CG1: https://canadagazette.gc.ca/rp-pr/p1/2022/2022-12-31/html/reg1-eng.html

General Comment - none

Executive Summary

Clean Energy Canada is a climate and clean energy program within the Morris J. Wosk Centre for Dialogue at Simon Fraser University. We are pleased to submit these comments as part of the Government of Canada's consultations on the Regulations Amending Passenger Automobile and Light Truck Greenhouse Gas Emission (the Proposed Regulations).

Clean Energy Canada strongly supports the introduction of a zero-emission vehicle regulation as a necessary part of the federal government's comprehensive plan to achieve the government's zero emission vehicle (ZEV) sales targets and reduce greenhouse gas (GHG) emissions in the transportation sector, as outlined in the Emissions Reduction Plan (ERP). As the RIAS acknowledges, the rapid adoption of ZEVs[1] is required to achieve Canada's 2030 climate targets and drive the deep GHG reductions needed to achieve net-zero emissions in the transportation sector by 2050. And as the country's emissions gap to 2030 continues to widen—with Canada's biennial report[2] projecting an eight megatonne *increase* in 2030 transportation emissions compared to the 2030 transportation-related emissions projected under the Emissions Reduction Plan—ambitious action must be taken now to curb emissions in this sector.

A supply-side regulation is also needed to improve the state of ZEV supply across Canada. The most recent Transport Canada-commissioned study of ZEV inventory[3] found that 82% of dealerships across the country had no ZEVs in stock and 38% of those dealerships reported wait times of over six months before a prospective buyer could drive a ZEV home. The analysis also indicated a 72% drop in EV inventory between 2021 and 2022. Stringent regulations have been key to the success of other leading jurisdictions by ensuring a predictable supply of ZEVs. Without similar regulatory action, ZEV supply will continue to be directed to regions with stronger sales targets, including California and the 16 other U.S. states[4] that have adopted California's ZEV mandate. Canada needs a strong regulation that will act as a countermeasure to secure supply. Once Canada's regulated sales targets come into effect, 42% of the Canada-U.S. market would be covered by a ZEV sales regulation (up from 36% in the absence of a Canada-wide regulation).

We are pleased to see the Proposed Regulations introduced expeditiously, using existing authorities, as a top priority of the federal government and want to ensure that any changes made in CG2 do not delay their finalisation and successful implementation. However, while Clean Energy Canada supports many aspects of the proposed Regulations, we believe the regulation as drafted risks failing to meet the following key objectives:

1. Driving emissions reductions by ensuring Canada meets its ZEV sales targets by increasing ZEVs available for sale.

2. Creating market certainty for consumers seeking a ZEV, as well as for automakers, utilities, charging infrastructure providers and other stakeholders in the EV ecosystem.
3. More equitably distributing ZEV supply across Canada.

Specifically, the Proposed Regulations' combination of weak sales targets (especially pre-2030 and compared to other North American ZEV mandate jurisdictions) and overly generous compliance flexibilities risks meeting Canada's climate targets and reduces the very market certainty regulated sales targets are meant to provide.

Clean Energy Canada's recommendations fall into two broad categories:

1. The first, and our highest ranking proposed change, to increase sales targets ramping up to 2030, to at least as stringent as other North American jurisdictions (B.C., QC and California). This will have a multi-tiered effect:
   a. More stringent sales targets will result in a greater distribution of sales to provinces that do not have regulated sales targets (those outside of B.C. and QC) as this would be the only means for automakers to meet their targets.
   b. Due to regulatory provisions with overly flexible compliance options for banking and borrowing, PHEV allowances and EV-related activities - real ZEV sales will track on a lower trajectory than the regulated sales targets within the Proposed Regulations by several percentage points. Increasing regulated sales targets would mean that real sales targets would track more closely to the original regulated sales targets within this draft.

2. The second, Canada should also **tighten up compliance flexibilities to allow for greater certainty in meeting emissions and sales targets** (further detailed in the amendment section). In order of priority, our suggested changes would be to:
   a. Remove the EV-related activities clause, or at the very least, create a strict criteria to limit credit generation under this flexibility, which detracts from real sales of ZEVs for credit creation to prevent gaming.
   b. Create more clarity around enforcement and compliance, by exploring authorities feasible options under CEPA to introduce monetary penalties.
   c. Tighten flexibilities on banking and borrowing.
   d. Tighten flexibilities limitations on PHEVs and,
   e. Explore options to prevent double counting of credits within provincial and federal regulations.

More specifically, Clean Energy Canada recommends the following changes to the Proposed Regulations to ensure they achieve their objectives:

- **Minimum ZEV requirements (s. 30.3):** Increase annual sales targets to align with the minimum sales percentages in other North American ZEV mandates, especially before 2030, according to the following schedule:
    - 26% by 2026
    - 34% by 2027
    - 43% by 2028
    - 53% by 2029
    - 65% by 2030

- **Calculation of ZEV value (s. 30.4):** Reduce the cap on compliance that can be met by PHEVs from 45% in 2026 to be (at the very least) in alignment with California's cap of 20% in initial years, with a declining cap eventually reaching 0% by 2035. Include an additional signal that the government intends to phase out PHEVs entirely post-2035.

- **Banking (s. 30.5(5)(a)):** Reduce the number of years credits can be banked for from five years to three years, in line with Quebec's regulation. Apply a declining cap on the percentage compliance that can be met with banked credits according to the following schedule:
    - 2025-2027: 20%
    - 2028-2030: 15%
    - 2031-2033: 10%
    - 2034 onward: 0%

- **Borrowing (s. 30.5 (5)(b)):** Require automakers to resolve any past credit deficits within one year, in line with B.C.'s regulation, instead of three years after which they would be subject to penalties.

- **Eligible ZEV activity (s. 30.6(4):** Remove the proposed alternative credit mechanism whereby automakers could earn credits by investing $20,000 in eligible ZEV activities. Explore other options that more closely resemble the administrative fines available under other North American ZEV mandates such as a last-resort option to purchase credits from the federal government, similar to the use of "purchase agreements" in B.C., or a variation of the "credit clearing mechanism" under the Clean Fuel Regulation.

- **Early action credits:** None. Clean Energy Canada strongly supports the current proposal to exclude Early Action Credits.

- **Interaction with existing provincial ZEV standards:** Explore options to prevent double counting of ZEV credits between the B.C., Quebec and federal ZEV mandates, such as by auditing Vehicle Identification Numbers (VIN) from provinces with a ZEV regulation against federal VIN.

Issues

In 2020, the transport sector[2] was the second largest emitter in Canada, making up 30% of total emissions, with passenger transport making up more than 50% of transport emissions. In order for Canada to reach its 2030 emissions targets (and reach its net zero commitments, written into law, by 2050) it must reduce its passenger vehicle emissions by almost 20%[5] (or 16 MT) by 2030 to remain on track. This becomes particularly difficult as transport emissions have continued to increase year over year[2] since 2005 (not including the pandemic years). In addition, the most recent Biennial report shows that Canada's projected 2030 transportation-related emissions have already increased by 8 MT compared to the Emissions Reduction Plan projections. Also taking into consideration the expected growth in transport activity[6] in the years to come, on a per vehicle basis, the emissions reductions necessary will be even greater. By the start of the proposed regulation, this would leave only 4 years between 2026 and 2030, and does not include the emissions reductions that will be left on the table through the various compliance flexibilities offered through the draft regulation.

ZEV are the best technology option when it comes to the scale of emissions reductions necessary to meet Canada's climate commitments. The more rapidly Canada is able to reach the mass deployment of ZEV, through regulated ZEV sales targets, the better we can capitalise on the emissions reduction and economic opportunities ZEVs bring to Canadians. Clean Energy Canada analysis that is to be released in the coming weeks shows that if sales targets are met as outlined in the ERP, almost 200,000 direct and indirect jobs would be added along the ZEV supply chain by 2030, and almost 1.5 million by 2050. While other technologies are used comparatively for emissions reductions benefits, such as hybrid EVs (HEV), their emissions reduction potential is limited. At best, HEVs[1] can reduce emissions compared to a traditional internal combustion engine vehicle (ICEV) by 20% on a lifecycle basis. This would mean that every passenger vehicle on Canada's roads by 2030 (not sales), or 24 million vehicles[7], would need to be an HEV by 2030. Based on 2021 annual sales[8], it would take 15 years to convert all of Canada's on-road vehicles to HEV. Comparatively, battery electric vehicles (BEV) can reduce lifecycle emissions by more than 60 - 68%—that's more than three times the emissions benefits. This highlights two key points, i) ICEV technologies, including HEV, do not present a realistic path towards decarbonization and ii) ZEVs present the only realistic path towards reaching Canada's climate targets under the Paris agreement.

Background

Regulated ZEV targets provide much needed market certainty (to consumers, charging infrastructure providers, utilities) by providing a predictable trajectory for ZEV uptake in the country. It is why several jurisdictions around the world have adopted similar measures[9]- including California and 16 other states, B.C., QC, Nova Scotia

(proposed), the UK (proposed) and China. In fact, this predictability helps build the charging infrastructure and grid capacity (including transmission and distribution) that is commonly pointed to as barriers to greater ZEV uptake. Demand-side policies such as vehicle incentives help reduce the upfront cost of ZEVs to allow Canadians to benefit from the longer term savings that ZEVs provide. But these vehicle incentives do not matter when there are no ZEVs at dealerships. Studies[3] show that less than 1 in 5 dealerships across Canada had a single ZEV in stock in 2022, with almost 40% of dealers having wait times of more than 6 months. Canada has a ZEV supply problem - and the best way to address this is through supply-side regulations, not vehicle or charging infrastructure incentives. When it comes to the price of a ZEV to consumers, already this has decreased[10] by more than 7% in 2022, while industry-wide prices increased by 6%. OEMs are already announcing price cuts[11] in markets around the world, including the U.S., Canada and China to remain competitive - as actors in the space are now beginning to reap the benefits of acting early, capturing market share and shifting to mass production that provides economies of scale. This trend will continue, as regulated sales targets require automakers to manufacture affordable ZEVs to meet the needs of all Canadians, in larger volumes. When sales targets reach 30, 60 and 100%, ZEV prices will further decrease. Studies[12] show that a 100% sales target by 2035 would reduce ZEV prices by 20% in Canada.

Objective
As noted above, Clean Energy Canada supports the Proposed Regulations and wants to see regulations come into force without delay. However, if Canada wants the regulated ZEV sales targets to be successful at reaching sales targets and reducing GHG emissions in line with the trajectory outlined in the ERP, Canada should raise the sales targets to be more in line with other leading jurisdictions as well as tighten the available compliance flexibilities (both discussed in detail in our submission in the section “Amendments”). Clean Energy Canada strongly opposes any further dilution of the regulation from the CG1 version.

Interaction with U.S. GHG Emission Regulations

While it is a valid aspiration of the regulation to “reduce the regulatory burden for companies operating in both the Canadian and U.S. markets”, Canada cannot wait for the U.S. EPA’s vehicle emissions standard expected in 2023 to structure its regulation. For this regulation to be effective for Canada, it is important that the regulated ZEV sales targets and the vehicle emissions standard operate as two separate regulatory instruments. This also prevents Canada from being beholden to drastic swings in policies from less ambitious to more ambitious (and vice versa) due to changes in U.S. government changes, as was seen recently with the EPA’s vehicle emissions standards.

Clean Energy Canada supports aligning Canada’s Electric Vehicle, Fuel Cell Vehicle and Plug-in Hybrid Electric Vehicle Multipliers with those in the updated U.S. GHG schedules for model years 2023 to 2024 and phasing these multiplier credits out entirely starting in 2025. This must be maintained in the next version of the regulation. As the Proposed Regulation will be responsible for driving supply for ZEVs in Canada, the electric vehicle multiplier compliance flexibility under Canada’s vehicle emission regulations is no longer needed.

EV multiplier credits have been shown to reduce ZEV sales and significantly erode the GHG emission benefits of vehicle emission standards. For instance, the U.S. EPA's final tailpipe emission rule Regulatory Impact Analysis[13] found that EV multipliers are expected to *decrease* EV uptake in the years they are in effect (2023 and 2024). Similarly, a Union of Concerned Scientists' analysis[14] on the impact EV multipliers have had on the U.S. standards found that the multiplier credits drastically reduce the overall stringency of the standard a manufacturer must meet—and this reduction in stringency reduces the need for technology deployment to meet the standard, allowing for manufacturers to increase sales of gasoline-powered vehicles at the expense of more EVs. It also found that those remaining internal combustion engine vehicles are less efficient than they otherwise would have been (in other words, selling more EVs reduced fleet average emissions such that OEMs could sell a greater number of larger, higher-polluting ICE vehicles).

Description

As noted above, Clean Energy Canada supports the Proposed Regulations, and wants to see regulations come into force without delay. However, if Canada wants the regulated ZEV sales targets to be successful at reaching sales targets and reducing GHG emissions in line with the trajectory outlined in the ERP, Canada should consider raising the sales targets to be more in keeping with other leading jurisdictions, (discussed in detail in our submission in the section "Amendments" Description" and tighten the available compliance flexibilities (both discussed in detail in our submission in the section "Amendments") . Clean Energy Canada would strongly oppose any further dilution of the regulation from the CG1 version as this would risk being a regulation completely without teeth and unable to meet its objectives.

The Proposed Regulations risk leaving emissions reductions on the table. It is not the individual aspects of the regulation that are problematic, but the sum of all parts which can create further delays in mass adoption of ZEVs in Canada. The example below demonstrates theoretical choices an automaker could make that would result in a large difference by 2030 between the ZEV target and the real % of ZEV sales.

Supply For Sale %	2026	2027	2028	2029	2030
Target %	20%	23%	34%	43%	60%
Real %	23% (3% banked)	25% (2% banked)	34%	36% Apply 5% banked credits (26 – 27), Apply 2% (of fleet sales) compliance from EV related activities	44% Apply 10% delay clause to 2033 Apply 6% (of fleet sales) compliance from EV related activities

*Assume each year an automaker sells 100,000 cars - for simplicity.

While theoretical, it is easy to envision individual automakers pursuing varying degrees of such a scenario. While flexibility is key in providing automakers the capability to meet their obligations based on their individual business case, it is important to create stringent enough criteria to also meet Canada's emissions reduction and sales targets. This is a fictional scenario based on possible compliance pathways across the market under the existing regulation. It is clear that by using only the banking, borrowing and EV related activities provisions in a reasonable manner, plus the proposed EV charging credits, an OEM could easily be 16% lower than the proposed 2030 target. If multiple automakers go down a variation of this path then the market could easily be well below the necessary sales targets, particularly in later years with higher sales targets. These calculations do not even take into consideration the pollution reduction impacts of using PHEVs to comply with the regulation in early years. Studies[15] show that PHEV emissions labelling grossly overestimate their emissions reduction potential by driving 26 - 56% less on electricity than the label.

Another example looks at the banking provision with no cap on banked credits that can be used for compliance and a 5 year credit expiry period. These flexibilities combined with lower sales targets in initial years would mean that overcompliance in initial years would allow automakers to use banked credits to offset sales in later, more stringent years of the regulation.

Supply For Sale %	2026	2027	2028	2029	2030
Target %	20%	23%	34%	43%	60%
Real %	27% (7% banked)	28% (5% banked)	34%	41% Apply 2% banked credits	50% Apply 10% banked credits

*Assume each year an automaker sells 100,000 cars - for simplicity.

Again, this fictional scenario does not factor in other compliance flexibilities such as borrowing, EV related activities or PHEVs, which would water down the ZEV sales and emissions-related impacts further.

Other: Interactions with existing provincial ZEV standards

Clean Energy Canada recommends exploring alternative approaches to facilitate an interaction with existing B.C. and QC regulations to ensure that there is no double counting between regulations. Essentially, a vehicle that earns a credit in one provincial regulation should not be able to earn a credit in the federal regulation. This would prevent stacking of credit incentives in markets that already benefit from a ZEV regulation. This also prevents further exacerbating supply distribution, as B.C. and QC take 70% of ZEV supply[16] due to their respective supply regulations.

Clean Energy Canada suggests exploring alternative mechanisms to enable more even distribution of ZEV supply across Canada. With the current design of the federal draft regulation, provinces that are lagging behind in ZEV sales (outside of B.C. and QC) could be at risk of falling further behind as B.C. and QC continue to receive priority ZEV supply due to more stringent sales targets, a tighter credit market (more limitations on banking, borrowing and penalties) and strict penalties. In addition, the gap between lagging provinces and leading provinces can be significant, to the point where it would be difficult to "catch up". For example, B.C. had almost 5 times more ZEV sales than AB in 2022[16].

Some suggestions include:

1. Increasing overall sales targets to allow for greater supply to go to other provinces without a provincial ZEV regulation;
2. Auditing Vehicle Identification Numbers (VIN) from provinces with a ZEV regulation against federal VIN to prevent double crediting.

It is important to note that these suggestions would only be feasible with a tight credit market, with limitations on compliance flexibilities as set out in detail in previous sections, including: banking, borrowing, EV related activities and penalties.

Other: Early action credits

Clean Energy Canada supports the regulatory approach to not award early action credits, which should be maintained in the next version of the regulation.

Early action credits (EAC) are useful when introducing a novel technology with an enforced regulation. Therefore, early actors can benefit from investments in this technology preemptively before the regulation starts. We strongly recommend not introducing EAC, primarily due to the EV market not being in its nascent stages. As recent sales have shown, B.C. and QC have reached record-breaking sales percentages of 18% and 13% respectively in 2022[16]. Nationally, Canada has reached almost 9% ZEV sales in the same time[16]. This coupled with automakers making new announcements for ZEV models means that these investments are going to happen regardless of if EAC are offered or not. If these were introduced, they would subsidise actions that regulated parties would have been making anyway.

Finally, analysis shows that weaker sales targets combined with higher compliance flexibilities (including EAC) in other North American[17] jurisdictions such as California, have resulted in a surplus of credits in the very first year of the regulation. This surplus continues to grow as the years progress, reaching millions of credits in 2021. The

domino effect that could be created would jeopardise Canada meeting its increasingly stringent sales targets, especially as these are back loaded to later years of the regulation.

Regulatory development

Clean Energy Canada supports the use of regulated ZEV sales targets as the mechanism for emissions reduction and increasing ZEV supply and hence sales in Canada. The current vehicle emissions standards, as they stand, are insufficient to meet Canada's ZEV sales and emissions targets. As outlined in the U.S. EPA's vehicle emissions standard, with which Canada aligns, by 2026 the vehicle emissions standards estimate ZEV penetration rates to be only 17%[18] - well below where some provinces are *already* tracking, and incongruous with Canada's own ZEV sales targets that are aligned to a pathway to achieve net-zero emissions by 2050.

If, as suggested by some, the use of increasingly stringent vehicle emissions standards were to be used that *also* align with the ZEV sales targets and emissions targets set by Canada, it would need to be more ambitious than the U.S.' vehicle emissions standards are currently. For instance, Canada would need to adopt vehicle emission standards as stringent as the E.U.'s finalised CO_2 emissions standard, which uses its vehicle emissions standard effectively to ban all combustion vehicles, including PHEVs, by 2035.

Regulatory analysis

Clean Energy Canada supports the RIAS finding that the Proposed Regulations will produce savings of $33.9 billion in net energy costs with an overall net benefit of $26.8 billion. This is in alignment with Clean Energy Canada's view that greater ZEV adoption in Canada is not only beneficial for the environment, but also provides overall economic benefits as well when factoring in the real cost of carbon. The finding of incremental ZEV and home charger costs of $24.5 billion, however, may ignore the added benefit of regulated sales targets to address affordability concerns related to the upfront higher capital cost of ZEVs. While ZEVs can save Canadians upwards[19] of $10,000 - $18,000 over the ownership of the vehicle, the upfront cost of the vehicle can be challenging for individuals in lower income brackets to access those longer term savings. Already, due to technological advancements, and overall expected falling commodity prices in the longer term, it is expected that ZEVs could reach cost parity on their purchase price in the next few years. Studies[20] show BEV reaching price parity as close as 2024 - 2026 for short range models (240 - 320 km) and 2026-2029 for medium range models (400 - 480 km), with the longest range reaching cost parity potentially within this decade. Already, we are also seeing price cuts from OEMs[11] to remain competitive. The regulated ZEV sales targets would allow for necessary competition between automakers - particularly as we reach levels of mass adoption. This is because reaching targets of 30, 40, 60 and eventually 100% sales means that the needs of **all** Canadians from different income levels will need to be met. As automakers begin to learn to make efficiencies in their production line, mass produce ZEVs and reduce costs in their supply chain to remain competitive, those cost-savings would be passed down to consumers. Despite overall vehicle costs going up for the car industry in 2022 (about 6%), EV costs went down[10] by about the same

amount over the same period (7-8%). This is despite supply chain challenges and shortages. A recent study[12] found that a regulated sales target can lead to more than a 20% reduction in electric vehicle prices for the average consumer. This is because automakers would have to bring affordable models to the market and manufacture at scale to meet ZEV sales targets.

Clean Energy Canada notes that the RIAS's methodology assumes Canada's sales targets will be met annually. This does not factor in the several compliance flexibilities offered in the draft regulation, which detract from increasing ZEV supply and sales and therefore emissions reductions. As evidence in our examples above, it is clear that in numerous real-world scenarios, with the compliance flexibilities provided within this draft regulation, sales targets will be missed. This has been demonstrated in similar jurisdictions such as California's ACTII modelling showing a 5 - 8% difference in real sales[21] of ZEV due to the compliance flexibilities in the earlier years of the regulation leading up to 2030. Canada's similar banking and borrowing provisions to California, but weaker sales targets than California, combined with unprecedented compliance flexibilities through EV related activities and higher PHEV allowances, means Canada will not only leave emissions reductions on the table, but also risk meeting its already less ambitious sales targets. Based on Canada's emissions reduction trajectory tracking lower than projected towards our 2030 ERP targets, we cannot risk diluting this regulation further.

Implementation, compliance, enforcement and service standards section -

While we are aware of the limitations imposed by CEPA, Clean Energy Canada recommends the regulation align with best-in-class practices regarding compliance, penalties and enforcement followed by other North American jurisdictions. B.C., QC and California all have an administrative penalty of $20,000 per credit deficit. This is a simple, straightforward and transparent approach to penalties that can be easily quantified.

Currently, by relying on criminal sanctions under CEPA, it is unclear whether a prosecution would be pursued and how long it would take to reach a verdict. It is also unclear what the quantity of the financial penalty would ultimately be if the regulated party were found to be in violation of the regulation. The lack of a stringent, swift penalty in the face of regulated sales targets creates significant uncertainty in the repercussions for non-compliance. This would risk Canada reaching its ZEV sales and emissions targets. Clean Energy Canada recommends exploring other options that would more closely resemble the administrative fines available under Quebec, British Columbia and California's ZEV mandates if administrative fines are not available under the relevant section of CEPA.

One option could be the purchasing of credits from the government as a "last resort" mechanism. This option is available under B.C.'s ZEV mandate legislation (see section 15 concerning purchase agreements). So long as the credit price is high enough to change behaviour ($20,000 is the penalty used by California, B.C. and QC), and credits purchased could not be banked, this could act as a proxy in the absence of administrative fines under CEPA. A cap on the percentage of a party's compliance obligation that could be met using these credits will be required, such as 10% per year in 2026-2030, 6% in 2031-2034 and 0% in 2035.

Other potential mechanisms could include adopting a similar mechanism to the Credit Clearing Mechanism under the Clean Fuel Regulation (CFR). Other options under the CFR, which also faces the same limitations as this draft regulation by sitting under CEPA, has a "last resort measure" that allows for "primary suppliers to offset up to 10% of their annual liquid class reduction requirement for a compliance period by payment at a fixed price into a fund that invests in, and obtains GHG emissions reductions, in the short term" through the Environmental Damages Fund (EDF).

If this recommendation is adopted, it should apply only if there is a market-wide credit deficit to ensure this is used as a "last resort" measure, rather than "buying compliance". The funds collected by the government could then be reinvested into existing environmental damages funds. A practical application of a similar regulation that sits under CEPA is the CFR, where the EDF, is a specified purpose account administered by ECCC to direct funds received from fines, court orders and voluntary payments to priority projects that will benefit Canada's natural environment. This approach would remove the need for verification of eligible projects and would better ensure additionality (i.e. that the Proposed Regulations are encouraging investments that would not have otherwise occurred in a business-as-usual scenario).

In effect, these mechanisms could be used in place of the "EV related activities" clause to prevent any gaming that is highly likely in the current draft proposal by going through a neutral third party such as the government.

Finally, it will be important to have this measure coupled with credit transparency provisions. This enables the public to be aware of the credits purchased, traded, and sold between OEMs and the government. Quebec has similar transparency provisions and it is recommended to follow a similar outline - such as the alienation of credit transfers should be reported and made available to the public.

Performance measurement and evaluation section -none

Proposed regulatory text section -none

Amendments section

As outlined in the "Executive Summary" section, Clean Energy Canada would suggest ECCC implement the following changes to the draft regulation to tighten this regulatory framework and ensure its efficacy:

Increase Sales Targets to be in line with other North American jurisdictions

Section 30.3: For the 2026 model year and subsequent model years, the minimum ZEV requirement for a company's combined fleet of a model year set out in column 1 of the following table is the percentage set out in column 2:

Our primary recommendation to increase the efficacy of the Proposed Regulations would be to increase annual sales targets and trajectories to align with the minimum sales percentages in other North American ZEV mandates especially before 2030.

- In 2026 this would be: 26%
- In 2027 this would be: 34%
- In 2028 this would be: 43%
- In 2029 this would be: 53%
- In 2030 this would be: 65%

Note that certain jurisdictions such as Quebec are in the process of revisiting their ZEV sales percentages. Updated targets should be taken into consideration when revising the percentages.

We are on track to miss 2030 emissions reductions targets economy wide, for transportation and passenger vehicles. Canada's latest biennial report[2] shows that we are now further away from our economy-wide 2030 GHG target, projected to be 34% below 2005 levels by 2030 (compared to the target of 40 - 45% below). The report also shows transportation-related emissions in 2030 have already increased 8 MT versus Emissions Reduction Plan projections. In addition, the RIAS for this regulation does not include the significant compliance flexibilities provided to automakers (banking, borrowing/three-year delay clause, penalties, EV related activities and overly generous PHEV allowances) - thus overstating the emissions reductions from this regulatory design. Hence, increasing the stringency of annual sales targets between 2026 - 2030 would allow for the lower emissions reductions coming through these flexibilities. For example, despite California having more stringent sales targets than Canada, due to its compliance flexibilities, its real ZEV sales are 5 - 8% lower[21] than its targets leading up to 2030. Canada's Proposed Regulations have similar compliance flexibilities to California, yet its sales targets up to 2030 are lower. This means that due to these compliance flexibilities, real sales, particularly in the years leading up to 2030 would be lower than estimated.

In addition, setting lower sales targets compared to other jurisdictions, particularly B.C. and QC would cause regulated parties, such as automakers, to continue to prioritise supply to B.C. and QC. This would be due to the fact that higher sales targets in those jurisdictions would need to receive a greater supply of EVs in order for regulated parties to meet the requirements in those jurisdictions, or face stiff penalties. From Feb 2021 to Feb 2022[3], there was a 72% decrease in EV inventory, with 82% of dealerships having no ZEV inventory on site (compared to 54% the year before), the lowest since the study was conducted since 2018. B.C. also has the highest number of

ZEVs available per 100,000 people. Recent updates to more stringent sales targets for B.C.[22] and more recently QC could exacerbate the problem. Increased sales targets would help to more evenly distribute supply outside of B.C. and QC - particularly in later years of the regulation. As B.C. and QC make up only 40% of car sales in Canada[8] in order to reach mass adoption, more stringent targets would force automakers to distribute supply beyond B.C. and QC to other provinces.

As well, a look at sales growth rates in B.C. and QC shows that Canada could easily surpass its 2026 sales target of 20% ZEV if it follows its current trajectory. In 2022[16], Canada's sales percentage increased by almost 60% - in 1 year. This has largely been due to B.C. and QC, which made up more than 70%[16] of Canada's ZEV sales in 2021 (by volume). Sales in these provinces have grown year-over-year to record numbers - with B.C. already hitting 18% ZEV sales in 2022, or 1 in 5 vehicles. This was a more than 50% increase in sales percentage points compared to 2021. These record numbers have occurred despite gasoline and diesel automotive sales dropping[8] due to the pandemic in 2020-2021. ZEV sales remained resilient - with sales volumes increasing over the same time period. Due to this, automakers would not be taking any significant action compared to there being no regulation, as the market would already reach 20% sales by 2026 in a business-as-usual case.

Clean Energy Canada presents a few real world examples of low targets, and the implications it has had on the credit market.
1. A review of California's ZEV credit balances[17] from years 2009 to 2021 reveal a large and growing surplus, reaching millions of cumulative credits in 2021.
2. Projections[21] modelled from California's Advanced Clean Car II regulation's sales targets show that despite the sales target being 35% in 2026, real sales are expected to be 8% lower at 27%. In 2030 the difference is 5% between the regulated sales target at 68% with real sales being at 63%.
3. A Canadian example includes B.C. - which has set a target of 10% ZEV sales by 2025[23]. In 2022, B.C. reached 18% ZEV sales (almost double) and 13% in 2021 - meaning the market has operated largely on over-compliance over the last few years as it underestimated its sales trajectory.
4. Analysis from the U.S. EPA's vehicle emissions standards[24] show large credit surpluses in earlier years of the regulation which resulted in large credit banks. Now, despite the fleet emissions standard becoming more stringent, actual cars sold are not getting much cleaner because automakers are relying on banked credits (from less stringent years) to comply versus making real world improvements.

For the federal regulation, weaker sales targets in initial years combined with overly flexible banking, a three year delay clause in the form of borrowing, a lack of penalties and EV-related activity credit options puts Canada's ZEV sales targets at risk of being met—particularly in later years of the regulation when sales targets are more stringent and there are very large credit surpluses in the market. This combination of design features would also mean Canadians outside of B.C., QC and ON will continue to "wait in line" for ZEV supply.

Increasing Canada's ZEV sales trajectory would address some of these weaknesses in regulatory design in a simple and streamlined way that is consistent with other leading jurisdictions. It would increase Canada's potential to actually hit the sales targets outlined in the ERP, have a resulting reduction in GHG emissions and increase the availability of vehicles across the country.

Section 30.4: Calculation of ZEV value

Clean Energy Canada supports certain aspects of the proposed regulatory framework:

1) Support: BEV and FCEV receive a full credit.
2) Support: To receive a full credit, eligible PHEVs must have a minimum electric range of 80 km. As well as a reduction in compliance that can be met by PHEVs leading up to 2035. We also support providing partial credit, for limited years, to PHEVs with ranges of less than 80 km.

Clean Energy Canada would propose to amend the following aspects:
Reduce the cap on compliance that can be met by PHEVs from 45% in 2026 to be (at the very least) in alignment with California's cap of 20% in initial years, with a declining cap eventually reaching 0% by 2035. We would like to see some sort of additional signal that the government intends to phase out PHEVs entirely post-2035, similar to what the EU[25] is planning as part of its tailpipe emission standards and what the UK[26] is proposing in its proposed ZEV mandate design framework.

The initial over-reliance of compliance that can be met by PHEVs in the first few years of the regulation would grossly undermine the regulation's ability to meet its emissions reduction targets. Recent analysis[15] shows strong real-world evidence that PHEVs drive on **much** lower shares of electricity than the approved vehicle label. In the U.S., this share is 26% - 56% lower than the EPA label, resulting in 42 - 67% higher gasoline/diesel consumption in a PHEV than estimated on the label.

In addition, recent analysis[27] shows that electric ranges for new PHEVs have increased marginally over the last few years but their energy consumption has increased substantially (by 22% between 2016 - 2021). This is because PHEVs have increased substantially in size to larger SUVs that consume more energy. This trend, coupled with PHEVs emitting more emissions than their label means Canada would be subsidising vehicles that do not reduce emissions substantially. Compare this to new BEVs, which have increased their electric range by 50% on average, in the same time period to a sales weighted average of 467 km as well as decreased energy consumption to be more fuel efficient.

Section 30.5 (5), a: Banking

Clean Energy Canada supports certain aspects of the proposed regulatory regime around banking, including imposing an expiration date on banked credits and ensuring 0% compliance can be met by banked credits in 2035 and later.

But strong concerns remain over the regulatory approach including allowing credit banking for a longer period than other jurisdictions, and not imposing a cap on compliance for banked credits between MY 2026 - 2034.

We recommend that Canada model their banking provisions off of Quebec's regime rather than California's:

1) Align expiration dates for banked credits with other jurisdictions (3 years) and, have a capped, reducing percentage compliance that can be met with banked credits, reducing over time to 0% by 2035 (based on Quebec's regulation):

- 2025-2027: 20%
- 2028-2030: 15%
- 2031-2033: 10%
- 2034 onward: 0%

Placing strict limits on credit banking would align Canada with other leading ZEV mandate jurisdictions. For instance, California's[28] final ZEV mandate allows credits to be banked for up to five years but phases some credit banking out starting in 2029 and all credit banking out starting in 2032. Quebec[29] allows credit banking for up to three years before banked credits expire. The United Kingdom's latest proposal[30] does not allow any credit banking at all.

Experts[31] note that banked credits from previous years being used to meet stricter compliance obligations in later years risk missing 2030 and 2035 ZEV sales targets. Analysis[24] from the U.S. EPA's vehicle emissions standard showed large credit surpluses in earlier years of the regulation which resulted in large credit banks. Now, with more stringent vehicle emissions standards, the industry is able to comply without actually making any real-world improvements as automakers rely on credit banks from earlier, less stringent years to meet their obligations under the regulation.

Not having a stringent expiry on credits jeopardises Canada's ability to meet its targets. With Canada's current banking provision, automakers would be able to use credits banked from less stringent requirements in 2026, in 2031 - when sales requirements reach more than 60%. As mentioned previously, the slow ramp up of Canada's sales targets in the initial years of the regulation, coupled with Canada's current trajectory slated to surpass 20% ZEV sales by 2026, means it would be likely that automakers could save credits from early years and apply them in the latter half of the mandate when Canada is trying to reach steeper sales requirements between 2030 - 2035. While in principle, earlier adoption would provide additional GHG reduction benefits, in actuality, because credits earned in early years may be the result of business as usual sales in BC and QC or PHEV sales, banked credits from early years may not represent actual GHG benefits. In addition, this level of flexibility would work against one of the key benefits of the regulations: market certainty.

Section 30.5 (5), b: Borrowing

Clean Energy Canada supports certain aspects of the proposal, including proposing some limitations on borrowing inline with California's approach, but we remain concerned about the current design in the context of the regulatory framework as a whole and encourage ECCC to place further limitations on the borrowing provision.

We recommend a grace period of 1 year instead of 3: automakers should be required to discharge the deficit of a given year within the following year, by selling more ZEVs or through credit trading. After that grace period, any residual deficit would be subject to penalties or credit purchase.

The current design for borrowing allows for a three- year delay in meeting compliance requirements. While credits cannot apply to past deficits without first meeting the obligations of the current year, the current clause could allow automakers to accrue a deficit in the first three years of the regulation and continue to remain in compliance. While compliance would be further backloaded to 2029 - 2031, it would allow for the further delay of OEM action until 2029.

Supply For Sale %	2026	2027	2028	2029	2030
Target %	20%	23%	34%	43%	60%
Real %	0% (20% 2026 delay)	0% (23% 2027 delay)	0% (34% 2028 delay)	63% (43% [2029] + 20% [2026])	83% (60% [2030] + 23% [2027])

*Assume each year an automaker sells 100,000 cars - for simplicity.

This example demonstrates the significant flexibilities offered to OEMs, and means that Canadians could wait another 6 years before seeing any meaningful change in the ZEV market. While this example may seem unlikely, it demonstrates variations of this provision showing how certain individual automakers can continue to be laggards, delaying investment in the necessary EV supply chain.

In addition, while a main argument of the auto sector is that this regulation would put Canada out of alignment with the U.S., it is important to note that the borrowing clause provides flexibility to align with the U.S.' voluntary target of 50% ZEV sales by 2030. An automaker could choose to delay its 60% obligation in 2030 to not only align with the less stringent 50% voluntary target in the U.S. to 2033, but it could also be less stringent as well. An example of this is seen in Example #2 of the "Description" section). Not only that, but it continues to allow laggards to continue to be laggards when the regulation should push the overall market to become more competitive, innovate and reach mass adoption amongst Canadians.

Section 30.6 (4): Eligible ZEV activity

Clean Energy Canada does not support the proposed regulatory approach which allows for credit accumulation through eligible ZEV activity.

Clean Energy Canada recommends the removal of this compliance flexibility, and maintains no credits should be awarded for ZEV related activities that do not fulfill the main purpose of the regulation - increasing ZEV supply and hence, sales across Canada. No other jurisdiction with a similar regulation has such a mechanism in place. . In its place, ECCC could explore other options such as purchase agreements (similar to B.C.) or a variation of the credit clearing mechanism from the Clean Fuel Regulation.

This is outlined in the **Implementation, compliance, enforcement and service standards** section.

Studies[32] show that building out public charging stations plays a minimal role in increasing ZEV sales, particularly when targeting mass adoption as the federal targets intend to do. Building out public charging infrastructure to meet increased ZEV sales targets would only increase sales by 1.5%. This is more important in early adopter regions with low ZEV sales in Canada[33] with **no** public charging infrastructure; regions with less than 1 - 2% EV sales, for example rural, remote or northern communities. It does little to spur ZEV sales growth in regions where ZEV adoption is well past its early adopter days (such as B.C., QC and even ON) and would help minimally to achieve Canada's sales targets for mass adoption. As we move forward, with the addition of growing battery electric ranges[27] the impact on ZEV sales[34] is also minimal. Also, higher access to private parking spaces, including for rural detached homes, means that charging needs can also largely be met by private home charging[34]. In Canada, 80% of charging[35] happens at home.

Rather - regulated ZEV sales targets provide much needed market certainty. Hence, focusing on increasing ZEV supply and sales to meet sales targets would be the best tool for charging infrastructure build-out. Putting in place such a mechanism would only detract from meeting ZEV sales targets, and create further uncertainty on ZEV sales.

The current design of the mechanism has a high risk of "gaming":

1) The inclusion of this alternative credit generating mechanism could delay the very investments OEMs argue must be a precursor to putting a ZEV mandate in place, by incentivizing parties to wait until 2026 to start making those investments in order to qualify for credit generation.
2) There is no currently no limit on stacking these credits with existing subsidies offered through NRCan's ZEVIP or CIB's Charging Infrastructure Program.
3) By basing the credit allowance on a project expenditure basis (i.e., the current credit calculation is based on the cost of the project divided by $20,000) - this incentivizes automakers to keep costs high in order to maximise credits.
4) The inability for other parties to be credit generators - such as charging network operators, utilities, or municipalities - creates an unequal system in terms of access to financing for charging infrastructure.
5) As discussed in the paragraph above, access to public charging infrastructure minimally impacts ZEV sales, particularly in regions with higher ZEV adoption. As we approach 20%, 60% and eventually 100% ZEV sales - this will become less relevant. This can be seen in regions such as Norway[34], where 90% of charging happens at home, with 80% of ZEV sales.

6) Based on announcements from OEMs and automakers (e.g. Volvo[36], General Motors[37]) - this mechanism could be further subsidising actions that were already going to happen.

Should there still be the desire to include such a compliance mechanism, Clean Energy Canada recommends:

1) The list of eligible EV-related activities be very clearly defined with detailed protocols and a verification process to ensure project integrity and additionality;
2) Does not allow stacking with other federal charging infrastructure incentives;
3) Keep percentage compliance that can be met with this mechanism at 2% from 2026 to 2035;
4) Only allow for investments in rural, remote or northern communities with less than 1 - 2% ZEV sales or for education, or training and awareness activities, including at dealerships.

Confidential business information section - none

Supporting Resources or References with comments section

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