



Government
of Canada
Trade Commissioner
Service

Gouvernement
du Canada
Service des
délégés commerciaux

Canada

CANADA A GLOBAL LEADER IN HYDROGEN AND FUEL CELL BUSES, TRAINS AND HEAVY DUTY VEHICLES

Hydrogen fuel cell buses, trains, and heavy duty vehicles powered by Canadian technology are helping reduce vehicle emissions around the world. Fuel cell vehicles match the extended range and rapid refueling demanded by consumers, with zero emissions. Mercedes Benz recognised the Canadian advantage and established their fuel cell manufacturing facility in Vancouver Canada. In nearby Whistler, one of the world's first zero emission hydrogen fuel cell bus program logged over a million miles. Canada's fuel cell bus systems are helping reduce vehicle emissions, operating in Europe, Brazil, China and the United States.



Newflyer Xcelsior CHARGE H2™ is a battery-electric vehicle that uses compressed hydrogen as an energy source. Fuel cell-electric technology is a unique and innovative way to obtain extended-range operation similar to existing transit vehicles with a fully zero-emission solution. > www.newflyer.com



BALLARD POWER SYSTEMS

> www.ballard.com

Ballard Power Systems is recognized as a world leader in clean energy hydrogen fuel cell products. Ballard's products deliver tangible improvements over incumbent technologies across a range of buses, trains and heavy duty vehicle applications.

Ballard Supplies FCveloCity® motive modules to heavy duty vehicle manufacturers for integration into buses, trucks and light rail, ready for deployment in commercial fleets. Fuel cell electric buses powered by Ballard's FCveloCity® motive modules have traveled more than 10 million kilometers (6.2 million miles) of revenue service, equivalent to circling the Earth 250 times and have been deployed in buses in 15 countries on 5 continents. FCveloCity® provides up to 200 kilowatts of power for rail applications and are designed and tested to railway standards. Ballard motive modules are currently powering the world's first hydrogen fuel cell powered fixed rail electric tram in China.

Bringing leadership and innovative solutions to the world.

HYDROGEN AND
FUEL CELLS

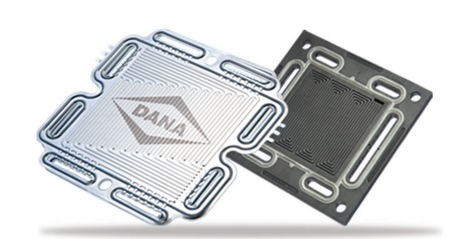
TRADE COMMISSIONER SERVICE (TCS)

EXAMPLES OF INNOVATIVE COMPANIES INCLUDE:



HYDROGENICS > www.hydrogenics.com

Hydrogenics is playing a central role in decarbonizing transportation on the global stage. Hydrogenics was selected by ALSTOM, global leader in rail transportation, to supply the fuel cell technology for the Coradia iLint regional trains in Germany. The fuel cell power modules for Coradia iLint are manufactured at Hydrogenics headquarters in Mississauga, Ontario. The world's first Hydrail (fuel cell powered zero emission train) trains, powered by Hydrogenics fuel cell power modules, started revenue service in 2018 and another 39 will be running on-track by 2020. As demand for Hydrail systems increases worldwide, the prospects for economic growth and employment expand accordingly.



DANA CANADA > www.dana.com

Dana Holding Corporation is a multi-national automotive parts manufacturer. Dana Canada is applying its Power Technologies Group capabilities to develop and supply fuel cell components for systems integrator customers—in mobility, small stationary, and portable power markets. Dana supports fuel cell component development at its global technical centre Dana Canada's Oakville Development Centre. The Canadian Fuel Cell Center product focus is thermal and water management balance of plant components; and reformer-based hydrogen fuel processor and SOFC thermal subsystems.



LOOP ENERGY > www.loopenergy.com

Loop Energy provides zero-emission power systems for leading truck and bus manufacturers who want to gain an edge and eliminate toxic diesel from urban environments. Loop works with freight and bus owners to design and deliver scalable carbon-free transportation solutions using both electric and hydrogen fuel cell technologies. Loop powertrains deliver superior performance to conventional diesel engines at a competitive cost of ownership, without subsidies.

**MORE FIRMS WITH
BUS, TRAIN, AND
HEAVY VEHICLE
EXPERTISE:**

- > **Hydrogen In Motion Inc. (H2M)**
www.hydrogeninmotion.com
- > **Palcan Energy Corp**
www.palcan.com
- > **Hydra Energy**
www.hydra-energy.ca
- > **Zen Clean Energy Solutions Inc**
www.zenenergysolutions.com
- > **OverDrive Fuel Cell Engineering Inc**
www.overdrivefce.ca



THE CANADIAN HYDROGEN AND FUEL CELL ASSOCIATION
For more information about innovative Canadian hydrogen and fuel cells companies please visit > www.chfca.ca

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