

ELECTRIC VEHICLE & CHARGE STATION INFORMATION - CITY OF BELLEVUE



The Vehicles

What is an EV?

The term "EV" is used to denote all vehicles that connect to and derive energy from the electricity grid. These include plug-in hybrid (PHEV), range-extended (REEV) and battery electric vehicles (BEV).

Where would I charge my Electric Vehicle?

It is anticipated that most charging will take place at home, overnight. Since the BEVs are expected to have a range of between 80-100 miles on a full battery, an overnight (Level 2) charge will be enough to cover the daily commute needs of the majority of people in King County. Businesses and local governments are also providing charging locations for people who want to recharge while at work or at other locations.

What is Level 1 charging?

Level 1 charging refers to the use of standard 110 volt power that is the lowest common voltage found in both residential and commercial buildings. Due to the length of charge time required (15-20 hours), it is anticipated that most users will be installing Level 2 systems.

What is Level 2 charging?

Level 2 charging systems recharge EVs in 4-8 hours utilizing 220 volt power. Level 2 charging systems are typically used for overnight charging at home or at businesses that operate fleets of EVs. Level 2 chargers will be available for home installation and at selected public use sites.

What is Level 3 charging?

Level 3 charging, often referred to as fast charging, allows vehicles to be recharged in less than 30 minutes. These units are not yet commercially available, but installation of roughly 40 fast charge units is expected throughout King County and along Washington's I-5 corridor. These units will be ideal for applications such as highway rest stops to enable fast and significant range extension for longer trips.

Will all cars have the same plug-in adapters?

Yes. The J-1772 plug is the universally adopted model in use for all new electric vehicles.

Purchasing, Prices and Costs

Which automakers are going to make Electric Vehicles?

Many automakers have announced plans to release either BEV or PHEV model vehicles in 2011 and 2012. These include Nissan, Audi, Ford, General Motors, Toyota, Volvo, BMW, Chrysler, Daimler, Ford, Hyundai, Mitsubishi, Nissan, Rolls Royce, and Tesla. Thousands of electric vehicles (cars and bicycles) are already in use in China.

How much will the EVs cost?

The Nissan Leaf, the first all-electric family sedan to be mass produced for the US market, will have a manufacturer's suggested retail price (MSRP) of \$33,720. The Chevy Volt, a combined PHEV has an MSRP of \$40,280.

What are the incentives for buying an EV?

A federal tax rebate of \$7,500 is currently being offered with your purchase of an electric vehicle that has greater than 4 kW of battery storage capacity. Both Nissan Leaf and Chevy Volt models currently qualify.

What are the maintenance requirements and associated costs of EV ownership?

Generally, the maintenance associated with an electric vehicle is considered to be far less than that of a gas-burning vehicle because there are fewer parts in

general (example: no exhaust system). It is recommended that you speak with your auto seller about specifics of maintenance and care.

Charging Stations- General

Will the charger be built into the vehicle?

Yes. To charge, you will simply need to plug in to an appropriate charging dock which supplies power safely to the charger.

Am I able to determine what time the charging of my vehicle starts and stops?

Yes. You will be able to set a charging timer in the car. You will also be able to control the car's functions and charging from any computer or internet-enabled phone.

Charging Stations- Residential

For more detailed **home charger installation** info please see our Public Information Handout- *"Installing an Electric Vehicle Charge Station for Single Family Residences."*

How much does it cost to charge a plug-in vehicle?

Much less than it costs to buy gasoline. Exactly how much will vary depending on the vehicle and electricity rates. On average, it will be less than \$1 to charge a plug-in hybrid and \$2-\$3 for an all-electric car.

I live in an apartment. How would I go about charging the car?

Start talking to your apartment complex owner and other residents about charging stations. You can also use public infrastructure as it becomes available.

Is the home charging station weatherproof?

Yes. The home charging dock will be weatherproof.

Charging Stations- Public Use

Where will public-use charging stations be located?

City of Bellevue is developing a public charging network at city and other commercial use facilities. Between your car's navigation system, computer, or smartphone, you will be able to access information about station locations and availability, and even make reservations. Your home charging dock will likely be your primary charging station.

How many public use stations does Bellevue have?

Bellevue now has among the highest numbers of EV charging stations in the nation! As of December, 2011,

24 were available for public use. The precise number and locations of all Bellevue and nationwide stations can be found online through the Department of Energy: http://www.afdc.energy.gov/afdc/fuels/electricity_locations.html

What does it cost to use the stations?

No fees are currently in place for station usage. The city expects to set usage fees for stations in 2012. Pricing will be set for cost recovery and with an effort to provide consistency with rates across other regional jurisdictions. Projected costs are between \$2 and \$4 for a charging session, regardless of its duration.

How can I access the stations?

The Bellevue stations are part of the ChargePoint network, and therefore require a ChargePoint access card for usage. Stations can be activated and paid-for through the use of this key-fob swipe card. Cards can be obtained in advance at the ChargePoint website or at the charging station by calling a toll-free number. www.mychargepoint.net. Other regional stations may require a credit-card swipe or key-fob for the "Blink" network.

How will enforcement of EV parking work?

Only electric vehicles that are plugged in and charging may use the designated EV Charging stalls. All other vehicles may be ticketed for usage of these stalls. Electric vehicles are also prohibited from parking in the charging stalls unless they are in fact charging. Signposts at each station state the exact terms for use.

How long will it be before you can charge a car anywhere? Like at a gas station?

In the Puget Sound region, look for dozens if not hundreds of publicly available Level 2 charging stations to be installed at government and commercial facilities in the coming years. There are plans for roughly 40 Level 3 "fast chargers" to be installed throughout King County and on the I-5 corridor in 2012 and 2013.

How can I find out where stations exist?

Electric vehicles feature dashboard displays that provide updated information of EV Charge stations within range of your vehicle depending on your location, in real time. Another great resource for this information is the U.S. Department of Energy Alternative Fuels website, which details station location, date installed, cost to charge, and whether the station is available for public charging or not.

http://www.afdc.energy.gov/afdc/fuels/electricity_locations.html

Other Considerations and Questions

What if I run out of power and get stranded?

Vehicle manufacturers are exploring many roadside assistance possibilities. Cars will be equipped with systems to help drivers find charging stations before this happens.

Does the battery still drain when you are not moving?

Only if you are using lights, stereo, and other accessories. When you are not moving, no power is being used to "idle."

Aren't the batteries bad for the environment?

The battery will have a lifespan for automotive use of 5-10 years under normal use. The industry is still working to define all variables that will impact battery performance.

How will spent batteries be disposed of?

An EV Battery Recycling process is being finalized. Specialized third party recycling facilities will be engaged to recycle the EV battery and/or battery parts when necessary.

Are the batteries ready?

Yes. According to an Electric Power Research Institute report, battery durability tests demonstrate that current lithium-ion batteries are likely to retain sufficient capacity for more than 3,000 dynamic deep-discharge cycles (about 10-12 years of typical driving). Major automakers are offering 8-year, 100,000-mile warranties on the batteries of today's plug-in vehicles. Put lots of batteries in a car and you can drive more miles on a charge. As with any new technology, the cost of EV batteries will become even more affordable once they're in mass production. Research continues to explore multiple newer battery chemistries that promise an exciting future for plug-in vehicles.

Why would I want to plug a car in?

Three words: Cheaper. Cleaner. Domestic.

Cheaper: Electricity is about a third of the current cost of gas and electric cars require next to no maintenance. (No oil changes, no muffler, no catalytic converter, etc.)

Cleaner: Even on a coal-fired electrical grid, driving on electricity is cleaner than driving on gasoline. Plug-in vehicles give you the option of powering with

renewable electricity sources such as solar or geothermal energy and produce less air pollution.

Domestic: Electricity and most new EVs are manufactured in the U.S.A.!

Bonus: Plug-in cars are quiet, convenient, and fun to drive!