PEMBINA Institute

Getting the Vehicle Emissions Standard Right

How Canada can meet its climate and EV adoption goals

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Key takeaways

- Canada should adopt a 2035 vehicle emissions standard (VES) of 40 grams of CO_2 equivalent per mile (g/mile) or lower to confidently achieve the federal government's 75% electric vehicle (EV) sales target.
- Battery electric vehicles (BEVs) should remain the focus of the transition to decarbonizing the light-duty vehicle sector. A weaker (higher) standard, such as 62 g/mile, could reach EV sales targets through greater reliance on plug-in hybrids, but with greater uncertainty. Plug-in hybrid vehicles (PHEVs) should be treated as a transitional technology, not the long-term pathway.
- If Canada wants to achieve its emission targets for the light-duty vehicle sector, the VES stringency for 2035 needs to be 30 g/mile or below.
- Replacing the Electric Vehicle Availability Standard (EVAS) with a weaker vehicle emissions standard (VES) puts Canada at risk of missing climate targets and falling behind jurisdictions like the European Union (EU).
- A single fleet-wide VES target would be more effective at reducing emissions than maintaining separate targets for passenger cars and light trucks, as it would incentivize smaller and lighter vehicles.

Context

On February 5, 2026, the federal government announced its plan to replace the Electric Vehicle Availability Standard with the greenhouse gas (GHG) emission regulation, also known as the vehicle emissions standard (VES). The new regulation is intended to put Canada on track to achieve a target goal of 75% electric vehicle sales by 2035, according to the announcement.[1]

The VES sets annual fleet-wide emissions targets for automakers, measured in grams of CO_2 equivalent per mile (g/mile). Early unconfirmed reports suggest targets could start at 170 g/mile in 2027 and decline to 74 g/mile by 2035.[2]

The VES offers automakers greater flexibility to reduce emissions in the most cost-effective pathway. This could be through improving fuel economy in internal combustion engines,

[1] Prime Minister of Canada, "Prime Minister Carney launches new strategy to transform Canada's auto industry," February 5, 2026. https://www.pm.gc.ca/en/news/news-releases/2026/02/05/prime-minister-carney-launches-new-strategy-transform-canadas-auto

[2] CPAC, "PM Mark Carney Announces New Auto Strategy," video, February 5, 2026 (35:50). https://www.cpac.ca/headline-politics/episode/pm-mark-carney-announces-new-auto-strategy--february-5-2026?id=02f8685d-7b02-4d01-8120-8e75a3cc9921

redesigning components (e.g. refrigeration equipment or air conditioning systems), or increasing sales of zero-emission vehicles like battery electric or plug-in hybrid electric models.[3]

However, replacing the EVAS with a less stringent standard puts Canada's climate commitments at risk. A November 2025 report from the Auditor General of Canada found that "Canada's current measures and pace of emission reductions were not enough to meet the target of reducing greenhouse gas emissions by 40% to 45% below the 2005 level by 2030."[4] The report emphasized that the government will "need to strengthen or add measures if it is to meet Canada's national and international commitments in the global effort to limit temperature rise." In December 2024, Canada committed to reducing emissions by 45% to 50% below 2005 levels by 2035 (updated from 2030).

Our modelling indicates that **a VES stringency of 74 g/mile by 2035 would result in 62 megatonnes (Mt) fewer cumulative emissions reductions by 2035 compared with the original EVAS** (Figure 1). Using Government of Canada assumptions, this represents an additional **social cost of greenhouse gas emissions of over $18 billion by 2035**. [5]

Other progressively stringent VES targets are also shown on Figure 1:

- 62 g/mile (needed to achieve 75% sales with EVs and plug-in hybrids)
- 40 g/mile (needed to achieve 75% sales goal with EVs only)
- 30 g/mile (needed to achieve 45% GHG reduction below 2005 levels),

All of these targets would lead to progressively greater cumulative emissions reductions between now and 2035, although the reductions would not be as large as the original EVAS.

[3] The regulations allow companies to report 0 g/mile for electric vehicles, fuel cell vehicles, and the electric portion of plug-in hybrid vehicles (PHEVs) (when PHEVs operate as electric vehicles).

[4] Office of the Auditor General of Canada, "Implementing the Canadian Net-Zero Emissions Accountability Act—Financial Measures," November 2025. https://www.oag-bvg.gc.ca/internet/English/parl_cesd_202511_06_e_44750.html

[5] The social cost of greenhouse gas emissions estimates the economic damages caused by emitting one tonne of carbon dioxide (or equivalent) into the atmosphere, accounting for impacts on health, agriculture, property and ecosystems. Government of Canada, "Social cost of greenhouse gas emissions," April 2023. https://www.canada.ca/en/environment-climate-change/services/climate-change/science-research-data/social-cost-ghg.html

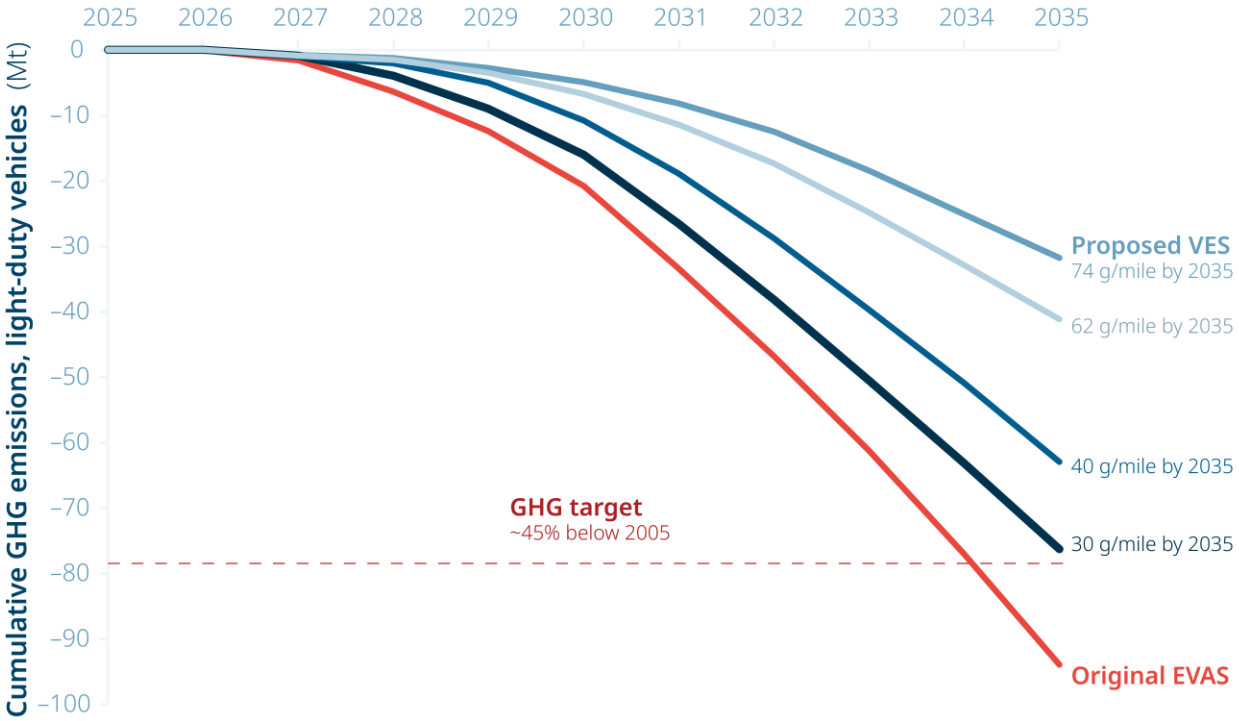

Figure 1. Cumulative GHG emissions from light-duty vehicles in Canada under the original EVAS (now repealed) compared with the proposed VES and other policy options.

The VES can be designed to match EVAS in reducing GHG emissions,[6] but it is critical that future targets are stringent enough. Design features, such as attribute-based standards, can also be adjusted to improve policy effectiveness. A revision of GHG regulations should include a careful look at the following.

[6] Jonn Axsen, Chandan Bhardwaj, and Curran Crawford, "Comparing policy pathways to achieve 100% zero-emissions vehicle sales by 2035," *Transportation Research Part D: Transport and Environment,* 112 (2022). https://www.sciencedirect.com/science/article/abs/pii/S1361920922003145

Chandan Bhardwaj, Jonn Axsen, and David McCollum, "Which "second-best" climate policies are best? Simulating cost-effective policy mixes for passenger vehicles." *Resource and Energy Economics,* 70 (2022). https://www.sciencedirect.com/science/article/abs/pii/S0928765522000367

Options

1. If Canada wants to reach its climate goals, it needs a VES target of 30 g/mile or lower

Canada's VES has been in place since 2012. Despite this, emissions from Canada's light-duty vehicle sector (passenger cars and light trucks) have remained largely unchanged. Between 2005 and 2023, emissions stayed at roughly 82 Mt of carbon dioxide equivalent.[7] This shows that simply having the policy in place is not enough. The strength of the targets matters.

Our modelling shows that, **in the absence of another strong climate policy, the VES target for 2035 needs to be 30 g/mile (or lower) for Canada to achieve its 2035 goal of reducing light-duty vehicle emissions by 45% to 50% below 2005 levels** (Figure 2).

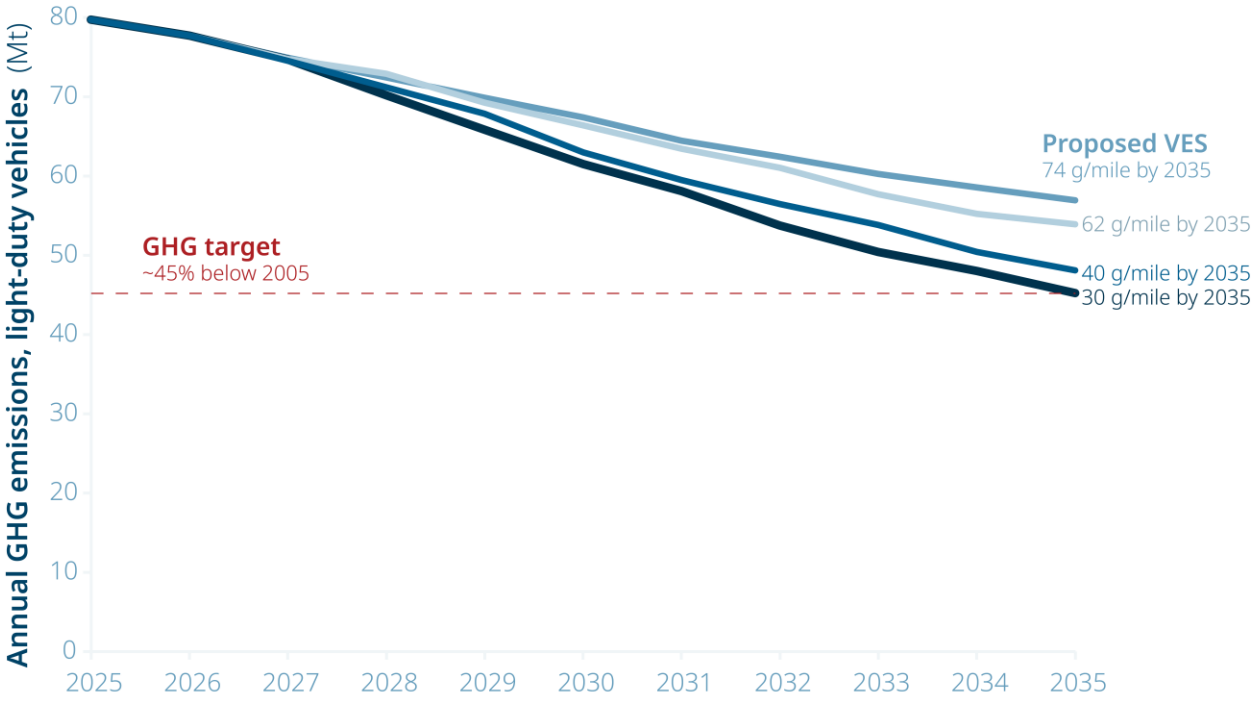

Figure 2. Annual GHG emissions from light-duty vehicles in Canada under different VES scenarios

Canada's industry minister has indicated that the federal government intends to align Canada's VES with standards in place in the EU.[8] In December 2025, the EU proposed new regulations to

[7] Government of Canada, "Greenhouse gas emissions," March 2025. https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html#transport

[8] CBC News, "What does Canada's new EV plan mean for an industry hit hard by U.S. tariffs?" *Power & Politics*, video, February 5, 2026. https://www.youtube.com/watch?v=TZRn6S1pjDM

reduce fleet-wide emissions for cars and vans by 90% below the 2021 baseline.[9] If Canada aligned with this approach, its 2035 VES target would need to be approximately 26 g/mile.

2. If Canada wants to meet its EV sales goal, it needs a VES target of 40 g/mile or lower

As noted, the new GHG regulations are intended to put Canada on track to achieve 75% EV sales by 2035. Our modelling indicates that **to achieve this goal by 2035 with high confidence, the VES target would need to be 40 g/mile or lower** (Figure 3)**.** More stringent targets encourage EV uptake and limit compliance pathways that allow continued sales of higher-emitting vehicles.

By contrast, a VES target of **74 g/mile** is projected to result in **less than 50%** battery EV sales by 2035. Even when plug-in hybrid vehicles are included, total zero-emission vehicle (ZEV) market share would reach only **64%,** well below the 75% target for 2035. If plug-in hybrid vehicles (and not just battery EVs) are included, the VES target needs to be **62 g/mile (or lower) to have a reasonable chance of approaching the goal** of 75% zero-emission vehicle share by 2035. [10] While plug-in hybrid vehicles can play a constructive role earlier in the transition, they are a bridge technology rather than a zero-emission end state.

This distinction reflects both confidence and long-term direction. At 40 g/mile, the modelling shows near certainty of achieving 75% sales, comprised of fully electric vehicles, and provides a clear signal that vehicles with tailpipe emissions, including plug-in hybrids, must phase out as the market matures. At 62 g/mile, the probability of reaching 75% sales falls to roughly 60%, as compliance pathways remain that could delay a full shift to electric vehicles.

[9] European Commission, "Cars and vans," December 2025. https://climate.ec.europa.eu/eu-action/transport-decarbonisation/road-transport/cars-and-vans_en

[10] The uncertainty in this case stems from the fact that different combinations of plug-in hybrid electric vehicle and battery electric vehicle market share could be used to achieve the 75% target. Automakers can choose different mixes of technologies (battery electric vehicles, plug-in hybrid electric vehicles, hybrid electric vehicles and internal combustion engine vehicles) to comply with the VES targets that are set. For example, a 62 g/mile target can be achieved with 40% battery electric vehicles, and 35% plug-in hybrids. A more stringent (lower) VES target will encourage more EV sales.

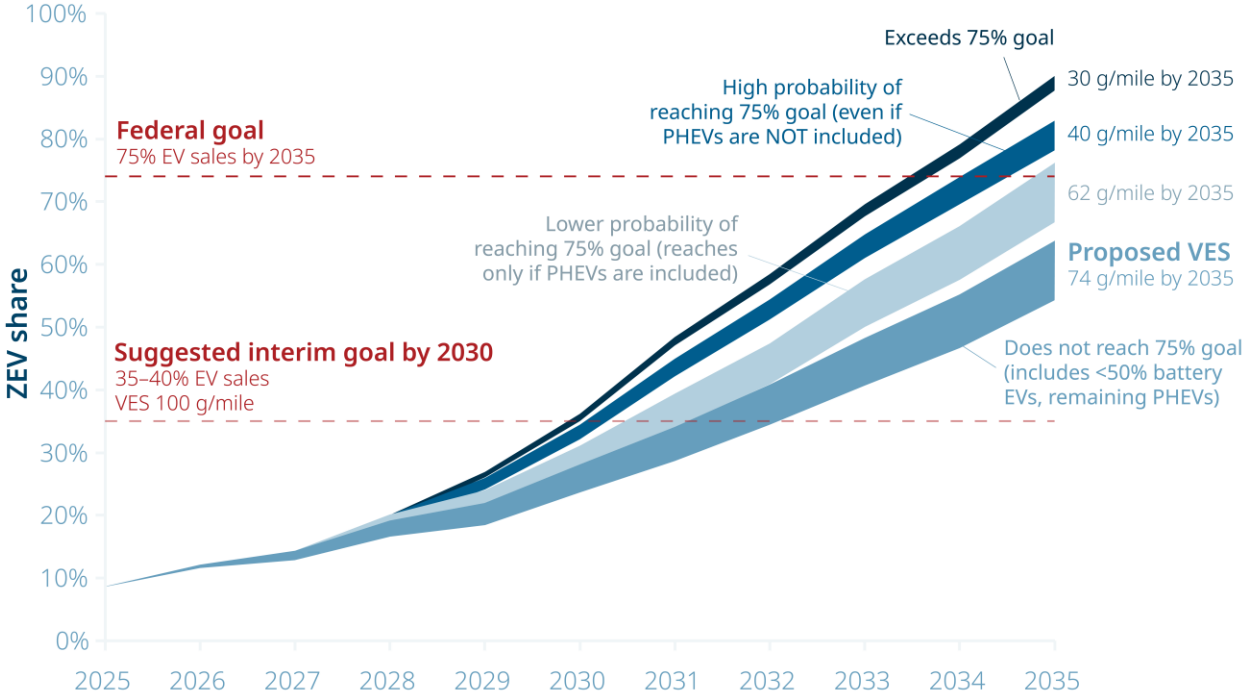

Figure 3. Projected zero-emission vehicle uptake under various emission scenarios

3. To incentivize vehicle downsizing, Canada needs a fleet-wide VES target for passenger vehicles

The growing global market share of large, heavy sport utility vehicles (SUVs) and other light-duty trucks is increasing the carbon and energy intensity of new passenger vehicles. This trend is offsetting some of the benefits of efficiency improvements, including electrification (Figure 4). Existing GHG regulations can inadvertently reinforce this trend. In particular, attribute-based VES, such as those currently used in Canada, typically set less stringent requirements for larger vehicles.

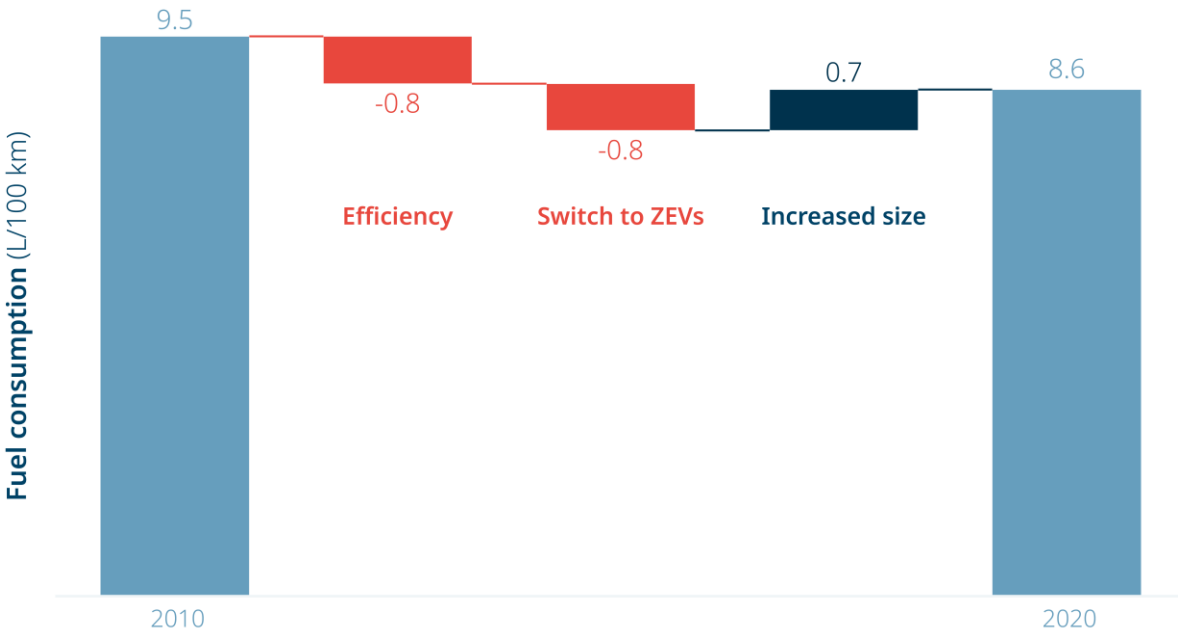

Figure 4. Fuel consumption trends for new light-duty passenger vehicles sold in Canada

Data source: Axsen and Bhardwaj (2026)

A revised VES should incentivize vehicle downsizing, or at a minimum slow or reverse the rapid growth in vehicle size. Our research, conducted in collaboration with Simon Fraser University, shows that a neutral fleet-wide VES can deliver more emissions reductions than attribute-based standards can, while slowing the shift toward larger, heavier vehicles.[11]

In Canada, a single fleet-wide VES target would be more effective at reducing emissions than maintaining separate targets for passenger cars and light trucks, as is currently the case.

[11] Jonn Axsen and Chandan Bhardwaj, "Policy can downsize passenger vehicles and cut climate emissions," *Environmental Research Letters* (2026). https://iopscience.iop.org/article/10.1088/1748-9326/ae41d0

Affordability

Globally, EVs are increasingly available to consumers at prices below $40,000.[12] In Canada, however, the average EV price remains around $65,000, limiting access to more affordable options.[13] Stronger VES targets encourage automakers to produce and sell lower-cost EV models, helping drive the average price below $45,000 by 2035 (Figure 5). For example, under the 30 g/mile scenario, the average EV price in 2035 is projected to be just over $40,000, compared to just over $46,000 under the 74 g/mile scenario, a difference of around 12% per vehicle. While declining EV prices are largely driven by external factors such as global battery cost reductions, more stringent VES targets can contribute to additional price declines as automakers adjust pricing strategies and expand the availability of lower-cost EV models.

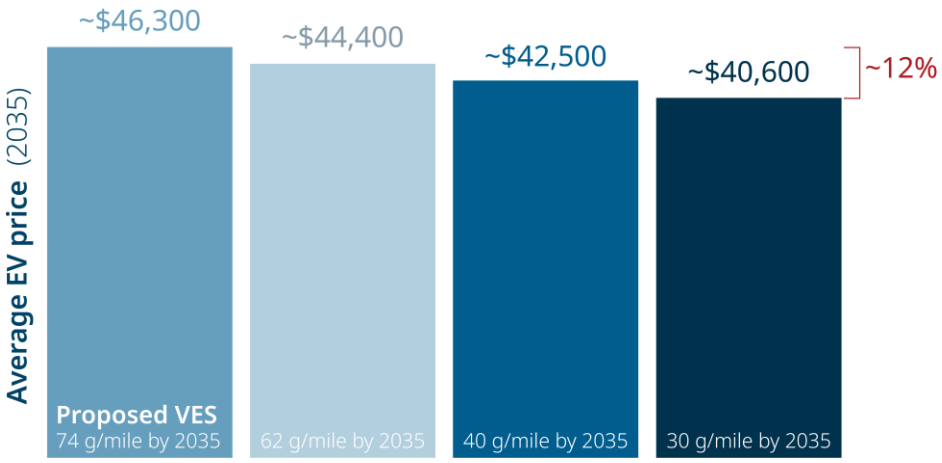

Figure 5. Projected average EV prices in 2035 under different VES scenarios

The Pembina Institute acknowledges that the work we steward and those we serve span across many Nations. We respectfully acknowledge the space our organization is headquartered in as the traditional and ancestral territories of the Blackfoot Confederacy, comprised of the bands Siksika, Piikani, and Kainai, the Îyârhe Nakoda Nations, including the bands of Goodstoney, Chiniki, and Bearspaw, and the Tsuut'ina Dené. These Lands are also home to the Métis Nation of Alberta — Region 3 whose Peoples have deep relationships with the Land.

These acknowledgements are some of the beginning steps on a journey of several generations. We share them in the spirit of truth, justice, reconciliation, and to contribute to a more equitable and inclusive future for all of society.

[12] IEA, "Global EV Outlook 2025," https://www.iea.org/reports/global-ev-outlook-2025/trends-in-electric-car-affordability

[13] AutoTrader.ca, "2026 Q1 Price Index," https://www.autotrader.ca/editorial/price-index/