INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

IPHE Country Update Nov 2025 – May 2026:

Canada

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Covered Period	November 1, 2025 – April 25, 2026

1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells

As part of a new Automotive Strategy, the Government of Canada announced several new measures, including:

- Increased stringency of GHG emissions standards for light duty vehicles, which is expected to drive a 75% ZEV adoption rate by 2035, with the goal of reaching 90% adoption by 2040. Through new emission standards for model years 2027 to 2032, the intent is to support emissions reductions in a technology-neutral manner; and,
- A new, targeted five-year ZEV affordability program offering incentives to consumers and businesses for the purchase or lease of eligible cars with a final transaction value up to $50,000 (up to $5,000 for BEV and FCEV and $2,500 for plug-in hybrids). The program is expected to incentivize more than 840,000 new ZEVs.

The Government of Canada and Government of Alberta signed a memorandum of understanding in November 2025 outlining a framework to strengthen collaboration in the energy sector to achieve net-zero emissions by 2050, including a commitment to strengthened industrial carbon pricing in the province and enhanced flexibility on federal environmental rules and support for major energy infrastructure projects. Under the MOU, both governments also committed to working together to advance the Pathways Plus project—the world's largest CCUS project.

In its Spring Economic Update, the Government of Canada announced:

- Team Canada Strong—a new nationwide effort to recruit, train, and hire 80,000 to 100,000 new skilled trade workers by 2030-31. The program will provide new paid pathways for skilled trades, supported with $2B in funding over five years, starting in 2026-2027.
- The Canada Strong Fund—Canada's first national sovereign wealth fund, which will invest in nation building projects in Canada. The fund will be capitalised in the near term with $25B.

2. Hydrogen and Fuel Cell R&D Update

R&D Developments

- A University of Alberta chemist created a patented, low-cost technology to produce green hydrogen directly from seawater, with Canadian firm Cipher Neutron licensing the innovation to commercialize and scale it into durable electrolyzers for industry and remote communities. [eurometal.net]
- Simon Fraser University (SFU) and Siemens Canada signed a new memorandum of understanding to accelerate clean hydrogen innovation by linking Siemens' digital and energy expertise with SFU's Clean Hydrogen Hub, strengthening research, testing, and industry adoption and expanding training opportunities in clean energy and net-zero technologies.
- Researchers at St. Francis Xavier University discovered a light-activated material that produces green hydrogen at extremely high yields, and are now moving into reactor design, scale-up, and funding efforts for initial industrial trials.
- University of Calgary researchers are developing advanced flame- and detonation-arrestor technologies—using experiments, modelling, and machine learning—to improve the safety and reliability of future hydrogen fuel systems.

Salt Dome Storage Advances

- A study led by the Institut national de la recherche scientifique confirmed the strong thermodynamic stability and suitability of the Fischells Salt Dome for clean-energy storage applications, including hydrogen and compressed air storage. The finings strengthen the foundation for the feasibility study already underway by WSP, which will guide environmental assessment, long-term partnerships, and development of Fischells as a key clean-energy reserve supporting grid reliability and renewable integration in Atlantic Canada.

3. Demonstration, Deployments, and Workforce Developments Update

Production Technology Advances

- Aurora Hydrogen received Alberta's ASTech Award for Hydrogen and Alternative Energies after reaching Technology Readiness Level 7 of its microwave-based hydrogen production technology. It also attracted a US$3 million investment and a long-term unit purchase commitment from Oldendorff Overseas Investments, signalling strong maritime-sector support for technology as a pathway to shipping decarbonisation. Aurora reported progress on operating hours, reactor efficiency, and carbon coproduct testing, and aims to deploy commercial units starting in 2027 for industrial, chemical, logistics, and maritime applications.
- Hazer Group commissioned engineering firm KBR to carry out engineering and economic feasibility studies for a planned 2,500-TPA facility British Columbia, using Hazer's methane pyrolysis technology to produce hydrogen and graphite at a FortisBC site.

Production Project Developments

- Sc.wénwen Economic Development, Tk̓emlúps te Secwépemc and Elemental Clean Fuels are advancing a FEED for a 10-MW green hydrogen facility planned for the Kruger Kamloops Pulp Mill, which is expected to produce up to four tonnes of hydrogen, cutting the mill's natural-gas use by 16% and lowering emissions by roughly 7,000 tonnes per annum. The $21.7 million project is supported by NRCan and BC Hydro. Feasibility and engineering work is underway while FortisBC and the partners explore a critical offtake agreement required for a final investment decision. The project has been highlighted as a model of Indigenous-industry collaboration driving sustainability, clean-energy innovation, and regional economic benefits.
- Tokyo Gas is partnering with B.C.-based Teralta on a clean energy project in Brandon, Manitoba, to produce about 30,000 tonnes of e-NG annually for export to Japan using by-product green hydrogen from hydro power and CO_2 captured from existing industry, with a final investment decision targeted for fiscal 2026–27 and operations by 2030. Local officials, who have been working with Teralta for two years, cited the project as it transformative for regional jobs, supply chains and Brandon's position in the clean-energy sector.
- Cielo Waste Solutions and Tano T'enneh Enterprises, an entity of the Lheidli T'enneh Nation, have formed a non-binding partnership to advance a proposed sustainable aviation fuel facility in British Columbia with a majority Indigenous ownership structure. The project aims to leverage Indigenous land ownership and a mix of financing options, including BC Low Carbon Fuel Standard incentives, Indigenous loan guarantees, Canada Infrastructure Bank support, Clean Fuels Fund contributions, and investment tax credits. The parties are working toward definitive agreements that would formalize governance, financing, and site development.

Hydrogen Transportation Pilots and Proposals

- Loblaws deployed a Class 8 hydrogen fuel-cell electric truck in active commercial service, operating a Hyundai XCIENT vehicle on delivery routes between Vancouver and Squamish, British Columbia. A month-long pilot, supported by FortisBC, HTEC, Transport Canada, and the B.C. government, collected real-world data on performance, fuelling, and operations to assess the viability of hydrogen trucks and infrastructure in the province. The 37-tonne truck, refuelled at HTEC's Vancouver hydrogen station, has a range of over 700 km. Loblaw, which aims for net-zero operations by 2040, is using the pilot to compare hydrogen and battery-electric technologies as it expands its low-carbon fleet.
- Fredericton Transit is conducting a pilot to trial HY-RANGER, developed by Ontario-based company HYGN Energy, to hybridize a diesel-powered city bus for four weeks in Fredericton, New Brunswick. The technology could reduce emissions by up to 90% and fuel consumption by 32% and is already in use in several cities in Ontario (Sudbury, Kawartha Lakes, and Sault Ste. Marie. The hydrogen hybrid retrofit kits use alkaline electrolyzer modules that integrate with existing gas and diesel vehicles, adding on-board hydrogen to improve combustion.
- Edmonton International Airport, with Diesel Tech Industries and Alberta Innovates, is piloting dual-fuel hydrogen technology on high-output runway

snow sweepers, collecting winter performance and emissions data to guide potential expansion of hydrogen use across its ground fleet.

Hydrogen Vehicles

- Ballard Power Systems will supply 500 hydrogen fuel cell engines to manufacturer New Flyer starting in 2026 to power powering its Xcelsior CHARGE FC hydrogen buses. The deal, representing about 50 MW of capacity, is the largest commitment in the partners decade-long partnership, signalling growing demand for hydrogen transit solutions as transit agencies across North America accelerate the shift from diesel to zero emissions.
- Elemental Trucks unveiled a Canadian-built hydrogen fuel cell truck designed specifically for Canada's heavier hauling requirements. The truck is rated at 63.5 tonnes, making it the only zero emission vehicle in North America built for that weight class. Manufactured in Rexdale, Ontario, with components and engineering expertise sourced from across the country, the vehicle targets demanding applications such as dump, concrete, and municipal work.

Natural Hydrogen Developments

- MAX Power' confirmed a high-purity subsurface system at its natural hydrogen Lawson well in Saskatchewan, positioning the company to accelerate commercial evaluation. The company also commenced drilling at its Bracken well, about 325 km southwest of the Lawson well. Located in Saskatchewan approximately 325 km southwest of its first 'Lawson' well, the Bracken well is designed to test basin-scale continuity under a distinct geological trapping mechanism at the Grasslands Projects within Max Power's 1.3 million permitted acres.
- QIMC Nova Scotia's approval to begin Phase 1 drilling at its Eatonville project—advancing exploration of geologic hydrogen—and has submitted a regulatory notice for its Bennett Hill program, enabling back-to-back hydrogen-focused drilling in the Advocate area. The company also reported the completion of its first drill hole, DDH-26-01, at the West-Advocate project in Nova Scotia. revealing extensive fault-related fracturing and structural features believed to facilitate hydrogen migration. Drilling on the second hole has progressed to about 500 metres, targeting zones with geophysical anomalies and elevated soil-gas indicators.

New Deployments

- Charbone began supplying ultra-high-purity hydrogen in Ontario to power fuel-cell generators for film and TV productions. The fuel cell powered generator systems are used to provide electricity for production sets and related mobile infrastructure, demonstrating a pathway to lowering emissions and refuelling fuel logistics complexity associated with traditional diesel-based generators in the film production ecosystem.

4. Events and Solicitations

The next iteration of **hy-fcell Canada** is to be held in Vancouver in September 2026. Featuring an expo of exhibitors and sponsors, the event is the industry's top marketplace, demonstrating advancement in the commercial use of hydrogen and fuel cell technologies globally.

5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

Federal Funding

- The Zero Emission Transit Fund is providing more than $1M to support a $1.25M project by the Canadian Hydrogen Association (CHA) and Canadian Urban Transit Research and Innovation Consortium (CUTRIC) to a plan for low-carbon fleet transition in the Greater Toronto and Hamilton Area, including assessment of hydrogen fueling options. The project will include analysis of hydrogen fuel-cell buses, feasibility work on a hydrogen fueling hub, and data collection to guide future deployment.
- Natural Resources Canada's Energy Innovation Program is providing more than $1.4M to Hydra Energy Canada to advance hydrogen co-combustion technology for heavy-duty trucks. The project aims to improve retrofitted engines so they can run on higher proportions of hydrogen alongside diesel, using machine learning to enhance performance, fuel efficiency and emissions reductions during real-world demonstrations in BC. The initiative reflects the federal government's goal of accelerating clean-technology deployment to cut greenhouse gas emissions and lower operating costs.

Provincial Funding

- The Province of British Columbia is investing $500,000 through its Integrated Marketplace platform delivered by Innovate BC to support three clean-transportation pilot projects across northern communities, aimed at modernizing medium- and heavy-duty fleets with low-carbon fuels and technologies. Working with Prince Rupert, Prince George, Kitimat and Smithers, the initiative will test hydrogen fuel-enhancement modules, renewable diesel and zero- or low-emission vehicle options along the key Prince Rupert–Prince George trade corridor.
- The Province of Ontario opened a new round of its $30M Hydrogen Innovation Fund for applications, doubling the funding from the previous round and expanding the eligibility criteria to support the province's long-term energy roadmap. The expanded fund includes two streams:
    - One for projects that integrate low-carbon hydrogen into Ontario's electricity grid, and
    - One for broader sector applications of hydrogen across transportation, manufacturing and heavy industry through creating hydrogen hubs, connecting hydrogen producers with end-users and switching existing hydrogen users to made-in-Ontario hydrogen.

6. Regulations, Codes & Standards, and Safety Update

No developments.