



The Official Beginners Guide to Electric Vehicles (EV)

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1. Why Electric Vehicles?

There are so many reasons why people are moving to Electric Vehicles to get them to the places they need to be. These include:

- EV's are fun to drive because they are fast and smooth.
- EV's produce no smelly fumes or harmful greenhouse gases.
- EV's are innovative and cool.

- EV's only cost \$400 a year to operate compared to \$4000 for a gasoline vehicle, in BC.
- EV's are a smart and convenient choice.

2. What is the difference between an Electric Vehicle and a Hybrid?

As the world transitions to Electric Vehicles some manufacturers are producing vehicles that have an gasoline engine with a generator. These essentially provide the ability to use the gasoline engine when the battery runs out. However these vehicles still produce harmful emissions, and there is the complexity and cost of a gasoline engine that needs to be maintained. The following table details the different Electric Vehicle types available today.

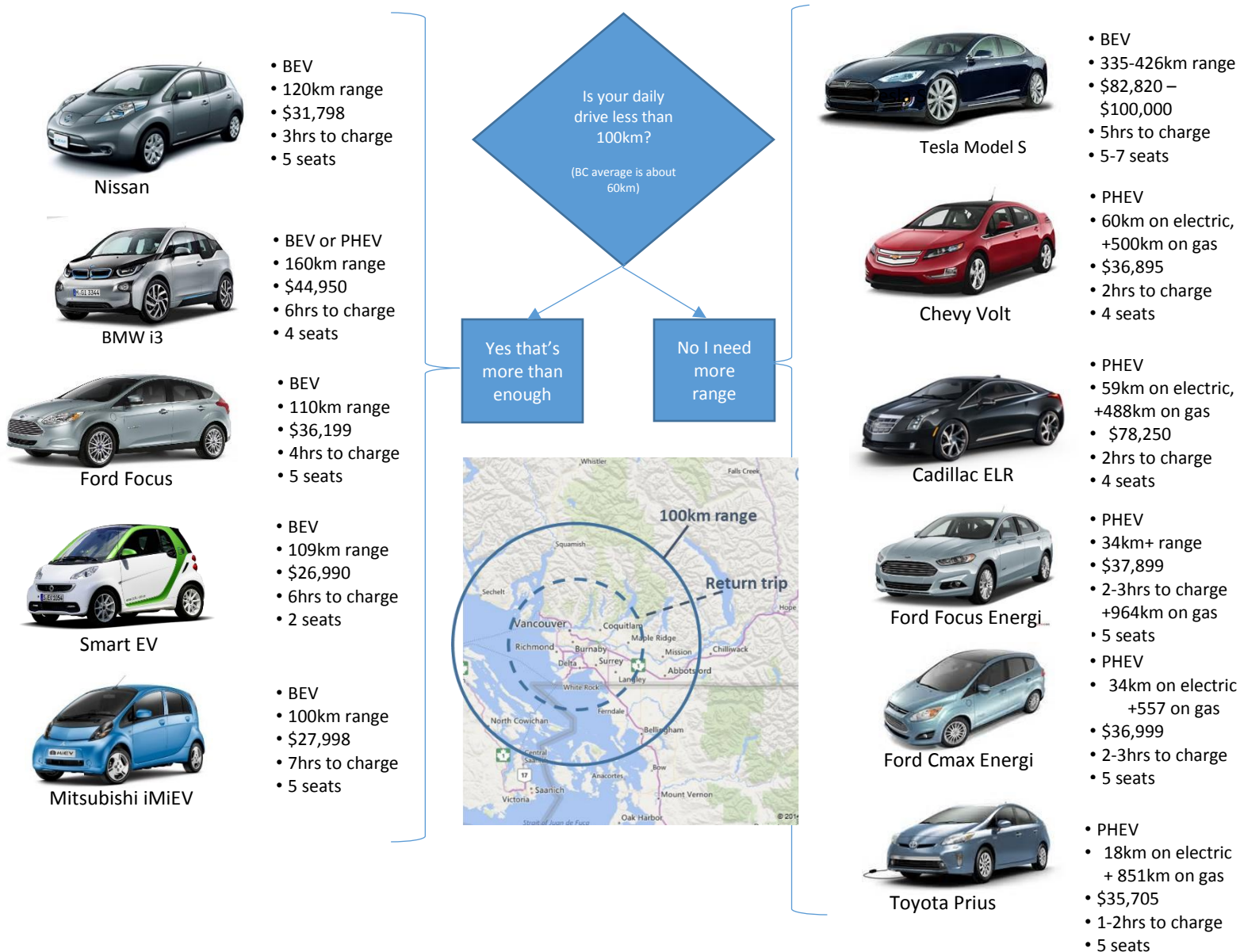
<p>Battery Electric Vehicle (BEV)</p>	<p>A Battery Electric Vehicle (BEV) operates using an electric motor and battery. There is no gasoline engine or oil used. The vehicle needs to be recharged from electricity.</p>	<p>Pros</p> <ul style="list-style-type: none"> • No emissions • No gas • No oil changes • Ability to conveniently charge at home • Fast and smooth acceleration • Average electricity cost is about \$30 a month! <p>Cons</p> <ul style="list-style-type: none"> • Shorter range than gasoline vehicle, (range capability is more than enough for most people)
<p>Hybrid Electric Vehicle (HEV)</p>	<p>A Hybrid Electric Vehicle (HEV) operates using a combination of an electric motor and gasoline engine to move the vehicle. The vehicle uses the gasoline engine to recharge the battery.</p>	<p>Pros</p> <ul style="list-style-type: none"> • Longer range than BEV • Less gas consumption than gas only vehicle • Less emissions than gas only vehicle <p>Cons</p> <ul style="list-style-type: none"> • Still produces emissions • Needs gas and oil changes • No ability to conveniently charge at home
<p>Plugin Hybrid Electric Vehicles (PHEV)</p>	<p>A Plugin Hybrid Electric Vehicle (PHEV) operates using a combination of an electric motor and gasoline engine. The gas engine does not move the vehicle instead it acts as a battery charger when the battery level is low. You can also charge the battery by plugging into electricity.</p>	<p>Pros</p> <ul style="list-style-type: none"> • Longer range than BEV • Less gas consumption than gas only vehicle • Less emissions <p>Cons</p> <ul style="list-style-type: none"> • Produces emissions • Needs gas

3. What Electric Vehicle best fits your needs?

When choosing an EV you will consider many of the same features that you would with a traditional gasoline car like size, seats, style, colours etc.

Specifically for an Electric Vehicle the deciding factor is often how far the car can drive before needing to be recharged. Typical daily driving behaviours include; commuting to work, getting groceries and visiting friends, etc. Very long ranges are not typically needed for daily driving. It's easy to charge every night they so EV drivers don't need as much one-time range as a typical gas-engine car driver who may refuel once a week or once a month.

Here is a chart that will help with choosing an EV. If your daily drive less than 100km (BC average is about 60km) than the cars on the left may best fit your needs. If you need more daily range than 100km than the cars on the right may best fit your needs.






For more information on available EV's please visit <http://www.plugndrive.ca/ev-models>

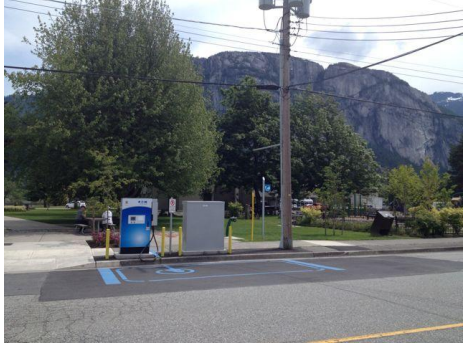
4. How do you charge your EV?

Now that you have chosen the EV that best fits your needs, how do you charge it up? Well it's as easy as charging your phone and can be done in the comfort of your home or at the 450+ public charging stations in BC plus more in the US.

EV's will also charge themselves whenever you brake or go downhill so sometimes you will have more range available at the bottom of the hill than you did at the top.

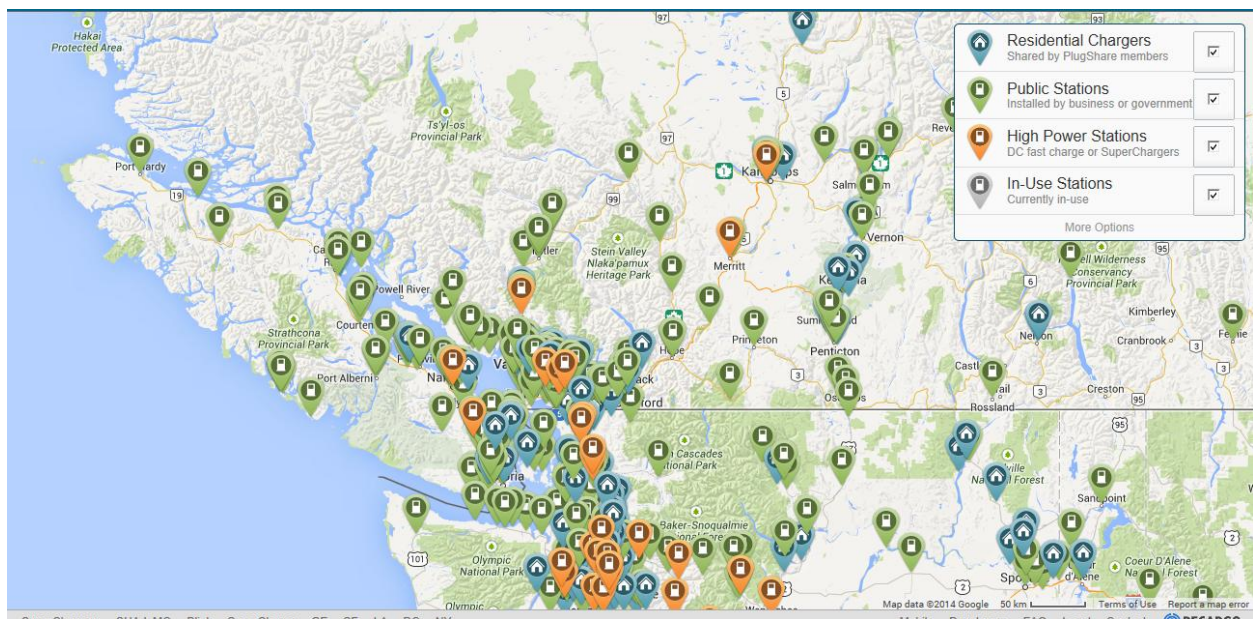
There are a couple of different types of charges each with different times it takes to charge your EV, the table below provides more details.

<p>Level 1 – Trickle Charge</p>		<ul style="list-style-type: none"> • You can plug your EV into any normal 110v plug just like you do to charge your phone. • This will add 8km of range to your EV per hour. • The charging cable will come with your EV.
<p>Level 2 – Charge @ Home</p>		<ul style="list-style-type: none"> • You can purchase a 220v charging station for your home for approximately \$500 • A certified electrician will need to install this. • These chargers will add 42km of range per hour or typically take 3-4 hours for a full charge.
<p>Level 2 – Public Charging Station</p>		<ul style="list-style-type: none"> • There are 450+ public charging stations in BC and many are free of charge. • Find charge stations in your area using www.plugshare.com • These chargers will add 42km of range per hour or typically take 3-4 hours for a full charge. • Ensure you sign up for accounts at the providers like www.chargePoint.com to allow you to use the chargers.

<p>Level 3-FAST Charge</p> <p>(High Power Stations)</p>		<ul style="list-style-type: none"> • Adds 136km of range to your EV in 30min! • There are a number of Fast Chargers in BC • You EV needs to be equipped to support a Fast Charger • Find the quick charge stations in your area using www.plugshare.com or http://www.caa.ca/evstations/
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5. Public Charging Stations in BC

With over 450+ public charging stations there is bound to be somewhere you can top up while you are shopping, going to the movies, at work, grabbing a bite to eat. You can see from the map below courtesy of www.PlugShare.com that there are plenty of places for you to be able to charge while on the go plus give you the ability to do some super fun road trips!



6. Mobile Apps for your EV

Many EV's today are very technically advanced and have mobile apps that can provide you with information on your car such as how far you can drive given your current battery charge and even allow you to control your car like locking the doors or pre heating your car on a winter day. Be sure to check the app store of your mobile device for apps for your EV, for example [Leaf Spy](#) and [VERNetwork](#)

7. Video: The Life Electric

The following video (5:39) was produced by [Transport Canada](#). It shows the current state of EVs and describes how they can fit into our transportation system.

<https://www.youtube.com/watch?v=6KRbNBa-O2g>