

# Intelligence MEMOS



From: Brian Livingston  
To: Canadians Interested in the Future of EVs  
Date: March 11, 2024  
Re: **THE REAL STORY OF THE FUTURE OF EVs**

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*C.D. Howe Institute author Brian Livingston responds to a critique of his publication.*

In a [recent study](#) for the C.D. Howe Institute, I highlighted the near-impossibility of procuring enough Zero Emission Vehicles (ZEV) to meet the federal government's target of 100 percent ZEV sales by 2035 in the Canadian market, without a large shortfall in the availability of light vehicles (cars, vans, SUV's and pickup trucks) relative to what Canadians want and need. My study came under criticism by Electric Mobility Canada, which produced a document purporting to debunk our work.

The commentary fails to disprove my work because its main arguments are essentially that the government's targets for ZEV just have to be achieved, and that some manufacturers have committed to meeting them. Our report, in contrast, asks whether industry as a whole will be able to produce sufficient output to meet the target, given the likely demand for light vehicles. This is a live question outside of Canada, with the US federal government recently [delaying its mandated ramp-up in ZEV sales to past 2030](#), given concerns about consumer take-up and about jobs. The rebuke simply does not address that practical question.

While naturally, the goal of the regulation is ultimately to reduce emissions, the fact is that the Canadian government's goal cannot be met unless producers can only sell ZEV's, since voluntary measures did not work sufficiently fast enough for the government – as the commentary itself points out.

This means that enough such ZEVs must be available for sale in the Canadian market. My report addresses the question of whether global producers can ramp up production sufficiently quickly to serve the Canadian market as well as all other markets that are mandating a higher percentage of ZEV sales.

Far from being supported by “no data”, as this other report claims, my forecast is actually detailed and transparent and therefore, unlike the views of others, subject to specific rebuttal or correction. I would have welcomed such improvements. But the other commentary does not provide an alternative “bottom up” forecast. It simply states that manufacturers will fill the mandated 100 percent of sales with ZEVs (ultimately, either Battery Electric Vehicles, BEVs, some plug-in hybrids or fuel cell vehicles), avoiding the question of whether they can do so without leaving hundreds of thousands of Canadians high and dry regarding their transportation needs. Simply put, a target is not a forecast.

Even when this alternate commentary relies on concrete examples, it rests on wishful thinking. For example, it says the Tesla Mexico gigafactory *may* produce 2 million EVs. The reality is that the usual nameplate capacity of Tesla plants has been 500,000 to 750,000 vehicles per year. It is possible to build two trains for a plant, but that will take a number of years to achieve. In addition, construction of this Gigafactory was being paused as of [October 2023](#) due to high interest rates. It still has not started construction [as of March 11, 2024](#). Given this, [they will be doing well to have any production in 2026](#), which is actually later than the assumption in my forecast.

As another example, the commentary states that a new Volkswagen plant in Ontario would produce 1 million EVs. In fact, it is only a factory that would produce batteries for 1 million EVs. There is no indication that Volkswagen will build any EVs in Canada.

This opposing commentary does note that 63 percent of Canadian are considering buying an electric vehicle, after being prompted to think about their benefits. This number is close to my 55 percent to 60 percent forecast for BEV sales as a share of the market in 2035. Which still leaves almost 40 percent who have some concerns, and are [not prepared to buy a full BEV at this time](#).

Given this, and given that sales of fuel cell light vehicles are likely to remain very low due to the challenge of building a network of hydrogen fueling stations, I proposed a Plan B with practical suggestions for some flexibility.

A key suggestion is to make the ZEV mandate more flexible by encouraging plug-in hybrids as a bridge mechanism. But this other commentary treats plug-in hybrids as not acceptable because they are not zero-emission. Talk about making best the enemy of the good: Plug-in hybrids could, depending on driving habits, rely on battery power for 80 percent of driving, and therefore reduce emissions by 80 percent versus gasoline vehicles.

My training as an engineer means that I understand mechanical operations, batteries and electrical matters quite well. Not to mention, just how difficult it is to build large projects such as light vehicle assembly facilities and operate them in a timely way.

I understand that climate change is an existential threat, but policies that work to address it need to be pragmatic and realistic to succeed, notably when they require ongoing support from the buying public. This is not a test that this other [commentary](#) meets.

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