The Sustainable Transportation Action Research Team (START) would like to formally support increasing the stringency of British Columbia’s Low Carbon Fuel Standard (LCFS), based on evidence from our original, peer-reviewed research.

THE LCFS HELPS BC ACHIEVE ITS 2050 CLIMATE TARGETS

We developed a dynamic vehicle adoption model coupled with a fuel supply optimization model, applied to the personal and freight vehicle sectors in BC, which was published in the internationally peer-reviewed journal, *Energy Policy*. The goal of this research was to assess the potential for BC to achieve its 2050 GHG reduction target through a suite of transport policies, including the Low Carbon Fuel Standard (LCFS). Our results show that the LCFS is both effective at reducing GHG emissions and could play a strong role in achieving deep emission reduction targets across the transport sector. When accompanied with ambitious, non-LCFS policies the inclusion of the LCFS in the transport sector was the difference between achieving BC’s 2050 GHG target and falling short of it. Further, the LCFS appears to be complementary to the other modeled policies, resulting in incremental GHG reductions in all modeled policy scenarios.

Our results indicate that the LCFS is particularly important to reducing GHG emissions within the freight sector, where a switch to zero-emissions vehicles does not necessarily cut GHGs. In the short- and long-term, our results suggest that the LCFS can reduce emissions in freight by incentivizing the supply of low carbon fuels. We also find that the LCFS has an additive but lower impact in the personal vehicle sector. Overall, with increasing stringency, the LCFS could play an important role in decarbonizing the transportation sector.

CONCLUSION

Our original, peer-reviewed research demonstrates that BC’s Low Carbon Fuel Standard is effective at reducing transportation-related GHGs and will help BC meet its 2050 climate targets. We therefore support the province continuing to implement the LCFS and that it increase the stringency to require fuel suppliers to decrease the average carbon intensity of fuels by 15% by 2030, and by 20% in the coming decades.

Sincerely,

Dr. Jonn Axsen,
on behalf of the Sustainable Transportation Action Research Team (START) at Simon Fraser University

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The Sustainable Transportation Action Research Team (START) would like to formally support the introduction of a provincial Zero Emissions Vehicle (ZEV) mandate in British Columbia, based on evidence from our original, peer-reviewed research. A number of international studies show that ZEVs are critical for reaching our 2050 greenhouse gas targets\(^1\). Our research finds that a provincial ZEV mandate is likely to be the single most effective policy at driving ZEV sales, particularly in combination with the current ZEV policies BC has in place.

**THE ROLE OF A ZEV MANDATE IN ACHIEVING 2050 CLIMATE TARGETS**

We have conducted a number of studies using in-depth data representing actual car buyers in British Columbia, as well as real-world purchase conditions. In one such study, we find that **BC cannot achieve its 2050 GHG reductions goals in the transportation sector without a strong ZEV mandate** to stimulate ZEV diffusion\(^2\). Our findings suggest that a ZEV mandate requiring 30% of new vehicle sales be ZEVs by 2030, and progressing to higher stringencies thereafter, is consistent with meeting 2050 climate targets. This research, with its BC case study, was published last year in the international peer-reviewed journal, *Energy Policy*.

In another study, we have evaluated different policy options to achieve 40% ZEV market share by 2040\(^3\) – a goal which is consistent with meeting 2050 GHG targets. Of the policies we evaluated, a strong **ZEV mandate (requiring 30% ZEV sales by 2030) is found to be the most effective, low-cost, and most transformative policy**. It is the only policy examined to receive the highest possible effectiveness score, as well as the highest transformative signal score, as it provides a durable signal for automakers, dealerships, utilities, and other stakeholders stimulate investment in ZEVs now and the coming decades.

In another peer reviewed study, we have evaluated each province’s electric vehicle supportive policies, in terms of ability to achieve climate targets. Due to its ZEV mandate, Quebec received the highest grade of all provinces. **BC could achieve an “A” grade with a mix of policies**, including a ZEV mandate requiring that 30% of sales be ZEVs by 2030\(^4\).

**A ZEV MANDATE WILL REMOVE A CRITICAL BARRIER TO ZEV ADOPTION**

A ZEV mandate will remove a fundamental barrier to ZEV adoption: lack of ZEV availability. Our modeling research, which relies on vehicle preference data from new car

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\(^3\) START. 2017. Canada’s ZEV Policy Handbook.

buyers in BC, finds that lack of ZEV availability plays a substantial role in limiting present day sales\(^5\). Further, our model indicates that electric vehicle sales can not reach or exceed 30% market share by 2030 without a substantial boost in ZEV availability. In our informed view, a **ZEV mandate is the most effective way to increase the ZEV availability in this province.** It is also important to note that in our analyses, a large segment of BC consumers have potential interest in EVs – compliance with a 30% ZEV mandate seems to be possible with current consumer preferences.

The nature of strong ZEV policy (like a ZEV mandate) in regions means that vehicles get allocated to those regions over other jurisdictions, such that supply is prioritized to regions for compliance purposes. This has already been seen in Canada, where Ford, Toyota, and Subaru have prioritized allocating ZEV inventory to Quebec, the only region in Canada with a ZEV mandate. Researchers and analysis worldwide have found that a **ZEV mandate sends a strong signal to automakers to provide consumers with greater choice.** Our research finds that BC needs its own ZEV mandate, and cannot rely on other jurisdictions and policies to fill demand\(^6\). Without an adequate tool to deliver ZEV supply to BC, demand for ZEVs may not be filled.

**CONCLUSION**

Our original, peer-reviewed research demonstrates that implementing a **ZEV mandate will give BC the opportunity to meet its 2050 climate targets, remove a key barrier to ZEV adoption, and allow consumers to fulfill their demand for ZEVs.** We therefore support the province implementing a strong ZEV mandate, one which ramps up required ZEV sales such that by 2030, 30% of new vehicle sales are ZEVs, with increasing requirements in future decades.

Sincerely,

\[\text{Dr. Jonn Axsen,}\]
\[\text{on behalf of the Sustainable Transportation Action Research Team (START) at Simon Fraser University}\]

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\(^6\) Sykes and Axsen, 2017.