State of Oregon
Department of Environmental Quality Memorandum

Date: Nov. 4, 2022

To: Environmental Quality Commission

From: Leah Feldon, Interim Director

Subject: Item C: Transportation systems electrification update (Informational)
Nov. 17-18, 2022, EQC meeting

Purpose

This is an informational briefing for the commission on the electrification of Oregon's transportation systems.

Overview

Electrifying Oregon's transportation system is critical to achieving the state's air quality and climate goals. Transportation emissions are the largest sector of greenhouse gases (GHG) in Oregon, representing over a third of our entire state's emissions. The Advanced Clean Cars II rules DEQ is developing for proposed commission action in December 2022 represents a vital step toward transitioning this critically important sector to cleaner vehicles. The following memo outlines several important efforts to electrify the transportation sector as Oregon considers new requirements on auto manufacturers. These ongoing and existing efforts include investments in charging infrastructure and improvements to the electric grid, as well as progress towards making vehicles available and accessible to Oregonians. Collectively, these complementary measures will make Oregon's clean-energy transition more rapid, efficient and equitable.

Transportation electrification efforts in Oregon are led by state agencies, utilities, private sector companies, community nonprofits, and local governments. Legislation such as SB 1044 (2019) established state goals for electrification, and HB 2021 (2021) requires most electricity provided in Oregon to have zero greenhouse gas emissions by 2040. In addition, the Environmental Quality Commission has adopted rules to reduce GHG emissions, including:

- The Climate Protection Program (CPP) - Sets statewide, enforceable limits on GHG emissions from fossil fuels used in transportation, residential, commercial, and industrial settings.
- Oregon's Clean Fuels Program - Requires increasing reductions in the carbon intensity of transportation fuels over time. Electrification is a key zero-emission transportation fuel, and the Clean Fuels Program provides critical incentives supporting investments in electric vehicles and charging infrastructure.

- Low Emission Vehicle/Zero Emission Vehicle (LEV/ZEV) Regulations - Require manufacturers of passenger cars and trucks to deliver an increasing percentage of ZEVs to the state. These rules have been in place in Oregon since the 2009 model year. DEQ is proposing the Advanced Clean Cars II rule to establish requirements for all new passenger car sales to be zero emission vehicles by the 2035 model year.
- Advanced Clean Trucks Rule – Requires manufacturers of medium- and heavy-duty vehicles to sell increasing percentages of ZEVs starting in the 2025 model year.

To facilitate the transition to zero emission vehicles, the state is working to ensure other critical components such as infrastructure and the sources of energy to charge these vehicles are in place.

Infrastructure

The Oregon Department of Transportation (ODOT) updated the Transportation Electrification Infrastructure Needs Analysis (TEINA) in 2022, which identifies where charging infrastructure is needed to help meet the state's transportation electrification goals. As more electric vehicles are entering the market, both public and private investments are essential to meet the state's charging needs. In response, ODOT has developed comprehensive plan with near term and long-term strategies and has dedicated over $100 million to build out charging infrastructure over the next few years. Over half of these funds will come from the National EV Infrastructure Formula program and must be spent first on EV charging infrastructure along federally designated alternative fuel corridors. ODOT is also prioritizing the inclusion of high-powered charging at sites compatible for medium duty ZEVs. Additionally, ODOT is launching a new rebate program focused on community EV charging infrastructure for the underserved communities such as rural, low-income, and Black, Indigenous, and People of Color (BIPoC) communities.

DEQ is also administering one-time grants to public and private fleets to develop charging infrastructure to support medium and heavy duty zero emission vehicles. These investments, with a focus on building out an interconnected charging network and addressing the needs in underserved communities, are vital to ensuring a successful transition to vehicle electrification. DEQ will focus grant projects to better understand the challenges in this sector, maximizing the value of future funding opportunities

Electrical grid planning

As Oregon prepares the infrastructure needed to charge the growing number of EVs in the state, utilities are investing in their electrical grids to ensure charging reliability and capacity. For example, the Public Utilities Commission (PUC) regulates transportation electrification program and infrastructure investment

activities of investor-owned utilities such as Portland General Electric (PGE) and Pacificorp. These activities include:

- Investment Plans: Investor-owned utilities must submit multi-year plans to the PUC for approval of investments that advance diverse transportation electrification programs, charging infrastructure, and community outreach particularly in underserved communities. This year's PUC rulemaking will advance these planning requirements within an updated transportation electrification investment framework to support portfolio-level, holistic plans including direct consultation with underserved communities to identify and prioritize investments.
- Rate Designs and Programs: Investor-owned utilities must submit rate designs and programs for the PUC's approval that encourage EV charging in ways that can optimize power grid investments, lower utility costs and encourage fuel cost savings for the public.

PGE and Pacificorp, along with consumer-owned utilities are currently planning for distribution system upgrades and preparing their local grids for the EV adoption that is expected to occur.

Vehicle availability

Over the past few years, EV sales have continued to grow with Oregon being among the top states in the nation for the proportion of new car sales that are electric. In 2022 alone, Oregon's passenger car and light-duty truck EV sales were 9.5 percent of overall vehicle sales, well above the national average of 6.6 percent. Currently there are over 83 different EVs available on the market today, including passenger cars, SUVs, pickups, and vans. Manufacturers have made commitments to either transforming a large percentage of their vehicle offerings to electric or to manufacture only electric vehicles within the next 20 years. While some electric vehicles are more expensive than their gasoline counterparts right now, it is widely expected that lower cost EVs will be available in the near future and economies of scale will further drive down costs as the market grows. DEQ's Clean Vehicle Rebate Program also provides incentives towards the purchase of an EV, including rebates for low- and moderate-income households looking to purchase a new or used EV.

While the transition to light-duty EVs is accelerating rapidly, Oregon is also supporting the transition to zero emission medium- and heavy-duty vehicles. DEQ and ODOT are releasing a report to the Legislature in December 2022 that provides updates and recommendations on medium and heavy-duty vehicle electrification.

Future needs Understanding the need to monitor and track the state's progress towards electrifying the transportation sector, SB 1044 (2019) directed ODOE to develop the Biennial Zero Emission Vehicle Report. The report assesses the state of transportation electrification in Oregon such as EV adoption, demographic analysis of EV adopters, and the capacity of electric utilities to meet the state's future EV needs. In addition, ODOE, in collaboration with DEQ and ODOT, track supply and consumption of alternative fuel sources including electricity and hydrogen.

Next steps DEQ plans to present the proposed Advanced Clean Cars II regulation for commission action at a December 2022 EQC special meeting.