

## **Frequently Asked Questions about the Vehicle Efficiency and Cost Calculator (VECC)**

**Q: What is the difference between a battery electric vehicle and a plug-in hybrid electric vehicle?**

A: Battery electric vehicles (BEVs) are a form of electric vehicle propelled entirely by electric motors and which do not have an internal combustion engine (ICE). BEVs are powered solely from electricity from the grid. By contrast, plug-in hybrid electric vehicles can run solely on electricity, generally for a distance of around 60 kilometres on a full charge, but also employ an ICE as a backup. When the electric battery is drained of its energy, the ICE - powered by gasoline or diesel - takes over and can either propel the vehicle or recharge its drained battery.

**Q. I drive a hybrid, what type of vehicle should I select?**

A: In general terms, there are two types of hybrids: conventional hybrids and plug-in hybrid electric vehicles.

- Conventional hybrids: The battery in conventional hybrids is charged from the engine during driving; it cannot be plugged into an external electricity source. For this type of vehicle, choose “Gasoline (including hybrid vehicles that do not plug in to recharge)”. For this type
- Plug-in Hybrid Electric Vehicles: The battery that powers the vehicle is charged using an external electricity source such as a charging station. For this type of vehicle choose “Plug-In Hybrid”.

**Q: Why is additional information required for plug-in hybrid electric vehicles?**

A: Plug-in hybrid electric vehicles use both electricity to power their battery and gasoline to power their internal combustion engine. As a result, when selecting this type of vehicle information for both gasoline and electricity use must be provided. In addition, in order to accurately estimate greenhouse gas emissions for these types of vehicles, information is required on the anticipated split between electricity powered (all-electric) and gasoline-powered kilometres driven annually.

**Q: What if I received my vehicle as a gift at no cost to me? How do I reflect this in the calculator?**

A: If you received your vehicle as a gift, select ‘Cash Purchase’ and enter ‘1’ in the “Please enter the amount of your full cash payment. Including any applicable taxes, fees, and/or interest charges, to the nearest dollar” field, as the calculator will not recognize a value of ‘0’ for this input.

**Q. I don't know how many kilometres I drive in a year and how many are 'city' or 'highway'. How do I determine this?**

A. The Canadian annual average was approximately 16,000 km per year in 2009 (the most recent year data was available). However, individual driving patterns vary greatly. This includes how many 'city' and 'highway' kilometres are driven. 'City' driving conditions involve driving with frequent stops and lower driving speeds (e.g., driving to a nearby restaurant or school). 'Highway' driving conditions involve few stops and higher driving speeds (e.g. travelling on the Trans Canada Highway from Gander to Grand Falls). Natural Resources Canada uses a default split of 55 per cent 'city' driving versus 45 per cent 'highway' driving, but as previously stated, individual driving patterns vary greatly.

**Q: Why aren't maintenance costs included in the calculator?**

A: While some information may suggest that electric vehicles have lower maintenance costs, given the variability of service providers and prices for maintenance for various vehicle types, these costs were not included in the calculator.

**Q: Is the cost of purchasing charging stations for electric vehicles included in the calculator?**

A: The calculator has been developed to help consumers consider the purchase/lease cost, fuel/energy consumption and greenhouse gas emissions in making a vehicle purchase or lease decision. The calculator does not take into account additional capital purchases that a consumer may incur.

**Q: Why isn't the cost of insuring a vehicle included in the calculator?**

A: Assumptions regarding insurance prices were not included in the calculator. The cost of insurance is variable and can depend on factors such as a vehicle owners' driving record, the number of vehicles insured, the owner's accident rate, and the type of vehicle being insured.

**Q: How do I convert litres per 100 kilometres (L/100 km) into miles per gallon?**

A: The conversion formulas for both US (American) and Imperial (UK) gallons are provided below. Please note that miles per gallon (MPG) information from the United States would be developed using the US gallon and the methodology used to derive mpg for specific vehicles may differ from the approach used by Natural Resources Canada.

**US Gallons:** To convert between L/100 km and mpg (US), use the following formulas:

MPG (U.S.) = 235.21 ÷ L/100 km  
3.785 litres = 1 US gallon

L/100 km = 235.21 ÷ MPG (U.S.)

**Imperial Gallons:** To convert between L/100 km and MPG (imperial), use the following formulas:

MPG (imperial) = 282.48 ÷ L/100 km

L/100 km = 282.48 ÷ MPG (imperial)

4.546 L = 1 imperial gallon = 1.2 US gallons

**Q: What is a discount rate?**

A: A discount rate represents the relative importance that consumers may give to costs and benefits in different years in the future, and that money consumers have today is more valuable to them than money received in the future. A 10 per cent discount rate is used for the purposes of this calculator.

**Q: Why do I have to select a community power system / electricity grid?**

A: When charging battery electric vehicles and plug-in hybrid electric vehicles, there are greenhouse gas emissions associated with the generation of electricity used to power the vehicle in most cases. For example, in St. John's or any community on the Island Interconnected System, the fuel consumed by the Holyrood Generating Station has to be taken into consideration for emissions calculations. For isolated communities with diesel-generated electricity, the emissions associated with the amount of diesel used to generate the power needed to charge a vehicle must be considered.

**Q: What is a tonne of greenhouse gas emissions?**

A: Greenhouse gas emissions are often measured, reported and discussed in terms of tonnes of carbon dioxide equivalent. For illustrative purposes, one tonne of greenhouse gas emissions is equivalent to driving 4,000 kilometers in an average fossil fuel fired car.