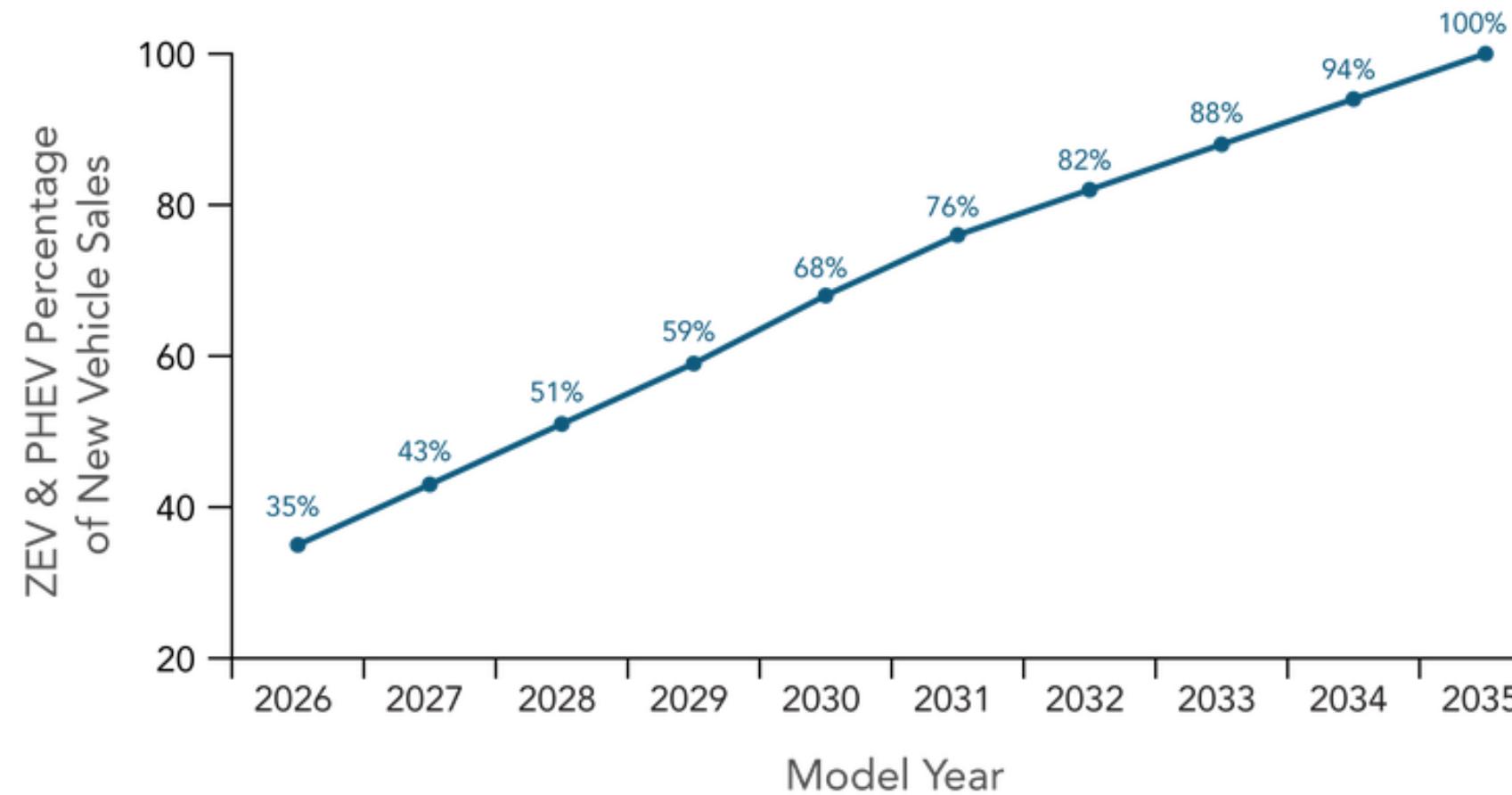


California Zero Emission Vehicle Mandate

In 2035, 100% of all new cars sold in California must be a Zero Emission Vehicle.

(Z.E.V.'s include Electric Vehicles, Plug-IN Hybrid Vehicles, and Fuel Cell Electric Vehicles).

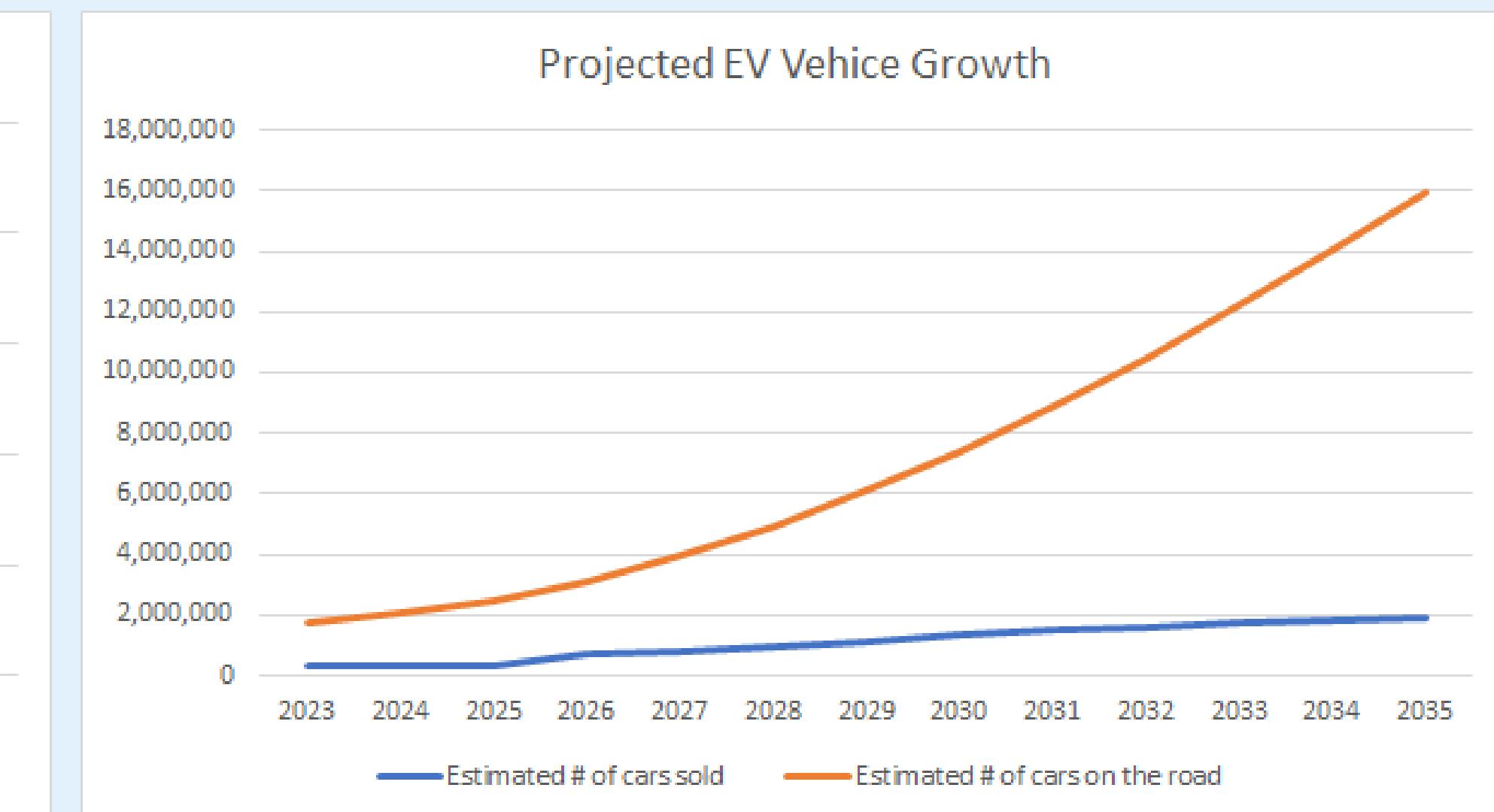
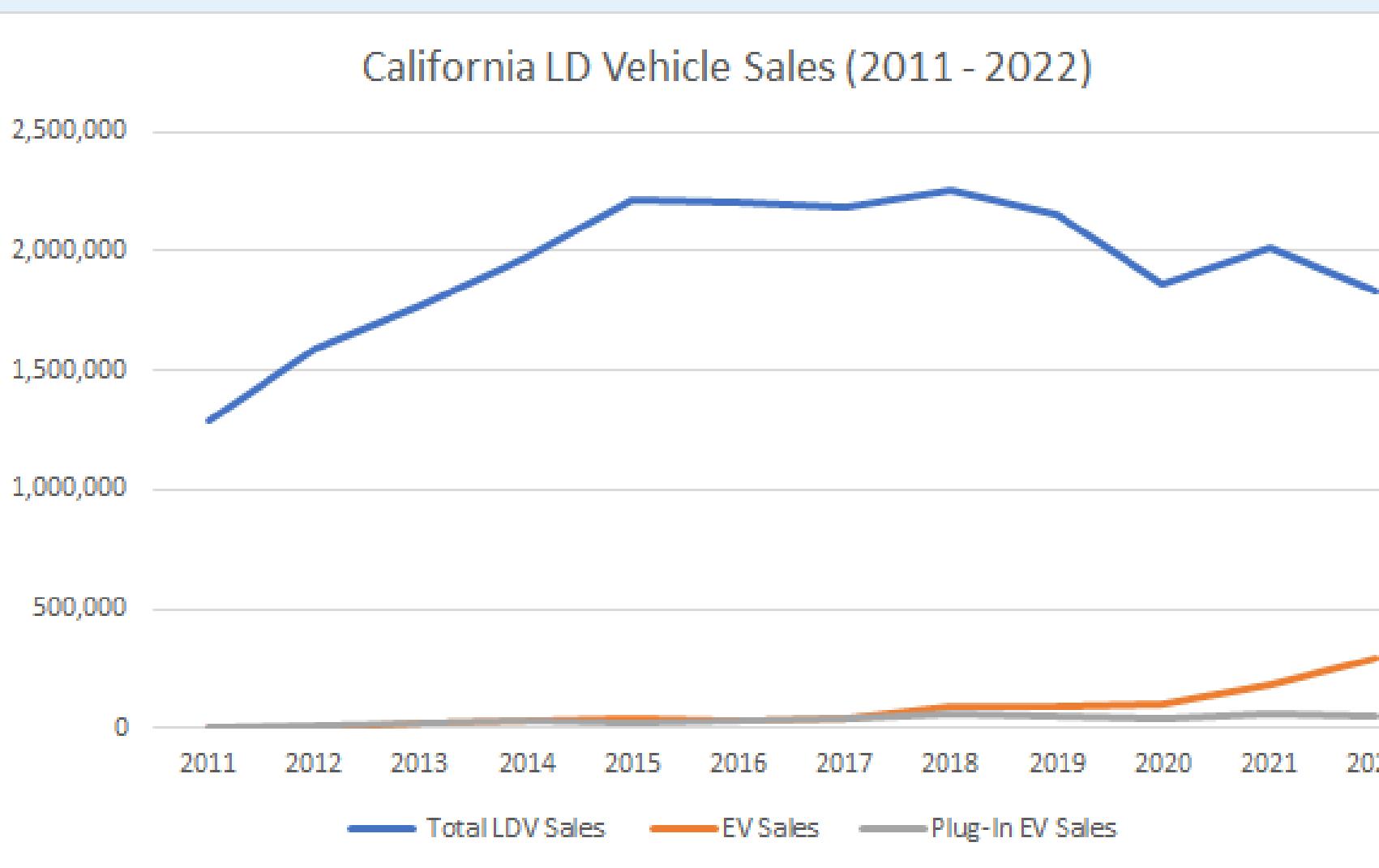


*Will California
Have Enough
Energy for
EVs?*

How many EV's will be on the road in California?

2022 = 1,384,624

2035 = 15,977,652



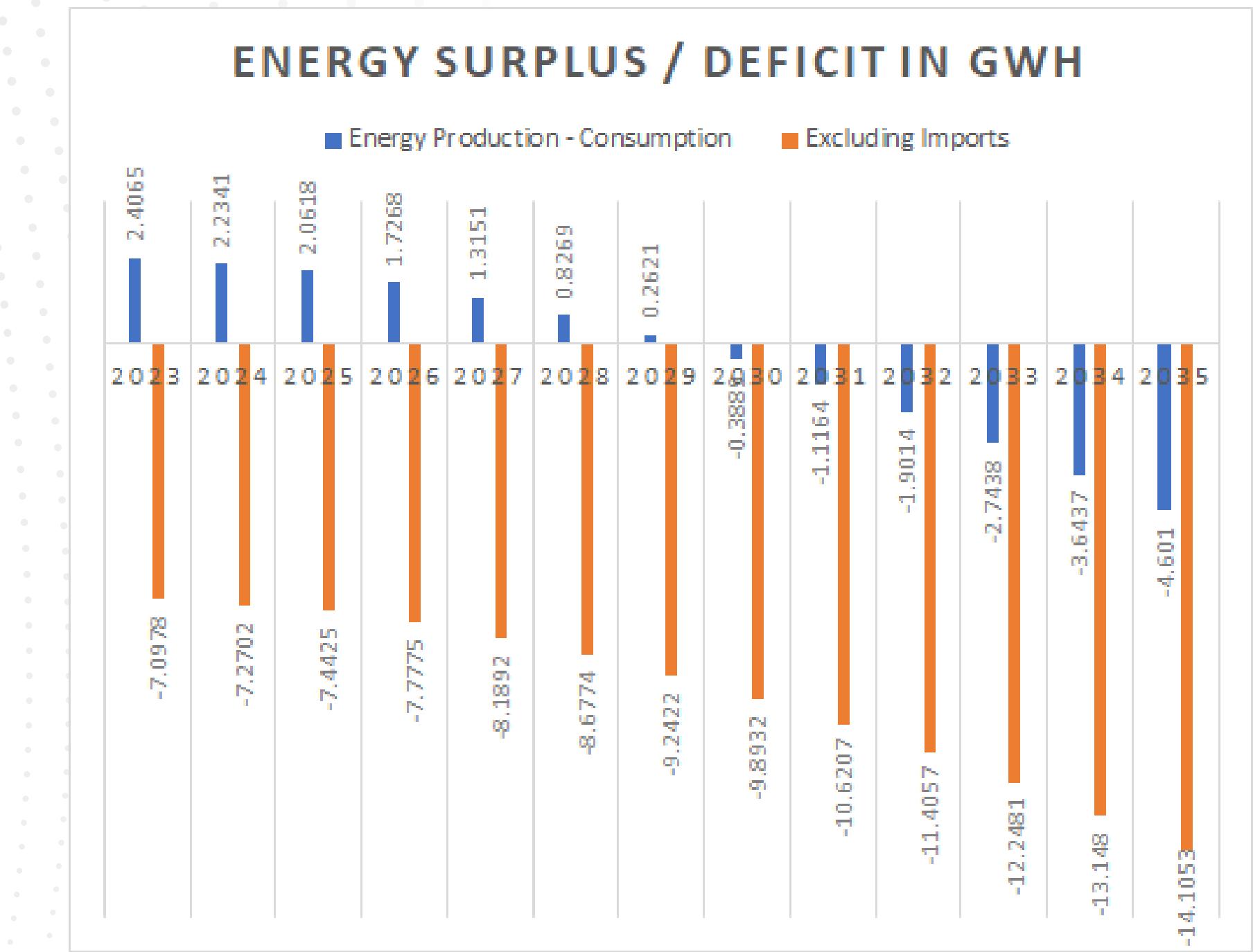
Source: Ca.gov - LDV Sales

How much electricity?

In 2020 California's Energy Grid produced 31.7 GWh per hour, per year.

California's consumption (excluding ZEV's) is estimated to be 28.444 GWh per hour, per year.

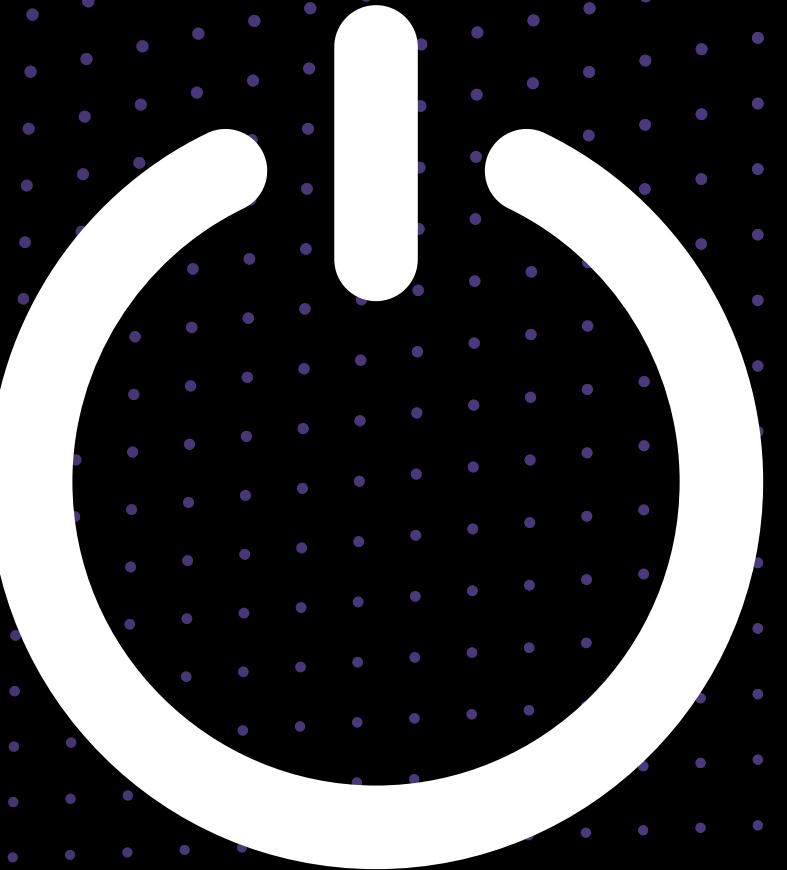
Each ZEV is predicted to require 0.4920 kWh per hour, per year



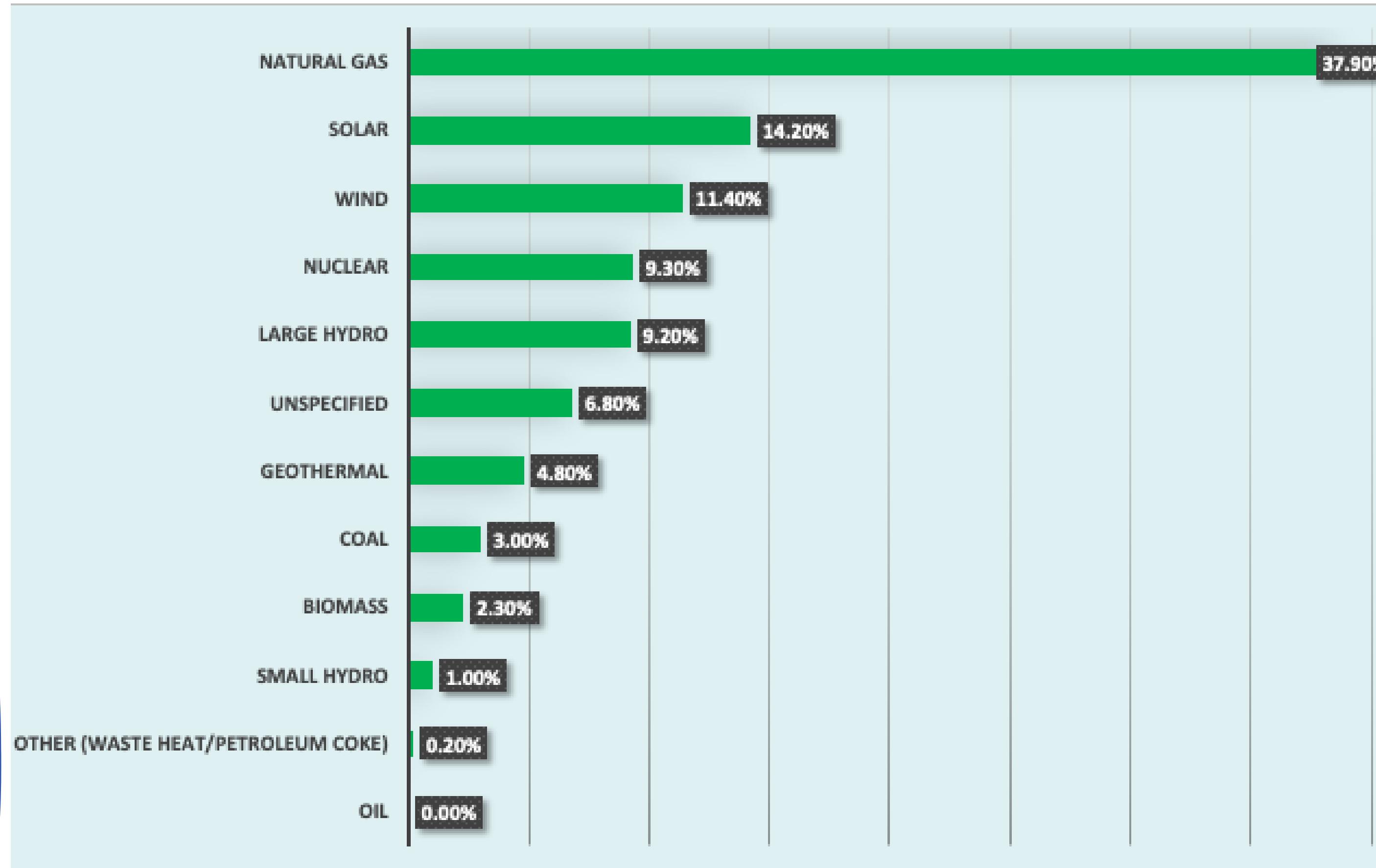
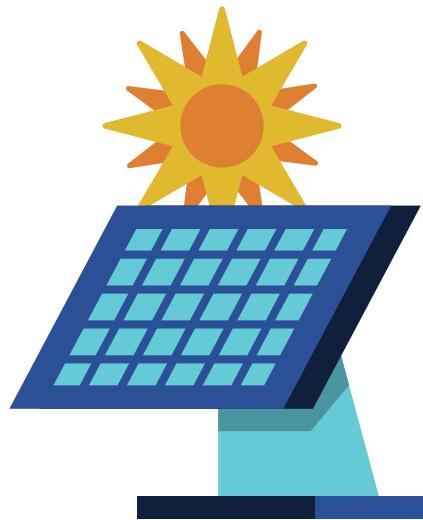
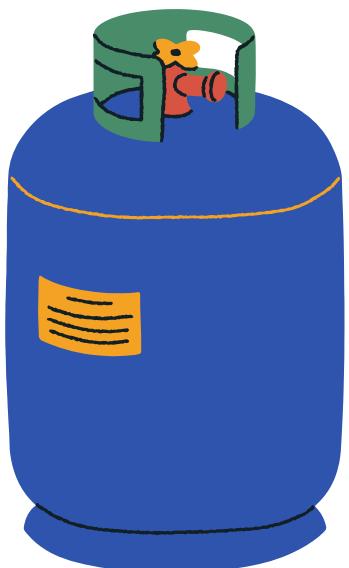
Power Sources

In order to power all these new vehicles and keep up with other electricity needs, the state must triple its power generation capacity and deploy new solar and wind energy at almost five times the pace of the past decade.

Let's take a look at some current power sources.



California Power Sources in 2021



Renewable Energy Sources

Solar 17.1%

Wind 7.8%

Geothermal 5.7%

Biomass 2.8%

Small Hydro 1.3%



Non-Renewable Energy Sources

Natural Gas 50.2%

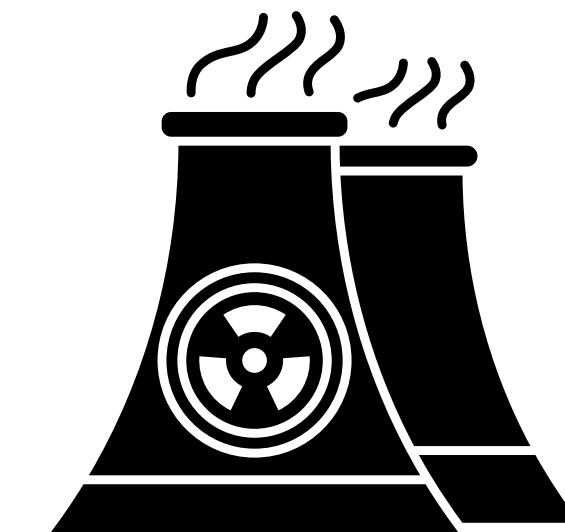
Nuclear 8.5%

Large Hydro 6.2%

Coal 0.2%

Waste Heat/Petroleum Coke 0.2%

Oil < 0.1%



What's the plan?

How does California plan to meet energy demands by 2035?



Offshore Wind Turbines



Three of the common types of floating wind turbine platform.

Josh Bauer/NREL

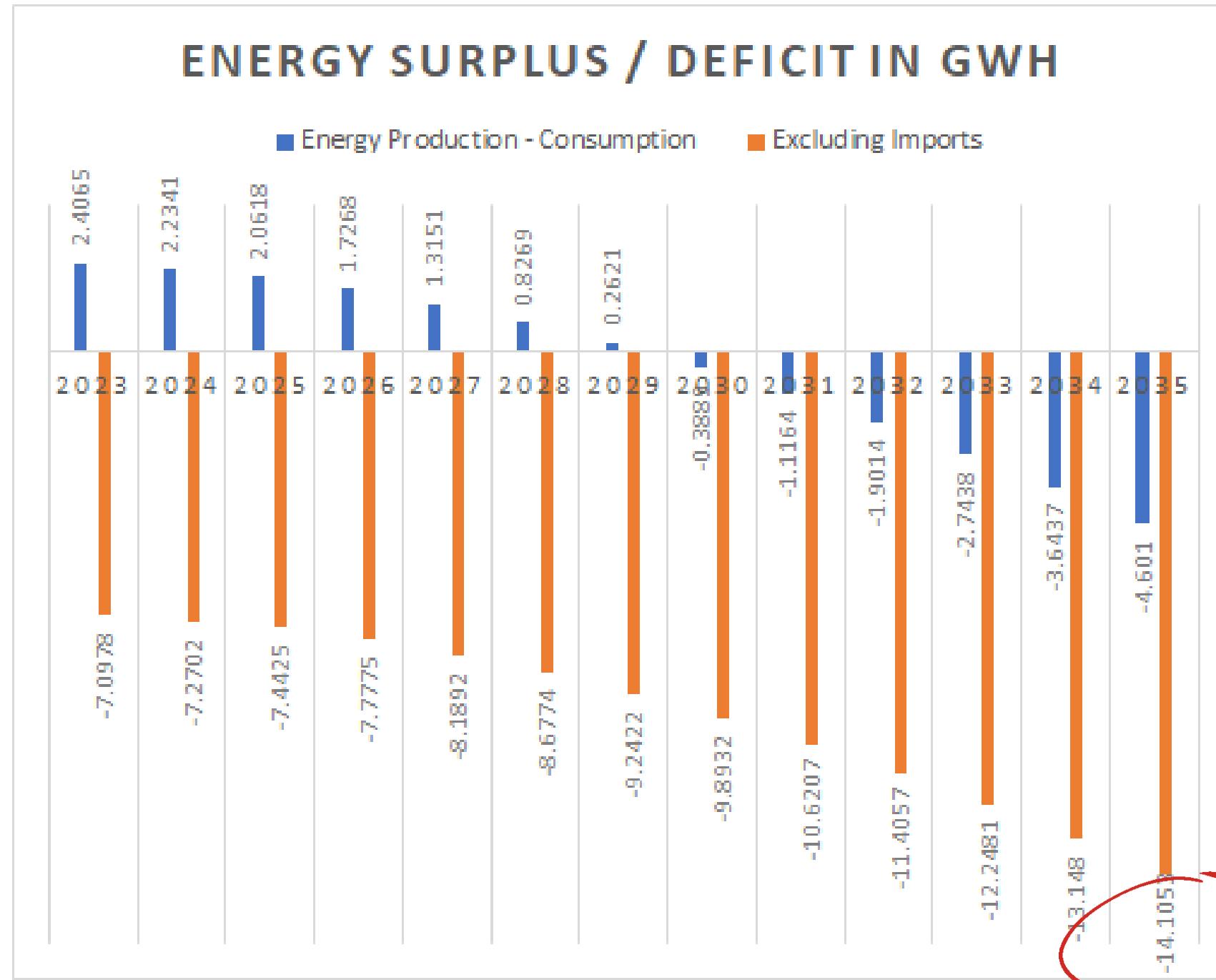
- On average: onshore wind turbines produce about **2.5 to 3 GW**, offshore about **3.6 GW**.
- GOALS: Between **2 to 5 GW** of offshore wind off California's coasts per year by 2030 and at least **25 GW** per year from offshore wind by 2045.
-
- Between the planning and regulatory process, installing the turbines, constructing transmission lines and an onshore production plant it could take **7-9 years** before the first offshore wind farm is operational.

Solar and Battery Power



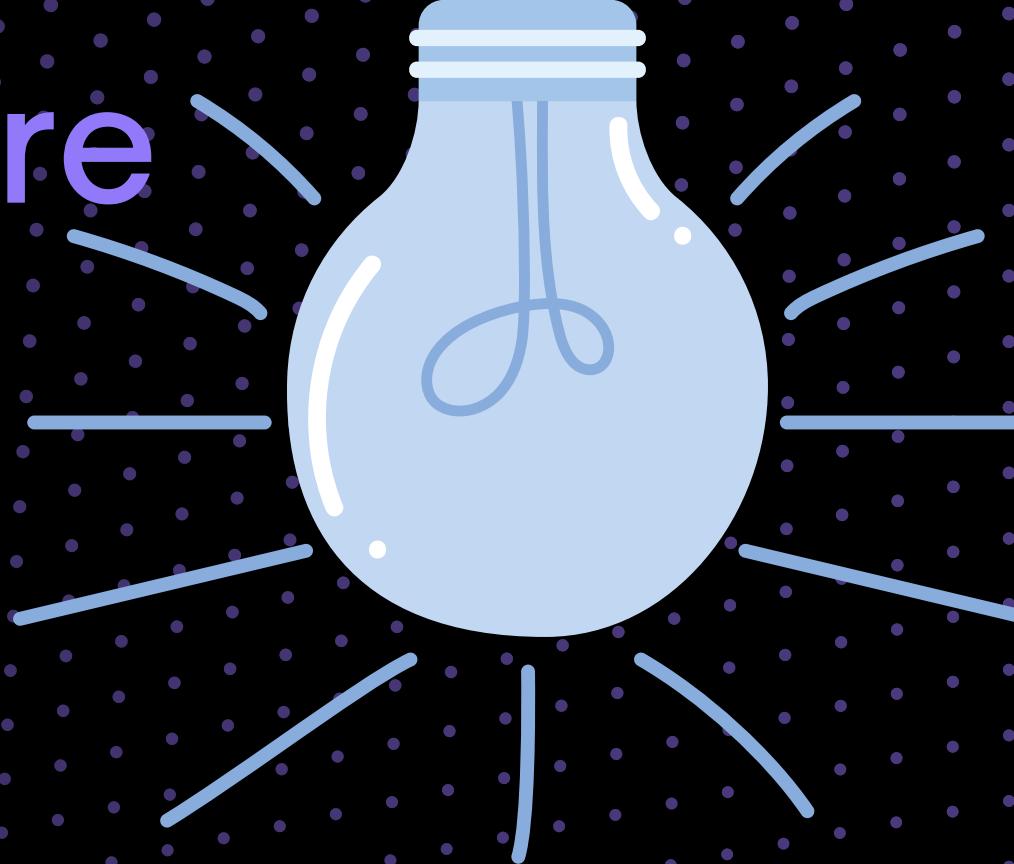
- GOAL: to build at least **6GW** of solar and wind energy and battery storage a year for the next 25 years.
- In the past decade, average of **1 GW** of utility solar and **0.3 GW** of wind per year.
- In the past three years, the pace sped up, with more than **4 GW** added annually.

What needs to happen?



- An average of **112.56 GW or 493,012.8 GWh per year** by 2035 among Solar (Utility-Scale and Customer), Offshore and On-shore Wind, Geothermal and other clean energy sources.
- Construction on offshore wind farms needs to commence, commercial and residential solar power and other renewable energy sources need to increase as soon as possible.

Charging Stations Current and Future

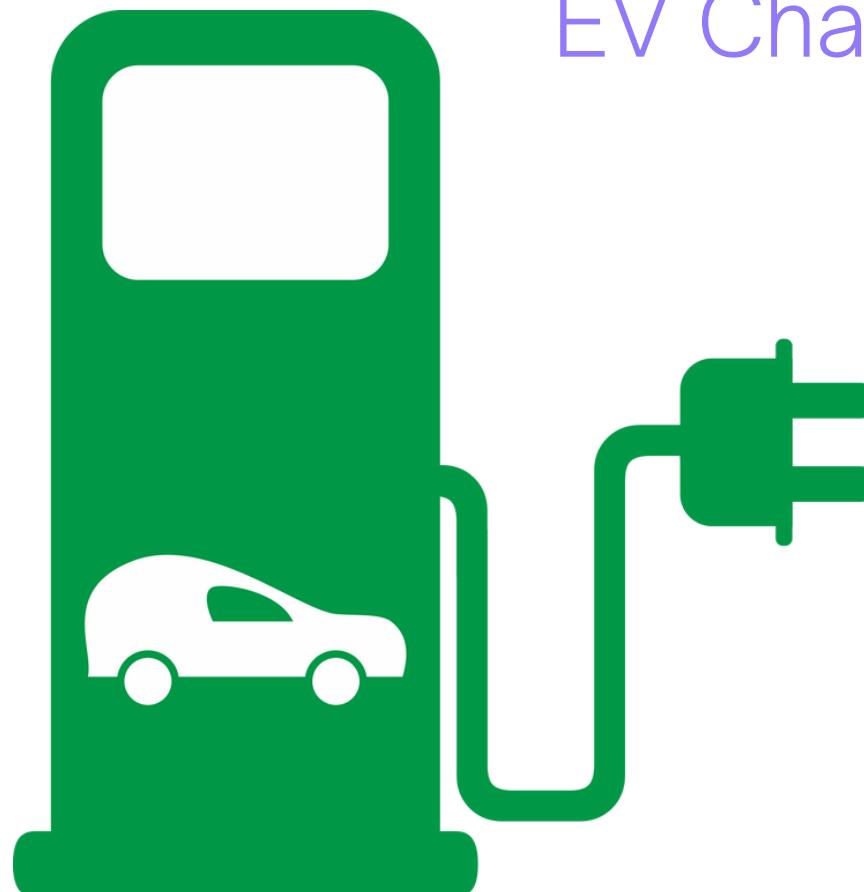


As electric vehicles surge in popularity, the need for accessible and reliable EV charging stations will only increase.

How many charging stations do we have now

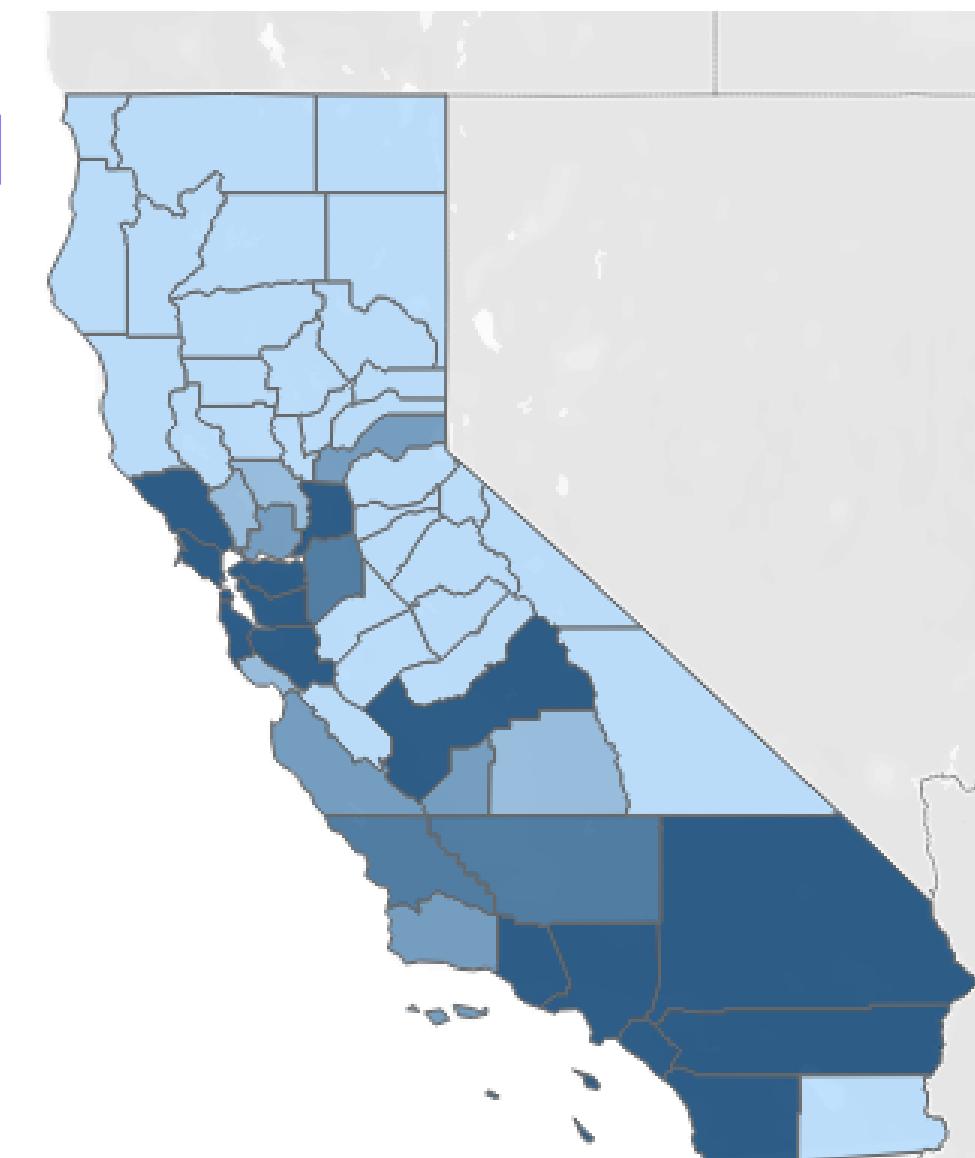
In California currently there is 87,707 Ev Stations and our data reveals that Los Angeles County and Santa Clara County exhibit the most extensive charging networks and that will only increase.

EV Chargers Currently and Average Energy Needed



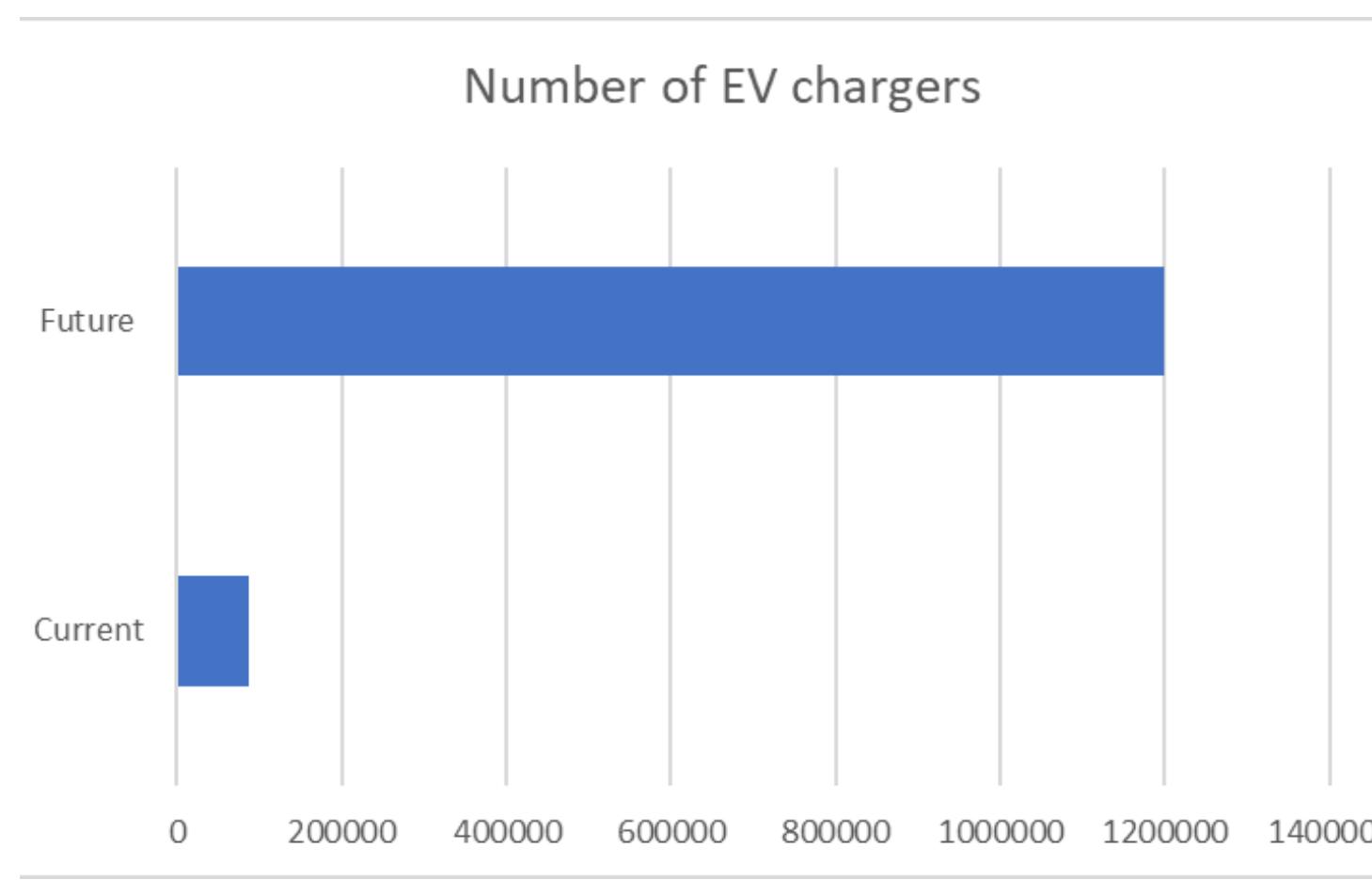
Level 2 Charging Stations: $78,500 = 1051 \text{ GWh}$

DC Fast Charging: $9,207 = 644.49 \text{ GWh}$



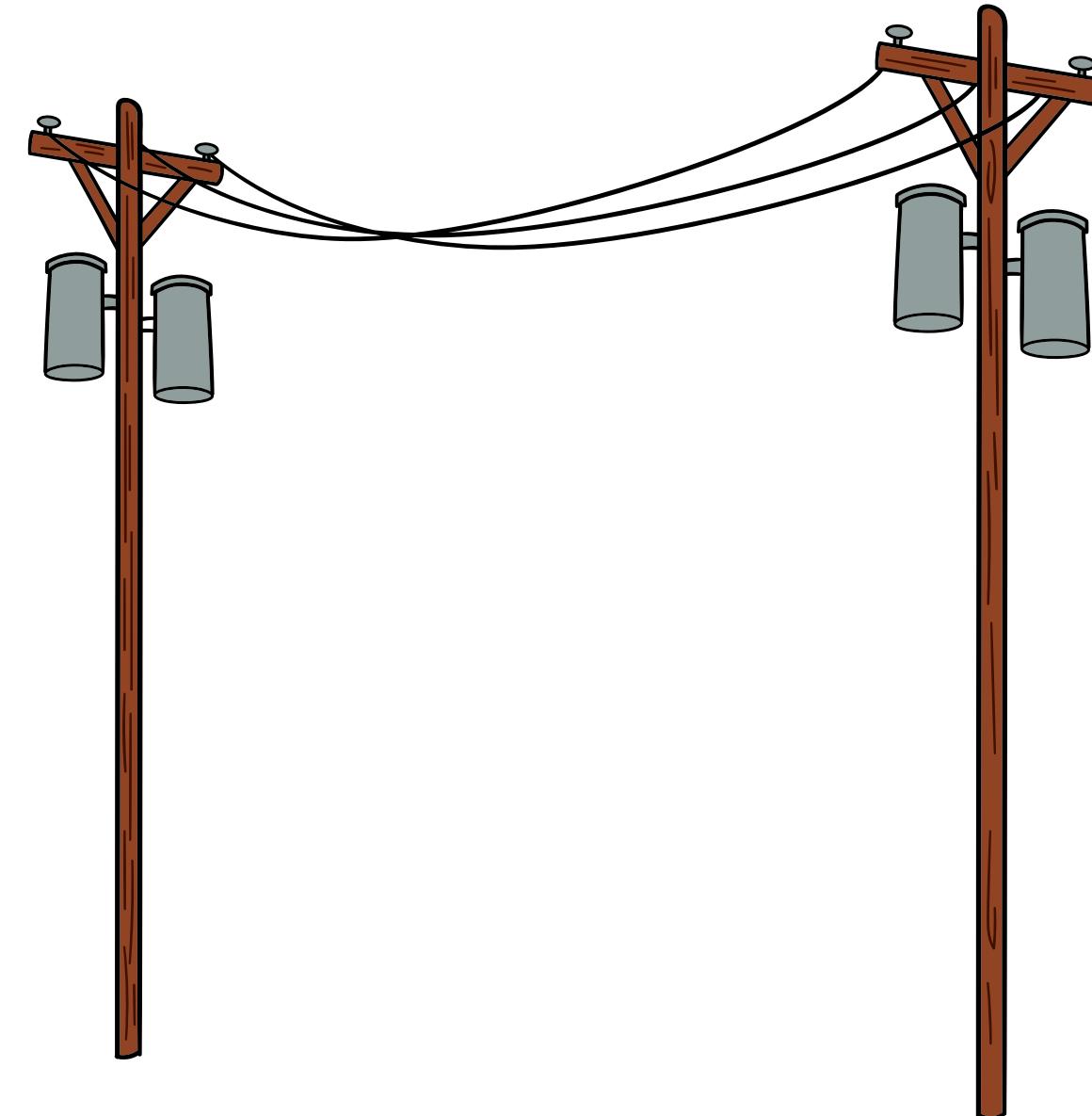
Predictions on how many charging stations we will need by 2035

Despite the current progress, it is evident that California still requires a significant expansion of its electric vehicle charging infrastructure to meet the growing demand and ensure widespread accessibility by 2035

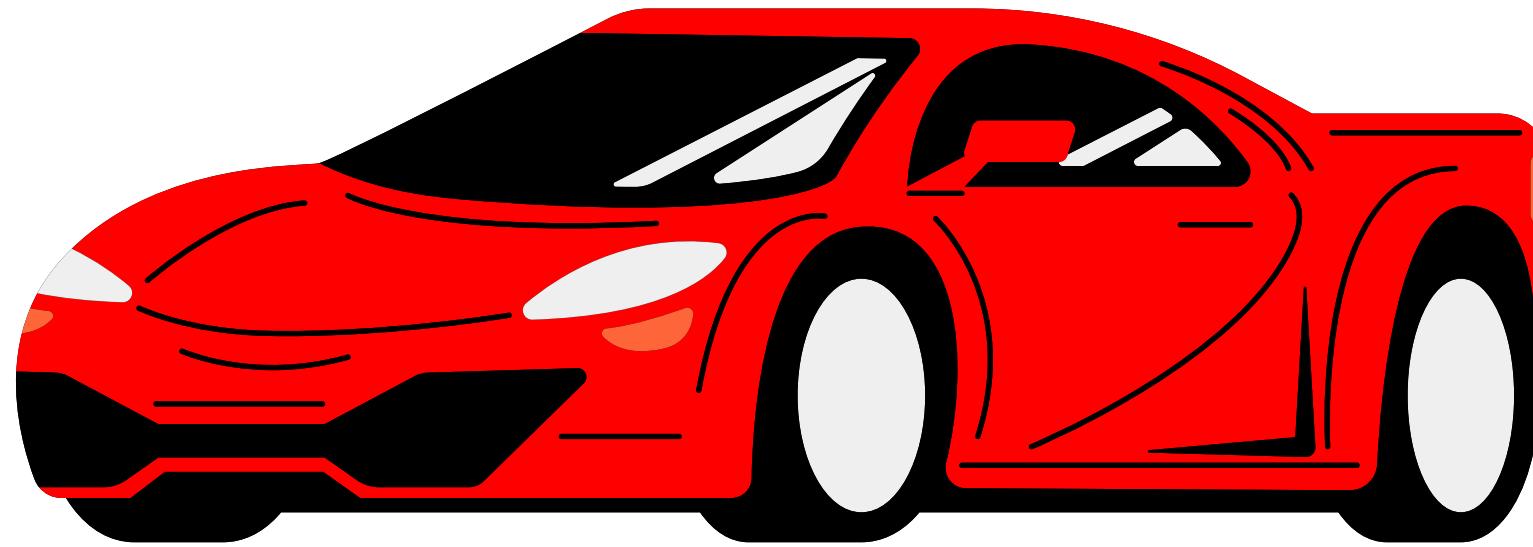


Companies that actually have plans in the works for new stations

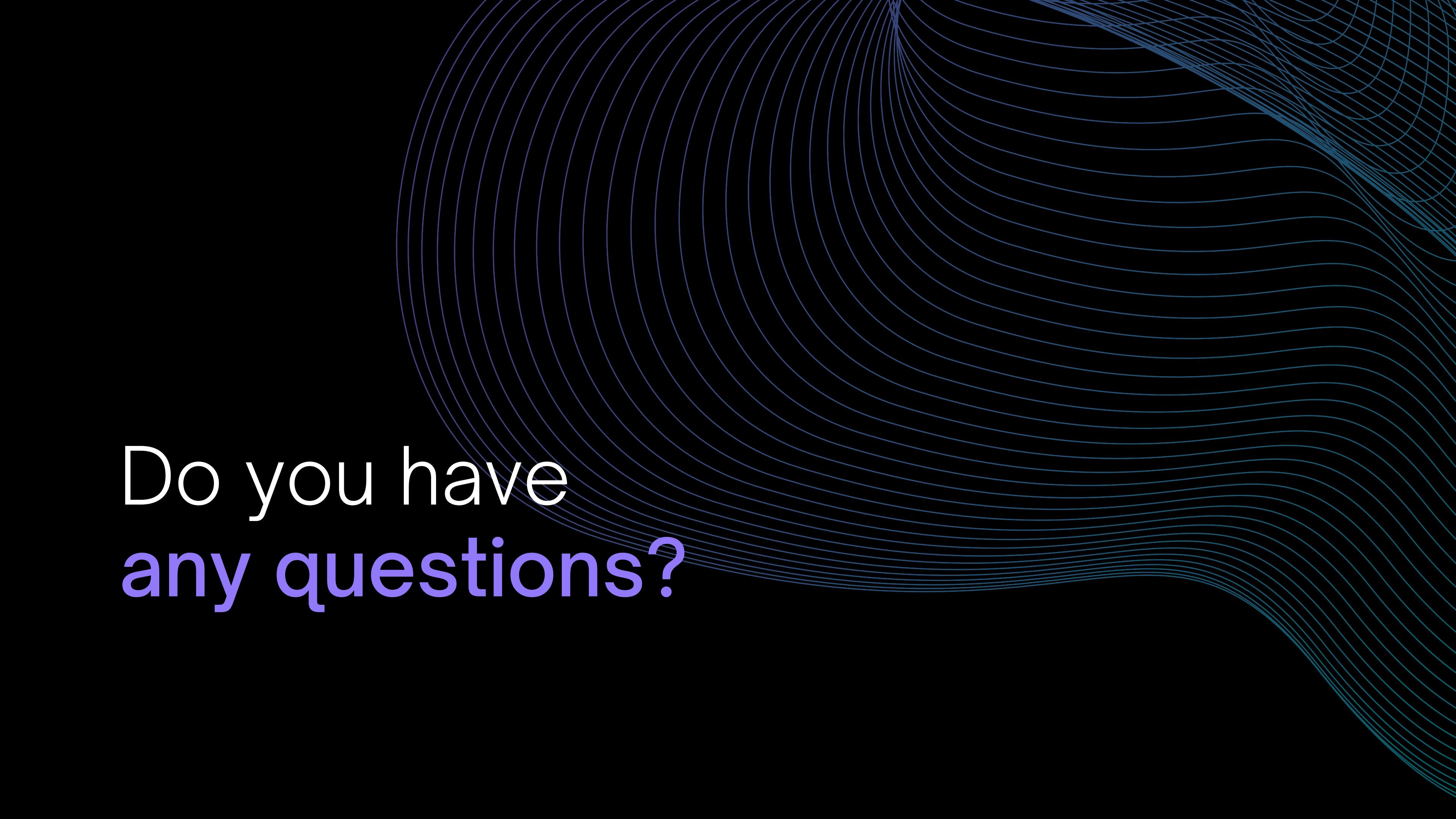
EVgo, Electrify America, and ChargePoint are leading the way in expanding EV charging infrastructure in California. They are actively installing charging stations in urban areas, highways, workplaces, and other strategic locations, making electric vehicle charging more accessible and convenient for drivers throughout the state.



How long will it take for those stations to come online?



By 2035, California is projected to require an estimated 1.2 million EV charging stations. It's a staggering number that highlights the pressing need to expand our charging infrastructure.

The background features a dark gray to black gradient. Overlaid on this are numerous thin, light blue wavy lines that curve from the bottom right towards the top left, creating a sense of motion and depth.

Do you have
any questions?