





The future of transportation is electric. Globally, governments, utilities and automakers are looking at electric vehicles as the future for decarbonizing the economy and reducing greenhouse gas emissions.

Nova Scotia Power is a strong supporter of the EV movement. We've installed Nova Scotia's first EV fast-charging network, connecting the province end-to-end.

Through helping to facilitate the establishment of the Nova Scotia Chapter of Electric Mobility Canada, hosting an annual EV test-drive event, and supporting incorporating EVs into commercial fleets, we're helping our province adopt the way of the future.

For more information, visit www.nspower.ca.

WHAT IS AN ELECTRIC VEHICLE (EV)?

An electric vehicle, or EV, is a car that is powered fully, or partially, by a battery pack and electric motor.

The fundamental difference between an EV and a hybrid is that EVs can charge their batteries by plugging into the electricity grid and provide drivers with dedicated all-electric driving distances.

Every auto manufacturer in the world has an EV model on the road right now, or is close to releasing one, and many have committed to electrifying their entire line-ups over the next 10-15 years.



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June 2018



FULLY ELECTRIC

PLUG-IN HYBRID ELECTRIC

Fully electric cars are powered 100% by an electric motor and battery. Fully electric cars do not burn gasoline or diesel and have zero tailpipe emissions.

Most fully electric cars can travel 200+ km on a full charge, with some models capable of 400+ km.

Plug-in hybrids use electricity and gasoline. They can travel 20-80 km (depending on model) on a full charge. Once the battery is used up, a gasoline engine or generator turns on for an additional 500+ km of gasoline range. At which point, it functions like a traditional hybrid.

Plug-in hybrids can do everything gas cars can do with the added benefit of providing all-electric driving for most day to day needs.

Advantages Advantages

- Significantly cheaper to drive and maintain than gas, diesel and hybrid cars
- Reduce greenhouse gas emissions and air pollution
- No more gas stations!

- Have electric-only driving modes.
- Can drive using just gasoline. No more range anxiety!
- Cheaper to operate and maintain than gasoline and diesel hybrids

EVs SAVE MONEY



\$2,000 (approx)
Annual Savings on Fuel and Maintenance

EVs GO THE DISTANCE



200+ Km of Driving On a Full Charge

Fully Charge In 15-30 Minutes Using a DC Fast-Charger

EVs REDUCE GREENHOUSE GAS EMISSIONS



Up To 50%

Fewer Greenhouse Gas Emissions

Than an Equivalent Gas or Diesel Car

EVS ARE FOR EVERYONE



34+ Models Starting From as Low as \$30,000

All Shapes and Sizes
Subcompact, Compact, Midsize, Full Size, Minivan, SUV

EVs in Nova Scotia



- More than 130 EVs are registered in Nova Scotia today.
- There are currently over 100 public charging stations across Nova Scotia.
- Almost every major car manufacturer has plans to release an electric vehicle in the next few years. 14 plug-in brands are available in Nova Scotia today, including: Audi, BMW, Chevrolet, Chrysler, Ford, Hyundai, Kia, Nissan, Mitsubishi, Porsche, Tesla, Volkswagen, Volvo.
- Nova Scotia Power has partnered with Natural Resources Canada and the Government of Nova Scotia to install a network of Level 3 DC fast-charging stations and Level 2 charging stations across the province. This makes Nova Scotia one of the few provinces to have a fully interconnected network of DC fast-charging stations.



CHARGING GENERAL

Level 1 - (120 Volts/15 Amps)



One Hour of Charge ~ 8 Km of Range

All electric vehicles come standard with a cordset that plugs into a regular wall socket.

Level 2 - (240 Volts/30 Amps)

One Hour of Charge ~ 30 Km of Range

The most common level of charging. Level 2 stations have similar electrical requirements to a stove or clothes dryer. Most EV drivers install a Level 2 station at home and many businesses install them for employees and/or customers.

There are two standards of Level 2 charging:



J1772 which is used by every EV model sold in Canada and the United States.



Tesla which is used by Tesla. Tesla cars come standard with a J1772 adapter.

Level 3 - (480 Volts/100 Amps)

One Hour of Charge ~ 250 Km of Range

Level 3, called DC fast-charging, will recharge your battery from empty to 80% in 15-30 minutes. Level 3 stations can be found along major highways and travel routes throughout Nova Scotia.

There are three standards of Level 3 charging:



CHAdeMO which is used by the Asian auto manufacturers.



CCS which is used by the North American and European auto manufacturers.



Supercharger which is used by Tesla.

CHARGING AT HOME



HOME CHARGING STATION INSTALLATION STEPS

1. Learn more about your options

While all residential charging stations are similar, certain brands offer certain features. Visit nspower.ca/ev to begin.

2. Consult with an Electrician

Many homes were not designed with EV charging in mind and you may require upgrades to your electrical service. Visit nspower.ca/ev for a list of local installers

3. Buy your Charging Station

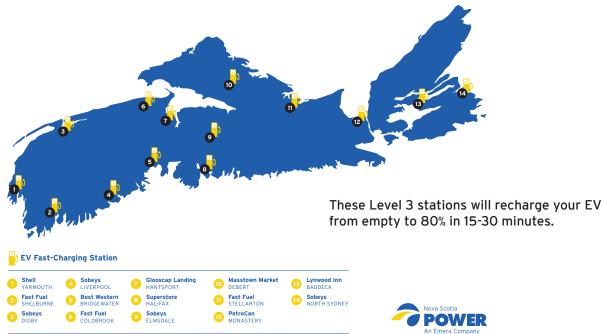
Search for EV charging stations online and pick your favourite product. Most home charging stations available for sale use the North American standard for charging (J1772) and will recharge your car at about the same speed.

4. Install your Charging Station

Hire an electrician to complete the installation. In most cases, the installation should only take one day.

No More Range Anxiety!

Nova Scotia Power has partnered with Natural Resources Canada and the Government of Nova Scotia to install a network of Level 3 DC-fast charging stations and Level 2 charging stations across the province. This will make Nova Scotia one of the few provinces to have a fully interconnected province of DC fast-charging stations.



FULLY ELECTRIC VEHICLES
AVAILABLE FOR SALE IN CANADA

BMW i3 \$48,750^{MSRP}





Cost to Drive Per Year \$586

Gas Car Equivalent: \$1,936

Electric Range: 183 km (33.2 kWh)

Greenhouse Gas Emissions Per Year 2018: 2,350 kg

2020: 1,750 kg

Gas Car Equivalent: 4,480 kg

Chevrolet BOLT \$43,195MSRP





Electric Range: 383 km (60 kWh)

Cost to Drive Per Year \$540

Gas Car Equivalent: \$1,562

Greenhouse Gas Emissions Per Year

2018: 2,160 kg 2020: 1,620 kg

Gas Car Equivalent: 4,400 kg

Ford Focus Electric \$34,998^{MSRP}





Electric Range: 185 km (33.5 kWh)

Cost to Drive Per Year \$501

Gas Car Equivalent: \$1,716

Greenhouse Gas Emissions Per Year

2018: 2,410 kg 2020: 1,800 kg

Gas Car Equivalent: 4,400 kg

Hyundai IONIQ \$35,649^{MSRP}





Cost to Drive Per Year

as Car Equivalent: \$924

Greenhouse Gas Emissions Per Year

2018: 1,910 kg 2020: 1,420 kg

\$475

Gas Car Equivalent: 4,860 kg

Electric Range: 200 km (28 kWh)

Kia Soul Electric \$35,895^{MSRP}





Electric Range: 179 km (30 kWh)

Cost to Drive Per Year \$592

as Car Equivalent: \$1.892

Greenhouse Gas Emissions Per Year 2018: 2,370 kg

2020: 1,770 kg

Nissan LEAF \$35,998MSRP





Electric Range: 242 km (40 kWh)

Cost to Drive Per Year \$576

Gas Car Equivalent: \$1,683

Greenhouse Gas Emissions Per Year

2018: 2,310 kg 2020: 1,730 ka

as Car Equivalent: 4.400 kg

\$29,050^{MSRP} smart fortwo Electric





Cost to Drive Per Year

Electric Range: 93 km (17.6 kWh)

Greenhouse Gas Emissions Per Year

2018: 2,370 kg 2020: 1,770 kg

Electric Range: 416 km (75 kWh)

\$96,650^{MSRP} Tesla Model S



TESLA

Cost to Drive Per Year

\$622

\$592

Greenhouse Gas Emissions Per Year

2018: 2,500 kg 2020: 1,860 kg

Gas Car Equivalent: 4,880 kg

\$110,200^{MSRP} Tesla Model X



TESLA

Electric Range: 381 km (75 kWh)

Cost to Drive Per Year \$690

Greenhouse Gas Emissions Per Year

2018: 2,770 kg 2020: 2,070 kg

Gas Car Equivalent: 5,780 kg



TESLA

Cost to Drive Per Year

\$494

Gas Car Equivalent: \$2,002

Greenhouse Gas Emissions Per Year

2018: 1,980 kg

2020: 1,480 kg

Gas Car Equivalent: 4,400 kg

Volkswagen e-Golf \$36,355^{MSRP}





Electric Range: 201 km (35.8 kWh)

Cost to Drive Per Year \$534

Gas Car Equivalent: \$1,870

Greenhouse Gas Emissions Per Year

2018: 2,140 kg 2020: 1,600 kg

Gas Car Equivalent: 4,400 kg

FULLY ELECTRIC COMPARISON

FIND YOUR FULLY ELECTRIC MATCH

		Electric	Cost to Drive	Gas Car	Time to Charge		
Model	MSRP	Range	Per Year	Equivalent Cost to Drive Per Year	Level 1	Level 2	Level 3
smart fortwo Electric	\$29,050	93 km	\$592	\$1,474	12 Hours	3 Hours	Unavailable
Ford Focus Electric	\$34,998	185 km	\$601	\$1,716	23 Hours	5.5 Hours	80% - 15 Minutes
Hyundai IONIQ Electric	\$35,649	200 km	\$475	\$924	19 Hours	5 Hours	80% - 15 Minutes
Kia Soul Electric	\$35,895	179 km	\$592	\$1,892	21 Hours	5 Hours	80% - 15 Minutes
Nissan LEAF	\$35,998	242 km	\$576	\$1,683	28 Hours	6 Hours	80% - 20 Minutes
Volkswagen e-Golf	\$36,355	201 km	\$534	\$1,870	25 Hours	5.5 Hours	80% - 15 Minutes
Chevrolet BOLT	\$43,195	383 km	\$540	\$1,562	42 Hours	9.5 Hours	80% - 30 Minutes
Tesla Model 3	\$45,600	354 km	\$494	\$2,002	44 Hours	10 Hours	80% - 30 Minutes
BMW i3	\$48,750	183 km	\$586	\$1,936	23 Hours	5 Hours	80% - 15 Minutes
Tesla Model S	\$96,650	416 km	\$622	\$2,156	52 Hours	14 Hours	80% - 30 Minutes
Tesla Model X	\$110,200	381 km	\$690	\$2,530	48 Hours	13 Hours	80% - 30 Minutes

All data uses the following variables:

- NRCan's 2018 Fuel Consumption Guide
- A gasoline price of \$1.10/litre
- Nova Scotia's electricity rates (\$0.15331/kWh)
- Nova Scotia's electricity generation mix and the corresponding greenhouse gas emissions (see nspower.ca)

- An average annual driving distance of 20,000 km
- Gas car equivalent figures are based on direct model to model comparisons where possible (eg. Kia Soul Electric vs. Kia Soul Gas). If no direct model to model comparison is available, a close proximity is used (eg. Nissan LEAF vs. Nissan Sentra)

PLUG-IN HYBRID
ELECTRIC VEHICLES
AVAILABLE FOR SALE IN CANADA





Cost to Drive Per Year \$1,118

Gas Car Equivalent: \$1,760

Greenhouse Gas Emissions Per Year

2018: 3,140 kg 2020: 2,760 kg

Gas Car Equivalent: 4.400 kg

BMW 330e \$54,699^{MSRP}



Electric Range: 23 km (7.6 kWh) Gasoline Range: 533 km

Cost to Drive Per Year \$1,363

ias Car Equivalent: \$1958

Greenhouse Gas Emissions Per Year

2018: 3,680 kg 2020: 3,310 kg

Gas Car Equivalent: 4,480 kg

BMW 530e \$70,699MSRP



Electric Range: 24 km (9.2 kWh) Gasoline Range: 554 km

Cost to Drive Per Year \$1,432

as Car Equivalent: \$1.958

Greenhouse Gas Emissions Per Year

2018: 3,900 kg 2020: 3,490 kg

Gas Car Equivalent: 4,400 kg





Cost to Drive Per Year \$1,537

Gas Car Equivalent: \$2,728

Greenhouse Gas Emissions Per Year

2018: 4,150 kg 2020: 3,730 kg

Gas Car Equivalent: 4.880 kg

BMW i3 REX \$56,168MSRP





Electric Range: 156 km (33.2 kWh) Gasoline Range: 129 km

Cost to Drive Per Year \$586

Gas Car Equivalent: \$1.936

Greenhouse Gas Emissions Per Year

2018: 2,350 kg 2020: 1,750 kg

Gas Car Equivalent: 4.480 kg

BMW X5 xDrive40e \$74,950MSRP





Electric Range: 23 km (9.2 kWh) Gasoline Range: 863 km

Cost to Drive Per Year \$1,739

as Car Equivalent: \$2 530

Greenhouse Gas Emissions Per Year

2018: 4,710 kg 2020: 4,230 kg

Gas Car Equivalent: 5,780 kg





Cost to Drive Per Year \$1,120

Gas Car Equivalent: \$2,090

Greenhouse Gas Emissions Per Year

2018: 4,180 kg 2020: 3,220 kg

Gas Car Equivalent: 4,860 kg

Chevrolet VOLT \$39.095MSRP



Electric Range: 85 km (18.4 kWh) Gasoline Range: 591 km

Cost to Drive Per Year \$610

Gas Car Equivalent: \$1,562

Greenhouse Gas Emissions Per Year

2018: 2,450 kg 2020: 1,830 kg

Gas Car Equivalent: 4,400 kg

Chrysler Pacifica PHEV \$51,445MSRP



Electric Range: 53 km (16.7 kWh) Gasoline Range: 858 km

Cost to Drive Per Year \$791

Gas Car Equivalent: \$2.398

Greenhouse Gas Emissions Per Year

2018: 3,080 kg 2020: 2,330 kg

Gas Car Equivalent: 5,780 kg



Ford Fusion Energi \$33,588^{MSRP}





Cost to Drive Per Year \$866

Gas Car Equivalent: \$1,914

Greenhouse Gas Emissions Per Year

2018: 2,680 kg 2020: 2,250 kg

Gas Car Equivalent: 4,860 kg

Honda Clarity PHEV \$39,900 MSRP



Electric Range: 77 km (17 kWh) Gasoline Range: 475 km

Cost to Drive Per Year \$585

Gas Car Equivalent: \$1584

Greenhouse Gas Emissions Per Year 2018: 2,340 kg

2020: 1,740 kg

Gas Car Equivalent: 4,860 kg



\$31,999^{MSRP}

Electric Range: 47 km (9.8 kWh) Gasoline Range: 961 km





Cost to Drive Per Year \$606

Gas Car Equivalent: \$946

Greenhouse Gas Emissions Per Year

2018: 2,180 kg 2020: 1,710 kg

Gas Car Equivalent: 4,860 kg





Cost to Drive Per Year \$1,064

as Car Equivalent: \$2,464

Greenhouse Gas Emissions Per Year

2018: 4,270 kg 2020: 3,190 kg

Gas Car Equivalent: 6,840 kg

Kia Optima PHEV \$42,995MSRP





Electric Range: 47 km (9.8 kWh) Gasoline Range: 935 km

Cost to Drive Per Year \$583

Gas Car Equivalent: \$1.584

Greenhouse Gas Emissions Per Year

2018: 2,550 kg 2020: 2,010 kg

Gas Car Equivalent: 4,860 kg

Mercedes-Benz GLC 350e 4MATIC \$59,900 MSRP





Electric Range: 21 km (8.7 kWh) Gasoline Range: 541 km

Cost to Drive Per Year

\$1,692

Gas Car Equivalent. \$2,200

Greenhouse Gas Emissions Per Year 2018: 4,520 kg

2020: 4,090 kg

Gas Car Equivalent: 5,780 kg





Cost to Drive Per Year \$2,048

Gas Car Equivalent: \$2,970

Greenhouse Gas Emissions Per Year

2018: 5,360 kg 2020: 4,890 kg

Gas Car Equivalent: 6,210 kg

MINI Cooper S E Countryman ALL4 \$43,490 MSRP





Electric Range: 19 km (7.6 kWh) Gasoline Range: 420 km

Cost to Drive Per Year \$1,570

Gas Car Equivalent: \$2,025

Greenhouse Gas Emissions Per Year

2018: 4,080 kg 2020: 3,740 kg

Gas Car Equivalent: 4,860 kg

Mitsubishi Outlander PHEV \$42.998MSRP





Electric Range: 35 km (12 kWh) Gasoline Range: 463 km

Cost to Drive Per Year \$1,274

Gas Car Equivalent: \$2,002

Greenhouse Gas Emissions Per Year

2018: 3,800 kg 2020: 3,250 kg

Gas Car Equivalent: 5,780 kg



Cost to Drive Per Year \$1,922

as Car Equivalent: \$2,640

Greenhouse Gas Emissions Per Year

2018: 5,280 kg 2020: 4,700 kg

Gas Car Equivalent: 5,780 kg

Toyota Prius Prime \$32,990^{MSRP}



Electric Range: 40 km (8.8 kWh) Gasoline Range: 995 km

Cost to Drive Per Year \$609

Gas Car Equivalent: \$990

Greenhouse Gas Emissions Per Year 2018: 1,990 kg

2020: 1,630 kg

Gas Car Equivalent: 4,860 kg

Volvo S90 T8 eAWD \$74,950MSRP



Electric Range: 34 km (10.4 kWh) Gasoline Range: 621 km

Cost to Drive Per Year \$1,203

Gas Car Equivalent: \$2.046

Greenhouse Gas Emissions Per Year

2018: 3,610 kg

2020: 3,080 kg

Gas Car Equivalent: 4,860 kg







Cost to Drive Per Year \$1,576

Gas Car Equivalent: \$2,244

Greenhouse Gas Emissions Per Year

2018: 4,440 kg 2020: 3,910 kg

Gasoline Range: 547 km

\$1,546

Gas Car Equivalent: 4,860 kg

Volvo XC90 T8 Momentum

\$74,150^{MSRP}



Cost to Drive Per Year

Electric Range: 27 km (10.4 kWh)

Gas Car Equivalent: \$2,266

Greenhouse Gas Emissions Per Year

2018: 4,360 kg 2020: 3,830 kg

Gas Car Equivalent: 5,780 kg



PLUG-IN HYBRID COMPARISON

FIND YOUR PLUG-IN HYBRID MATCH

		Electric	Gasoline	Cost to Drive	Gas Car Equivalent Cost to Drive	Ti	me to Charge	
Model	MSRP	Range	Range	Per Year	Per Year	Level 1	Level 2	Level 3
Hyundai IONIQ PHEV	\$31,999	47 km	961 km	\$606	\$946	6 Hours	2.5 Hours	Unavailable
Toyota Prius Prime	\$32,990	40 km	995 km	\$609	\$990	5.5 Hours	2.2 Hours	Unavailable
Ford Fusion Energi	\$33,588	35 km	947 km	\$866	\$1,914	5.5 Hours	2.5 Hours	Unavailable
Chevrolet VOLT	\$39,095	85 km	591 km	\$610	\$1,562	13 Hours	4.5 Hours	Unavailable
Honda Clarity PHEV	\$39,900	77 km	475 km	\$583	\$1,584	12 Hours	2.5 Hours	Unavailable
Audi A3 Sportback e-Tron	\$40,900	26 km	623 km	\$1,118	\$1,760	6 Hours	2 Hours	Unavailable
Kia Optima PHEV	\$42,995	47 km	935 km	\$719	\$2,068	7 Hours	3 Hours	Unavailable
Mitsubishi Outlander PHEV	\$42,998	35 km	463 km	\$1,274	\$2,002	8 Hours	3.5 Hours	80% in 5 Minutes
MINI Cooper S E Countryman	\$43,490	19 km	420 km	\$1,570	\$2,024	5.5 Hours	3 Hours	Unavailable
Chrysler Pacifica PHEV	\$51,445	53 km	858 km	\$791	\$2,398	11.5 Hours	2 Hours	Unavailable
BMW 330e	\$54,699	23 km	533 km	\$1,363	\$1,958	6 Hours	2 Hours	Unavailable
BMW i3 REX	\$56,168	156 km	129 km	\$586	\$1,936	23 Hours	5 Hours	80% in 20 Minutes
Mercedes-Benz GLC 350E	\$59,900	21 km	541 km	\$1,692	\$2,200	6 Hours	2 Hours	Unavailable
Volvo XC60 T8 eAWD	\$69,550	27 km	534 km	\$1,576	\$2,244	7 Hours	3 Hours	Unavailable
BMW 530e xDrive	\$70,699	24 km	554 km	\$1,432	\$1,958	6.5 Hours	2 Hours	Unavailable
Volvo XC90 T8 eAWD	\$74,150	27 km	547 km	\$1,546	\$2,266	7 Hours	3 Hours	Unavailable
BMW X5 xDrive 40e	\$74,950	23 km	863 km	\$1,739	\$2,530	6 Hours	3 Hours	Unavailable
Volvo S90 T8 eAWD	\$74,950	34 km	621 km	\$1,203	\$2,046	7.2 Hours	3 Hours	Unavailable
Mercedes-Benz GLE 550e	\$83,900	21 km	692 km	\$1,624	\$2,970	6 Hours	2 Hours	Unavailable
Cadillac CT6 PHEV	\$86,095	48 km	642 km	\$1,120	\$2,090	13 Hours	4.5 Hours	Unavailable
Porsche Cayenne S E Hybrid	\$90,400	23 km	768 km	\$1,922	\$2,640	6.5 Hours	3 Hours	Unavailable
BMW 740e xDrive	\$113,599	23 km	525 km	\$1,537	\$2,728	6.5 Hours	3 Hours	Unavailable
Karma Revero	\$156,000	60 km	328 km	\$1,064	\$2,464	14.5 Hours	4 Hours	Unavailable

All data uses the following variables:

- NRCan's 2018 Fuel Consumption Guide
- A gasoline price of \$1.10/litre
- Nova Scotia's electricity rates (\$0.15331/kWh)
- Nova Scotia's electricity generation mix and the corresponding greenhouse gas emissions (see nspower.ca)
- An average annual driving distance of 20,000 km

- The first 19-53 km (depending on model) of daily driving is assumed to be electric with the remainder being gasoline
- Gas car equivalent figures are based on direct model to model comparisons where possible (eg. Chrysler Pacifica PHEV vs. Chrysler Pacifica Gas). If no direct model to model comparison is available, a close proximity is used (eg. Chevrolet VOLT vs. Chevrolet Cruze)

NOTES

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For more information, visit: www.nspower.ca/ev

