

**Submission**  
**to the**  
**[House of Commons Standing Committee on Industry, Science and Technology](#)**  
**by the**  
**Hydrogen Business Council (HBC), Toronto, ON**  
(Submitted via the webpage at this [LINK](#))

This submission is from the Ontario based [Hydrogen Business Council \(HBC\)](#), which is a coalition of companies and industry experts who are dedicated to sharing knowledge and opportunities of hydrogen technologies.

1) Urgent need for action:

- a) Canada's commitments to Paris accords for 2030 [requires CO2 emission reduction of approximately 300 million tonnes](#) below the 2015 reference case (BR2) but it is not on track to do so.
- b) The Head of the International Energy Agency, Fatih Birol, has recently indicated that the “[world has six months to avert climate crisis](#)”. His reported rationale is that “governments are planning to spend \$9tn (£7.2tn) globally in the next few months on rescuing their economies from the coronavirus crisis, the IEA has calculated. The stimulus packages created this year will determine the shape of the global economy for the next three years, according to Birol, and within that time emissions must start to fall sharply and permanently, or climate targets will be out of reach.”

2) Consensus on hydrogen technologies:

- There is a growing consensus amongst experts that hydrogen technologies are needed to be utilized by many countries in the world, including Canada, to meet their respective commitments to the Paris Accord. As a result, several major economies in the world are moving toward utilization of hydrogen technologies. For example, [Germany announced plans to spend US\\$9bn on implementation of a hydrogen strategy plan](#), South Korea has allocated [US\\$22bn to accelerate hydrogen transportation and fuel cell power systems](#), and in Japan, the hydrogen market is expected to [grow 56 times to over US\\$4 bn USD by 2030 for transportation and power](#).

### 3) Large opportunity for Canada:

Although the scale of implementation of hydrogen technologies in Canada is relatively small at this time, this country could become a world leader in the area. Given below are some examples:

- a) By converting goods movement to hydrogen powered trucks, Canada could [reduce its emissions by approximately 60 million tonnes of CO<sub>2</sub> per year \(estimate from data in Pembina Institute report\)](#).
- b) Hydrogen generation technology and hydrogen-powered transport vehicles are now available and can be replicated quickly to implement goods transport on a national scale.
- c) Hydrogen-powered goods transport can enable Canada to decarbonize a major component of its emissions with the largest impact and lowest cost in the shortest time.
- d) Public transit including trains and buses can de-carbonized cost effectively by hydrogen.
- e) Major industrial processes can de-carbonized with hydrogen such as steel, ammonia and cement production.

### 4) Example scenario - H<sub>2</sub>Oshawa:

- a) Manufacturing:
  - Oshawa could become a major manufacturing centre for hydrogen-powered transportation technology that would create thousands of jobs. For example, this city could become a major manufacturer centre of hydrogen-powered delivery trucks since it has a combination of substantial manufacturing infrastructure, skilled workers and a research institution that can help accelerate implementation. This includes the General Motors manufacturing plant along with their network of suppliers and the nearby Ontario Tech University.
- b) Hydrogen-Powered Goods Movement:
  - Oshawa could become a hydrogen hub since off-peak electricity generated at Darlington Nuclear power plant could be used to create hydrogen fuel on a large scale at a very low cost.
  - Delivery trucks used in the area could be powered on this hydrogen.
- c) Hydrogen-Powered Trains

- Oshawa is a terminus for the GO commuter trains and could become fueling point for hydrogen-powered trains. [Test runs of hydrogen-powered trains have been completed in Germany](#) and are also planned for the UK.

d) Production of Goods Utilizing Hydrogen

- Using low-cost hydrogen, several useful products can be produced economically through commercially available processes. For example, high purity ethanol can be produced cost effectively using a proven catalytic process.

5) Recommendations:

We recommend that the federal government do the following:

- a) Fund the development of a national plan for rapid scale up hydrogen technologies.
- b) Incentivize industry to increase manufacturing of hydrogen-powered transport vehicles in centres such as Oshawa.
- c) Incentivize industry to demonstrate the benefits of hydrogen-powered goods distribution in selected areas such as Oshawa region.
- d) Incentivize private sector financing of infrastructure for hydrogen-powered transportation systems such as hydrogen infrastructure and hydrogen-powered buses for the City of Mississauga.

6) HBC's Activities:

To help accelerate the utilization of hydrogen technologies, HBC is planning to host an online conference on October 29th that would include these focus areas:

- a) UN Sustainable Development Goals and how hydrogen technologies are critically important to help reach these goals.
- b) Commercially available hydrogen related technologies that can and are used in a wide range of areas including production, processing and goods transportation.
- c) Rapidly growing green finance and how it can be utilized to finance hydrogen related projects on a substantial scale.
- d) Explore the gaps between the above 3 areas.

Thank you for your consideration of our submission. Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Stasko', with a stylized flourish at the end.

Robert Stasko, Chairman  
Hydrogen Business Council  
[robert.stasko@sympatico.ca](mailto:robert.stasko@sympatico.ca)