

# The Scenic Route

Electric vehicles already save Canadians thousands of dollars. In 2024, the electric road trip has never looked more appealing



July 2024

 CLEAN ENERGY CANADA

# CONTENTS

- 1 Back to the future
- 3 Road trip savings
- 5 The faceoff
- 6 Hatchbacks
- 7 Sedans
- 8 SUVs
- 9 Trucks
- 10 Methodology
- 12 Endnotes



## The Scenic Route

July 2024 | © 2024 Clean Energy Canada | ISBN: 978-1-989692-17-2

All rights reserved. Permission is granted to reproduce all or part of this publication for non-commercial purposes, as long as the source is cited as “Clean Energy Canada.” Clean Energy Canada is a program at the Morris J. Wosk Centre for Dialogue at Simon Fraser University in Vancouver, British Columbia, located on the unceded traditional territories of the Musqueam, Squamish, and Tsleil-Waututh peoples.



MORRIS J. WOSK  
CENTRE FOR DIALOGUE

# Back to the future

Those old enough to remember the gas wars of the '90s may remember the number 40 cents. As gas stations competed for customers, prices dipped as low as 40 cents per litre in many parts of Canada in the era of Forrest Gump and the Spice Girls—a prospect that, today, sounds about as fanciful as a house selling in Vancouver or Toronto for \$300,000.<sup>1</sup>

## **But what if, three decades later, a Canadian driver could still pay '90s gas war prices with 2024 dollars?**

Clean Energy Canada's third report comparing electric and gas vehicles on cost comes in time for the summer road trip season, with a few new metrics unique to this edition. **Case in point: we found that gas prices would have to plummet to roughly 40 cents per litre to match the cost of EV charging.** In reality, that's even better than what the '90s had to offer when accounting for three decades of inflation. In fact, 40 cent gas today is the equivalent of 25 cents in the '90s. And unlike the gas wars of decades past, low charging prices aren't just a blip—they're here to stay.<sup>2</sup>

And while, yes, EVs typically still cost more upfront, that too has been shifting in recent years as technology costs decline and competition heats up. In fact, as the cost of pretty much everything else increases, the costs of EVs are coming down, narrowing (and in some cases eliminating) the sticker price gap between them and their gas-powered counterparts.<sup>3</sup>

All told, when considering the full costs of ownership over the course of a decade—from the car's purchase price to fuel and maintenance—a **typical EV saves drivers roughly \$30,000 or about \$3,000 a year.** In fact, car buyers in some cases buy their EV for less than a comparable gas car when factoring in government incentives, while other options now break even in just a few months, after which point that higher upfront cost is essentially paid off as driving an EV starts reaping considerable net savings.



Our results this year are similar to those previously published by Clean Energy Canada, a testament to the solid savings fundamentals of driving electric. For example, while gas prices were about 8% lower this past year, favouring the gas side of the equation, EVs still won on costs by significant margins.

**Specifically, choosing an electric hatchback or SUV instead of a gas version will save you \$28,500 over a 10-year ownership period. The same is true for sedans and trucks. Opting for a Tesla Model 3 instead of a Lexus ES will save you \$38,000, while electric truck drivers will save a huge \$40,000 over 10 years by choosing an electric F-150 instead of a gas-powered one.**

With EVs offering such a sweet deal, perhaps it's no wonder that, despite what you may have read about consumers supposedly turning away from them, the opposite continues to be true in 2024. In the first quarter of the year, the most recent period for which there is data, 12.5% of all new car sales in Canada were electric, compared to 9.2% that time last year. Quebec (25%) and B.C. (22%) continued their strong leads over the rest of the country, with Quebec finally taking first place.<sup>4</sup>

In short, cutting carbon also means cutting costs. Last year, Clean Energy Canada released a flagship report, *A Clean Bill*, showing that a Toronto area family that adopts a few common clean energy solutions—including EVs and heat pumps—could knock \$800 off their monthly energy bill (including equipment costs) compared to one reliant on fossil fuels.

This fall, Clean Energy Canada will apply that analysis across the country and, for the first time ever, release an online calculator allowing Canadians to see just how much making the switch would save them personally, whether they live in a condo in Montreal or a house in Halifax.

In the meantime, if summer road trips are on the horizon, EVs are bringing the '90s back. It's never been a better time to spice up your life.



## SWEET SAVINGS

Average amount saved over 10 years of ownership

### HATCHBACK



\$28,636  
saved



### SEDAN



\$37,897  
saved



### SUV



\$28,546  
saved



### TRUCK



\$40,146  
saved





# Road trip savings

Few things spell summer like road trips. There can be plenty to think about: where to put the luggage, how to get the bikes on the car, how to keep the kids entertained. But one thing you don't need to worry about as an EV driver is the cost.

With many cars now offering over 400 kilometres of range, from the Tesla Model 3 to the Hyundai Ioniq 6 (both of which cost less than the average new car), road trips are not only easy in an EV—they're cheap.<sup>5</sup> In fact, if you take a trip from Montreal to Toronto, your friends in their gas-powered car are going to pay four times what you would pay in an electric vehicle. If you live on Vancouver Island, driving from Victoria to Nanaimo is going to be six times more expensive in a gas car. And gas-car-owning Edmontonians will have to pay almost twice as much as their EV-driving counterparts to roadtrip to Calgary for the stampede.

## How cheap does gasoline need to be to match the fuel savings of an EV?

<b>British Columbia</b> \$0.36	<b>Manitoba</b> \$0.34	<b>New Brunswick</b> \$0.45	<b>Newfoundland and Labrador</b> \$0.43	<b>Northwest Territories</b> \$0.95
<b>Alberta</b> \$0.75	<b>Ontario</b> \$0.43	<b>Nova Scotia</b> \$0.50	<b>Yukon</b> \$0.49	<b>Nunavut</b> \$0.84
<b>Saskatchewan</b> \$0.47	<b>Quebec</b> \$0.29	<b>Prince Edward Island</b> \$0.53	<b>CANADIAN AVERAGE</b> <b>\$0.43</b>	

Based on a Volkswagen ID.4 compared to a Honda CR-V.



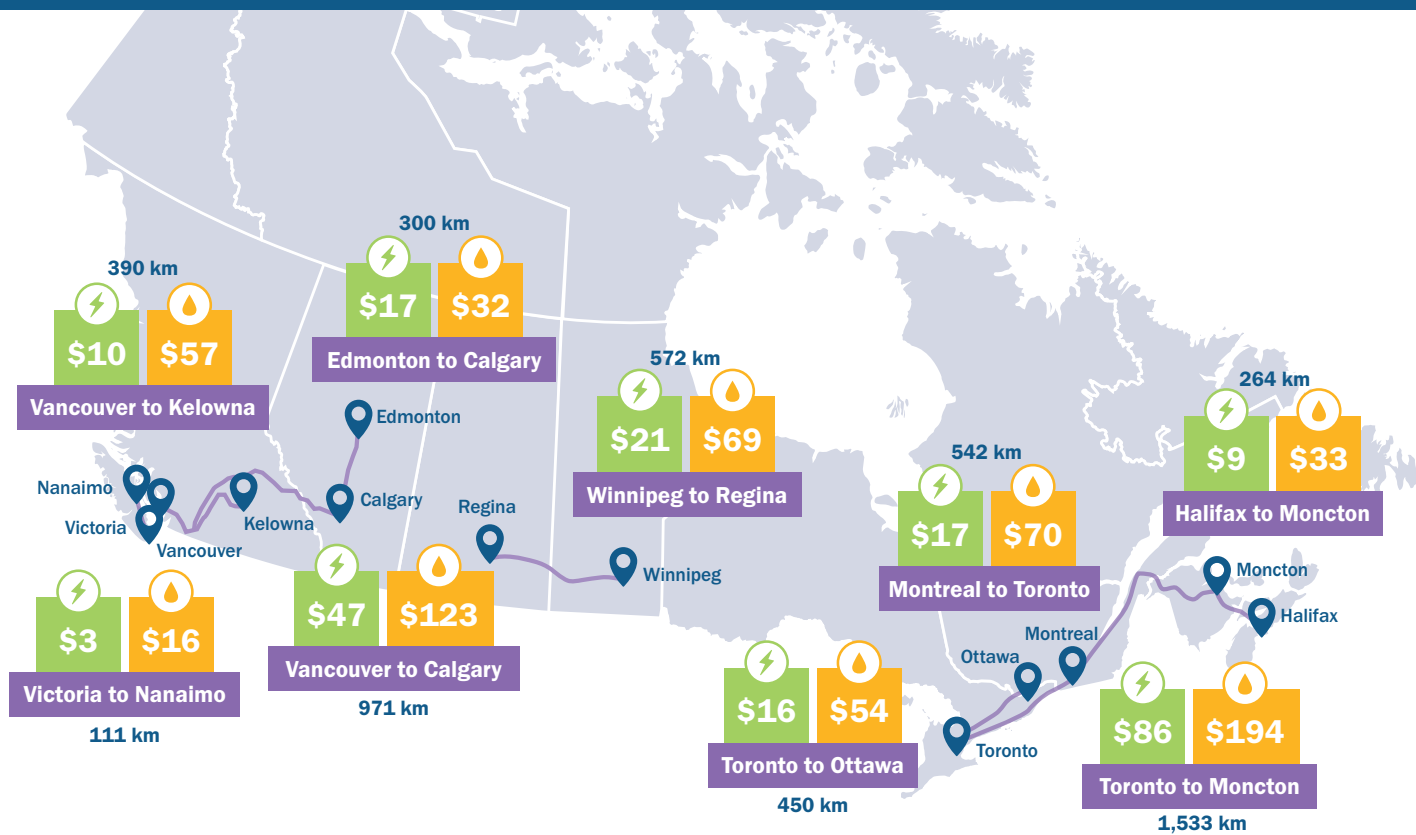
## ROAD TRIP COST COMPARISONS



**ELECTRIC**  
Volkswagen ID.4



**GAS**  
Honda CR-V



Based on a road trip in a Volkswagen ID.4 compared to a Honda CR-V. Assumes a home charging rate for the first 80% of the EV range and a public charging rate for the rest of the trip. The home charging rate is based on the province where the trip begins. Longer trips requiring en route charging will therefore be more expensive than those where most or all of the trip can be achieved with lower home charging rates. In addition, while the electric option is considerably cheaper for all trips, the gap is smallest in provinces with lower gas prices and higher electricity prices.

# The faceoff



## LIVING THAT EV LIFE

### Skip the gas station



Considering most charging is done at home, EV owners get to skip trips to the gas station altogether. That's one less errand to run for working families.

### Save on fuel prices



Owning an EV also means never having to dread the sign outside that gas station. Insulate your wallet from the global geopolitics driving up fossil fuel prices.

### Save on maintenance



EVs require less maintenance than gas cars. You'll never need another oil change again, while other components, like brakes, last longer due to the technology they use.

### Stretch your legs in style



With rest stops racing to reimagine themselves for EV owners, an all-electric road trip could soon involve charging breaks complete with dog parks, log fires, and fitness centres. **Though you won't be waiting long: with fast-chargers, some EVs can charge to 80% in 20 minutes.**

# Hatchbacks

**ELECTRIC**

**GAS**

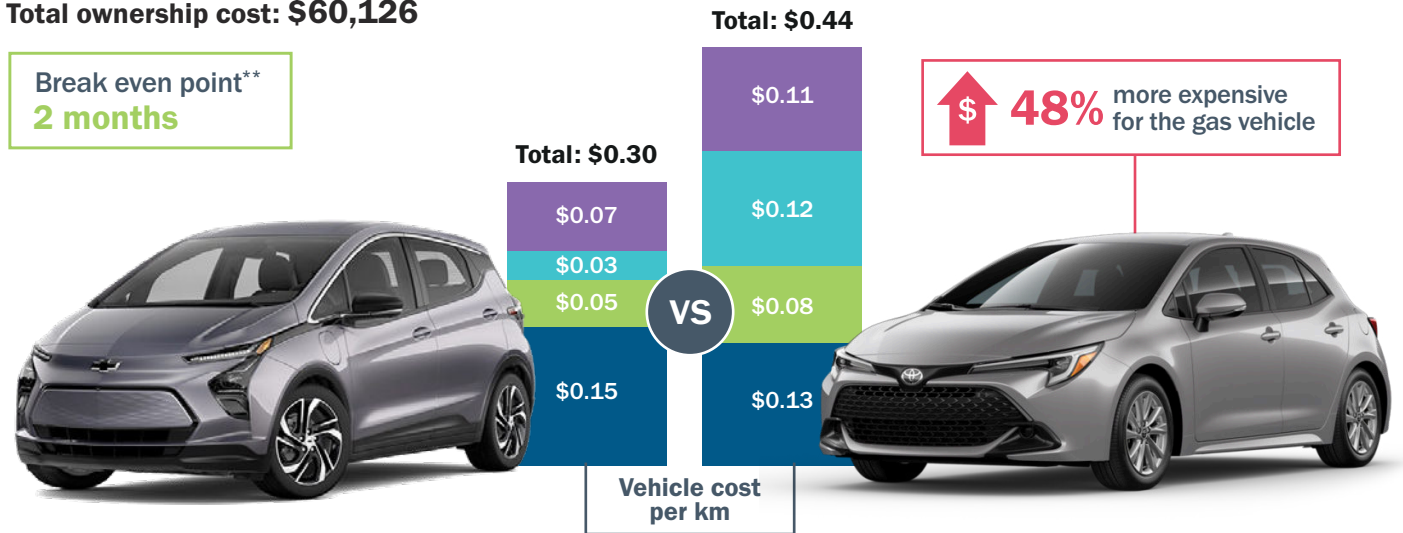
## 2023 Chevrolet Bolt EV

Retail price: **\$38,943**  
 Battery range: 417 kilometres  
 Eligible for rebates: yes

**Total ownership cost: \$60,126**

## 2025 Toyota Corolla Hatchback XSE

Retail price: **\$30,465**  
**Total ownership cost: \$88,763**



\*\* All break even points include rebates (a Canada average) and exclude depreciation.

"Cost of car" calculates depreciation from the full MSRP (not the rebate-adjusted price). While depreciation rates are applied equally across powertrains, because EVs are discounted via rebates, EV drivers essentially acquire a more valuable asset for less money and benefit from this when reselling the vehicle.

■ Cost of car (depreciation)
 ■ Fuel
 ■ Maintenance and repairs
 ■ Taxes, insurance, and other costs

## BUYING A BOLT

The 2023 Chevrolet Bolt included in this analysis was discontinued by General Motors, though the automaker subsequently indicated plans to revive the model in 2025.<sup>6,7</sup> The Bolt is by far the cheapest electric vehicle available in Canada and was the third best-selling EV in the country last year. Its removal leaves a large gap in the market for smaller, more affordable EVs in North America. Europeans can choose from no less than 11 different electric options with a purchase price of less than C\$45,000, compared to just two in Canada (the Bolt and the Fiat 500e).<sup>8,9</sup> It's therefore not surprising that EVs in Europe now make up 24% of all new cars sold, compared to 12% in Canada.<sup>10,11</sup> What's more, there are just four electric hatchbacks on the Canadian market versus 52 in Europe.<sup>8,9</sup> **It's vital that automakers prioritize bringing more affordable electric options to the North American market. Failing to do so will slow the rate of EV adoption and result in Canadians paying at the gas pump for years longer than they might otherwise.**





# Sedans

## ELECTRIC

## GAS

### 2024 Tesla Model 3 RWD

Retail price: **\$49,990**

Battery range: 438 kilometres

Eligible for rebates: yes

**Total ownership cost: \$62,507**

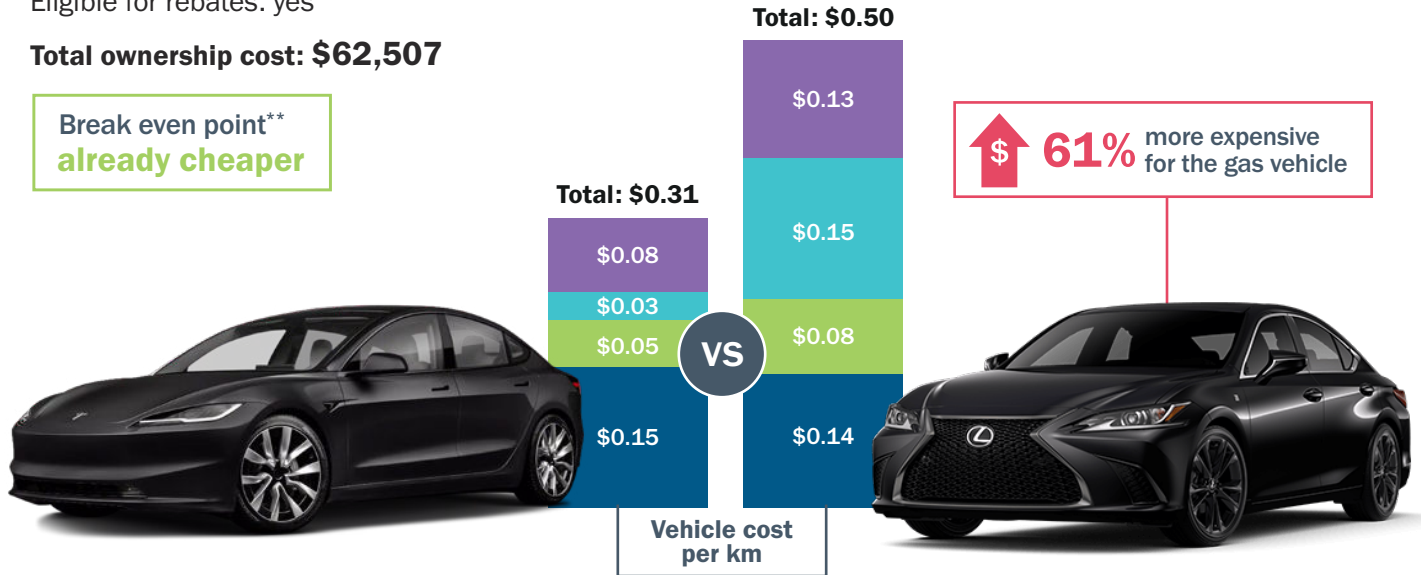
Break even point\*\*  
**already cheaper**

### 2024 Lexus ES 250 AWD\*

Retail price: **\$49,250**

**Total ownership cost: \$100,404**

**61%** more expensive  
for the gas vehicle



\* The Lexus ES 350 is front-wheel drive only but is actually more expensive than the AWD ES 250, and in both cases we compared the cheapest version of each model.

\*\* All break even points include rebates (a Canada average) and exclude depreciation.

"Cost of car" calculates depreciation from the full MSRP (not the rebate-adjusted price). While depreciation rates are applied equally across powertrains, because EVs are discounted via rebates, EV drivers essentially acquire a more valuable asset for less money and benefit from this when reselling the vehicle.

■ Cost of car (depreciation)
 ■ Fuel
 ■ Maintenance and repairs
 ■ Taxes, insurance, and other costs

## ARE REBATES STILL NECESSARY?

**We also ran additional calculations assuming that no rebates were available.** And while the EV in almost every location still comes out ahead over a 10-year period (thanks to sizable fuel and maintenance savings), the absence of rebates notably increases the break-even time (the point at which an EV makes up for its higher upfront cost compared to a gas equivalent). The effect is particularly felt in the hatchbacks category. Since the rebate is a fixed amount, it represents a greater percentage discount for more affordable cars. Specifically, it increases the break-even time for the Bolt from only two months to more than four years. It's a similar story for SUVs, where it increases from four years and eight months to six years and eight months. **Put simply, it is still important that governments help Canadians overcome upfront cost barriers so that they can reap cost-saving benefits closer down the road.**

# SUVs

## ELECTRIC

## GAS

### 2024 Volkswagen ID.4 Pro

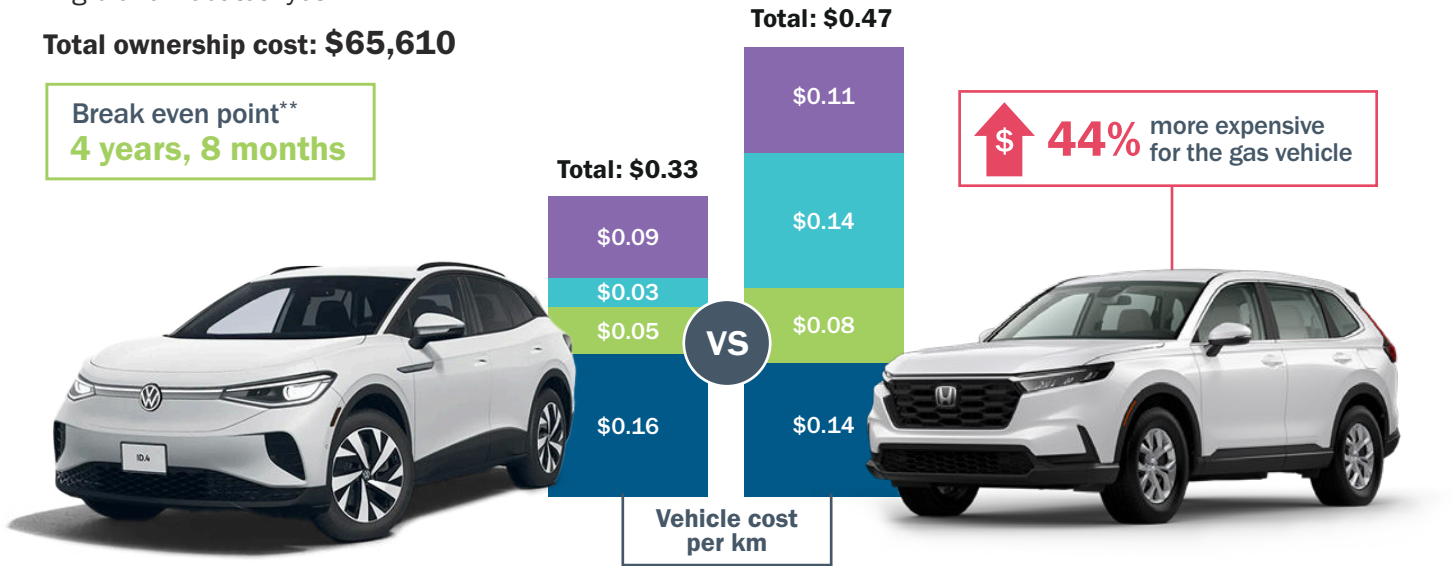
Retail price: **\$52,995**  
 Battery range: 468 kilometres  
 Eligible for rebates: yes\*

**Total ownership cost: \$65,610**

Break even point\*\*  
**4 years, 8 months**

### 2024 Honda CR-V LX-B 2WD

Retail price: **\$35,125**  
**Total ownership cost: \$94,156**



\* B.C. recently lowered its MSRP cap for rebates to \$50,000, and while the cheapest ID.4 remains eligible, the base model only has 332 kilometres of range.

\*\* All break even points include rebates (a Canada average) and exclude depreciation.

“Cost of car” calculates depreciation from the full MSRP (not the rebate-adjusted price). While depreciation rates are applied equally across powertrains, because EVs are discounted via rebates, EV drivers essentially acquire a more valuable asset for less money and benefit from this when reselling the vehicle.

■ Cost of car (depreciation)
 ■ Fuel
 ■ Maintenance and repairs
 ■ Taxes, insurance, and other costs

## BUSTING MYTHS

“EVs do not have enough range”

The average range of new EVs is now almost 480 kilometres—and rising.<sup>18</sup> Most Canadians drive less than 60 kilometres per day, while the average EV driver does between 80% to 90% of charging at home, usually just plugging in overnight for convenience.<sup>19–21</sup> As Canada’s fast-charging network grows, range and charging will become less of a concern for longer trips. There are now fast chargers at 20 out of 23 ONroute rest stops in Ontario, while PetroCanada has already installed chargers along the TransCanada highway from Halifax to Victoria.<sup>22</sup> The Government of Canada has committed to deploy 84,500 chargers by 2029 and is on track to meet its 2026 target.<sup>23,24</sup>

“EVs have greater lifecycle emissions than gas cars”

Globally, electric vehicles have been shown repeatedly to have lower lifecycle emissions than traditional gas-powered vehicles even in regions with fossil-fuel-dependent electricity grids. Specifically, studies have shown that EVs emit as much as 71% less carbon pollution than gas cars—that includes pollution from mining, manufacturing, and driving.<sup>12</sup> What’s more, EVs are especially clean when battery recycling is included (up to 95% of the material from an EV battery can be recycled).<sup>13</sup>

# Trucks

## ELECTRIC

## GAS

### 2024 Ford F-150 Lightning XLT (Standard Range)

Retail price: **\$69,995**  
 Battery range: 386 kilometres  
 Eligible for rebates: yes\*

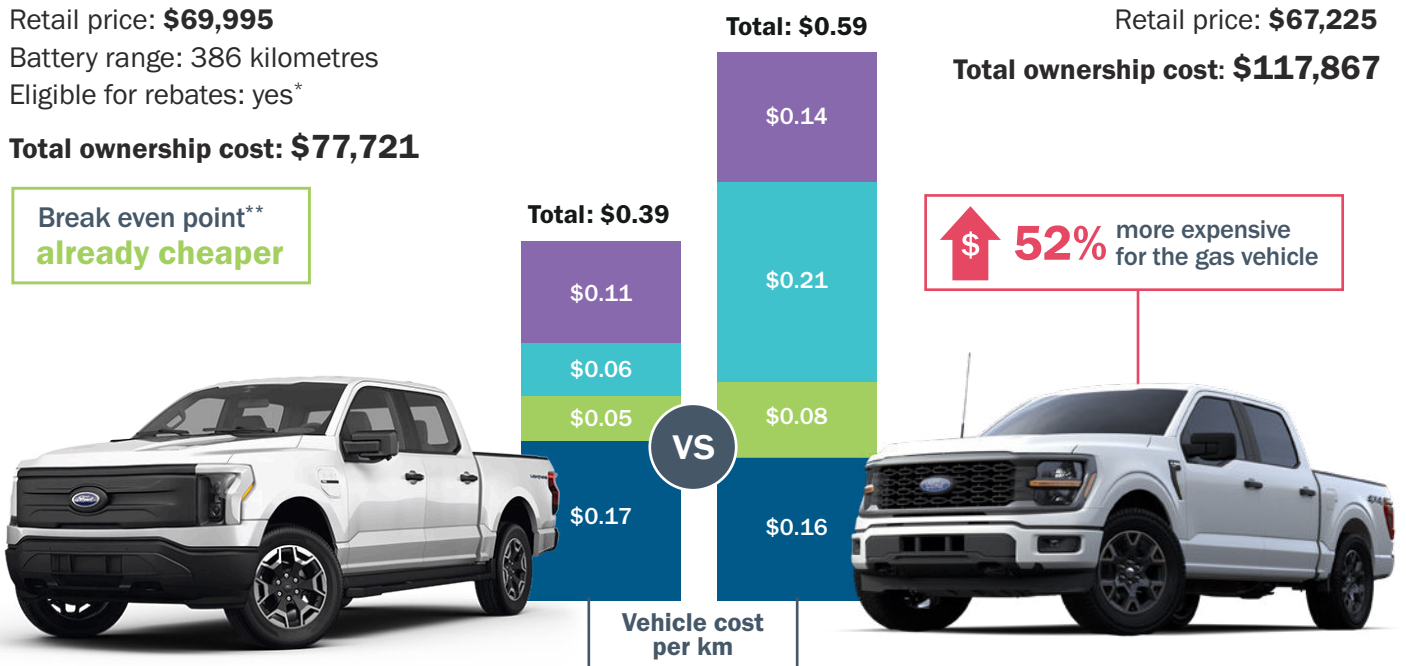
**Total ownership cost: \$77,721**

Break even point\*\*  
**already cheaper**

### 2024 Ford F-150 XLT SuperCrew 4x4

Retail price: **\$67,225**  
**Total ownership cost: \$117,867**

**52%** more expensive  
 for the gas vehicle



\* Ineligible for provincial rebate in Quebec, but eligible for the federal rebate.

\*\* All break even points include rebates (a Canada average) and exclude depreciation.

“Cost of car” calculates depreciation from the full MSRP (not the rebate-adjusted price). While depreciation rates are applied equally across powertrains, because EVs are discounted via rebates, EV drivers essentially acquire a more valuable asset for less money and benefit from this when reselling the vehicle.

■ Cost of car (depreciation)
 ■ Fuel
 ■ Maintenance and repairs
 ■ Taxes, insurance, and other costs

## BUSTING MYTHS

### “EV batteries need replacing before the vehicle’s end of life”

All EVs sold today include a battery warranty of at least eight years and 160,000 kilometres.<sup>14</sup> A recent analysis indicated that, out of 20,000 cars studied, only 2.5% have required a battery replacement, and most have occurred under warranty.<sup>15</sup> Tesla has claimed that the range on its Model S and X vehicles decreased by just 12% after 321,000 kilometers of driving (these models are older and therefore offer insights based on real-world data).<sup>16,17</sup>

### “The electricity grid can’t handle EVs”

While the switch to EVs will require provinces to plan for EV growth, other countries around the world (EVs account for some 80% of new cars sold in Norway) have not experienced grid-related issues as a result of high EV adoption.<sup>25</sup> A Canadian government study on the anticipated electricity needs of EVs found that they would represent 3%, 16%, and 22% of electrical power demand in 2030, 2040, and 2050, respectively. As the study states, “This number is significant, but since the growth is spread over 30 years, with most happening during the 2030 to 2050 timeframe, Canadian utilities have 10 years to refine the load forecast and plan for grid expansion.”<sup>26</sup>



# Methodology

The total cost of ownership for the vehicles shown in this report was calculated using the Fleet Procurement Analysis Tool by Atlas Public Policy. The vehicles were selected based on their popularity on the Canadian market. The vehicle performance data was taken from Natural Resources Canada.<sup>27</sup> The analysis is based on the following data and assumptions:

- Average retail prices for regular gasoline in 2023 as provided by Natural Resources Canada (Canadian average: \$1.60/l)<sup>39</sup>
- Average prices for residential electricity in 2023 from Hydro-Québec with Canadian average (15.7¢/kWh) calculated as population-based weighted average<sup>28</sup>
- Annual vehicle mileage of 20,000 kilometres as per information from Natural Resources Canada<sup>29</sup>
- Combined fuel/electricity consumption ratings that reflect 55% city and 45% highway driving
- Expected vehicle ownership of 10 years
- Canadian average EV purchase incentives based on EV sales-weighted provincial rebates plus federal
- 88% home charging of EVs based on the midpoint of a range provided in a report from the U.S. National Renewable Energy Laboratory<sup>30</sup> incentive
- Equal depreciation rates assumed across powertrains to account for the lack of a consensual method to estimate the depreciation of EVs, mixed findings in extant research that is based on relatively limited data, and this rapidly developing area of technology
- Public charging price (\$0.352/kWh) based on a review of per-minute rates in B.C., Ontario, and Quebec to charge a 75 kWh battery (the sales-weighted average battery size in the U.S. in 2021) at an average charging speed of 70 kW (the average rated fast-charging speed in Quebec and Ontario) and assumed losses in charging and grid delivery of 36%<sup>31-33</sup>
- Inflation rate based on the Canada Energy Regulator's projected Consumer Price Index<sup>34</sup>

Note that the affordability of EVs increases even further with additional rebates, higher gasoline prices, lower electricity rates, longer vehicle ownership, and higher annual mileage.



## SPOTLIGHT

# Kia EV3

This spring, Kia unveiled its forthcoming EV3, a more compact and affordable offering to complement its larger, award-winning EV9.<sup>35</sup> In Canada, the small SUV will likely start in the mid-\$40,000 range before government rebates, making it one of the more affordable electric cars soon to be available. It will have competition, however, as GM promises that its next Chevrolet Bolt will be the most affordable EV on the market by 2025.<sup>36-38</sup>

# Endnotes

1. Government of Canada. Monthly average retail prices for gasoline and fuel oil, by geography. *Statistics Canada* <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000101&pickMembers%5B0%5D=2.2&cubeTimeFrame.startMonth=02&cubeTimeFrame.startYear=1990&cubeTimeFrame.endMonth=06&cubeTimeFrame.endYear=1999&referencePeriods=19900201%2C19990601> (2024).
2. Inflation Calculator. *Bank of Canada* <https://www.bankofcanada.ca/rates/related/inflation-calculator/>.
3. Trends in electric cars – Global EV Outlook 2024. *International Energy Agency* <https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars>.
4. Banks, B. Echoing StatsCan, S&P Global Mobility reports Canada’s ZEV market share fell to 12.5 per cent in Q1 from 13.2 in Q4. *Electric Autonomy Canada* <https://electricautonomy.ca/data-trackers/2024-06-19/sp-zev-q1-market-share-canada/> (2024).
5. Randall, T. Long-Range EVs Now Cost Less Than the Average New Car in the US. *Bloomberg* <https://www.bloomberg.com/news/articles/2024-06-07/long-range-evs-now-cost-less-than-the-average-us-new-car?sref=52ZW06YM> (2024).
6. Seifert, D. GM killed the Chevy Bolt — and the dream of a small, affordable EV. *The Verge* <https://www.theverge.com/2023/4/26/23697911/gm-discontinued-chevy-bolt-small-affordable-ev> (2023).
7. Johnson, P. GM confirms 2025 launch date for next-gen Chevy Bolt EV. *Electrek* <https://electrek.co/2023/12/05/gm-confirms-2025-launch-date-next-gen-chevy-bolt-ev/> (2023).
8. Electric Vehicle Database. *Fully Charged* <https://ev-database.org/#sort:path~type~order=.rank~number~desc|bodyshape-checkbox-dropdown:pathGroup=.shape-hatchback|rs-price:prev~next=10000~100000|rs-range:prev~next=0~1000|rs-fastcharge:prev~next=0~1500|rs-acceleration:prev~next=2~23|rs-topspeed:prev~next=110~350|rs-battery:prev~next=10~200|rs-towweight:prev~next=0~2500|rs-eff:prev~next=100~350|rs-safety:prev~next=1~5|paging:currentPage=0|paging:number=10>.
9. EV Buyers Guide. *Plug’n Drive* <https://ev.plugndrive.ca/vehicles>.
10. Kane, M. Europe: Plug-In Car Sales Exceeded 3 Million In 2023. *InsideEVs* <https://insideevs.com/news/707425/europe-plugin-car-sales-december2023/> (2024).
11. Banks, B. Zero-emission vehicle registrations hold recent big gains in Canada in Q4. *Electric Autonomy Canada* <https://electricautonomy.ca/news/2024-03-05/registrations-q4-2023-zero-emission-vehicle/> (2024).
12. Cantor, C. No Doubt About It: EVs Really Are Cleaner Than Gas Cars. *BloombergNEF* <https://about.bnef.com/blog/no-doubt-about-it-evs-really-are-cleaner-than-gas-cars/> (2024).
13. Hessey, K. How electric vehicles are sparking a battery recycling revolution. *Global News* <https://globalnews.ca/news/9405696/electric-vehicle-battery-recycling/> (2023).
14. McAleer, B. Electric Car Battery Life: Everything You Need to Know, Including How Long They Last. *Car and Driver* <https://www.caranddriver.com/features/a31875141/electric-car-battery-life/> (2024).
15. Najman, L. New Updates: How Long Do Electric Car Batteries Last? *ReCurrent* <https://www.recurrentauto.com/research/how-long-do-ev-batteries-last> (2024).
16. Lambert, F. Tesla gives update on battery degradation: only 12% after 200,000 miles. *Electrek* <https://electrek.co/2023/04/25/tesla-update-battery-degradation/> (2023).
17. Lambert, F. Tesla battery degradation at less than 10% after over 160,000 miles, according to latest data. *Electrek* <https://electrek.co/2018/04/14/tesla-battery-degradation-data/> (2018).
18. Randall, T. US Electric Cars Set Record With Almost 300-Mile Average Range. *Bloomberg* <https://www.bloomberg.com/news/articles/2023-03-09/average-range-for-us-electric-cars-reached-a-record-291-miles?sref=52ZW06YM> (2023).
19. Randall, T. US Electric Cars Set Record With Almost 300-Mile Average Range. *Bloomberg* <https://www.bloomberg.com/news/articles/2023-03-09/average-range-for-us-electric-cars-reached-a-record-291-miles?sref=52ZW06YM> (2023).
20. Electric Vehicle Range. *Plug’n Drive* <https://www.plugndrive.ca/electric-vehicle-range/>.

21. Assessment of The Consumer Electric Vehicle Charging Experience in Canada. *Pollution Probe* <https://www.pollutionprobe.org/wp-content/uploads/2022/06/Pollution-Probe-.Consumer-EV-charging-Experience.pdf> (2022).
22. EV Charging Stations. *OnRoute* <https://www.onroute.ca/brands/ev-chargers>.
23. Zero Emission Vehicle Infrastructure Program. *Government of Canada* <https://natural-resources.canada.ca/energy-efficiency/transportation-alternative-fuels/zero-emission-vehicle-infrastructure-program/21876>.
24. Office of the Auditor General of Canada. Report 8—The Zero Emission Vehicle Infrastructure Program. *Government of Canada* [https://www.oag-bvg.gc.ca/internet/English/parl\\_cesd\\_202311\\_08\\_e\\_44371.html?utm\\_source=All+Media&utm\\_campaign=deb23759ac-EMAIL\\_CAMPAIGN\\_2018\\_11\\_20\\_05\\_31\\_COPY\\_01&utm\\_medium=email&utm\\_term=0\\_135bfb50a9-deb23759ac](https://www.oag-bvg.gc.ca/internet/English/parl_cesd_202311_08_e_44371.html?utm_source=All+Media&utm_campaign=deb23759ac-EMAIL_CAMPAIGN_2018_11_20_05_31_COPY_01&utm_medium=email&utm_term=0_135bfb50a9-deb23759ac) (2023).
25. Ewing, J. In Norway, the Electric Vehicle Future Has Already Arrived. *The New York Times* <https://www.nytimes.com/2023/05/08/business/energy-environment/norway-electric-vehicles.html> (2023).
26. Natural Resources Canada. ICF Executive Summary. [https://natural-resources.canada.ca/sites/nrcan/files/Executive%20Summary%20ICF\\_English.pdf](https://natural-resources.canada.ca/sites/nrcan/files/Executive%20Summary%20ICF_English.pdf)
27. Natural Resources Canada. Fuel consumption ratings search tool. *Government of Canada* <https://fcr-ccc.nrcan-nrcan.gc.ca/en>.
28. Comparison of Electricity Prices in Major North American Cities. *Hydro-Québec* <https://www.hydroquebec.com/data/documents-donnees/pdf/comparison-electricity-prices.pdf> (2023).
29. Natural Resources Canada. Electric vehicle chargers: the basics. *Government of Canada* <https://natural-resources.canada.ca/energy-efficiency/spotlight-energy-efficiency/2021/04/08/electric-vehicle-chargers-the-basics/23564> (2021).
30. Ge, Y., Simeone, C., Duvall, A. & Wood, E. There's No Place Like Home: Residential Parking, Electrical Access, and Implications for the Future of Electric Vehicle Charging Infrastructure. *National Renewable Energy Laboratory* <https://www.nrel.gov/docs/fy22osti/81065.pdf> (2021).
31. Assessment of Light-Duty Plug-in Electric Vehicles in the United States, 2010 – 2021. *Argonne National Laboratory* <https://publications.anl.gov/anlpubs/2022/11/178584.pdf> (2022).
32. Circuit électrique inc. Find a station. *The Electric Circuit* <http://lecircuitelectrique.com/en/find-a-station/>.
33. Apostolaki-Iosifidou, E., Codani, P. & Kempton, W. Measurement of power loss during electric vehicle charging and discharging. *Energy* <http://dx.doi.org/10.1016/j.energy.2017.03.015> (2017)
34. Canada's Energy Future Data Appendices. *Canada Energy Regulator* <https://apps.cer-rec.gc.ca/ftprpndc/dfft.aspx?GoCTemplateCulture=en-CA>.
35. Richardson, M. Kia targets mid-\$40,000 range for smaller EV3 to 'extend EV ownership'. *The Globe and Mail* <https://www.theglobeandmail.com/drive/article-kia-targets-mid-40000-range-for-smaller-ev3-to-extend-ev-ownership/> (2024).
36. Vanhuelle, L. GM North America President Marissa West: Assessing plug-ins and which segments need them. *Automotive News* <https://www.autonews.com/talk-top/gms-marissa-west-where-are-plug-hybrids-needed> (2024).
37. Randall, T. When Will America Get Its \$25,000 Electric Car? *Bloomberg* <https://www.bloomberg.com/news/articles/2024-06-17/when-will-america-get-its-25-000-electric-car> (2024).
38. Johnson, P. GM claims its new Chevy Bolt EV will be the most affordable on the market by 2025. *Electrek* <https://electrek.co/2024/05/30/gm-claims-new-chevy-bolt-most-affordable-ev/> (2024).
39. Natural Resources Canada. Monthly Average Retail Prices for Regular Gasoline in 2023. *Government of Canada* [https://www2.nrcan.gc.ca/eneene/sources/pripri/prices\\_bycity\\_e.cfm?productID=1&locationID=66&locationID=43&locationID=10&locationID=39&locationID=35&locationID=28&locationID=12&locationID=44&locationID=17&locationID=2&locationID=1&locationID=15&locationID=7&frequency=M&priceYear=2023&Redisplay=](https://www2.nrcan.gc.ca/eneene/sources/pripri/prices_bycity_e.cfm?productID=1&locationID=66&locationID=43&locationID=10&locationID=39&locationID=35&locationID=28&locationID=12&locationID=44&locationID=17&locationID=2&locationID=1&locationID=15&locationID=7&frequency=M&priceYear=2023&Redisplay=).

 CLEAN ENERGY CANADA

Clean Energy Canada  
Morris J. Wosk Centre for Dialogue  
Simon Fraser University | Harbour Centre  
3311-515 West Hastings Street  
Vancouver, B.C., V6B 5K3

