

## Electric Vehicles FAQ

Electric vehicles are becoming an opportunity for more and more drivers, even in Rossland. Given the benefits of EVs – cost savings, no emissions, and convenience – you may start to consider the ways an EV can fit your lifestyle, even before electric pickup trucks arrive in 2021 and 2022. With incentives available now, this is a great time to transition to electric mobility.

### Why electric vehicles?

#### 1. Save money

**Charging** - With electricity and gas prices where they are today, EVs are 1/4 the cost to drive than a gas car (especially when charging at home) and a typical EV driver could save \$1,500-\$2,000 per year on fuel.

**Maintenance** - Fully electric cars do not have internal combustion engines or exhaust systems so you will never need another oil change! Regenerative braking systems also preserve brake pads so they can last much longer. The average EV driver can save hundreds of dollars per year on maintenance. Electric motors are much simpler than combustion engines, with significantly fewer parts.

#### 2. Use BC clean energy

BC has an electrical grid that is 97% [clean](#)<sup>1</sup> so EVs can charge up today and have nearly emissions-free travel. By 'fueling' your car with BC-generated energy, you're supporting local economies and keeping your dollars in the Province.

#### 3. No exhaust fumes

When you turn on your EV, it's like turning on electric appliance. So even while you're warming your car (outside or in your garage) there will be no exhaust fumes. Cleaner air for you and our community.

This means when you defrost your car on a cold Rossland morning not only is heat available quickly, but you can let it warm up completely - no idling guilt!

(Hint – keep your car plugged in and you can preheat your car without using your battery)

#### 4. Easy fill up options

You'll never catch an EV driver standing in the cold to fill up their car! Most EV drivers start every day with a full charge, spending just a few seconds plugging in at home the night before. As one EV driver states, "I like to say it takes 6 seconds to fill up my EV: 3 seconds to plug it in, 3 seconds to unplug it the next day."

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<sup>1</sup> <https://electricvehicles.bchydro.com/about/what-does-97-clean-mean>

Most drivers' needs are met by filling up at home. Even commuters will have more than enough charge to go about their day when they leave home each morning with a full battery (by plugging into a 240V outlet, see below for more details).

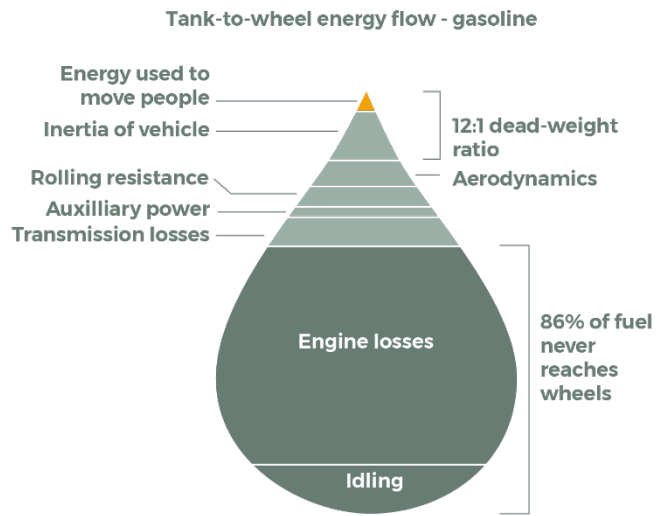
When on the road, EV drivers rely on public fast chargers or Level 2 chargers at hotels and other destinations. There are a growing number of fast chargers along Highways, and more coming online every day (see *How to Charge* section below). Even employers are starting to provide charging for employees.

## 5. Efficient

EVs are more efficient than fossil-fueled vehicles. Natural Resources Canada reports<sup>2</sup>, "The efficiency of energy conversion from on-board storage to turning the wheels is nearly five times greater for electricity than gasoline, at approximately 76% and 16%, respectively." The graphic below, produced in the UK, demonstrates the amount of energy in gasoline that is simply lost as heat during combustion.

Just a fraction of the gas you pay for at the pump is actually used to move the car forward.

The majority of your money is burned up and is lost as waste heat.



Source: "GROWTH WITHIN: A CIRCULAR ECONOMY VISION FOR A COMPETITIVE EUROPE" (page 19), Ellen MacArthur Foundation. Repurposed with permission. <https://www.ellenmacarthurfoundation.org/assets/downloads/circular-economy/Growth-Within-Report.pdf>

## 6. Quiet

Since there is no combustion moving the car or gears, you get soundless (fast!) acceleration and no engine noises.

## 7. Just simply more fun to drive!

With instant torque and no gear noise, EVs are simply fun. In addition, the car's drive battery is at the bottom of the car, distributing its weight across all four tires. So, an EV handles very well on our windy BC highways, even on packed snow.

<sup>2</sup> <https://www.nrcan.gc.ca/energy/efficiency/energy-efficiency-transportation-and-alternative-fuels/choosing-right-vehicle/buying-electric-vehicle/21034>

## Where to charge electric vehicles in Rossland

Mostly, you'll charge at home, overnight while you sleep, waking up each morning with a full 'tank'. Rossland currently has one Level 2 public charging station, and one DC Fast Charger. Both are located on Washington Street. For up-to-date locations of all charging stations in BC, Canada and the USA, visit [Plughshare](#), [Chargehub](#), or the [BC Hydro EV app](#).

## How does charging an EV work?

It's important to think a bit differently about EVs than gas cars when it comes to 'fueling'. A huge benefit of EVs is that you can add energy anywhere there is a plug - different plugs add energy at different rates. So adding energy to your car isn't instantaneous *but* you can do it overnight (no waiting at all!), or fairly quickly on a road trip at fast chargers.

When you drive your EV, you're consuming that energy at different rates; hills and driving speed are more noticeable in an EV than a gas car. As a new EV driver, you'll become more familiar with how your specific car consumes energy so that when on road trips you plan charging stops that let you do something else – eat, sleep, take a walk, play at a park.

## How can I charge my electric car?

### At home

Most EV drivers have over 80% of their energy needs for their EV fulfilled at home. There are two main ways to charge at home:

- 1) **120V** - Your new vehicle will come with basic charging equipment so you can simply use that with a regular 120V outlet. If your daily commute is in and around Rossland, this could be all you need as you'll get 30-50kms of range overnight. Most EV drivers opt for Level 2 for convenience.
- 2) **240V / Level 2** - Hire an electrician to install a Level 2, 240V, charging station. In some cases, you can even just install a 240V outlet – check with a qualified electrician. Buying an adapter or Level 2 charger is a one time cost for drivers.



Pro Tip! Level 2 chargers can be hard-wired to your home or business, others are portable which can be helpful on some road trips. For those who like data, some Level 2 chargers keep all sorts of stats to track and analyze.

### On the Road

Find an EV charging station near you or your destination with online maps and mobile apps such as [Plughshare](#), BC Hydro EV App, ABetterRoutePlanner, [Chargehub](#). These apps can also tell you at any time whether a station is in use or available.

#### 1) DC Fast Charger



Fast chargers are often sited close to highways or local amenities like downtown restaurants (like our fast charger!), perfect for plugging in and grabbing a quick bite to eat or visit a few stores. With the growing charging options, you can time your charging stop to coincide with a tourist break, a quick walk or just grab a meal or snack.

Fast chargers can add between 150 and 240 km of range per hour. There are a few factors that could affect charging speed. For example:

- your vehicle’s maximum charging rate
- the battery’s state of charge
- the temperature of the battery

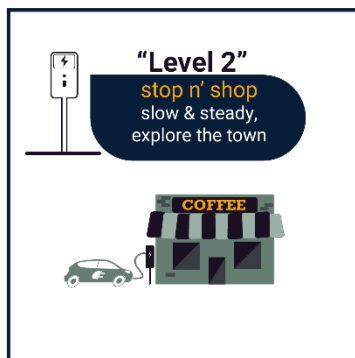
Once plugged in, the EV will charge on its own, you won’t need to monitor it. In most cases you can also use an app on your phone to check in on the charging progress while you’re away. It is true your roadtrips will take longer, but as many EV drivers discover, having time to explore a new town, have a picnic or sit down to eat can turn into a benefit. As one driver experienced, “I didn’t realize how much nicer it was to have 30 mins for the kids to play at a playground on a long road trip! We so much enjoy running around outside while we charge.”

**“State of Charge”**

This term refers to how full your battery is. An EV battery will receive electricity at a faster rate when it is roughly between 30 and 70% full (each car is different).

The reason the your battery receives energy at different rates is to preserve the life of the battery.

## 2) Public Level 2 Charger



If you choose to stop at a Level 2 charger while travelling, you’ll likely plan to stop for over an hour or overnight (at a hotel, for instance). Level 2 chargers will add 30- 40 kms of range per hour. This means you can have a meal at a restaurant, take the dog or kids for a walk, go shopping or visit a tourist destination. In some cases, you can get your bike off the car and enjoy local trails!

**Fees at charging stations**

Fees are designed to promote turn-over and ensure that chargers are available to those who need them. Public charging stations charge more than your home electricity rates, but destinations like hotels and resorts often offer free Level 2 charging for guests.

Electric vehicles have the range to get you to your favourite destinations

Newer model electric vehicles typically have ranges in excess of 400km on a single charge. This enables residents to travel regionally with ease. We've put together a map showcasing how far you can travel easily on a single charge and where you'll need to stop if necessary.

Many local trips are possible to do roundtrip without charging: Nelson, New Denver, Kaslo, Nancy Green Park, Christina Lake, Salmo, Grand Forks, Greenwood, Northport, WA and Colville, WA.

Other top destinations may need a charge before a return to Rossland: Kimberly, Cranbrook, Osoyoos, Spokane, WA, 49 North Ski Chewelah, WA. And the good news is that in each of these places there is fast charging, so you can 'fill up' while eating, recreating...or sleeping!

Some of your favourite BC destinations will likely require a couple stops for a roundtrip: Princeton, Kelowna, and Revelstoke.

Electric vehicles do perform in the winter

EVs are safe and effective in Rossland winters. Battery range is reduced in cold weather but even so you'll have enough for most trips, especially in and around Rossland. One thing to remember is that you don't 'start' an EV like a gas car. Rather, you turn an EV on much like your electric kettle. So even at -30°C it will always start and since you don't have to wait for an engine to warm up, the electric heat is available really quickly.

Do you want to hear from other Kootenay EV residents about driving an EV in the winter? The provincial EV Awareness initiative, Emotive, produced a series of Q&A videos related to winter EV driver. Find them here: <https://youtube.com/playlist?list=PLqDZH1HLKou9afnxMrOkFRWPsgZ8DUkNa>

And our own Rossland EV drivers talk about driving an EV in the winter months in our Electrify your Rossland Life videos. See them here <hyperlink once published>.

[EV's are comfortable in the cold](#)



EV models and purchase incentives

EV sales in the Province are growing steadily with over 30,000 EVs currently registered in BC. And with EVs accounting for more than 10% of all new vehicle sales, BC has already exceeded the 2025 [ZEV mandate](#).

[Emotive BC](#) has a handy guide showing all the models of zero emissions vehicles currently available in BC: <http://www.emotivebc.ca/wp-content/uploads/2020/09/Electric-Vehicles-in-BC.pdf> as well as a number of great resources to learn more about EVs.

## EV INCENTIVES

The Province of British Columbia offers up to \$3,000 off the purchase of a battery electric, plug-in hybrid electric or hydrogen fuel cell vehicle with an electric range of at least 85 km and up to \$1,500 for plug-in hybrid electric vehicles with an electric range of less than 85 km. For more information, visit [CEVforBC](#).

As of May 1, 2019, all Canadians qualify for an incentive of up to \$5,000 off the purchase of a new fully electric or plug-in hybrid electric vehicle. Learn more about which vehicles qualify visit <https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles>

The dealership that sells you your vehicle will usually apply for and credit your rebates from both the provincial and federal programs, making the process effortless.

Trade in your old gas car for an electric car and receive up to \$6,000 to buy a brand new electric car and up to \$3,000 to buy a used electric car. For more information, visit [BC SCRAP-IT.](#)

There is even a tax write off for businesses that purchase a ZEV. Businesses should contact the Canada Revenue Agency at 1-800-959-5525 for more details.

### **EV CHARGER INCENTIVES**

There are a variety of incentives available for individuals and businesses to install EV charging. With incentives being added all the time, we recommend visiting <https://pluginbc.ca/incentives/> for up-to-date information.