

Act to Increase the Number of Zero-Emission Motor Vehicles in Québec in Order to Reduce Greenhouse Gas and Other Pollutant Emissions

Application Report - Evolution of the Zero-Emission

Vehicle Standard and Results as of September 1, 2024.

January 2025

Coordination and drafting

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A Word from the Minister of the Environment, the Fight against Climate Change, Wildlife and Parks and Minister Responsible for the Laurentides Region



The *Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions* is a fundamental pillar of our strategy for reducing greenhouse gas and other pollutant emissions. Through concrete measures, including a strengthened zero-emission vehicle (ZEV) standard, we have successfully positioned Québec as one of the most advanced states in the fight against climate change in North America.

I am pleased to present the Application Report – Evolution of the Zero-Emission Vehicle Standard as of September 1, 2024. This document demonstrates our significant progress in the field of transport electrification, the result of actions taken following the reflections and findings of a first report covering the period of 2018–2020.

This report describes the changes made to the ZEV standard to ensure its effectiveness, as well as an update on the results of the standard as of September 1, 2024, highlighting our successes and the growing use of electric vehicles on our roads. In the third quarter of 2024, 32.8% of new light vehicles sold were electric vehicles, compared with 3.6% for the same period in 2018, when implementation of the ZEV standard began. This remarkable result reflects the collective commitment of individuals, businesses and government to a transition to greener transportation.

The report also provides an overview of the electrification of light vehicles in Québec and global trends. It also presents new findings and suggests areas for improvement in the coming years, including the development of a ZEV standard for heavy vehicles. I invite you to consult it to discover all of our achievements and our prospects for the future in this transition to electric mobility.

Together, let us continue to make Québec a model in transport electrification.

The Minister,

A handwritten signature in black ink that reads "Benoit Charette". The signature is written in a cursive, flowing style.

Benoit Charette

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1 Introduction

The zero-emission vehicle (ZEV) standard is a landmark measure to encourage automakers to offer more and more electric vehicles (EV) in Québec. It creates the conditions for increasing both the number of vehicles available and the variety of models, in order to better meet consumer needs.

Fleet electrification is a promising solution to reduce greenhouse gas (GHG) emissions, especially since the transportation sector, which is heavily dependent on imported fossil fuels, is the largest emitter in Québec. According to the most recent inventory,¹ greenhouse gas (GHG) emissions from transportation in Québec accounted for 43.3% of the province's total emissions.

In accordance with section 66 of the *Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions* (chapter A-33.02, hereinafter “the ZEV Act”),² the Minister of the Environment, the Fight Against Climate Change, Wildlife and Parks submitted a report³ to the government in January 2021 on the implementation of that Act between 2018 and 2020. That report provided an update on the standard and its results, and suggested areas for improvement.

Four years later, this new publication, required under section 66 of the ZEV Act, presents the evolution of the standard and the results observed as of September 1, 2024. It details the actions implemented following the findings and recommendations of the 2018 report, including the tightening of the ZEV standard, finalized in September 2023.

This tightening of the ZEV standard will contribute to the objectives of the Plan for a Green Economy (2030 PGE)⁴ and its 2023–2028 Implementation Plan (2023–2028 IP),⁵ including having two million electric vehicles (EV) on Québec roads by 2030 and having ZEVs account for 100% of new light motor vehicle sales by 2035. More broadly, the strengthened ZEV

¹ Inventaire québécois des émissions de gaz à effet de serre en 2022 et leur évolution depuis 1990, gouvernement du Québec, 2024,

<https://www.environnement.gouv.qc.ca/changements/ges/2022/inventaire-ges-1990-2022.pdf>

² The *Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions*,

<https://www.legisquebec.gouv.qc.ca/en/document/cs/A-33.02>

³ Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions, 2018-2020 Implementation Report, Gouvernement du Québec, January 2021, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/rapport-mise-oeuvre-2018-2020-en.pdf>

⁴ Plan for a Green Economy 2030, MELCCFP, 2020, <https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/plan-economie-verte-2030-en.pdf>

⁵ 2023-2028 Implementation Plan, MELCCFP, 2023, <https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/plan-mise-oeuvre-2023-2028.pdf>

standard will also help reduce GHG emissions, supporting Québec's commitment to reduce GHG emissions by 37.5% by 2030, from 1990 levels, with a view to achieving carbon neutrality by 2050.

This application report also provides an overall picture of electrification in Québec, sets out our findings, suggests areas for improvement, and outlines the next steps being considered for Québec's ZEV standard.

2 Report on the ZEV standard and EV profile in Québec

The ZEV standard is governed by the ZEV Act. There are two resulting regulations, which came into force on January 11, 2018, and, with the Act, form the foundation of the ZEV standard.

- *The Regulation respecting the application of the Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions* (chapter A-33.02, r. 1; hereinafter the “Application Regulation”).
- *The Regulation respecting the limit on the number of credits that may be used by a motor vehicle manufacturer and the confidentiality of some information* (chapter A-33.02, r. 2; hereinafter the “Regulation respecting the limit on credits and confidentiality”).

Since January 2018, manufacturers who sell or lease an average of 4,500 new light vehicles or more in Québec are subject to the ZEV standard. They must accumulate credits by supplying electric vehicles to the Québec market or by purchasing the required credits from other manufacturers. The credit target, determined by the government, is calculated by applying a percentage to the total number of new light vehicles that each manufacturer sells or leases in Québec.

Each sale or lease of an electric vehicle earns credits for the manufacturer, with the number of credits varying based on the characteristics of the vehicle. To generate credits, eligible vehicles reported by manufacturers must be registered in Québec when they are reported. To ensure this, the MELCCFP verifies vehicle identification numbers (VINs) with the SAAQ.

At the end of each compliance period, which consists of three consecutive model years starting with 2019-2020-2021, manufacturers must have accumulated the number of credits required by the government for that period. In the event of a credit deficit, manufacturers must pay a charge to the government.

2.1 Eligible EVs

For the 2014 model year, nine manufacturers reported eligible vehicles for credits. **In 2024, that number increased to 19, each manufacturer offering at least one eligible vehicle approved by the MELCCFP.** Manufacturers subject to the standard and three not subject to it have reported a total of 759 versions of EVs to date, between model years 2014 and 2024. Since the number of credits granted for a vehicle depends on its electric range, several versions of the same model are accounted for separately when their range is different.

Of these vehicles, 505 (66.5%) are ZEVs, which includes battery electric vehicles (BEV, also called all-electric vehicles) and vehicles powered by a hydrogen fuel cell, 242 (31.9%) are low-emission vehicles (LEV), i.e., plug-in hybrid electric vehicles (PHEV), and 12 (1.6%) are

vehicles with a range extender (VRE). It should be noted that no new VREs have been reported since the 2021 model year and no application for eligibility for low-speed vehicles has been submitted to date.

One of the objectives of the ZEV standard, in addition to making a larger number of EVs available to consumers, was to bring higher performance EVs on the market to make them more attractive and reduce range anxiety among drivers. Figures 1 and 2 show the evolution of electric range and the number of credits granted based on that range, on average, per vehicle reported by manufacturers over the model years. **The average number of credits granted for new vehicles rose from 1.37 in 2014 to 3.36 in 2023.** In 2023, the average value assigned to ZEVs was 3.93 credits, close to the maximum value of 4.00, indicating that the goal of having ZEVs with greater range than when the ZEV standard was implemented has been met.

The same cannot be said of the LEVs, whose average electric range has remained fairly stable at approximately 50 km since 2014. For this reason, the new regulation reinforced in 2023 requires that the minimum electric range increase from 50 km in 2025 to 80 km in 2028 for LEVs to be eligible for credits. The MELCCFP estimates that 80 km is the minimum threshold that allows LEV owners to travel on a daily basis in electric mode, both in summer and winter.

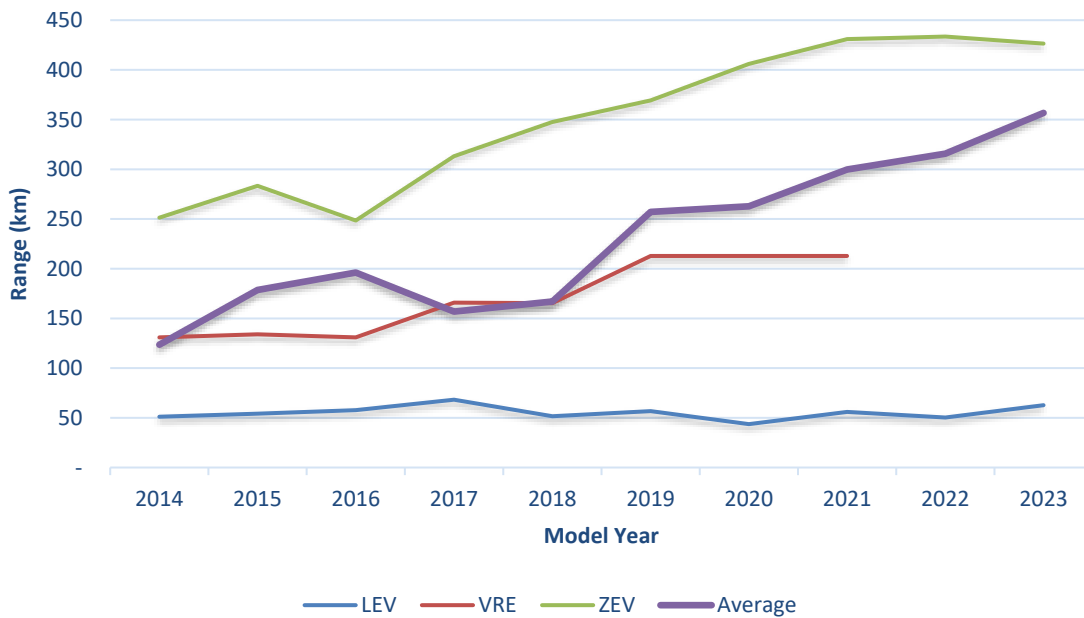


FIGURE 1: AVERAGE ELECTRIC RANGE OF VEHICLES BY MODEL YEAR

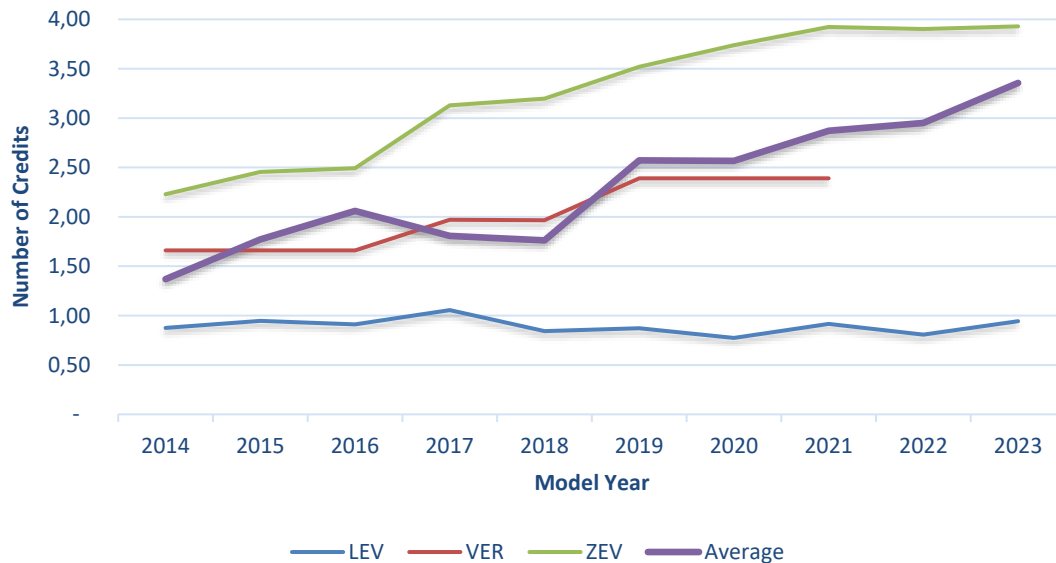


FIGURE 2: AVERAGE NUMBER OF CREDITS PER VEHICLE BY MODEL YEAR

2.2 Vehicle availability

As previously mentioned, one of the targets of the ZEV standard is to ensure broader model availability and a greater number of vehicles at car dealerships so as to meet the needs of consumers and shorten waiting lists.

When the ZEV Act was adopted in 2016, only 66% of models available in California were also marketed in Québec. Today, approximately **92% of models available in California are also available in Québec.**

Some motor vehicle manufacturers have clearly stated that they are **prioritizing Québec and British Columbia within the Canadian market**, in particular due to the presence of a ZEV standard in the two provinces. In addition to a regulatory obligation, the alienation of surplus credits represents a business opportunity for some manufacturers, an incentive for them to offer more vehicles and models.

However, it is important to note that other tools and measures play a key role in promoting electric vehicles in Québec, such as monetary incentives, development of the charging station network, “green plates”⁶ and educational campaigns.

While access to EVs has improved (figures 3 and 4 show the marked increase in the number of eligible models and the number of declared vehicles by model year), **the situation is not**

⁶ The benefits of the green plate include preferred access to certain reserved lanes, free access to toll bridges and ferries managed by Québec, and free parking in certain municipalities. <https://saaq.gouv.qc.ca/en/vehicle-registration/registering-vehicle/electric-plug-in-hybrid-hydrogen-vehicle>

uniform across makes and models. Waiting lists remain long for some popular new models.

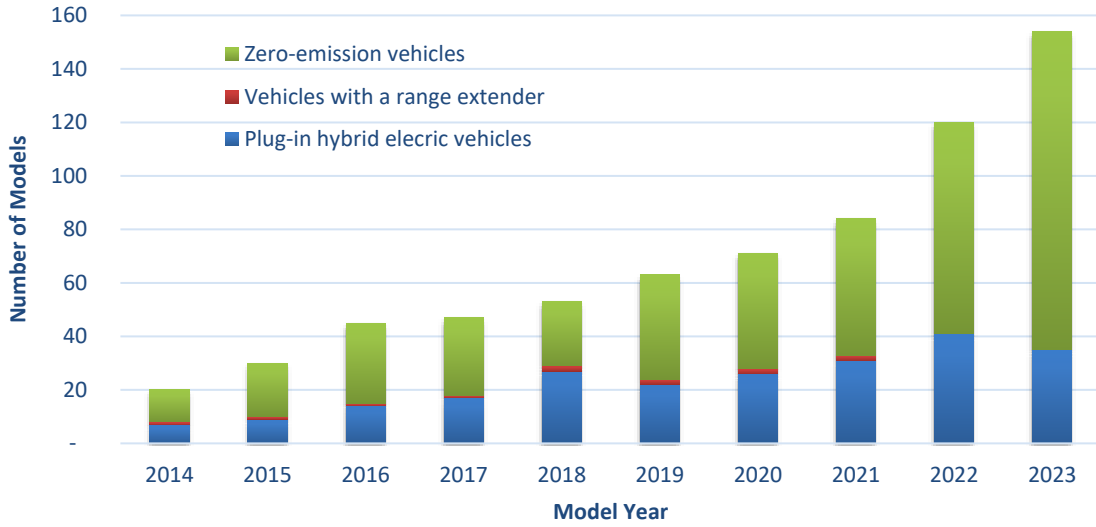


FIGURE 3: NUMBER OF MODELS ELIGIBLE FOR CREDITS REPORTED BY MANUFACTURERS

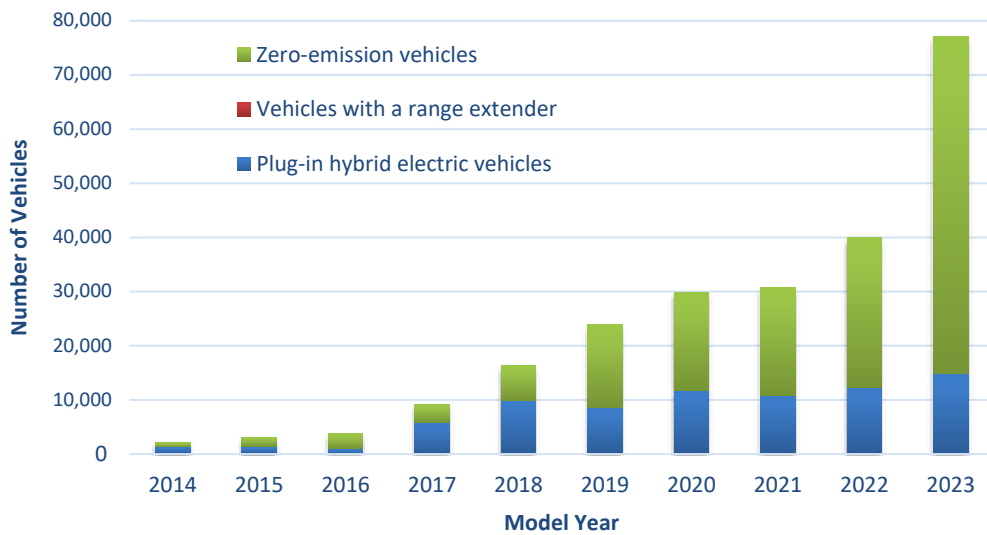


FIGURE 4: TOTAL NUMBER OF VEHICLES GENERATING CREDITS REPORTED BY MANUFACTURERS PER MODEL YEAR

2.3 Earned credits statement

For the first two compliance periods, the first for model year vehicles from 2014 to 2018, but with requirements only for model year 2018, and the second for model years from 2019 to 2021, **all manufacturers subject to the standard met their regulatory obligations.** They did this either by accumulating credits from their own sales or leases of EVs or by acquiring credits from other manufacturers. Figure 5 summarizes the total credits accumulated as of September 1, 2024, for model years 2014 to 2023, as well as the total annual credit requirements for the industry as a whole.

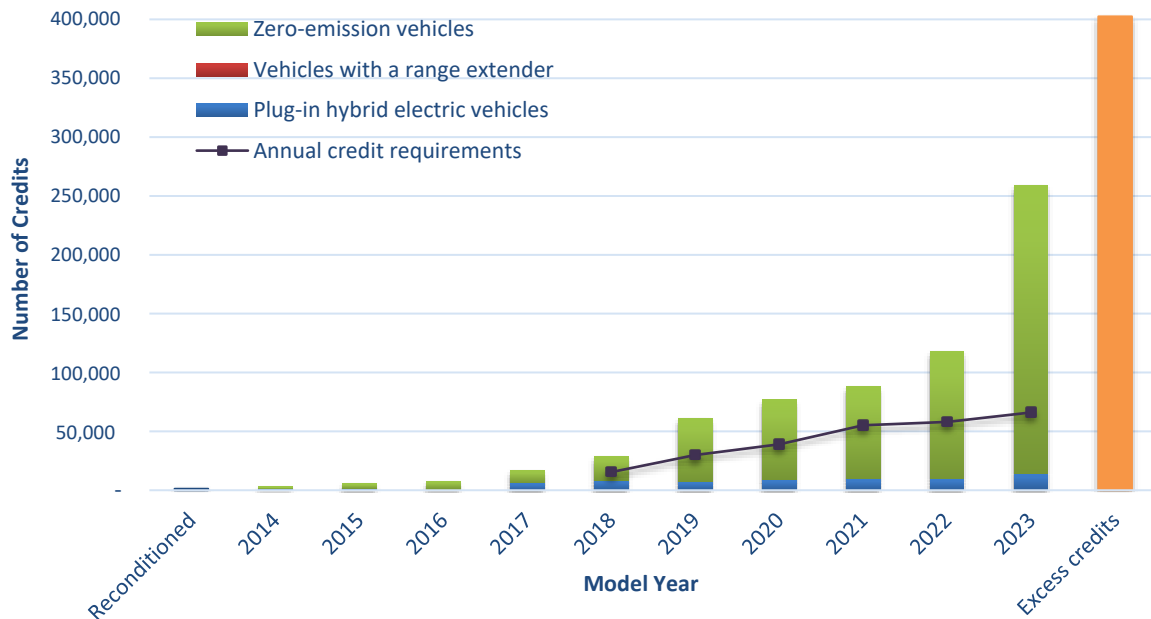


FIGURE 5: REQUIREMENTS AND CREDITS ACCUMULATED BASED ON SOURCE

Figure 5 shows that manufacturers are on track to meet regulatory requirements for the 2022–2024 compliance period. Indeed, since the ZEV standard came into force, over 665,000 credits have been accumulated by manufacturers. After the allocation of nearly 265,000 credits for model years 2018 to 2023, over 400,000 surplus credits will remain available. This surplus will be largely sufficient to cover the requirements for the 2024 model year, estimated at approximately 72,000 credits, even if the manufacturers did not sell any EVs for that model year.

This surplus in credits is due to a higher demand for EVs than was anticipated when determining the requirements for 2017, as well as to the faster-than-expected progress in battery technologies. ZEVs produced since 2018 typically have a high range, which frequently allows manufacturers to reach the maximum of 4.00 credits per vehicle (see figures 1 and 2, which illustrate the evolution of the electric range and the number of credits per vehicle type).

When the ZEV standard was tightened, measures were put in place to control these excess credits (see Section 4.2.6). Credits that are not used to meet the requirements of the current compliance period (2022–2024) will be divided by a factor of 2.7 and can be used to meet up to 20% of the requirements for the following period (2025–2027). Unused credits will then expire.

Tables 1 and 2 show the results as of September 1, 2024, by manufacturer, i.e., all credits reported, including for some vehicles from the 2024 model year, as well as the excess credits from previous compliance periods.

Complete reports on the results of the first two compliance periods and the 2022 model year are available on the MELCCFP website.⁷

⁷ <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/index-en.htm>

TABLE 1: MANUFACTURER CATEGORIES AND NUMBER OF CREDITS EARNED FOR COMPLIANCE PERIOD 3 (MODEL YEARS 2022–2024), AS OF SEPTEMBER 1, 2024

		Number of credits earned (as of September 1, 2024)					Credit requirements		
		NZEV	RZEV	NLEV	RLEV	Total	2022	2023	2024
Large	General Motors of Canada Ltd.	82,120.00	-	-	-	82,120.00	7,335.26	7,944.44	8,736.26
	Ford Canada Ltd.	42,927.86	-	3,436.96	-	46,364.82	6,408.90	6,782.77	7,718.43
	Honda Canada Inc.	9,333.00	-	-	-	9,333.00	4,489.06	5,127.94	5,817.24
	Hyundai Auto Canada Corp.	57,428.00	-	2,194.07	-	59,622.07	6,048.34	6,206.76	7,546.50
	Kia Canada Inc.	20,326.12	-	1,175.94	-	21,502.06	3,788.03	4,389.00	5,021.97
	Mazda Canada Inc.	2,330.00	-	-	-	2,330.00	1,929.66	3,602.64	3,348.02
	Nissan Canada Inc.	11,232.30	225.58	-	-	11,457.88	5,326.29	5,541.21	4,818.45
	Stellantis Canada	-	-	1,998.34	0.48	1,998.34	4,487.94	5,432.07	5,917.08
	Toyota Canada Inc.	22,642.23	88.95	10,408.95	9.00	33,052.68	7,420.71	8,580.47	9,851.40
	Volkswagen Group Canada Inc.	30,445.30	-	50.57	-	30,495.87	4,457.20	4,427.99	4,035.14
Intermediate	BMW Canada Inc.	6,487.38	-	887.30	-	7,374.68	1,235.79	1,218.62	1,295.84
	Mercedes-Benz Canada Inc.	4,051.73	-	10.50	-	4,062.23	1,435.26	1,450.95	1,560.84
	Subaru Canada Inc.	6,988.00	-	129.96	-	7,117.96	1,876.16	3,404.31	3,374.61
	Tesla Motors Canada ULC	63,485.00	-	-	-	63,485.00	570.14	990.76	1,556.49
	Mitsubishi Canada, Inc. vehicle sales	-	-	7,077.46	-	7,077.46	1,236.66	972.29	1,338.81
Small	Jaguar Land Rover North America LLC	102.78	-	4.26	-	107.04	-	-	-
	Porsche Cars Canada Ltd.	-	-	-	-	-	-	-	-
	Volvo Car Corporation	13,626.38	-	803.84	-	14,430.22	-	-	-
Total		373,526.08	314.53	28,178.15	9.48	402,028.24	58,045.40	66,072.22	71,937.08

Notes: Results are incomplete and other credits will be added by September 1, 2025.

The 2024 credit requirements are forecasts and will be formalized in the fall of 2025.

The small manufacturers listed in the table voluntarily participated in credit acquisitions and transactions.

Credits earned as of September 1, 2024, include acquisitions from other manufacturers (credit alienation).

NZEV: New zero-emission vehicle

NLEV: New low-emission vehicle

RZEV: Reconditioned zero-emission vehicle

RLEV: Reconditioned low-emission vehicle

TABLE 2: MANUFACTURER CATEGORIES AND NUMBER OF EXCESS CREDITS FOR THE FIRST TWO COMPLIANCE PERIODS (MODEL YEARS 2018, AND 2019–2021), AS OF SEPTEMBER 1, 2024

Manufacturer		Number of credits earned (as of September 1, 2024)			
		NZEV	RZEV	NLEV	Total
Large	General Motors of Canada Ltd.	29,921.53	-	4,149.81	34,071.34
	Ford Canada Ltd.	1,882.12	-	0.56	1,882.68
	Honda Canada Inc.	4,763.53	-	-	4,763.53
	Hyundai Auto Canada Corp.	31,193.83	-	-	31,193.83
	Kia Canada Inc.	9,987.55	-	-	9,987.55
	Mazda Canada Inc.	2,260.53	-	-	2,260.53
	Nissan Canada Inc.	11,379.10	-	-	11,379.10
	Stellantis Canada	4,061.19	-	-	4,061.19
	Toyota Canada Inc.	230.99	-	5,026.35	5,257.34
	Volkswagen Group Canada Inc.	2,855.32	-	-	2,855.32
Intermediate	BMW Canada Inc.	775.97	-	-	775.97
	Mercedes-Benz Canada Inc.	897.57	56.05	-	953.62
	Subaru Canada Inc.	2,452.68	-	353.97	2,806.65
	Tesla Motors Canada ULC	32,074.84	-	-	32,074.84
	Mitsubishi Canada, Inc. vehicle sales	325.74	2.36	1,179.34	1,507.44
Small	Jaguar Land Rover North America LLC	544.00	-	45.24	589.24
	Porsche Cars Canada Ltd.	1,236.90	-	210.43	1,447.33
	Volvo Car Corporation	960.93	-	631.28	1,592.21
Total		137,804.32	58.41	11,596.98	149,459.71

Notes: The small manufacturers listed in the table voluntarily participated in credit acquisitions and transactions.

Credits earned as of September 1, 2024, include acquisitions from other manufacturers (credit alienation).

NZEV: New zero-emission vehicle

RZEV Reconditioned zero-emission vehicle

NLEV New low-emission vehicle

2.4 Credit transaction statement

Since the ZEV standard came into force, up to September 1, 2024, a total of **78,398.00** credits were exchanged between manufacturers, representing 11.6% of the credits earned by the industry.

- Since the first report to the National Assembly, a significant slowdown in transactions has been observed. Indeed, during the 2.5-year period covered by that report, from January 11, 2018, to September 1, 2020, **40,200, 00** credits were traded. In comparison, only **38,198.00** credits were traded over the next 4 years, from September 2, 2020, to September 1, 2024.
- Those 38,198 credits traded over the last 4 years (see Table 3) involved nine manufacturers and involved credits banked from three compliance periods: **1,296.13** credits for the 2018 compliance period, **20,138.87** credits for the 2019–2021 period, and **16,763.00** for the 2022–2024 compliance period.
- The fact that fewer credits are traded over the years, when credit requirements are increasing, may indicate that manufacturers who introduced electric vehicles after the others are catching up and therefore need to buy fewer credits on the market. However, we will need to wait until the end of the current compliance period, on September 1, 2025, to confirm this theory.

TABLE 3: ALIENATION OF CREDITS AMONG MANUFACTURERS BETWEEN SEPTEMBER 2, 2020, AND SEPTEMBER 1, 2024

	Manufacturer	Number of credits
Manufacturer ceding credits	General Motors of Canada Ltd.	4,635.00
	Hyundai Auto Canada Corp.	1,650.00
	Tesla Motors Canada ULC	31,913.00
Manufacturer receiving credits	BMW Canada Inc.	1,650.00
	Honda Canada Inc.	11,333.00
	Mazda Canada Inc.	9,215.00
	Mercedes-Benz Canada Inc.	2,200.00
	Stellantis Canada	8,000.00
	Toyota Canada Inc.	5,800.00

2.5 Profile of electric vehicles registered in Québec

The ZEV standard is just one of the many tools put in place by the government since 2012 to accelerate the electrification of light vehicles in Québec. Other measures include rebates on the purchase of a new or pre-owned electric vehicle, subsidies for the installation of home, workplace or multi-unit dwelling charging stations, green plate benefits, and the development of the network of public charging stations.

As a result of these various measures and the growing interest among Quebecers in electric vehicles, the market shares for EVs have increased steadily and rapidly. They reached 32.8% of new light vehicle registrations in the third quarter of 2024 (25.2% BEV and 7.5% PHEV), the highest adoption rate in North America. Québec thus surpasses California (26.4%)⁸ and British Columbia (22.7%).⁹ During that quarter, more EVs were registered in Québec than in the rest of Canada,¹⁰ Figure 6 shows the increase in EV registrations by quarter, from 2017 to 2024.

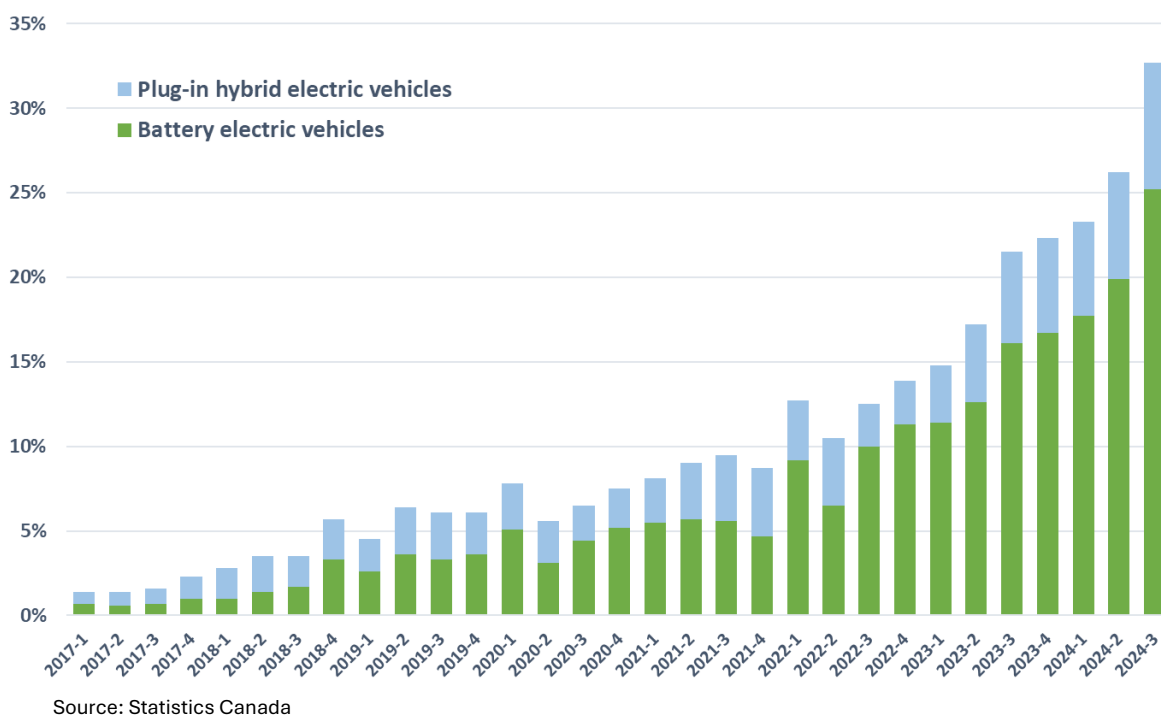


FIGURE 6: ELECTRIC VEHICLE RATIO VERSUS ALL NEW VEHICLES REGISTERED IN QUÉBEC

⁸ New ZEV Sales in California, California Energy Commission, consulted on October 28, 2024, <https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/new-zev>

⁹ New motor vehicle registrations: Quarterly data visualization tool, Statistics Canada, consulted on December 12, 2024, <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2021019-eng.htm>

¹⁰ *Ibidem*

This rapid progression puts Québec in a good position to reach its target of 2 million EVs on the road by 2030 (see Figure 7). As of September 30, 2024, 332,419 EVs were registered in Québec, of which 68.9% were BEVs and 31.1% were PHEVs. Low-speed vehicles, vehicles with a range extender and hydrogen fuel cell vehicles represent a marginal share, with approximately 500 vehicles for the three categories.

Moving forward, it will be interesting to monitor the evolution of the share of new electric vehicles among new light vehicle registrations in Québec, to measure the impact of the phase-out of the rebates under the Roulez vert program announced in the tabling of the 2024–2025 Québec budget on March 12, 2024.

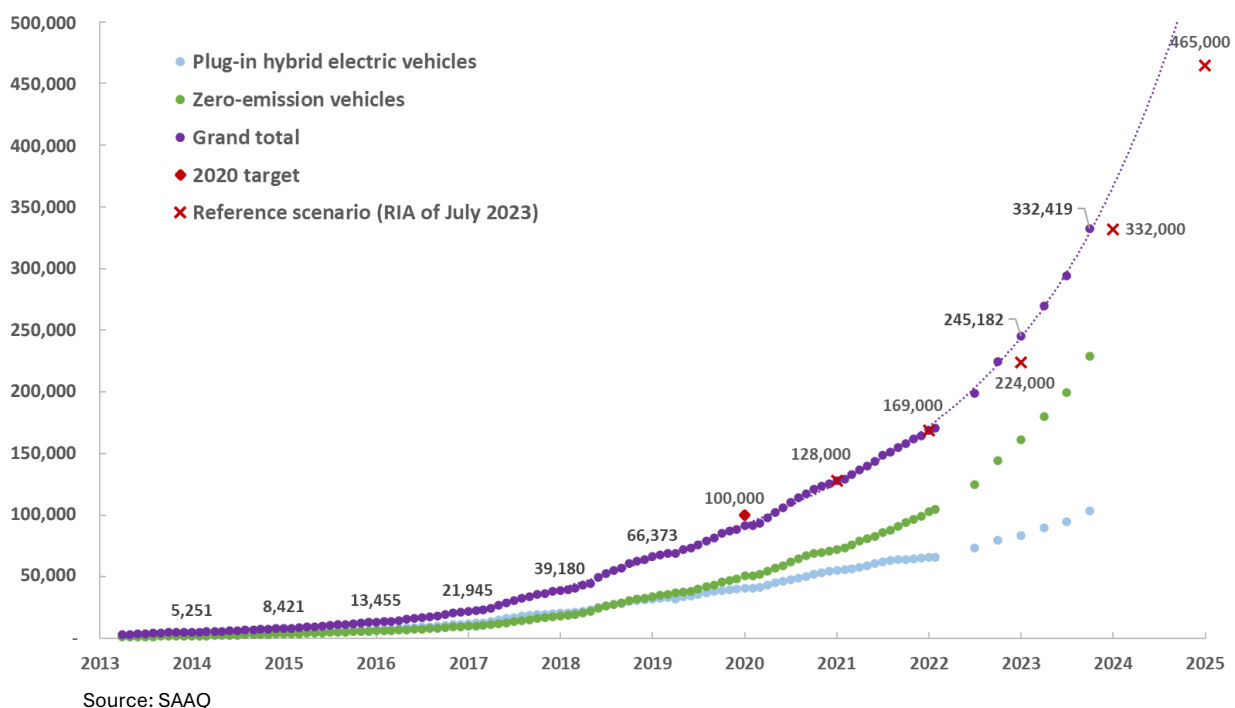


FIGURE 7: NUMBER OF ELECTRIC VEHICLES REGISTERED IN QUÉBEC

With respect to the distribution of EVs in Québec, Table 4 shows that the Montérégie region has the highest number of EVs. This table also shows that the number of battery electric vehicles (BEV) is proportionally higher near major urban centres, while more remote areas have a greater share of plug-in hybrid electric vehicles (PHEV).

The latest data from the Institut de la statistique du Québec (ISQ), as of March 31, 2024,¹¹ shows a significant increase in the number of EVs in all regions of Québec over the past four years, with an average increase of 291%.

¹¹ Panorama des régions du Québec – Édition 2024, Institut de la statistique du Québec (ISQ), 2024, <https://statistique.quebec.ca/fr/fichier/panorama-des-regions-du-quebec-edition-2024.pdf>

TABLE 4: NUMBER OF ELECTRIC VEHICLES IN CIRCULATION BY REGION, AS OF MARCH 31, 2024

Administrative region		Electric vehicles*		
		ZEV	PHEV	Total EVs
01	Bas-Saint-Laurent	2,907	1,997	4,904
02	Saguenay–Lac-Saint-Jean	3,621	2,661	6,282
03	Capitale-Nationale	13,253	9,882	23,135
04	Mauricie	5,221	3,012	8,233
05	Estrie	14,364	6,566	20,930
06	Montréal	30,174	13,916	44,090
07	Outaouais	5,779	3,378	9,157
08	Abitibi-Témiscamingue	1,431	1,501	2,932
09	Côte-Nord	647	633	1,280
10	Nord-du-Québec	60	86	146
11	Gaspésie–Îles-de-la-Madeleine	690	616	1,306
12	Chaudière-Appalaches	6,231	3,760	9,991
13	Laval	10,711	4,503	15,214
14	Lanaudière	16,357	7,528	23,885
15	Laurentides	18,481	7,501	25,982
16	Montréal	43,953	18,747	62,700
17	Centre-du-Québec	5,686	3,017	8,703
00	Not specified†	534	337	871
Total		180,100	89,641	269,741

Source: SAAQ Data

* ZEV: Zero-emission vehicles, including battery electric vehicles, hydrogen fuel cell vehicles and low-speed vehicles.

PHEV: Plug-in hybrid electric vehicles

† The region is not specified, among others, when the vehicle is registered in Québec, but purchased by an individual or company based outside Québec.

According to data from the ISQ, although the largest number of EVs is in the Montréal region, the Lanaudière region has the highest proportion of EVs per capita, with 524 EVs per 10,000 residents aged 15 and over. The central areas of Québec also have high proportions, all exceeding 300 EVs per 10,000 residents. Conversely, remoter or border areas have lower rates, varying from 280 (Bas-Saint-Laurent) to 43 EV (Nord-du-Québec) per 10,000 residents aged 15 and over. The Montréal area is an exception, with 243 EVs per 10,000 residents, possibly because fewer people on average have vehicles in all categories on the Island of Montréal than elsewhere in the province. A more developed public transit system on the island could explain this difference.

According to Statistics Canada, there were 473,000 electric vehicles registered in Canada as of December 31, 2023, of which 199,000 were in Québec¹² (Table 5). Québec’s electric vehicle fleet would therefore represent 42% of the Canadian EV total, while the province population accounts for 22% of the Canadian population and his total vehicle fleet accounts for 24% of the country’s vehicle fleet.

TABLE 5: ELECTRIC VEHICLE (EV) FLEET AND TOTAL VEHICLE FLEET, BY PROVINCE (DECEMBER 31, 2023)

Province/ Territory	Approximate EV registration	Vehicles on the road	EV share
Alberta	15,900	3,105,000	0.5%
BC	126,000	3,350,000	3.8%
Manitoba	4,000	852,000	0.5%
NB	3,000	557,000	0.5%
NL	1,300	361,000	0.4%
NT	74	23,300	0.3%
Nova Scotia	3,000	651,000	0.5%
Nunavut	2	4,400	0.0%
Ontario	116,000	8,050,000	1.4%
PEI	1,000	107,000	0.9%
Québec	199,000	5,626,000	3.5%
Saskatchewan	2,400	830,000	0.3%
Yukon	270	35,000	0.8%
Canada	473,000	23,552,000	2.0%

Source: Statistics Canada, October 2024

Figure 8 presents the evolution of the price and electric range of four popular EV models in Québec: Chevrolet Bolt (BEV), Nissan Leaf (BEV), Tesla Model 3 (BEV) and Toyota Prius Prime (PHEV).¹³ With the steady decrease in battery costs from over US\$1,200/kWh in 2010 to US\$111/kWh in 2024^{14,15} manufacturers have generally adopted two strategies to make their EVs more attractive: increasing the range and quality of vehicles rather than lowering prices, or offering more affordable prices while maintaining the same range. It can be inferred that greater ranges are favoured by consumers. In addition, it is more beneficial for

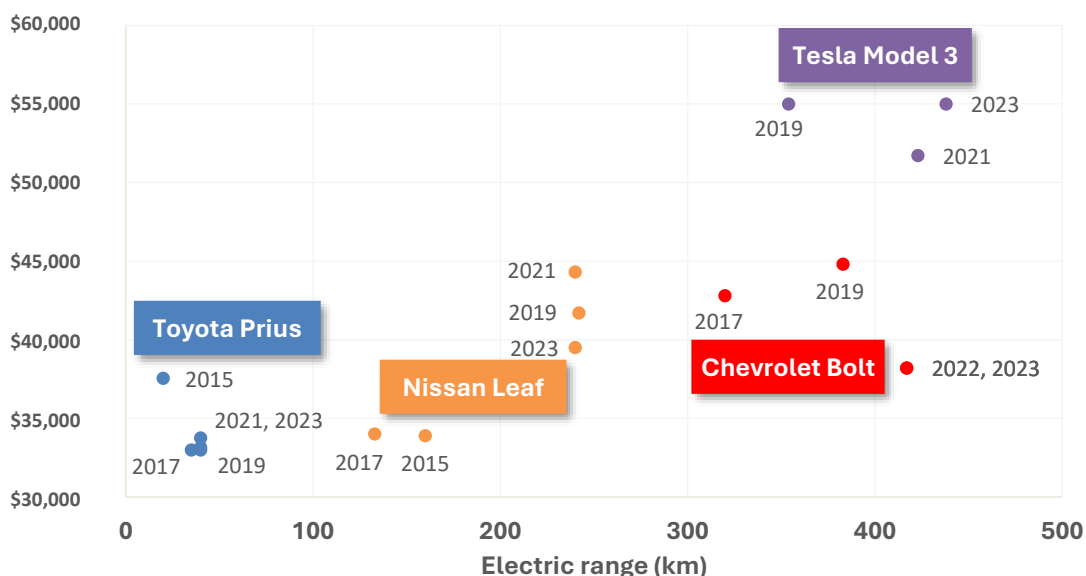
¹² Light and medium-duty vehicle registrations: Interactive dashboard, consulted on October 28, 2024, <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2022023-eng.htm>

¹³ Registration data compiled by AVEQ <https://www.aveq.ca/actualiteacutes/statistiques-saaq-aveq-sur-lelectromobilite-au-quebec-en-date-du-30-septembre-2020-infographie>

¹⁴ Battery Pack Prices Cited Below \$100/kWh for the First Time in 2020, While Market Average Sits at \$137/kWh, BloombergNEF, <https://about.bnef.com/blog/battery-pack-prices-cited-below-100-kwh-for-the-first-time-in-2020-while-market-average-sits-at-137-kwh/>

¹⁵ EV Batteries Will Be Half Their 2023 Prices In Two Years: Study, Inside EVs, October 11, 2024, <https://insideevs.com/news/737116/battery-prices-ev-study-2026>

manufacturers to offer higher performing vehicles, as this allows them to earn more credits under the ZEV standard. This trend is expected to continue, particularly as the price of batteries is expected to decrease further, reaching US\$82/kWh in 2026, a 26% decrease from 2024. In this respect, battery electric vehicles would achieve cost-of-ownership parity with gasoline vehicles in the United States, without a subsidy.¹⁶



Source: Care Guide - 2015 to 2024 editions

FIGURE 8: ELECTRIC RANGE AND THE MOST AFFORDABLE PRICE OF FOUR POPULAR EVs IN QUÉBEC, MODEL YEARS 2015, 2017, 2019, 2021 AND 2023

2.6 Heavy electric vehicles in Québec

The ZEV Act passed in 2016 only imposes regulatory credit requirements on manufacturers who sell or lease light vehicles in Québec, i.e. vehicles with a gross weight rating of 4,500 kg or less (laden weight).

As of September 30, 2024, there were 1,703 electric buses and 1,156 electric trucks registered in Québec. According to SAAQ statistics, in 2022, there were 20,484 buses and 175,190 transport trucks on its roads.¹⁷ This means that only 1.5% of the heavy vehicle fleet

¹⁶ EV Batteries Will Be Half Their 2023 Prices In Two Years: Study, Inside EVS, October 11, 2024, <https://insideevs.com/news/737116/battery-prices-ev-study-2026>

¹⁷ Données et statistiques 2022, Société de l'assurance automobile du Québec, 2023, <https://saag.gouv.qc.ca/blob/saag/documents/publications/donnees-statistiques-2022.pdf>

is electrified, while these vehicles represent 29.6% of GHGs from road transportation in Québec, according to the most recent inventory.¹⁸

2.7 Major findings and areas for improvement

The MELCCFP has taken the necessary steps to address the findings and areas for improvement identified in the 2018–2020 Implementation Report, as will be described in Section 3.

The observations in this report identify new areas for improvement.

Finding 1: The tools available to monitor the operation of the standard have been improved, but could be further optimized.

Area for improvement: Examine the possibility of improving computer tools to:

- make them more user-friendly and practical, both for the Ministère and for motor vehicle manufacturers;
- improve the user interface and share it with manufacturers so they have direct access to their account information, which is not currently possible;
- allow manufacturers to complete their declarations directly online in order to limit manual processing errors;
- automate the process of validation with the SAAQ to reduce processing times; and
- if Bill 81, *An Act to amend various provisions relating to the environment*, is passed, prepare the system for the implementation of a ZEV standard for heavy vehicles.

Finding 2: The credits earned by the industry continue to grow rapidly and would suffice to meet the requirements of the current compliance period (2022–2024) even if no new electric vehicles (EV) were sold between September 1, 2024, and September 1, 2025, provided that credits are exchanged between manufacturers. However, the tightening of the ZEV standard has put in place a series of measures to control excessive accumulation of credits, the effects of which are expected to be seen in the coming years.

Area for improvement: The progression of EVs in Québec and the surplus credit situation will be monitored to determine whether additional actions are required.

- However, this issue will need to be examined in light of the significant increase in requirements already anticipated as part of the recent tightening of the standard and the ambitious targets set by the government.

¹⁸ Inventaire québécois des émissions de gaz à effet de serre en 2022 et leur évolution depuis 1990, Gouvernement du Québec, 2024, <https://www.environnement.gouv.qc.ca/changements/ges/2022/inventaire-ges-1990-2022.pdf>

Finding 3: Electrification of the light vehicle sector has progressed significantly in Québec since the ZEV standard came into effect, achieving a market share of 32.8% in the third quarter of 2024, the highest rate in North America. The tightening of the ZEV standard set the strictest requirements on the continent, aiming for 100% ZEVs in 2035. However, the electrification of heavy vehicles is still in its early stages.

Area for improvement: To continue the electrification of the transportation sector and maintain its position as a leader, Québec must continue taking strong actions, including turning to heavy vehicles.

- In the 2030 Plan for a Green Economy (2030 PGE), the government committed to defining a ZEV standard for heavy vehicles.
- The ZEV Act should be amended and regulations be adopted to put in place a ZEV standard for heavy vehicles;
- There must also be continued support for EV demand, including through the implementation and enhancement of Québec’s Electric Vehicle Charging Strategy, as well as consumer education and awareness.
- The impact of the announced reduction in Roulez vert incentives on EV sales will be studied, as will the possible introduction of other measures to support the market.

3 Actions taken following the 2018–2020 Implementation Report

The 2018–2020 Implementation Report¹⁹, tabled in the National Assembly in January 2021, identified some findings and areas for improvement for the ZEV standard, four years after the enactment of the ZEV Act.

This section examines each of the findings raised in the report and details the actions taken since then by the Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs (MELCCFP) to address them.

3.1 Tools for operationalizing the ZEV standard

Finding 1: The available tools used for the operationalization of the standard, while functional, could be optimized.

Area for improvement: Assess how data processing tools could be improved in the following areas:

- Facilitate information sharing between motor vehicle manufacturers and the MELCCFP
- Examine the possibility of allowing motor vehicle manufacturers to access their account and transaction history in real time
- Accelerate the process for checking and processing motor vehicle manufacturer declarations by the MELCCFP, both before and after validation with the SAAQ, particularly for special cases. The target would be to halve processing time over the coming year (currently from one to two weeks) by improving the quality of data submitted by motor vehicle manufacturers (examples could be eliminating duplicate data and information on already-credited vehicles) and optimizing the automation of the reporting process.

Over the past few years, the MELCCFP's IT resources have experienced heavy demand, including the following:

- providing employees with the tools needed for telework and migrating some systems to cloud computing;
- making critical technology adjustments and security updates; and

¹⁹ *Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions*, 2018–2020 Implementation Report, Gouvernement du Québec, January 2021, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/rapport-mise-oeuvre-2018-2020-en.pdf>

- integrating new teams resulting from interdepartmental restructuring, including from the Faune and Parcs sectors and assistance programs previously under the Ministère des Ressources naturelles et de la Faune.

These activities delayed the improvement of the ZEV standard interface between manufacturers and the Ministère. However, the study to support the consolidation of the ZEV system is now a priority and work is under way.

Problems encountered with the deployment of the SAAQclic platform in January 2023 by the Société de l'assurance automobile du Québec (SAAQ) delayed validation of vehicle registrations reported by manufacturers for several months in 2023–2024. A working group was formed with SAAQ, and a technology solution—enhanced and tested with a few motor vehicle manufacturers—was deployed in 2024.

Over the past year, the validation time with SAAQ has improved significantly, from several weeks to a few hours, thanks to automation. Improvements were also made to the validation tools and the insertion of information in the Ministère's databases. The average processing time for a typical declaration was reduced from one to two weeks to less than seven days.

3.2 Collection of additional information for monitoring the standard

Finding 2: Information currently gathered from motor vehicle manufacturer declarations and various external sources (SAAQ, Institut de la statistique du Québec, DesRosiers Automotive Consultants, Natural Resources Canada, etc.) are used to monitor the standard and enable monitoring regulatory requirement compliance, but cannot detail the effects of the standard on the motor vehicle market.

Area for improvement: It would be pertinent to require more information directly from motor vehicle manufacturers regarding the state of the market for electric vehicles while guaranteeing that sensitive information would remain private, when appropriate. For example, this could mean:

- Knowledge of the cost of credit transactions among motor vehicle manufacturers would be a good indicator of the ease or difficulty of motor vehicle manufacturer experience in meeting regulatory requirements.
- Holding additional data on vehicle availability (inventories, average waiting time lists, if they exist, manufacturer's suggested retail price for different models, etc.) would make it possible to better document the effect of the transportation electrification measures put in place in Québec.

The requirement to collect new information from motor vehicle manufacturers was incorporated into regulatory texts as part of the tightening of the ZEV standard, finalized in September 2023. This new information is the price paid for the alienated credits and the sales projections for the three years following the declaration (details in Section 4.2.9).

This information is confidential under the *Regulation respecting the limit on the number of credits that may be used by a motor vehicle manufacturer and the confidentiality of some information*.²⁰

All the data collected will help better assess the standard's impact on manufacturers and better anticipate the arrival of electric vehicles, including effective planning for the deployment of charging infrastructure.

3.3 Issues with credits earned and the tightening of the standard

Finding 3: The credits earned to date by the industry as a whole (including bonus credits for the first compliance period) would suffice to meet the requirements of compliance period 2019–2021, even if motor vehicle manufacturers sold no more electric vehicles between now and September 1, 2022, on condition that credits continue to be exchanged or sold between motor vehicle manufacturers. This situation shows that motor vehicle manufacturers are able to comply to the standard in advance.

Area for improvement: The abundance of credits earned raises the question of a potential tightening of the standard and higher credit requirements.

- However, this question should be examined in the light of the gradual increase of requirements that already exists in the standard and in the ambitious targets set by the government.
- A future amended ZEV standard could also look at the possibility for the government to adjust to rapidly changing market conditions while still ensuring predictability for the industry.

The Gouvernement du Québec has strengthened the ZEV standard, following a process that took place between October 2021 and September 2023 (see Section 4, Tightening of the ZEV standard). Requirements have increased significantly to target 100% of credits by 2035 for manufacturers subject to the standard. These requirements thus provide predictability for over 10 years.

²⁰ *Regulation respecting the limit on the number of credits that may be used by a motor vehicle manufacturer and the confidentiality of some information*, <https://www.legisquebec.gouv.qc.ca/en/document/cr/A-33.02,%20r.%202>

Specific measures have also been included in the strengthened regulations to manage bonus credits, and to avoid them being earned in a way that could impede the achievement of the government's ambitious objectives. Details in this respect are provided in Section 4.2.6.

It should be noted that credits have continued to be earned since the report was tabled. As of September 1, 2024, manufacturers had approximately:

- 149,500 credits banked for previous periods (18,500 for 2018, 131,000 for 2019–2021);
- 402,000 credits banked for the first two years of the current period covering the model years 2022–2024 (for a grand total of 551,500 credits).

Requirements for 2022–2024 are estimated at 196,100 credits (actual requirements for model year 2024 will be calculated in the fall of 2025). Of this total, a maximum of 25%, or 49,000 credits, may be from past credits.

This means that 147,100 credits from 2022–2024 would be required, while 402,000 are already available. As a result, manufacturers would be able to meet the requirements for the 2024 model year, estimated at approximately 72,000 credits, even if they did not sell any electric vehicles of that model year.

The details are provided in Section 2.3.

3.4 Strong actions to maintain a leading position

Finding 4: The electrification of the light vehicle sector has progressed greatly in Québec since the ZEV standard came into effect, enabling the government to come close to its target of seeing 100,000 electric vehicles on the road by the end of 2020 (the COVID-19 pandemic and other factors have slowed this down). Québec also remains the Canadian province with the most electric vehicles on its roads and the highest ratio of electric vehicles to its total light vehicle fleet.

Area for improvement: To continue and even accelerate the electrification of Québec's light vehicle fleet and maintain its leading position, Québec needs to go on taking strong measures.

- With the 2030 Plan for a Green Economy's (2021–2026 PGE) 2021–2026 Implementation Plan (2030 IP), the government has set new light vehicle electrification targets: 1.5 million electric vehicles in circulation in 2030 and the prohibition of new sales of gasoline-powered vehicles by 2035.
- The surplus of credits earned to date by motor vehicle manufacturers suggests that tightening the ZEV standard could be one way of enabling Québec to reach these targets. The modelling of a potential scenario is illustrated in Figure 6.
- The 2021–2026 IP also anticipates that demand-side EV incentives will continue, as will the development of the charging station network and consumer education and awareness efforts.

The adoption of light zero-emission vehicles has not only continued, but has increased since 2021 (see Section 2, Report on the ZEV standard and EV profile in Québec). Québec has stepped up its electrification efforts, including:

- Increasing its 2030 target for electric vehicles in circulation in 2030 from 1.5 million EVs in the 2021–2026 Implementation Plan, to 1.6 million in the 2022–2027 IP, and 2.0 million in the 2023–2028 IP;
- Strengthening the ZEV standard in September 2023 to a level that supports this target (see Section 4, Tightening of the ZEV standard);
- Investing \$1.5 billion in structural measures to accelerate the electrification of light vehicles (incentives, education, charging infrastructure, etc.);
- Unveiling Québec's first Electric Vehicle Charging Strategy²¹ in September 2023, with a budget of \$514 million over 5 years;

²¹ Québec's Electric Vehicle Charging Strategy 2023–2030, Gouvernement du Québec, 2023, <https://cdn-contenu.quebec.ca/cdn-contenu/environnement/vehicules-electriques/recharge/Strategie-quebecoise-recharge-vehicules-electriques.pdf>

- Amending the *Environment Quality Act* through the *Act mainly to reinforce the enforcement of environmental and dam safety legislation, to ensure the responsible management of pesticides and to implement certain measures of the 2030 Plan for a Green Economy concerning zero emission vehicles* (2022, chapter 8, hereinafter the “2022 Act, chapter 8”) to confer authority to prohibit the sale of combustion vehicles no later than 2035;
- Organizing a public pre-consultation in November 2023 to fuel the discussion on the draft regulation to prohibit the sale of internal combustion vehicles and engines (aimed at banning the sale of gasoline and diesel vehicles in Québec by 2035) and for a ZEV standard specifically for heavy vehicles;
- Publishing a draft regulation in the *Gazette officielle du Québec* on July 10, 2024. The *Regulation prescribing certain prohibitions as regards motor vehicles and internal combustion engines* was enacted on December 11, 2024, and published in the *Gazette* on December 26, 2024;
- Continuing work on a ZEV standard for heavy vehicles, including conducting a study entitled “Portrait of heavy-duty vehicles in Québec, electrification potential and heavy-duty ZEV standard” following a tendering process;
- Tabling Bill 81, *An Act to amend various provisions relating to the environment*, in the National Assembly on November 20, 2024, to amend, among other things, the ZEV Act to add powers that will allow for the enactment of a ZEV regulation specifically for heavy motor vehicles.

4 Tightening of the ZEV standard

In the 2021–2026 IP, the Gouvernement du Québec committed to increasing the requirements of the ZEV standard for light vehicles. The objective was twofold: To achieve a more ambitious number of electric vehicles on Québec roads in 2030 and to review the operation of the standard to better monitor accumulated and future credits. This is to ensure that targets for transport electrification and GHG reduction are met.

4.1 Legislative and regulatory process

The 2022 Act, chapter 8²², tabled in Québec’s National Assembly on October 5, 2021, and sanctioned on April 12, 2022, introduced a new power to the ZEV Act concerning the future use of credits earned by manufacturers prior to 2025. This enabling power will allow for

A measure to complement the ZEV standard: The Regulation prescribing certain prohibitions as regards motor vehicles and internal combustion engines

The 2030 Plan for a Green Economy also introduced the goal of prohibiting the sale of new gasoline vehicles in 2035. By its nature, the ZEV standard is an incentive system based on the acquisition of credits, which can be earned through the sale of vehicles or through trading with other manufacturers. A credit deficit may also be filled by the payment of a charge. The desire to prohibit the sale of combustion vehicles, announced in the 2030 PGE, therefore requires a complementary regulation.

To that end, the 2022 Act, chapter 8, includes amendments to certain provisions of the *Environment Quality Act* (Chapter Q-2, hereinafter the “EQA”) requiring a regulation prohibiting the offering for sale or lease, the exhibition for sale or lease, or the selling or leasing of certain classes of motor vehicles that emit pollutants by December 31, 2035, or leasing, selling or leasing certain categories of motor vehicles emitting pollutants no later than December 31, 2035.

The *Draft Regulation prescribing certain prohibitions as regards motor vehicles and internal combustion engines* was published in the *Gazette officielle* on July 10, 2024, for a comment period that ended on August 25, 2024. The Regulation was enacted on December 11, 2024, and published in the *Gazette officielle* on December 26, 2024, pursuant to the 2022 Act, chapter 8, which required it before December 31, 2024.

²² *An Act mainly to reinforce the enforcement of environmental and dam safety legislation, to ensure the responsible management of pesticides and to implement certain measures of the 2030 Plan for a Green Economy concerning zero emission vehicles* (2022, chapter 8), <https://www.environnement.gouv.qc.ca/ministere/loi-102.htm>

adjustments to credits earned up to the 2024 model year, as described in the regulatory amendments presented in Section 4.2.6.

In addition, draft regulations to tighten the regulatory requirements of the ZEV standard, namely the Regulation respecting the application and the Regulation respecting the limit on the number of credits and the confidentiality, were published as draft regulations in the Gazette officielle du Québec three times:

- January 26 to March 12, 2022: A total of 84 submissions and comments were received from various players in the automotive industry (associations, manufacturers, dealers), as well as from the fuel and electric charging sectors. Environmental and management groups, a municipality, associations promoting transport electrification and intelligent transportation and the public also participated.
- June 8 to August 22, 2022: This time, 19 submissions and comments were received, mostly from stakeholders who had already commented, and from two additional motor vehicle manufacturers.
- May 3 to June 16, 2023: During this final consultation period, 24 submissions and four comments from the public were received.

The content of the comments received was similar during each consultation: The majority of manufacturers subject to the standard felt that the requirements and penalties were too stringent and wanted more flexibility, while other interest groups argued instead for faster tightening of the ZEV standard and restrictions on plug-in hybrid vehicles.

Adjustments to the draft regulations followed the analysis of the submissions and comments received after each consultation period, leading to the final version published in the Gazette officielle du Québec on September 20, 2023, which came into force on October 5, 2023.

Further details on the regulatory process and associated costs and benefits can be found in the Regulatory Impact Analysis of the tightening of the zero-emission vehicle standard.²³

²³ Analyse d'impact réglementaire du resserrement de la norme véhicules zéro émission - Règlement modifiant le Règlement d'application de la Loi visant l'augmentation du nombre de véhicules automobiles zéro émission au Québec afin de réduire les émissions de gaz à effet de serre et autres polluants, gouvernement du Québec, 2023, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/analyse-impact-reglementaire-resserrement-norme-vze-juillet2023.pdf>

4.2 Key changes during the tightening of the standard

The detailed operation of the ZEV standard for model years 2018 to 2024 is described in Section 2 of the 2018–2020 Implementation Report.²⁴ This section illustrates the main changes made during the tightening of the standard, organized by theme.

4.2.1 Target manufacturers and ranking

Prior to the regulatory amendments, motor vehicle manufacturers were ranked in three categories:

- Small volume manufacturers (fewer than 4,500 vehicles sold annually on average): not subject to the ZEV standard can voluntarily participate and declare the number of their eligible vehicles and exchange or sell earned credits;
- Intermediate volume manufacturers (4,500 to 19,999 vehicles): Subject to the ZEV standard;
- Large volume manufacturers (20,000 or more vehicles): Subject to the ZEV standard, with additional requirements regarding the minimum number of credits they are required to earn from zero-emission vehicles.

This classification is the one applied until the 2024 model year, inclusively.

Beginning in the 2025 model year, intermediate volume manufacturers will be included with large volume manufacturers. Thus, for all target manufacturers (i.e., those selling more than 4,500 vehicles annually on average), the thresholds for earning ZEV credits will be eliminated. These manufacturers will have the freedom to choose the type of vehicle they want to bring to market but must ensure that they earn enough credits to meet their requirements. Small volume manufacturers will continue to be able to voluntarily participate in the credit market.

The method for calculating the manufacturer's category remains unchanged: It is calculated annually based on the average sales and leases over the three preceding years and allows a manufacturer to change categories.

4.2.2 Vehicles eligible for credits

Eligible light vehicles (less than 4,500 kg) are still divided into four categories:

- Zero-emission vehicles (ZEV)
- Low-emission vehicles (LEV)
- Vehicles with a range extender (VRE)

²⁴ *Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions*, 2018–2020 Implementation Report, Gouvernement du Québec, January 2021, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/rapport-mise-oeuvre-2018-2020-en.pdf>

- Low-speed vehicles (LSV)

These vehicles can qualify as new or reconditioned vehicles.

However, the regulatory amendment resulted in a change in the allocation of credits for each of these vehicle types.

The list of eligible vehicles²⁵ is published in the *Gazette officielle du Québec* no later than May 1. It is also available on the website of the Ministère, where it may be updated during the year.

4.2.2.1 Zero-emission vehicles (ZEV)

Zero-emission vehicles (ZEV) are either battery electric vehicles (BEV) or hydrogen fuel cell vehicles (HFCV). They emit no GHG when in use, except for air conditioning purposes.

Up to the 2024 model year, the number of credits awarded for ZEVs (up to a maximum of 4.00 credits) varied based on their range, and is calculated with a formula set out in the regulation. To obtain credits, the minimum electric range, calculated using the “UDDS” method,²⁶ is 80.47 km.

Beginning in the 2025 model year, all ZEVs will earn 1 credit regardless of their electric range. This change limits the number of credits available, thus avoiding excess credits. In addition, the change allows for a more accurate estimate of the percentage of ZEVs that each manufacturer must place on the market to meet its requirements if it chooses to comply only by selling its own ZEVs without buying credits or paying charges.

4.2.2.2 Low-emission vehicles (LEV)

Low-emission vehicles (LEV), which currently only include plug-in hybrid electric vehicles (PHEV), are equipped with both an electric motor and an internal combustion engine. They can work in full electric, hybrid or, when their battery is drained, with the combustion engine only.

Up to the 2024 model year, the number of credits awarded for LEVs (up to a maximum of 1.10 credits) varies based on their range, and is calculated with a formula set out in the regulation. A bonus of 0.20 credits (up to a maximum of 1.30 credits per vehicle) may be awarded if the vehicle passes the “EPA US06” test,²⁷ which assesses performance under brisk acceleration

²⁵ List of new or reconditioned motor vehicles eligible for credits, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/liste-vehicules-admis-en.htm>

²⁶ “EPA light-duty urban dynamometer driving schedule (UDDS)” method provided for in U.S. 40 CFR Appendix I to Part 86

²⁷ “EPA US06 Driving Schedule for Light-Duty Vehicles and Light-Duty Trucks” method provided for in U.S. 40 CFR Appendix I to Part 86

conditions and at higher speeds than standard test protocols. The minimum electric range for earning credits is 16 km.

Beginning with the 2025 model year, the sale or lease of a new LEV will be eligible for 0.5 credits if the electric range of the vehicle ($A \times 0.7$) is equal to or greater than 80 km.

It is important to note that the value of the electric range used for the calculation, (A), for 2025 and subsequent years, is the so-called “charge-depletion mode,” a methodology developed by the U.S. federal government. That value, multiplied by a factor of 0.7, is similar to the electric range published by Natural Resources Canada (NRCan) in the Fuel Consumption Guide.²⁸ It is more representative of vehicle range under actual conditions than the “UDDS” range value used for credit calculations for 2024 and earlier model years.

For the 2025, 2026 and 2027 model years, a new LEV with an electric range ($A \times 0.7$) equal to or greater than 50 km but less than 80 km is eligible for the number of credits determined using the following equation:

$$\text{Nb LEV credits} = ((A \times 0.7) / 200) + 0.05$$

For example, an LEV with a range of 60 km ($A \times 0.7$) will receive 0.35 credit.

For certain vehicles with a gross vehicle weight rating of between 3,856 kg and 4,500 kg, including large pickup trucks, tests to determine the range value (A) in the U.S. regulations do not apply. In these specific cases, LEVs will be eligible for 0.5 credits regardless of their electric range.

The choice to award a maximum of 0.5 credits for an LEV, as opposed to 1 credit for ZEVs, is intended to encourage the marketing of ZEVs, particularly when credit requirements are high.

4.2.2.3 Vehicles with a range extender (VRE)

Vehicles with a range extender (VRE) are plug-in electric vehicles that are also equipped with a gasoline engine that recharges the vehicle’s battery, but only when it is drained. This type of vehicle requires the battery to be recharged when a distance equivalent to that of the electric mode has been travelled using energy from the gasoline engine. Up to the 2024 model year, the number of credits awarded for VREs (up to a maximum of 4.00 credits) varied based on their “UDDS” range, and is calculated using the formula set out in the regulation (identical to the one applied to ZEVs).

In addition, up to the 2024 model year, as with ZEV credits, credits earned from the sale of VREs can be used to meet the regulatory obligations specific to large volume manufacturers. However, a maximum of 50% of credits may be from that category.

²⁸ Natural Resources Canada, 2024 Fuel Consumption Guide, <https://natural-resources.canada.ca/energy-efficiency/transportation-alternative-fuels/2024-fuel-consumption-guide/21002>

Since VREs have a gasoline engine, they will no longer be considered ZEVs beginning in the 2025 model year, but rather as an LEV. The method for calculating VRE credits will be therefore aligned with the one described in Section 4.2.2.2, up to a maximum of 0.5 credits per vehicle.

4.2.2.4 Low-speed vehicles (LSV)

Low-speed vehicles (LSVs) are ZEVs designed to attain a maximum speed of between 32 km/h and 40 km/h and with an electric range of at least 40 km

Up to and including the 2024 model year, the sale or lease of a new LSV that meets the conditions set out in the regulation earns 0.15 credits. It should be noted that, until the end of the 2022–2024 compliance period, LSV credits cannot account for more than 25% of the required total credits, and cannot be used to meet the minimal ZEV credit requirements for large volume manufacturers.

However, given that LSVs are ZEVs, and that they have an interesting potential for use in certain areas, such as urban delivery, beginning in the 2025 model year, manufacturers will earn 1 credit per vehicle, as indicated in Section 4.2.2.1. In addition, the LSV credit limit on the total amount of credits required will be eliminated. The regulatory amendments should therefore make them more attractive for marketing in Québec.

To date, no manufacturer has applied to qualify for LSV credits and only about sixty LSVs are registered in Québec at this time. Most of these vehicles are not trademarks owned by manufacturers subject to the ZEV standard.

4.2.3 Reconditioned vehicles

Reconditioned vehicles in the four preceding categories originating outside the province can also earn credits when sold or leased and registered in Québec for the first time. The eligibility conditions are set out in the Regulation.

The number of credits earned for imported vehicles is marginal (nearly 1,300 since the regulation came into force, or less than 0.2% of the total credits earned). Furthermore, no manufacturer has taken advantage of the option to import other makes of vehicles than its own.

It was assessed that weighting credits according to mileage, in particular with a 40,000 km ceiling at the time of import, was a restrictive factor for some motor vehicle manufacturers. As a result, the rules for reconditioned vehicles were revised as part of the regulatory amendment, which came into force on October 5, 2023.

Prior to that date, the number of credits awarded per reconditioned vehicle was adjusted based on the mileage recorded on the registry of the Société de l'assurance automobile du

Québec (SAAQ) when the vehicle was imported into Québec, compared to a new vehicle, based on the following scale:

- Between 0 and 10,000 km = 80%
- Between 10,001 and 20,000 km = 75%
- Between 20,001 and 30,000 km = 60%
- Between 30,001 and 40,000 km = 50%
- Over 40,000 km = No credit

Credits resulting from the sale or lease of reconditioned vehicles can only account for a maximum of 30% of the total credits required.

Since October 5, 2023, the maximum mileage at the time of the first registration in Québec to earn credit has increased to 100,000 km. In addition, the weighting of the number of credits awarded for the reconditioned vehicle compared to a new vehicle is now based on the difference between the calendar year of its first registration in Québec and the model year:

- 0 or less = 100%
- 1 = 80%
- 2 = 70%
- 3 = 60%
- 4 = 50%
- Over 5 = No credit

For example, a reconditioned ZEV from the 2024 model year with 50,000 km on the odometer, imported to Québec in June 2024 and earning 4 credits when new, would earn all its credits (calendar year of registration 2024 — model year 2024 = 0, therefore 100% of 4 credits if new, or 4 credits).

However, as the mechanism for awarding credits changes for ZEVs and LEVs after September 1, 2025, the number of credits for reconditioned vehicles from the 2024 and earlier model years will be adjusted. The same 2024 vehicle, if it were new, would earn 1 credit after that date. If registered in November 2025, the calculation would be as follows: calendar year of registration 2025 — model year 2024 = 1, or 80% of 1 credit if new, so 0.8 credits.

Vehicles must always meet certain criteria to ensure that they are in good condition. For example, they must be covered by the vehicle manufacturer's conventional warranty.

In order to guide the automotive market toward the objective of the 2030 PGE, which aims to ensure that 100% of new vehicles sold are ZEVs by 2035, it is essential that the use of reconditioned vehicle credits be restricted during future compliance periods.

Prior to the regulatory amendment, up to 30% of the total credits for a compliance period could be from credits related to reconditioned vehicles. That percentage will gradually decrease over the compliance periods:

- 2022–2024: 30%
- 2025–2027: 20%
- 2028–2030: 15%
- 2031–2033: 10%
- Subsequent three-year periods: 0%

4.2.4 Credit requirements

In order to determine the requirements that apply to each covered motor vehicle manufacturer, the MELCCFP applies the percentage of credits required by regulation for a given model year to average Québec sales and leases by the manufacturer across-the-board for all technologies.

Credit requirements put in place following the implementation of the ZEV standard in 2018 remain unchanged until the 2024 model year (Figure 9). These credit requirements gradually increased from 3.5% in 2018 to 19.5% in 2024. In addition, between the 2020 and 2024 model years, large volume manufacturers are required to earn a percentage of credits attributable exclusively to the sale of ZEVs. For the 2024 model year, the minimum credit requirement to be earned by large volume manufacturers subject to the standard will thus be 19.5%, and at least 14.0% must come exclusively from the sale of ZEVs.

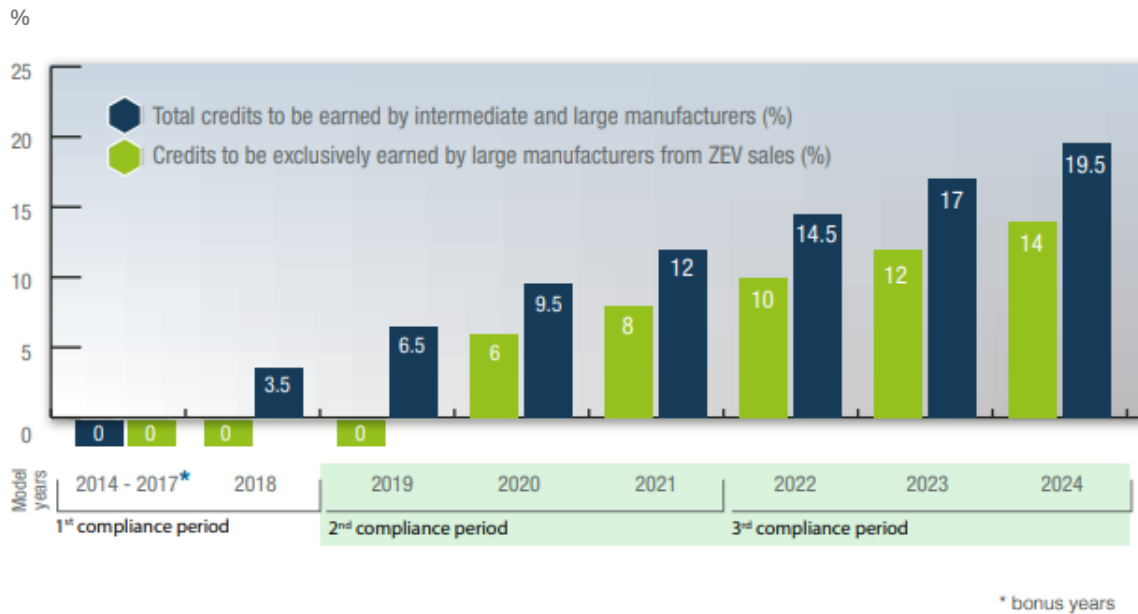


FIGURE 9: CREDIT REQUIREMENTS AS A PERCENTAGE OF AVERAGE SALES BY EACH MANUFACTURER SUBJECT TO THE STANDARD, BY MODEL YEAR, 2018 TO 2024

Since a single vehicle can generate up to 4 credits according to the formulas set out in the Regulation, the market share requirement is significantly lower than the credit requirement itself. This is illustrated by the red dotted lines in Figure 10.

The tightening of the ZEV standard changed the number of credits awarded per electric vehicle for 2025 and subsequent model years (see Section 4.2.2). Credit requirements have also been strengthened beginning in model year 2025 to support the achievement of Québec’s objectives, including a target of two million EVs on Québec roads in 2030 and 100% EV sales in 2035 (see Figure 10).

In addition, there will no longer be any specific ZEV credit requirements for large volume manufacturers for 2025 and subsequent model years. As noted in Section 4.2.1, the requirements will be uniform for all manufacturers subject to the standard.

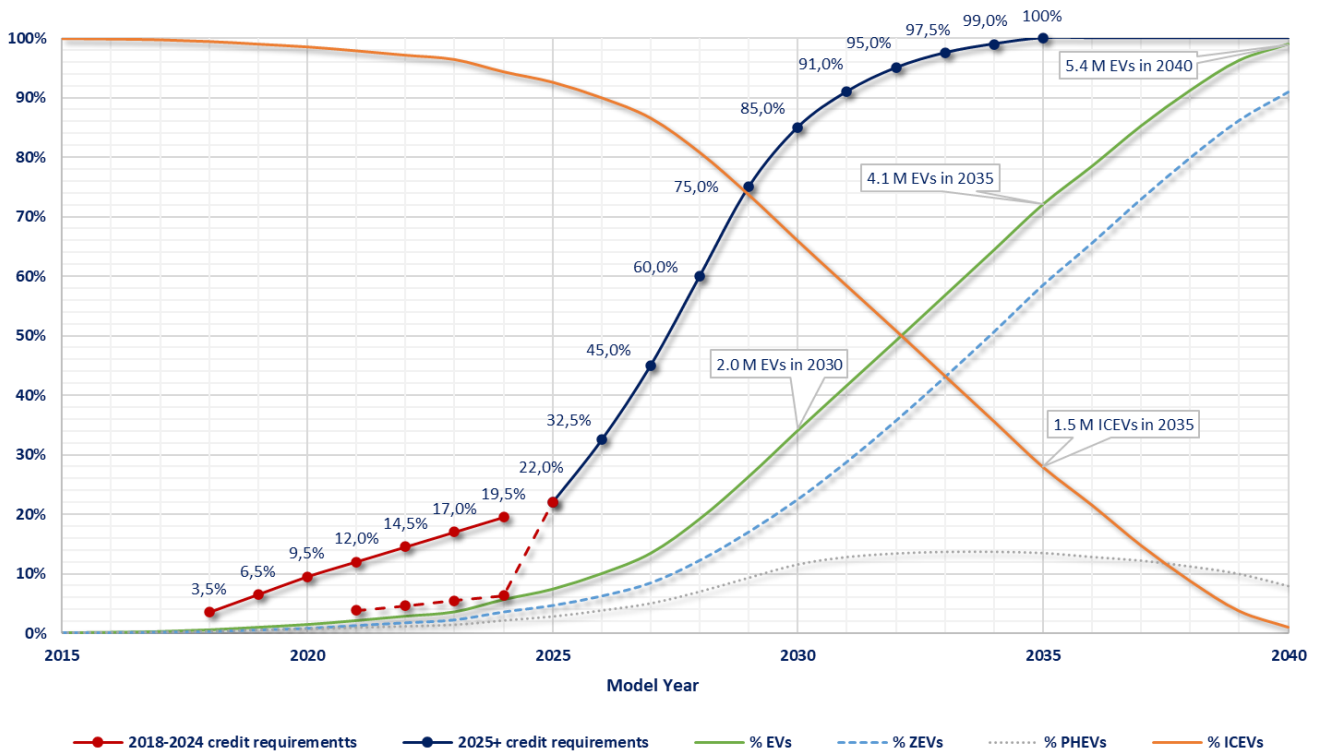


FIGURE 10: NEW CREDIT REQUIREMENTS, AND MODELLING OF THE EVOLUTION OF QUÉBEC’S LIGHT VEHICLE FLEET UNTIL 2040

The credit requirement for a given model year is usually calculated based on average Québec sales and leases by that motor vehicle manufacturer across-the-board for all technologies, over the three model years preceding the model year in question. However, there is an alternative calculation method for manufacturers whose new vehicle sales or rentals have, due to circumstances beyond their control and that they could not foresee, diminished by at

least 30% in relation to the preceding model year (Section 19 of the Regulation). At the request of the manufacturer, and if demonstrated to the Minister's satisfaction, the requirements can then be calculated based on the total number of sales or leases in the model year in question (the one in which sales diminished).

This alternative calculation method existed prior to the regulatory amendment and was used by four car manufacturers for 2020 when vehicle sales were affected by the pandemic. Following the tightening of the ZEV standard, a motor vehicle manufacturer may also request this calculation method if the number of new vehicles sold or leased for a given model year makes it impossible to attain the number of credits it must earn, even if it has sold only zero-emission vehicles. This avoids a mathematical impossibility resulting from fluctuating sales.

4.2.5 Compliance periods

Compliance periods are periods for which motor vehicle manufacturers need to meet predetermined model year vehicle regulatory requirements. Reporting deadlines on credits due to the government are set on September 1st of the calendar year that follows the end of the given compliance period.

The first compliance period, relating to the first implementation year of the ZEV Act, covered model year 2018 vehicles sold in Québec. Reporting was due on September 1, 2019, and included credits earned for the 2014–2018 model year vehicles and bonus years. The results of that period were published on April 15, 2020.²⁹

Starting with model year 2019, compliance periods have a duration of three years. For example, at the end of the 2019–2021 compliance period on September 1, 2022, motor vehicle manufacturers must have declared all ZEV and LEV sales for model years 2019, 2020 and 2021 in order to earn the credits they need to meet their requirements for those three years (Figure 9). The results of that period were published on May 3, 2023.³⁰

Even if requirements are set for each year, reporting must cover all three years of a compliance period. This approach enables greater flexibility in applying the ZEV Act and marketing vehicles and does not unfairly penalize manufacturers for special issues (such as unexpected lower sales for a given model year, model years of different duration, etc.).

As seen in the results, the reporting motor vehicle manufacturers met the requirements of the first two compliance periods (2018 and 2019–2021), either through the credits they earned themselves, or by acquiring credits from other manufacturers.

²⁹ Report on the Results of the First Compliance Period, April 2020, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/bilan-norme-vze-periode-1-en.pdf>

³⁰ Assessment of the results for the 2019–2021 compliance period, May 2023, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/bilan-norme-vze-periode-2019-2021-en.pdf>

The current compliance period covers the 2022, 2023 and 2024 model years, with reporting due on September 1, 2025. After the end of this period, starting with the 2025 model year, the majority of the regulatory amendments presented in Section 4.2 will come into force.

4.2.6 Use and management of excess credits

Motor vehicle manufacturers can use credits earned in earlier compliance periods to meet their requirements, up to a certain ceiling. For the current compliance period (period 3, model years 2022 to 2024), credits earned earlier by a given manufacturer can cover up to 25% of its regulatory requirements. As a consequence, even if some motor vehicle manufacturers earned a significant number of credits during the first compliance period, they will still need to acquire at least 75% of their needs in new credits to meet the requirements of the current period.

The credit limits between periods have been tightened during the strengthening of the regulations in order to:

- address the large number of credits earned since the coming into force of the ZEV standard; and
- ensure that the standard contributes to government objectives, including the goal of 100% of new vehicles sold being ZEVs by 2035.

The maximum percentage of total credits that a manufacturer must earn that can be filled by credits from an earlier period for each compliance period is as follows:

- | | |
|----------------------------------|-----|
| ▪ 2019–2021: | 35% |
| ▪ 2022–2024: | 25% |
| ▪ 2025–2027: | 20% |
| ▪ 2028–2030: | 15% |
| ▪ 2031–2033: | 10% |
| ▪ Subsequent three-year periods: | 0% |

This measure is part of the provisions put in place to manage credits following finding 3 from the 2018–2020 Implementation Report (see Section 3.3). In addition:

- In the fall of 2025, at the end of the 2022–2024 period, unused or alienated credits, including those from previous periods (2018 and 2019–2021), will be divided by 2.7. This factor corresponds to the average number of credits awarded per vehicle during the compliance period consisting of the 2019, 2020 and 2021 model years.
- Credits remaining after this operation may only be used for the 2025–2027 period.
- As stated in Sections 4.2.2.1 and 4.2.2.2, starting in the 2025 model year, the maximum number of credits per vehicle will be reduced from 4 to 1 for a ZEV, and from 1.3 to 0.5 for an LEV.
- These credits can only be used in the compliance period in which they were earned and the subsequent period, after which they will expire.

4.2.7 *Purchase of credits from other manufacturers*

If the credits earned using the preceding methods are insufficient to comply with the standard, manufacturers can acquire credits from other manufacturers that hold excess credits. In this respect, small motor vehicle manufacturers that are not subject to the standard can participate in the credit market voluntarily and exchange credits with manufacturers that are subject to the standard.

The MELCCFP is informed of the number and type of credits exchanged, and this information is included in the annual results published on the MELCCFP's ZEV standard page.³¹ As a result of the regulatory amendment, the price paid for these credits at the time of exchange (or the monetary value of the goods or services exchanged for these credits) is now required but the information will remain confidential.

4.2.8 *Charges*

At the end of a compliance period, motor vehicle manufacturers that have not earned the number of credits they need to meet their regulatory requirements must pay a charge.

For the current period, covering the 2022 to 2024 model years, this charge is \$5,000 for each missing credit.

With the regulatory amendment, starting with the period covering the 2025 to 2027 model years, the value of a credit is set at \$20,000. This value will be indexed on January 1 of each year beginning in 2027, based on the rate calculated in accordance with Section 83.3 of the *Financial Administration Act* (chapter A-6.001). The Minister will publish the result of this indexing by way of a notice in the *Gazette officielle du Québec* or by any other means deemed appropriate.

The amount of the charge per missing vehicle will therefore remain approximately the same, as the maximum amount of credits per vehicle will be decreased from 4 to 1 at the same time.

4.2.9 *Additional information required from manufacturers*

In response to the second finding and area for improvement from the 2018–2020 Implementation Report, and as noted in Section 3.2, manufacturers must now report:

- When a credit is alienated: the price paid for that credit or, as applicable, the monetary value of the goods or services received or to be received in exchange for those credits.

³¹ Zero-emission vehicle (ZEV) standard, <https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/index-en.htm>

- When declaring annual sales: the number of zero-emission motor vehicles (ZEV) and low-emission vehicles (LEV) that the manufacturer plans to sell for each of the three years following the model year of the declaration.

This information is confidential under the Regulation respecting the limit on the number of credits and confidentiality.

The requirement to declare the price or value of the alienated credits has been in effect since October 2023. The first summary declarations from manufacturers, including three-year projections, were received by the MELCCFP in August 2024.

4.3 Comparison to other ZEV standards in North America

California was the first state in the world to implement a ZEV standard for light vehicles in 1990. Its regulations have undergone a number of consolidations, the most recent being completed on November 30, 2022, the main amendments of which will apply beginning in the 2026 model year. Like Québec, California has seen manufacturers earn a large number of credits and has recognized the need to strengthen its ZEV standard in order to achieve its environmental and electrification objectives, including 100% EV sales in 2035.

Other US states are able to adopt California standards through section 177 of the *Clean Air Act*.³² Currently, ten states apply California ZEV regulations, including several that border Québec: Connecticut, Colorado, Maine, Maryland, Massachusetts, Minnesota, New Jersey, New York, Oregon, Rhode Island et Vermont. With California, these states account for nearly 30% of new light vehicle sales in the United States. It should be noted that a ZEV standard will also be in effect in Minnesota and Washington State for the 2025 model year.

British Columbia also adjusted its ZEV standard in July 2024, implementing California's new system for 2026 and subsequent model years. As in California, British Columbia's credit requirement is 100% in 2035, but British Columbia's progression toward that objective is faster than in California, approaching that of Québec.

Finally, Environment and Climate Change Canada (ECCC) amended the *Regulations Amending the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*³³ in December 2023, adding a section on a federal ZEV standard for 2026 and subsequent model years. That new framework operates in a manner similar to the California standard, while providing increased flexibility for LEVs in the early years. The requirements imposed on manufacturers, with the "softest" progression of ZEV standards in North America, apply across the country, without any regional distinction. Given that the Canadian

³² States that have Adopted California's Vehicle Standards under Section 177 of the Federal Clean Air Act, California Air Resources Board, 2019.

<https://ww2.arb.ca.gov/sites/default/files/2019-03/177-states.pdf>

³³ *Regulations Amending the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*: SOR/2023-275, Canada Gazette, Part II, Volume 157, Number 26,

<https://gazette.gc.ca/rp-pr/p2/2023/2023-12-20/html/sor-dors275-eng.html>

ZEV standard is independent of Québec's, and is less demanding, we believe that it will have a positive impact on the Québec market, which will become a preferred location for the distribution of required vehicles in Canada, through its measures to support demand and its own ZEV standard.

Like Québec, California, British Columbia and Canada will implement a system where each ZEV will generate 1 credit, but this mechanism will come into effect beginning in the 2026 model year rather than 2025. As a result, the tightening adopted by Québec largely aligns its ZEV standard with other similar regulations in North America, which together account for 42% of the Canada-US market.³⁴

Certain terms and conditions remain specific to Québec, such as the allocation of credits for reconditioned vehicles imported into Québec, the existence of three-year compliance periods, and a smaller number of credits granted for PHEVs (0.5 credits compared to 1 in California, British Columbia and Canada). However, Québec does not impose restrictions on the use of these credits to meet the requirements, unlike other jurisdictions that impose a minimum threshold of 80% ZEV credits. Note that for Canada, the percentage is degressive for PHEVs: 45% for model year 2026, 30% for model year 2027, and 20% for 2028 and subsequent model years.

A comparison of the progression of requirements under the various ZEV standards in North America is presented in Figure 11.

³⁴ *Regulations Amending the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*: SOR/2023-275, Canada Gazette, Part II, Volume 157, Number 26, <https://gazette.gc.ca/rp-pr/p2/2023/2023-12-20/html/sor-dors275-eng.html>

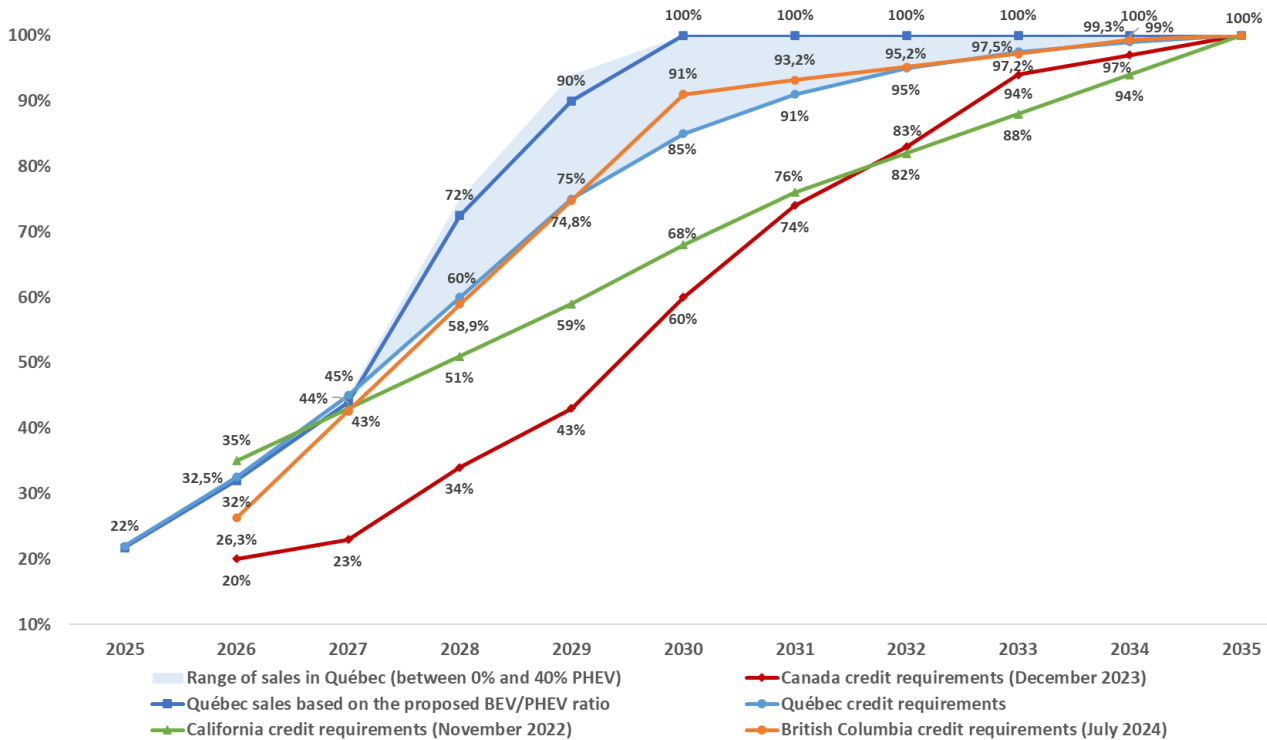


FIGURE 11: CREDIT REQUIREMENTS FOR QUÉBEC, CALIFORNIA, BRITISH COLUMBIA AND CANADA

It should be noted that a ZEV standard for heavy vehicles is in effect in California and ten U.S. states that have adopted the same requirements.³⁵ In addition, as part of a priority fleet standard,³⁶ California set a target of EVs representing 100% of new heavy vehicle sales in 2036. British Columbia also announced its intention to implement a ZEV standard for medium and heavy vehicles, although adoption or implementation dates are currently unknown. For its part, in the 2030 Emissions Reduction Plan,³⁷ Canada’s government set targets of 35% electric heavy vehicles by 2030 and 100% by 2040, where technology permits. However, the development of a Canadian heavy ZEV standard, which has been discussed for several years, appears to be suspended at this time, as ECCC focuses instead on

³⁵ Advanced Clean Trucks, California Air Resources Board, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks>

³⁶ Advanced Clean Trucks, California Air Resources Board, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets>

³⁷ 2030 Emissions Reduction Plan: Clean Air and a Strong Economy, Government of Canada, 2022, https://publications.gc.ca/collections/collection_2022/eccc/En4-460-2022-eng.pdf

harmonizing heavy vehicle performance standards governing pollutants^{38 39} and GHG⁴⁰ from new vehicles with those of the US Environmental Protection Agency.

4.4 ZEV standards outside North America

In January 2024, the United Kingdom was the first country in Europe to adopt a ZEV standard. The requirements include that 80% of new cars and 70% of new vans must be ZEVs by 2030, with a target of 100% by 2035.⁴¹

China is currently the only other country to use a system similar to a ZEV standard. Under its legislation, credits are required based on EV sales, as well as GHG emissions. In October 2020, China announced its intention to make all new vehicles sold in the country “eco-friendly” by 2035. For example, at least 50% of vehicles sold will need to be “new energy,” i.e., electric, plug-in hybrids or fuel cell vehicles. The other half will be non-plug-in hybrids.⁴²

³⁸ Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, U.S. Environmental Protection Agency, <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-multi-pollutant-emissions-standards-model>

³⁹ Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicles Standard, U.S. Environmental Protection Agency, <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-and-related-materials-control-air-pollution>

⁴⁰ Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles Phase 3, U.S. Environmental Protection Agency, <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-standards-heavy-duty>

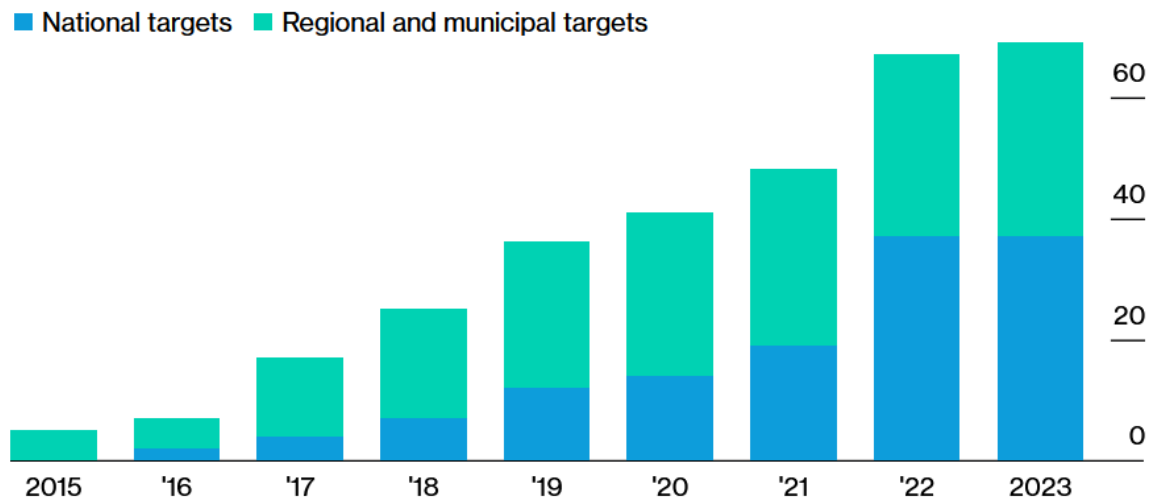
⁴¹ Pathway for zero emission vehicle transition by 2035 becomes law, UK Government, 2024, <https://www.gov.uk/government/news/pathway-for-zero-emission-vehicle-transition-by-2035-becomes-law>

⁴² China plans to phase out conventional gas-burning cars by 2035, Nikkei Asia, 2020, <https://asia.nikkei.com/Business/Automobiles/China-plans-to-phase-out-conventional-gas-burning-cars-by-2035>

5 Elsewhere in the world

The 2030 PGE, unveiled by the Gouvernement du Québec on November 16, 2020, set out the target of prohibiting the sale of new gasoline powered light vehicles starting in 2035. The *Regulation prescribing certain prohibitions as regards motor vehicles and internal combustion engines*,⁴³ enacted in December 2024, moves in the same direction by prohibiting the sale of new light vehicles equipped with a combustion engine, including PHEVs, as of December 31, 2035.

Even without ZEV standards, a growing number of countries have announced similar targets (see Figure 12).⁴⁴ In 2023, 38 countries, including Canada, the United Kingdom and the countries of the European Union, announced their intention to prohibit sales of gasoline vehicles.



Source: Bloomberg

FIGURE 12: NUMBER OF COUNTRIES WITH A TARGET FOR PHASING OUT SALES OF LIGHT COMBUSTION VEHICLES

Canada and the United Kingdom, like Québec, British Columbia, California and 13 other American states, have implemented a ZEV standard to strive towards 100% EV sales by 2035. On the other hand, since 2020 the European Union has opted for a new CO₂ emissions target

⁴³ Certain prohibitions as regards motor vehicles and internal combustion engines, 2024, https://www.publicationsduquebec.gouv.qc.ca/fileadmin/gazette/pdf_encrypte/lois_reglements/2024A/107186.pdf

⁴⁴ Auto CEOs Aren't Telling the Whole Story About Phasing Out Combustion Cars, Bloomberg, October 25, 2024, <https://www.bloomberg.com/news/newsletters/2024-10-25/auto-ceos-aren-t-telling-the-whole-story-about-phasing-out-combustion-cars>

framework for the automotive industry as a whole. Manufacturers must comply with an industry-wide CO₂ emissions target that is gradually reduced to 0 grams per km in 2035 (zero-emission threshold), subject to significant financial penalties.

Norway is the undisputed world leader in vehicle electrification. By 2017, the country had implemented several stringent measures, such as high taxes for gasoline-powered vehicles, a tax break for electric vehicles, and toll systems, to fully electrify new light vehicle sales by 2025. Norway is on track to meet its target: In September 2024, 96.4% of newly registered vehicles were BEVs.⁴⁵

Although China has less specific decarbonization targets (it seems to target 2035 for the abandonment of gasoline and diesel vehicles, but is leaving room for 50% of conventional hybrid sales⁴⁶), it is nonetheless the second most advanced country in the adoption of EVs. As of July 2024, over 50% of light vehicles sold in China were BEVs or PHEVs.⁴⁷ This rapid increase (e.g., EV shares were only 7% three years ago) is the result of massive investments in supply chains.

In Europe, the situation has been more delicate in the past year, as some countries have withdrawn their purchase subsidies. This slowdown is also part of a broader context that affects the automotive industry as a whole. However, sales rebounded in September 2024, rising 24% in the United Kingdom, where manufacturers offer large rebates on EVs to comply with the new ZEV standard in place, and 8.7% in Germany.⁴⁸

Despite these challenges, global sales of electric vehicles continue to grow, although less rapidly than between 2020 and 2023. The market share of EVs is estimated at 19.2% for 2024,⁴⁹ up 16% from 2023 (see Figure 13).

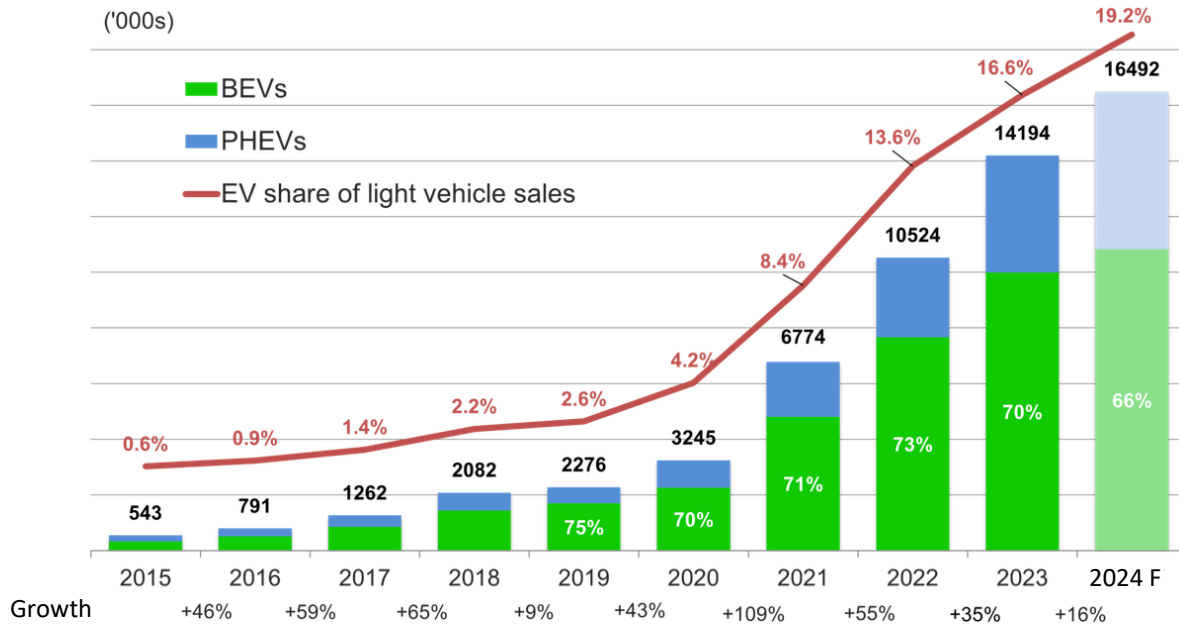
⁴⁵ New EV record in Norway, electrive, October 1, 2024, <https://www.electrive.com/2024/10/01/new-ev-record-in-norway-2>

⁴⁶ China plans to phase out conventional gas-burning cars by 2035, NIKKEI Asia, October 27, 2020, <https://asia.nikkei.com/Business/Automobiles/China-plans-to-phase-out-conventional-gas-burning-cars-by-2035>

⁴⁷ China auto market hits milestone as EVs, hybrids make up half of July sales, Reuters, August 8, 2024, <https://www.reuters.com/business/autos-transportation/chinas-car-sales-extend-declines-fourth-month-2024-08-08/>

⁴⁸ Carmakers Are Mired in First Europe Sales Slump in Two Years, Bloomberg, October 22, 2024, <https://www.bloomberg.com/news/articles/2024-10-22/automakers-are-mired-in-first-europe-sales-slump-in-two-years>

⁴⁹ Is the global EV market slowing down? AUTOVISTA 2024, September 3, 2024, <https://autovista24.autovistagroup.com/news/is-the-global-ev-market-slowing-down/>



Source: EV Volumes (J. D. Powers)

FIGURE 13: EVOLUTION OF EV SALES WORLDWIDE (FOR 2024, THE FORECAST IS BASED ON SALES IN THE FIRST TWO QUARTERS)

6 Conclusion

The profile of EVs in Québec, as presented in this report, highlights Québec's enviable position in North America. The tools and measures put in place to accelerate transportation electrification are working. Indeed, as of September 30, 2024, more than 332,000 light EVs were on the roads in all regions of Québec. In addition, EVs accounted for 32.8% of new light vehicles sold in Québec in the third quarter of 2024, thus raising Québec as a leader in North America.

The results more specific to the ZEV standard show that car manufacturers have introduced more and more EV models in Québec for an ever-greater number of vehicles. This diversity has allowed the industry as a whole to continue to earn credits quickly. In effect, the credits earned would suffice to meet the requirements of the current compliance period (2022–2024) even if no new EVs were sold between September 1, 2024, and September 1, 2025, on condition that credits be exchanged between manufacturers. To date, all manufacturers have complied with the standard.

This shows the relevance of the regulatory tightening between October 2021 and September 2023, inspired in part by the findings of the 2018–2020 Implementation Report. In this respect, several changes to the ZEV standard will come into effect beginning with the 2025 model year. These include a revised allocation of credits (including a single credit for ZEVs), requirements to move toward a target of 100% of new light vehicle sales by 2035, provisions to manage excess credits, and an increase in the per-credit charge.

These measures will control the excessive accumulation of credits in the future, and their effects should be visible over the next few years. They will also help in achieving the target of 2 million electric vehicles on Québec roads by 2030 and in significantly reducing GHG emissions by the transportation sector by 2040.

It should be noted that the other ZEV standards in effect in North America (California and 13 other U.S. states plus British Columbia), as well as the one implemented by Canada at the federal level in December 2023, will operate in a manner similar to the Québec ZEV standard beginning in the 2026 model year, although the progression of credit requirements varies by jurisdiction. As a result, 42% of the Canada-US market has a target of 100% of new light vehicles sold being electric by 2035. The electrification of the sector is therefore well under way.

The inclusion of regulatory requirements in Québec requiring that manufacturers provide information on the price paid for alienated credits and sales projections for the three years following the declaration will provide a better understanding of the effect of the standard on manufacturers, and allow to better prepare for the arrival of projected electric vehicles, particularly when planning the deployment of the charging infrastructure.

The MELCCFP, in collaboration with SAAQ, has also improved the effectiveness of the validation of the registration of EVs declared by vehicle manufacturers and the robustness of

its IT systems. However, it recognizes that there is still work to be done to optimize these tools.

While the findings and areas for improvement from the 2018–2020 Implementation Report have supported departmental work in recent years, it is now time to establish new ones. The MELCCFP plans to continue to improve its IT system, to monitor excess credits and—should Bill 81, *An Act to amend various provisions relating to the environment*, be passed—to work on the development of a ZEV standard for heavy vehicles.

At the same time, the Gouvernement du Québec will continue to implement the current actions in Québec’s Electric Vehicle Charging Strategy, which seeks to deploy public charging stations based on the rate of adoption of electric vehicles. Other measures to support transport electrification may also be included as needed in future implementation plans under the 2030 Plan for a Green Economy.

6.1 Next Steps

The last few years have seen a tightening of the ZEV standard for light vehicles and the recent enactment of the *Regulation prescribing certain prohibitions as regards motor vehicles and internal combustion engines* to end the sale of new light gas vehicles in 2035. The Ministère plans to reassess the maturity of the market in 2026 and again in 2030, leaving room for exceptions or adjustments to the prohibition regulations to ensure a successful transition

In the 2021–2026 Implementation Plan for the 2030 Plan for a Green Economy, the Gouvernement du Québec committed to defining a ZEV standard for heavy vehicles. The next steps in the implementation of the Act will therefore focus on that topic, especially through work which began on November 20, 2024, with the tabling of Bill 81, *An Act to amend various provisions relating to the environment*, aimed at granting the government the powers needed to establish a ZEV regulation for heavy vehicles.

As for any subsequent steps, should the bill be passed, the implementation schedule remains to be determined.

Glossary, abbreviations and acronyms

- **2030 PGE:** 2030 Plan for a Green Economy
- **AVEQ:** Association des véhicules électriques du Québec
- **BEV:** Battery electric vehicle
- **CARB:** California Air Resources Board
- **EPA:** Environmental Protection Agency
- **EV:** Electric vehicle, general term including all zero-emission vehicles (ZEV) and low-emission vehicles (LEV)
- **GHG:** Greenhouse gases
- **HFCV:** Hydrogen fuel cell vehicle
- **ICEV:** Internal combustion engine vehicle
- **IP 2023–2028:** 2023–2028 Implementation Plan
- **ISQ:** Institut de la statistique du Québec
- **km:** Kilometre
- **kWh:** kilowatt-hour
- **LEV:** Low-emission vehicles, including plug-in hybrid electric vehicles (PHEV) and vehicles equipped with a range extender (VRE). (Also: NLEV = new LEV; RLEV = reconditioned LEV)
- **LSV:** Low-speed vehicle. (Also: NLSV = new LSV; RLSV = reconditioned LSV)
- **MELCCFP:** Ministère de l’Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs
- **Nb:** Number
- **PHEV:** Plug-in hybrid electric vehicle
- **SAAQ:** Société de l’assurance automobile du Québec
- **SUV:** Sport/utility vehicle
- **UDDS:** *Urban Dynamometer Driving Schedule* test protocol
- **VIN:** Vehicle Identification Number
- **VRE:** Vehicle equipped with a range extender. (Also: NVRE = new VRE; RVRE = reconditioned VRE)
- **ZEV Act:** *An Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions*
- **ZEV Regulation:** *Regulation respecting the application of the Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions*
- **ZEV standard:** Zero-emission vehicle standard
- **ZEV:** Zero-emission vehicles, term including battery electric vehicles (BEV) and hydrogen fuel cell vehicles (HFCV). (Also: NZEV = new ZEV; RZEV = reconditioned ZEV)

References

- Zero-emission vehicle standard
<https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/index-en.htm>
- *Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions*
<https://www.legisquebec.gouv.qc.ca/en/document/cs/A-33.02>
- *Regulation respecting the application of the Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions*
<https://www.legisquebec.gouv.qc.ca/en/document/cr/A-33.02,%20r.%201>
- *Regulation respecting the limit on the number of credits that may be used by a motor vehicle manufacturer and the confidentiality of some information*
<https://www.legisquebec.gouv.qc.ca/en/document/cr/A-33.02,%20r.%202>
- List of credit-eligible new and reconditioned motor vehicles
<https://www.environnement.gouv.qc.ca/changementsclimatiques/vze/liste-vehicules-admis-en.htm>