# Charging Stations Move Electric Cars Out Of City

Jeff Barnard, AP Environmental Writer

Charging stations that can fill the batteries of an electric car in 30 minutes or less are moving from the city to the country.

A $2 million federal stimulus grant will finance 22 fast-charging stations in smaller cities in the northwestern corner of the state, the Oregon Department of Transportation announced Thursday. After they are installed next year, electric car owners will be able to go on vacation to the coast or the mountains and home again without having to stop overnight to charge up.

This comes on top of plans to build fast-charging stations along Interstate 5 in Oregon and Washington by the end of this year.

"Electric cars are often seen as city vehicles," said Kristen Helsel, vice president of EV solutions for AeroVironment Inc., the Monrovia, Calif., company that is building the charging stations. "What this does is it extends the range so you can go from one corridor to another. It completely changes how EVs can be used."

Oregon is the first state to get this kind of grant from the U.S. Department of Transportation, said spokesman Bill Adams.

The state's history of supporting green initiatives like the bottle deposit bill and open access to beaches has put it at the forefront of embracing electric vehicles, said Art James, innovative partnerships project director for Oregon's Transportation Department.

The governor's office has also made a strong commitment to electric cars.

In 2008, then-Gov. Ted Kulongoski signed a deal with Nissan North America to launch the all-electric Leaf in Oregon, and most of the country's major electric vehicle manufacturers have visited Oregon to talk about introducing their vehicles.

So far, there are only two fast-chargers in the state, both in Portland. Eight more are slated to go online by the end of October along Interstate 5 between Eugene and the California border.

The stations are gathering key data on how people use their electric cars, and hundreds more stations that can charge a car in a few hours are also planned.

Level 1 car chargers use 110 volts, like a regular home outlet, and it can take an entire night to charge a vehicle. Level 2 uses 240 volts, like a home dryer or range, and can charge a car in three or four hours. But Level 3, which uses 480 volts, makes en route charging feasible by boosting a Nissan Leaf's 45-kilowatt battery from a 20 percent charge to 80 percent in less than 30 minutes.

This new group of fast-charging stations will cover an area radiating from Portland and stretching 80 miles to the northwest, 50 miles to the east, and 120 miles south. Stations will be no more than 50 miles apart, well within the 70- to 100-mile range of the Leaf.

Each station will be at a place offering restrooms and a convenience store.

They will be able to handle only one car at a time, but with just an estimated 800 electric cars of various stripes spread among Oregon's nearly 4 million residents, the prospect for lines is small for now.

Analysts expect the number of electric vehicles to grow quickly as the charging infrastructure expands, making the technology more convenient.

Pat Davis, who heads the vehicle technologies program for the U.S. Department of Energy, said automakers' current plans for ramping up electric vehicle production puts the nation on track to top President Barack Obama's goal of 1 million electric vehicles on the road by 2015.

"It's clear that by 2025, to meet the new fuel (efficiency) requirements, that we are going to see more electrification than we have now," Davis said. "That is going to take the form of everything from micro-hybrids to full hybridization plug-ins to electric drive. But they will not be the only thing on the road. You will probably see more natural gas vehicles than you have today, and vehicles with downsized engines and lighter vehicles than today."

Justin Denley and his wife traded in a four-wheel-drive pickup truck and bought a Leaf this year to cut their spending on gasoline. He mostly uses it to commute about 4 miles to his job as an information technology specialist at a Medford, Ore., credit union, but he recently piled the family in for the 125-mile drive to the coast to show the car off to relatives.

To make what is a three-hour trip in a conventional car, they had to stop overnight at an RV park, where they slept in a tent while the car charged overnight.

Denley said he can't wait for the fast-charging stations to go online along Interstate 5 this fall.

"That's a key thing that has to happen for most people who want to adopt this technology," he said. "Range anxiety (the fear of getting stranded) is a real thing.

"People want to be able to go farther."

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