



# Backgrounder: Expectations for Canada's Plan to Phase Out the Sale of New Gasoline Cars by 2035

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## Clean Car Standard Backgrounder

Environment and Climate Change Minister, Steven Guilbeault is expected to soon announce the federal government’s plan for phasing out the sale of new gasoline cars by 2035, and the federal government has indicated that draft regulations will be unveiled before the end of 2022.<sup>1</sup>

### **POLICY RATIONALE**

Canada is among signatories to the COP26 declaration on zero emissions cars and vans, which commits us to phasing out the sale of new gasoline light-duty vehicles by 2035.<sup>2</sup> As part of the ‘fit for 55’ package, the European Union will phase out the sale of new gasoline cars by 2035 through aggressively ramping up vehicle emissions standards (VES).<sup>3</sup> Canada however does not have full control over VES regulations as we adopt by reference the fuel economy rules that are written in Washington by the Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA). Adopting a ZEV-specific regulation called Clean Car Standard, which is already present in California, 15 other US states, Quebec and British Columbia allows Canada to achieve its more ambitious climate targets while remaining harmonized with the United States on VES for gasoline cars.

### **HOW DOES A CLEAN CAR STANDARD<sup>4</sup> WORK?**

Under this regulation, the government would set a target that specifies what percentage of light-duty car and trucks available for sale must be zero-emission each year. The federal government’s emission reduction plan currently indicates milestone targets of 20 per cent by 2026, 60 per cent by 2030 and 100 per cent by 2035. In short, the regulation works similarly to fuel economy standards, where a target is set for automaker’s fleets, and enforced with a credit system. To comply with the policy, automakers would earn credits for selling ZEVs, buy credits from over-compliant automakers, or pay a financial penalty. It will mean gradually phasing out the sale of gasoline cars entirely by 2035 by requiring the sale of ZEVs instead. Like vehicle emissions standards, this regulation applies to automakers, not consumers.

<b>Policy problem</b>	<b>How will a Clean Car Standard help solve the issue?</b>
<i>GHG emissions</i>	Transportation sector emissions are large, accounting for one quarter of Canada’s total emissions – and growing. Between 2005 and 2019, total transportation emissions have risen by 14 per cent while automotive emissions alone have risen by 18 per cent. <sup>5</sup> A Clean Car Standard can ensure ZEV sales targets are met, and can reduce annual light-duty vehicle GHG emissions from now to 2035 by 58-62 per cent (cumulatively lowering GHG emissions by 135 million tonnes) if there is a robust and effective credit system in place. <sup>6</sup>
<i>High prices for ZEVs</i>	Requiring automakers to meet sales targets would force them to break ZEVs out of the luxury market and go mainstream with more affordable, mass market models. A strong credit system would result in ZEV prices declining by 20 per cent for the average Canadian consumer, and lead to automakers doubling investment in research and development to lower production costs. <sup>7</sup>
<i>Lack of charging infrastructure</i>	Currently, public EV chargers are often under-utilized, and need a greater amount of charging demand to justify a business case for investment by public utilities and the private sector. <sup>8</sup> <b>This policy creates market certainty</b> for ZEV sales that will help foster this business case, while also allowing public utilities to plan with greater certainty for electricity grid capacity upgrades.

<p><i>Supply shortages</i></p>	<p>Canadians are currently facing long wait times and low availability of ZEVs due to a limited supply being manufactured.<sup>9</sup> But jurisdictions with supply-side policies (BC and Québec), have a disproportionate percentage of ZEV sales because automakers send their currently limited supply of ZEVs where requirements regarding ZEV supply are the most stringent. For example, ZEVs represent 9.5 per cent of new vehicles sold in Canada, but they represent 19.9 per cent in British Columbia (B.C.) and 13.3 per cent in Québec, with all other provinces below the national average.<sup>10</sup> A national Clean Car Standard would mitigate regional inequities and increase ZEV availability across the country.<sup>11</sup> Considering that California and 15 other US states already have ZEV sales requirements in place, it will also raise the share of US-Canada auto market covered by this regulation from 36 per cent to 43 per cent - prompting automakers to significantly scale production and overall ZEV supply.<sup>12</sup> However, additional targeted measures to address regional supply equity will likely also be required, especially if automakers continue to favor some markets over others.</p>
<p><i>Gasoline vehicle production bias</i></p>	<p>Automakers currently have larger profit margins on gasoline vehicles than they do on zero-emission vehicles. Because of this, automakers have a bias in investment and vehicle pricing decisions towards furthering the production and sale of more gasoline vehicles. Taking into account projected market trends including battery price trajectories, Canada will miss its ZEV sales targets because of this production bias, unless further policy action is taken. Under a business as usual policy scenario, ZEVs will only make up 39 per cent of new vehicle sales in 2035.<sup>13</sup> <b>With a Clean Car Standard, the business case for switching towards zero-emission vehicles changes</b>, as selling ZEVs earns valuable credits than can be traded, while non-compliance leads to financial penalties and ceding market share to competitors.</p>

**ADVANTAGES COMPARED TO POLICY ALTERNATIVES**

**Fiscal Cost Efficiency:** This regulation has no fiscal cost by itself, while trying to achieve sales targets through increasing purchase incentives is very costly. If the Government of Canada adopted the Canadian Vehicle Manufacturers’ Association’s (CVMA) recommended alternative of tripling federal purchase incentives from \$5,000 to \$15,000 up to 2035 it would come at a fiscal cost of \$54 billion and still fail to meet sales targets, only reaching 65 per cent of new market share in 2035.<sup>14</sup>

**No Value Capture:** Relying on increasing purchase incentives to reach sales targets can have unintended consequences, because little prevents automakers from raising ZEV prices to capture the value of subsidies, especially when demand is strong and there is a supply shortage in the market. One notable example is when Ford [hiked the price](#) of its F-150 Lightning trucks by approximately \$7,000 USD just days after the US Senate passed the Inflation Reduction Act, which included a \$7,500 USD EV tax credit. Overall, economic modeling conducted by the Sustainable Transportation Action Research Team (START) at Simon Fraser University (SFU) estimated that automakers would be able to capture up to 18 per cent of the value of increased purchase incentives by raising prices. If the Government of Canada adopted the CVMA’s recommended policy alternative, the auto industry would be able to capture up to \$10 billion of the overall \$54 billion fiscal cost, a portion of which would actually go towards subsidizing the price of gasoline cars.

## **WHAT DOES AN EFFECTIVE CREDIT SYSTEM LOOK LIKE?**

### **Credits Should Have Expiry Dates and Not be Oversupplied**

An effective credit system cannot provide excess credits as this will oversupply the market and undermine the stringency of the regulation. Best practices from jurisdictions including BC and Quebec provide single credits for each battery-electric zero-emission vehicle, and half credits for plug-in hybrid vehicles (PHEVs). Credit markets should incentivize over-compliance and not incentivize under-compliance. Automakers should be allowed to trade and bank credits, but no credits should be allowed to be banked for more than three years. Credits without expiry dates can mean under-compliance and missed targets in later years as targets become more stringent, especially if excess credits were supplied in the early years of the regulatory regime.

### **Strong PHEV Credit Limits**

Plug-in hybrid vehicles (PHEVs) are not zero-emission vehicles, and allowing for too many of these vehicles to be eligible for credits undermines how much emissions can be reduced. They must be limited to no more than 10 per cent to 20 per cent of total annual fleet compliance and be phased out early, such as by 2030. Studies have found that PHEV fuel consumption and tailpipe CO<sub>2</sub> emissions in real-world driving are about two to four times higher than advertised.<sup>15</sup> Analysis by the International Council on Clean Transportation (ICCT) also found that restricting total PHEV credits allowed for compliance significantly changes the amount of emissions reduced by the Clean Car Standard. Emissions reduced go from -52 per cent without restrictions to between -85 per cent and -92 per cent by 2050 in scenarios where restrictions on PHEV credits are in place.<sup>16</sup> As a transition technology, PHEV market flexibilities should be allowed for rural and northern regions where charging infrastructure may take longer to reach, but this exception should be more broadly reflective of the actual market share for new vehicles that rural and remote communities actually represent.

### **Enforcement is Everything**

For each year that an automaker does not hold sufficient ZEV credits, they must face a penalty. This means there must be annually rising sales targets in between milestone target years (2026, 2030 and 2035). To ensure that this regulation has its intended effect, the penalty for non-compliance needs to exceed the potential profit of non-compliance. This means that there must be a \$20,000 minimum penalty for each missing credit, pegged to inflation, aligned with existing fine levels in BC, Quebec and California. The value of traded credits is tied to the penalty level, and aligning credit values with BC and Quebec ensures more seamless credit trading between provinces.

### **Prevent the Weakening of Vehicle Emissions Standards for Gasoline Cars<sup>17</sup>**

Currently, automakers earn CO<sub>2</sub> credits from selling zero-emission vehicles under Canada-US harmonized vehicle emissions standards. Once a Clean Car Standard is introduced, they will also be earning ZEV credits for their battery-electric and plug-in hybrid vehicles. This means that manufacturer fleets would have to meet two targets per year, the ZEV sales target, and the CO<sub>2</sub>-based target. Once the Clean Car Standard is implemented, regulators will have to decide whether the scope of the CO<sub>2</sub> target remains applied to the whole fleet, or only vehicles with tailpipes (exempting battery-electric vehicles).

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If it applies to the whole fleet, emissions standards would also have to be ramped up in order to prevent a weakening of emissions standards for non-ZEVs as ZEV market share increases and lowers the corporate fleet average. However, this would require aggressive increases in the CO<sub>2</sub> target, a policy factor which Canada largely does not control, as we adopt by reference the American vehicle emissions standards written in Washington.

In order to prevent 'backsliding' in terms of the stringency of vehicle emissions standards for gasoline vehicles sold up to 2035, battery-electric vehicles would have to be removed from the scope of vehicle emissions standards regulation, in effect creating a regulatory distinction between vehicles with tailpipes and vehicles without tailpipes. This also underlines the importance of limiting ZEV credits for plug-in hybrid vehicles (which have tailpipes) as they could also potentially earn CO<sub>2</sub> credits in a hybrid arrangement. Limitations and early phase-outs of PHEV ZEV credits mitigates this potential double-crediting.

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<sup>1</sup> Transport Canada. Canada's Action Plan for Clean On-Road Transportation. <https://tc.canada.ca/en/road-transportation/publications/canada-s-action-plan-clean-road-transportation>

<sup>2</sup> COP26 declaration: zero emission cars and vans <https://www.gov.uk/government/publications/cop26-declaration-zero-emission-cars-and-vans>

<sup>3</sup> Reuters (2022) EU approves effective ban on new fossil fuel cars from 2035 <https://www.reuters.com/markets/europe/eu-approves-effective-ban-new-fossil-fuel-cars-2035-2022-10-27/>

<sup>4</sup> While the federal government's official name for this regulation is yet to be unveiled, this policy can be referred to as a Clean Car Standard, a Zero-Emissions Vehicle Standard, or Zero-Emissions Vehicle Mandate.

<sup>5</sup> Environment and Climate Change Canada. (2019) National Inventory Report 1990-2019: Greenhouse Gas Sources and Sinks in Canada, Canada's submission to the United Nations Framework Convention on Climate Change. <https://publications.gc.ca/site/eng/9.506002/publication.html>

<sup>6</sup> See Clean Car Standard Technical Report authored by the Sustainable Transportation Action Research Team (START), Simon Fraser University, published by Environmental Defence and Équiterre. [https://environmentaldefence.ca/wp-content/uploads/2022/11/Clean\\_Car\\_Standard\\_Technical\\_Report\\_FINAL-ENG-.pdf](https://environmentaldefence.ca/wp-content/uploads/2022/11/Clean_Car_Standard_Technical_Report_FINAL-ENG-.pdf)

<sup>7</sup> Ibid.

<sup>8</sup> McKerracher, Colin (2022) Electric Vehicle Growth Outpaces Installation of Battery Chargers. Bloomberg Hyperdrive. <https://www.bloomberg.com/news/articles/2022-04-12/electric-vehicle-growth-outpaces-battery-charger-installations>

<sup>9</sup> Dunskey Energy + Climate Advisors (2021) Zero Emission Vehicle Availability: Estimating Inventories in Canada: 2020/2021 Update. [https://www.dunskey.com/wp-content/uploads/2021/12/DunskeyZEVAvailabilityReport\\_2021-04-1.pdf](https://www.dunskey.com/wp-content/uploads/2021/12/DunskeyZEVAvailabilityReport_2021-04-1.pdf)

<sup>10</sup> S&P Global Mobility, Q3 2022 <https://cdn.ihsmarket.com/www/prot/pdf/1122/EV-Canadian-Newsletter-Q3-2022.pdf>

<sup>11</sup> Anna Kanduth. Why is it so hard to get an electric vehicle in Canada? Canadian Climate Institute. <https://440megatonnes.ca/insight/why-is-it-so-hard-to-get-an-electric-vehicle-in-canada/>

<sup>12</sup> Clean Energy Canada and Electric Mobility Canada, [How Canada can design a truly effective zero-emission vehicle mandate](#).

<sup>13</sup> See Clean Car Standard Technical Report authored by the Sustainable Transportation Action Research Team (START), Simon Fraser University, published by Environmental Defence and Équiterre. [https://environmentaldefence.ca/wp-content/uploads/2022/11/Clean\\_Car\\_Standard\\_Technical\\_Report\\_FINAL-ENG-.pdf](https://environmentaldefence.ca/wp-content/uploads/2022/11/Clean_Car_Standard_Technical_Report_FINAL-ENG-.pdf)

<sup>14</sup> Ibid.

<sup>15</sup> International Council on Clean Transportation. Real-World Usage of Plug-in Hybrid Electric Vehicles: Fuel Consumption, Electric Driving, and CO<sub>2</sub> Emissions. <https://theicct.org/publication/real-world-usage-of-plug-in-hybrid-electric-vehicles-fuel-consumption-electric-driving-and-co2-emissions/> (2020)

<sup>16</sup> Arijit Sen, Anh Bui, Josh Miller (2022) Canada's Path to 100% Zero Emission Light Duty Vehicle Sales: Regulatory Options and Greenhouse Gas Impacts. ICCT. <https://theicct.org/publication/can-zev-reg-options-jun22/>

<sup>17</sup> For a discussion of this issue, please see the following documents from the UK Department of Transport: *Green Paper on a New Road Vehicle CO<sub>2</sub> Emissions Regulatory Framework for the United Kingdom* (pp. 23-30) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1007466/green-paper-on-a-new-road-vehicle-CO2-emissions-regulatory-framework-for-the-United-Kingdom-web-version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007466/green-paper-on-a-new-road-vehicle-CO2-emissions-regulatory-framework-for-the-United-Kingdom-web-version.pdf)

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*Technical consultation on zero emission vehicle mandate policy design* (pp. 23-24)

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1067041/technical-consultation-on-zero-emission-vehicle-mandate-policy-design.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1067041/technical-consultation-on-zero-emission-vehicle-mandate-policy-design.pdf)