

EV **ELECTRIC** **+HYDROGEN** **VEHICLE** **INFO**

RIDE THE CURRENT

Electric and Hydrogen Vehicles in Edmonton



More and more Edmontonians are going electric.
Get to know the options and advantages.

WHY CHOOSE AN ELECTRIC VEHICLE (EV)?

Changing how we move is a great way to take action on climate change

Transportation accounts for

30% *of Edmonton's greenhouse gas (GHG) emissions*



42% *of the city's energy consumption*

Walking, biking and taking public transit are the best ways to reduce the environmental impacts from transportation and traffic congestion.

When we need to drive, replacing gasoline and diesel vehicles with electric vehicles is better for the environment and saves on fuel and maintenance costs.

EVs are vehicles that are **fully** or **partially** powered by electricity.



BENEFITS

BETTER FOR THE ENVIRONMENT:

- On average EVs release 41% less greenhouse gases (GHG) than gasoline or diesel vehicles in Alberta. GHGs will be reduced even more as our electric grid gets greener.
- Over the lifetime of their use, EVs produce less GHGs than gasoline or diesel internal combustion engine (ICE) vehicles. Battery EVs typically offset their excess manufacturing emissions within the first 6-16 months of operation because they do not produce tailpipe emissions.

IMPROVED AIR QUALITY:

- Gasoline and diesel vehicles release pollutants that negatively impact local air quality and health.
- As more people switch from gasoline and diesel to EVs, this will reduce air pollution and improve air quality for everyone.

LOWER MAINTENANCE AND OPERATING COSTS:

- EVs cost less to maintain and operate due to fewer moving parts and lower fuel costs. The average annual savings on fuel and maintenance for an EV in Alberta, compared to a gasoline vehicle, is about \$3,000.
- Over time the reduced operating and maintenance costs can offset the higher purchase price of EVs.

USE LOCALLY GENERATED ELECTRICITY:

- Green energy is provided through solar, wind, hydro and geothermal systems. It is even possible to charge an EV at home with solar panels.

FUN TO DRIVE!

- EVs come in all shapes and sizes, and can be powerful and comfortable. Ask EV drivers about their experience, and you might become an EV fan yourself!

TYPES OF EVs



There are two types of EVs available in Canada that are charged by plugging into the grid.

Battery Electric Vehicles (BEVs)

Powered exclusively by an electric battery, BEVs are charged by plugging them into an EV charger or a typical wall outlet. Today's BEVs can travel 400 km or more on a single charge.

Plug-in Hybrid Electric Vehicles (PHEVs)

PHEVs are powered by an electric battery and, when needed, by a gasoline internal combustion engine (ICE). PHEVs can travel between 20 to 80 km on all-electric power. The gasoline engine takes over for driving longer distances.





CHOOSING AN EV THAT MEETS YOUR NEEDS

From sedans to trucks, almost every vehicle manufacturer has an EV on the market today. When choosing one, it is important to consider your daily travel needs and vehicle travel ranges. Keep in mind that the travel range of EVs is greater than the average car trip in Edmonton (9.4 km) and the average round trip commute (25.6 km).

INCENTIVES

The Government of Canada offers incentives of up to \$5,000 that can be applied to the cost of a zero-emission vehicle (ZEV), as well as tax concessions for businesses. Visit Natural Resource Canada's iZEV Program website for conditions and eligible vehicles.

FIND YOUR EV MATCH

To learn which EV models are available in Canada, and to compare costs and travel ranges, visit ev.plugndrive.ca

CHARGING AN EV

EV drivers can charge their vehicles at home, work or at publicly accessible EV charging stations. There are currently more than 60 publicly accessible EV charging locations throughout the Edmonton Metropolitan Area.

To find out the closest publicly accessible EV charger, visit:

- [plugshare.com](https://www.plugshare.com)
- [chargehub.com](https://www.chargehub.com)
- ev.plugndrive.ca/charging-stations



TYPES OF EV CHARGING

Level 1: Standard Wall Outlet

Power level: 120V, 15-20 amps

Charging times: 8 km per hour, 12-20 hrs (BEVs),
6-12 hrs (PHEVs)



EVs come with a portable cord that you can plug into a standard wall outlet. This is the slowest of the three charging methods, but is sufficient for those who travel less than 64 km a day and have the ability to charge their vehicle overnight.

Level 2: EV Charger

Power level: 240V, up to 80 amps (30 amps typical)

Charging times: 30 km per hour, 4-10 hrs (BEVs), 2-4 hrs (PHEVs)

EV drivers can add 16 to 30 kms of range in an hour of charging with a Level 2 EV charger. These are the most common public EV chargers and can also be installed at home or work. They use similar electrical requirements as a stove, and any certified electrician can install a Level 2 charger.



Level 3: Direct Current (DC) Fast Charger

Power level: 200V-450V, up to 200 amps

Charging times: 25-30 minutes to charge BEV to 80% capacity



A DC Fast Charger is similar in size to a gas pump and can deliver 80% of a full charge to an EV in 30 minutes. These are the fastest of the three methods and are typically found in businesses and public charging stations. The Edmonton Metropolitan Region has seven public Level 3 chargers and eight Tesla Superchargers. Tesla Superchargers can only be used to charge Tesla vehicles.



WHAT ARE HYDROGEN VEHICLES?



Hydrogen vehicles, also known as Fuel Cell Electric Vehicles (FCEVs), are electric vehicles that run on hydrogen gas. Hydrogen vehicles offer similar environmental and reduced maintenance benefits as other EVs. The only emissions hydrogen vehicles produce are water vapour and warm air.

Hydrogen vehicles are refilled with pressurized hydrogen gas at fueling stations instead of recharging at electric charging stations like battery or plug-in hybrid electric vehicles.

Hydrogen vehicles for passenger and freight transport are an emerging market. As FCEV technology and infrastructure develops, the potential is promising for hydrogen-powered vehicles to become an affordable, efficient and clean transportation option in Edmonton.

FOR MORE INFORMATION...

- Talk with EV owners. The Electric Vehicle Association of Alberta is a great resource to connect with EV owners; visit albertaev.ca or find them on Facebook.
- Explore the Plug'n Drive website, which has useful educational information; visit plugndrive.ca
- Learn more about EVs and what the City of Edmonton is doing to encourage EV adoption; visit edmonton.ca/electricvehicles
- Stay informed and find other ways to take action on climate change; visit changeforclimate.ca

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