

January, 2020

To: Clean Transportation Branch, B.C. Ministry of Energy, Mines & Petroleum Resources
Fr: Alex Boston, ED Renewable Cities & Fellow, SFU MJ Wosk Centre for Dialogue
Re: Course Correction Needed on Zero Emission Vehicle Act (Input on Proposed ZEV Act Regulations)

The B.C. Government’s renewed interest in climate action is commendable. As B.C.’s largest GHG sub-sector, decarbonizing passenger transportation is pivotal to meeting B.C.’s climate action targets and making a defensible contribution to protecting our global climate. Despite a constellation of factors that can and should make B.C. a clear leader in ZEV market transformation, this leadership potential is at risk under the existing ZEV Act and the proposed ZEV Act intentions, and broader policy trends that are inconsistent with CleanBC’s commitments to “cut congestion” and “making transit more accessible and efficient.” The following recommendations reduce the high risk that B.C. will fail to meet its CleanBC GHG reduction targets, and would enable B.C. to emerge as a recognized leader in accelerating zero emission vehicle market transformation versus riding the wave created by other small, smart jurisdictions.

A: Implementation Priorities

Several considerations not addressed in the ZEV Act Intentions Paper are decisive to accelerating ZEV market transformation and should inform policy and program development.

1. Small, Smart Jurisdictions are Leading ZEV Market Transformation

The conventional wisdom that large jurisdictions must lead ZEV market transformation is erroneous. Jurisdictions with the highest market share of zero emission vehicle sales are all relatively small – significantly smaller than British Columbia. They are amongst the most committed to climate action and the most innovative in terms of public policy design with excellent governance regimes to enable collaboration amongst different orders of government and relevant sectors, and a diverse suite of regulatory and fiscal tools that are making EVs attractive and putting robust charging network networks in place. It would be wrong to suggest large jurisdictions don’t count. They are critical in driving volume. With the exception of China with unique densities, total population, political-economy, small jurisdictions are amongst the most innovative in driving policy innovations that set the standard for ZEV market transformation.

| Global ZEV Leaders – Small & Smart | | | |
|------------------------------------|-----------------------------|----------------------------|--------------|
| Jurisdiction | ZEV Share of New Auto Sales | 100% ZEV Sales Target Year | Population |
| Norway | 56% | 2025 | 5.4 million |
| Iceland | 25% | 2030 | 0.4 million |
| Netherlands | 14% | 2030 | 17 million |
| Sweden | 11% | 2030 | 10.1 million |

Each of these jurisdictions aims to phase out the sale of internal combustion engines within 5 to 10 years, at least a full decade ahead of British Columbia. Yes — B.C. must pay attention to the California marketplace, but evidence shows there is no compelling reason for B.C. to follow California in North America. **B.C. is within striking distance of Sweden and the Netherlands and should join not trail them by a decade.**

Constellation of Bright Players Positions B.C. to Join Small, Smart Jurisdictions

B.C. has a unique constellation of factors that should instill great confidence provincially in joining leading jurisdictions that are accelerating rather than just pulled along riding the wave of zero emission vehicle market transformation.

B.C.'s EV Strategy has broken North American sales records. Commemorating its one-year CleanBC launch, the B.C. Government proudly announced in December that zero emission vehicles made up 9% of new car and light truck sales over the first three quarters of 2019. This is greater than Quebec at 7% and California at 8%, jurisdictions with much longer-standing, comprehensive action.

This success can be attributed to several factors that make the B.C. market unique:

- Local government and utility leadership – B.C. Hydro and FortisB.C. – in EV charging infrastructure deployment in residential and commercial buildings and across communities
- Federal commitment to incentives that are stacked on top of provincial incentives to achieve a critical threshold for consumers, and provide broader federal support for market transformation.
- A cultural predisposition in B.C. to more sustainable consumption by sizeable segments of the population and a private sector with atypically high voluntary EV charging infrastructure deployment.
- The B.C. Government's new ZEV mandate is driving more EVs onto car lots, through a combination of well-designed consumer and car dealer incentives to offset EV and charging infrastructure costs that are helping drive EVs off their lots.

Resistance in B.C. to EV charging is modest and the strategic, multi-sectoral leadership in zero emission vehicles is exceptional. The biggest constraint to the rate of market transformation process is not consumers or most stakeholders; it is the B.C. Government's discomfort with bold leadership.

There is a real risk that the ZEV Act and proposed ZEV Act regulations will establish North America's weakest ZEV mandate. The proposed credit system that equates vehicles that can be driven largely on fossil fuels with genuine zero emission vehicles, the trading regime that could create windfall credits, the omission of review periods all threaten to undermine the B.C.'s likelihood of meeting its 2030 and 2040 province-wide GHG reduction targets, despite the preconditions to be a global leader. B.C. should recognize the bright, shining players in a perfect EV market transformation constellation and accelerate not slow progress.

A. Join leading small, smart jurisdictions and accelerate the 100% zero emission vehicle sales target to 2030.

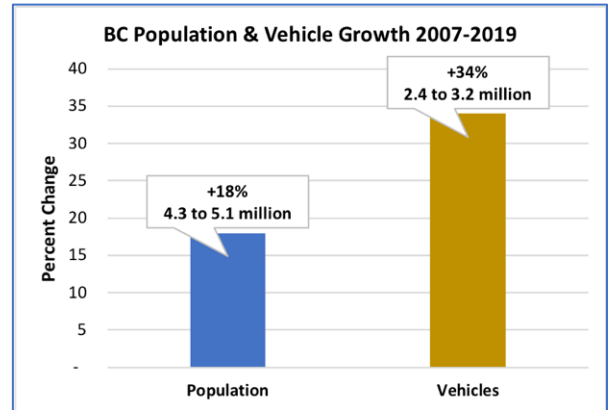
2. Zero Emission Vehicle Multi-Sector, Multi-Governance System

Leading jurisdictions in electric vehicle sales have strong multi-level, multi-sectoral governance bodies to debate, deliberate and help deliver on zero emission transportation agendas. B.C. should deeply appreciate its significance given its success with the Step Code Council – an exemplary demonstration of such a multi-sector, multi-governance body rapidly driving market transformation.

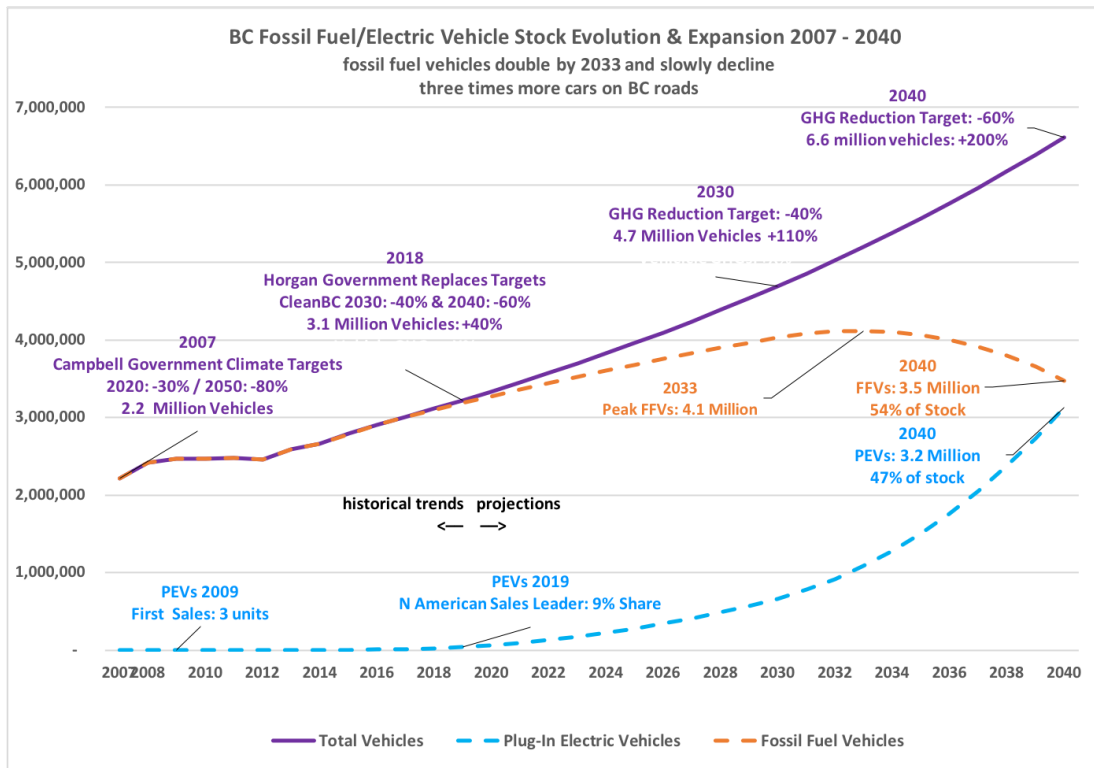
A. Establish a zero-emission transportation council comprised of every order of government, utilities, car dealers, transit authorities and other key players to help steward and problem solve zero emission vehicle market transformation.

3. Place Zero Emission Vehicles in Front not Back Seat

Budgets set public priorities. The current B.C. Government has completed or initiated more than \$9 billion in more than a dozen transportation projects that involve additional lane kilometres that will induce growth in car ownership and driving.¹ A fraction of that, about \$200 million – relatively 2% of highway expansion-related projects – is being spent on decarbonizing light duty passenger vehicles over both Liberal and B.C. governments. This spending is sustaining the trend in rapid passenger vehicle sales, growing at twice the rate of the population over the last decade. The vast majority of passenger vehicles sales prior to 2040 will be for conventional fossil fuel vehicles. Based on current policies and trends, B.C. will have more fossil fuel vehicles (excluding EREV and PHEV fossil fuel vehicles) in 2040 than it did in 2007 – see below. These large inadvertent incentives fuel far-flung car-oriented urban growth that will undermine the regulatory backstop.



Boston, Renewable Cities. Vehicle stock is growing at twice the rate of the population. Under current policies and trends this will continue, undermining the “regulatory backstop.”
 Data: NRCAN NEUD 2007-2016 with 2017-2019 estimates based on 10 year historical trend.



Boston, Renewable Cities. Under current policies and trends – notably highway and bridge expansion – rapid Growth in passenger vehicles which will be dominated by fossil fuel sales until approximately 2033. There will be more fossil fuel vehicles in 2040 than 2007. These trends – even with B.C.’s effective low carbon fuel standard – undermine the integrity of a meaningful “regulatory backstop” to meet CleanBC’s GHG targets.

Data: Vehicle registration from NRCAN NEUD 2007-2016 with 2017-2040 estimates based on 10 year historical trend. Historical EV sales based on EMC data and projections based on CleanBC ZEV targets. Note: Projections are provisional.

A. *Prioritize zero emission passenger transportation vehicles as a fiscal priority over fossil fuel vehicles and total vehicle growth. The primary approach should be focusing highway and bridge spending on increasing safety not increasing supply which induces car ownership and driving. This can be complemented by introducing requirements to strongly emphasize vehicle weight as a determinant of vehicle registration and insurance costs, reflecting the impact on roads and the higher personal health, private and public damage costs of vehicles, the heavier they are. Lastly this can be accomplished by strategically increasing spending on electric vehicles and charging infrastructure.*

B. ZEV Act Regulatory Solutions

1. Align the Zero Emission Vehicle Act and Regulations with CleanBC Commitments

Currently there are fundamental inconsistencies between the ZEV Act and proposed ZEV Act regulations and CleanBC commitments. The CleanBC Plan, the Province's most prominently profiled climate action agenda, should serve as the guiding intention of the ZEV Act in defining a zero-emission vehicle. The CleanBC commitment is that by 2040 all *"all new light-duty cars and trucks sold in British Columbia will run on clean electricity from batteries or hydrogen fuel cells."*

The proposed regulations in the intentions paper could permit the majority of cars sold under the ZEV Act to be powered by fossil fuels for a large share of their operation.

- A. *Establish a definition for Zero Emission Passenger Vehicles that is consistent with the very nomenclature "zero emission" and aligns with the CleanBC intention of a zero emission vehicle, i.e. "will run on clean electricity from batteries or hydrogen fuel cells." The current Act and proposed regulations do not acknowledge the definition of zero as zero, nor its importance within the context of meeting the IPCC's recommendations to stay within 1.5°C of warming.*
- B. *Establish a definition for transitional "Low Emission Vehicles" (LEVs) that permit them to "be charged through an electricity source, and are propelled for a portion of their operation on a battery," covering plug-in electric hybrids (PHEVs) and extended range electric vehicles (EREVs). A share of LEVs should be permissible to meet the Zero Emission Vehicle Act sales targets on an interim basis – out to 2025 -- but not in the final planning horizon that should be accelerated to 2030 for 100% Zero Emission Vehicle sales.*

2. Design the Act and Regulations to Achieve the "Regulatory Backstop's" Intended Goal

The ZEV Act was created to "provide a regulatory backstop to ensure the Province's GHG reduction targets are met." Currently there is insufficient analysis – at least publicly available -- to show how the CleanBC targets will be met overall or in the transportation sector.

- A. *Undertake analysis and establish sub-sectoral targets and indicators to demonstrate regulatory backstop defensibility.*

Minimally, as CleanBC has a 25% gap to meet its 2030 targets, and road transportation comprises 30% of B.C.'s total emissions and has grown 11% since 2007 and the second largest sector – oil and gas – is projected to rise significantly due to growth in natural gas extraction and LNG exports, deep emission reductions will be required in personal transportation – the largest and fastest growing share of road transportation. Defensible analysis is required to genuinely understand the regulatory backstop's quantitative GHG reduction objectives.

This analysis must include in the personal transportation sub-sector the contribution of other GHG reduction contributions, specifically:

- Low carbon fuel standard (where progress appears to be significant);
- Fuel economy regulations that will be critical in managing GHG growth in the fossil fuel vehicles currently scheduled to comprise the vast majority of vehicle sales between now and 2040;

- Reductions in vehicle km travelled and shifts to public transit and active travel modes due to other CleanBC objectives, notably: “cutting congestion” so that British Columbians will spend “less time in gridlock,” and “making transit more accessible and efficient;” and, of course
- Zero emission vehicles, notably distinguishing between genuine zero emission vehicles and low emission vehicles (PHEVs and EREVs).

The total personal transportation reduction contribution at 2030 and 2040 must be situated within the broader, complementary road transportation sector and within B.C.’s overall GHG reduction agenda. Without understanding the expected contribution of zero emission vehicles, the regulatory backstop is wholly unsatisfactory, i.e. it is not backstop but

3. Establish a Defensible Credit Trading Regime:

The system proposed in the ZEV Act Intentions Paper for acquiring a credit value for ZEV and LEV (PHEV/EREV) sales exceeding targets, notably in early implementation periods could generate massive windfall credits that dampen the long term market. European ETS learned this the hard way. More than once -- coal fired utilities made massive windfall profits, and the ETS impact of on GHG reductions has been hugely underwhelming.

A. A big lesson for the ZEV ACT from the underwhelming ETS performance, that as a regulatory backstop, design for the worst-case scenario, to achieve ~99% ZEV sales compliance by the final horizon, excluding LEVs that still combust fossil fuel. This can be accomplished by putting a 2 to 3-year expiry date on credits accrued from exceeding sales targets in previous years.

4. Systematic Review Schedule

In contrast to Quebec and California, there are no provisions under the ZEV Act Intentions Paper for reviewing progress and optimizing regulations. Rapid market penetration of ZEV sales in B.C., for example, should be considered in accelerating the phase in of 100% ZEVs and phase out of LEVs (i.e. PHEVs and EREVs). Steep barriers for systematically retrofitting existing multi-family and commercial buildings could delay implementation for some vehicle owners.

A. Establish clear review cycles within the ZEV Act and its regulations to permit ZEV Agenda optimization.

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¹ This \$9 billion includes increased spending for current and future major bridge expansions due to transferring debt onto taxpayers from road users who were generating revenue streams in the form of tolls. This estimate of road expansion spending is from a variety of public sources, primarily [B.C. Ministry of Transportation and Infrastructure Service Plans 2010-2019](#).