2021-2023 TRANSPORTATION ELECTRIFICATION PLAN

SEMI-ANNUAL REPORT

PROCEEDING NO. 20A-0204E

APRIL 2022

SECTION 1. INTRODUCTION AND BACKGROUND

I. INTRODUCTION

Public Service Company of Colorado ("Public Service" or the "Company") is pleased to provide its April 2022 Transportation Electrification Plan ("TEP") Semi-Annual Report as required through Decision No. C21-0017 in Proceeding No. 20A-0204E. With the State's goal of 940,000 electric vehicles ("EV") on the road by 2030, the Company's TEP is essential to achieving this goal. This is even more critical given the impacts of the COVID-19 pandemic, which have impacted the entire EV ecosystem. Despite the pandemic headwinds, nearly all TEP programs are now in-market and the Company's 2021-2023 TEP is serving customer demand for electric transportation, supporting emissions reductions, and keeping electric bills low while benefiting the electric grid.[1] Through this and future semi-annual reports, we are excited to demonstrate how the TEP empowers and assists customers in their EV journey, including by helping them adopt EVs and optimize charging to save money and reduce carbon emissions. The Company continues to be encouraged with how the TEP generates strong stakeholder engagement, enhances opportunities to partner with our customers and communities, and is dedicated to increasing access to electric transportation for income-qualified ("IQ") customers and higher emissions communities ("HEC").

II. OVERVIEW AND TIMELINE

Since the Commission's final approval of the Company's 2021-2023 TEP in March 2021, the Company has implemented nearly all contemplated programs across the TEP's six portfolios. In practice, this signifies the successful launch of the approved TEP programs that do not require additional Commission action. Some of the diverse sets of offerings now in place include programs supporting customers charging at home and at the workplace; helping businesses to test out fleet electrification scenarios; and supporting IQ customers to offset the cost of obtaining a personal EV. In addition to launching the programs, in the time since the Commission's approval of the TEP, the Company has initiated six projects in the Partnership, Research, and Innovation ("PRI") portfolio through the Commission-approved 60-Day Notice process, five of which have been completed and are preparing to launch, a sixth for which final review is pending, and a seventh which the Company anticipates issuing the 60-Day Notice formally to stakeholders later this month. The only remaining offering under development is the Company-owned Direct Current Fast Charging ("DCFC") Stations Program. Details are still in progress for the

[1] Note that the Company is in the process of launching several projects and demonstrations through the TEP's Partnerships, Research, and Innovation portfolio, which were largely developed and discussed with stakeholders over the course of 2021.

DCFC Stations Program regarding rates, siting, charging equipment vendors, and site hosts align with the process directed by the Commission in the TEP proceeding.[2]

The rate at which the Company launched this comprehensive portfolio of programs was unprecedented. Immediately upon approval of the TEP in March of 2021, with the issuance of the Commission's Decision[3] Addressing Applications for Rehearing, Reargument and Reconsideration (ARRR), the Company moved forward with the steps needed to conduct vendor and equipment selection, establish needed business processes, and contract and plan for customer outreach to launch all Residential, Commercial, and Advisory programs, and to begin PRI project planning. This task was roughly equivalent to setting up our portfolio of DSM programs, which took place over many years. The Company launched its Residential, Multifamily Housing ("MFH"), and Commercial programs within approximately five months of Commission approval. Since launch, the Company has had various notable successes, including many positive experiences with customers. As just one example, after attending a ride and drive event on the Western Slope hosted by the Company and other partners, a Public Service customer went through the income qualification process, purchased an EV with support from the Company's EV Purchase/Lease Rebate, and installed a Level 2 charger at their home with the help of the Company's Charger and Wiring Rebate.

In parallel with the launch of this robust and comprehensive set of offerings, the Company quickly expanded its internal resources to support the administration, implementation, and further refinement of our programs, while also keeping pace with market, customer and policy developments that evolve constantly in the EV ecosystem. The Clean Transportation and Strategic Partnerships team within Xcel Energy has grown to include new staff to oversee and run our programs across the Commercial, Residential, and Advisory portfolios, as well as provide the additional regulatory support to ensure thoughtful program design and regulatory compliance. The team brings together a diverse group of individuals and experiences with expertise in marketing, program management, finance, policy and regulation, renewable energy programs, residential and commercial markets, business systems, and many others. A dedicated set of specialists work closely with customers on a regular basis to support their electrification needs, efforts which are projected to bring environmental and economic benefits to all Coloradans. In tandem, we have built out a highly effective and results-driven internal organization structure, enabling us to efficiently run our programs and work cross-functionally across dozens of departments within the Public Service and Xcel Energy

[2] At the time of filing this report, there are two open proceedings before the Commission to finalize a few details for the Xcel Energy DCFC Program, including the distance between Company-owned stations and existing DCFC stations and the prices to be charged to EV drivers using those stations (see Proceeding Nos. 22D-0069E and 21AL-0494E).

[3] Decision No. C21-0117 in Proceeding No. 20A-0204E

service company structure to effectively deliver these new programs for our customers while managing system impacts.

In addition to these notable developments, the Company is excited to report that its EV market forecasting, for the mid-case adoption scenario, has thus far demonstrated to be on track with the trajectory of the market. This analytical capability will continue to be critical to plan for future programs and investments that anticipate and meet future EV market needs in Colorado.

Alongside these successes, however, the Company is currently seeing a gap between actual program enrollment and initial enrollment forecasts. At a high level, we believe this is due to a few factors, including the uncertainties inherent in launching new programs directed at nascent and fast evolving markets for a relatively new transportation technology as well as timing considerations.

The Company's TEP programs represent a significant and new role for the Company in supporting the adoption of EVs and associated charging infrastructure throughout residential, multifamily housing, fleet, workplace, and public contexts – particularly when considering the TEP's focus on equity and broadening access to the benefits of EVs. There is uncertainty in any set of forecasts, and the Company is witnessing in real time just how valuable it is to have program and budget flexibility in order to respond to higher and lower customer demand for particular solutions as the EV market continues to rapidly evolve with new models, new charging solutions, and many macroeconomic forces at play.

Regarding timing, the TEP's budgets and enrollment assumptions as originally filed presumed that the TEP would be in full effect, including with programs up and running, by January 1, 2021. As noted earlier, the Commission's decision on the TEP was not final until March of 2021. As described in this report, the Company then moved expeditiously to implement the Commission's decisions, spending the first several months of the TEP period on staffing and pre-launch activities. These pre-launch activities included releasing requests for proposals ("RFPs") for charging equipment and network services along with evaluation and reporting activities, finding partners to help implement the TEPs IQ and HEC-focused equity programs, building back-end systems for online customer enrollment, and building many other internal processes to support EV adoption. The impact that this timing would have on when program enrollment would begin to take hold was not fully anticipated, and as such, was not reflected in the original TEP program enrollment forecasts. The Company also notes that the unprecedented impact of the COVID-19 pandemic and the resulting economic downturn on vehicle and charger availability, transportation patterns, as well as customers' needs and vehicle purchasing

decisions was not anticipated at the time the TEP was originally filed. For all these reasons, we estimate at this time, an approximately 9-12 month lag as compared to our initial program enrollment expectations. The Company plans to work diligently to increase customer engagement and enrollment and remains committed to the spirit of the ambitious enrollment targets in its original TEP filing. However, it is possible that those enrollment targets may ultimately prove to be challenging within the time frame remaining for this TEP, partially due to factors outside of the Company's control such as global supply chain shortages. In the forthcoming section, the Company describes in further detail some concrete challenges it is currently encountering in the initial phase of program implementation.

While the pace of EV adoption has largely kept pace with the Company's initial forecasts, the prices and availability of new and used EVs, along with the pricing and availability of new and used traditional internal combustion engine vehicles, has presented a challenge for many consumers. Demand for vehicles, particularly EVs, have confronted shortages of semiconductors as well as raw materials used in those and materials used to make batteries, such as nickel. Furthermore, the ongoing war in Ukraine is adding pressure to some of the existing supply chain and raw material cost pressures for the industry. Currently, these circumstances have pushed EV prices to all-time highs.[4] Industry forecasts show an expectation of price stability within the coming year, but potentially at higher levels compared to prior to the pandemic.[5] As a result of these headwinds, the Company's support for all types of customers in helping them reduce the upfront costs of adopting EVs and associated infrastructure via the TEP's programs is all the more important.

We are working to maximize the success of the TEP over its remaining approved time frame, which will conclude at the end of 2023. Throughout this window, the Company will continue to pursue the highest degree of program utilization possible over the remainder of 2022 and 2023 which comprises most of the time programs will be in market, given that the majority of programs launched in August and September of 2021. The Company is optimistic about future increases in enrollment given recent upticks in program utilization, especially for the Residential and Multifamily Housing (MFH) programs, and based on the number of Commercial program projects in various stages of development, but also acknowledges that there are various market factors outside of its control impacting our customers (e.g., microchip shortages and the resulting auto and charger manufacturing delays). Additionally, Public Service is taking concrete steps to drive increased utilization and an enhanced customer experience, including by identifying challenges we are facing in specific programs and developing solutions to those

[4] E&E News, EV buyers face long waits, price hikes above sticker cost. March 4, 2022.
[5] Business Insider, Used cars may finally get cheaper this year — but don't expect pre-pandemic prices. January 21, 2022.

challenges. The following sections summarize program uptake, barriers to participation, and solutions the Company is considering.

III. PROGRAM PARTICIPATION OVERVIEW AND PLANS TO INCREASE ENGAGEMENT

The Company's first TEP Semi-Annual Report was filed on October 1, 2021. The October 2021 report provided initial results for residential programs that published terms and conditions on August 5, 2021 and launched a week later on August 12, 2021. With the reporting cutoff date of September 1, 2021, the Company did not have results for its MFH and Commercial Portfolio programs as those programs were not launched until September 9, 2021. The table below summarizes programs with participation over the past six months. What is most notable is program uptake by residential customers, MFH Electric Vehicle Supply Infrastructure ("EVSI"), and Commercial EVSI. Importantly, participation increased from 24 to over 1,700 program participants in six months. It is clear that TEP program uptake is growing with this new market in Colorado for EVs.

Program	**September 1, 2021 Participation**	**March 1, 2022 Participation**
EV Charger and Wiring Rebate Program	9	**453** (Rebates Issued)
Home Charging Service (EVAAH)*	11	**417** (Installations)
Multifamily Housing – Assigned Parking EVSI	0	**239** (Ports Awarded)**
Public EVSI	0	**167** (Ports Awarded)
Workplace EVSI	0	**146** (Ports Awarded)
Fleet EVSI	0	**120** (Ports Awarded)
Multifamily Housing – Shared Parking EVSI	0	**114** (Ports Awarded)
EV Purchase/Lease Rebates	0	**39** (Rebates Issued)
Primary General EV Pilot	0	**34** (Ports Awarded)
Fleet Electrification Advisory Program	4	**5** (Completed Assessments)
Community Charging Hubs	0	**4** (Ports Awarded)

*Known as EV Accelerate at Home ("EVAAH")

**Ports Awarded is the current reporting metric until the Company completes installations.

While these successes are heartening, the Company also acknowledges a current gap between actual program activity and that which it originally forecast in the TEP at the time it was filed. Specifically, there are programs that have not yet achieved any participation,

some of which is due to typical customer completion of precedent program participation that is still in process (described below). The programs without any current participants include:

- Multifamily Housing Income Qualified Rebate*
- Fleet & Workplace Income Qualified Rebate*
- Community Charging Hubs Income Qualified Rebate*
- Multifamily Housing New Construction Rebate
- Small Business Rebate Program[6]

For three of the programs with no participation to date (indicated with an asterisk above), the customer's completion of another TEP program supporting EVSI will typically come before the issuance of rebates. Because the Company has not yet *completed* the EVSI phase for any participants, given the duration required for infrastructure work, this has resulted in the current low levels of participation in a few rebate programs. The Company anticipates greater uptake in MFH and Commercial rebates as EVSI phases are completed. The Company notes that a few programs, shown later in this report, have achieved participation well above target.

The Company wishes to provide additional information and context regarding the current program participation numbers previewed above and subsequently reported in the remainder of this report.

- *Multifamily Housing New Construction Rebate*
    - This offering requires developers to work with the Company earlier in the design process and as such, there is long lead time before they would apply. We are still in early-stage outreach with developers through organizations like homebuilders associations.
- *Multifamily Housing Income-Qualified Rebate*
    - Current income-qualified rebate amounts cover only about 25 percent of ultimate charger costs, which customers are indicating is too low of an incentive for MFH building owners/managers to install chargers. To be desirable, customers are indicating a much higher percentage would be required.
- *Fleet & Workplace— Income-Qualified Rebate*
    - Several of the program requirements have served to limit program participation. Below are some highlights:

[6] The Company notes that the Small Business Program was added to the TEP discussion at the time of settlement discussions with Parties in the TEP Proceeding, and as such the Company had not conducted as much market research regarding the need for such a program as it had for other TEP programs.

        - One issue the Company has identified is that fleets, workplaces, and public charging (private companies) do not qualify for HEC rebates even if they are in an HEC.
        - For the fleet/workplace rebates, being in an HEC was not a sufficient condition to qualify for the program.
        - Rather, commercial fleet/workplace customers must demonstrate that they would qualify for a non-profit energy efficiency program or are a public organization seeking to provide accessible and affordable services for IQ customers or communities to be eligible for the Company's IQ programs.
- *Community Charging Hubs - Income-Qualified Rebate*
    - As stated above, the Company has not yet completed a Community Charging Hub EVSI project; therefore, no projects are eligible for rebates at this time. However, we are working with our communities and also looking to partner internally with our Partners in Energy program regarding hub rebate opportunities.
- *Small Business Program*
    - This program was proposed through the 60-Day Notice process to support small commercial customers who wish to install a small number of chargers. The program's 50kW maximum threshold for small commercial customers to be eligible for the program has resulted in an exceptionally small number of interested participants. Further, many potential customers who only need one or two ports have expressed interest in support from the Company's programs, but the majority have exceeded the 50 kW demand threshold and are therefore not eligible for this program.

Globally, the Company's Advisory program portfolio is a primary method of increasing future program participation across the various TEP programs by increasing education and awareness of the benefits of transportation electrification as well as of the Company's available programs. Advisory services are an essential early step to prepare customers to participate in the Company's other TEP programs. A foundation of information on which to consider transportation electrification options and evaluate the benefits of the Company's TEP programs is necessary to obtain customer participation in these programs. The Company is also committed to the success of the equity programs but understands that certain communities can benefit from more tailored outreach and messaging, which is why we have a specific emphasis on such communities in our Advisory services programs and accompanying education and outreach efforts.

The Company is continuing to examine program uptake, customer experience, and has contracted with a third-party consultant to develop evaluation plans for each of the TEP portfolios. The plans will be designed to help the Company's portfolio managers refine

implementation and address the dynamic needs of the market over the course of the TEP. Each of the evaluation plans will include research that provides insight into how current programs can be adapted to increase participation and what new strategies and approaches are needed to help reach the state's 940,000 EV target, as well as the Company's 2030 goal to power 1.5 million EV within its eight-state service area.

While the Company will work to increase participation in all of its TEP programs, Public Service also plans to use the budget flexibility provided in the approved TEP to support greater participation in those programs that receive the most customer interest and have the greatest potential to maximize the benefits of the TEP. In approving the Company's TEP, the Commission approved budgets for each of the TEP program portfolios while also providing the Company with the ability to reallocate the approved TEP budget between portfolios to be responsive to customer demand. The Company greatly appreciates this budget flexibility. It will be a key component of the Company's approach to successfully implementing its TEP programs throughout the remainder of the TEP period.

Finally, the Company notes that it will continue to evaluate customer participation and program budget forecasts over time and will make appropriate adjustments to the Transportation Electrification Programs Adjustment ("TEPA") rider to reduce the potential for overcollection of TEPA revenues if and when the Company believes such adjustments are warranted.

IV. BACKGROUND AND REPORTING REQUIREMENTS

In May 2019, the Colorado General Assembly enacted Senate Bill 19-077 ("SB19-077"). SB19-077 represents a culmination of years of growing policy support in Colorado for a more coordinated effort to promote widespread transportation electrification. SB19-077 required each Colorado electric public utility to file with the Commission "an application for a program for regulated activities to support widespread transportation electrification" within its service territory for Colorado Public Utilities Commission ("Commission") approval by May 15, 2020. *See* C.R.S. § 40-5-107(1)(a).

Under SB19-077, in addition to the criteria listed below, a TEP must "seek to minimize overall costs and maximize overall benefits," and may include:

> (I) Investments or incentives to facilitate the deployment of customer-owned or utility-owned charging infrastructure, including charging facilities, make-ready infrastructure, and associated electrical equipment that support transportation electrification;

(II) Investments or incentives to facilitate the electrification of public transit and other vehicle fleets;

(III) Rate designs, or programs that encourage vehicle charging that supports the operation of the electric grid; and

(IV) Customer education, outreach, and incentive programs that increase awareness of the programs and of the benefits of transportation electrification and encourage greater adoption of electric vehicles.[7]

SB19-077 provides several considerations for the Commission to evaluate in determining whether to approve a utility's TEP and associated cost recovery requests. *See* C.R.S. § 40-5-107. Specifically, the Commission shall consider whether the investments and other 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. 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;
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 [e]ffect on low-income customers.[8]

[7] C.R.S. § 40-5-107(1)(b).

[8] C.R.S. § 40-5-107(2).

As required by SB19-077, on May 15, 2020, the Company filed an application for Commission approval of its 2021-2023 TEP. The Company's approved TEP includes a broad array of new programs to support EV adoption through six portfolios: (1) Residential, (2) Multifamily Housing, (3) Commercial, (4) Partnerships, Research, and Innovation, (5) EV Purchase/ Lease Rebates ("EV Rebate") for Income-Qualified[9] customers, and (6) Advisory Services. The Company's 2021-2023 TEP is intended to support the State's goal of getting 940,000 EVs on the road by 2030 and to help position Colorado as a national leader in vehicle electrification. The TEP is also informed by considerations of equity, accessibility, and fairness.

Designed to benefit all drivers, all customers, and the state by helping reduce greenhouse gas emissions and air pollution while keeping electric bills low, the TEP benefits the electric grid with a focus on expanding access to electricity as a transportation fuel. The TEP seeks to achieve these outcomes by fostering greater awareness of the opportunities and benefits of electric transportation; reducing barriers to adopting electric transportation; increasing access to the benefits of electric transportation; and encouraging EV charging in ways that reduce system costs and better enable the Company to further its vision for a 100 percent carbon-free electric grid.

The Company's 2021-2023 TEP received input from a wide array of intervening parties.[10] On January 11, 2021, the Commission issued Decision No. C21-0017 approving with modifications the Company's application for its 2021-2023 TEP. On March 2, 2021, the Commission issued Decision No. C21-0117 resolving a number of issues brought forward for Rehearing, Reargument, or Reconsideration. Through Decision No. C21-0017, the Company is required to file TEP reports on a semi-annual basis. The Company files its April 2022 semi-annual report in compliance with Decision No. C21-0017 in Proceeding No. 20A-0204E.

[9] Based upon feedback received from stakeholders the Company agreed to change references of "low-income" to "income qualified".

[10] Intervening parties to the Company's 2021-2023 TEP (Proceeding No. 20A-0204E) were: Staff of the Colorado Public Utilities Commission ("Staff"); the Colorado Office of Consumer Counsel ("OCC") which became the Utility Consumer Advocate on September 1, 2021; the Colorado Energy Office ("CEO"); the Regional Transportation District ("RTD"); ChargePoint, Inc. ("ChargePoint"); Tesla, Inc. ("Tesla"); Electrify America, LLC ("Electrify America"); EVgo Services, LLC ("EVgo"); the Joint EV Charging Providers-consisting of Enel X North America, Inc. , EVBox North America, Inc. , and Zeco Systems, Inc. d/b/a Greenlots; the City of Boulder; the City and County of Denver; Colorado Energy Consumers ("CEC"); the Environmental Organizations-consisting of Natural Resources Defense Council , Sierra Club, and Western Resource Advocates ("WRA"); the Southwest Energy Efficiency Project ("SWEEP"); the Environmental Justice Coalition - consisting of the Colorado Latino Forum, GreenLatinos, GRID Alternatives, and Vote Solar; Energy Outreach Colorado ("EOC"); and Walmart, Inc. ("Walmart"). Black Hills Colorado Electric, LLC, d/b/a Black Hills Energy ("Black Hills') participated as amicus curiae.

Reporting Requirements

It is important to note that the Company intends to meet all reporting requirements set forth in the TEP proceeding but in this report, some data is not available due to the short time programs have been in market. Below are reporting requirements that are still in progress due to limited data and availability that the Company will include in future reports.

- *Aggregated and anonymized data via third parties for information from MFH site hosts and Commercial program participants detailing site-specific data (start and stop times of charging, peak kilowatt ("kW") per charging session, number of charging sessions daily, amount of time each vehicle charges per session daily, whether station owner provides charging for free or if there are usage fees, operating costs, any technologies being used to manage demand)*
    - This data will be included in later reports once the Company's third-party consultant has initiated this process with charging providers.
- *Number of small MFH sites, where a four-port minimum may not be cost-effective to support, express interest in participating in MFH programs*
    - The Company has not experienced examples of this but will report if/when this occurs.
- *Average cost of a line extension for MFH and Commercial portfolios*
    - The Company does not have final costs of line extensions at this time but is tracking this and will report when available.
- *Average cost of a line extension for a utility-owned DCFC station*
    - The Company has not installed utility-owned DCFC stations yet but will report when available.
- *Average costs for charging installations, including EVSI and charging equipment*
    - For MFH and Commercial programs, the Company has not yet completed an installation of EVSI but is tracking this and will report when available.

Throughout the report, the Company has provided all available reported data as of March 1, 2022. For semi-annual reports going forward, the Company plans to provide data collected up to the beginning of the month prior to filing the next semi-annual report (e.g., September 1 for the October 1 filing and March 1 for the April 1 filing). Aggregated customer data will be provided in accordance with the Commission's 15/15 rule, Rule 3033(b), which governs when aggregated customer data can be made public.

SECTION 2. EV MARKET INSIGHTS

The Company is not only tracking circumstances within its service territories, we are also analyzing national and global EV factors that are impacting the market.

I. VEHICLE MARKET

According to BloombergNEF's Electric Vehicle Outlook 2021 Report[11], EV sales in the United States continue to grow, with 483,000 in new sales in 2021 despite the effects of the pandemic. However, EV adoption in the United States, continues to lag behind Europe and China. While domestically EV sales are increasing, significant increases in sales are expected over the next few years, with Bloomberg forecasting domestic EV market share to increase from 3.5 percent in 2021 to 9 percent by 2024. By 2024, Bloomberg forecasts 1.42 million in new EV sales in the United States.

A. Colorado Market

The table below shows the actual number of vehicles that are registered within the Company's Colorado service territory as of January 2022 and EV market share.

Xcel Energy Service Territory[12]	EV	Internal Combustion Engines (and Other)	Total	EVs as a Share of all Vehicles
Colorado	41,965	3,858,988	3,900,953	1.1%

Passenger Vehicles

Tesla continues to dominate the US EV market with 69 percent of EV market share. This is a direct result of Tesla Model 3 and Model Y serving as the two best-selling EV models in the US.[13] General Motors, Ford, and Rivian are focusing heavily on the pickup trucks and sport utility vehicle ("SUV") segments, which tend to be the most popular in the United States and should also see adoption continue along an s-curve pathway. Behind Tesla, in the top three automakers in terms of market share in Colorado, are Nissan and Chevrolet.

[11] EVO Report 2021 | BloombergNEF | Bloomberg Finance LP (bnef.com)
[12] EPRI, I.H.S Data (Includes BEV and PHEV, excludes vehicles registered with the U.S. DOT)
[13] US: BEV Sales Almost Doubled In January-October 2021 (insideevs.com)

Commercial and Buses

Commercial adoption is growing with both private and public organizations having aggressive sustainability goals but remains slow as fleet operators are more sensitive to total cost of ownership ("TCO") than individual vehicle owners and tend to focus on sizable upfront capital requirements to make the switch. Rising oil and natural gas prices help to support fleet electrification. Electrifying medium and heavy-duty vehicles, that have higher emissions, is an increased focus area for a broad mix of industries. For heavy-duty applications, there is less certainty about which technology solutions will prevail (battery electric, hydrogen fuel cell, electric battery/tractor swap, etc.).

II. VEHICLE AVAILABILITY AND PRICES

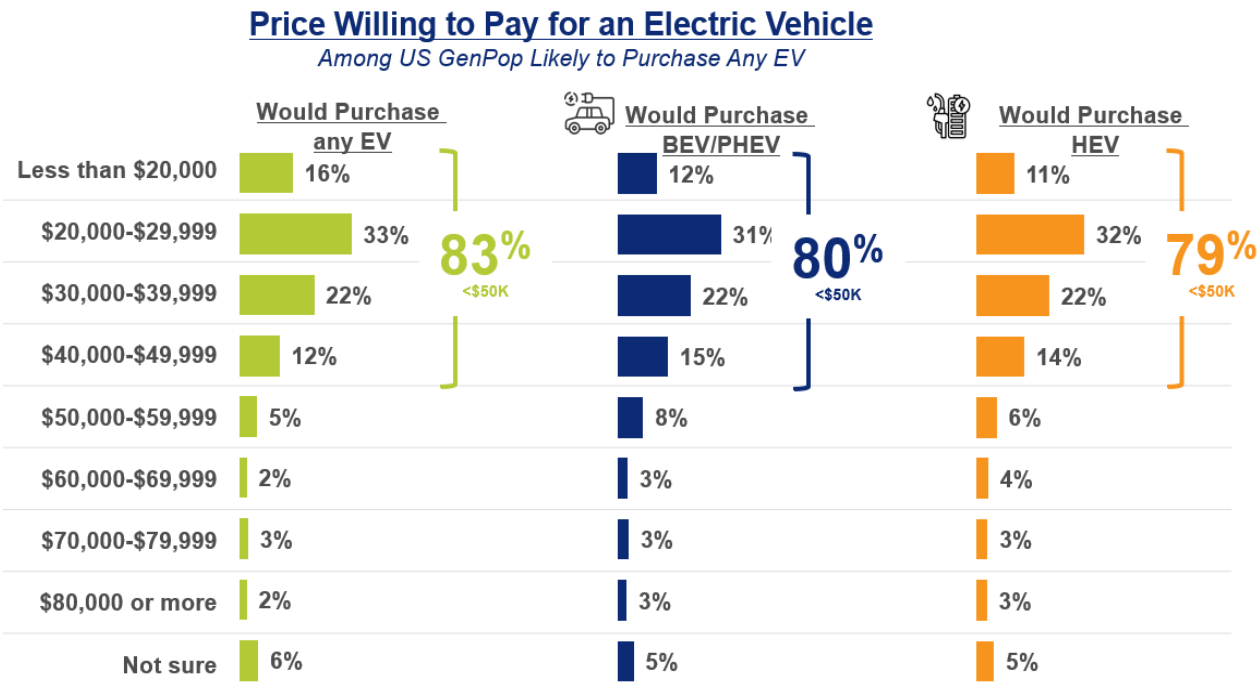
As of the second quarter of 2022, there are a total of 97 EV models available in the United States market: (Battery EV = 57, Plug-in Hybrid EV = 38, and Fuel Cell = 2).[14] By the second quarter of 2024 that number is expected to be nearly 124. For 2022, Drive Clean Colorado notes there are approximately 53 new EV models readily available in the state for consumer purchase or pre-order from various manufacturers and dealerships. While more than fifty models are technically available in the United States, the majority of sales are predominantly from a handful of widely available models.

Overall, vehicle availability and purchase prices are being impacted by the global automotive sector's microchip shortage and supply chain issues that we explain further in the section below.

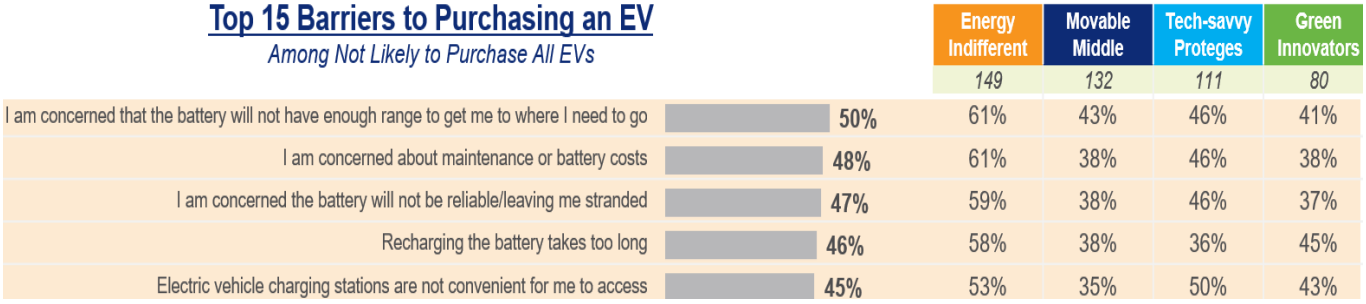
Future Purchase Price of Electric Vehicles

According to the Smart Energy Consumer Collaborative's ("SECC") "Achieving Equity in Energy with Electric Vehicles" report, when looking at future purchases, the price consumers are willing to pay for an EV as their next vehicle is consistent between different types of EVs. The figures below show about 80 percent of consumers want to spend less than $50,000 on the purchase price. However, about 60 percent of current EV owners spent less than $50,000.[15]

[14] EVO Report 2021 | BloombergNEF | Bloomberg Finance LP (bnef.com)
[15] SECC, Achieving Equity in Energy with Electric Vehicles. January 10, 2022



When looking at EV ownership battery cost concerns and access to charging stations are also top barriers to ownership after purchase price.[16]



[16] SECC, Achieving Equity in Energy with Electric Vehicles. January 10, 2022

SECTION 3. INCOME QUALIFIED AND HIGHER EMISSIONS COMMUNITIES

In approving the Company's TEP, the Commission authorized the Company to offer a wide range of EV programs designed to increase access to EVs for IQ communities and populations. This objective is highlighted in SB19-077. The Company will dedicate at least 15 percent of the total 2021-2023 TEP budget, 15 percent of the Advisory Services portfolio budget, and 30 percent of the PRI portfolio budget to support IQ customers, communities, and HECs. The Company's Residential, MFH, and Commercial portfolios offer enhanced rebates to customers and communities that meet certain criteria that identify them as an underserved population. The table below shows current levels of IQ and HEC participants across TEP programs. The Company notes that of the 39 EV rebates so far, survey data shared in Attachment B of this report shows participation across eighteen different municipalities. As discussed in the introduction, there are uncertainties inherent in any initial forecast, and this is particularly true when attempting to assess potential demand for new EV programs among income-qualified, public, and/or HEC-qualifying projects and programs. The Company is working diligently to expand its outreach to customers that could qualify for enhanced support though the TEP's equity-focused programs.

Portfolio	Expected IQ and HEC Program Participants (as of 12/31/2022)	Actual IQ and HEC Participants (as of 3/1/2022)	Percent of Goal
EV Charger and Wiring Income-Qualified Rebate	150	13	9%
MFH	48	0	0%
Commercial	186	0	0%
EV Purchase/Lease Rebates	650	39	6%

Through the TEP proceeding, the Company and stakeholders proposed, and the Commission approved, the use of a broad range of eligibility criteria in order to be as inclusive as possible with these EV programs, and several of these programs offer enhanced support to HECs. The following table highlights these rebate programs with eligibility criteria.

Program	Rebate	Criteria for Participation
EV Charger and Wiring Income-Qualified Rebate	EV Charger and Wiring: $1,300	1. Enrolled in SNAP or TANF 2. Enrolled in LEAP, CO WAP, DSM IQ participation, CARE 3. Income below 60 percent of state median or below 200 percent of federal poverty or below 80 percent of area median
EV Purchase & Lease Rebate	New EV: $5,500 Used EV: $3,000	1. Enrolled in SNAP or TANF 2. Enrolled in LEAP, CO WAP, DSM IQ participation, CARE 3. Income below 60 percent of state median or below 200 percent of federal poverty or below 80 percent of area median
MFH –Income Qualified Rebate	Up to $800 per port for assigned parking and up to $2,200 per port for shared parking	1. Participated in affordable housing weatherization, multifamily weatherization, affordable house rebate program in last five years or currently meet income qualification requirements for those programs, or 2. Located in an HEC
Commercial Fleet & Workplace – Income Qualified Rebate	Up to $2,200 for each L2 port – Up to $45,000 for each DCFC port	1. Demonstrate that organization is non-profit eligible to participate in Xcel Energy non-profit efficiency programs, or 2. Public organization that provides services to IQ customers or communities
Community Charging Hubs – Income-Qualified Rebate	Up to $2,200 for each L2 port (4 port minimum) and up to $31,200 for each DCFC port	1. Located in a census block where 50 percent or more of households have incomes at or below 80 percent of area median income, or 2. Located in an HEC
Small Commercial	Up to $2,500 for EVSI Costs per port and up to $2,000 for charger equipment costs per port (up to 3 ports)	1. Income qualification: For MFH customers, an IQ customer must have participated in affordable housing weatherization, multifamily weatherization, or affordable housing rebate program in the last five years, or currently meet income qualification requirements for those programs. For other commercial customers, an IQ customer must

		demonstrate that such customer is a non-profit eligible to participate in Xcel Energy non-profit efficiency programs or is a public organization that provides services to IQ customers or communities. 2. HEC qualification: The project must fall within one of the census blocks identified as HECs by the Company

While the rest of this report will address some of the holistic reasons participation lags estimates, there are some unique factors impacting the IQ and HEC programs, including chip shortages impacting the availability of new EVs and slowing the turnover of used EVs, the number of income qualified customers living at multifamily homes that cannot take advantage of the charger and home wiring rebate, and access to charging at multifamily homes. As noted, the company remains fully committed to increasing program participation and believes valuable learnings are being acquired that can translate into future program adjustments to streamline and increase IQ and HEC program participation.

SECTION 4. TEP PORTFOLIOS

The TEP is comprised of six portfolios: (1) Residential, (2) Multifamily Housing, (3) Commercial, (4) Partnerships, Research, Innovation, (5) Electric Vehicle Purchase/Lease Rebates, and (6) Advisory Services (comprised of program support and activities geared towards various customer classes).[17]

The EV Accelerate At Home (Home Charging Service) program, the EV Charger and Wiring Rebate Program, and Residential Advisory Services are addressed in Subsection I, "Residential Portfolio". MFH programs and Advisory Services are addressed in Subsection II ("Multifamily Housing Portfolio"), Commercial programs and Advisory Services in Subsection III ("Commercial Portfolio"), and PRI initiatives in subsection IV ("Partnerships, Research, and Innovation Portfolio"). The EV Vehicle Rebate Programs are addressed in Section V.

Unless noted otherwise, the information and data presented in the following Sections and in Attachment A are reported as of March 1, 2022 and include the dollar amount of actual dollars expended by the Company for work completed. Figures are rounded to the nearest dollar.

I. RESIDENTIAL PORTFOLIO

Program	Expected Program Participants (as of 12/31/2022)	Actual Participants (as of 3/1/2022)	Percent of Goal
Home Charging Service (EVAAH)	4,900	417	9%
Standard EV Charger and Wiring Rebate	7,900	440	6%
Income Qualified EV Charger and Wiring Rebate	150	13	9%

A. Customer Programs

"EV Accelerate At Home"- Home Charging Service

Through the EV Accelerate At Home program, residential electric customers are provided a Level 2 charger from the Company without paying any upfront costs for the charger, standard installation, and set-up of the charger. These customers pay a bundled service

[17] Advisory Services activities will be discussed throughout this report in the Residential, Multi-family Housing and Commercial portfolio sections, as applicable.

charge of $13.29 per month that appears on their monthly Xcel Energy bill. Electricians vetted by the Company and licensed by the State of Colorado arrive at the customer's home to hardwire and program the Level 2 charger. The electricians also inform the customer of their eligibility for the EV Charger and Wiring Rebate. The electricians can provide the EV Charger and Wiring Rebate "up front" by subtracting the rebate amount from their final invoiced amount to the customer for any qualifying EVSI work.

As of March 1, 2022, there were 417 active participants in the program and 252 applicants in the queue waiting for a Level 2 charger to be installed. Average charging installation costs (excluding EVSI) have been $253 and average EVSI costs have been $1,086.

Customer Experience

Overall, survey participants were 92 percent satisfied with the program enrollment experience and 91 percent would recommend the program to a friend (N = 23).

EV Charger and Wiring Rebate Program

Through the EV charger and wiring Rebate program, residential electric customers can receive a rebate of up to $500 (IQ customers can receive an enhanced rebate of $1,300) to offset the cost of purchasing an eligible Level 2 charger for their home and the cost of upgrading their wiring to accommodate the Level 2 charger. The wiring rebate is available to both EV Accelerate At Home customers who rent a charger from the Company, and as a standalone offering for customers who chose to purchase their own qualifying charger. In order to be eligible for the wiring rebate, customers must participate in a managed charging program (Optimize Your Charge or Charging Perks) for a minimum of one year. The Company's contracted electricians can provide the rebate at the time of installation for EV Accelerate At Home ("EVAAH") customers by subtracting the wiring rebate value from their invoiced amount to customers for qualifying wiring work. Non-IQ EVAAH customers can get up to $500 for home wiring work only.

IQ customers are eligible to receive the full $1,300 rebate, even if the cost to install the dedicated circuit is less than the rebate amount. In that scenario, IQ customers are sent a check for the remaining rebate amount to help continue to offset the costs of transitioning to an EV.

Customers who purchase their own qualifying charger and participate in a managed charging program (Optimize Your Charge or Charging Perks) can provide proof of qualifying purchases (dedicated circuitry work and/or charger purchases) and be sent a check for the rebate amount.

As of March 1, 2022, there were 440 participants in the standard EV Charger and Wiring Rebate program. Also, approximately 90 percent of EVAAH customers receive the EV

Charger and Wiring Rebate, meaning that the 252 charger installations in the queue and scheduled under the EVAAH program could potentially generate nearly 252 additional EV Charger and Wiring Rebates, in the amount of either the standard $500 rebate or the $1,300 enhanced rebate for IQ customers. As of March 1, 2022, 13 IQ EV Charger and Wiring rebates had been issued, and there were five IQ EV and Charger Wiring Rebates pending.

Optimization Programs

While not a part of the Company's TEP, as described above, eligibility for certain TEP Residential programs is dependent upon participation in the Company's two current Residential EV optimization programs, approved by the Commission as part of the Company's Demand Side Management ("DSM") portfolio through Decision No. R21-0081 in Proceeding No. 20A-0287EG.

The Company launched the Optimize Your Charge program on August 5, 2021. Optimize Your Charge is an off-peak charging incentive program. The Company requires all customers applying for the EV Charger and Wiring Rebate or that have a Level 2 charger provided by the Company through the EVAAH program to participate in Optimize Your Charge for at least one year. IQ customers receiving the enhanced $1,300 EV Charger and Wiring Rebate can, however, opt-out of participating in Optimize Your Charge. The Optimize Your Charge program requires customers to choose from three different off-peak charging windows, each of which is a period of nine hours. Customers are then required to charge during the window they have selected for at least 25 percent of the time, and in return they receive an annual credit on their electric bill of $50 for each year that they participate in the program. The credit is issued in October.

As of March 1, 2022, there were 944 participants in the Optimize Your Charge (static optimization) program. Out of those participants, two IQ customers that used charging optimization to meet the TEP program enrollment requirement later opted out. Of the current participants, over 83 percent are complying with the program requirements by charging at least 25 percent of the time within their selected charging window. Our customer care agents reach out to non-compliant participants to remind them of the 25 percent off-peak charging window requirement and help them get back on track. The Company plans to review compliance and conduct outreach to non-compliant participants quarterly.

The Charging Perks Pilot is a dynamic optimization program that rewards EV drivers in Colorado when they charge during times of day that help the energy grid operate more efficiently and use more renewable energy. Every time a participating customer plugs in at home, the Company and its EV energy-service provider or the customer's automaker will work together to automatically schedule the customer's car's charging. The

customer's EV will then charge at the best time for the energy grid, and their vehicle will be ready to go when they need it in the morning. Customers receive a $100 gift card upon enrollment and can earn up to $100 annually, depending on the speed of the charger. The pilot was made available to Tesla drivers on June 16, 2021. The pilot has expanded to drivers of certain Plug-in Hybrid EV models from Ford, BMW, Honda, and General Motors in late September 2021.

As of March 1, 2022, there were 224 customers participating in the Charging Perks (dynamic optimization) Pilot program. The Company intends to provide more detailed updates on program participation, costs, achievement, and other learnings about its EV optimization programs in the April 2022 DSM Status Report.

B. Advisory Services and Outreach

Note: While the activities described below are part of the "Residential Advisory" program (and housed within its budget), they support education and engagement across all program portfolios.

1. Public Events

Rifle Ride and Drive. The Company was a sponsor and exhibitor at a ride and drive event in Rifle, Colorado on December 11, 2021. The Company displayed EV charging equipment, EVs, and Xcel Energy EV Advisors were on hand to talk to people about the benefits of driving electric, answer any general EV-related questions, and share information about the Company's programs outlined in Section I(A) above.

Denver Parade of Lights. The Company was an exhibitor at the Denver Parade of Lights in downtown Denver on December 11-12, 2021. The Company displayed EV charging equipment and Xcel Energy EV Advisors were on hand to talk to people about the benefits of driving electric, answer any general EV-related questions, and share information about the Company's programs outlined in Section I(A) above.

Marshall Fire Rebuild Expo. The Company, along with Drive Electric Colorado, attended an event focused on the rebuilding efforts in and around the Boulder County area that were affected by the Marshall Fire. The event was held on February 25, 2022. The Company participates in weekly transportation subcommittee meetings with Boulder County and other stakeholders in connection with the Marshall Fire rebuilding efforts and is exploring ways to offer EV incentives to Boulder County customers who were affected by the fire.

Denver Home Show. The Company was an exhibitor at the Denver Home Show, which took place at the National Western Complex in Denver on March 18-20, 2022. The Company displayed a tiny-home and EV charging equipment. Xcel Energy EV Advisors were on hand to talk to people about the benefits of driving electric, answer any general EV-related questions, and share information about the Company's programs outlined in Section I(A) above.

Outreach partner engagement. The Company has participated in several meetings held by external outreach partners, including the Colorado Electric Vehicle Coalition bi-monthly meetings run by the CEO and the Clean Cars Coalition facilitated by Conservation Colorado. The Company's EV program managers have conducted training for event volunteers from Drive Electric Colorado and Women Who Charge to familiarize them with all of our EV programs, with special attention to the EV Rebate program (which provides IQ customers with an EV purchase or lease rebate as outlined in Subsection V below) and the IQ EV Charger and Wiring Rebate. The Company is collaborating with GRID Alternatives Colorado to design informational pamphlets and brochures and conduct outreach to customers living in underserved communities, including providing information in English and Spanish. EOC verifies eligibility for IQ rebate applicants. Together with its partners, the Company is bringing information and resources to underserved communities to enable more customers to drive EVs.

2. Digital Outreach, Website, and Digital Tools

Several digital educational initiatives have been developed by the Company, including our EV Awareness & Education digital ad campaign that highlights EV benefits and helps customers realize that switching to an electric car is simple and beneficial. Digital advertising includes search engine advertising, display network advertising, and social media advertising. In addition to communicating EV benefits, the campaign includes ads to drive awareness of our EV Accelerate At Home and EV Charger and Wiring Rebate programs as well as answers to customers' questions about EV charging. All efforts directed customers to the Company's online resources for EV information. The EV website provides information about equipment installation guidelines and provides online program enrollment options[18]. Multiple email campaigns were conducted to build awareness of EV benefits and the tools, information, events, and programs the Company offers to help make it easy and less costly for customers to drive electric.

All outreach efforts directed customers to the Company's online resources for EV tools, information, and program sign-up. The online EV catalog has been

[18] https://ev.xcelenergy.com/ev-charging-programs

expanded to include both new and pre-owned EV models and customers can find EV-focused auto dealers in our EV Dealer Network and explore available tax credits and incentives on the website. The Home Charging Advisor can help customers compare EV home charging programs and find the best one for their lifestyle.

In addition to English, residential EV program pages and digital tools on ev.xcelenergy.com are now offered in Spanish. Website visitors can toggle between the two language options.

3. Traditional Media

The Company has also used traditional, non-digital channels for customer outreach, including the incorporation of EV visuals and messaging in brand-level television advertising. We also have printed materials for general EV education and to promote our programs. Printed materials for IQ customer programs are in both English and Spanish.

4. EV Dealer Network

In an effort to help our customers wherever they are on their EV journey, the Company launched an EV Dealer Network in March of 2021. Through the network, the Company is offering services that directly address barriers that dealers face regarding EVs including:

1. Staff training – The Company conducts ongoing staff and management training at our Colorado dealership partners, educating them on how to engage with our shared customers and promote Company programs at the point of purchase. Dealership feedback has indicated that having these programs has helped address customer concerns on how to charge their new EV.
2. Customer education in showrooms via signage, brochures, digital tools, and hands-on experiences with Level 2 charger models. Partnering with the right dealerships and utilizing Company assets has helped drive EV adoption, with over 640 EVs and Plug-in Hybrid EVs being sold by our network partners from September 2021– February 2022.
3. Co-Marketing support to advertise EVs, including messages to drive awareness of EV benefits and the Company's programs. In the September 2021 to February 2022 timeframe, four dealerships in the Company's network have utilized co-marketing to drive television, internet, and social media campaigns.

Customers can also redeem the IQ EV Rebate at the dealership at the time of purchase or lease of the vehicle. Network dealers can provide the EV Rebate instantly by discounting the purchase price of the vehicle by the amount of the EV Rebate. As of March 1, 2022 nine instant EV Rebates have been given to customers by dealerships within our network.

There are now more than 25 dealers in the Company's "EV Dealer Network" across Colorado, with the Company focusing on growth outside metro areas. All of Xcel Energy's EV Network of new car dealerships also sell pre-owned EVs and in one case, pre-owned EVs is the entire focus of the dealership.

II. MULTIFAMILY HOUSING PORTFOLIO

On June 26, 2021, the Company launched a robust set of advisory services to support customers in applying for the MFH Programs. Interested MFH owners, property managers, residents, and others can work directly with an Xcel Energy EV Concierge by submitting a short intake form linked on every commercial webpage. As of March 1, 2022, 179 intakes have been received for MFH projects.

The assigned parking model was significantly more popular than expected. Those in MFH, especially those that own condominiums, have given feedback that the billing issues that assigned parking models overcome have been some of the most significant barriers to EV adoption. Feedback from MFH customers also indicates that those barriers are especially significant in properties that have interior parking structures since the electrical infrastructure existing in those buildings may not be suitable for electrification. This makes the dedicated service provided by EVSI programs quite crucial.

The company has continued to receive interest in the MFH programs through the intake process. On September 9, 2021, the Company launched applications for all MFH Programs. Applications are available on the MFH Portfolio website.[19]

[19] Multifamily Housing | EV Solutions | Business Services | Xcel Energy

Program	Applications	Expected Charging Station Ports Supported by Program (as of 12/31/2022)	Actual Charging Station Ports Awarded by Program (as of 3/1/2022)	Percent of Goal
Multifamily Housing – Shared Parking EVSI	23	210	114	54%
Multifamily Housing – Assigned Parking EVSI	20	120	239	199%
Multifamily Housing New Construction Rebate	0	225	0	0%
Multifamily Housing Income Qualified Rebate	0	48	0	0%

III. COMMERCIAL PORTFOLIO

A. Customer Programs

On June 26, 2021, the Company launched a robust set of advisory services to support customers in applying for the Commercial Programs. Interested customers (including but not limited to businesses, workplaces, fleets, property managers, commercial site hosts, and others) can work directly with an Xcel Energy EV Concierge to guide them on the journey of electrification and utilize the programs best suited for their needs. Customers can work directly with an EV Concierge by submitting a short intake form linked on every commercial webpage. As of March 1, 2022, the Company has received 48 Fleet intakes, 105 Public Charging intakes, 31 Community Charging Hub intakes, and 86 Workplace intakes. The advisory services and intake process in effect create a robust set of initial program contacts with a high likelihood of EV program participation in the near term.

On September 9, 2021, the Company launched the application process for a suite of Commercial EV programs to support communities, fleets, workplaces, and businesses of all sizes in EV charging infrastructure. The table below summarizes commercial participation as of March 1, 2022. The number of ports reported indicates projects that have been awarded by the Company and are currently in the process of signing the EVSI Agreement, design, and engineering. Please note, because this process takes some time to complete, no projects have yet completed construction; as a result, the Company does not yet have information to report on the following metrics: (1) average costs for charging installations, including EVSI and charging equipment, and (2) average cost of a line

extension for MFH and Commercial portfolios. However, the advanced state of commitment on the part of these participants indicates a strong likelihood of port completion in the near future.

Program	Applications	Expected Charging Station Ports Supported by Program (as of 12/31/2022)	Actual Charging Station Ports Awarded by Program (as of 3/1/2022)	Percent of Goal
Fleet EVSI	16	557	120	22%
Workplace EVSI	32	558	146	26%
Fleet & Workplace - Income Qualified Rebate	0	90	0	0%
Small Business Program	0	N/A	0	0%
Primary General EV Pilot	2	120	34	28%
Community Charging Hubs	1	139	4	3%
Community Charging Hubs - Income Qualified Rebate	0	96	0	0%
Public EVSI	28	96	167	174%
Xcel Energy Public DCFC*	0	12	0	0%

* Note that the Company has just recently opened up applications for interested site hosts to express interest in hosting a DCFC station, given that the focus in 2021 was on stakeholder discussions regarding the final details of the program, as directed by the Commission.

B. Other Commercial Offerings

Fleet EV Solutions

Understanding that Commercial and Industrial customers are commonly looking for initial support on developing their fleet electrification plans, the Fleet Electrification Advisory Program ("FEAP") is often their first request for advisory support. For eligible customers, the Company provides a free suitability assessment, data analysis, and advisory services using the fleet's own operation data and business goals. FEAP assessments typically take three to six months to complete. As of March 1, 2022, 11 fleets have submitted intake forms and five fleets have completed their assessments with a total of 155 vehicles.

Small Business Program

Through the 60-Day Notice process, the Company developed a Small Business Program that launched in October 2021. As of March 1, 2022, the Company has received 21 Small Business intakes from customers but has not had any applicants meet the program eligibility.

Electric School Bus Rebate

This program will provide up to $2.2 million in rebates, up to a maximum of $275,000 per bus, for the costs incurred to procure the bus and the charging equipment necessary for operations. Launching in October 2021, the Company has held four webinars across its service territory and conducted continuous account management outreach. Intakes are ongoing and the Company has received four intake forms for advisory support. These are currently under review and will take three to six months to review the data; rebate administration will occur on a rolling basis so participants can take advantage of other organizations' available grant funding and incentives in parallel.

Xcel Energy Owned Public DCFC

The Company continues to develop and prepare for the launch of the Xcel Energy Owned and Operated DCFC Program. In August 2021, the Company held two public stakeholder meetings to discuss the siting methodology and metrics for Company-owned connector and market stations, which culminated in a report to the Commission summarizing the final program designs discussed with stakeholders and as directed by the Commission.[20]

The Company hosted an RFP process in 2021 to select a vendor that will use the information contained in the report to conduct a siting analysis to identify several good candidates for geographic locations throughout the service area for the Company's DCFC stations. The Company selected Guidehouse for this analysis. After compiling the siting results, filtering out several higher-traffic market station locations in recognition of the balance this program seeks to strike with other third-party DCFC stations and incorporating several additional rural and HEC communities, the Company was left with a list of census tracts within which it began outreach to potential site hosts. The Company anticipates accepting and reviewing applications from site hosts located in the geographic locations identified over the next few months before moving forward with on-site development.

The Company also conducted an RFP in 2021 for charging equipment hardware and software to be featured in this program and is working to finalize a contract.

[20] See the Company's Report on Process and Siting for Xcel Energy DCFC Stations filed in Proceeding No. 20A-0204E.

IV. PARTNERSHIPS, RESEARCH, INNOVATION PORTFOLIO

Through the PRI portfolio, the Company is working to develop partnerships with communities, charging vendors, innovative start-up companies, academia, research organizations, local non-profits, and other stakeholders. To date, the Company has been providing project development updates to stakeholder groups and soliciting feedback.

Using the 60-Day Notice process, the Company has issued notices, received stakeholder feedback, and provided final summaries. The table below summarizes the five projects that have completed the 60-Day Notice process and are preparing to launch. Additionally, the DCFC + Storage Demonstration Project is near completion of the 60-Day Notice process, and the Company anticipates issuing the 60-Day Notice for the EV Load Disaggregation Project in April 2022.

Project Name	Original Date Issued	60-Day Notice Status
Residential Resiliency and Managed Charging Project	10/29/2022	Complete
V2X and Resilience Project	10/29/2022	Complete
Municipal Refuse Fleet Electrification Pilot	10/29/2022	Complete
Electrify Paratransit Mobility Pilot	10/29/2022	Complete
Electric Car Sharing for Underserved Communities Pilot	11/5/2021	Complete
DCFC Charging + Storage Demonstration Project	1/31/2022	Pending
EV Load Disaggregation Project	TBD	TBD

PRI Project Descriptions

- *Residential Resiliency and Managed Charging Project*
    - The Residential Resiliency and Managed Charging project is a collaborative study of the impacts of residential EV charging on the distribution grid under various, managed charging scenarios. The results of this study will then be used by the Company to develop a "Charge Ready Tool and Program" and help to prepare the distribution grid for increasing levels of EV adoption in our service territory.
    - The Project will study the impacts of EV home charging for one or more customers sharing the same transformer and secondary under varying conditions of load, load diversity, customers/transformer, varying lengths of secondary, secondary conductor sizes, transformer sizes, and other variables, such as solar plus storage and Time-of-Use ("TOU") rates.

- *V2X and Resilience Project*
    - The project proposes a two-phased approach; a feasibility study to understand the current state and near-term capabilities of V2X technology, and a limited scale deployment to identify and demonstrate the most valuable use cases of these technologies.
- *Municipal Refuse Fleet Electrification Pilot*
    - The pilot will consist of the Company or intermediary third-party leasing one to four heavy-duty electric refuse trucks through an OEM and deploying those trucks with selected waste management fleet partners for extended test drive demonstrations. Based on stakeholder feedback, the Company will look for ways to help ensure that the trucks are integrated into operational fleets and deployed commercially following the study/pilot phase to achieve a tangible transition to electrified refuse vehicle service.
- *Electrify Paratransit Mobility Pilot*
    - The purpose of this pilot is to study how best to reduce the upfront and operational costs of electrifying medium-duty shuttle buses serving municipal and other paratransit operators.
    - The pilot will provide rebates for the purchase and/or lease of a total of between three to six electric paratransit buses to be placed within the fleets of various providers of paratransit services. It will also provide funding for the necessary charging equipment and EVSI to enable this pilot, if not supported by other approved TEP programs.
- *Electric Car Sharing for Underserved Communities Pilot*
    - The purpose of the pilot is to study how to reduce the upfront and operational costs of electrifying and expanding the use of light-duty cars, trucks, and SUVs for car-sharing services that specifically support underserved communities. The pilot will provide rebates for the purchase and/or lease of between 25-35 EVs to be charged throughout Public Service's electric service territory. It will also provide funding for necessary charging stations and EVSI to enable this pilot.

- *DCFC Charging + Storage Demonstration Project*
    - The Company is proposing to demonstrate the value of utilizing battery storage as a non-wire alternative for large DCFC installations as well as the technology's potential to provide resiliency services. This demonstration will help the Company understand the true cost of battery deployment and the value they can provide to the grid in terms of capacity deferral. This demonstration will inform future battery deployment strategies.
    - For this demonstration project, the Company is proposing to partner with one to three customers with plans to install a DCFC charging hub with 0.5 MW or more of charging capacity. The Company proposes this capacity level because charging installations of this size and higher are more likely to contribute to grid constraints at higher adoption levels.
- *EV Load Disaggregation Project*
    - The Company is proposing this project to demonstrate automated EV load detection and disaggregation to understand and quantify the impacts and benefits to the grid and customers using Advanced Metering Infrastructure ("AMI") and Distributed Intelligence data, per a unanimous Settlement Agreement recently reached in Proceeding No. 21A-0279E.
    - Results will inform grid and customer impacts, produce a grid analytics tool, and be used to design grid planning and customer programs.

V. ELECTRIC VEHICLE PURCHASE/LEASE REBATES PORTFOLIO

The Company's EV rebate program is designed to support affordable access to EVs for IQ customers (referenced as the "EV Rebate" program in this report). The EV Rebate is only available to the Company's IQ customers and provides $3,000 off the purchase or lease of a pre-owned EV and $5,500 off the price of a new EV purchase or lease. The table below shows that as of March 1, 2022, 39 EV rebates have been issued. The rebate program did not go live until August 2021. In addition, early adaptor dealerships needed time to embrace the instant rebate program, the administration required, creating market awareness, and training on the process. The goal in 2022 is to expand the dealership network with an additional 45 dealerships that will focus on processing and promoting this rebate, in addition to our existing network.

Program	Expected Program Participants (as of 12/31/2022)	Actual Participants (as of 3/1/2022)	Percent of Goal
New EV Purchase/Lease Rebates	225	30	13%
Used EV Purchase/Lease Rebates	425	9	2%

Customers interested in the program submit a rebate form which is preliminarily reviewed by the Company and then is verified for income eligibility by the Company's vendor partner, GRID Alternatives Colorado. Customers then receive a code they can use at one of the Company's EV Dealer Network partners for a rebate at the point of sale. Alternatively, the customer can purchase or lease the EV from a non-partner dealer and receive the rebate check in the mail approximately six to eight weeks later.

Eligible vehicles must not exceed $50,000 in price and can be either purchased or leased for a lease term of not less than two years. Customers must agree to forego claiming the state tax credit when receiving a rebate through the Company's EV Rebate program.

In accordance with the TEP reporting requirements and Commission Rule 3033(b), data for the following metrics has been collected and is set forth in Attachment B: aggregated income and zip code data for program participants; make and model of the EV purchased; purchase price; whether the EV Rebate impacted the customer's decision to buy or lease the EV; how the customer learned about the EV Rebate program; and demographics including - approximate annual household income, marital status, ethnicity/race, and gender.

SECTION 5. REVENUE REQUIREMENT AND COST RECOVERY

As approved by the Commission in Advice No. 1865,[21] Public Service will report on the prior program year's actual revenue requirement as part of the April 1 semi-annual update. The forecasted revenue requirement for 2021[22] was $8,119,657[23]. The actual revenue requirement for 2021 was $2,987,104 and is further detailed in Attachment C to this report. This results in a revenue requirement true-up of $5,132,553 which will be included in the true up adjustment to the 2023 revenue requirement when it is filed in the October 1 report.

In approving Advice No. 1865, the Commission also approved the actual true-up of revenues to be filed in the Company's October 1 advice letter filing filed contemporaneously with the semi-annual report. Final TEPA revenues are not available to determine the final revenue true up in time for the April 1 filing but final revenues will be available for the October 1, 2022 filing. At that time, Public Service will report the final revenue collection and determine any over- or under- collection relative to the forecasted revenue. The Company's forecasted 2023 revenue requirement will then be adjusted for the over- or under-collection of the revenue requirement and revenues and reflected in the rates proposed to go into effect January 1, 2023.

As discussed in Section 1, the Company's programs to date have been below the original forecasts included in the TEP due to several factors and, correspondingly, this has led to program spending that is below the originally forecasted budget. While this results in a temporary overcollection, the Company believes this is unlikely to persist in a substantial manner in the future as the programs will operate for a full calendar year in 2022 and 2023 and will have matured from early implementation status. It is not atypical, in the Company's experience, to see actual program spend after the initial launch of programs to lag budget projections and to increase in line with forecasts as program maturity, customer engagement, and market awareness take hold.

[21]In Advice No. 1865, the Company proposed filing a report in April detailing TEPA expenditures and revenues from the preceding year. The April 1 filing establishes the true-up and over/under recovery amounts that are included in the October 1 TEPA rate update. The Commission allowed Advice No. 1865 to become effective by operation of law at the Commissioners Weekly Meeting on December 29, 2021.

[22] This represents the Calendar Year of 2021.

[23]The Company presented its forecasted 2021 revenue requirement in Advice No. 1849 in Proceeding No. 21AL-0083E. Advice No. 1849 put the TEPA in effect and was filed in compliance with Decision No. C21-0017E in Proceeding No. 20A-0204E.

SECTION 6. RETAIL RATE IMPACT AND LOAD SUMMARY

SB19-077 requires that "[t]he 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 the utility." In Decision No. C21-0017, the Commission supported the Company's formulation of the retail rate impact and provided additional guidance that revenues from EVs purchased prior to 2021 be excluded. The following table provides an update to the rate impact analysis based on the Company's 2021 TEP revenue requirement and updated 2021 estimate for sales to EVs and the cost to serve those sales.

Retail Rate Impact Calculation

		2021
	Revenue from EV Charging	($8,269,935)
+	Cost to Serve EV Charging	$1,864,193
=	Net Revenue from EV Charging	($6,405,742)
+	TEP Revenue Requirement	$2,987,104
=	Retail Rate Impact	($3,418,638)
÷	Approximate Total Retail Revenues	$3,029,298,212
=	Retail Rate Impact - Percentage	-0.11%

The Company uses historical EV sales data from IHS Market and forecasts sales going forward using two different methodologies[24]. The total sales associated with EV charging are based on average annual miles driven and average kilowatt-hour per mile. The following table summarizes the Company's estimate of EVs in our service territory and their incremental growth from 2020. Approximately 99 percent of the Company's sales to EVs are for light-duty vehicle charging.

[24] Please see the Company's April 1, 2021 filing in Proceeding No. 20A-0204E for a full description of EV forecasting methodology.

EVs in the Company's Service Territory[25]

# of Vehicles	2020	2021	Incremental Growth 2020 to 2021
Light-Duty Vehicles	29,361	41,919	12,558
Medium-Duty Vehicles	0	0	0
Heavy-Duty Vehicles	38	46	8

Sales Volumes	2020	2021	Incremental Growth 2020 to 2021
Light-Duty Vehicles	105,114 MWh	150,650 MWh	45,536 MWh
Medium-Duty Vehicles	0 MWh	0 MWh	0 MWh
Heavy-Duty Vehicles (1)	6,481 MWh	7,215 MWh	734 MWh

(1) 2020 reflects Guidehouse total Megawatt hour ("MWh") estimate, 2021 reflects an updated calculation utilizing the Guidehouse per vehicle consumption estimate.

Reduced emissions

The Company estimates that for light-duty vehicles, each vehicle charging in its service territory results in a savings of 2 tons of CO_2 per vehicle, or 48 percent, based on an emissions rate of 4.2 tons for each internal combustion engine light-duty vehicle and a rate of 2.1 tons for a light-duty EV charged on the Company's system, using 2021 average emissions intensity data.

The Company estimates that each light-duty vehicle charging in its service territory results in a savings of 2.5 pounds per vehicle, or about 64 percent NOx reduction per vehicle, based on an emissions rate of 4.8 pounds per year[26] for each internal combustion engine light-duty vehicle and a rate of 2.3 pounds per year for a light-duty EV charged on the Company's system, using 2021 average emissions intensity data.

Demand

Because the load of EVs is not individually metered, it is not possible to know for certain how much peak demand is attributable to EV charging. Based on the number of EVs, an estimate of L1 and L2 home charging, and a survey of public EV charging stations, the Company calculated that there is potentially over 200MW of demand potential from EVs.

[25] EPRI, I.H.S Data (Includes BEV and PHEV, excludes vehicles registered with the U.S. DOT)
[26] https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and

Total Charger Capacity

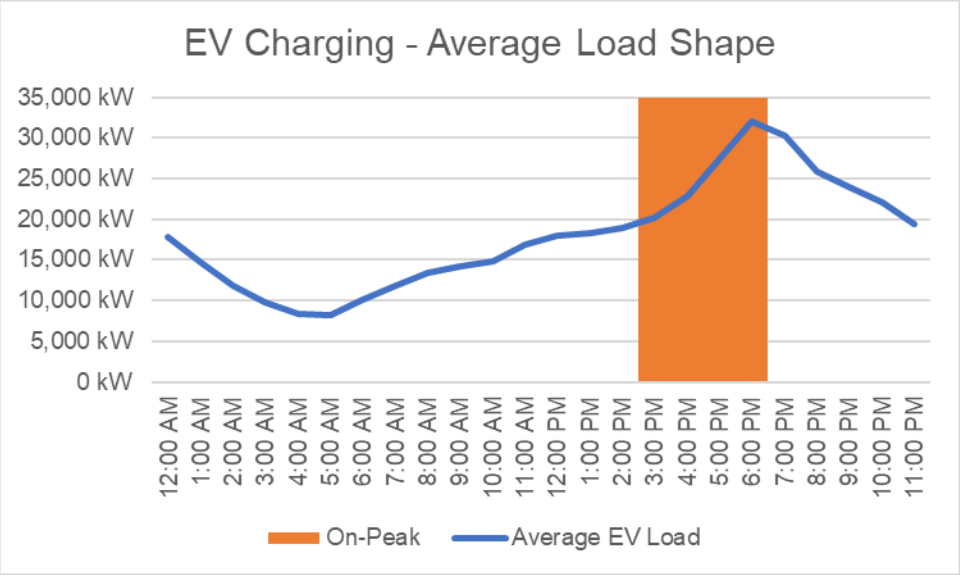
	Count	Ave Capacity	Total
Home L1	19,495	1.8 kW	35,090 kW
Home L2	22,424	7 kW	156,971 kW
MDV	5	50 kW	250 kW
HDV	40	75 kW	3,000 kW
Public L1	56	2 kW	101 kW
Public L2	2,088	7 kW	14,616 kW
Public DCFC	408	75 kW	30,600 kW

However, because it is implausible that all charging ports would be utilized at the same time and at full capacity, the actual peak demand by EVs is much lower. To estimate hourly load patterns and peak demand the Company utilized the Markov-Chain Monte Carlo simulation performed by E3 Consulting in the 2020 TEP proceeding, adjusted for the current penetration of EVs. The results show that the maximum EV demand is much lower than the maximum charging capacity and that during the on-peak hours (3:00 PM-7:00 PM) in July and August when the Company's system typically reaches its maximum peak load, the EV load is even smaller still. The Company's maximum peak demand is approximately 7,000MW, and of that peak demand, we estimate that EVs contributed only about 30MW.

Demand Summary

Total Charger Capacity	221,673 kW
Maximum Non-Coincident Demand	45,103 kW
Average Demand On-Peak July & August	26,893 kW
Average Load	17,984 kW

Currently, only a small amount of EV customers are on TOU rates. The Commercial EV charging rate, Schedule S-EV, has 33 charging stations. The Company's Residential TOU rate, RE-TOU, has approximately 1,000 EV customers. As such a large majority of customers had no financial incentive to shift usage to off-peak hours in 2021. Again, using the EV charging shapes developed by E3 Consulting, the overall average load shape indicates that on-peak EV charging accounts for 23.8 percent of the total. For comparison, the on-peak hours of 3:00 PM to 7:00 PM account for 11.9 percent of all the hours in the year. Therefore, EV charging is disproportionally weighted in the on-peak hours. The average load shape displays a pronounced peak at 6:00 PM when many residential customers would likely be returning home from work.



As the Company's advanced meter deployment expands and as more customers are switched to TOU rates the Company will continue to study EV charging patterns in order to identify any shifting to off-peak periods that may occur. The expected adoption of optimization programs described earlier in this report will be another factor in encouraging customers to charge during off-peak hours in coming years.

SECTION 7. STAKEHOLDER ENGAGEMENT

As a part of the TEP, the Company has developed a robust process for gathering feedback and input from stakeholders. With the TEP stakeholder group, there has been continuous engagement, including with those that have previously participated in workshops and in the TEP proceeding. The Company has also provided instructions for other interested stakeholders to sign up for the TEP stakeholder distribution list.

I. TEP STAKEHOLDER GROUP GOALS

The Company's TEP Stakeholder Group meets quarterly in March (Q1), June (Q2), September (Q3), and December (Q4). The Company hosts stakeholder meetings to:

- Foster discussion about programs in-market.
- Gather ideas for continuing to improve the programs and portfolios.
- Discuss whether additional projects and programs are necessary to support transportation electrification in Colorado.

II. UPDATES FROM STAKEHOLDER MEETINGS AND DISCUSSIONS

A summary of formal stakeholder meetings is below. In addition to formal meetings, the Company regularly engages stakeholders individually on topics of interest to them.

- *TEP Quarterly Stakeholder Meetings*
    - June 23, 2021: The Company presented TEP program implementation updates (including the just-launched Intake Form process); EV charging rates including the Commercial S-EV Rate, New Commercial Charging Rate, and DCFC Station Rate to receive feedback and input from stakeholders; and a new program for supporting EV charging for smaller commercial customers.
    - September 29, 2021: The Company presented TEP program participation and rebate spending updates; a new commercial EV charging rate to be filed on October 15; and potential PRI project ideas.
    - December 17, 2021: The Company presented TEP program participation and rebate spending updates; regulatory updates for PRI projects; and discussed the S-EV, S-EV-CPP, DCFC Rates, and the Equity PIM filing in Proceeding No. 21AL-0494E.

- March 25, 2022: The Company presented TEP program participation and rebate spending updates; regulatory updates for PRI projects; discussed the S-EV, S-EV-CPP, DCFC Rates, and the Equity PIM filing in Proceeding No. 21AL-0494E; provided an update on Company-owned DCFC Siting; and proposed two 60-Day Notices.

- *Topic-specific TEP Stakeholder Discussions*

  - March 2, 2021: The Company presented and solicited feedback on charging equipment hardware and software specifications for approved TEP programs, with distinctions between programs where the Company will own and operate charging equipment and programs where customers will own the equipment. The conversation informed an RFP that the Company held for charging equipment hardware and software this year.

  - April 27, 2021: The Company presented and solicited feedback on a proposed process for identifying HECs and on the details of the electric school bus grant program. The conversation with stakeholders informed subsequent 60 Day Notices that the Company issued for these programs.

  - August 5, 2021: The Company presented EVSI program application scoring criteria; details on a proposed siting methodology for Xcel Energy DCFC stations; and potential principles, goals, focus areas, and metrics for a potential Performance Incentive Mechanism ("PIM") to support transportation electrification activities.

  - August 20, 2021: Incorporating feedback received from stakeholders at the August 5th meeting, the Company again presented EVSI program application scoring criteria; details on a proposed siting methodology for Xcel Energy DCFC stations; and potential principles, goals, focus areas, and metrics for a potential PIM to support transportation electrification activities. The conversation provided valuable input to inform reports filed on August 30, 2021on EVSI application scoring and an equity PIM.

  - The Company has also met with a broad and diverse mix of stakeholders on PRI topic-specific matters throughout the process to develop the projects. Discussion topics included stakeholders sharing their ideas about how to ensure the projects best benefit customers and the broader set of Colorado communities both equitably and in culturally diverse ways. Stakeholders' technical questions were also answered, and their project design considerations were actively accounted for in the 60-Day

Notices. Stakeholder groups who participated in these discussions included, but were not limited to, organizations such as WRA, SWEEP, Grid Alternatives, National Resource Defense Council, Vote Solar, EOC, the Regional Air Quality Council, Colorado Car Share, Via Mobility, the City of Boulder, Boulder County, Staff, and others. PRI topic-specific discussions with these stakeholder groups occurred on October 12, 2021; October 14, 2021; November 3, 2021; and January 5, 2022.

SECTION 8. SUMMARY OF ONGOING EV PILOTS AND PROGRAMS IN OTHER XCEL ENERGY SERVICE TERRITORIES

The TEP reporting requirements include providing a summary of ongoing EV pilots and programs in other Xcel Energy service territories. Several of the Company's programs are similar to programs offered in other Xcel Energy service territories, though specific program terms, including the amount of monthly fees and eligibility requirements, vary state to state. Where there are specific and unique programs available in another Xcel Energy service territory that are not available in Colorado, they will be described in this section.

I. MINNESOTA

On January 6, 2022, the Minnesota Public Utilities Commission approved the EV Optimization Pilot (Optimize Your Charge) and Electric School Bus Vehicle-to-Grid ("V2G") Demonstration (Docket No. E002/M-21-101).

Optimize Your Charge seeks to manage the grid impacts of EVs by working with customers to schedule daily EV charging based on the customer's selection of a preferred schedule that ensures charging occurs during off-peak hours. Participants receive an annual $50 bill credit for charging during their off-peak charging schedule 25 percent of the time.

The Electric School Bus V2G demonstration will dispatch electric bus batteries during summer system peaks. Xcel Energy will rely on bus batteries during critical times or when a strain on the power grid is expected.

The table below summarizes all MN EV filings:

Filing Name	Docket Number	Pilot & Program Names	Status
Residential Electric Vehicle Charging Tariff	E002/M-15-111	- Time-of-Day – Separate Meter (Residential EV Service Tariff)	In market
Residential Electric Vehicle Service Pilot	E002/M-17-817	- EV Service Pilot	Complete
Transportation Electrification Plan	E999/CI-17-879	- Transportation Electrification Plan (TEP) (Summarizes the Company's existing and potential future EV initiatives)	N/A
Electric Vehicle Pilot Programs	E002/M-18-643	- Fleet EV Service Pilot - Public Charging Pilot	In market (2021-2023)
Residential EV Subscription Service Pilot	E002/M-19-186	- EV Subscription Service Pilot	In market (2020-2024)
Electric Vehicle Home Service Program	E002/M-19-559	- EV Accelerate At Home	In market (Permanent)
Pilot Programs General Time-Of-Use Service Tariffs	E002/M-20-86	- General TOU Service Rate - Critical Peak Pricing Rate (CPP)	Under review (TBD)
Multi-Dwelling Unit Electric Vehicle Service Pilot	E002/M-20-711	- Multifamily Charging Pilot	In market (2021-2024)
COVID-19 Relief & Recovery (R&R)	E,G002/M-20-745	- EV Purchase Rebates – *denied* - Public Fast Charging Stations – *approved* - Xcel Energy Fleet Electrification – *postponed cost recovery* - Expansion of Existing Fleet EV Service Pilot – *approved w/ modifications*	Awaiting Written Order (2021-2025)
Load Flexibility Pilot Programs	E002/M-21-101	- EV Optimization Pilot (EV Accelerate At Home – Optimize Your Charge) (EV Accelerate Your Fleet – Optimize Your Charge) - Electric School Bus V2G Demonstrations	Approved

II. WISCONSIN

Northern States Power Company (Wisconsin) (NSPW) has EV programs available to its Wisconsin customers. NSPW offers EVAAH for residential customers, as well as a commercial EVSI program and optional charger service for commercial customers. The commercial program currently has a cap of 30 MW of supported charging capacity.

On January 1, 2022, the Company began developing an EV Advisory Services program for residential and commercial customers.

III. NEW MEXICO

Southwestern Public Service Company (SPS) received approval of its New Mexico TEP on September 22, 2021.

On March 2, 2022, the Company launched four new residential EV programs, making it easier and less costly for residential customers to drive electric. Customers can use digital tools to explore EV models, find charging on-the-go, and compare home charging program options. Eligible customers can also have a charger installed at their house for a low monthly fee, save on energy with a $50 annual reward, and get rebates for eligible Level 2 chargers and wiring upgrades. IQ customers can receive expanded rebates to save even more.

For the commercial side, the Company launched the Make-Ready for Public Fast Charging program that provides EVSI to help lower the upfront costs of transportation electrification. The Public Fast Charging Service program is still in development and will be launched later this year.

Advisory services are also available for residential, fleet, and communities.

New Mexico TEP Programs	Status
EV Charger and Wiring Rebate	In-Market
Income Qualified Charging Rebate	In-Market
Home Charging Service	In-Market
EV Optimization	In-Market
Make-Ready for Public Charging Stations	Pending
Public Fast Charging Service	In-Market
Advisory Services (Residential, Fleets, Communities)	In-Market

SECTION 9. THIRD PARTY CONSULTANT UPDATE

The Company conducted a competitive sourcing event for a third-party vendor to execute the Company's TEP 2021-2023 Evaluation and Reporting. After reviewing the responsive proposals, based on qualifications and value, we selected a single team to complete both tasks.

Opinion Dynamics will lead an evaluation of the Company's 2021-2023 TEP designed to 1) provide regular updates to interested stakeholders in Colorado on how TEP programs are performing against key performance indicators and 2) deliver insights to inform program improvements to be made over the course of the 2021-2023 TEP and to inform the direction of future TEPs. To support this effort, Opinion Dynamics will engage in a collaborative evaluation planning process with Public Service, collect, manage, and analyze multiple data streams, and provide regular reports on evaluation results, as described in more detail below.

- **Embedded Evaluation, Focused on Future Programs**. Opinion Dynamics will develop evaluation plans for each of the TEP portfolios. The plans will be designed to help the Company's portfolio managers refine implementation and address the dynamic needs of the market over the three years of the evaluation contract. Each of the evaluation plans will include research that provides insight into how current programs can be adapted to increase participation and what new strategies and approaches are needed to help reach the Company's 2030 goal in the next TEP cycle.
- **Data Collection and Management.** Opinion Dynamics will collect, ingest, and manage the substantial data streams required to assess the TEP. These data collection efforts will be structured to capture site-, project-, program-, and portfolio-level data, with a particular emphasis on providing data to support the critical key performance indicators ("KPI") for the TEP. Opinion Dynamics will acquire utility AMI, meter, and EV supply equipment data from devices and third-party services and capture a wide range of participant, non-participant, and market data to support the evaluation. These data will be stored in a centralized data management platform for use across a range of analytical efforts.
- **Reporting and Dissemination.** The TEP evaluation is designed to provide feedback on program performance and findings as they arise rather than at the close of the reporting timeframe. Given the temporal nature of program implementation and the multiple programs included within the scope, Opinion Dynamics will develop a dynamic dashboard that includes reporting on KPI performance, such as program costs, customer usage, and greenhouse gas reductions. Opinion Dynamics and Public Service will leverage insights from these dashboards to develop future semi-annual reports.

SECTION 10. CONCLUSION

The Company is excited to support its customers with the suite of EV programs described in this report and it looks forward to strong engagement and participation in these programs in the months and years to come. The Company's 2021-2023 TEP programs are making EV charging easy, fast, and more affordable for its customers, empowering and assisting customers in their EV journey, and helping them drive electric to save money and reduce carbon emissions.