



Zero-Emission Vehicle Update 2021

MESSAGE FROM THE MINISTER



As British Columbians continue to face multiple challenges from the COVID-19 pandemic to the escalating impacts from climate change, we're doing more to support economic recovery, keep people safe and protect our environment.

British Columbians are adopting cleaner vehicles at a remarkable rate and we are supporting major growth in British Columbia (B.C.)'s zero-emission vehicle (ZEV) industry through CleanBC Go Electric programs and rebates.

This past year, we have continued our support for British Columbians who are eager to help us make the transition to a low-carbon economy by expanding the CleanBC Go Electric Electric Vehicle (EV) Maintenance Training program to more colleges in B.C. Ensuring that more automotive technicians can upgrade their skills to work on EVs means that more people will have the confidence to make the switch to an EV, knowing that their vehicles will be serviced by a qualified professional.

To better support public-sector organizations in B.C. that are leading the way to a cleaner future, we have increased rebates for public-sector organizations with light-duty EV fleets to plan for and install chargers under the CleanBC Go Electric Fleets program. The additional support helps public-sector organizations meet legislative emission reduction targets under amendments to the Climate Change Accountability Act.

Our support for ZEVs extends beyond light-duty vehicles. In 2018, B.C.'s commercial transport sector accounted for approximately 60% of B.C.'s transport emissions and 22% of total provincial emissions. We are working to reduce emissions in the medium- and heavy-duty commercial vehicle sector through the CleanBC Go Electric Commercial Vehicle Pilots (CVP) program and the Specialty Use Vehicle Incentive (SUVI) program. These programs are designed to encourage businesses, non-profit organizations, local governments, and other public entities to adopt electric or hydrogen fuel-cell specialty use vehicles for their fleets, replacing gas or diesel vehicles.

We continue to support the widespread adoption of EVs by installing more public EV charging stations across B.C. The BC Public Light-Duty Zero-Emission Vehicle Infrastructure Study serves as a guide for municipalities, First Nations communities, and the private sector to invest in further expansion of the fast-charging and hydrogen-fuelling network in B.C. The study shows us that B.C. already has more than 50% of the public fast-charging sites required to meet the province's 2040 demand already built or underway.

We also continue to provide rebates for installation of EV chargers at home and workplaces. British Columbians living in apartment and condominium buildings now have access to EV Ready rebates so that more people can charge their EVs at home.

B.C.'s EV sector continues to deliver jobs and significant economic opportunities across the province with an estimated 274 B.C. companies that provide 6,300 full-time jobs and contribute \$622 million to the provincial gross domestic product.

The CleanBC Roadmap to 2030, released in 2021, details a range of expanded actions to accelerate the transition to a net-zero future and achieve B.C.'s legislated greenhouse gas (GHG) emissions targets. These actions include strengthening the Zero-Emission Vehicles Act to require 26% of light-duty vehicle sales to be ZEVs by 2026, 90% by 2030 and 100% by 2035 - five years ahead of the original target.

With the highest uptake rates of ZEVs in North America making 13% of new light-duty vehicles sold in B.C. and more than 79,000 light-duty ZEVs on B.C. roads today, we are quickly becoming a leader in the industry.

Continuing to make cleaner options more affordable and accessible to all British Columbians is essential to meeting our CleanBC targets and supporting the growing demand for ZEVs in B.C. remains one of our top priorities.

Honourable Bruce Ralston

Minister of Energy, Mines and Low Carbon Innovation

ZERO-EMISSION VEHICLE MARKET HIGHLIGHTS

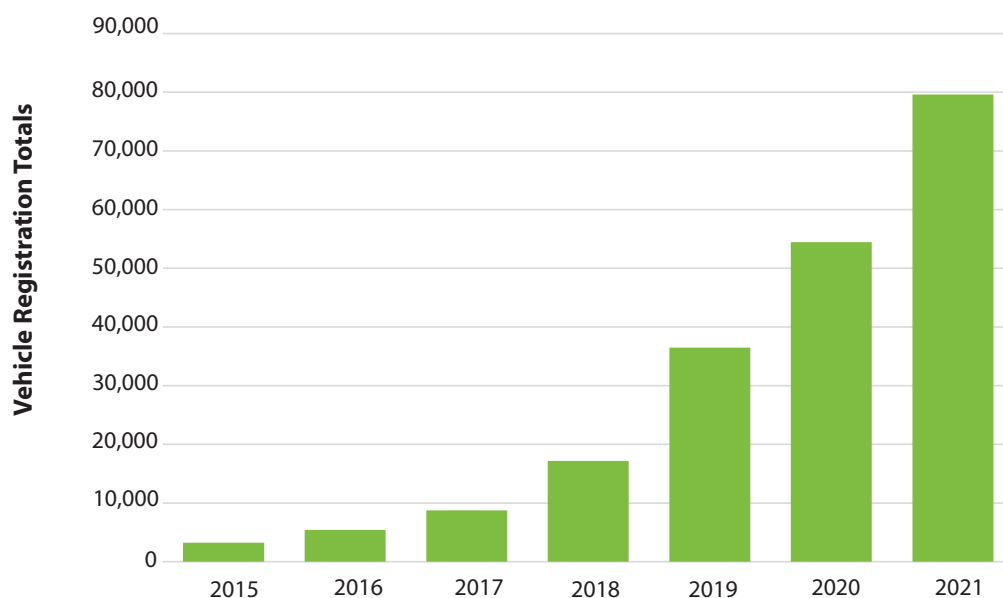
With the suite of CleanBC Go Electric programs and Zero-Emission Vehicles Regulation, we're getting more zero-emission vehicles (ZEVs) on the road in B.C. We're working on the following:

- Bringing down the price of ZEVs.
- Making it easier to charge or fuel a ZEV.
- Supporting research, jobs, training and economic development in B.C.'s ZEV sector.
- Increasing availability of ZEVs for British Columbians.

B.C. is leading the charge for EVs.

- In 2021, light-duty ZEV sales represented 13% of all new light-duty vehicle sales in B.C.¹
- 79,587 light-duty ZEVs registered in B.C. as of December 30, 2021.²
- At the end of 2021, there were over 3,000 public charging stations and four hydrogen fuelling stations in B.C.
- In 2021, B.C. had the highest uptake rates of ZEVs in North America.

British Columbia Light-Duty ZEV Registration Totals



Data source: IHS Markit for 2020 and 2021² and ICBC registration data for 2015 to 2019.

¹ Based on IHS Markit New Registration Data (Year End 2021) for the Province of British Columbia and IHS Markit's definition of Light Vehicles which excludes Medium and Heavy Trucks and vehicles greater than 8500 GVW.

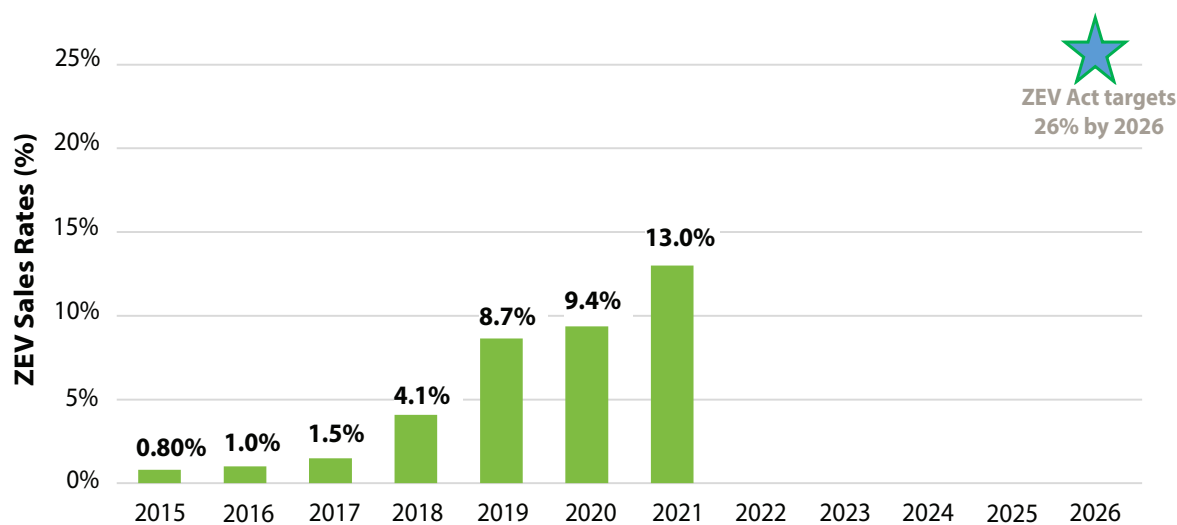
² Based on IHS Markit Units in Operation Registration Data as of December 31, 2021 (Model Years 1981 and Newer) for the Province of British Columbia. Figures and information sourced to IHS Markit within this report (the "IHS Markit Materials") are the copyrighted property and of IHS Markit Ltd. and its subsidiaries ("IHS Markit") and represent data, research, or opinions of IHS Markit, and are not representations of fact. The information and opinions expressed in the IHS Markit Materials are subject to change without notice and IHS Markit has no duty or responsibility to update the IHS Markit Materials. Moreover, while the IHS Markit Materials reproduced herein are from sources considered reliable, the accuracy and completeness thereof are not warranted. No further reproduction of this material is allowed without the express written permission of IHS Markit.

ZEV TARGETS

B.C. became the first jurisdiction in the world to legislate a 100% ZEV sales requirement. The ZEV Act, passed on May 30, 2019, required automakers to meet ZEV sales targets reaching 10% of new light-duty vehicle sales by 2025, 30% by 2030, and 100% by 2040. In the Roadmap to 2030, the Province committed to increase the stringency of the ZEV Act with targets of 26% of ZEV sales by 2026, 90% by 2030, and 100% by 2035, and to implement targets for medium- and heavy-duty vehicles. The legislation aims to ensure a greater availability of ZEVs at more affordable prices in B.C.

We are well on our way to achieving the 2026 ZEV sales targets. In 2021, there were 24,263 new ZEVs registered in B.C., which represented 13% of all new light-duty vehicle registrations in B.C.¹

British Columbia Light-Duty Vehicle ZEV Sales Rates¹



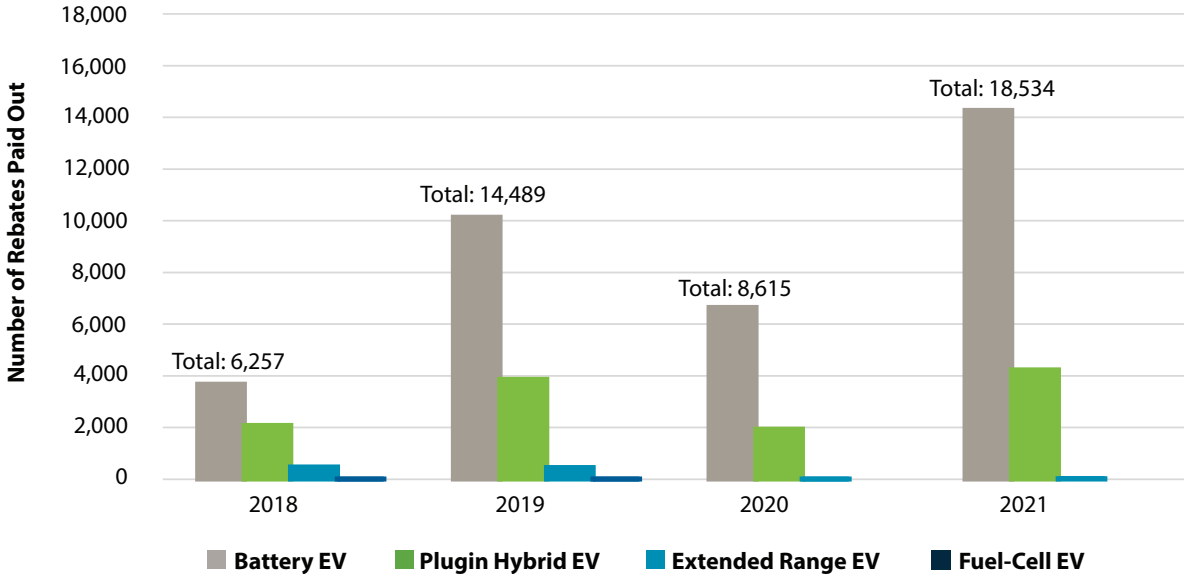
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LIGHT-DUTY VEHICLE REBATE

As of December 2021, the Province provided rebates for 51,986 ZEVs through the Go Electric Light-Duty Vehicle Rebate program, totalling \$173,295,855 since April 2015.

Number of Light-Duty Vehicle Rebates by Year



HYDROGEN FLEET PROGRAM

In partnership with the Canadian Hydrogen and Fuel Cell Association (CHFCA), the Go Electric Hydrogen Fleet program provides rebates to fleet operators for the purchase of fuel-cell electric vehicles (FCEVs) currently available in B.C.

A Victoria company, Geazone Eco-Courier, received \$72,000 in rebates towards the purchase of 9 FCEVs, to expand its fleet to 20 FCEVs. As a zero-emissions courier, Geazone provides sustainable delivery services, third-party logistics and freight services to businesses on Vancouver Island and in Greater Vancouver, with a fleet made of human-powered tricycles, FCEVs and fully electric five-tonne trucks.



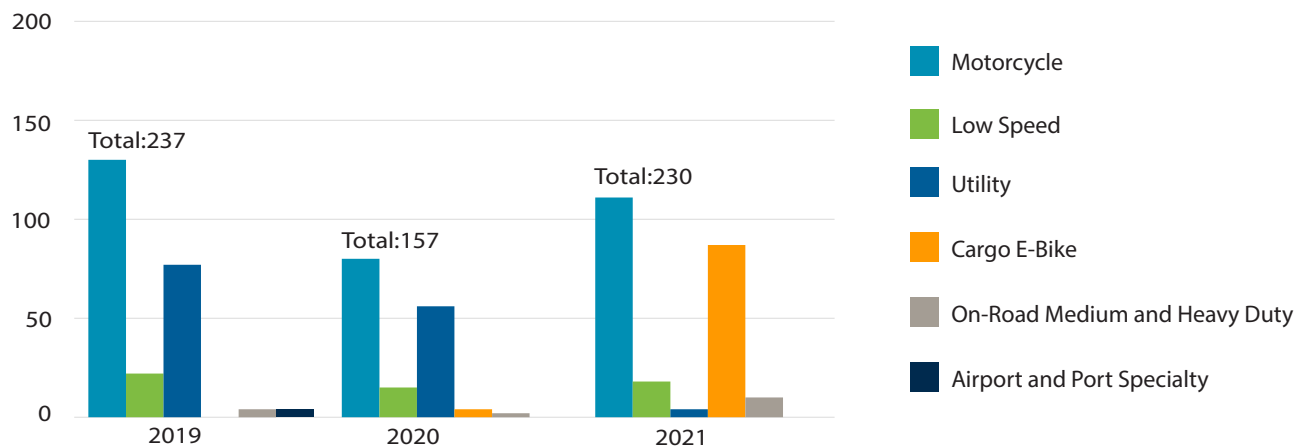
COMMERCIAL VEHICLES*

The Go Electric Commercial Vehicle Pilots (CVP) program and the Specialty Use Vehicle Incentive (SUVI) program, are designed to support the adoption of commercial* ZEVs in a variety of applications across all modes.

The SUVI program provides post-purchase rebates to eligible commercial vehicles for B.C. businesses, local and regional governments, public sector organizations and non-profit organizations. The program also allows individuals to receive rebates on zero-emission motorcycles and low-speed vehicles.

The CVP program is a competitive program that supports pilot projects focused on the development and deployment of commercial zero-emission medium- and heavy-duty vehicles and associated fuelling infrastructure across all modes of transportation. The program is available to B.C. businesses, local and regional governments, public sector organizations and non-profit organizations. Selected projects can receive up to 33% of the cost for both eligible vehicles and fuelling infrastructure.

Number of SUVI Rebates by Year



HIGHLIGHTS

- Since its re-launch in November 2017 the SUVI program has distributed \$3,460,636 in rebates, providing a total of 777 rebates for specialty use vehicles.
- The CVP program launched in January 2021, and has since held two funding calls valued at \$9.6 million to support the adoption of commercial ZEVs and supporting infrastructure.
- Since 2020, a total of 52 electric school buses have been ordered through the Go Electric School Bus program. Out of 84 school buses ordered in 2021 by school districts, 34 were electric representing a 40% increase in adoption rate.

*Commercial vehicles include on-road and off-road medium, heavy-duty trucks, vans, buses, marine vessels, port, airport equipment, etc.

PUBLIC CHARGING AND FUELLING INFRASTRUCTURE

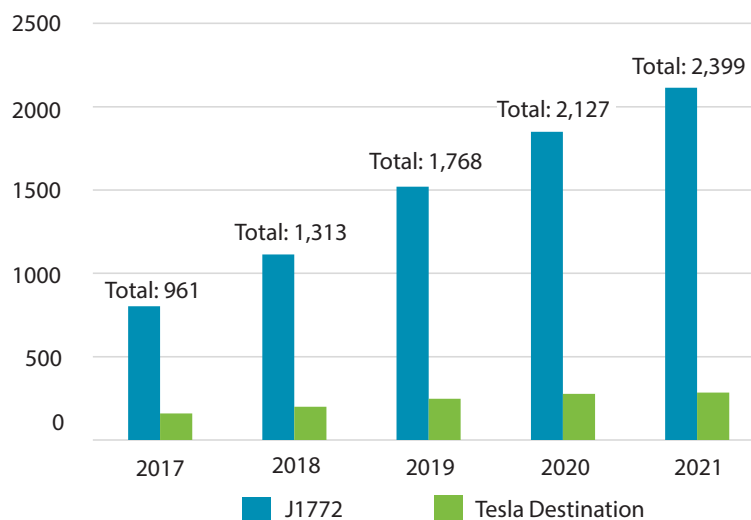


PUBLIC INFRASTRUCTURE FUNDING

Through the Go Electric Public Charger program, Indigenous applicants can receive up to 90% of project costs to a maximum of \$130,000 per fast-charging station, while all other applicants can receive up to 50% of project costs, to a maximum of \$80,000 per station. In the Roadmap to 2030, the Province committed to having 10,000 public EV charging stations in B.C. by 2030.

Additionally, Go Electric funding provides applicants of Natural Resources Canada's (NRCan) Zero Emission Vehicle Infrastructure Program (ZEVIP) with top up funding of up to 25% of projects costs to a maximum of \$25,000 for public fast-charging projects located in B.C. This funding is in addition to funding of up to 50% of project costs provided by NRCan.

Public Level 2 Charging Station Growth



Data provided by PlugShare, end of Q4 2021

HYDROGEN FUELLING

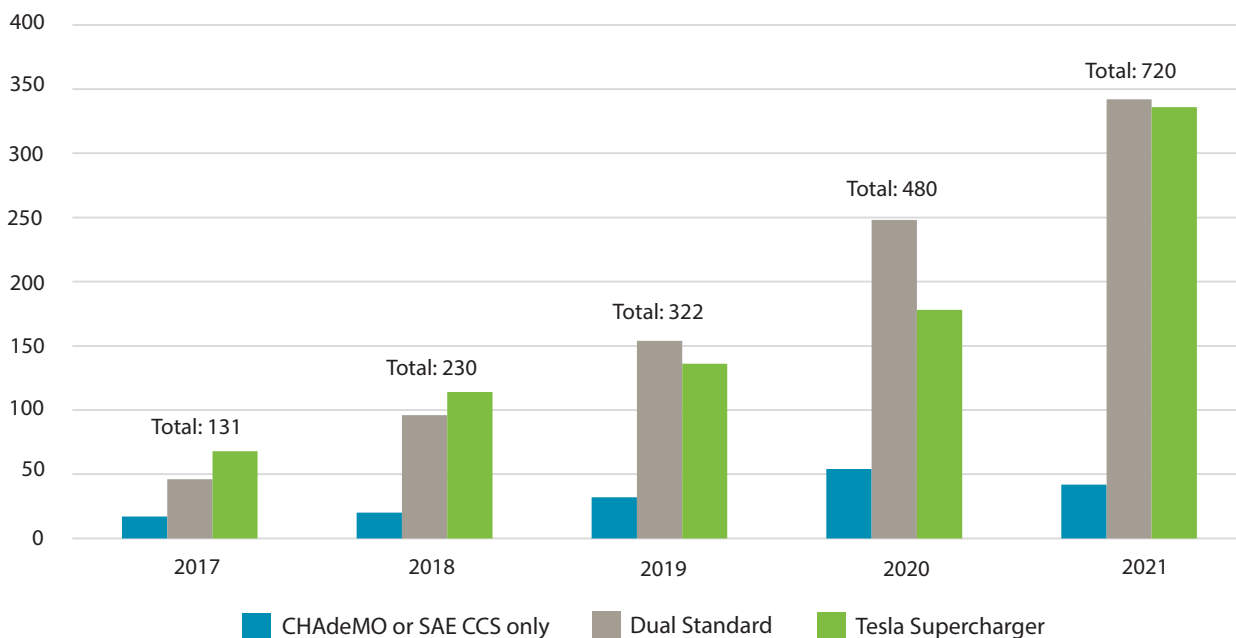
As of the end of 2021, there was a network of four public hydrogen-fuelling stations for light-duty vehicles in B.C., with two more planned for completion in 2022. In the summer of 2021, the Province released a Request for Proposal (RFP) to fund an additional 10 public hydrogen-fuelling stations. The stations to be funded under this RFP are expected to be completed by 2023.

PUBLIC CHARGING AND FUELLING INFRASTRUCTURE



Public Fast-Charging Station Growth

Data provided by PlugShare, end of Q4 2021

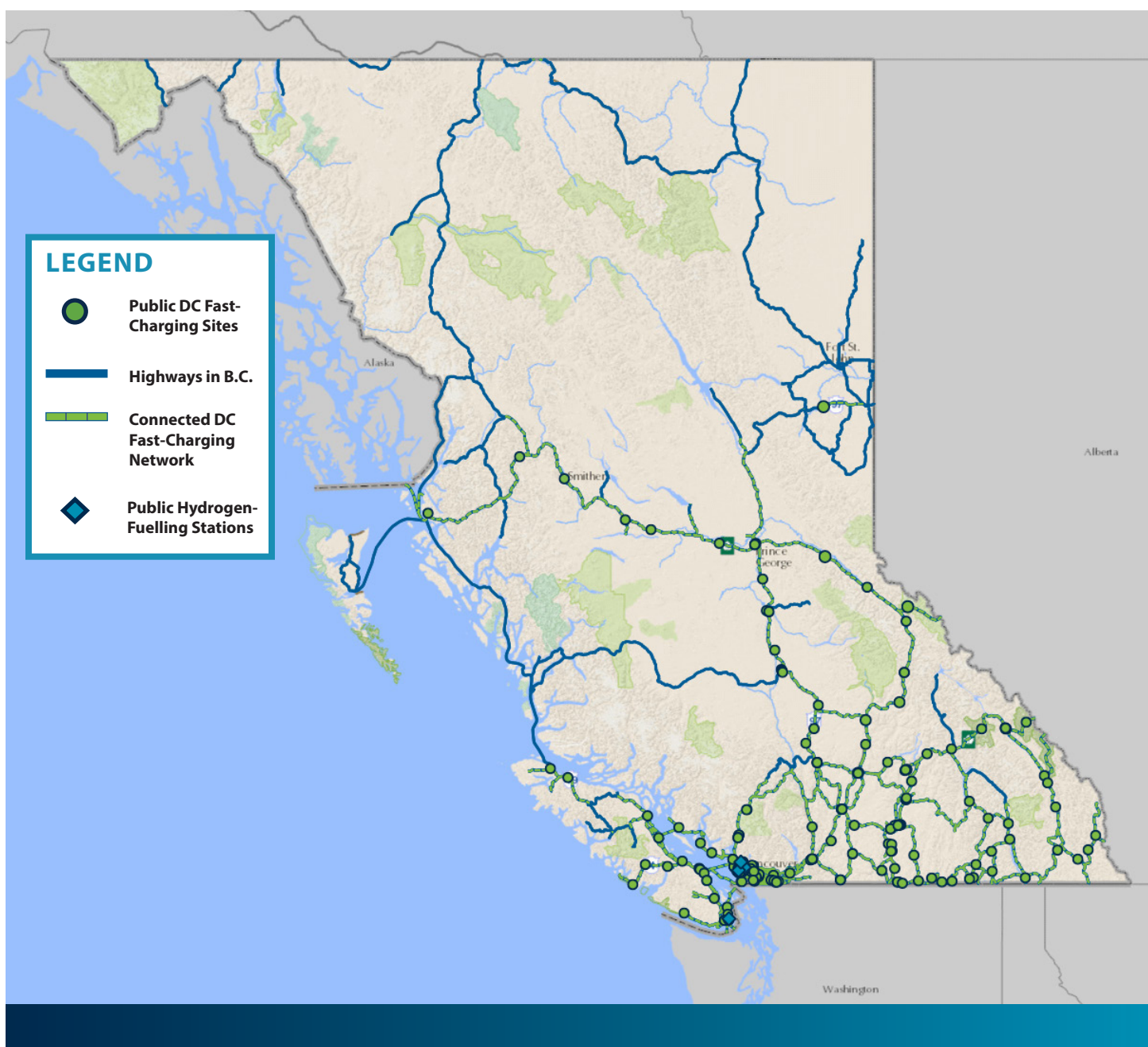


Public charging station numbers grew by 50% in 2021, compared with 2020. By the end of 2021 in B.C., there were 720 charging stations across 262 public fast-charging sites (33 of those sites were Tesla Supercharger sites). Approximately 60% of the core network of fast-charging sites enabling travel throughout B.C. are now ready.

CHARGER TYPE	DESCRIPTION
SAE CCS	A type of connector for charging an EV at a public fast charger, mostly associated with American-brand EVs.
CHAdeMO	A type of connector for charging at a public fast charger, mostly associated with Japanese-brand EVs.
Dual Standard	A station that has both a CHAdeMO and SAE CCS connector. Public fast-charging stations being deployed in B.C. are largely dual standard. All EVs with fast charging capability can charge at these stations (including Teslas with an adapter).
Tesla Supercharger	Tesla-specific connector for fast-charging stations. Only used by Tesla vehicles.

PUBLIC ZEV INFRASTRUCTURE NETWORK

The network of public fast-charging and hydrogen-fuelling stations is expanding along B.C.'s primary and secondary highway systems, major roads, and in community centres. The Ministry is working with its partners to support a network that will allow safe and convenient travel in a ZEV throughout B.C. Our public infrastructure planning is informed by the 2021 study, "[British Columbia Public Light-Duty ZEV Infrastructure Study](#)".



HOME, WORKPLACE, AND FLEET CHARGER REBATES

The Go Electric EV Charger Rebate program offers rebates for the purchase and installation of Level 2 charging stations in single-family homes, apartments, condominiums (condos), and workplaces. Up to five hours of free support services provided by an EV Advisor are available for apartments, condos, and workplaces. The program also provides an EV Ready stream for apartments and condos. This offer provides rebates for apartment and condo buildings to complete an EV Ready plan, install electrical infrastructure to implement the EV Ready plan and install charging stations. Up to \$97,000 in rebates per apartment or condo is available.

The Go Electric Fleets program offers rebates for the purchase and installation of Level 2 and fast-charging stations for fleets. Eligible businesses and municipalities can access technical support, including up to 40 hours of free support services from a ZEV fleet advisor. In 2021, 12 fleets accessed a combination of infrastructure rebates and fleet assessments through the program.

EV Charger Rebate Program Statistics (January to December 2021)



2,520

Home EV charging stations installed.



289

Multi-unit residential building (MURB) EV charging stations installed.



297

Workplace EV charging stations installed.



375

Site visits and virtual presentations completed by an EV Adviser to workplaces and MURBs.

TRAINING AND JOBS

The Go Electric Training program helps prepare B.C.'s workforce to be leaders in the transition to ZEVs. Go Electric funding supports Red Seal Electricians in B.C. to complete the Electric Vehicle Infrastructure Training Program (EVITP) delivered by the Electrical Joint Training Committee (EJTC). This program provides training and certification for electricians installing EV charging infrastructure. In 2021, updated educational resources for B.C. electricians installing EV charging infrastructure were developed.



HIGHLIGHTS
Go Electric funding also supported the development and expansion of the Electric Vehicle Maintenance Training program, available to Red Seal Automotive Service Technicians at four different schools in B.C. The program is now being offered at the British Columbia Institute of Technology (BCIT), Camosun College, Okanagan College and the College of New Caledonia.

EVs are leading the way in creating good jobs and economic growth.

The Automotive Retailers Association of British Columbia (ARA) launched [EVfriendly](#), an industry-led certification, sponsored by the Go Electric program, designed to cultivate a higher degree of confidence in ZEV ownership. The program helps ensure that only trained and qualified industry professionals are selling, servicing, repairing, and recycling ZEVs, in a responsible and safe manner.

255
Electricians trained through the Electric Vehicle Infrastructure Training Program in B.C.*

96
Automotive technicians completed the Electric Vehicle Maintenance Training Program.*

* As of the end of December 2021. Number shown is the total number of people who have been trained since Program offering became available.

ZEV ECONOMIC DEVELOPMENT

The Go Electric Advanced Research and Commercialization (ARC) program supports B.C.'s ZEV sector by providing reliable and targeted support for:

- Pre-commercial research and development of a B.C.-based product, service or technology.
- Commercialization of a B.C.-based product, service or technology including investments in manufacturing facilities or processes.
- Use or demonstration of a B.C.-based product, service or technology.

\$8.28 million is being distributed to 18 projects from the second round of Go Electric ARC program funding. Approximately 178 full-time equivalent jobs are anticipated to be created and sustained by the projects. A few of the successful projects are:

- Harbour Air Seaplanes (\$1.6 million): aircraft conversion to be fully electric-powered.
- Damon Motors (\$400,000): development of a modular EV powertrain system.
- IRDI System Inc. (\$72,940): development of an infrared transmitter, used to acquire data in refuelling hydrogen fuel-cell passenger vehicles, as well as a handheld diagnostic receiver to test the functionality of communication systems in hydrogen-fuelling stations.



PUBLIC OUTREACH AND PLANNING

The Go Electric Community Outreach Incentive Program (COIP), provides funding to communities and non-profit organizations in B.C. to deliver EV outreach activities and events. In 2021, COIP funding was provided to 12 EV awareness projects, and three transportation target and planning projects within communities. The Resort Municipality of Whistler, City of Penticton, and Musqueam Indian Band are receiving funding for projects within their communities to help develop plans and targets to increase electric mobility adoption, and active transportation.

Due to updated COVID-19 restrictions, COIP activities over 2021 were a mix of both creative online digital material as well as in-person EV events. An EV demonstration and test drive event took place in Prince George where over 250 people attended and experienced the 24 EV models on display, including two test-drive vehicles.

 17 Supported events (in-person and online).	 12 Community outreach incentives distributed.
 2 Ride n' Drives completed.	 15 Outreach videos created.
 41 Test Drives completed.	 3 Indigenous projects or events.

To learn more about Emotive, the Provincial and local community outreach partnership, visit www.emotivebc.ca or follow them on [Instagram](#), [Facebook](#) or [YouTube](#).



Photo credit: Michael Stanyer from the PlugIn BC team.

INDIGENOUS COMMUNITY AND BUSINESS OFFERINGS

There are several Go Electric program offerings that help to support the adoption of ZEVs by Indigenous businesses and communities in B.C. Currently, three Go Electric programs provide enhanced program offerings for Indigenous businesses and communities:

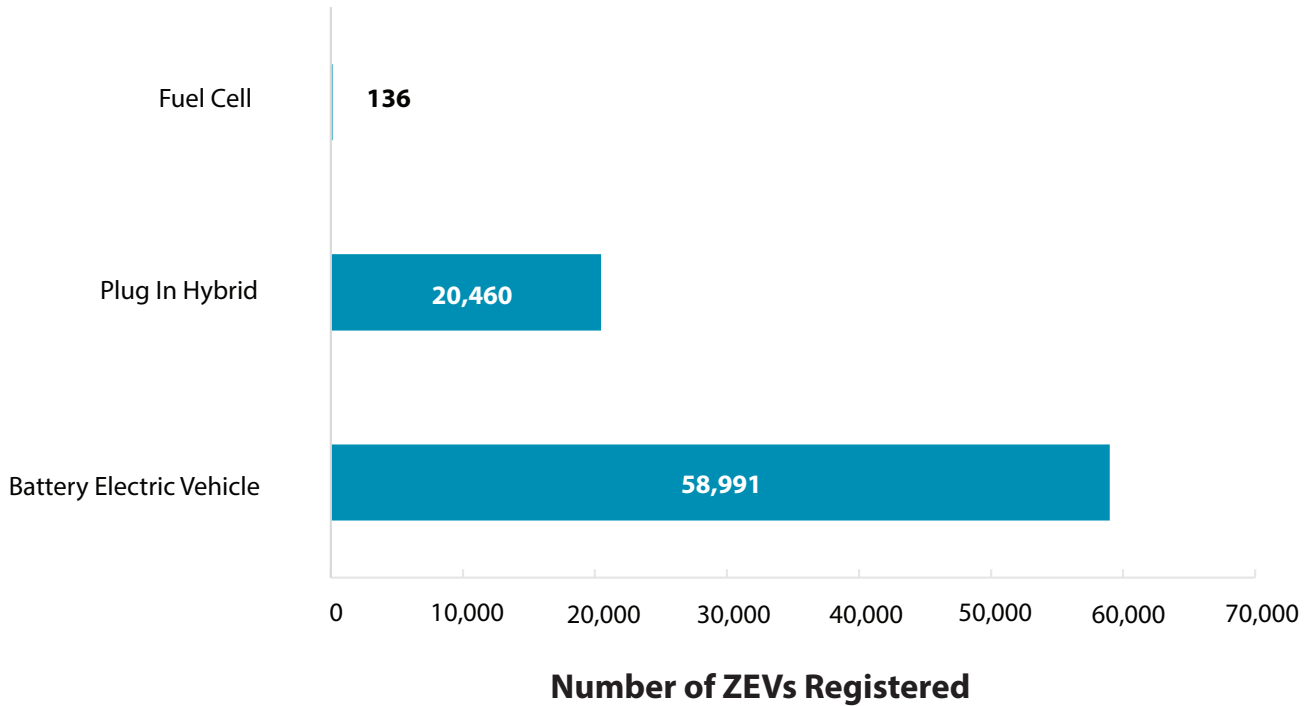
- The Go Electric EV Charger Rebate program provides increased rebates of up to 75% of the cost to purchase and install charging equipment at homes or workplaces.
- The Go Electric Public Charger program provides increased rebates of up to 90% of project costs to install fast-charging stations.
- The Go Electric Fleets program provides increased rebates of up to 75% of costs for several of the program offerings.



In 2021 the Splatsin Indian Band in Enderby, and the Snaw-Naw-As First Nation and Nanoose Economic Development Corporation in Lantzville took advantage of the enhanced rebates under the Go Electric Public Charger program to install public charging stations.

OTHER ZEV DATA

Light-duty ZEVs Registered in B.C.²



Registration Totals for 2021 by Development Region²

Region	ZEV Registrations
Cariboo	287
Kootenay	605
Lower Mainland-Southwest	59,918
Nechako	52
North Coast	116
Northeast	58
Thompson-Okanagan	4,092
Vancouver Island and Coast	14,180
Other	279



² Based on IHS Markit Units in Operation Registration Data as of December 30 2021 (Model Years 1981 and Newer) for the Province of British Columbia. Figures and information sourced to IHS Markit within this report (the "IHS Markit Materials") are the copyrighted property and of IHS Markit Ltd. and its subsidiaries ("IHS Markit") and represent data, research, or opinions of IHS Markit, and are not representations of fact. The information and opinions expressed in the IHS Markit Materials are subject to change without notice and IHS Markit has no duty or responsibility to update the IHS Markit Materials. Moreover, while the IHS Markit Materials reproduced herein are from sources considered reliable, the accuracy and completeness thereof are not warranted. No further reproduction of this material is allowed without the express written permission of IHS Markit.

GLOSSARY

ACRONYM	DESCRIPTION
ZEV	Zero-Emission Vehicle - used interchangeably with "EV", and includes BEVs, FCEVs, EREVs, and PHEVs.
DCFC	Direct Current Fast Charger - the public fast chargers that today allow EVs to get 100 - 300km in 30 minutes of charging (but faster chargers giving more range in less time are coming out every year).
EV	Electric Vehicle - used interchangeably with "ZEV", and includes BEVs, FCEVs, EREVs, and PHEVs.
BEV	Battery Electric Vehicle - powered 100% with electricity.
FCEV	Fuel-Cell Electric Vehicle - powered 100% with hydrogen.
EREV	Extended Range Electric Vehicle - has an electric motor and battery, but the battery is recharged with a combination of electricity and gas.
PHEV	Plugin Hybrid Electric Vehicle - has both an electric motor powered by electricity from a battery and a gas engine fueled by conventional gas.
EVSE	Electric Vehicle Supply Equipment - an industry term for charging stations.
SUVI	Specialty Use Vehicle Incentive - "specialty use" in the Go Electric programs is the term we use for anything that is not a car or light-duty truck (bikes, buses, delivery vans, transport trucks, ferries, etc.).

To learn more about the Province's clean transportation actions, visit www.gov.bc.ca/zeroemissionvehicles.

To find Go Electric rebates, visit goelectricbc.gov.bc.ca.



Photo credit: KootenayEVfamily

THANK YOU TO OUR PARTNERS

Thank you to all the EV associations, local communities, academic institutes, original equipment manufacturers, industry associations, infrastructure vendors and installers, and other organizations for continuing to support the adoption of EVs in B.C. and contributing to the implementation of EV policies and programs.



Energy at work



FORTIS BC™





WARNING
OPERATOR SAFETY INSTRUCTIONS
READ AND UNDERSTAND ALL SAFETY INSTRUCTIONS BEFORE OPERATING THE EQUIPMENT.
NEVER OPERATE THE EQUIPMENT WITHOUT PROPER TRAINING AND SUPERVISION.
NEVER OPERATE THE EQUIPMENT UNDER THE INFLUENCE OF ALCOHOL, DRUGS, OR MEDICATIONS.
NEVER OPERATE THE EQUIPMENT IF YOU ARE FATIGUED OR DISTRACTED.
NEVER OPERATE THE EQUIPMENT IN UNUSUAL WEATHER CONDITIONS.
NEVER OPERATE THE EQUIPMENT ON SLOPES OR TERRAIN NOT DESIGNED FOR IT.
NEVER OPERATE THE EQUIPMENT IN PROXIMITY TO POWER LINES OR OTHER ELECTRICAL SOURCES.
NEVER OPERATE THE EQUIPMENT IN PROXIMITY TO OTHER PEOPLE OR PROPERTY.
NEVER OPERATE THE EQUIPMENT IN PROXIMITY TO OBSTACLES OR OBSTRUCTIONS.
NEVER OPERATE THE EQUIPMENT IN PROXIMITY TO WATER OR ICE.
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