



To: General Purposes Committee **Date:** January 10, 2020
From: Peter Russell **File:** 10-6125-07-02/2019-Vol 01
 Director, Sustainability and District Energy
Re: **Comments on the BC Zero Emission Vehicles (ZEV) Act Regulations Intentions Paper**

Staff Recommendation

That a letter be sent to the BC Minister of Energy, Mines and Petroleum Resources stating the City's concerns and suggested improvements to support achievement of zero emission vehicle targets, as identified in Attachment 2 within the report titled "Comments on the BC Zero Emission Vehicles (ZEV) Act Regulations Intentions Paper", dated January 10, 2020, from Director, Sustainability and District Energy.

Peter Russell
 Director, Sustainability and District Energy
 (604-276-4130)

Att. 2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Fleet Transportation	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

On October 23, 2019, the Province of BC posted the *ZEV Act Regulations Intentions Paper* with a four-week consultation period. Subsequent review of details within the Intentions Paper by stakeholders, including staff from City of Richmond, has raised key concerns with current targets and categorization of new light duty zero emission vehicles within the draft Act. Local governments have also raised concerns about the short notification period, and the Province has agreed to receive written and verbal feedback on the *ZEV Act Regulations Intentions Paper* until the end of January, 2020.

This report supports Council's Strategic Plan 2018-2022 Strategy #2 A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.

2.1 Continued leadership in addressing climate change and promoting circular economic principles.

2.2 Policies and practices support Richmond's sustainability goals.

In the report titled "UBCM Resolutions – Provincial Action on Zero Emission Vehicles and Low Carbon Fuels", dated April 11, 2018, Council endorsed two resolutions that were subsequently forwarded to Union of BC Municipalities, calling for the Province to establish requirements for zero emission vehicles to comprise at least 30% of passenger vehicle sales by 2030 (Resolution B131, endorsed by UBCM), and to increase the Low Carbon Fuel Standard to 30% by 2030 (Resolution B129, not endorsed by UBCM).

Analysis

Province of British Columbia CleanBC Plan

The CleanBC Plan released on December 5, 2018, communicated the Province's intention to address tailpipe emissions from passenger vehicles, given the priority to achieve Provincial greenhouse gas (GHG) emission reduction targets. The Plan stated that all new light-duty cars and trucks sold in British Columbia will run on clean electricity from batteries or hydrogen fuel cells by 2040.

The Plan further detailed how zero emission vehicle (ZEV) requirements would be phased in through vehicle performance and quotas that would require automakers to meet escalating annual percentages of new light-duty ZEV sales in BC, reaching:

- 10 per cent in 2025;
- 30 per cent in 2030; and
- 100 per cent by 2040.

CleanBC describes what British Columbia “could look like in 2030” as a result of this policy, stating that: “15% of the passenger vehicles could be all-electric, 4% plug-in hybrid, and 33% hybrids. That means less than half (48%) would be conventional gas powered vehicles.”

The provincial transition to zero emission vehicles by 2040 (defined in CleanBC), particularly in the light-duty vehicle sector, is a ‘breakthrough’ strategy referred to in Richmond’s Community Energy and Emission Plan (2014) to achieve significant transportation-related greenhouse gas emission reductions.

BC ZEV Act and ZEV Act Regulations Intentions Paper

The Province of British Columbia passed the *Zero-Emission Vehicles Act* (ZEV Act) on May 30, 2019, with the intent to accelerate uptake of battery electric and fuel cell vehicles (i.e. vehicles without fossil-fuel combustion engines) in BC. The ZEV Act defines a zero-emission vehicle as: “...a motor vehicle that ... emits no greenhouse gases at least some of the time while the motor vehicle is being operated.”

As proposed, the ZEV Act and accompanying regulation makes little distinction between a 100% battery electric propelled vehicle and a plug-in hybrid electric vehicle, where a gas motor recharges the electric battery when needed. The implication is that the actual impact of the ZEV Act in reducing GHG emissions from BC’s light-duty vehicle sector will be below that suggested by the CleanBC Plan, and the provincial government’s messaging to date.

If the recommendations from the Intentions Paper are implemented:

- Total annual sales of conventional internal combustion engine vehicles may not decline below current levels until the 2030s;
- Only 70% of new vehicle sales in 2040 would need to come from “Class A” ZEVs; the remaining 30% could be limited-range “neighbourhood zero-emission vehicles” (legal for use on neighbourhood streets), as well as plug-in hybrid electric vehicles (where most kilometres travelled would be powered by an ‘extended range’ internal combustion engine);
- A large amount of ZEV excess credits would be generated between 2020 and 2025. These credits could then be used by automakers and retailers to “offset” the sale of large numbers of conventional internal combustion engine (ICE) vehicles through to 2040.
- The definition of “Class A” vehicles would include “extended range electric vehicles” (EREVs) i.e. cars with gas-fuelled electric generators. (See Attachment 1)

Detailed comments on the Intentions Paper have been submitted by staff from the cities of Vancouver and Surrey, and the Metro Vancouver Regional District. These letters have identified concerns with specific elements in the Intentions Paper, and are consistent with the following high-level recommended improvements that are also supported by staff from City of Richmond:

1. Increase the minimum performance requirements for Zero Emission Vehicles (in both 2020-2025 and 2026-2040 periods).

2. Increase “Class A” ZEV sales targets to reflect market adoption of electric vehicles.
3. Reduce the value of ZEV credits issued during 2020-2025 period, relative to the 2026-2040 period.
4. Ensure that after 2025, the definition of “Class A” ZEVs excludes vehicles with internal combustion engines or fossil-fuel electric generators.
5. Provide regular review and improvement to the ZEV Act Regulations.

Further detail on the above recommendations is included in Attachment 2. If endorsed, the content in Attachment 2 would be sent to the BC Minister of Energy, Mines and Petroleum Resources.

Impact on Richmond Climate Action efforts

It is estimated that if the overall electric vehicle (EV) sales targets as stated in CleanBC were achieved, the increase in EVs as a percentage of private light duty vehicles in Richmond would, by itself, reduce Richmond’s overall GHG emissions 12% below 2007 levels by 2030 and by 35% below 2007 levels by 2050, greatly assisting Richmond in achieving deep GHG emission reductions over the next decade. However, given the ZEV definitions, range standards and allowable credits within the current draft Intentions Paper, the above-noted emission reductions from light duty vehicles would not be achieved.

Financial Impact

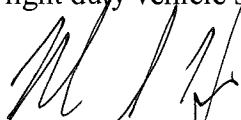
None.

Conclusion

Given the limited jurisdiction that local governments have in terms of province-wide electric vehicle sales targets and performance ranges, efforts by the City to achieve deep GHG emission reduction targets are greatly enhanced by an EV-supportive policy regime at the Provincial level, as detailed in CleanBC. To the extent that the current *ZEV Act Regulations Intentions Paper* could undermine achievement of CleanBC’s stated target, there is concern that this would also undermine the City’s efforts to achieve significant emission reduction from passenger vehicles within Richmond. With the recommended improvements to the ZEV Act regulations outlined above, the policy objective to decarbonize the light duty vehicle sector in BC could be realized.



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- Att. 1: Table of A, B, and C class ZEVs, from the ZEV Act Regulations Intentions Paper
Att. 2: Summary of City of Richmond comments on the ZEV Act Regulations Intentions Paper

Attachment 1: Table showing vehicle classifications from the Regulations Intentions Paper

Class	Type	Description	2020-2025	2026-2040
ZEV Class A	EV	BEV (Battery electric vehicle):	over 80 km	over 80 km
		EREV (Extended range electric vehicle with gas-fuelled generator)	over 121 km	over 80 km
	H₂	FCEV (Fuel cell electric vehicle):	over 80 km	over 80 km
ZEV Class B	EV	PHEV (Plug-in hybrid electric vehicle)	over 16 km	over 80 km
		EREV (Extended range electric vehicle with gas-fuelled generator)	16 km to 121 km	does not apply
		NZEV (Neighbourhood Zero Emission vehicle [legal on roads up to 40 km/hour speed limit])	No minimum range	No minimum range
	H₂	HICE (Hydrogen Internal Combustion Engine Vehicles)	over 16 km	over 80 km
ZEV Class C *	EV	BEV (Battery electric vehicle):	up to 80 km	up to 80 km
		PHEV (Plug-in hybrid electric vehicle):	up to 16 km	up to 80 km
		EREV (Extended range electric vehicle with gas-fuelled generator)	up to 16 km	up to 80 km
	H₂	FCEV (Fuel cell electric vehicle):	up to 80 km	up to 80 km
		HICE (Hydrogen Internal Combustion Engine Vehicles)	up to 16 km	up to 80 km

* NOTE: No ZEV credits are awarded for Class C vehicles (verbal clarification from BC Ministry of Energy, Mines and Petroleum Resources).

Attachment 2: Summary of proposed City of Richmond comments on ZEV Act Regulations Intentions Paper

1. Increase the minimum performance requirements for Zero Emission Vehicles

Performance requirements for some ZEV categories during the 2020-2025 period are very low when compared against the performance of light-duty electric vehicles already available in 2019. These requirements do not ramp up sufficiently to meet the intent of CleanBC targets for the 2025 to 2040 compliance period. As late as 2040, the minimum zero-emission range requirement for almost every category of vehicle is still only 80 km (50 miles).¹ This problem is reinforced by the lack of a mechanism for periodic review of eligible zero emission vehicle technologies, or minimum zero-emission range requirements for light duty electric vehicles.

2. Increase Class A, ZEV sales targets to reflect market adoption of electric vehicles

The Intentions Paper sets out “Compliance Ratios” of ZEVs sold, relative to total automobile sales for each year between 2020 and 2040. These targets start low and increase slowly until 2030. Notably, actual sales of battery electric vehicles (BEVs) in 2019 already exceed the 2023 target for all “Class A” ZEVs. Moreover, the current regulatory targets will allow sales of conventional automobiles to continue to grow until 2030.²

3. Realign the value of ZEV credits issued during the 2020-2025 period relative to the 2026-2040 period

Actual sales of EVs alone are likely to greatly exceed the total ZEV sales compliance ratio set out in the regulation for the 2020 to 2025 period. Moreover, four credits are to be granted for every Class A battery electric vehicle sold during this period. The resulting ‘surplus’ sales of BEVs will generate excess credits for automakers and retailers. Because these credits do not expire, they could be used to offset the continued sale of conventional internal combustion engine vehicles in later years, potentially undermining the market supply and models of ZEVs post 2025.

4. Ensure that the definition of “Class A” ZEVs is limited to vehicles that do not have internal combustion engines or fossil-fuel electric generators after 2025

The definition of ZEVs within the draft regulation covers 19 separate categories of motor/engine configurations and zero-emission vehicle ranges, in two time periods. These categories are grouped into three classes of zero-emission vehicles (Class “A”, “B”, “C”). Class A comprises the highest performing categories, in terms of 100% battery range. However, the draft regulation currently includes several categories of vehicle with limited zero emission ranges, such as:

- Limited-range and lower-speed “neighbourhood zero-emission vehicles” qualify as Class B ZEVs up until 2040.

¹ The draft regulation proposes that the minimum zero-emission range requirement for Class A EREVs actually declines from 121 km to 80 km after 2025.

² Renewable Cities, in press, 2020 (personal communication)

- Extended range electric vehicles (i.e., electric vehicle with a gas-fuelled electric generator) qualify as a Class A ZEV from 2025 to 2040, provided they have a zero-emission range of 80 km or better. The inclusion of EREVs within the Class A category means that every category of “zero emission vehicles” includes some vehicle types designed to burn fossil fuels.

5. Provide regular review and improvement to the ZEV Act Regulations

The City of Richmond supports the concept of creating different vehicle credit classes and compliance pathways under the Regulation, with the recommendation that the Province of BC conduct periodic reviews of ZEV classifications, minimum fuel range, allowable credits as well as time limits on credit banking by auto suppliers. The City recommends that the Province conduct this review every 2-3 years to ensure that the ZEV Act continues to send critical market transformation signals to vehicle manufacturers and suppliers in BC, thus supporting the transition to zero emission light duty vehicles by the 2040 target date.