ZEV mandates and subsidies – expensive misguided policies

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Zero Emission Vehicles (ZEVs) are a growing focus for climate policy makers. The underpinning objective is to reduce light duty vehicle (LDV) GHG emissions, primarily through vehicle electrification. Regardless of the specific policy mechanism – government intervention to electrify the LDV fleet comes at a hefty price for consumers and taxpayers, ignores consumer preferences and ultimately could restrict consumer choice, all while yielding small and elusive GHG reductions.

Quebec has become the first Canadian jurisdiction to adopt a requirement for sales of a certain number of ZEVs. Starting with the 2018 model year, car companies will need to generate ZEV credits equivalent to 3.5 percent of their sales in Quebec—and the threshold will rise rapidly over time – to 22% in 2025.

The federal government is now developing a national strategy to increase the number of ZEVs on Canadian roads. Based on past federal climate initiatives, sales mandates, subsidies or both will undoubtedly be part of the strategy.

What's wrong with this picture? Consider this:

Current LDV emission regulations are already driving significant year-over-year emission reductions across all vehicle sizes and types, resulting in a projected 50% reduction in LDV fleet emissions by 2025 from a 2012 baseline. Not only are ZEVs chasing a moving emissions target, the 'zero' in ZEV can add up to a lot more than zero on a full life cycle basis that includes the energy mix used to produce the electricity, and emissions from vehicle production and end of life disposal. It's not just about tailpipe emissions.

Electric vehicles come with a significant price premium, which make them a costly way to reduce emissions. The US National Highway Traffic Safety Administration (NHTSA) estimates that in the 2017 to 2025 time period, GHG reductions achieved by electric vehicles cost between $243 and $291 per tonne. That's an order of magnitude higher than reductions in virtually any other sector or carbon pricing scheme.

Some provincial governments offset some of the electric cost premium with generous taxpayer funded subsidies – as much as $14,000 in Ontario to put a luxury Tesla S in the driveway. Multiple analyses show that these kinds of market distorting policies come with a very high price tag to taxpayers. A recent Montreal Economic Institute study pegged the cost of Quebec's electric vehicle subsidy at $288 per tonne and Ontario's at $523 per tonne.

What about consumer preference and choice? Canadians bought nearly two million new vehicles in 2016. Of this total, only 10,839 were electric vehicles representing a total new LDV share of just 0.56 percent. Canadians' vehicle preferences are firmly bound to the reliability and performance delivered by conventional internal combustion engine (ICE) powered vehicles. ZEV mandates essentially establish quotas that reduce consumer choice and increase vehicle prices – just like any other quota system.

By implementing ZEV mandates governments are restricting consumers' ability to make a value judgement based on their individual needs and select the most cost-effective vehicle choice to meet them. It brings to mind Henry Ford's famous quote from the Model T years – "Any customer can have a car painted any colour that he wants so long as it is black."

Are electric vehicles part of a lower emissions future? Yes, absolutely. But we are a long way from mass acceptance and adoption of electric cars. Electric vehicle sales are increasing, and are expected to continue to grow as vehicle and battery technology improves, the number of electric vehicle models brought to market increases, and the electric vehicle cost premium decreases. In the interim, improvements to mainstream ICE vehicle technology will deliver significant LDV GHG emissions reductions for the next 20-plus years.

Forcing electric vehicles into the market through ZEV quotas or market distorting, taxpayer funded subsidies is just bad policy. Moreover, it's counterproductive to a pan-Canadian carbon pricing agenda that drives to emissions reductions at the lowest possible cost per tonne.

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