EV4 Oregon landed a Drive Oregon grant to refine its fast-charging technology in partnership with Powin Energy and OpConnect.

Drive Oregon announced this week a $42,000 matching grant to EV4 Oregon to help the company complete a pilot project to produce and install a new breed of EV charging station in Tualatin.

The EV4 Oregon station, known as an ETM — a quirky play on ATM that stands for "energy transfer merchant" — is partly powered by solar and will allow DC quick charging in areas with a limited connection to the electrical grid.

Instead of using just electricity to charge up, ETM pairs EV4 Oregon's newly developed fast-charger with energy collected through a solar canopy to charge a battery. That battery fuels EVs, acting as a buffer to the grid and reducing charging demands. The system is being developed in partnership with Powin Energy and with OpConnect, which also provides slow chargers to the ETM stations.

"In a nutshell, Powin Energy is developing for me the battery system that goes along with this charging station. And OpConnect, I use their level-two charger," said Hans van der Meer, president and CEO of EV4.

Van der Meer said the integration of the components, along with their local production, "sets this unit apart from other charging stations currently being deployed."

Jeff Allen, executive director of Drive Oregon, a state-funded electric vehicle industry support group, said there were several things the Drive Oregon board liked about the proposal.

"One is that I think the technology is extremely interesting and could have a really substantial market," he said.

Next, he said, is that "it basically allows for DC quick-charging in places that don't have the grid capacity to allow it otherwise."

Allen likened fast charging to filling up an EV with a fire hose. A huge hose allows for faster power transmission. But in a lot of places, the grid capacity for fire hoses just isn't there. Oregon has been struggling, for example, with where to put a fast-charger between Astoria and Portland. And sometimes the host site — such as a convenience store where the charger is located — must pay demand charges of up to several thousand dollars monthly no matter how often the charging station is used.

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"What Hans and his folks have come up with is a technology that uses —instead of a fire hose connection to the grid — a garden hose connection to the grid. It's a regular 220 connection and it slowly fills up a battery. And then when you go to charge, you pull the charge out of the battery," Allen said. "What that allows you to do is put the chargers where you couldn't otherwise, reduce the demand on the grid, which reduces those demand costs, and then you've got that battery."

In the future, he said, such batteries will likely have other uses, such as storing power from intermittent energy sources like wind power generated at night, or feeding it back to the grid in times of need. That battery may even help a convenience store owner keep ice cream from melting in a power outage.

"The other thing we really liked about it is that it's a collaboration among several pretty innovative businesses in Oregon," said Allen.

So far, EV4 Oregon has installed two ETM stations, one in Seattle and another in Portland on Northeast Martin Luther King Jr. Boulevard just north of Northeast Fremont Avenue. There are more on the way.

"We are installing a station in Tillamook two weeks from now and then I've got on the planning board stations in Madras, Arlington, Bend, Salem and, in total, roughly about 10 stations to come," said van der Meer.

He said the stations are ultimately owned by their hosts, in this case Powin Energy. Hosts can expect to recover $30 a day for 5 years from the stations through a combination of memberships, sponsorships and advertisements on a screen on the station.

The Tualatin project will take place on Powin property at 20550 SW 115th Avenue. It is expected to serve as a model for EV4 for future deployment of ETM stations. Van der Meer said the grant would help keep down costs of future installations to about $40,000 per owner, after tax credit reductions from a total $200,000 installation cost.

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The grant to EV4 was one of three grants awarded Tuesday as part of a second round of matching grants awarded by Drive Oregon, totaling $142,000. In other awards, a $50,000 grant to Brammo Inc. will help the Ashland-based company open a satellite facility in Portland to strengthen its research and development. Another $50,000 grant was awarded to RYNO Motors as that company completes a pre-production run of its single-wheeled microcycle in Portland.

Drive Oregon noted the grants would help all three companies provide a minimum of $1.98 million in matching funds and create more than 20 jobs over 12 months.

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