs
- Estimated level of demand (in kilowatts) resulting from EVs
- Estimates for the amount of energy sold to program participants during on-peak and off-peak time periods, where feasible
- Average costs for charging installations, including EV supply infrastructure and charging equipment
- Geographical distribution of program participants and infrastructure investments

- Reduced carbon emissions resulting from EVs and TEP programs
- Reduced NOx emissions resulting from EVs and TEP programs
- Insights drawn from customer experience and program performance, including customer surveys and Customer Effort Score results
- A summary of ongoing EV pilots and programs from other Xcel Energy service territories

X. OTHER TOPICS

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

A. The purpose of this section of my testimony is to highlight three issues that are important but did not fit readily into previous sections of my testimony. These issues are organized and trade labor, a unique funding mechanism for our EV school bus program, and an introduction to our proposed performance incentive measures in this Plan.

A. Organized and Trade Labor

Q. HOW DOES THE COMPANY PLAN TO WORK WITH ORGANIZED AND TRADE LABOR WITH RESPECT TO THIS PROPOSED TEP?

A. For the proposed TEP, we plan to work with organized and trade labor similarly to how we are doing so in the EV supply infrastructure initiative settled in Proceeding 19A-0471E. More specifically, for the proposed infrastructure investments that the Company will own, we plan to use external contract labor. As we do so, we intend to work with IBEW Signatory electrical contractors. The Company also notes that, while this Plan does not directly support line extension work, to the extent the Plan's programs trigger additional line extension work that is on the Company side of the meter, the Company plans to install, own, and maintain the line extension consistent with Public Service's current practices and extension policy. These practices conform to the language in SB 19-077, codified at 40-5-107(3)(b):

> For all electric vehicle infrastructure or charging stations owned by the utility, the utility shall use utility employees or qualified contractors if the contractors' employees have access to an apprenticeship program…

Q. FOR REBATES ADMINISTERED UNDER THIS PLAN, HOW DOES THE COMPANY PLAN TO WORK WITH ORGANIZED AND TRADE LABOR?

A. SB19-077, codified at 40-5-107(3)(a) provides that, for EV supply infrastructure electrical work on the customer side of the meter, the work must be performed by a licensed master electrician, licensed journeyman electrician, licensed residential wireman, or properly supervised electrical apprentice.

For rebates administered under the TEP, which generally cover work on the customer's side of the meter, the Company will require attestation or proof of compliance with this section of law for the customer to receive the rebates. The Company has maintained and intends to continue to maintain lists of suggested electricians for customers seeking these installations and will ensure that these lists conform to the statutory requirements.

B. <u>Funding for EV School Bus Program</u>

Q. PLEASE DESCRIBE THE FUNDING SOURCE THE COMPANY PROPOSES TO USE TOWARD AN EV SCHOOL BUS PROGRAM?

A. Certainly. First, I would point out that the EV school bus program itself is described in Company witness Kevin Schwain's Direct Testimony and in the Plan document. I describe the funding for the program here in my testimony, as I was a member of the Environmental Policy team that managed the carbon offset pilot program.

The funding source is actually a combination of two funding sources. The first is historic REC sales. Stemming from a case originally filed in 2009, (Proceeding No. 09A-602E), the Company gained approval to sell RECs with certain margin sharing terms, including that ten percent of the margins would be

used to fund a carbon offsets pilot program. Subsequently, the Company did make REC sales and set aside the ten percent of margins for the carbon offsets program. As a result, about $9 million were ultimately earned and set aside for carbon offsets purchases. Some of these funds were used to purchase carbon offsets. In 2012, the Company, recognizing that carbon policy incorporating carbon offsets may not come to pass in the short term, and that it had completed the intended purpose of the carbon offsets pilot, stopped buying offsets and returned about $7 million in offsets funds to customers. Some of the proceeds from REC sales were retained in a regulatory liability account. This remainder is today about $1.4 million.

The second funding source are net proceeds from carbon offsets that were later sold at a higher price than they were originally purchased. This total is about $0.8 million. The carbon offsets pilot program, purchase and sale of the offsets are described further below. Between the remaining REC sales proceeds and the carbon offsets proceeds, approximately $2.2 million is available, is currently in a regulatory liability account, and the Company now proposes to use these funds for the EV school bus program.

Q. WHAT WAS THE COMPANY'S CARBON OFFSET PILOT PROGRAM? WHEN WAS IT CREATED?

A. In 2010, with Commission approval and stakeholder support, the Company established a carbon offset pilot program. There were several objectives of the program including learning about the carbon offset market, understanding carbon offset project types and project development, and obtaining cost competitive GHG reductions that were likely to reduce compliance costs for utility customers under

future carbon reduction mandates. Through the program the company learned how to use carbon offsets in future compliance programs if it became necessary.

Q. DID THE COMPANY BUY CARBON OFFSETS FOR THE PROGRAM? HOW WERE THE OFFSETS PAID FOR?

A. Yes, the Company held a competitive solicitation for carbon offsets and purchased a limited number of offsets from five projects for about $5/tonne. The selected high-quality offsets were bought with revenue from the sale of excess RECs that was occurring at the same time.

Q. WHAT TYPES OF OFFSETS DID THE COMPANY BUY? HOW MANY CARBON OFFSET TONNES DID THE COMPANY BUY?

A. The Company selected high quality verified offsets from several projects including California based forestry, Idaho sourced dairy methane, Colorado coal mine methane and a landfill project. The Company procured over 260,000 metric tonnes.

Q. WHAT DID THE COMPANY DO WITH THE CARBON OFFSETS?

A. The Company did not need the offsets for compliance as neither the federal government nor Colorado enacted a carbon dioxide or GHG trading program, but the offsets were still valuable in state and regional programs outside of Colorado. In 2016-17 the Company reverified about 150,000 tonnes to ensure the quality of the offsets, went through a formal process under California cap and trade regulations to convert these early action offsets to compliance offsets, and sold them to a California compliance buyer for $10.75/tonne.

Q. WHAT DID THE COMPANY DO WITH THE PROCEEDS FROM THE OFFSETS SALE?

A. The Company has held the proceeds and has been evaluating projects looking for the right project to support with the profits from the sale of the offsets. The Company wanted to use the money to support a project that furthered the environmental value chain of these funds which originated as REC proceeds, then carbon offset proceeds. The Company also wanted the project to have a direct customer environmental benefit.

C. Performance Incentive Measures

Q. WHAT DOES THE COMPANY PROPOSE WITH RESPECT TO PERFORMANCE INCENTIVES IN THIS TEP?

A. In light of Colorado lawmakers' interest in studying performance-based incentives and the Commission's associated investigation, the Company proposes two PIMs for this TEP. We believe that this first TEP can serve as a useful model to test out new performance incentives in the context of EVs given the many public benefit goals that EVs have the potential to help the state achieve.

While lawmakers and the Commission have enumerated a number of public benefit goals that performance mechanisms could focus on, we propose focusing on two of them: customer service and cost efficiency. Company witness Kevin Schwain discusses the proposed metrics and design of the two PIMs in more detail.

Q. WHY COULD PERFORMANCE INCENTIVES BE IN THE PUBLIC INTEREST?

A. While the details are always paramount in helping the Commission determine if a proposal is in the public interest or not, modest PIMs at this early stage in the triennial TEP process have the potential to align a utility's financial incentives with achieving outcomes that are important to lawmakers and regulators. By offering a financial reward to encourage strong performance or even exceeding expectations on metrics tied to one or more public benefit goals, well-designed PIMs can promote both a company's and society's interests. Additionally, PIMs can be part of the broader approach to the research, experimentation, and innovation that is central to this TEP – innovating not only on new EV technologies and applications but also on regulatory frameworks.

It is important to note that if the Commission were to authorize the use of any PIMs for the TEP, it would not be the Commission's first foray into performance incentives. The Commission has approved PIMs in the context of the Company's DSM plans, the availability of its power plans, quality of service plans, and electric trading margins, to name a few. The Company's proposed TEP offers yet another opportunity for the use of performance incentives.

Q. WHAT POTENTIAL REWARDS COULD RESULT FROM THE PIMS IN RESPONSE TO STRONG COMPANY PERFORMANCE ON THE SELECTED METRICS?

A. The PIMs we propose seek to balance several considerations, one of which is to be effective yet limited in scope in this first iteration of the TEP. As a result, the Company should have an incentive to achieve strong outcomes aligned with public goals but not at an unreasonable level. The rewards we propose range from $0 to

$1.5 million for the cost efficiency PIM and $0 to $1.5 million for the customer experience PIM.

XI. CONCLUSION

Q. AS YOU STATE IN PREVIOUS TESTIMONY, THE STATUTE REQUIRES THAT YOU FILE A TEP EVERY THREE YEARS. CAN YOU PLEASE SUMMARIZE HOW THE COMPANY WILL ADHERE TO THIS REQUIREMENT, WHILE MAINTAINING FLEXIBILITY AND TRANSPARENCY WITH THE COMMISSION ON ITS ACTIONS?

A. Yes. First, the Company certainly plans to adhere to the three-year requirement, and looks forward to developing future TEPs as we, the Commission, the stakeholders, and our customers learn from increasing engagement with EVs. Also, within this TEP, we have proposed flexibility mechanisms to help us adapt to this growing market through 2023. How we implement this TEP with the proposed flexibility mechanisms will be influenced by our outreach, evaluation and reporting activities that we have proposed. And we anticipate that our regular ongoing engagement with stakeholders will help us to refine future TEP proposals as well.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

Statement of Qualifications

Jack W. Ihle

Jack Ihle is Director of Regulatory & Strategy Analysis for Xcel Energy – Colorado. He leads a team responsible for regulatory aspects of resource planning, renewable energy planning, electric vehicles and other policy issues. He has testified before the Colorado Public Utilities Commission, the Colorado Legislature, the Minnesota Legislature and the New Mexico Environmental Improvement Board.

Mr. Ihle previously worked in environmental policy for ten years, most recently serving as Director of Environmental Policy while leading Xcel Energy's climate policy, environmental policy and environmental communications efforts across the eight states in which the Company operates. Mr. Ihle has also served in energy consulting roles with IHS and Platts, focusing on renewable energy, climate policy and forecasting engagements.

Mr. Ihle has a Master of Science degree in Energy & Resources from the University of California at Berkeley, and a Bachelor of Arts degree in Political Science from Bowling Green State University. He serves on the boards of directors for the Regional Air Quality Council, and Volunteers for Outdoor Colorado, and has previously served on the boards of XPAC, the Solar Technology Acceleration Center and WEST Associates.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * *

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2021-2023 TRANSPORTATION ELECTRIFICATION PLAN	)))))	PROCEEDING NO. 20A-XXXXE

AFFIDAVIT OF JACK W. IHLE
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

I, Jack W. Ihle, being duly sworn, state that the Direct Testimony and attachments were prepared by me or under my supervision, control, and direction; that the 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.

Signed in Denver, Colorado, this 15 day of May 2020.

Jack W. Ihle
Director, Regulatory and Strategic Analysis

Subscribed and sworn to before me this 15th day of May, 2020.

SCHUNA D WRIGHT
Notary Public
State of Colorado
Notary ID # 19974007693
My Commission Expires 05-06-2021

Schuna D. Wright
Notary Public

My Commission expires May 6, 2021