

How far can you go in an electric car? California needs 1.2 million charging stations

By Isabella Bloom

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California wants to eliminate the sale of new gas-powered vehicles by 2035, but consumers worry about how far they can drive on a single charge with an electric car.

Chief among drivers' concerns is range anxiety, a fear that your vehicle will run out of range before you reach your destination, according to a survey by Consumer Reports. Drivers also worry about finding an electric charger on road trips and long commutes.

Many electric vehicles today have a range of over 200 miles. The Tesla Model 3 has a range of 353 miles and the Chevy Bolt can go 259 miles on a single charge, according to each manufacturer.

"Consumers have to be interested and willing to purchase these vehicles," said Brian Maas, president of the California New Car Dealership Association. "That means the vehicles are going to have to meet the needs of customers in terms of how they fuel the cars, the range of the vehicles, their cost, their utility."

Range capacity of electric vehicles is rapidly increasing.

Nissan says the 2021 Nissan Leaf has a range of 226 miles, up from its 2018 version with only a 151-mile range. Tesla reports that its 2021 Tesla Model S has a range of 390 miles, the longest ranged electric car to date. And many models with over 400-mile ranges will join the market soon. That would be enough to drive from San Francisco to Los Angeles on a single charge.

One of the major challenges in selling electric vehicles, according to Maas, is explaining how to refuel the vehicle.

"In selling zero-emission vehicles, consumers need to understand how electric charging works, where they can get charging, what levels of charging are available," Maas said. "That's a whole new conversation that we haven't seen in decades in the automotive industry... And it's something that dealers are doing their darndest to learn."

California already has more than 73,000 electric chargers, but a report from the California Energy Commission (CEC) projects the state will need 1.2 million public and shared private chargers by 2030 to support the number of electric vehicles on the road.

"I think we could definitely do it," said Assembly Member Phil Ting, D-San Francisco, who wrote the 2018 bill requiring the CEC to review ZEV charging needs every two years.

Currently, the state is behind by 54,000 chargers to meet a 2025 benchmark, but Gov. Gavin Newsom's 2021-22 budget proposal includes \$500 million to help close that gap.

Ting says this money is "an initial start," but what's really needed is for the California Public Utilities Commission to move faster to let the three largest independent utilities in the state build charging infrastructure.

"What we need to do is really unlock the private capital that's dying to build out charging infrastructures," Ting said. "We need to streamline that process, make it go faster. So money isn't the only issue."

What kind of charging is available?

Level 1 charging is the easiest but slowest method of charging your electric vehicle. All electric cars come with a cable that's compatible with standard outlets so you can do this at home. This method adds about 3.5 to 6.5 miles per hour of charging.

Level 2 charging requires the installation of a charging station, which costs about \$350 to \$900 to purchase the station and another \$400 to \$1,700 to install. These are the stations most commonly used at home and public locations. These chargers add about 14 to 35 miles per hour of charging.

Level 3 or Direct Current (DC) fast chargers cost \$10,000 to \$40,000 to purchase, plus an additional \$4,000 to \$50,000 to install. However, they have the greatest return in range per hour, adding about 300 miles per hour of charging.

Although the up-front cost of purchasing an electric vehicle is currently about \$19,000 more than a gas-powered vehicle, a Consumer Report study shows that over the life of the vehicle, electric cars save consumers \$6,000 to \$10,000.

For one, electricity prices are simple compared to fluctuating gasoline prices, so electric vehicle drivers can save about \$800 to \$1,000 per year. And as more Californians switch to electric vehicles, this will drive down electricity prices.

At the average cost of electricity in California right now, it would cost about \$6.63 to fully charge an electric vehicle with a 150-mile range. In comparison, at California's average gas price of \$3.11 per gallon, it costs about \$18.66 for enough gas to drive 150 miles.

Where are the charging stations now?

You're most likely to find charging stations clustered in places where people can occupy themselves while they wait — at shopping centers and outside workplaces — or where interstate highways cross.

Public chargers are mostly concentrated in cities and large commercial areas and mostly absent from dense urban residential neighborhoods, according to a recent infrastructure deployment assessment report by the CEC.

You can see a map of all electric vehicle charging stations in the U.S. [here](#).

Volkswagen settlement funds available for engine upgrades

By The Business Journal Staff

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Volkswagen is footing the bill to replace or upgrade older, in-use vehicles and engines for freight trucks, switcher locomotives, ferries, tugboats and towboats.

The South Coast Air Quality Management District (South Coast AQMD) Governing Board has approved \$26 million in statewide funding for the Combustion Freight and Marine Projects through the VW Environmental Mitigation Trust program.

The program is meant to fund projects in California that will fully mitigate excess nitrogen oxide (NOx) emissions caused by vehicles included in the statewide VW settlement.

This round of funding is the second statewide solicitation for this funding category under the VW Environmental Mitigation Trust program. The funding will provide the \$26 million on a first-come, first-served basis to eligible projects to repower or replace older, in-use vehicles and equipment with the cleanest commercially available certified internal combustion or hybrid technologies including: replacement or upgrade of Class 7 and 8 freight trucks—including waste haulers, dump trucks, replacement of freight switcher locomotives or upgrade engines to Tier 4, and upgrade ferries tugboats or towboats to Tier 4 or hybrid with Tier 4-equivalent NOx emissions.

The new vehicles, equipment and engines funded through the program must be operated in the state for at least three years. Existing vehicles, equipment or engines being replace or upgraded are required to be scrapped.

The VW Environmental Mitigation Trust is a nationwide program that allocated \$423 million to California to mitigate the excess NOx emissions caused by VW's use of illegal emissions testing defeat devices in VW diesel vehicles.

The funding is also mean to target areas disproportionately impacted by air pollution and 50% of the funds from this category are expected to benefit disadvantaged or low-income communities.

Applications for the program will be accepted at <http://www.aqmd.gov/vw/> starting June 22 at 1 p.m.