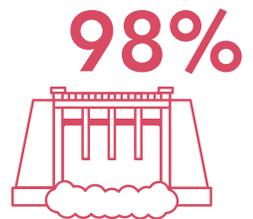
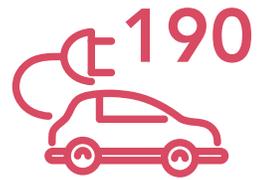




ELECTRIC VEHICLES

- There are **over 190 all-electric vehicles on the road in Newfoundland and Labrador**, and there are **over 50 charging stations** across the province¹.
- When powered by renewable energy, electric vehicles (EVs) **do not produce any greenhouse gases (GHGs) to operate**².
- When EVs are powered by non-renewable energy sources, there are associated GHG emissions, but they remain **much more fuel efficient than conventional gas vehicles** and produce considerably less GHGs².
- Upon completion of Muskrat Falls, the **province is expected to have 98 percent renewable electricity**, effectively creating zero GHGs in relation to operating EVs in the province².



14
charging
locations



Driving in a 2021 Hyundai Kona Electric (an all-electric EV with an estimated price range of \$40,000 to \$50,000), someone can leave St. John's with a fully charged battery and drive about 334km to Gander. In Gander the EV can plug into the Level 3 charger located at the Orange Store while the driver stops for some lunch.

At \$15/hour, this charger can bring the Hyundai to full charge in under an hour. Leaving Gander, the driver can use the EV's range of 415km to make it to Corner Brook, about 358km away.

In Corner Brook the driver can stop for a meal and charge the EV with the Level 3 charger at the Irving location.

Leaving Corner Brook with the battery charged over 80%, the driver can make it 218km to Port aux Basques (where more chargers are available) with about 169km in range remaining.

Road Trip!

HOW CAN WE TRANSITION TO ELECTRIC VEHICLES IN NL?

- EVs offer several societal and user benefits including improved **energy security, tackling climate change, improved local air quality, simple maintenance, high performance, and reduced operating costs**².
- **Government support of electric vehicles** (both supply and demand) in other jurisdictions – such as tax reliefs for EV purchases and benefits offered to EV owners like exemptions from road tolls and access to bus lanes – **has shown increased EV market development**².
- The Government of Canada currently offers an **incentive of up to \$5000** to new EV buyers¹, and the Government of Newfoundland and Labrador offers an **incentive of \$2500** on a purchase or lease of all-electric vehicles; combining these rebates can **save up to \$7500 on the purchase of an EV** in the province³.

Types of Electric Cars:

1 All-Electric Vehicles (including an electric motor and plugs in to charge)

An all-electric vehicle runs entirely on electricity. Their batteries run between 80-400km, and they generally come with approximately 25% lower fuel costs and less maintenance costs¹.

2 Plug-In Hybrid Electric Vehicles (including gas engine, electric motor, and plugs in to charge)

A plug-in hybrid runs almost exclusively on electricity until its battery depletes and then it will switch to the gas-powered engine. They are generally less expensive to buy than all-electric vehicles, but do have more expenses for operation and maintenance¹.

3 Hybrid Vehicles (including gas engine and electric motor))

A hybrid vehicle primarily uses gas for its main power source and uses regenerative braking to generate electricity for the electric motor. Hybrids have minimal fuel savings compared to all-electric vehicles and plug-ins¹.

• Factors making EVs more attractive choices for consumers in the province include:

1. Government support of EVs
2. Increasing EV infrastructure in the province
3. Declining prices of EVs, and
4. More models added by vehicle manufacturers every year



WHAT BARRIERS EXIST?

People working in automobile industries believe that **many consumers do not have an accurate understanding of EVs compared to conventional vehicles**, and that more information and education is therefore needed for EVs to become a more attractive option for consumers².



Some **consumers are reluctant to purchase EVs without more EV infrastructure** in place, despite the increased EV battery capacity in recent years² and increased public charging spots across Newfoundland and Labrador¹.

There are some **anxieties among consumers about the lifespan and cost of replacement EV batteries**, but these prices are decreasing rapidly and the battery lifespans are increasing, expecting to last more than ten years and lose only 20-30 percent of their capacity during this period².



There are **some challenges of using EVs in cold weather**, namely the limited battery performance from cold air, and the reduced range due to the higher draw on the battery to provide heat and run window and mirror defrosters. However, thanks to technological advances, EV range in the cold is advancing, and automakers have attempted to use heat generated by the electric motor to heat the vehicle's battery². Despite the barrier of cold weather (which is improving), many other regions, with comparable or lower temperatures than that in Newfoundland and Labrador, have high levels of EV deployment, such as Quebec, and Norway².



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