



# SIERRA CLUB ELECTRIC VEHICLE FACT SHEET

Automobiles, above all else, have historically represented America's problem with dirty oil. A switch to plug-in electric vehicles (EVs), which require no gasoline and emit no tailpipe pollution, presents a critical opportunity to slash pollution, create American jobs, reduce oil dependence, and forever change the impact of vehicles on our planet.

## WHAT IS A PLUG-IN ELECTRIC VEHICLE?

A fully electric vehicle uses electricity to power a battery. This means no gasoline, no dirty oil changes, and no internal combustion engine. Most new fully electric vehicles can drive 70-100 miles on one charge. Plug-in hybrid electric vehicles run on electricity for a certain number of miles, and as their battery runs out of charge, a gasoline powered engine or generator kicks in.

Most EVs are charged at home overnight. Using a 220-volt outlet and charging unit, installed by an electrician, a plug-in hybrid recharges in about 100 minutes, and a pure electric vehicle in three to eight hours. A regular 120-volt wall outlet

will significantly increase charging times, but is likely sufficient for plug-in hybrids and for fully electric vehicles for some people.

## WHY SHOULD I SWITCH TO A PLUG-IN ELECTRIC VEHICLE?

### It's Good for the Environment

Each year, American passenger cars and trucks, through vehicle tailpipe and oil extraction and transport emissions, spew upwards of three trillion tons of carbon pollution into the air by burning about 121 billion gallons of gasoline. In addition to worsening climate change, our dangerous dependence on oil has resulted in countless catastrophes like the BP spill in the Gulf of Mexico.

## EMISSIONS COMPARISON

In almost in every region of the country, carbon emissions from the electricity sources used to power EVs are lower than the emissions from conventional cars (doing a full lifecycle analysis).

In some areas, like many on the west and east coasts that rely on cleaner sources of power, emissions are significantly lower for EVs. And that's today. As we retire more coal plants and bring online cleaner sources of power like wind and solar, the emissions from electric vehicle charging drop even further.

One caveat is that when coal supplies the vast majority of power in a given area (which is true in only a small number of US states), electric vehicles may emit more CO2 pollution than hybrid electric vehicles.

Visit [www.sierraclub.org/EVGuide](http://www.sierraclub.org/EVGuide) to learn where your electricity comes from, what plans your state or community has for shifting to renewables, and whether you have options for switching to greener power.



## POLICIES TO ADVOCATE TO INCENTIVIZE EVS

- State rebate for purchasing an EV or charging unit.
- State tax rebate or credit for converting vehicles to plug-in.
- Local or state building code change that mandates new construction include EV-ready wiring.
- HOV (carpool) lane access for EVs.
- EV mandates for state and municipal fleets and grants for private EV fleets.
- Waiver of emissions inspections or sales tax for EVs.
- Streamlined permitting process for getting EV charger units installed.
- Creation of high-level state EV planning council.
- Smart grid planning as well as time-of-use metering programs from utilities with lower rates for off-peak EV charging and/or EV-only charging.
- Visit [www.sierraclub.org/EVGuide](http://www.sierraclub.org/EVGuide) to find out existing incentives in your own region.

### It's Affordable

Thanks to federal, state and industry rebates and tax credits, decreasing prices in EV technology, and the much cheaper price of electricity vs. gasoline, the cost of owning and operating an electric vehicle is now notably lower than that of many conventional vehicles. For most plug-in vehicles the federal tax credit is up to \$3,000 - \$7,500.

### It's Convenient

Most people charge their EVs at home overnight. Charging EVs in public is also getting increasingly convenient. Many workplaces and businesses have installed public chargers (found on online maps). Along highways and at stores and offices, some businesses and agencies are installing fast-charging stations that can re-charge a car to 80% of battery capacity in less than 30 minutes.

### HOW DO WE GET MORE EVS ON THE ROAD?

- Work with your Sierra Club chapter or the national campaign to advocate for EV incentives and programs.
- Write letters to the editor, hold meetings with policymakers, and organize public events to raise awareness and advocate for better EV programs.

### SO, WHAT ARE MY OPTIONS?

There are currently more than 20 fully electric and plug-in hybrid vehicles available at US dealerships.

- Check out the Sierra Club's Electric Vehicle Guide and 'pick-a-plug-in' quiz at [www.sierraclub.org/EVGuide](http://www.sierraclub.org/EVGuide) to find which model works best for you, information on which EVs and incentives are available in your state, and the fueling costs and emissions you'll avoid in your part of the country.
- For news updates and blog posts from the EV campaign, send an email to [electric.vehicles@sierraclub.org](mailto:electric.vehicles@sierraclub.org)

### ENDNOTES

**1** Union of Concerned Scientists. "State of Charge: Electric Vehicles' Global Warming Emissions and Fuel-Cost Savings Across the United States." April, 2012. [http://www.ucsusa.org/assets/documents/clean\\_vehicles/electric-car-global-warming-emissions-report.pdf](http://www.ucsusa.org/assets/documents/clean_vehicles/electric-car-global-warming-emissions-report.pdf).

**2** MIT Energy Initiative. "The Electrification of the Transportation System." April, 2010.

**3** Electric Power Research Institute and Natural Resources Defense Council. "Environmental Assessment of Plug-in Hybrid Electric Vehicles." 2007. <http://mydocs.epri.com/docs/CorporateDocuments/SectorPages/Portfolio/PDM/PHEV-ExecSum-voll.pdf>. Cited February 16, 2011.

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