



## PLUG-IN ELECTRIC VEHICLES – Frequently Asked Questions

**Q: What is a plug-in electric car?**

**A:** There are two types of plug-in electric cars: plug-in hybrids and battery electric vehicles. Plug-in hybrids, such as the converted Toyota Priuses in the city's fleet, have more powerful batteries along with a gasoline engine to improve mileage or recharge the battery. The Chevy "Volt" is an example of a plug-in hybrid that will be introduced in the fall of 2010. Battery electric vehicles have no gasoline engine and run exclusively on an electric motor. The Nissan "LEAF," available in Seattle-area dealerships next year, is a highway-capable, all-electric car.

**Q: When will plug-in electric vehicles arrive in Seattle?**

**A:** Plug-in electric vehicles —scooters, bicycles, motorcycles, neighborhood electric vehicles, Tesla sports cars, and a few retrofitted passenger cars — have been on the streets of Seattle for a few years already. The Nissan LEAF was the first commercially available all-electric passenger car available since December 2010. Through a U.S. Department of Energy grant, Nissan has committed to make a minimum of 900 LEAFs available in the Seattle market.

**Q: How much will all-electric passenger vehicles cost to operate?**

**A:** At current City Light residential electricity rates, the Nissan LEAF would cost approximately \$220 to drive 10,000 miles, or a little more than 2 cents a mile. To drive the same distance in a car that gets 25 miles per gallon (the 2008 national average MPG) would cost approximately \$1,140 at \$2.85 per gallon.

In addition to lower operation costs, the U.S. Department of Energy reports that all-electric vehicles will have lower maintenance costs because electric vehicles have far fewer moving parts compared to the hundreds of moving parts of the internal combustion engine.

**Q: How many miles can plug-in vehicles travel before needing to plug-in?**

**A:** Highway capable battery electric vehicles, like the Nissan LEAF, will have a range of 100 miles and plug-in hybrid will have an anticipated range of 40 miles of all electric operation. Research suggests that 98 percent of people drive less than 100 miles a day and 78 percent of people drive less than 40 miles. In fact, the Puget Sound Regional Council has found that the daily commute for Seattle residents is an average of eight miles.



**Q: What will I need to operate a plug-in electric car?**

**A:** You will need a way to charge the vehicle in your home or at another charging facility. All-electric vehicles have a large battery that can be recharged overnight with a 220 Volt charging system. The cost to install a home charging system varies significantly, depending on the home's existing electric systems

**Q: How do electric vehicles help Seattle meet its climate protection goals?**

**A:** Greenhouse gas emissions from cars and trucks are Seattle's largest source of climate pollution, accounting for approximately 40 percent of the city's carbon footprint. To shrink our transportation footprint, the city of Seattle is pursuing a two-part strategy. The first part focuses on increasing investment in transportation choices so that residents and businesses can walk, bike, or take transit. The second part focuses on improving vehicle efficiency so that cars and trucks have a smaller greenhouse gas impact. Plug-in electric vehicles represent a big step forward. For example, switching from a car that gets 25 MPG to the all-electric car would reduce approximately four tons of greenhouse gas emissions over the course of 10,000 miles. Under this scenario, the 1,000 vehicles supported by the U.S. Department of Energy grant would reduce emissions in the Seattle area by 4,000 tons.

**Q: What is the climate impact of the electricity that will power the electric automobiles?**

**A:** Electric automobiles in Seattle will be powered by electricity from Seattle City Light, the first large utility in the United States to achieve zero net greenhouse gas emissions. Most of City Light's electricity is supplied by renewable sources, like hydropower and wind, and the emissions from the remaining sources are offset by City Light's investment in carbon-reduction projects. In addition to City Light's policy of zero net emissions, the utility has a commitment to meet all new electric demand — including the increased demand from electric vehicles — with conservation and renewable sources.

**Q: Does Seattle City Light have enough electricity to power electric vehicles?**

**A:** Seattle City Light anticipates the utility will have sufficient electric supply for plug-in electric vehicles.

**Q: What is the city of Seattle doing to prepare for plug-in electric vehicles?**

**A:** In 2009, the city of Seattle kicked off an effort to ensure we are "plug-in ready" when electric passenger vehicles hit the market in the fall of 2010. Ongoing work includes streamlining the permitting processes, identifying building code changes and public charging stations, coordinating with surrounding jurisdictions to develop a regional electric vehicle infrastructure, and informing people about the benefits of electric vehicles.

More information at [www.seattle.gov/environment/EV.htm](http://www.seattle.gov/environment/EV.htm)