

Pembina Institute's comments on the Clean Transportation Intentions Paper

August 24, 2018

Summary

Strong action is needed in the transportation sector to ensure that B.C. has a chance to achieve its legislated climate targets. The Pembina Institute supports establishing a sectoral target for reducing carbon pollution by 30% by 2030 compared to 2007.

A well-designed zero emissions vehicle (ZEV) mandate has the potential to deliver significant environmental and economic benefits to British Columbians and establish the province as a leader in Canada's clean transportation transition. In combination with this mandate, substantive measures will be required to increase ZEV supply and build out a network of charging infrastructure. We recognise B.C.'s leadership on the low carbon fuel standard (LCFS), and we support continuing to increase the stringency of this policy.

Many of the policies proposed in the *Clean Transportation* intentions paper address passenger vehicles, and we emphasize that a strategy for this sector must include a comprehensive package of policies to support a cleaner transportation system to move people as well as goods. A more comprehensive and ambitious plan will be needed in order to achieve the necessary emissions reductions from freight, which accounts for roughly half of B.C.'s transportation emissions.

Introduction

The Pembina Institute supports taking strong action to reduce climate-damaging carbon pollution across the transportation sector. As the second largest sectoral source of emissions in B.C.,¹ transportation represents a critical piece of the climate action puzzle and of B.C.'s forthcoming clean growth strategy. Effective action is needed in this key sector to ensure that B.C. has a chance to achieve its legislated 2030, 2040, and 2050 climate targets. To help meet these targets, we support establishing a sectoral emissions target; we support the target proposed by the current Clean Growth and Climate Solutions Advisory Council and by the

¹ Government of British Columbia, *2015 Provincial Greenhouse Gas Inventory* (2017).
<https://www2.gov.bc.ca/gov/content/environment/climate-change/data/provincial-inventory>

previous Climate Leadership Team of a 30% reduction by 2030.^{2,3} The clean growth strategy should outline a clear plan to meet this target and demonstrate how proposed policies and initiatives are expected to achieve the target, and resources to ensure prompt implementation should be allocated in Budget 2019.

The *Clean Transportation* intentions paper⁴ is a positive start in the right direction. It identifies the key public policies needed to facilitate a low-carbon transition for transportation, and if intended policies are implemented, would make B.C. a leader on clean transportation in Canada. The intention to implement a zero-emission vehicle (ZEV) mandate for new passenger vehicle sales in combination with increased ambition of the low carbon fuel standard (LCFS) for existing vehicles are fundamental components of the transportation strategy and would allow B.C. to demonstrate leadership in the path towards low-carbon transportation. Policies to address cleaner transportation systems as a whole, going beyond the currently addressed passenger vehicles, are key to the success of decarbonising the transportation sector. We expect policies to reduce emissions from freight, in particular, to be addressed in more detail in forthcoming actions.

Specific recommendations to support a clean transportation strategy are articulated below based on the three sections of the *Clean Transportation* intentions paper.

Cleaner vehicles

Electrification of on-road transportation is key to meeting B.C.'s climate targets. While reducing overall demand and shifting to other low-carbon transportation modes is a critical part of the transportation solution, a transition to ZEVs — meaning battery electric and hydrogen vehicles — has to be part of the solution. Rapid technological advancements are bringing down the cost of electric vehicles, and as a result, global sales are growing at a rapid pace. By some estimates, electric vehicles (EVs) are on track to accelerate to 54% of new global car sales by 2040.⁵ Consumer demand for passenger EVs is also growing rapidly, with the market expanding by 53% between 2016 and 2017.⁶ This presents a critical opportunity for the low-carbon transportation transition and, given the large amount of clean electricity in the

² Climate Solutions and Clean Growth Advisory Council, letter to minister of environment and climate change strategy (2018). <http://www.pembina.org/pub/bc-climate-council-letter>

³ Climate Leadership Team, *Recommendations to Government* (2015). <http://www.pembina.org/reports/clt-recommendations-to-government-nov26final.pdf>

⁴ Government of British Columbia, *Clean Transportation*, intentions paper (2018). <https://engage.gov.bc.ca/cleangrowthfuture/transportation/>

⁵ Bloomberg NEF, *Electric Vehicle Outlook 2018* (2018). <https://about.bnef.com/electric-vehicle-outlook/>

⁶ Eric Schmidt, “Electric Vehicle Sales in Canada, 2017” (FleetCarma, 2018). <https://www.fleetcarma.com/electric-vehicle-sales-canada-2017/>

province, B.C. is well set up to seize this opportunity and participate in this global trend. For this reason, we are pleased to see and support the proposed policies on cleaner vehicles outlined in the intentions paper, including a ZEV mandate, financial and non-financial incentives to invest in ZEVs, support for ZEV infrastructure, and an internal combustion engine ban.

Of the proposed policies, the ZEV mandate is a foundational element to get us on track to achieve the required emissions reductions in the transportation sector and has been a missing piece of B.C.'s policy to support the deployment of EVs. A well-designed ZEV standard has the potential to deliver significant environmental and economic benefits to British Columbians and would serve as a signal of B.C.'s commitment to its climate targets and establish the province as a leader of the clean transportation transition in Canada.

We fully support implementation of a ZEV mandate of 10% of new passenger vehicle sales in 2025 and 30% in 2030, which is in line with the national ZEV strategy expected this year⁷ and with other leading North American jurisdictions including California and Quebec. Ensuring that this mandate translates into 30% or more of vehicle sales in 2030 will require carefully designed regulation, as well as incentives and infrastructure investments to support the regulation. We recommend the regulation use a crediting system that values plug-in electric vehicles relatively more than plug-in hybrid vehicles, as demonstrated in Quebec⁸ and California.⁹ We also recommend the mandate be applied to manufacturers on a province-wide basis, as is done in Quebec, in order to continue to allow the sale of ZEVs to vary throughout the province and to simplify administration of the policy.

In combination with this mandate, substantive measures will be required to increase ZEV supply and build out a network of charging infrastructure. We support both financial incentives, such as PST exemptions, and non-financial incentives, such as preferential parking, to support uptake of EVs. The existing Clean Energy Vehicle (CEV) Program has been successful in increasing demand for ZEVs, and we recommend the planned phase out of this program be gradual and carefully supported by other incentives, such as PST exemptions, in order to ensure no momentum is lost in the transition to ZEVs.

⁷ Transport Canada, "Government of Canada to develop a national Zero-Emissions Vehicle Strategy by 2018," news release (2017). https://www.canada.ca/en/transport-canada/news/2017/05/government_of_canadatodevelopanationalzero-emissionsvehiclestrat.html

⁸ Government of Quebec, "The zero-emission vehicle (ZEV) standard." <http://www.mddep.gouv.qc.ca/changementsclimatiques/vze/index-en.htm> (accessed 2018)

⁹ California Air Resources Board, "Zero Emission Vehicle (ZEV) Program" (2018). <https://www.arb.ca.gov/msprog/zevprog/zevprog.htm>

We recommend that incentives replacing the CEV program include targeted support for low-income households, based on success demonstrated by California,¹⁰ and we recommend exploring opportunities to increase original equipment manufacturers (OEMs) in B.C., such as by incentivizing investment in OEMs, in order to contribute to the economy, create jobs, and bring ZEVs to the market more quickly and competitively. We also recommend exploring opportunities for incentivizing the purchase of ZEVs using variable insurance rates based on vehicle emissions intensity.

We support continued investment in EV charging infrastructure and recommend that charging infrastructure in new developments be managed through building code and zoning requirements (such as in Vancouver and Richmond), and acknowledge that charging infrastructure in existing buildings will be more challenging. One example of how to address this challenge can be seen in Ontario, where strata corporations are not allowed to prevent the installation of EV charging in condo buildings where it is technically feasible and safe.¹¹

We strongly support expansion of the Specialty Use Vehicle Incentive Program (which supports the purchase of clean heavy-duty vehicles, buses, transport trucks, motorcycles, and heavy equipment). The majority of proposed policies in the intentions paper focus on passenger vehicles, but it is critical that the province's clean transportation strategy focus on heavy-duty vehicles and freight transport as well.¹² Decarbonization of freight is a greater challenge, but rapid advances in technology are presenting opportunities to electrify these vehicles as well. Policies to reduce these emissions and support the low-carbon transition of commercial vehicles are vital (see "Cleaner Transportation Systems" below).

We also support the proposed internal combustion engine ban by 2040 or earlier, as a commitment to set an end date for the sale of polluting cars is an appropriate way to complement the other efforts outlined in the intentions paper and continue to demonstrate B.C.'s climate leadership within Canada and globally. To ensure the implementation of this ban is feasible, we recommend implementing a commitment for regular evaluation of effectiveness of the ZEV mandate and an increase in ambition of the mandate as required, in order to support achievement of reduction targets.

¹⁰ California Air Resources Board, *Proposed Fiscal Year 2015-2016 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program* (2015).

https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_fy15-16_funding_plan.pdf

¹¹ Government of Ontario, "Owning a condo" (2018). <https://www.ontario.ca/page/owning-a-condo>

¹² Bora Plumptre, Eli Angen, and Dianne Zimmerman, *The State of Freight* (Pembina Institute, 2017). <http://www.pembina.org/pub/state-of-freight>

It is also important to note that an increase in the use of ZEVs in B.C. will significantly increase the electricity demand of the province.^{13,14} It is therefore important to carefully plan ahead for this increased demand to ensure that it can be supplied by cost-effective and low-carbon sources. We look forward to seeing details on how to meet this demand in the forthcoming energy roadmap.

Cleaner fuels

While incentivising, mandating, and investing in ZEVs is an important component of a clean transportation strategy, this addresses only new vehicles. Policies that support the low-carbon transition of the remaining vehicle fleet that is still dependent on fossil fuels are key for a comprehensive transportation strategy. We recognise B.C.'s leadership on LCFS in Canada and globally, and we support continuing to increase the stringency of this policy. We support an increase in the LCFS to a minimum 15% reduction from 2010 levels by 2030, along with the commitment to re-evaluate in 2020 whether further ambition is possible. It is important to note that other jurisdictions, including California,¹⁵ have committed to a more ambitious 20% reduction, and potential increases in B.C.'s LCFS should be considered based on the 2020 feasibility assessment to ensure it is as ambitious as possible. Continued increases in stringency are an integral component of LCFS policy design, and continued increases in ambition are necessary to ensure the province can meet its climate targets.¹⁶

We support the additional proposed policies to facilitate this transition to cleaner fuels, including tax exemptions for renewable fuel blends, promotion of investment in alternative fuelling infrastructure, and appointment of a centre of excellence for biofuels. We recommend that the incentives to transition to lower carbon fuels be maximized by accounting for differences in the lifecycle emissions intensity of renewable or low-carbon fuels under the carbon tax. The carbon savings of some renewable fuels is not currently recognized under the carbon pricing system and the carbon tax rate should be adjusted based on the carbon intensity

¹³ Navius Research, *Mitigating Climate Change through Electrification* (Clean Energy Canada, 2016).

<http://cleanenergycanada.org/wp-content/uploads/2016/10/Navius-Electrification-Modelling-Technical-Report-092016.pdf>

¹⁴ Deep Decarbonization Pathways Project, *Pathways to deep decarbonization 2015 report* (Sustainable Development Solutions Network and Institute for Sustainable Development and International Relations, 2015).

http://deepdecarbonization.org/wp-content/uploads/2016/03/DDPP_2015_REPORT.pdf

¹⁵ California Air Resources Board, "CARB cracks down on Low Carbon Fuel Standard violators," news release (2018).

<https://ww2.arb.ca.gov/news/carb-cracks-down-low-carbon-fuel-standard-violators>

¹⁶ Modeling by Navius Research in 2015 found that we must continue reducing the required emissions intensity of transportation fuels to -20% in 2030 with an end-point of close to -100% by 2050 in order to achieve provincial climate targets. Navius Research, *A Plan for Climate Leadership in British Columbia* (Clean Energy Canada, 2015).

<http://cleanenergycanada.org/wp-content/uploads/2018/03/A-Plan-for-Climate-Leadership-in-BC-Final-Oct-27-12pm-2015.pdf>

of different types of gasoline and diesel, as it is for natural gas, in order to maximize the incentive for a low carbon fuel transition.

It is important to acknowledge that different biofuels can have significantly different emissions intensities over their lifetime, and all biofuels supported under this policy should be from sustainable sources and have low life-cycle carbon emissions intensities. We recommend that this be a focus of this policy, and that the centre of excellence for biofuels ensure low-carbon emissions intensity along with the deployment of renewable fuels.

Cleaner transportation systems

Many of the policies proposed in the intentions paper address passenger vehicles, and we emphasize that a clean transportation strategy must include a comprehensive package of policies to support a cleaner transportation system to move people as well as goods.

We support the currently proposed policies for the movement of people, including expanding vehicle co-ops and carpooling, developing a multimodal transportation system, with special attention given to public transit and active transportation infrastructure, integrating transportation and land use planning, and supporting electric/hybrid ferries. In addition to using a share of the provincial gas tax to fund public transit systems in B.C.,¹⁷ there are opportunities to examine mobility pricing as a mechanism to respond to managing growing congestion while at the same time raising revenue for much-needed transit investments. We recommend further examination of how well designed mobility pricing strategies can be applied in urban centres in B.C. in order to improve the transportation system for citizens.

We recommend strengthening provincial transportation and land use planning policies to advance transit-supportive development around priority areas such as transit stations and to support transportation demand management practices and behaviour change tools to reduce the number of (single-occupancy vehicle) trips and shift travel demand to more sustainable modes. We also recommend exploring opportunities for improved data collection on transportation, as more data is needed in order to develop a low-carbon transportation system and allow policy makers to make optimal investment decisions for that system.

Electrifying ports, improving shipping corridor efficiency, and stimulating investment in zero emission heavy-duty vehicles will be important shifts in reducing emissions from the movement of goods. However, a more comprehensive and ambitious plan will be needed in order to achieve the necessary emissions reductions from freight. A comprehensive policy

¹⁷ Government of British Columbia, “Motor Fuel Tax & Carbon Tax.”
<https://www2.gov.bc.ca/gov/content/taxes/sales-taxes/motor-fuel-carbon-tax> (accessed 2018)

package to reduce emissions from freight transport is lacking from the current intentions paper and should be a crucial component of the province's clean transportation strategy.

Within B.C.'s transportation sector, freight transport accounted for roughly half of emissions in 2016,¹⁸ with trucks accounting for the majority of freight emissions. B.C.'s transport system is a key hub for domestic and international patterns of trade through Canada, the United States, and the Asia-Pacific region, and the economic importance of B.C.'s freight industry means it's essential to maintain competitiveness while working to decarbonize.

Three key recommendations for a competitive, low-carbon freight industry in B.C. include:

1. **Accelerate uptake of ZEV trucks:** The proposed ZEV mandate focuses on passenger vehicles, but rapid advances in technology are presenting opportunities to decarbonize freight vehicles as well. Electric school buses, manufactured in Quebec, are already on roads across North America.¹⁹ Leading retailers have pre-ordered Class 8 electric trucks,²⁰ suggesting that the business case for electrification is already there for some back-to-base operations. Building on the ZEV strategy for passenger vehicles, government should support further R&D on ZEV truck technologies and consider targets or incentives to accelerate their uptake. The Specialty Use Vehicle Incentive Program is a good start in this direction. In addition to this, government support is needed to help businesses mitigate risks of transitioning their fleets. Transit agencies and businesses need government incentive programs to pilot electrification.
2. **Focus on reducing demand:** A comprehensive low-carbon freight pathway will include measures to shift to lower-emitting modes (rail, and even cargo bicycle for last-mile deliveries²¹) and avoid unnecessary trips. Provincial policies aimed at avoiding emissions by addressing mode and demand include Quebec's program on intermodal shift²² and Ontario's off-peak delivery pilot.²³ Some leading innovations on sustainable goods movement are emerging at the regional level, such as in the Region of Peel in Ontario²⁴ and Metro Vancouver,²⁵ where regions are working closely with freight

¹⁸ Government of Canada, *National Inventory Report 2017*, Part 3, Table A12-11.

¹⁹ The Lion Electric Co. <https://thelionelectric.com/en> (accessed 2018)

²⁰ The Canadian Press, "Loblaws says it ordered 25 Tesla electric trucks, wants fully electric fleet by 2030" (*Financial Post*, 2017). <http://business.financialpost.com/wcm/b39d5385-ff02-454b-8975-d5188047bb24>

²¹, Nithya Vijayakumar, *Cyclelogistics* (Pembina Institute, 2017). <http://www.pembina.org/pub/cyclelogistics>

²² Transports Quebec, *Assistance Program Aiming to Reduce or Avoid Greenhouse Gas Emissions*. <http://www.bv.transports.gouv.qc.ca/mono/0983715.pdf> (accessed 2018)

²³ Ontario Ministry of Transportation, *Beyond the Finish Line* (2015). <http://www.mto.gov.on.ca/english/panam-games/pdfs/2015-games-transportation-post-games-report.pdf>

²⁴ Region of Peel, *Goods Movement Strategic Plan 2017-2021* (2017).

<https://www.peelregion.ca/pw/transportation/goodsmovement/pdf/goods-movement-strategic-plan-2017-2021.pdf>

companies to find efficiencies. To help support these initiatives, we recommend the province work with regional and municipal governments to most effectively address demand and support municipal and regional goods movement strategies, and we recommend financial support under the cleaner vehicle incentives be extended to electric-assisted cargo bikes (as other jurisdictions such as Sweden, France, Spain, and Oslo have done).

3. **Coordinate freight policy across governments and ministries:** Since it is usually shared between transportation, environment, energy, and other divisions, freight policy requires coordination between multiple ministries and also across jurisdictions (federal, provincial, and local). To ensure effective implementation, the province should work to ensure that freight policy, programs, and data collection are clearly coordinated across these ministries and levels of government.

It's also important to note that if liquefied natural gas is being considered for marine use as a transitional fuel, emissions from production, including upstream emissions (in particular methane), must be fully accounted for and reduced as much as possible through implementation of best practices across the supply chain.

We look forward to seeing the transportation system as a whole, including freight transport, addressed in more detail in the next series of intentions papers.

Additional comments

In order to enable delivery of these proposed policies and their intended result, we recommend a mechanism be put in place to ensure that municipal plans align with regional and provincial transportation plans. Many of these policies require municipalities to support the provincial vision and deliver on local infrastructure and services, such as transit infrastructure. A lack of clearly defined roles and responsibilities between municipal and provincial transportation agencies can result in costly delays in the planning as well as implementation phases of major transportation projects, and we recommend coordination and collaboration among different levels of government and stakeholders to avoid these inefficiencies. With ZEV incentives, for example, there is an opportunity to make use of a broader network of partners to extend the reach of the existing program and provide more incentives. Working with local governments, transit agencies, airports, and B.C. Ferries is key to ensuring the most cost-effective and successful implementation of these incentives.

²⁵ Metro Vancouver, "Integrated Air Quality & Greenhouse Gas Management Plan."
<http://www.metrovancouver.org/services/air-quality/plans-reports/iaqggmp/Pages/default.aspx> (accessed 2018)

Summary of key recommendations

The Pembina Institute supports implementation of the proposed policies for clean transportation and encourages the government to consider the following recommendations in the forthcoming clean growth strategy:

1. Support the intended goal of 30% of new passenger vehicle sales being ZEVs by 2030 by implementing a combination of a well-designed mandate, financial and non-financial incentives, and infrastructure investment. Commit to re-evaluate the ambition of the ZEV mandate regularly.
2. Increase the LCFS to a minimum of 15% reduction from 2010 levels by 2030 and commit to regular reassessment of ambition starting in 2020 to ensure the highest level of ambition possible.
3. Develop a comprehensive policy package to reduce emissions from freight transport in the next phase of intentions papers, including building on the Specialty Use Vehicle Incentive to accelerate uptake of ZEV trucks, focusing on reducing demand, and coordinating implementation between different ministries and levels of government.
4. Establish a transportation sector emissions target of a 30% reduction by 2030 compared to 2007.
5. Outline a clear plan to meet this target in the clean growth strategy, including modeling of how proposed policies are expected to reduce emissions and allocation of resources to ensure prompt implementation in Budget 2019.
6. Enable effective delivery of policies by coordinating between different levels of government to ensure successful, timely, and cost-effective implementation.