



September 2021

## California's Electric Future

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On September 24, 2020, California Governor Gavin Newsom announced a bold plan to ban all sales of new gasoline-powered vehicles in California by 2035, a move the Governor called “the most impactful step our state can take to fight climate change.”<sup>1</sup> Earlier in 2018, former Governor Jerry Brown signed Senate Bill 100, setting a goal to achieve 100 percent clean electric power by 2045.<sup>2</sup> The stage is set for the Golden State’s journey to an electric future in the driver’s seat of electric vehicles.

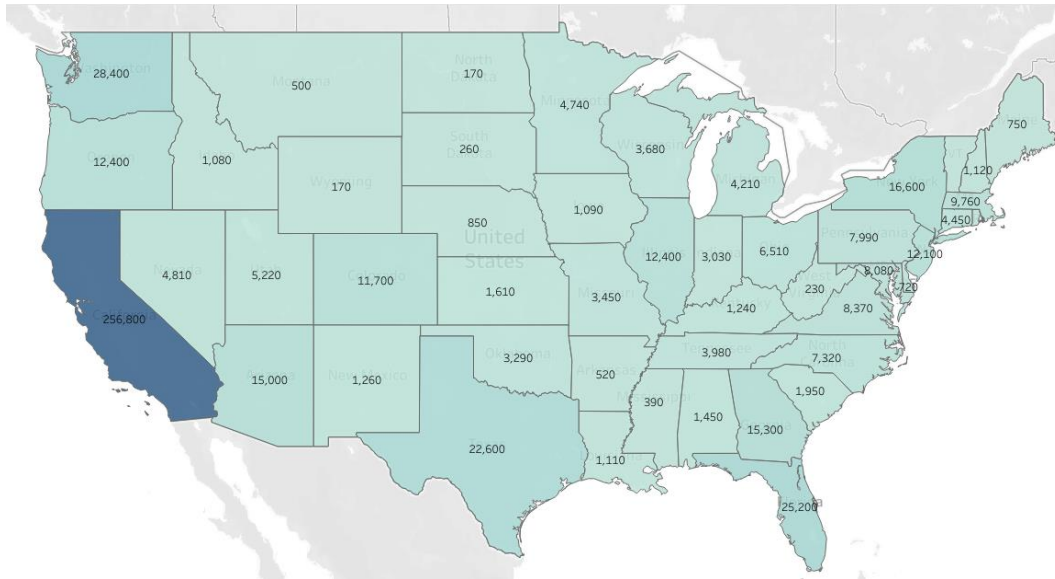
California already leads the nation—by a mile—in terms of electric vehicle registration. **Figure 1: *Number of Electric Vehicle Registrations*** shows electric vehicle registrations across the nation (excluding Alaska). As of December 2020, California has 425,300 registered all-electric vehicles—almost ten times more than the second-ranked state, Florida. California also leads the nation in per-capita ownership of electric vehicles, with one electric vehicle registered per every 92 people living in the state. The national average is one electric vehicle per 322 people.

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<sup>1</sup> “Governor Newsom Announces California Will Phase Out Gasoline-Powered Cars & Drastically Reduce Demand for Fossil Fuel in California’s Fight Against Climate Change.” *Office of Governor Gavin Newsom* (Sept. 23, 2020). <<https://www.gov.ca.gov/2020/09/23/governor-newsom-announces-california-will-phase-out-gasoline-powered-cars-drastically-reduce-demand-for-fossil-fuel-in-californias-fight-against-climate-change>> (accessed Sept. 15, 2021).

<sup>2</sup> “Governor Brown Signs 100 Percent Clean Electricity Bill, Issues Order Setting New Carbon Neutrality Goal.” *Office of Governor Edmund G. Brown Jr.* (Sept. 10, 2018). <<https://www.ca.gov/archive/gov39/2018/09/10/governor-brown-signs-100-percent-clean-electricity-bill-issues-order-setting-new-carbon-neutrality-goal/index.html#:~:text=Governor%20Edmund%20G.-,Brown%20Jr.,carbon%20neutrality%20%E2%80%93%20both%20by%202045>> (accessed Sept. 15, 2021).

Figure 1: Number of Electric Vehicle Registrations<sup>3</sup>



Electric vehicles are still a minority in the overall population of vehicles, making up less than two percent of California’s 35 million registered vehicles as of January 2021.<sup>4</sup> But they are gaining popularity at an astonishing rate—the number of registered electric vehicle has increased 600 times since 2010.<sup>5</sup> If Californians continue to register electric vehicles at the same rate they did in the past five years, the State is on pace to have 33 million electric vehicles registered by 2035.

California also has the infrastructure in place for moving into an electric future. About one-third of the nation’s electric charging stations and more than half of the nation’s charging outlets are in California. **Figure 2: Electric Charging Station Corridor** shows a corridor of charging stations, each represented by a green dot on the map, for electric vehicles within 50 miles of a route from Smith River at the southeast corner of the state to El Centro at the northwest corner—a total of 11,169 stations.<sup>6</sup>

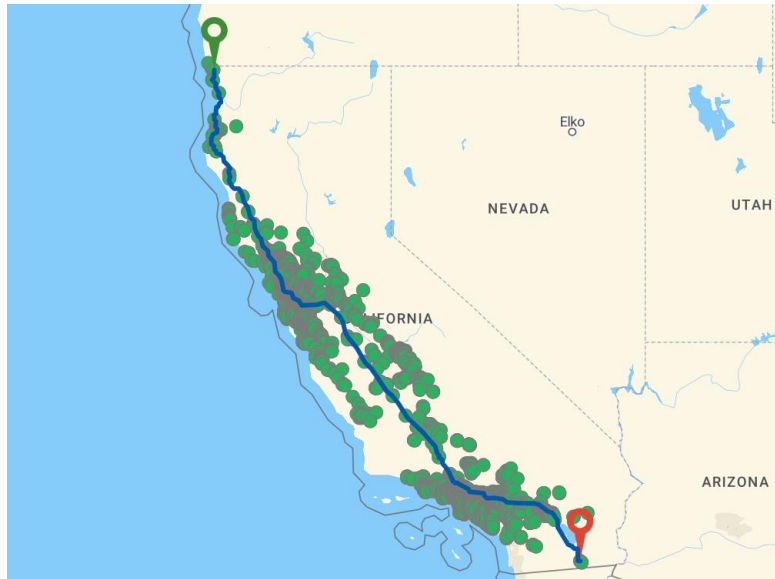
<sup>3</sup> “Electric Vehicle Registrations by State.” *Alternative Fuels Data Center, U.S. Department of Energy.* <<https://afdc.energy.gov/data/?page=2&q=electricity>> (accessed Sept. 15, 2021).

<sup>4</sup> “DMV Statistics.” *State of California Department of Motor Vehicles.* <<https://www.dmv.ca.gov/portal/news-and-media/dmv-statistics/>> (accessed Sept. 16, 2021).

<sup>5</sup> “ZEV and Infrastructure Stats Data.” *California Energy Commission.* <<https://www.energy.ca.gov/files/zev-and-infrastructure-stats-data>> (accessed Sept. 16, 2021).

<sup>6</sup> “Alternative Fueling Station Locator.” *Alternative Fuels Data Center, U.S. Department of Energy.* <<https://afdc.energy.gov/stations/#/find/nearest?fuel=ELEC>> (accessed Sept. 16, 2021).

**Figure 2:** *Electric Charging Station Corridor*



Most of these charging stations are of level 2 (240 volt) capacity, and are open to public use. The City of Los Angeles is home to the largest number of stations in the state at 2,542, followed by San Jose (1,379) and San Diego (1,235) in the top three. These stations operate with a range of different pricing schemes. More than 5,000 charging stations are free. Some stations charge by the hour, ranging from \$1 per hour to \$5 per hour. Others charge customers by actual energy consumption, at a rate between \$0.10 per kwh to \$0.69 per kwh.<sup>7</sup>

With infrastructure paving the way, California's leap into an electric future has received pushes from lawmakers as well. By counts of state laws and incentives that are related to electric cars, California stands the tallest in the nation at 156, three times the number for the state of Washington, the runner-up.<sup>8</sup> Currently, the State's Clean Vehicle Rebate Project offers up to \$7,000 in electric vehicle rebates for the purchase or lease of new, eligible zero-emissions and plug-in hybrid light-duty vehicles.<sup>9</sup> Additionally, there are incentives in place to help finance electric vehicle supply equipment for residential users and small businesses.<sup>10</sup>

In 2020, California was hit by the worst wildfire season in the history, which has claimed more than 4 million acres of land, 10,448 structures, and 33 lives.<sup>11</sup> It is widely believed that climate change is one of the triggers, if not the main culprit, of the increased incidence and severity of wildfires here in the Golden State. The switch from gasoline-powered vehicles to electric ones is viewed by the current government as an important step forward in the fight against climate change. Data

<sup>7</sup> *Id.* Reported numbers are based on a sample of 13,268 electric charging stations in California, obtained from the Department of Energy.

<sup>8</sup> "State Laws and Incentives." *Alternative Fuels Data Center, U.S. Department of Energy.* <<https://afdc.energy.gov/laws/state>> (accessed Sept. 16, 2021).

<sup>9</sup> "CVRP Eligible Vehicles." *California Clean Vehicle Rebate Project.* <<https://cleanvehiclerebate.org/eng/eligible-vehicles>> (accessed Sept. 16, 2021).

<sup>10</sup> "California Laws and Incentives." *Alternative Fuels Data Center, U.S. Department of Energy.* <<https://afdc.energy.gov/laws/all?state=CA>> (accessed Sept. 16, 2021).

<sup>11</sup> "2020 Incident Archive." *Cal Fire.* <<https://www.fire.ca.gov/incidents/2020>> (accessed Sept. 16, 2021).

reviewed in this article suggests that Californians are already getting a head start in the journey to an electric future.

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