

## BC Hydro Power smart

**Report** April 2025

## Driving the EV revolution: BC Hydro an EV leader

Since the 2000s, when the first electric vehicles hit B.C.'s roads, BC Hydro has been at the forefront of driving EV adoption. Today, there are over 195,000 EVs on B.C. roads, and within the next decade, this number is projected to soar to 700,000 to 900,000. This report dives into how BC Hydro is powering the transition to EVs by making EV charging more accessible, convenient, and inclusive for all British Columbians.

## From pioneers to game-changers



In 2013, we installed our first DC fast charger – the first in B.C. Now, with more than 591 charging ports at over 144 locations, we're transforming the EV charging experience across the province.



In just one year, our public charging network tripled in size. On average, we have installed more than one charging port a day for a total of 418 over the past year.



We debuted 350-kilowatt chargers that provide 100 kilometres of charging in just 5 minutes.

In the past year, we've launched 22 state-of-the-art charging hubs, each equipped with 8 to 22 charging ports, cutting wait times for drivers.

85% of our chargers are fast chargers and we support all charger connector types (CCS, NACS and CHAdeMO). BC Hydro was recently named one of the best-rated EV charging networks in North America of 2024 by ChargeHub.

In partnership with government, we completed the Electric Highway in September – strategically positioning fast chargers every 150 kilometres along major roadways across B.C. Of the 155 locations, BC Hydro built and operates 111 of the sites or just over 70% of the electric highway network.

EV drivers charging at home in B.C. save about 80% on fuel costs. A trip from Vancouver to Kelowna costs about \$10 in charging versus \$60 in gas. Over a decade, including purchase, fuel, and maintenance, a typical EV can save drivers about \$30,000 – or \$3,000 per year.

With over 98% renewable energy in our grid, EV drivers in B.C. are reducing greenhouse gas emissions while steering us toward a sustainable tomorrow. EV driver in B.C. can reduce their GHG emissions by 70% using BC Hydro's clean electricity, compared to fossil-fuel powered vehicles.

B.C. is one of the fastest-growing EV hubs in North America, and we have the highest EV adoption rate in Canada.

## **Electrifying the future**



 $\sqrt{2}$ 

\$

By Spring 2026, we'll grow our charging ports to over 800.

This year, we are introducing 400-kilowatt fast chargers, which can deliver 100 kilometres of range in just 3 minutes.

To continue supporting EV adoption, BC Hydro is:

- Making charging more convenient by allowing customers to activate and pay for their EV charging with a simple tap from credit or RFID cards.
- Expanding sites for medium-duty vehicles with tailored solutions, as well as EV charging sites equipped to support the heavy-duty vehicle market.
- O Helping apartments prepare for the EV boom with our EV Ready Program.

## British Columbia is a leader in EV adoption

British Columbia is blazing a trail in Canada with its rapid adoption of light–duty electric vehicles (EVs). In 2024, zero emissions vehicles (ZEVs) made up a remarkable 22.8% of all new light vehicles in the province. Today, over 195,000 electric vehicles are cruising B.C.'s roads, and BC Hydro projects this number will grow to between 700,000 and 900,000 within the next decade.

BC Hydro is facilitating the transition to electric vehicles by making EV charging accessible and easy for all British Columbians. This includes expanding public charging infrastructure, ensuring grid readiness for home, depot, workplace, and public charging, enhancing home and depot charging options, and leading the EV charging market through ongoing research.

This report highlights the progress BC Hydro has made in expanding its public charging infrastructure and outlines the steps it will continue to take to ensure that all drivers in B.C. have access to reliable, convenient, and affordable charging.

## The rise of electric vehicles in B.C.

The demand for EVs in B.C. has been steadily climbing, driven by a mix of eco- and cost-conscious customers. With 98% of the province's energy coming from renewable sources and some of the lowest energy rates in North America, B.C. is perfectly positioned to embrace the EV transition. Plus, thanks to major leaps in battery technology over the past decade, most new EVs can now zip along for 400 to 500 kilometers on a single charge, with some models even hitting the 700-kilometre mark.

The EV wave is gaining momentum, and it's not just because they're cool, eco-friendly and have lower life-cycle costs. The expansion of charging infrastructure means you can power up your ride almost anywhere, making range anxiety a thing of the past. Add to that the increasing oil and gas prices, and it's fueling people to switch gears. Plus, with an increasing array of EV options now available, from sleek SUVs to rugged pickup trucks, there are more electric vehicles available to suit different tastes and lifestyles. With more EV models expected to hit the market in the coming years, prices are set to become competitive with traditional internal combustion engine vehicles. This means more affordable EV options for everyone, making the switch to electric even more enticing.

The Zero-Emission Vehicle Act targets 90% light-duty ZEV sales by 2030, one of the most ambitious in North America. In the race to EV adoption, British Columbia is outpacing most other jurisdictions in North America.

EV drivers in B.C. charging at home save about

# 80% on fuel

A trip from Vancouver to Kelowna costs



Over a decade, including purchase, fuel, and maintenance, a typical EV can save drivers about

## \$30,000-or \$3,000 per year.



#### NUMBER OF EV'S ON BRITISH COLUMBIA ROADS

## Supplying clean electricity for EV growth

With over 98% of BC Hydro's electricity coming from clean energy, EV drivers in BC are significantly reducing their contribution to greenhouse gas emissions. Studies have shown that up to 70% of emissions can be reduced by EVs powered by renewable hydroelectricity, compared to conventional fossil fuel vehicles.

At BC Hydro, we often get asked about our strategy to power the rising tide of electric vehicles. It's essential to understand that this surge in EVs will be a gradual wave, not a sudden flood. Our current infrastructure is well–equipped to handle this growth, and we're making smart investments to ensure we can meet future demands.

Most EV charging happens overnight at home, when residential power usage for activities like cooking, heating, and lighting is at its lowest. BC Hydro offers an optional residential time-of-day rate that encourages overnight use of electricity to reduce the peak system demand in the late afternoon and early evening. By 2030, the estimated demand for electricity from EVs is 1,300 gigawatt hours—just 2 percent of the total energy demand. BC Hydro has been including EVs in its load forecasts since 2011 and has carefully planned for the anticipated increase in EVs on B.C. roads.

Through our Integrated Resource Plan, we have mapped out various load scenarios and identified the resources needed to meet this demand. We regularly monitor the health of local distribution systems and upgrade them as needed to meet new neighborhood demands as part of our standard operations.

## Power wherever you go: Our public EV charging network in B.C.

Lack of charging infrastructure is often seen as a roadblock to electric vehicle adoption. While most British Columbians charge their EVs at home, at depots, or at their workplaces for daily travel, we know that not everyone will have access to these options right away. Plus, EV drivers still have the need to charge while traveling long distances or when they need a quick top-up after a lot of driving. That's why having a reliable and trusted public charging network across the province is crucial, both now and in the future, to ensure EV drivers can charge their vehicles wherever they go. This network will help build confidence for British Columbians to embrace EVs. And guess what? BC Hydro has been working towards this goal since 2009.

## Early days



Back in 2009, BC Hydro didn't have any public chargers because there were no EVs on the roads in British Columbia. But that year, BC Hydro and the City of Vancouver made a splash by announcing the arrival of North America's first production-ready, highway-capable electric cars – three Mitsubishi iMiEVs. Two of these trailblazing cars joined BC Hydro's fleet, marking the dawn of the EV era in British Columbia. Fast forward to 2013, and Nanaimo proudly became home to the province's first public fast charger for electric vehicles. This game-changing charger could power up a vehicle in 90 minutes.

## First decade of public charging

In the first decade, BC Hydro made steady progress with public charging as the EV transition was just getting started. From 2013 to 2023, we added around 170 fast chargers to our network at 86 sites. Each site had about two to four ports, mostly along highways in places like Kamloops, Nanaimo, Duncan, Squamish, and Merritt. Our goal during this time was to create a network that allowed EV drivers to travel seamlessly across the province.

## Exponential growth in the last year

Over the past year, BC Hydro has supercharged its public EV charging network to support the government's CleanBC Roadmap to 2030 goal of completing the Electric Highway by the summer of 2024. BC Hydro now has the largest geographical footprint of any charging provider in the province and played a pivotal role in completing the Electric Highway.Most of BC Hydro's Electric

#### **POWERING THE ELECTRIC HIGHWAY**

to Alberta.

Rec

The Electric Highway network comprises 155 charging sites and over 310 fast chargers, with additional Level 2 chargers available at some locations. BC Hydro owns and operates 70% of these sites, reinforcing our commitment to supporting the growth of electric vehicle infrastructure in British Columbia.

seamless EV travel from Vancouver to the Yukon border and from Vancouver Island

In September, the Province reached a significant milestone with the completion of B.C.'s "Electric Highway," a comprehensive network of public EV fast charging sites strategically positioned along all highways and major roadways approximately 150 kilometers apart. This extensive network spans the entire province, enabling

Highway sites feature two to four fast-chargers and include innovative solutions such as nine battery-supported charging sites and five off-grid charging sites for areas where the grid is constrained or unavailable.

To cut down on waiting times at charging sites, we rolled out charging hub sites in 2024, each boasting 8 to 22 charging ports. The first hub site was at the Surrey Arts Center, hosted by the City of Surrey. As of March 2025, BC Hydro has a total of 22 hub-sites, including Surrey (7), Delta (2), Maple Ridge (1), Port Moody (1), Port Coquitlam (1), Colwood (2), Prince George (1), Chilliwack (1), Courtney (1), Sidney (1), Abbotsford (1), Gibsons (1), Vancouver (1) and Lake Country (1).



Lake Country charging hub: One of the largest in BC Hydro's network—provides space for up to 22 EVs to charge at the same time and debuted its first 350-kilowatt charger in B.C.

Today, BC Hydro boasts 591 charging ports in its network, with 85% being fast-chargers, spread across 144 locations throughout the province. The maximum output of our charging network has more than quadrupled, meaning we can power more vehicles and faster.

#### NETWORK TRIPLED IN SIZE IN JUST ONE YEAR



## Boosting today's charging experience

BC Hydro isn't just about the number of sites and EV chargers; we're all about enhancing the charging experience for our customers.

#### FAST HIGH POWER CHARGERS

We tailor our charging power levels to match dwell-times. For example, grocery store chargers allow for 30 to 40 minutes of shopping, while highway chargers are designed for quick stops. In 2024, we primarily installed 180-kilowatt fast chargers, which can add 180 kilometers of range in approximately 10 minutes and have power sharing that allows two vehicles to charge up to 90 kW each at the same time. Recently, we introduced 350-kilowatt chargers in Lake Country and Prince George, capable of providing a 100 kilometers ofrange in just 5 minutes.

#### INCLUSIVE FOR ALL

BC Hydro is all about making EV charging sites accessible for everyone, including individuals with disabilities. The vast majority of our sites include accessibility features like a curbless design, cable management systems, and lower screen displays on the new chargers for improved accessibility.

We've always offered EV charging for vehicles using the Combined Charging System (CCS) or CHAdeMO. But with many North American vehicle manufacturers now committing to the North American Charge Standard (NACS), we've started introducing chargers with NACS connectors at our hub-sites. This makes us the first public charging provider in B.C. to offer all connector types in our network.

BC Hydro offers both pull-in and pull-through charging sites. The pull-through sites are particularly convenient for EVs with trailers or medium-duty EVs.



# Currently, 25 of our charging sites are designed to accommodate medium-duty EVs, serving the business community.

We've also got our own mobile application that our more than 100,000 EV members can use to activate and pay at our public chargers. Plus, we're a member of ChargeHub, which means other EV charging providers that are members of ChargeHub (like SWTCH Energy, Shell Recharge, HyperCharge, FLO) can have their EV community use our charging sites seamlessly through their mobile application and visa versa, you can use your BC Hydro mobile application to activate and pay at their charging sites.

#### BOOST CONFIDENCE THROUGH HIGH RELIABILITY

EV drivers expect chargers to be operational, and a non-functioning charger can really shake their confidence—not just at the site they are charging, but in the entire public charging network. BC Hydro tackles this head–on by providing robust maintenance and service support, ensuring a consistent experience across the network with 24/7 assistance for drivers. These efforts contribute to BC Hydro's exceptional reliability, with our fast–charging network boasting an industry–leading charger uptime rate of 99%. This is even more impressive considering the high usage of our chargers, peaking at 56,000 charging sessions on average each month.



BC Hydro's fast-charging network was recently recognized by ChargeHub as one of the best-rated charging networks of 2024. Read the article here: <u>Top Rated Charge Point</u> <u>Operators in North America: 2024 Edition</u>



EV charging port weather canopies at Bell 2 Lodge in Northern B.C.

#### FAIR AND AFFORDABLE RATES:

#### CONVENIENT AND SAFE LOCATIONS

Safety for drivers is paramount, whether they are stepping out to charge or waiting in their vehicles. That's why we, along with our partners, ensure that EV charging sites are designed with adequate lighting, security measures, and open sightlines.

When deciding where to build new charging sites or expand existing ones, we consider key factors like priority areas from the Government of B.C.'s EV network plan, proximity to other chargers and core travel corridors, nearby amenities and available parking space.

Weather canopies are also part of BC Hydro's strategy to make EV charging as seamless as possible. These canopies, located in areas that experience the most inclement weather (Good Hope Lake, Bell 2, Powder King and Britton Creek) help EV drivers brave the elements, and ensure the chargers are protected from snow, ice and rain.

BC Hydro recovers its public charging program costs through the EV Public Charging Service Rate set by the BC Utilities Commission. This means EV drivers using BC Hydro public chargers are paying for the program costs. In 2024, BC Hydro switched from time-based rates to energy-based rates to bill customers for energy used, which is generally perceived as fairer.

#### **EV CHARGING RATES**

The BC Utilities Commission (BCUC) is responsible for setting EV charging rates, and the cost is recovered by public charging users, not ratepayers. In 2024, the BCUC approved new energy-based rates for EV charging which are 36.09 cents per kilowatt hour for all fast-charging power levels and 29.72 cents per kilowatt hour for Level 2 charging. BC Hydro believes energy-based rates are fairer and are easier for customers to understand. These charges are in line with other public charging services in B.C.



## Locally owned and powering economic growth together

BC Hydro's charging network is a British Columbia asset for the benefit of British Columbians and those who visit our beautiful province. Over the last year, BC Hydro invested over \$48 million in expanding the BC Hydro EV charging network and plans to invest more than \$360 million in further expansions over the next 10 years. These investments not only enable the transition to EVs, it also results in stimulating local economic growth through partnering with host providers, funding partners, tech experts, and design/construction experts.

We partner with a diverse group of public, private, and First Nations partners to host our EV charging sites. We have over 58 city, district and village partners hosting our chargers at recreation centers, parks, information centers, and along highways. We are collaborating with organizations like ICBC to host at their Claim Centres and Translink to host at their Park & Ride lots. We've also teamed up with private organizations to provide EV charging at multiple locations, often at shopping centers for the convenience of EV drivers.



BC Hydro partnered with TransLink to host L2 and fast chargers at their Park & Ride locations. L2 chargers allows EV drivers to charge their EV while taking transit and return to a fully charged EV, while the fast chargers allow EV drivers to top up their EV quickly, for example while waiting to pick up a transit user. Currently, there are two TransLink locations providing EV charging, South Surrey with 20 ports and Port Coquitlam with 18 ports, with more locations coming in the near future.



Artwork by Breanna Charleyboy from the Ulkatcho First Nations community at Ulkatcho (Anahim Lake) EV charging site.

BC Hydro is also thankful for partnerships with nine First Nations Communities to host and maintain the EV charging sites on their lands including at Seabird Island Band in Agassiz, McLeod Lake Indian Band in McLeod Lake, Ulkatcho First Nation in Anahim Lake, Nisga'a Nation in Gitlaxt'aamiks and Laxgalts'ap, Dease River First Nation in Good Hope Lake, Skidegate First Nations in Skidegate, Fort Nelson First Nation in Liard Hot Springs Lodge, Daylu Dena Council and Liard First Nation in Lower Post, and Chehalis Indian Band in Agassiz.

BC Hydro's charging network is partially funded through contributions from the Province of B.C. and Natural Resources Canada. For charging sites built in F25, the provincial and federal government contributed over \$21 million to fund the build costs. This support is crucial not only for expanding the network but also to keep rates affordable.

Through partnerships, we are supporting building an ecosystem of EV charging, not only our own charging network. We work closely with other EV charging providers to interconnect to our grid and provide customers with renewable energy to charge vehicles.

Partnerships are vital to our continued success towards a greener and prosperous tomorrow for B.C. We look forward to collaborating with more partners on the unique solutions that will power our shared future.

#### CONVENIENT HOME CHARGING

BC Hydro supports home charging with incentives like optional time-of-day pricing for electricity, with a discount of 5 cents per kilowatt-hour (kWh) for electricity used between 11 p.m. and 7 a.m., and a 5-cent surcharge per kWh for usage from 4 p.m. to 9 p.m. This is a great option for EV drivers who can charge their vehicles overnight.

Additionally, BC Hydro's EV Ready Program helps condos prepare for EV adoption, which is where we are seeing significant growth. The program supports apartment, condo, and townhome complexes in becoming EV Ready, ensuring they can accommodate high levels of future EV charging. This involves providing a parking space with electrical wiring installation for an EV charger.





BC Hydro will debut its new 400 kilowatt chargers this year, delivering 100 kilometres of range in just three minutes.

### What's next

By Spring 2026, BC Hydro is set to grow its charging ports to over 800. We will continue to support the Province's goal to achieve 10,000 chargers by 2030, by leading charger deployment and working with other parties will ensure reliable EV charging for residents across B.C., along travel corridors, and provide additional support in bustling urban areas. In 2025, we expect to install our first 400-kilowatt fastcharger, marking a significant milestone.

To make EV charging even more convenient, we are enabling customers to activate and pay for their EV charging with a simple tap from credit and/or RFID cards. We are also exploring options to integrate EV public charging bills into residential bills and developing tailored charging solutions for fleet customers.

From a rate perspective BC Hydro will be piloting various rate alternatives to increase charger utilization. Providing incentives may encourage some customers to shift the time of day they charge their vehicles to charge at off peak times where overall system load and charging utilization is lower, and/or to charge at sites that are less heavily used.

Venturing into new market segments beyond light-duty vehicles, BC Hydro will continue expanding its network for medium-duty EVs and begin constructing its first heavy-duty EV charging site to support the trucking market.

By using the BC Hydro charging network, you are energizing the Canadian economy. Together, we are driving towards a more sustainable and prosperous future, one charge at a time.

