What is a plug-in car?

A plug-in car uses clean, affordable, domestic electricity for some or all of its energy. An all-electric vehicle (EV) stores all its energy in batteries. Plug-in hybrids (PHEV) store some energy in batteries, and have a gas engine to extend range. Conventional hybrids have batteries, but all their energy comes from gasoline. They cannot plug in to cleaner, cheaper power!

Sounds great! Can I get one?

Carmakers should offer us the choice of electric cars and plug-in hybrids. The automakers made great electric cars during the 1990s. But only a small number of these electric cars were ever offered for sale. Those EVs are still on the road, using no gasoline and driving emission-free.

Finally, plug-in electric cars are beginning to appear in the market. Many large automakers are promising plug-in cars starting in late 2010. Aftermarket conversions of hybrids are available now. But today the major automakers still sell only gasoline cars.

Plug In America is working with automakers and policymakers to ensure that affordable plug-in vehicles come to market soon.

Plug-in vehicle resources

- Plug In America
  - www.pluginamerica.org
- Plug-In Vehicle Tracker
  - pluginamerica.org/vehicles
- Electric Auto Association
  - www.electricauto.org
- Who Killed the Electric Car?
  - Must-see documentary
  - Available now on DVD
  - whokilledtheelectriccar.com
- CalCars Plug-In Hybrid Project
  - www.calcars.org
  - www.eee-phev.org
- Plug-In Hybrids: The Cars that will Recharge America
  - Book by Sherry Boschert
  - www.sherryboschert.com

Plug In America drives change. We accelerate the shift to plug-in vehicles powered by clean, affordable, domestic electricity to reduce our nation’s dependence on petroleum and improve the global environment. Join us.

Plug In America®

www.pluginamerica.org
The US Dept. of Energy says utilities have enough excess generating capacity at night to charge 185 million plug-ins. While electricity is getting cleaner and more renewable every year, even the cleanest gasoline car becomes more polluting over time. An electric car gets cleaner as the grid gets greener.

**What can I do?**

- Join Plug In America.
- Tell your local auto dealer you won’t buy a new car until it has a plug. No Plug? No Deal!
- Tell your friends to see the film Who Killed the Electric Car?

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**Toyota RAV4 EV**
- All-electric
- 1997–2003

- All-Electric Range: 125 miles
- Top Speed: 80 mph
- Weight: 3480 pounds
- Motor: 50 kW (67 hp)
- Batteries: Nickel Metal Hydride (NiMH)
- Charger: 208/240 volt/30 amp; inductive
- Battery Capacity: 27 kWh

**Tesla Motors Roadster**
- All-electric
- For Sale Now

- All-Electric Range: 220 miles
- Top Speed: 125 mph
- Weight: 2723 pounds
- Motor: 185 kW (248 hp peak)
- Batteries: Lithium–Ion
- Charger: 120 to 240 volts; conductive
- Battery Capacity: 56 kWh

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**Chevrolet Volt**
- Plug-in Hybrid
- Nov. 2010

- All-Electric Range: 40 miles
- Total Range: 300 miles
- Top Speed: 100 mph
- Weight: 3520 pounds
- Motor: 111 kW (149 hp peak)
- Batteries: Lithium–Ion
- Charger: 120 to 240 volts; conductive
- Battery Capacity: 16 kWh
- I.C. Engine: 1.4 Liter Gas/E85

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**How many miles can a battery electric car (EV) go between charges?**
Most new EVs will have 100 miles range. Most cars travel under 40 miles a day. An EV begins each day with a full charge.

**How many miles can a plug-in hybrid (PHEV) go on electricity?**
PHEV conversions have an all-electric range of 10–40 miles, depending on the battery size and type. The 2010 Chevy Volt will have an all-electric range of 40 miles. After that, the gasoline engine kicks in to maintain the battery’s charge, extending the range to over 300 miles.

**How long to recharge the batteries of electric cars and plug-in hybrids?**
A few hours overnight will charge to full.

**Where do you charge?**
Usually overnight in one’s garage. There are also public chargers for electric cars in parking garages and shopping centers. (see www.evchargermaps.com). New electric cars will be capable of charging at any electric outlet.

**Is it expensive to charge?**
Less than $1 to fill up a plug-in hybrid; $2–4 for an all-electric car.

**Aren’t electric vehicles inefficient?**
EVs are the most efficient cars on the road. Compare the gas & electric RAV4:
- Gas: 21(city)/26(hwy) MPG, 8 tons of greenhouse gas emissions per year
- Electric: 125/100 MPG (equivalent), 3.9 tons GGE per year


**How does a plug make hybrids better?**
Plugging in a PHEV is like filling up with 60 cent per gallon gasoline. And you still have a gas tank for longer trips.

**Isn’t hydrogen the solution?**
No. Electricity is less expensive and more efficient. Hydrogen powered cars are 4X less efficient than EVs when the hydrogen is produced from electricity and 1.4X less efficient when made from natural gas. Billions of dollars will be required for new fueling infrastructure. For plug-in cars, the infrastructure is largely in place – the electric grid.

**What about the pollution created making the electricity? Aren’t you just moving all the pollution?**
No. Emissions from plug-in cars are lower even on the 50%–coal U.S. grid. Moving the pollution away from population centers is a good thing.

**Plug In America**

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