

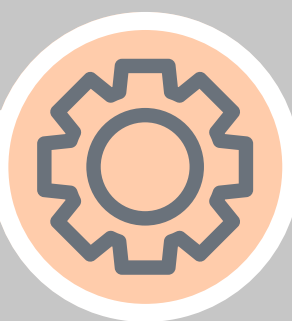


ELECTRIC VEHICLE BENEFITS

1 FUEL EFFICIENCY

In evaluating government statistics for 2023-24 cars (from www.fueleconomy.gov), fuel costs for an EV are typically

- one half the costs of a hybrid-gas-electric, and
- one quarter the costs of a regular gas car!



2 LOW MAINTENANCE

No motor means a very simplified engine: no oil changes. MotorWeek estimates you will need to rotate tires regularly and perform a relatively inexpensive battery pack fluid change at 100,000 miles.

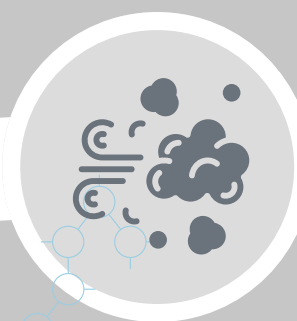
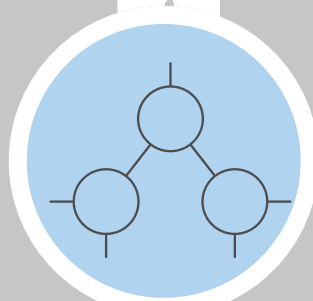
3 CHARGE AT HOME

The cheapest, easiest way to charge an EV is at your home driveway or garage - plus you can select for the cheapest times. If this is not possible, see next page.



4 ENERGY INDEPENDENCE

As oil becomes harder to find, oil quality goes down while its processing price and pollution goes up. Renewable energy is regional and costs are reduced with time as technologies become more efficient.



5 REDUCED POLLUTION, GREENHOUSE GAS

While you are benefiting yourself in the short term, you are also benefiting you and your children in the long term. Median statistics taken from a U.S. government website estimate that EVs require 0.1 barrels per year, whereas hybrids require 6, small gas cars 10.6, and SUVs 13-16 barrels/year. (From www.fueleconomy.gov.)

Charging an EV

01

Level 1 Charger:

Only used at home; requires no modifications to regular outlet (120 Volts AC).

Charging Rate: 2-5 miles per hour.
Cheap option, at home electrical rates.

Plug type: Standard **SAE J1772**;
Tesla uses NACS or J1772 adapter



SAE J1772

02

Level 2 Charger:

Used at public charging station or at home with modification (240 Volts AC).

Charging Rate: 19.8 miles per hour.
Costs: free with parking lot entry or \$1-2 per hour (estimated).

Plug type: Standard **SAE J1772**
Tesla uses NACS or J1772 adapter



SAE J1772

03

Level 3 Charger = DC Fast Charger:

Public only charging at slightly higher prices; used for long distance. Example companies: Electrify America, EVgo and Tesla

Charging Rate: Charge in 20 min-1 hour @ 180-240 miles per hour.

Plug type: Most common: **CCS (SAE J1772 Combo)**, CHAdeMO,
Tesla: NACS or adapter



CCS
(SAE J1772 Combo)



How far can an electric car go without charging?

The U.S. Dept of Energy (2023) indicates that an all-electric vehicle (or Battery-Electric Vehicle, BEV) can travel 150-400 miles before requiring a recharge. A plug-in hybrid electric vehicle (PHEV) can travel 20-40 miles, before reverting to its gasoline engine. A hybrid electric vehicle (HEV) charges its battery from operating its gas engine through peak efficiencies, not from plugging in.



Find Local Charging Stations at:
https://afdc.energy.gov/fuels/electricity_locations.html



SOURCES OF ADDITIONAL INFORMATION

1. COMPARE CAR PERFORMANCE

The official U.S. government source for fuel economy information: Find and Compare Cars. U.S. Dept. of Transportation. From:
<https://www.fueleconomy.gov/feg/findacar.shtml>.

2. FIND CHARGING STATIONS

Electric Vehicle Charging Station Locations. Alternative Fuels Data Center, U.S. Dept. of Energy. From:
https://afdc.energy.gov/fuels/electricity_locations.html#/find/nearest?fuel=ELEC.

3. CHARGER TYPES & SPEEDS

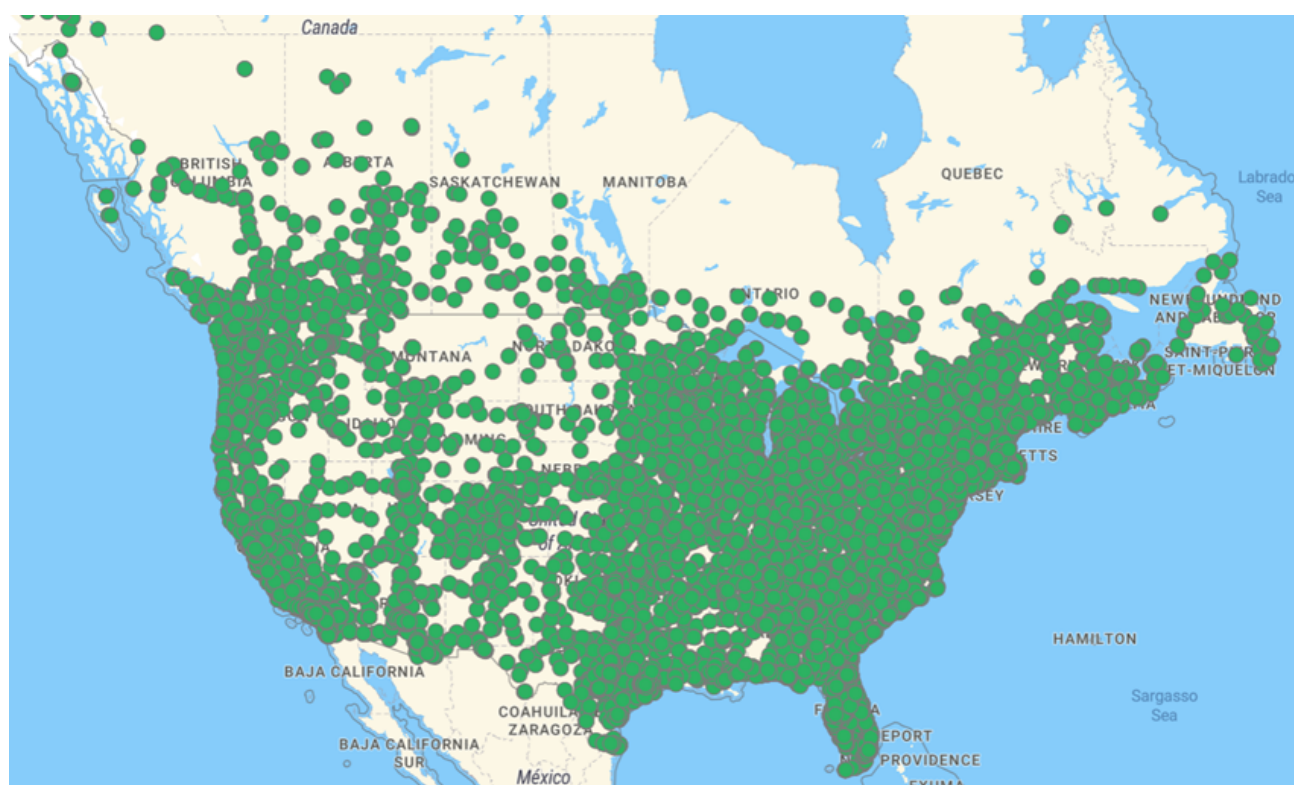
Charger Types and Speeds, U.S. Dept of Transportation. June 22, 2023. From:
<https://www.transportation.gov/rural/ev/toolkit/ev-basics/charging-speeds>.

4. BENEFITS OF EVS

EV Dollars and Sense. MotorWeek.
<https://www.youtube.com/watch?v=ocNfkVA28mg>.

How Much does it Really Cost to Charge an Electric Vehicle? CallasEV, May 6, 2023. <https://www.youtube.com/watch?v=TIPzmLtc-Rw>.

Charger Availability in U.S. (2023)



https://afdc.energy.gov/fuels/electricity_locations.html

Local companies can then tell you the status ‘Available’ or ‘In Use’ of the chargers.