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➢ Summary of 60-Day Notice: Municipal Refuse Fleet Electrification Pilot

The following 60-Day Notice summarizes Public Service Company of Colorado's ("Public Service" or "the Company") action to update stakeholders of the Company's development of the Municipal Refuse Fleet Electrification Pilot ("Pilot") within the Company's 2021-2023 Transportation Electrification Plan ("TEP"). This 60-Day Notice is issued in compliance with Decision No. C21-0017 in Proceeding No. 20A-0204E.

A copy of this notice will be available on our website at:
https://www.xcelenergy.com/company/rates_and_regulations/filings/transportation_electrification_plan

Municipal Refuse Fleet Electrification Pilot

In Decision No. C21-0017, the Colorado Public Utilities Commission ("Commission") approved the Company's proposed Partnerships, Research and Innovation ("PRI") portfolio. The objective of the PRI portfolio is to ease the process for customers to access electricity as a transportation fuel, minimize system costs, increase environmental benefits for charging, and help inform future Company TEPs. As a part of this portfolio, Public Service is proposing to direct a portion of the PRI budget to fund a Municipal Refuse Fleet Electrification Pilot.

Through this 60-Day Notice, Public Service is providing a description of the Municipal Refuse Fleet Electrification Pilot, the scoring considerations developed to review and evaluate submitted applications, and the metrics that Public Service will report on and provide to stakeholders through its semi-annual TEP reporting requirement. The Pilot will consist of the Company or intermediary third-party leasing electric refuse trucks and providing them to participants at no cost for the term of the lease one to four heavy duty electric refuse trucks and deploying those trucks with selected waste management fleet partners for extended test drive demonstrations at no cost to such partner (except for electricity usage). To inform this proposal, the Company conducted several individual stakeholder meetings to present draft Pilot designs and gather input.

➢ Municipal Refuse Fleet Electrification Pilot

A. Project Description, Goals, and Key Outcomes

The Pilot will consist of the Company or intermediary third-party leasing one to four heavy duty ("HD") electric refuse trucks through an original equipment manufacturer ("OEM") and deploying those trucks with selected waste management fleet partners for extended test drive demonstrations at no cost (except for electricity usage). The Company is evaluating lease options including:

1. The Company will lease trucks from the OEM and then sublease the trucks to the waste management fleet partners.
2. The Company conducts a bulk lease purchase with the OEM and the OEM handles the sublease and liability contracts with the waste management fleet partners directly.
3. The Company works with a vendor that leases trucks from the OEM on behalf of the waste management fleet partners.

A series of four demonstrations will take place over the 12-month period for each truck procured.[1] The Company will procure the vehicle, charging infrastructure, and manage stakeholder and community outreach. The Company will provide dedicated project management and concierge services for participating fleets to ensure a smooth process. These participants will be secured through a marketing and outreach effort. Participants will complete an application to provide the necessary information for the Company to determine if the applicant will take part in the Pilot. Applications will be selected based on the criteria identified in Section E below. Potential applicants include municipal and private refuse fleets. To support the diversification of electrification benefits and the emphasis on higher emission communities ("HEC"), the Company will prioritize fleets that service HECs along their routes or have a truck depot located in an HEC. HECs are communities most effected by emissions from the transportation sector.[2] Surveys and case studies will be developed and published on each participant. At the end of the Pilot, the vehicles will be returned to the OEM.

The goal of the Pilot is to study HD fleet electrification by understanding how vehicle performance changes from varying regions in different environments (urban, metropolitan, rural) and allowing fleet operators to test the vehicle over an extended period to allow them to gain operational insights. The Pilot will capture data and experiences to help to evaluate if HD electric refuse trucks are a viable option for waste management fleets. Through data collection on energy consumption, emissions reductions, and customer experiences using these vehicles, the Company and participants will gather and share learnings amongst the groups taking part in the Pilot and with interested stakeholders.

The timeline for the Pilot will be based upon the letters of intent secured from OEMs by early 2022. The OEM partner(s) will be expected to manufacture one to four electric refuse trucks for

[1] For example, if four vehicles are procured, then there would be up to 16 demonstrations total.

[2] https://www.xcelenergy.com/staticfiles/xeresponsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/CO%20Recent%20Filings/Higher-Emissions-Community-Summary-Report.pdf

deployment in Q4 2022. Demonstrations are planned to be completed in Q4 2023 and Pilot evaluation is estimated to be completed by Q2 2024.

B. Estimated Costs, Benefits, Value to Customers

Estimated Costs

Costs eligible for the Pilot include funding for leasing electric refuse trucks, the charging equipment, digital costs, education, outreach and project management, and any necessary infrastructure upgrades the project requires. The estimated cost is approximately $500,000 to $750,000 per vehicle and the Company is considering deployment of up to four vehicles.

The cost breakdown is as follows (*in thousands*):

	One Electric Refuse Truck	Two Electric Refuse Trucks	Three Electric Refuse Trucks	Four Electric Refuse Trucks
Electric Refuse Truck Lease	$350	$700	$1,050	$1,400
50 kW Charger (including energization and digital services)[3]	$100 - $350	$200 - $700	$300 - $1,050	$400 - $1,400
Education, Outreach, and Project Management	$50	$50	$50	$50
Total	**$500 - $750**	**$950 - $1,450**	**$1,400 - $2,150**	**$1,850 - $2,850**

Benefits and Value to Customers

The Pilot aims to accomplish the following:

1. Make electric vehicle ("EV") charging easy.
   Electric refuse truck charging demonstrations will provide a blueprint for wider adoption of medium and heavy-duty charging equipment alongside the electric refuse truck.
2. Lower system costs and increase EV charging benefits.
   The Pilot will help to minimize system costs by providing research and development funds toward the closure of typical deployment data and experience gaps seen in the electrification of transportation such as vehicle range, reliability, data collection, real-time

[3] We are considering both mobile chargers and installed chargers for this Pilot project. Even though an individual mobile charger costs more than an installed charger, only one charger is required per vehicle. The table includes ranges on costs to reflect how multiple charging stations may be required.

cost monitoring, and charger interoperability. As gaps are closed and cost parity is approached, adoption will advance among fleets and the benefits become increasingly accessible.

3. Gain new insights and stimulate innovation around EVs.
   The Pilot will provide the Company with unparalleled access to critical data points including strategy, plan development, implementation, key performance indicators and data evaluations. At the conclusion of this project, the Company will have empirical data to support analyses of total cost of ownership ("TCO"), operational experience and technology gap closures, grid impact, environmental impact, customer satisfaction, next steps, and additional lessons learned and best practices.
4. Promote, accelerate, and commercialize EVs.
   The Pilot promotes the commercialization of EVs by providing accessible benefits to both commercial and residential customers beyond cost. It accelerates commercialization by identifying and targeting sector gaps for closure, providing proof of concept, empirical data, and acting as an overall blueprint for adoption among other fleets in other cities, counties, and states.

C. Equity and Commercial Viability

Equity

The Pilot promotes equity for communities by providing socialized benefits of refuse vehicle electrification in communities that may not receive any or other direct EV benefits. Some of these benefits include reductions in greenhouse gas emissions, particulate matter, and noise and pollution.

Commercial Viability

Refuse vehicles present a good case for electrification given their nightly return-to-base operations and highly urban driving patterns (low speed/regenerative braking). The refuse segment is made up of municipal fleets, and private fleets such as Waste Management, Republic Services, and Waste Connections. Data suggests over 2,000 refuse vehicles may operate in the Company's service territory.

In Colorado, this Pilot can immediately be replicated beyond the Company's service territory to the public and private fleets operating in other jurisdictions. This Pilot can be scaled nationally, and its insights have the potential to impact tens of thousands of public and private refuse vehicles (e.g., Waste Management has a fleet of more than 32,000 vehicles nationally).

This project promotes equity by reducing the knowledge barriers and operational confidence for municipalities that are necessary for fleets to adopt electric refuse trucks, both initially and at scale. Greater adoption of electrified heavier duty vehicles can provide financial savings and health benefits for all members of the communities served by them.

D. Education and Outreach Efforts

The Company will focus on educating multiple audiences about the goals and benefits of this project. Outreach efforts are planned to include:

- Posting program information on the Company's website. Project web pages could be used to establish a single, easily accessible place where the community can learn more about the project, its objectives, and continue to receive updates about progress and key results.
- In person and/or digitally hosted periodic community events that allow members of the community to participate in asking questions and learning about the vehicles.
- Providing information via email to Company Account Management teams, partner organizations, and vendors that can be forwarded and shared with interested customers.

E. Application, Process, and Scoring

Using standard project selection and best practices for concept project applications that center on viable but not developed projects, the Company expects to score the applications using the following considerations:

- Project scope of work and interests
    - Documentation on the alignment of the Pilot to participants' goals for sustainability, cost reductions and clean transportation
    - Commitment to the Pilot's goal of having demonstration projects completed within three to four months of partnership
    - Developed Scope of Work for viable routes to be electrified including but not limited to
        - Whether the charging and operation of the electric refuse truck will take place in HECs, as applied within the Company's 2021-2023 TEP
        - The estimated number of miles to be included in the demonstrations
        - The expected kilowatt-hour ("kWh") of charging that could be incurred if the project moves forward
- Project Support, Leadership and Subject Matter Expertise
    - Whether the applicant has previously received funding for EVs, charging infrastructure or other alternative fuel vehicles
    - Whether the applicant currently operates EVs or other alternative fuel vehicles
    - Whether the applicant has sustainability commitments that have investments committed currently or previously
    - Whether a fleet recently made technological advancements in the space that makes them experienced with demonstrations and pilots
    - Whether and how the applicant is willing to support the Pilot in additional ways

Applicants will receive support from the Company throughout their application development, including the ability to participate, at no cost to the applicant, in the Fleet Electrification Advisory Program.

F. Reporting and Evaluation

For purposes of this Pilot, all participants will be enrolled in the Company's Fleet Electrification Advisory Program ("FEAP"). FEAP is a net-zero cost program that utilizes telematics-based analytics to provide Total Cost of Ownership modeling of EVs against the existing internal combustion engine fleet vehicles. This program can help provide data driven analytics that can inform whether a particular vehicle or route is suitable for electrification and helps fleet operators identify which models offer the best capability at the lowest cost.

As part of the Company's semi-annual reporting for TEP programs, the Company proposes to track and report on the following metrics regarding participation in the Pilot:

- Project costs and impacts of the Pilot
- Vehicle miles traveled, per demonstration
- Estimated consumption of electricity (kilowatt hours) resulting from electric refuse truck charging
- Estimated level of demand (kilowatts) resulting from electric refuse truck charging
- Estimates for the amount of energy sold to program participants during on-peak and off-peak time periods
- Geographic distribution of the Pilot participants
- Anonymized Customer survey information

H. Stakeholder Involvement

During the development of the methodology and the identification of proposed Municipal Refuse Fleet Electrification Pilot, the Company engaged numerous stakeholders to gather feedback and refine its approach. The table below summarizes stakeholder involvement:

Stakeholder Group	Meeting Date
Transportation Electrification Plan Stakeholder Group[4]	9/29/2021
Environmental Justice Coalition[5], Energy Outreach Colorado, Natural Resources Defense Council, Southwest Energy Efficiency Project, and Western Resource Advocates	10/12/2021
Commission Staff	10/14/2021

[4] The TEP Stakeholder Group includes dozens of organizations spanning Colorado state government agencies, Colorado municipalities, environmental advocates, energy efficiency and electrification groups, other utilities, EV charging hardware and software providers, automobile manufacturers and dealerships, community groups, and many others. Nearly 100 people participated in the TEP Stakeholder Group meeting on September 29, 2021.

[5] The Environmental Justice Coalition includes representatives from the Colorado Latino Forum, GreenLatinos, GRID Alternatives, and Vote Solar.

In general, stakeholders were favorable towards the Municipal Refuse Fleet Electrification Pilot. There were no negative comments or feedback related to the project.