The role of consumer preference in reducing emissions

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Consumer behaviour and choice represent both a challenge and an opportunity in the effort to reduce transportation GHG emissions, especially in the personal transport/light duty vehicle space. The degree to which this is true was reinforced for me by two presentations I attended at the Conference Board of Canada's Reshaping Energy 2018 event in Ottawa the last week of May.

The first was from Dennis DesRosiers, Canada's leading auto industry analyst. Dennis has been immersed in the auto sector for more than 40 years and is the 'go to' guy for governments and the private sector for auto sector market analysis and forecasts.

Dennis confirmed that Canadians are embracing vehicle ownership at a record pace. In the year 2000, vehicle ownership measured as vehicles per driving age population was about 70 percent; in 2017 it was over 87 percent. The result was 9.2 more million vehicles on the road in 2017 than in 2000. Imagine this forward to 2030, and there will be another 8 to 10 million additional vehicles on the road – that's an increase of nearly 20 million vehicles on the road between 2000 and 2030.

Internal combustion engine vehicles (ICEV) have dominated this massive expansion of the vehicle fleet. Since 2000, Canadians have bought about 20,000 zero emission vehicles and a little over 220,000 hybrid vehicles; hybrid sales have 'flat-lined' over the past six years.

This strong consumer preference for ICEVs was explained in a presentation by John German, a Senior Fellow at the International Council on Clean Transportation (ICCT) who, like Dennis, has more than 40 years of auto industry experience, with a focus on fuel economy and environmental performance. John drew the distinction between 'early adopters' and mainstream consumers, the latter being much more risk averse. He confirmed that after 18 years on the market, hybrids have not made the transition from early adopters to mainstream customers.

Beyond this risk aversion, Desrosiers noted that 'environmental friendliness' ranks near the bottom of the metrics consumers look for when buying a vehicle (30th out of 33 factors).

This says a lot about the future market penetration prospects of battery electric vehicles (BEVs) and governments' focus on them as a solution to GHG emissions reduction.

Couple this consumer preference for ICEVs with the very significant increase in the expected life of a vehicle in Canada (it now takes between 20 and 25 years before 90 percent of vehicles are scrapped) and it's clear that ICEVs will continue to dominate the vehicle fleet for several decades. Even if electric vehicles are as successful as some predict, they will still be a very small component of the overall fleet of vehicles on the road.

For DesRosiers, the emissions reduction 'bottom line' of all this is that "the total impact [of BEVs] will be negligible". German also acknowledged challenges for BEVs, reinforcing that mainstream customers will determine the success of powertrain transitions, not early adopters.

Both DesRosiers and German agreed on the rapid and continuing improvement in ICEV fuel and emissions efficiency, and the opportunity this represents for emissions reductions. German described how ICEV manufacturers are "playing technology leapfrog", with some already achieving fuel efficiency standards required by 2022, in 2018. In the near term, technologies such as dynamic cylinder deactivation and gasoline compression ignition engines will deliver efficiency improvements of 20-30 percent.

Two policy takeaways from Desrosiers' and German's presentations stand out for me.

1. Governments shouldn't be trying to pick technology 'winners'. Rather, they should be setting performance-based standards and harnessing the power of the market (consumer choice) to determine preferred solutions.

2. Governments should implement measures to encourage the purchase of a new vehicle of any kind, since all new vehicles are much more fuel efficient than the one being replaced.