



Investing in Canada's Hydrogen Fueling Infrastructure to Support Consumer Adoption of Fuel Cell-Electric Zero-Emissions Vehicles

Submitted by Bob Oliver on behalf of Hydra-Go, for consideration by the House of Commons Standing Committee on Finance as part of the 2017 Pre-Budget consultation process.

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Executive Summary

Hydra-Go is a newly-formed, consortium-owned Canadian company created to build, own and operate an initial network of 100 publicly-accessible hydrogen fueling stations (capable of producing, compressing, storing and dispensing zero-emission hydrogen fuel) to support the early consumer adoption of fuel cell electric vehicles (FCEVs) in Canada and to accelerate Canada's transition toward a zero-carbon, zero-emission transportation future.

Hydra-Go is calling on the Government of Canada to prioritize the reduction of greenhouse gas (GHG) emissions from Canada's transportation sector by expanding its financial support for new investments in zero-carbon, zero-emission charging and fueling infrastructure over the next 10 years. This expanded commitment must be balanced and promote a healthy mix of zero-emission and hybrid vehicle technologies in the Canadian marketplace, including, importantly, support for the coming fleets of FCEVs. A commitment of \$100,000,000 over 10 years in financial assistance to promote private-sector investment in the building and operation of publicly-accessible hydrogen fueling stations would show the necessary government leadership to bring about transformative change in Canada.

Submission

Hydra-Go is a newly-formed, consortium-owned, Canadian company committed to becoming a leading name in the drive to create a new, zero-carbon, zero-emission transportation future in Canada.

With the support and collaboration of Canadian governments, the world's leading fuel cell electric vehicle (FCEV) automakers and conventional retail fueling partners, the Hydra-Go vision is to build, own and operate an initial network of 100 publicly accessible hydrogen fueling stations (capable of producing, compressing, storing and dispensing zero-carbon hydrogen fuel) to support early consumer

adoption of FCEVs in Canada and accelerate Canada's transition toward a zero-carbon, zero-emission transportation future.

Hydra-Go feels it is imperative that the Government of Canada prioritize the reduction of GHG emissions from Canada's transportation sector by expanding its financial support for new investments in zero-carbon, zero-emission charging and fueling infrastructure over the next 10 years. This expanded commitment must be balanced to promote a healthy mix of zero-emission and hybrid vehicle technologies in the Canadian marketplace, including, importantly, support for the coming fleets of FCEVs. A commitment of \$100,000,000 over 10-years in financial assistance to promote private-sector investment in the building and operation of publicly accessible hydrogen fueling stations would show the necessary government leadership to bring about transformative change in Canada.

Climate Change & Transportation – Challenge and Opportunity

After the Oil and Gas industry, transportation is the second largest source of GHG emissions in Canada. Nearly one-quarter of Canada's total national energy-use GHG emissions come from the burning of fossil fuels to power transportation services, and almost half of that comes from passenger cars and light trucks.

Meeting Canada's climate change challenge means reducing (and, ultimately, eliminating) GHG emissions from the cars and trucks we drive. The Governments of Canada and several provinces, including Ontario, Quebec and British Columbia, recognize this, leading to a collective renewed interest in the commercial development and deployment of new zero-emission vehicles. Complementary to the deployment of plug-in electric and hybrid electric vehicles, new FCEVs are poised to play an instrumental role in reducing GHG emissions by meeting the market demand for longer-range and faster-fueling zero-emission vehicle models.

The coming era of FCEVs in Canada

In Canada, Hyundai Motor Company has begun leasing the Tucson FCEV (a compact SUV model) in Vancouver, British Columbia, with plans to rapidly expand availability in Ontario and Quebec. Toyota Motor Corporation has introduced its new Mirai FCEV (a four-door liftback) in California, with plans to bring the vehicle into Ontario and Quebec. Honda Motor Company is accelerating plans to introduce its zero-emission Clarity FCEV (also a four-door liftback) in Canada within 12 months. Several other automakers are also developing market-ready FCEV products that are expected to become available within the next 5 years.

As with battery electric vehicles, fueling infrastructure is the primary technological barrier to widespread acceptance and adoption of FCEVs in the Canadian automotive marketplace. Removing this barrier clears the path for rapid introduction of this market-ready technology. Thus, the time has come for governments to make significant public investments in new hydrogen fueling infrastructure to overcome this last significant obstacle.

Government and Private Sector Partnership

Governments cannot do it alone. They will need private-sector partners. Hydra-Go was created for this purpose, to be a leading infrastructure partner to governments for the creation of an initial, publicly accessible hydrogen fueling network in Canada.

The Hydra-Go network will be rolled out in three phases over a period of six-to-ten years:

Phase 1: Within the first two years of operation, Hydra-Go will service approximately 150 FCEVs by building six fueling stations (two in the Greater Toronto Area and one in each of Ottawa, Kingston, Montreal and Quebec City), co-located at existing conventional fueling outlets. All stations built in Phase I will have full operational capabilities from electrolysis and compression to the storing and dispensing of hydrogen fuel.

Phase 2: Building from the success of Phase I, Hydra-Go will build 14 additional stations (20 in total) in Phase II, servicing at least 2,000 FCEVs across the Hydra-Go fueling network, effectively connecting Quebec City to Windsor, Ontario. For greater efficiency, six of the new Hydra-Go stations built in this phase will have storage and dispensing capacity only.

Phase 3: Hydra-Go will leverage its strategic partnerships with dominant players in the Canadian energy sector to expand its hydrogen fueling network to 100 stations in key markets across Canada, including British Columbia, Alberta, Saskatchewan, Manitoba and Atlantic Canada, servicing at least 25,000 FCEVs across Canada, from coast-to-coast-to-coast.

Starting in Ontario and Quebec

Ontario and Quebec are the most suitable Canadian jurisdictions in which to deploy an initial network of publicly accessible hydrogen fueling stations to support early consumer adoption of FCEVs, in part because:

- ✓ both provinces have robust consumer vehicle markets with proximity to the Northeastern United States;
- ✓ vehicle GHG emissions in Canada are concentrated in the urban areas of Southern Ontario and Quebec;
- ✓ the Quebec City-Ottawa-Windsor corridor is home to seven key governments, including the federal legislature in Ottawa, the provincial legislatures in Quebec City and Toronto, and four key municipal councils in Quebec City, Montreal, Ottawa and Toronto, all of which share a common commitment to fight climate change by reducing GHG emissions; and,
- ✓ early adoption of FCEVs and related technologies creates opportunity for economic development and jobs arising from future FCEV systems manufacturing in Ontario and Quebec.

Budget recommendation

A commitment of \$100,000,000 over 10 years in financial assistance to promote private-sector investment in the building and operation of publicly accessible hydrogen fueling stations.

About Hydra-Go

Hydra-Go is a newly-formed, consortium-owned Canadian company created to build, own and operate an initial network of 100 publicly-accessible hydrogen fueling stations (capable of producing, compressing, storing and dispensing zero-emission hydrogen fuel) to support the early consumer adoption of fuel cell electric vehicles in Canada and to accelerate Canada's transition toward a zero-carbon, zero-emission transportation future.