Environment and Climate Change Canada
Environnement et Changement climatique Canada

2019

Summary of comments received in response to the discussion paper on the mid-term evaluation of the Passenger Automobile and Light Truck Greenhouse Gas Emissions Regulations

Canada

Cat. No.: En14-328/1-2019E-PDF
ISBN: 978-0-660-30006-1

Environment and Climate Change Canada
Public Inquiries Centre
7th Floor, Fontaine Building
200 Sacré-Coeur Boulevard
Gatineau QC K1A 0H3
Telephone: 819-997-2800
Toll Free: 1-800-668-6767 (in Canada only)
Email: ec.enviroinfo.ec@canada.ca

Aussi disponible en français

Table of contents

1 Introduction 1

2 Factors Considered in the Mid-Term Review 2

3 Responses to Key Consultation Questions 3

3.1 What levels of vehicle technology costs and payback timelines are reasonable for compliance with the existing 2022 to 2025 standards? 3

3.2 Are there any impediments to meeting the estimated levels of electrification (plug-in vehicles) from the 2014 Regulatory Impact Analysis Statement? 4

3.3 What level of electrification (plug-in vehicles) and hybrid powertrains would be needed to achieve compliance with the existing 2022 to 2025 standards? 5

3.4 Is the projected greenhouse gas emission reduction contribution of the light-duty vehicle sector towards meeting the government's emission reduction goals reasonable? 6

3.5 Would compliance with the existing standards for the 2022 to 2025 model years be achievable while maintaining the competitiveness of the Canadian auto industry considering the integrated nature of vehicle manufacturing and trade in the North American market? 7

3.6 Would the existing standards for the 2022 to 2025 model years provide benefits to consumers and to the public? 8

3.7 Are there any safety related considerations that should be taken into account? 9

3.8 Are there changes to existing flexibilities or other new flexibilities that should be considered to facilitate compliance with existing standards while minimizing impacts on expected greenhouse gas emission reductions? 9

3.9 Are there any emerging trends such as car sharing that need to be taken into account as part of the mid-term evaluation? 10

3.10 Are there any other factors affecting the light-duty vehicle market that the department should consider as part of the mid-term evaluation? 11

3.11 Are there any other factors that the department should take into account in considering the outcome of the U.S. mid-term evaluation and the appropriateness of the existing 2022 to 2025 model year standards in Canada? 12

4 Next Steps 13

5 Annex: Breakdown of Public Comments 14

1 Introduction

This document summarizes the comments received by Environment and Climate Change Canada in response to its discussion paper on the mid-term evaluation of the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations.* The discussion paper was published on August 20, 2018 and the comment period closed on September 28, 2018.

The *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* establish greenhouse gas emission standards for new light-duty on-road vehicles offered for sale in Canada. These regulations require manufacturers and importers of new vehicles to meet progressively more stringent fleet average GHG emission standards for both passenger automobiles and light trucks through to the 2025 model year. Canada's regulations are aligned with those of the U.S. Environmental Protection Agency and incorporate U.S. standards by reference.

The mid-term evaluation aims to determine whether the established greenhouse gas emission standards for the 2022 to 2025 model years remain appropriate for Canada. The determination will be informed by this mid-term evaluation process and careful consideration of environmental and economic impacts to industry and consumers.

Environment and Climate Change Canada received approximately 230 submissions from a broad range of interested parties in response to the discussion paper. These are grouped into the following classifications for the purposes of this summary:

- automotive industry (including regulated companies that manufacture or import new vehicles, automotive parts suppliers, auto dealers and automotive infrastructure companies);
- non-governmental organizations;
- other governments; and
- the general public (194 of the total 230 submissions received).

Though not all comments directly addressed the questions posed in the discussion paper, all comments received as part of this consultation will be considered as part of the mid-term evaluation of the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*.

As this document is a summary, it includes an amalgamation of the most prominent themes and opinions expressed in response to the discussion paper. Though some of the feedback received by Environment and Climate Change Canada during the consultation period is not represented below, all submitted comments will be considered as part of the mid-term evaluation process.

All but one regulated company advocated for the department to avoid making any determination on Canada's mid-term evaluation until the conclusion of the on-going U.S. rulemaking process. These regulated companies noted that on-going negotiations between California and the U.S. federal government might result in a compromise and extension of the "One National Program". Should there be no compromise, they expect litigation between California and the U.S. resulting in further uncertainty for the industry.

---

1 Summary of Comments Received in Response to the Discussion Paper on the Midterm Evaluation of the Passenger Automobile and Light Truck Greenhouse Gas Emissions Regulations

Others in the auto industry, such as parts suppliers and dealers, expressed a strong preference for Canada align its standards with those of the U.S. regardless of any change in stringency which may result from the on-going U.S. rulemaking process. Companies involved in the ridesharing and electric vehicle infrastructure industries supported preserving the existing standards.

The majority of non-governmental organizations advocated for Canada to maintain or increase the stringency of the current standards. Some further suggested that the department should remove the existing incorporation by reference of U.S. standards to prevent Canada's standards from remaining automatically aligned with future changes in the U.S. Some non-governmental organizations questioned whether it would be possible to predict how Canadian vehicle supply would be impacted if Canadian standards were not aligned with those of the U.S.

Some municipal and provincial level governments also provided comments. These governments were generally supportive of Canada maintaining the stringency of the current standards.

Members of the public generally advocated for the Government to maintain the stringency of Canada's existing standards or make them more stringent, rather than adopt less stringent standards that would align with the U.S. Environmental Protection Agency's current Proposed Rule, which would freeze light-duty vehicle greenhouse gas emission standards at 2020 levels through the 2026 model year. A breakdown of the comments received from members of the public is included in the Annex at the end of the document.

The department is monitoring the U.S. rule development process that is currently underway, the actions of California and other U.S. states, and many other global jurisdictions that are developing measures to address greenhouse gas emissions from light-duty vehicles. If the department determines that amendments to Canada's Regulation are warranted, a regulatory development process will be initiated and interested parties will have further opportunity to provide comments.

2 Factors considered in the mid-term review

As noted in the discussion paper, Environment and Climate Change Canada is proposing to assess a number of factors through this process, including company compliance with standards since the 2011 model year and how economic and policy elements have evolved since publishing the amendments to the Regulations in 2014. Some of these economic and policy factors include:

- Canada's Paris Agreement target to reduce economy-wide greenhouse gas emissions by 30% below 2005 levels by 2030;
- Canada's Pan-Canadian Framework on Clean Growth and Climate Change and initiatives directed at reducing greenhouse gas emissions, including Canada's Clean Fuel Standard and commitment to price carbon pollution;
- the integrated nature of vehicle manufacturing and trade in the North American market;
- fuel prices in Canada and the impact on vehicle choice;
- federal and provincial efforts to increase the number of zero emission vehicles in Canada;
- the pace of technological advancement in the light-duty vehicle market;

---

2 Summary of Comments Received in Response to the Discussion Paper on the Midterm Evaluation of the Passenger Automobile and Light Truck Greenhouse Gas Emissions Regulations

- Canada-specific provisions under existing regulations to encourage advanced technologies; and
- the evolving composition of the Canadian fleet.

3 Responses to key consultation questions

The discussion paper supported consultations by seeking early views on factors to be considered when assessing the appropriateness of the Canadian requirements. The discussion paper posed 11 key consultation questions about the factors under consideration as part of Canada's mid-term evaluation, and the responses received are summarized below.

3.1 What levels of vehicle technology costs and payback timelines are reasonable for compliance with the existing 2022 to 2025 standards?

"Payback period" refers to the length of time it takes for the financial savings generated by more fuel efficient vehicles to offset the increased purchase price resulting from the technologies used to make the vehicles more fuel efficient. Differences such as fuel prices, vehicle kilometres travelled and currency exchange rates can affect payback periods in Canada when compared to the U.S.

Non-governmental organizations cited studies from the International Council on Clean Transportation, whose research indicates that the costs of complying with the existing standards has been falling faster than predicted when amendments to Canada's regulations were published in 2014. Almost all non-governmental organizations stated that no costly, high-risk or breakthrough technologies are needed to meet the existing standards out to the 2025 model year. Some non-governmental organizations also stated that any new innovative technologies developed in the coming years would likely aid manufacturer efforts to make vehicles more fuel-efficient. Several non-governmental organizations stated technological advances would be beneficial to the Canadian economy and industry, and would provide Canadian companies with a competitive advantage that could be exported internationally.

One non-governmental organization estimated that a vehicle complying with the 2025 model year standards would cost an average of $865 more than the same vehicle that complies with the 2020 model year standards; although this value would differ for each specific company. Offsetting these technology costs are benefits accrued due to technology implementation on vehicles. Non-governmental organizations estimated payback periods of between 1 to 6 years for 2020 to 2025 model year vehicles, with the lowest paypack period corresponding to the later model year vehicles. One non-governmental organization further suggested that increased gasoline prices from federal and provincial plans to price carbon pollution and 'feebate' structured vehicle taxes should be considered and would improve the associated payback period. They further suggested that the Canadian consumer could reasonably expect to save $4,000 on fuel costs alone if purchasing a 2025 model year standard complying vehicle.

Regulated companies and their associations stated that technology cost estimates and the level of technology

required to achieve the 2022-2025 standards are underestimated, and thus the associated payback periods are underestimated. They stated that specific technology costs and payback periods would vary for each company. In one example, a regulated company estimated that their cost increase of a 2025 model year over a 2021 model year vehicle would be $1,850. In contrast, an association representing companies who manufacture and supply various components to final vehicle manufacturers stated that the pace of efficiency technology introduction and the breadth of available efficiency technology options have grown beyond early projections and at lower costs than previously estimated. In addition, stringent standards had provided domestic suppliers and vehicle manufacturers a competitive advantage over foreign competitors through early adoption and optimization of vehicle technologies.

Many regulated companies and their associations stated that Canada is a technology taker within the global vehicle market and that it would not be cost-effective to design and build vehicles solely for the Canadian market. They stated that many companies would only be able to comply by curtailing the supply of certain models to Canada or increasing the cost of vehicles to unaffordable levels if Canadian standards are substantially different from those of a larger global market (historically the U.S. market).

Multiple regulated companies noted that an increasing number of consumers are choosing to lease vehicles, consequently reasonable consumer payback periods should not exceed five years. Some stated that the most common lease duration is three years and consumers would not be motivated to acquire a vehicle whose payback time exceeds the length of the lease.

3.2 Are there any impediments to meeting the estimated levels of electrification (plug-in vehicles) from the 2014 Regulatory Impact Analysis Statement?

The levels of fleet electrification for model year 2025 were estimated to be between 2% to 4% in the 2014 Regulatory Impact Statement that accompanied the Regulations. Data reported to Environment and Climate Change Canada by regulated companies indicates that sales of battery electric and plug-in electric vehicles is growing rapidly from a very small baseline, and that the vehicles accounted for about 0.5% of new vehicle sales in 2016.

Many members of the public and other levels of government stated that the main barrier preventing the uptake of electrified vehicles is the higher upfront purchase price when compared to internal combustion engine vehicles. Many members of the public expressed a desire to see additional federal and provincial financial measures to incentivize the purchase of, invest in infrastructure for and educate the public regarding electric vehicles. Members of the public encouraged the government to consider mandating or requiring companies to sell a certain number or percentage of electric vehicles. Members of the public also suggested the government consider other policies such as requiring vehicles to be equipped with certain technologies or banning the sales of internal combustion engines. Those who advocated for electric vehicle mandates often also stated that there was insufficient availability of electric vehicle models in Canada. They also suggested that a supplementary program that encourages fleet turnover would help speed the replacement of

conventional vehicles with electric vehicles.

Several non-governmental organizations stated that electric vehicles were unlikely to account for 2% to 4% of new vehicle sales without further government policy actions. They further stated that government investments in financial incentives, infrastructure, mandates and education programs would increase electric vehicle uptake in Canada. They further stated that charging infrastructure should use non-proprietary, common standards and be able to serve vehicles from all manufacturers.

The main impediments to increasing sales of electric vehicles identified by non-government organizations were:

- low plug-in electric vehicle availability;
- lack of plug-in electric vehicle price parity;
- insufficient charging/infrastructure investment; and
- lack of a federal zero emission vehicle strategy.

Non-governmental organizations stated that little new technology and electric vehicle deployment would be necessary to meet the 2025 standards. They further stated that financial incentives from provincial governments had been helpful in mitigating the higher prices of electric vehicles. To encourage the uptake of electric vehicles, non-governmental organizations suggested a variety of initiatives including:

- road tolls for internal combustion engine vehicles;
- ferry passes for electric vehicles;
- discounts or tax credits for the purchase of zero emission vehicles; and
- incentives provided directly to zero emissions vehicle manufacturers and importers.

Companies in the auto industry stated that the high cost of electric vehicles and lack of consumer financial incentives from government in all parts of the country were reducing the penetration of electric vehicles. They further noted that electric vehicle sales are low even in regions with financial incentives, but lowest in regions of the country without incentives.

Some regulated companies stated the existing regulatory provisions that require companies to account for the upstream emissions from electric vehicles after surpassing a specific sales threshold were an additional impediment, since the first companies required to account for upstream emissions would be those that sell the greatest number of electric vehicles.

3.3 What level of electrification (plug-in vehicles) and hybrid powertrains would be needed to achieve compliance with the existing 2022 to 2025 standards?

Many regulated companies stated that significantly more electrification than initially predicted would be needed to meet the existing standards. They also stated there no reasonable combination of affordable national policy, consumer-purchasing preferences, and factory output of electrified vehicles could change the fleet to meet the 2022 to 2025 model year standards.

Regulated companies stated that charging infrastructure was neither extensive nor visible enough to the Canadian public. One regulated company suggested that there might initially need to be more chargers than actually required to reassure consumers concerns about insufficient charging infrastructure availability.

One company provided data indicating that its fleet of new vehicle sales in Canada for 2018 consisted of 2.5% electrified vehicles and projected that they could achieve between 7% and 10% electrified vehicle sales by the 2025 model year if provincial consumer purchase incentives continued through to 2025 and fast charging infrastructure expanded along highway corridors. Another regulated company stated that the existing standards would require little to no battery electric vehicle adoption in order to achieve compliance through the 2025 model year.

Non-governmental organizations and regulated companies stated that consumer's increasing preference for light trucks over passenger cars was reducing overall electric vehicle penetration in Canada, because most current and upcoming plug-in models are in the passenger car segment. One industry association stated that continued low oil prices encourage consumers to purchase larger vehicles. Some companies and non-governmental organizations stated that the improving fuel efficiency of conventional vehicles made electric vehicles less attractive for consumers. These commenters cited the high cost of electricity in Canada and the fact that the range deficit suffered by electric vehicles in comparison to conventional vehicles becomes worse in colder conditions. Several regulated companies noted that many Canadian families only own one vehicle, and are unwilling to purchase a higher cost electric vehicle with limited range as their sole vehicle. They noted that Canadian household debt is now at record levels, and electric vehicles could not be expected to achieve meaningful market share until they achieve price parity with conventional vehicles. Another regulated company insisted that there are currently no impediments to widespread electrification and that the lack of available inventory has been the primary determinant of slow electric vehicles adoption in most jurisdictions to date. They suggested adopting an electric vehicle sales requirement and stated that this had increased electric vehicle supply in other jurisdictions.

Non-governmental organizations generally expressed the view that the current levels of electrification are not enough to meet Canada's climate change goals. It was suggested that more aggressive electric vehicle targets be set, federal and provincial governments increase coordination, and a new regulatory impact analysis statement be created for use in future Canadian regulatory action. Several non-governmental organizations also recommended a zero emissions vehicle mandate to complement the regulations.

3.4 Is the projected greenhouse gas emission reduction contribution of the light-duty vehicle sector towards meeting the government's emission reduction goals reasonable?

The Pan-Canadian Framework on Clean Growth and Climate Change was signed in December 2016 and represents a collective federal-provincial-territorial plan to grow the Canadian economy while reducing emissions and building resilience to adapt to a changing climate. The mid-term evaluation is focused on the greenhouse gas emission standards for new light-duty vehicles of the 2022 to 2025 model years. By 2030, annual greenhouse gas emissions in 2030 are expected to be about 7 million tonnes lower as a result the standards for these vehicles.

Respondents were in favour of continuing to reduce greenhouse gas emissions from the light-duty vehicle sector in Canada. Many regulated companies stated that achieving further substantial greenhouse gas emission reductions would be difficult, citing the current low-demand for electric vehicles and the lag time associated with fleet turnover as barriers. One regulated company noted that model year 2015 and 2016 vehicles had per vehicle emissions that were 15 to 17% lower than model year 2005 vehicles.

Regulated companies and a non-governmental organization stated that the burden of reducing greenhouse gas emissions should be shared equitably across all sectors of the Canadian economy. Non-governmental organizations and an industry association recommended that the government take a holistic approach to reducing greenhouse gas emissions and introduce policies to encourage electric vehicles, retire older vehicles and reduce the carbon intensity of fuels. Regulations were seen by these stakeholders as part of a suite of complementary and mutually reinforcing measures to promote the transition to low-carbon transportation systems.

Some non-governmental organizations and other governments stated the existing targets and expected emissions reductions for the light-duty vehicle sector were reasonable. Other non-governmental organizations, another government and a regulated company also expressed a desire for more stringent targets. An investment firm noted that passenger vehicle travel is likely to remain a part of Canada's transportation picture for the foreseeable future, particularly in rural areas; and that this continued reliance highlights the importance on setting appropriate stringent vehicle emission standards.

One non-governmental organization, who considered existing targets reasonable, calculated that aligning with the current U.S. proposal to freeze standards at model year 2020 levels for the 2021-2026 model years could increase greenhouse gas emissions by almost 11 million tonnes above the levels needed to achieve the targets outlined in the Pan-Canadian Framework.

3.5 Would compliance with the existing standards for the 2022 to 2025 model years be achievable while maintaining the competitiveness of the Canadian auto industry considering the integrated nature of vehicle manufacturing and trade in the North American market?

Many regulated companies noted that meeting the existing increasingly stringent standards in Canada would not be achievable if U.S. standards are held constant at model year 2020 levels. One regulated company stated that they did not see the potential for any vehicle with an internal combustion engine to comply with the 2025 light duty GHG standards without some form of electrification, such as a hybrid powertrain.

Regulated companies stated that Canada is a technology taker in the vehicle market, and that companies may need to curtail the supply of certain vehicle models and reduce the choices available to Canadian consumers if Canadian standards are more stringent than comparable U.S. standards. They further stated that amortizing the costs associated with designing, testing and building vehicles for a small market such as Canada

would make these vehicles too costly. Some industry commenters also predicted that consumers may respond to limited vehicle choice or higher vehicle purchase prices by delaying the purchase of new vehicles (which would delay the introduction of new safety technologies and could negatively affect overall economic activity) or opt to purchase new and nearly-new vehicles from the U.S.

Many regulated companies stated that maintaining alignment with U.S. standards is the only way for the Canadian automotive industry to remain competitive. One industry association noted that regulatory harmonization allows for greater economies of scale and efficiencies with fewer cost-ups from customization than would be required for small markets such as Canada.

Many non-governmental organizations, members of the public and an investment firm stressed the importance of maintaining the competitiveness of the Canadian auto sector in the context of the global marketplace, where there is a growing demand for low-emitting vehicles in other parts of the world. An investment firm also expressed concern that less stringent Canadian standards would reduce the incentive to develop new technologies in Canada. One non-governmental organization cautioned that Canadian industry could be in a weaker position if political change occurred following the 2020 U.S. election, and that relaxing standards would reduce the demand for advanced technologies in North America.

Another non-governmental organization stated that while parts manufacturing and vehicle assembly is integrated within North America, the competitiveness of the Canadian auto industry would not necessarily be undermined if Canada's greenhouse gas emission standards differed from those of the U.S.

3.6 Would the existing standards for the 2022 to 2025 model years provide benefits to consumers and to the public?

The majority of non-governmental organizations and some commenters from regulated companies stated that the existing standards provide substantial benefits to Canadians. Regulated companies and non-governmental organizations stated that projected fuel savings would outweigh the compliance costs, saving the public money in the long-term and that actions that reduce greenhouse gas emissions benefit both the climate and public health. An investment firm stated that the existing regulations also benefit the public via spurring economic development opportunities.

An industry association stated there are many consumers who attach no personal value to greenhouse gas reductions. One regulated company stated some consumers sometimes avoid advanced technologies due to their discomfort with how the technology works, despite the environmental and fuel-saving benefits.

Most regulated companies stated that the existing standards would not benefit the public in a bifurcated market, and that the associated costs would lead to increased vehicle prices and reduced vehicle availability as some companies would likely prevent the sale of certain models to achieve compliance. They further stated that these costs and the possible delayed acceptance of alternative-fuel models and slower fleet turnover, could affect profitability and lead to job losses.

3.7 Are there any safety related considerations that should be taken into account?

The U.S. projects that its current Notice of Proposed Rulemaking would reduce on-road fatalities by 12,700 in the U.S. as compared to the existing standards over the lifetime of vehicles produced through model year 2029. The estimated reduction in traffic fatalities are attributed to the lower cost of driving leading to increased number of miles driven, consumers remaining in older less-safe vehicles due to costs, and lighter cars providing less occupant protection in collisions.

A regulated company and industry association stated that Canada might not experience the safety benefits projected in the U.S. Notice of Proposed Rulemaking if Canada did not maintain alignment with the proposed U.S. standards. An industry association and regulated companies both stated that this delayed replacement of new vehicles in the market could result in reduced on road safety benefits and incremental on road fatalities and injuries.

A substantial number of non-governmental organizations and a regulated company strongly disputed the safety analysis put forward in the U.S. Notice of Proposed Rulemaking. One non-governmental organization highlighted several recent scientific papers which have concluded that the practice of light weighting vehicles does not increase road fatalities and might even have a net positive effect on the number of traffic fatalities because it reduces the chance that vehicle-pedestrian collisions are fatal for the pedestrian. Another non-governmental organization noted that the National Highway Traffic Safety Administration's analytical methods and findings with respect to light-weighting are in direct opposition to their own previous findings during the 2012 rulemaking and the safety analysis in the 2016 joint Proposed Determination of the Appropriateness of the Model Year 2022-2025 standards. Some non-governmental organizations also noted that the safety arguments in the proposed rule conflict with a study on this issue published by the U.S. National Academy of Sciences in 2015. Some non-governmental organizations disagreed with the assumption of a 20% rebound rate and the projected associated safety impact. Finally, many non-governmental organizations pointed out what they believe to be technical errors, calculation errors and indefensible assumptions in the safety related analysis of the U.S. Notice of Proposed Rulemaking.

3.8 Are there changes to existing flexibilities or other new flexibilities that should be considered to facilitate compliance with existing standards while minimizing impacts on expected greenhouse gas emission reductions?

Various flexibilities and non-monetary incentives are incorporated into the regulations and these flexibilities allow companies to comply with Canada's existing light-duty vehicle greenhouse gas emission regulations in a manner that best suits their business model and technology deployment. These include off-cycle credits that recognize the greenhouse gas emission benefits of technologies that are not accounted for during standard compliance test cycles (i.e. active aerodynamics), credits for air conditioning efficiency improvements and reduced leakage, and credit multipliers for advanced technology vehicles like plug-in hybrid and battery electric vehicles.

---

9 Summary of Comments Received in Response to the Discussion Paper on the Midterm Evaluation of the Passenger Automobile and Light Truck Greenhouse Gas Emissions Regulations

The vast majority of regulated companies stated that flexibilities allow companies to utilize the technologies best suited to each company while complying with increasingly stringent standards.

Regulated companies stressed their support for having multipliers for advanced technology vehicles that encourage companies to bring more advanced technology vehicles to market, but also suggested changes to the current provisions outlined in the Regulations. Most stated that the existing credit multipliers should be increased and extended through model year 2025, rather than beginning to decrease in the 2020 model year. One regulated company suggested that a higher credit multiplier should be offered for vehicles with greater all-electric range. Another regulated company suggested that credit multipliers should be expanded to all vehicles equipped with hybrid electric powertrains, rather than the current provisions, which limit these credits to certain types of light-duty trucks. Some regulated companies also called for credits to be made available for investments in alternative fuel charging/refueling infrastructure, including the suggestion that a low carbon fuel standard using a credit trading system could be considered in order to encourage the development of refueling infrastructure.

Industry associations supported the current off-cycle credit program and many recommended making it easier to add new technologies to the eligible technologies list instead of waiting for the next regulatory amendment cycle. Equipment suppliers suggested offering carbon dioxide equivalent credits for technologies that reduce black carbon.

One non-governmental organization expressed concern that regulated companies could become increasingly more dependent on off-cycle credits, which could compromise the deployment of other advanced technologies. Parts suppliers and regulated companies were supportive of off-cycle credits for efficient air conditioner units and low global warming potential refrigerants and do not believe they should be removed as proposed in the current U.S. Notice of Proposed Rulemaking. Many regulated companies believe that there should be an option to buy credits from the regulator as a compliance mechanism if they are unable to buy from other companies on the open market.

Several regulated companies stated that provisions to eventually account for upstream emissions from electric vehicles should be removed from the regulations. They claimed that these provisions might inadvertently create a disincentive for companies to increase sales of electric vehicles at some point in the future.

3.9 Are there any emerging trends such as car sharing that need to be taken into account as part of the mid-term evaluation?

A number of regulated companies and one non-governmental organization noted the investments automakers have been making to develop autonomous vehicles, and discussed how Canada's regulations should treat these vehicles. Regulated companies highlighted that the U.S. Environmental Protection Agency has stated that autonomous vehicles might have the capability to reduce greenhouse gas emissions and stated that regulations should contain provisions to recognize this. One non-governmental organization noted that the increased weight and energy consumption resulting from the sophisticated sensing systems, telematics,

and computing systems that enable autonomous vehicles had the potential to increase greenhouse gas emissions. They noted that autonomous vehicles had the potential to increase emissions because of increased vehicle kilometers travelled both with fare paying passengers and empty vehicle kilometres travelled between revenue generating trips.

3.10 Are there any other factors affecting the light-duty vehicle market that the department should consider as part of the mid-term evaluation?

A number of companies and non-governmental organizations highlighted the continued shift in consumer preferences towards light-trucks. Many regulated companies highlighted that the Canadian new vehicle fleet had proportionally more light-trucks and all-wheel drive vehicles than the U.S., and that Environment and Climate Change Canada should consider this in the mid-term evaluation. One non-governmental organization claimed that the current regulations have enabled growth in sales of larger vehicles and that the government should consider policies to shift consumer purchases back toward passenger cars.

Several regulated companies and their associations stressed the importance of considering the phase-in of the Tier 3 air pollutant emission standards as part of the mid-term evaluation. These air pollutant standards are also fleet average standards and aligned with equivalent standards in the U.S. and the challenges of meeting these air pollutant standards would increase if Canada were to have different greenhouse gas emission standards than the U.S. Regulated companies warned that in this scenario they might need to limit the vehicle models available to Canadians or sell Canada-unique models with increased costs and regulatory burden.

Some non-governmental organizations suggested that the government reform the current federal excise tax on vehicles with high fuel consumption as a complementary measure to encourage the purchase of more efficient vehicles. These non-governmental organizations also suggested the government consider policies that would support a shift away from personal vehicles by supporting public transit, active transportation, and shared mobility services. These non-governmental organizations and a regulated company further suggested that the Government consider additional complementary policies to encourage the uptake of electrified vehicles including a low carbon fuel standard, a zero emissions vehicle mandate, and policies to encourage the retirement of older vehicles.

Some non-governmental organizations expressed concern with the multipliers for electrified vehicles in the current regulations. They stated that as sales of the electrified vehicles increased, the additional credits that regulated companies receive from the sale of these advanced vehicles could in turn allow increased sales of inefficient vehicles and offset the reduced greenhouse gas emissions from electric vehicles. They recommend that Environment and Climate Change Canada consider reducing or eliminating the multipliers for electrified vehicles in the regulations.

One comment from a member of the public recommended that the government adopt a feebate program as a complementary measure to improve demand for more fuel-efficient vehicles, and advanced vehicles, and reduce demand for inefficient larger vehicles. This commenter advocated for the fees and rebates to be

applied broadly across all vehicles types with amounts varying depending on vehicle performance, and emphasized that the feebate thresholds should shift over time to ensure the system remains cost neutral.

3.11 Are there any other factors that the department should take into account in considering the outcome of the U.S. mid-term evaluation and the appropriateness of the existing 2022 to 2025 model year standards in Canada?

Many regulated companies emphasized the importance of maintaining standards that are aligned with those of the U.S. but some also indicated that they are not necessarily supportive of the current U.S. proposal to freeze standards at 2020 levels for the 2021 to 2026 model years. They recommended that Environment and Climate Change Canada await the completion of the current on-going U.S. rulemaking process and the outcome of negotiations between California and the U.S. federal government. The companies stated that Canada-specific emission standards would waste resources and offer few benefits to consumers or the environment. One regulated company and several members of the automotive supply industry claimed that aligning with a less stringent U.S. standard could negatively affect Canadian auto parts manufacturers and risk billions of dollars that have been invested in advanced technologies.

Some non-governmental organizations and an investment firm encouraged Environment and Climate Change Canada to consider aligning with stringent standards in other countries and regions such as California. Some non-governmental organizations suggested that Canada look to Europe, China, and Scandinavian countries for policies to reduce greenhouse gas emissions from light-duty vehicles.

Some non-governmental organizations referenced recent reports from the auditor general and Canada's Third Biennial Report on Climate Change, which state that Canada has not yet adopted sufficient measures to meet its Paris commitments fully. They stated that Canada should adopt further measures to reduce emissions from transportation to help meet Canada's climate change goals.

Another non-governmental organization noted that projections in the regulatory impact statement that accompanied the 2014 regulations indicated that 80% of the expected GHG reductions from the light-duty vehicle sector would be attributable to model years 2021-2025.

4 Next steps

Over the coming months, Environment and Climate Change Canada will continue to assess the comments and issues raised by stakeholders in response to the discussion paper. The department will continue to assess the costs, benefits and potential impacts to the Canadian automotive industry of the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations.*

The U.S. has announced its intention to publish a Final Rule in March 2019. The department will continue to monitor the on-going U.S. regulatory amendment process, the actions of California and other U.S. states, and many other global jurisdictions that are developing measures to address greenhouse gas emissions from light-duty vehicles.

Following the publication of a U.S. Final Rule, Environment and Climate Change Canada will engage in additional consultations to inform a determination of whether the established greenhouse gas emission standards for the 2022 to 2025 model years remain appropriate for Canada. If the department determines that amendments to Canada's Regulation are warranted, a regulatory development process will be initiated and will include further consultations and opportunities to provide comments.

5 Annex: Breakdown of public comments

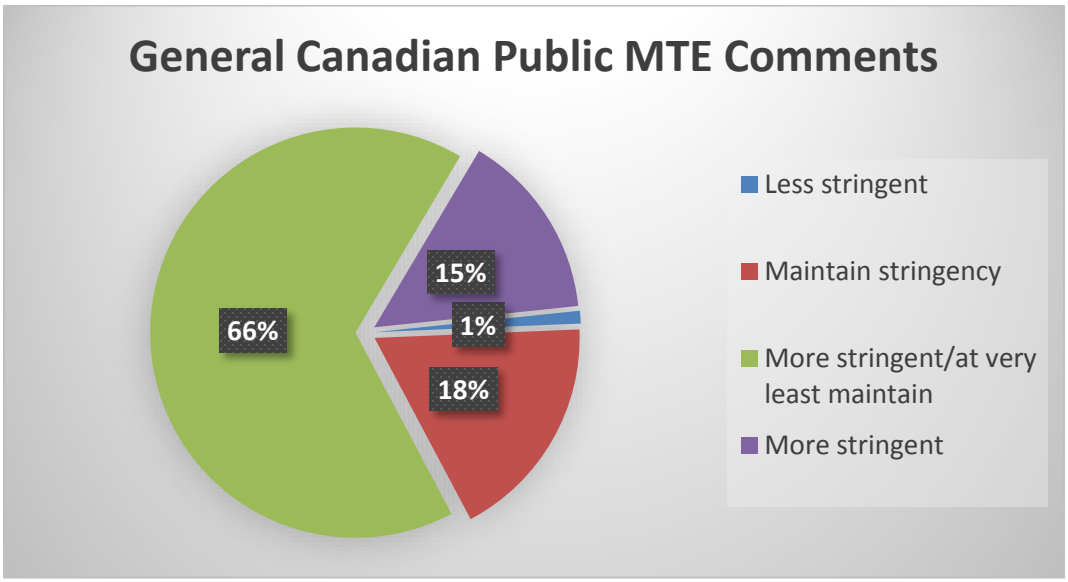

Figure 1: Breakdown of comments from the general public

Figure 1 is a pie chart that shows the percentage make-up of standard stringency suggestions from the general public, regarding the Passenger Automobile and Light-Truck Greenhouse Gas Emission Regulations.

The chart is divided into four different sections that are classified according to desired level of regulation stringency suggested by the general public, which are as follows:

- *66% of the general public suggested that the Regulations become more stringent but at the very least remain the same;*
- *18% of the general public suggested that the stringency of the Regulations remain the same;*
- *15% of the general public suggested that the stringency of the Regulations should be increased;*
- *1% of the general public suggested that the stringency of the Regulations should become less stringent.*