

Clean Growth Intentions—Clean Transportation

Re: Support for introducing a Zero Emission Vehicle Mandate in British Columbia

August 24, 2018

Introduction

This submission contains comments and recommendations related to the introduction of a Zero Emission Vehicle Mandate in B.C., and is submitted on behalf of the following public, private, non-profit and academic organizations:

Clean Energy Canada	Tesla	City of Vancouver
David Suzuki Foundation	Innergex Renewable Energy Inc.	Pembina Institute
NaiKun Wind Energy Group Inc.	Modo Co-operative	Renewable Cities
Vancouver Economic Commission	Autocharger.ca	Clean Energy BC

Sustainable Transportation Action Research Team (START)

Vancouver EV Association (VEVA)

Movmi Shared Transportation Services

Why a ZEV Mandate?

British Columbia stands out as an early leader in public policy supporting the deployment of electric vehicles. And British Columbians are expressing significant interest in EVs— a recent survey conducted for BC Hydro found that one in three respondents expect their next vehicle purchase to be electric.¹ But while B.C. has numerous policies and programs in place—such as the Clean Energy Vehicle Incentive, education programs, and investments in EV charging infrastructure—EV uptake lags the world’s leading jurisdictions, foregoing even greater economic and environmental benefits. In order to accelerate the deployment of electric vehicles, several leading jurisdictions have adopted Zero Emission Vehicle (ZEV) Mandates. California and nine other US states enforce one. In Canada, Quebec demonstrated leadership by becoming the first province to enact a mandate. China too has implemented a version, and broader global appetite for Mandates is increasing. **A missing piece in B.C.’s clean transportation policy package, as identified in the Clean Transportation intentions paper, is a ZEV Mandate.**

A robust ZEV standard in B.C. would ensure global automakers develop and deliver clean vehicles for the province and facilitate the Canadian transition to sustainable transportation. The creation of a program anchored on near-and medium-term ZEV sales goals would deliver significant environmental and economic benefits for British Columbians, while also sending a powerful signal of their commitment to broader climate change objectives and recognition of the economic opportunities associated with clean growth.

Why a ZEV Mandate?

Research evaluating different policy options, conducted by Simon Fraser University’s Sustainable Transportation Action Research Team (START), concluded that “A strong ZEV

¹ BC Hydro, Unplugged: Myths block road to the electric car dream, April 2018

mandate would be the most effective, low-cost and transformative policy,” noting that it is “...the only policy examined to receive an effectiveness score of 5/5.”²

Establishing a ZEV Mandate in B.C. will increase the range and number of ZEVs available, enhancing consumer choice and expanding opportunities for saving on fuel costs. In the absence of a program, the British Columbians could lose this opportunity.

Why? **Automakers respond to mandates and allocate limited ZEV inventory accordingly.** Ford Canada lists the Ford Focus Electric as only being available in Quebec, and GM has publicly stated its intent to direct the bulk of its ZEV supply to China, where the mandate requires automakers to achieve 10% ZEV sales in 2019.³ Toyota also announced it would be bringing the Mirai to Canada in response to the Quebec Mandate.⁴ Most recently, Subaru indicated that should its forthcoming plug-in hybrid Crosstrek be available in Canada, it would be in those provinces with a mandate.⁵

In B.C., a recent survey commissioned by Natural Resources Canada found that 30% of dealerships did not have a ZEV on their lot, and 39% only had one available on the lot.⁶ Further, the most commonly cited challenge faced by sales representatives trying to sell EVs was inadequate supply.⁷

According to the City of Vancouver’s 2018 *Staff Report*, “The City fleet, which continues to lead Canadian municipalities on ZEV adoption, is experiencing the impacts of newly introduced ZEV mandates elsewhere as manufacturers divert supply to jurisdictions with ZEV mandates, such as Quebec, California, Oregon, and eight other US states. This is further reducing the already limited availability of ZEV models locally.”

A B.C. ZEV Mandate would also contribute toward the creation of new jobs in clean technology, as well as the electrical and building trades as additional clean, zero emission fueling infrastructure is deployed.

A study⁸ commissioned by the B.C. government found that in 2015 the Clean Energy Vehicle sector was estimated to encompass:

- Approximately 198 companies and organizations involved in all aspects of the CEV supply chain.
- Total direct employment of approximately 3,850 full-time equivalents (FTEs), which support additional indirect and induced employment of approximately 2,820 FTEs.
- Approximately \$702.0 million in total direct economic activity, including more than \$137.6 million in exports of CEV-related goods and services and more than

² START, Canada’s ZEV Policy Handbook, 2017.

³ Paul Leinert and Nick Carey, “Big portion of future GM electric vehicles for China market: executive” *Reuters Business News*, January 17, 2018

⁴ Staff, “Toyota bringing hydrogen fuel cell cars to Quebec”, *Driving*, January 23, 2018

⁵ Subaru Canada, <https://twitter.com/SubaruCanada/status/1030448674902605824>, August 13, 2018

⁶ Natural Resources Canada, 2018, Auto Dealership Survey on Electric Vehicles http://epe.lac-bac.gc.ca/100/200/301/pwgs-c-tpsgc/por-ef/natural_resources/2018/064-17-e/report.pdf

⁷ *Ibid.*

⁸ MNP, Clean Energy Vehicles Economic Opportunities Assessment, 2016.

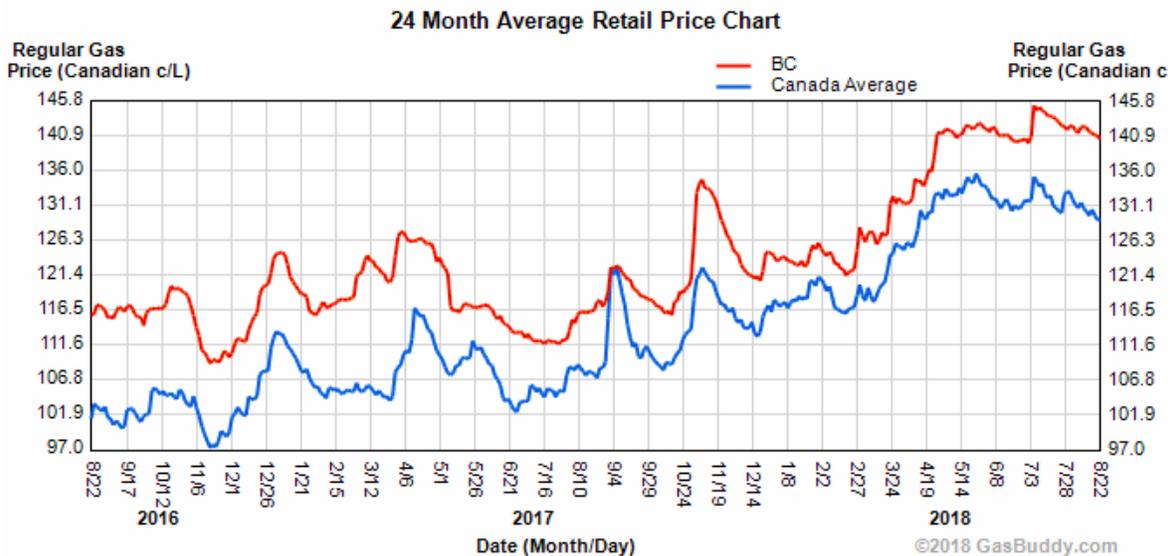
\$68.2 million in spending on research and development and demonstration projects.

Excluding residential charging equipment, Natural Resources Canada reports that there are currently 681 electric charging stations in the Province, 89 of which are direct current fast chargers (DCFC) (with 185 charging outlets) and 603 (with 1,212 charging outlets) of which are Level 2 chargers.⁹

A ZEV Mandate would multiply the number of ZEVs in the Province and catalyze additional economic impact through further investment and job creation in the electrical and construction industries.

A ZEV Mandate will also help to ensure that more vehicles are available to make use of B.C.'s surplus in emission-free electricity. **Whereas gas and diesel vehicles require imported fuel, ZEVs run on locally generated, transmitted and delivered electricity. This keeps valuable fueling dollars within the province and helps to grow the local economy.**

As they transition from internal combustion engines (ICEs) to ZEVs, **British Columbians will benefit from reduced fuel costs associated with charging.** A survey conducted on behalf of BC Hydro found that 55% said saving money on gas and maintenance would be the biggest motivation for buying an EV.¹⁰ Home to the most expensive gas in Canada, prices at the pump in B.C. are steadily increasing.



These high gas prices in B.C., coupled with electricity rates that are currently among the lowest in North America, make EVs an increasingly cost competitive choice over the life of the vehicle. Thanks to lower maintenance and fuel costs, the 2018 Nissan Leaf is estimated to be nearly

⁹ See Natural Resources Canada database at: <http://www.nrcan.gc.ca/energy/transportation/personal/20487#/analyze?country=CA&fuel=ELEC>. Note that this database is known to under-report existing charging station investments made by Tesla in Canada. As such the figures reported are likely low.

¹⁰ BC Hydro, Unplugged: Myths block road to the electric car dream, April 2018

\$1,500 a year less expensive than the top-selling gas-powered vehicle (Honda Civic).¹¹ This is thanks mostly to lower fuel costs: BC Hydro recently calculated that—assuming 20,000 kilometres of driving—the annual fuel costs for a Nissan Leaf would be \$449 for electricity, whereas a Honda Civic would consume \$1,705 worth of gasoline.¹²

Reductions in fossil fuel consumption result in critical environmental and public health benefits. In regions with the clean electricity grids like B.C., ZEVs produce lower global warming emissions than even the most fuel-efficient hybrids.

Air pollution in Canada has been shown to have a significant impact on public health, with studies citing annual air-pollution related premature deaths at 7,700¹³ and as high 21,000.¹⁴ Lost productivity, health care costs, and other economic impacts resulting from local air pollutants are reported to be costing Canadians \$36-billion annually.¹⁵ If left unchecked, global air pollutants are projected to cost Canadians as much as \$43-billion annually by 2050.¹⁶ In addition to reducing costs and creating jobs, supporting a transition to zero emission transportation will improve public health and strengthen British Columbia’s fight against climate change.

Countering the negative response and myths around a ZEV mandate:

Opponents of a ZEV Mandate may counter that compliance is burdensome or unachievable because consumer demand is limited. They may identify metrics suggesting EVs still only represent a fraction of overall vehicle sales. However, arguments around diminished consumer demand could not be further from the truth. **Consumer demand for EVs in B.C. is growing rapidly, with the market expanding by 53% between 2016 and 2017.¹⁷ But without mechanisms to ensure automakers deliver limited supply to B.C., demand may go unfulfilled.**

Lack of available inventory— not consumer demand – has been the primary determinant of slow ZEV adoption in most jurisdictions. Jurisdictions without ZEV Mandates have not received limited ZEV inventory from automakers. In California, dealers in the five largest cities offered one fully electric sedan for every twenty gasoline sedans on their lots. Non-ZEV states’ inventories are even more limited. In Colorado, an average non-ZEV state in the US, the ratio in the five largest cities is just one to 42.¹⁸ Furthermore, fewer EV models are offered outside of ZEV states. California has 29 different plug-in models on its roads, while the average non-ZEV state has only nine. **ZEV Mandates encourage EV deployment by providing consumers with significantly greater choice.**

¹¹ *Ibid.*

¹² *Ibid.*

¹³ International Institute for Sustainable Development, 2017, “Air Pollution Causes Premature Deaths in Canada” <https://www.iisd.org/sites/default/files/publications/costs-of-pollution-in-canada-highlights-en.pdf>

¹⁴ Michael Brauer, et al, 2013, Traffic-related air-pollution in Canada: <http://www.cmaj.ca/content/185/18/1557>

¹⁵ International Institute for Sustainable Development, 2017, “Air Pollution Causes Premature Deaths in Canada” <https://www.iisd.org/sites/default/files/publications/costs-of-pollution-in-canada-highlights-en.pdf>

¹⁶ See Pan Canadian Framework on Clean Growth and Climate Change.

¹⁷ FleetCarma, 2018, <https://www.fleetcarma.com/electric-vehicle-sales-canada-2017/>

¹⁸ Dealer inventory search from city center zip codes with 10-mile radius on autotrader.com in June 2018. Five CA cities: Los Angeles, San Francisco, San Jose, San Diego, Fresno. Five CO cities: Denver, Colorado Springs, Fort Collins, Aurora, Lakewood

In addition, dealers may argue that jobs in sales and service would be at risk from a ZEV Mandate that requires the sale of new technology to displace polluting legacy technology. This development will almost certainly not be realized. Between 2017 and 2030, the population of B.C. is expected increase by more than 800,000 people. With the B.C. population *and* vehicle ownership per household markedly increasing year over year, the total addressable vehicle sales market in B.C. is quickly expanding. Even if a ZEV Mandate carves out a percentage for EVs, the total vehicle market will continue to grow at a rate that offsets additional ZEVs. For this same reason, service jobs will not be compromised either, as the aggregate number of legacy vehicles needing service will continue to grow. If anything, service jobs could increase. A number of the ZEVs fulfilling a ZEV Mandate will be plugin hybrids which have two powertrains and demand a greater level of servicing. In light of this significant growth in the overall automotive market, B.C. may want to consider more stringent ZEV targets to tackle emissions not only on a percentage basis, but a gross basis as well (as is essential to combating climate change).

Conclusion

As representatives of a diverse group of public, private, non-profit and academic organizations, we fully support B.C.'s intention to introduce a ZEV mandate that will demonstrate British Columbia's commitment to sustainability, enhance consumer access to technology, catalyze new job creation, and improve air quality for all residents.

Respectfully submitted on behalf of:

Clean Energy Canada	Tesla	City of Vancouver
David Suzuki Foundation	Innergex Renewable Energy Inc.	Pembina Institute
NaiKun Wind Energy Group Inc.	Modo Co-operative	Renewable Cities
Vancouver Economic Commission	Autocharger.ca	Clean Energy BC
Sustainable Transportation Action Research Team (START)		
Vancouver EV Association (VEVA)		
Movmi Shared Transportation Services		