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Canadians' Awareness, Knowledge and Attitudes Related to Zero Emission Vehicles (ZEVs) – 2024

Summary

Prepared for Natural Resources Canada

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This research report presents the results of an online survey conducted by EKOS Research Associates Inc. on behalf of Natural Resources Canada. The research involved an online survey of 3,459 Canadians. The survey was conducted across Canada in both official languages. The field dates for the survey were January 17 to February 7, 2024.

Cette publication est aussi disponible en français sous le titre : Sensibilisation, connaissances et attitudes des Canadiens par rapport aux véhicules à émission zéro (VEZ) – 2024.

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SUMMARY

A. BACKGROUND AND OBJECTIVES

In 2022, the Government of Canada issued a plan for reducing emissions: *2030 Emissions Reduction Plan: Canada's Next Steps for Clean Air and a Strong Economy*. In this plan, the Government reinforced its commitment to fight climate change, create jobs, and ensure that Canadians are global leaders in the transition to clean industries and technologies.

On-road transportation accounts for about 20 percent of Canada's total greenhouse gas emissions. Reducing transportation emissions is critical to achieving the Government's more ambitious climate change commitments and is consistent with the global shift toward zero emission vehicles (ZEVs). The Government's plans to address transportation decarbonization are outlined in its Action Plan for Clean On-Road Transportation.

Among other actions, in December 2023, federally regulated sales targets were published for all new light-duty cars and passenger trucks in the Electric Vehicle Availability Standard. Under the Standard, auto manufacturers and importers must meet annual zero-emission vehicle (ZEV) regulated sales targets, rising to 100% of all new light-duty vehicle sales for the 2035 model year. In addition, the Government will develop a medium- and heavy-duty vehicle (MHDV) regulation to require that all MHDV sales be ZEVs by 2040 for a subset of vehicle types, based on feasibility.

The Government is investing an additional \$3 billion to ensure Canada reaches these goals. To provide certainty about the path to getting there, the Government will pursue a combination of investments and regulations to help Canadians and industry in this transition.

For the Government to achieve its ZEV targets, consumer awareness, knowledge and acceptance of new ZEV technologies has been acknowledged by all stakeholders as critical.

Although various parties in Canada have conducted sporadic consumer surveys over the past decade that seek to measure these factors in the Canadian general public, these have not been designed as a baseline to be repeated consistently over time, so comparison between years of the fast-evolving consumer perspectives on ZEVs cannot be undertaken with scientific rigour.

NRCan commissioned EKOS Research Associates to undertake a third survey of Canadians examining their awareness, knowledge and confidence in ZEVs. The first NRCan baseline survey of Canadians on their awareness, knowledge and confidence in ZEVs was conducted in the summer of 2021 (July 16 to August 3, 2021), and the survey, including a few changes, was repeated in the fall of 2022 (September 9 to October 4, 2022). The current survey was conducted in the winter of 2024 (January 17 to February 7, 2024).

The survey was specifically designed to be repeated on an annual or bi-annual basis to provide key performance indicators on the success of efforts to increase consumer intention and action on the purchase of ZEV technologies. This year's results will provide an update to the 2021 and 2022 surveys for key performance indicators and key market data to measure and track impacts and progress resulting from government and partner investments to foster ZEV adoption.¹

B. METHODOLOGY

The research involved an online survey of 3,459 Canadians 18 years of age and older. The survey was conducted across Canada in both official languages. The field dates for the survey were January 17 to February 7, 2024.

Appendix A contains a detailed description of the methodology used in this study.

Appendix B contains the full survey questionnaire.

C. KEY FINDINGS

Survey results reveal that Canadians hold mixed views on ZEVs and continue to have a general lack of knowledge about these vehicles. As was found in previous surveys, Canadians believe that ZEVs are beneficial for the environment, but also feel they are expensive and have issues related to charging (e.g., too few charging stations, can't travel far enough on a full charge). Canadians also have limited experience with ZEVs, and little understanding about a range of important issues associated with these vehicles, such as safety, vehicle charging, performance, maintenance costs, and resale value, suggesting these are areas in need of increased ZEV awareness/education initiatives.

Highlight Results

¹ As discussed later in this report, the timing of this year's survey, along with other factors, may have affected the 2024 results.

Survey results suggest that although there is some interest in ZEVs among Canadians, increased education and awareness efforts will be required to overcome some of the concerns about ZEVs (e.g., charging, reliability, costs to run and maintain), and the general lack of knowledge about these vehicles among the Canadian public. As shown by some examples of the key comparative results in the table below, tracking reveals an increase in exposure and familiarity with ZEVs, but also a significant decrease in interest in the purchase/lease of a ZEV, and, importantly for those working to advance ZEV adoption, worsening attitudes towards many aspects of ZEVs.

Table 1: Highlight results

| Statement/Question | 2024 % Agree | 2022 % Agree | 2021 % Agree | Change from 2022 +/- |
|---|-------------------------|-------------------------|-------------------------|-------------------------------------|
| Have you ever driven or ridden in a zero-emission vehicle? | 42% | 39% | 32% | +3% |
| Do you know an owner of a zero-emission vehicle? | 62% | 54% | 46% | +8% |
| Have you considered purchasing or leasing a zero emission vehicle for your household? | 36% | 51% | 51% | -15% |
| ZEVs can't travel far enough on a full charge | 56% | 49% | 44% | +7% |
| ZEVs perform poorly in cold weather | 59% | 37% | 28% | +22% |
| Interest in taking a ZEV for a test drive | 48% | 62% | 67% | -14% |
| Too few charging stations where I drive | 62% | 55% | 53% | +7% |

These and other survey results can help the Government of Canada and all ZEV stakeholders focus the content and messaging in their awareness and education activities in the coming months and years. There are clearly a wide variety of opportunities to fill gaps in knowledge and understanding related to ZEVs, particularly where there are clear misperceptions, and where large numbers of respondents have indicated they are “unsure”.

Survey Context

A few contextual factors should be considered when interpreting the 2024 survey results, and comparing any significant changes in Canadians’ attitudes and awareness of ZEVs from previous surveys. These contextual factors include:

- **Seasonality:** Previous surveys were conducted in the summer (2021) and fall (2022); the 2024 survey was conducted in the winter – late January to early February. Winter driving experiences and concerns may be more top of mind for respondents when surveyed in the winter. In addition, recent media reports indicating that ZEVs lose driving range in the winter are typically less prevalent in other seasons.
- **Recent ZEV announcements:** The survey was conducted shortly after the announcement of Canada's Electric Vehicle Availability Standard (December 2023) – a federal regulation requiring that by 2035, 100% of new light duty vehicles for sale in Canada must be zero-emission vehicles. This announcement received a significant amount of media attention, much of it negative in tone, and likely heightened Canadians' awareness of (and potentially opposition to) ZEVs.
- **Interest rates:** Recent increases in inflation and interest rates, compared to rates during survey periods in 2021 and 2022, may have impacted this year's survey results, due to impacts on affordability. Statistics Canada data indicates that all new passenger car sales were down 8 per cent in 2023 compared to 2022.

All of these factors may explain at least some of the decrease in attitudes and consumer interest in the purchase/lease of ZEVs seen in this year's survey.

Summary of Key Results

Outlined below are key findings from this study, organized by topic area. The remainder of this report describes survey results in more detail.

Intention to Purchase/Lease a Vehicle

Respondents were first asked if they plan to purchase or lease any type of new or used vehicle in the next 10 years. Two-thirds of Canadians (66 per cent) say they do intend to purchase a vehicle within the next 10 years. These results have remained largely stable over the past few years.

When asked in what timeframe they plan to purchase a vehicle, most of these respondents indicated within the next 2-5 years (43 per cent), or within the next 2 years (30 per cent). Tracking reveals that while overall interest in getting a vehicle in the next 10 years is stable, there has been a decline among those who plan to purchase/lease a vehicle in the next 2 years (from 35 per cent in 2021 to 30 per cent in 2024), suggesting some Canadians may be delaying planned vehicle purchases.

Results also reveal that, consistent with Statistics Canada data indicating a decline in new passenger car sales over the past year, the proportion of Canadians indicating they intend to purchase a new car is down 5 percentage points since 2022.

Ownership and Intention to Lease/Purchase a Zero-Emission Vehicle

Those who indicated they had a vehicle in their household were asked if they currently lease or own a zero emission vehicle. Results reveal that, consistent with previous surveys, very few Canadians (seven per cent) say they own or lease a zero emission vehicle; the vast majority (93 per cent) do not.

Those who do not own or lease a zero emission vehicle were asked if they had considered purchasing or leasing a ZEV for their household. Results reveal a fairly significant decrease in the proportion of Canadians who are considering purchasing a ZEV. Indeed, fewer than four in ten (36 per cent) indicated that they had considered purchasing a ZEV – down from 51 per cent in 2022.

All respondents were asked how likely it is that they will purchase a ZEV as their next vehicle. One in three say it is very or somewhat likely (36 per cent), however most Canadians say it is very or somewhat unlikely (34 per cent), or they will not purchase a ZEV (22 per cent). Fifteen per cent are unsure.

Those who do not own or lease a ZEV were asked what information would be of greatest interest to them if they were considering purchasing or leasing a ZEV. Driving range was mentioned most often (55 per cent), followed by purchase price (46 per cent), and battery life expectancy (45 per cent).

Experience with Zero Emission Vehicles

Respondents were asked if they had ever driven or ridden in a ZEV. Results reveal that while most Canadians (56 per cent) have not, an increasing proportion (42 per cent – up 10 per cent since 2021) said they had.

Respondents were also asked how interested they would be in taking a zero emission vehicle for a test drive. About half say they would be very (26 per cent) or somewhat (22 per cent) interested. Twenty per cent said they were only a little interested in this idea, and 30 per cent

said they were not at all interested. Tracking reveals a significant decline in interest in taking a ZEV for a test drive since 2022 (down 14 percentage points).²

Those who indicated they were not at all interested in taking a ZEV for a test drive were asked why they felt this way. The most common reason cited was they had no intention of buying a ZEV (68 per cent), followed distantly by a lack of suitable ZEV models for their lifestyle (15 per cent).

Views on Zero Emission Vehicle Features

Respondents were also asked a number of attitudinal questions about ZEVs. Results reveal mixed views on zero emission vehicles, as well as a general lack of knowledge about these vehicles.

A clear majority of Canadians (75 per cent, up 5 percentage points since 2022) believe that zero emission vehicles are too expensive. Only 35 per cent of Canadians agree that gas/diesel vehicles are too expensive.

Canadians generally believe that ZEVs are better for the environment than other types of vehicles (although agreement is down since 2022). Just over half (54 per cent, down two percentage points since 2022) agree that zero emission vehicles contribute significantly to a reduction of greenhouse gas emissions and air pollutants compared to gas or diesel-powered vehicles, and just under half (48 per cent, down three points since 2022) agree that zero emission vehicles are less damaging to the environment than gas or diesel-powered vehicles. A decreasing proportion (30 per cent – down 7 points since 2022) agrees that the total carbon footprint of ZEVs is lower than comparable gas vehicles. These tracking results suggest that an increasing proportion of Canadians have a fundamental misperception of the environmental impacts of ZEVs.

Results also reveal concerns about charging ZEVs. More than six in ten Canadians (62 per cent – up from 55 per cent in 2022) agree that there are too few, if any, publicly available charging stations where they drive. In addition, over half express concerns that zero emission vehicles

² However, please note that the question wording was changed from the earlier surveys – previously respondents were asked “Imagine you were able to test drive a zero emission vehicle that suited your lifestyle needs, at a location that was convenient for you with an impartial expert (no brand affiliation) available at the test drive to answer your questions. How interested, if at all, would you be in taking a zero emission vehicle for a test drive?” This year respondents were only asked “How interested, if at all, would you be in taking a zero emission vehicle for a test drive?” This wording change may have at least partially affected survey results this year.

can't travel far enough on a full charge (56 per cent, up 7 points since 2022). Fewer than half agree that they can charge a zero emission vehicle at their home (48 per cent), and even fewer agree they can charge a ZEV at their workplace (20 per cent). In addition, an increasing number of Canadians worry that if too many people purchase zero emission vehicles it will put too much pressure on the electric grid (54 per cent, up 11 points since 2022, and 28 points since 2021). Almost half also agree that charging a zero emission vehicle at home will significantly increase their monthly electricity bill (48 per cent – up 7 points since 2022).

There has also been a substantial increase in the proportion of Canadians who feel that zero emission vehicles perform poorly in cold weather (59 per cent, up from 37 per cent in 2022, and from 28 per cent in 2021). This result may be affected by the timing of the 2024 survey. The previous surveys were conducted in the summer and fall; the 2024 survey was conducted in the winter, and there have been several recent media reports indicating that ZEVs lose driving range in the winter.

Survey results also reveal that Canadians are unsure about many of the issues examined. One in four (24 per cent) feel that the style/type of vehicle they prefer isn't available as a ZEV, but almost as many (22 per cent) are unsure. Fewer than one in five (18 per cent) feel there is an affordable zero emission vehicle available that meets their lifestyle needs, but again, many (23 per cent) are unsure. One in three (32 per cent) are unsure whether the repair and maintenance costs for a zero emission vehicle are lower than for a gas or diesel-powered vehicle, and over four in ten (42 per cent) are unsure whether zero emission vehicles have a poor resale value.

Canadians were also asked to what extent a range of factors would make them more likely to consider purchasing or leasing a zero emission vehicle. Proven winter weather performance, having access to a charging station at home, a 10-year battery warranty, and equal or greater driving range than a gas or diesel vehicle were seen as the most important factors in encouraging Canadians to consider purchasing/leasing ZEVs. Lower total costs to own and operate ZEVs, more charging stations along highways, and rebates/incentives for purchasing or leasing a ZEV were also seen as effective in encouraging Canadians to consider ZEVs.

Awareness and Support for Government Rebates/Mandates

Results suggest that awareness of government rebates for ZEVs is increasing. When asked whether they have seen, read or heard about the Government of Canada's vehicle purchase rebates to encourage Canadians to buy zero emission vehicles, a majority (55 per cent) indicate

they have heard of these rebates, and this is up from 45 per cent in 2022. Among those who indicated they are aware of these Government of Canada rebates, most (56 per cent) are unsure how to apply for them, although this is down three percentage points since 2022, and 8 points since 2021.

Results also reveal that a majority of respondents (58 per cent) support the Government of Canada providing incentives to encourage Canadians to buy zero emission vehicles, although support is down over the past few years.

Respondents were also asked if they had heard of Canada's Electric Vehicle Availability Standard – a federal regulation requiring that by 2035, 100% of new light duty vehicles for sale in Canada must be zero-emission vehicles. Three in four Canadians (74 per cent) say they have heard of this regulation, and one in four (24 per cent) say they have not.

Canadians were also asked whether they support or oppose a variety of policies regarding ZEVS. There is strong support for building a national network of charging stations for electric vehicles (69 per cent). However, only four in ten (42 per cent) agree with a sales mandate ensuring that by 2035 100% of new vehicles sold will be ZEVs, and fewer than one in three (30 per cent) agree when the mandate is communicated as “banning the sale of new gas and diesel-powered vehicles by 2035”.

D. CONTRACT VALUE

The contract value for the POR project is \$76,229.80 (including HST).

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For more information on this report, please contact NRCAN at: nrcan.por-rop.nrcan@canada.ca

E. POLITICAL NEUTRALITY CERTIFICATION

I hereby certify as Senior Officer of EKOS Research Associates Inc. that the deliverables fully comply with the Government of Canada political neutrality requirements outlined in the Policy on Communications and Federal Identity and the Directive on the Management of Communications. Specifically, the deliverables do not include information on electoral voting intentions, political party preferences, standings with the electorate, or ratings of the performance of a political party or its leaders.

Signed by: 

Derek Jansen (Vice President)