

Intelligence MEMOS



From: Donald N. Dewees
To: Minister Glen Murray
CC: Premier Kathleen Wynne
Date: June 7, 2016
Re: **DON'T RUSH TO ELECTRIC AVENUE**

Recent press reports suggest that the Province of Ontario is considering a plan to greatly increase the sales of electric and hybrid-electric vehicles in Ontario, with a goal of having 1.7 million of these vehicles on the road by 2024. I applaud the goal of reducing greenhouse gas emissions but I suggest that the government learn from its green electricity experience and rethink electric and hybrid subsidies.

The *2009 Green Energy and Green Economy Act* bought solar power at feed-in-tariff prices up to 10 times the cost of generating the same power with natural gas. These 20-year contracts implied a ridiculous cost per tonne of greenhouse gases avoided. The price of solar installations has plummeted in the intervening years. If we had waited until 2014 to begin buying solar power and then bought it by competitive bidding we could achieve the same greenhouse gas reduction over the next decade at less than half the cost for Ontario's electricity consumers.

Electric cars are only as clean as the generators dispatched to charge them. In the middle of the night when generation is mostly nuclear, hydro and renewables, the electricity is quite clean. But charging them during the daytime - at work, at the store, on the road or at home - uses partly or mostly natural gas-generated power which produces 40% as much GHG as coal plants. On a trip you will charge up whenever necessary to make it to your destination. We cannot assume that most charging is going to be with 'clean' power.

In 2016, electric cars do not approach the range of gasoline-fuelled cars. Worse yet, in winter Canadians need to heat the car, defrost the windshield, run the wipers and lights, draining major electric power from batteries that perform worse in the cold anyway. Electric car range in winter will be much less than it is in mid-summer or in California year-round. This is not enough for most households. Other jurisdictions have found that even with subsidies only a small fraction of the motoring public will accept this compromise. 2016 is too early for a big all-electric push.

Hybrid vehicles solve the range problem and reduce greenhouse gases emissions by one-third but the cost, again, is high. And hybrid subsidies can pay buyers to purchase a large hybrid SUV rather than a smaller non-hybrid sedan with similar emissions. Why not encourage motorists to choose low emission vehicles regardless of the power source?

Governments have shown no expertise in choosing cost-effective technologies. A better policy would be a feebate system whereby high-emission vehicles pay a fee and low-emission vehicles receive a rebate based on estimated lifetime greenhouse gases emissions. This lets consumers choose vehicle size, performance and power source to get the best combination of user satisfaction and low emissions with low fees or high rebates. Studies have shown that Ontario's past feebate program worked and that better design could achieve more. A good feebate scheme will get better environmental results at lower costs to Ontarians than subsidizing specific technologies.

Donald N. Dewees is Professor Emeritus of Economics and Law, at the University of Toronto