

# A guide to Electric Vehicles

By Andrew Escobar

# Types of Electric Cars



- **Battery Electric Vehicles (BEV):** They are rechargeable EV that offers an average drive of 100 to 200 miles/charge.
- **Plug-in Hybrid Electric Vehicle (PHEV):** PHEV uses electric motor & IC engine at the same time. You can recharge the batteries via an external power source. They offer a driving range of 30 to 40 miles/charge.
- **Hybrid Electric Vehicles (HEV):** HEV is a combination of electric and IC engine. Batteries get charged with the help IC engine or regenerative braking system. On HEV mode, they can speed up to 40mph.

# Reasons to get an Electric vehicle

- Engine is made up of less parts so maintenance is easier
- Engine is virtually silent
- Better for the environment
- Electric cars are the car of the future, why not be ahead of the curb
- No need to ever get a smog check
- electricity cost of driving an electric car runs around \$1. while gas costs over \$3 per gallon.



Electric cars accelerate faster than gas powered cars. The Volkswagen I.D. R sprints 0 to 100 km/h in just 2.25 seconds.

# Top Cars on the Market



- 2020 Tesla Model 3 \$37,990 | Max Range: 322 mi
- 2020 Hyundai Ioniq Electric \$33,045 | Max Range: 170 mi
- 2020 Porsche Taycan \$103,800 | Max Range: 201 mi
- 2020 Audi e-tron \$77,400 | Max Range: 204 mi
- 2020 Tesla Model S \$74,990 | Max Range: 402 mi
- 2020 Chevrolet Bolt \$36,620 | Max Range: 259 mi
- 2020 Kia Niro EV \$39,090 | Max Range: 239 mi
- 2020 BMW i3 \$44,450 | Max Range: 153 mi

# What is California doing?



- Governor Gavin Newsom has set the goal of reaching zero emissions by 2045
- He has also set the goal of banning the sale of all new gas powered cars. (Used gas powered vehicles would still be legal to sell.)
- California would be the first state to create a plan to ban the buying of new gas powered cars
- Currently half of electricity in the state comes from non-carbon emitting sources. Making California the cleanest state to own an electric car in. With plans to increase that to 70%-85% by 2030
- California has continued to exceed federal guidelines in green initiatives. They're on pace with many countries in the EU
- Over 8% on new cars sold in California were EV's. That's over 6% above the national average.

# What is America doing?

## Positives

- The American Recovery and Reinvestment Act of 2009 established tax credits for purchasing electric vehicles
- New Corporate Average Fuel Economy (CAFE) standards will encourage the expanded market entry of electric drive technologies.
- The Federal government has enacted policies and legislations that promote the U.S. market for EDVs.
- Biden proposed infrastructure bill invests lots of funds to fit buildings with electric car charging ports

## Critique

- The US is still behind many other countries in passing legislation to reduce emission In general.
- this is because many states are dragging their feet when it comes to reducing greenhouse gas because the state relies heavily on industries such as coal and natural gas
- Investment to transition those workers and incentives to help those industries transition towards becoming more eco friendly would help the country make the transition faster
- Among developed nations the US ranks almost last in percentage of EV's sold compared to gas powered cars. only 1.9%of new car sales in 2020 were EV's

# Rest of the World

- Several European nations such as France and Germany plan to put forth bans on the sale of new gas powered in the 2030's
- Head and shoulders above the rest is china when it comes to buying new electric vehicles
- 74% of new cars sales in Norway last year were electric cars
- Volkswagen has promised to stop the production of gas powered cars by 2026

