

Electric-vehicle charging stations sprouting all over California

By Mark Glover

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Gas pumps still rule the roadways, but electric-vehicle chargers are moving up fast, being added by the dozens in California, the world's No. 1 electric-vehicle market.

In the last 20 years, the charging stations have evolved from novelties scattered across California to commonplace at airports, businesses, freeway rest stops and big-city parking garages.

Statewide, the boom in "EV" charging stations has been fueled by the increased popularity and sales of plug-in vehicles like the all-electric Nissan Leaf or plug-in hybrid versions of the hot-selling Toyota Prius and Honda Accord.

Mike Dodd, a 58-year-old Sacramento financial consultant, is an avid Leaf driver, using his to commute between Sacramento and the East Bay. When he needs to recharge his light-blue Leaf, he plugs it in at home or at various free charging stations in the Bay Area.

"For me, it's perfect," Dodd said. "I charge it up on one end and then charge it again on the other end. If you have that kind of commute, it makes perfect sense. ... If you live way out in the boonies, it's probably not going to work for you."

Drivers like Dodd have helped push California's EV infrastructure to first-in-the-nation proportions. Most of the state's charging stations are clustered in major metropolitan areas, like Los Angeles, San Francisco and Sacramento, with a smattering in more rural parts of the state.

The U.S. Department of Energy says California is home to 1,840 public electric-vehicle charging stations, or 21.6 percent of the 8,514 in use nationwide. By comparison, second-place Texas has 599 EV charging stations.

The state's exploding EV charging infrastructure corresponds with burgeoning sales of plug-in vehicles in California. According to the Washington, D.C.-based Electric Drive Transportation Association, California accounts for more than a third of the roughly 234,000 plug-in vehicles on U.S. roadways. Combined sales of plug-in hybrids and all-electric vehicles in California in 2013 topped 42,000 last year, up 500 percent from 2011.

For perspective, people bought 1.71 million new cars in the state last year, according to the California New Car Dealers Association in Sacramento. But experts say the intense growth of plug-in models, particularly the Toyota Prius, justifies the buildup of EV charging outlets.

Citing the rapid growth of Prius sales in the state, California Energy Commission member Janea Scott said "plug-in vehicles are moving (even) faster than that."

There are 19 plug-in electric vehicle models on the U.S. auto market today, but that number is expected to nearly double in two years, according to the EDTA.

Today's charger-ready autos are not limited-production models. Besides the Toyota Prius and Honda Accord, BMW is making a strong EV push. Add to that recently added plug-in players such as the all-electric Tesla Model S and the hybrid Chevrolet Volt.

In an increasingly competitive market, companies are dangling incentives to buyers. Nissan recently launched a sales campaign touting free charging for buyers of its five-passenger Leaf, which can run 85 to 100 miles on a full charge. Nissan's "No Charge to Charge" campaign offers two years of free public charging at EV stations to buyers in the top 10 U.S. markets for Leaf sales, including Sacramento, San Francisco and San Diego. Nissan plans to extend the offer to 15 additional markets over the next year.

John Driebe, who sells the Leaf at his Nissan store in the Elk Grove Automall, said "more and more people are embracing the Leaf" as access to EV charging stations has grown.

But Bay Area sales are the biggest market, he noted.

"To put it in perspective, I sold 10 (Leafs) last month but the numbers out of the Bay Area are much higher. I'm seeing (monthly dealership) sales of 60, 70 and 74 at those dealerships. With the population density and all the high-tech people working in the Bay Area, it's crazy how many they're selling there."

For California drivers, the proliferation of charging stations makes it far easier to map out a long-distance driving trip. Charging stations can be located on websites like www.plugshare.com and some vehicles (Tesla's Model S among them) have locator maps on the car's touchscreen navigation system.

In March 2012, Oregon, using nearly \$1 million in federal stimulus funds, opened its "electric highway," a 200-mile stretch of Interstate 5 in southern Oregon with fast chargers placed every 25 miles. By contrast, Nevada has hundreds of square miles without a single charging station; the state's 87 charging stations are mostly concentrated in the Reno/Tahoe and Las Vegas areas.

Over a generation, EV charger companies have multiplied, with names such as Blink Network, Car Charging Group Inc., NRG eVgo, ChargePoint and ClipperCreek Inc., founded in Auburn in 2006.

Pasquale Romano, president and CEO of ChargePoint, which claims the nation's largest EV charging network with a market share of more than 70 percent, projects there will be as many as 1 million electric charging points coast to coast by 2024.

"With automakers coming out with more and more electric vehicles," Romano said, "EV adoption just keeps growing."

Bill Boyce, SMUD's electric transportation supervisor who has observed EV charger growth since its infancy, sees evidence of increased demand locally. He said he's heard anecdotes of frustrated drivers competing for EV charging terminals in Sacramento parking garages. And SMUD and some motorists drive from far-flung locales to hook up to SMUD's EV charging stations at its Highway 50 headquarters.

He said SMUD's newly installed fast-charger can be accessed for a fee that equates to 22 cents a kilowatt-hour, or the equivalent of \$2.20-a-gallon gasoline. To pay, drivers use a mobile phone app that charges their credit card.

Fast chargers, which can charge an EV battery to 80 percent capacity in 30 minutes, are also becoming more prevalent. EV dealers like Nissan typically have fast chargers at their sites, and they also can be found in public locations, including downtown Sacramento.

Boyce, who said he has been driving a Chevrolet Volt "from about the first day they hit Sacramento," said today's fast chargers are "approaching gas-station-like performance" and that motorists are generally becoming more confident about electric vehicles and plug-in technology. At some companies, EV chargers are becoming "more like an employee perk," he said, noting that Google has about 400 chargers for employee use at its Mountain View headquarters.

But California's commitment to EV is more than a high-tech, Bay Area phenomenon. Electric-vehicle advocates and auto industry analysts say California's tough emissions standards and the state's long-term environmental goals are encouraging the surge in statewide EV charging stations. They cite Gov. Jerry Brown's goal of putting 1.5 million zero-emission vehicles on the road by 2025.

To help reach that goal, California buyers of electric vehicles can apply for a \$2,500 rebate from the California Air Resources Board and also have single-driver access to highway carpool lanes.

Late last year, Brown and governors of seven states announced an initiative to put a combined 3.3 million zero-emission vehicles on their state roadways within a dozen years. Increasing the number of EV charging stations in those states was a major component of that agreement.

Over the past decade, the California Energy Commission has awarded millions of dollars in grants to drive growth of the state's EV charging network. That includes the commission's

approval in June of 15 grants totaling more than \$5 million to install 475 new EV charging stations in communities statewide.

Scott, of the Energy Commission, believes that “we’re still early in the game,” with continued introductions of plug-in vehicles creating more demand for charging stations, including in remote areas of the state.

She said the trend is consistent: “If you build it, they will come.”