INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

IPHE Country Update Jun 2025 – Nov 2025:

Canada

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

In Budget 2025, which still requires a Parliamentary vote to pass, the Government of Canada outlined measures to improve the regulatory environment for project development and attract new clean energy investments and laid out its new Climate Competitiveness Strategy, which recognizes the moral and economic imperative to transition to clean energy and proposes a strengthened industrial carbon tax system. Measures proposed include:

- Affirmation of methane pyrolysis eligibility under Clean Hydrogen Investment Tax Credit and retroactive application—eligibility for equipment installed as of December 16, 2024.
- Major Projects Office (MPO)—Proposed legislation to provide the MPO, which was established in August to serve as a single point of contact for nation-building projects, with greater independence and managerial flexibility to advance its work coordinating financing and streamlining regulatory approval processes.
- Productivity Super-Deduction—a set of enhanced tax incentives covering all new capital investment that allow businesses to write off a larger share of the cost of these investments, including immediate expensing for clean energy generation and energy conservation equipment, and zero-emission vehicles.
- Increased appropriation for Canada Infrastructure Bank (CIB)—Proposed amendment to increase the statutory appropriation limit from CAD35B (USD25B) to CAD45B (USD32B) and to enable CIB to make investments in any nation-building projects that have been referred to the MPO, regardless of sector or asset class.
- Biofuels Production Incentives—Commitment of CAD372M (USD264) over two years, starting in 2026-2027, for an incentive to support domestic production of biodiesel and renewable diesel, and announced intention to make targeted amendments to Clean Fuels Regulations to support domestic biofuels industry.
- Strategic financing framework—Proposed guidance directing CIB, Export Development Canada, Canada Growth Fund, and the Canada Indigenous Loan Guarantee Corporation to work with the Major Projects Office to coordinate federal financing for nation-building projects

Hydrogen Hubs

- The Pan-Canadian Hydrogen Hubs Alliance was launched by the Energy Transition Valley (Quebec), Simon Fraser University's Clean Hydrogen Hub (British Columbia), the Newfoundland and Labrador Hydrogen Innovation Partnership (Newfoundland and Labrador), and the Edmonton Regional Hydrogen Hub (Alberta). The strategic alliance brings together complementary regional hubs to investment, support technological innovation, promote workforce training, and ensure long-term energy security and sustainability. The partners participated in a Transatlantic Hydrogen Hubs Dialogue to strengthen collaboration between Canada and Germany on hydrogen infrastructure development to enable the creation of transatlantic hubs.
- The Calgary Region Hydrogen Hub (CRH2) officially launched in June. Funded by the City of Calgary, Calgary Economic Development, PrairiesCan, Wheatland County, and Alberta Innovates, the hub aims to identify practical early opportunities, conduct technical and economic analysis, and support decarbonization while sustaining economic activity in the natural gas sector.
- The Atlantic Hydrogen Alliance, in partnership with Energy NL and Net-Zero Atlantic, launched a project to strengthen Atlantic Canada's hydrogen supply chain, supported by CAD50,000 (USD35,735) from the Government of Newfoundland and Labrador. The project will define the scope of hydrogen-related activities, benchmark regional capabilities, and identify supply chain gaps.
- Foresight Canada, in partnership with the Clean Energy and Major Projects Office (CEMPO), published two hydrogen hub reports exploring the advantages of British Columbia's Southern Interior and Vancouver Island, including existing infrastructure, industrial demand, and access to clean electricity. The reports speak to the need for tailored, coordinated action from all levels of government to enable hub realization.

2. Hydrogen and Fuel Cell R&D Update

Electrolyzer R&D

- In June 2025, Vancouver, British Columbia-based Ionomr Innovations signed a Memorandum of Understanding with Spain's Jolt Solutions to accelerate the commercial rollout of anion exchange membrane (AEM) electrolyzers. The agreement focuses on integrating Ionomr's high-performance membranes with Jolt's proprietary catalyst designs to improve efficiency, durability, and manufacturability.

Technology Developments

- Hydron Energy, a clean tech company in British Columbia, sold its first commercial-scale biogas upgrading system, marking a key milestone in deploying its proprietary gas separation technology. The system uses Hydron's modular membrane-based platform to turn biogas from sources like farms and wastewater into renewable natural gas (RNG), with future applications targeting low-cost, distributed hydrogen production.

- HyVera Distributed Energy, a British Columbia-based majority Indigenous owned company, is commercializing a hydrogen-on-demand technology that generates ultra-pure green hydrogen by adding water, including salt or wastewater, to proprietary dry pellets made from industrial byproducts. Originally developed by the U.S. Department of Defence and EnviroGen Technologies, the technology eliminates the need for storage, transportation and expensive energy inputs. HyVera intends to open production facilities in B.C. and Nova Scotia and is working with Ballard Power Systems to scale applications.
- Hone developed the first hydrogen generator for Canada's film industry, demoing the zero-emission alternative to diesel units in Ontario. The innovation is part of Ontario Green Screen, a coalition led by Film Commissioner Justin Cutler that is working to decarbonize productions through electrification, renewable fuels, waste reduction, and material reuse

3. Demonstration, Deployments, and Workforce Developments Update

Workforce Development

- The Province of Newfoundland and Labrador is investing nearly CAD2M (USD1.4M) over the next two years to support econext's Accelerating Clean Growth: Green Economy Workforce Development Project, which was launched in 2023 to prepare the workforce for emerging clean energy industries, including hydrogen, wind, hydroelectric power, and the bioeconomy. The program supports worker upskilling, inclusive hiring, talent retention, and workforce barrier reduction.

Hydrogen Transportation and FCEV deployments

- Halifax Transit launched a dual fuel (diesel/hydrogen) bus demonstration project, supported by CAD367,500 (USD262,650) from the Nova Scotia Clean Fuels Fund and CAD122,500 (87,550) from existing municipal transit budgets, to explore hydrogen as a complement to electric buses in its fleet decarbonization strategy. The project plans to convert four diesel buses by the end of 2025, followed by a year of operational testing and data collection through 2026.
- The City of Prince Rupert in British Columbia launched a pilot project to establish a hydrogen refuelling and dispatch station. The project, partially funded by Innovate BC, marks the latest step in the city's broader hydrogen hub strategy. The Port is also piloting next-generation heavy-duty trucks through Innovate BC's Integrated Marketplace initiative, including two hydrogen-powered and one hydrogen-diesel hybrid, to test operational performance and infrastructure needs through 2026.
- Calgary, Alberta-based Azolla Hydrogen launched Canada's first mobile hydrogen fuelling station. The Azolla Biodrome unit, part of the CAD6.9M (USD4.9M) Alberta Zero Emissions Fleet Fuelling initiative, began operating in June at Edmonton's Ellerslie facility. It produces hydrogen on-site from methanol and water, stores up to 600 kilograms, and can fuel about 45 cars or 10 buses a day. Backed by Emissions Reduction Alberta and regional partners, the pilot will run through 2027 with a second unit planned for 2026.

- Loblaws is completing a hydrogen fuel cell electric truck demonstration, supported by FortisBC's Clean Growth Innovation Fund (CGIF) and co-funded by the Alberta Motor Transport Association (AMTA) in partnership with Deloitte and Transport Canada, leading the Zero Emission Truck Testbed (ZETT). The demonstration is leading a truck from HTEC for operation between Squamish and Whistler using hydrogen supplied through HTEC's fueling network.

Demonstration Projects

- FuelPositive is advancing its first modular, decentralized green ammonia demonstration system, the FP300, which will designed to will produce 100 metric tons annually using Manitoba's hydroelectric power. The demonstration system serves as the model for the next-generation system, the FP1500, which is designed to support farms of up to 10,000 acres.
- The City Council of Owen Sound, Ontario, endorsed a proposal from Toronto-based Public Energy Inc. to build a hydrogen-powered peaker plant. The plant would use surplus electricity to produce and store hydrogen for combustion in turbines during peak demand. If selected for funding by Ontario's Independent Electricity System Operator (IESO), Owen Sound's plant could begin construction in 2028.

Geologic Hydrogen

- MAX Power Mining received a drilling license for the first well of its planned multi-well Natural Hydrogen drill program in southern Saskatchewan. The company intends to spud the Lawson target well in the 200-km-long Genesis Trend in November 2025.

Commercial Projects

- In October, HTEC opened Burnaby Clean Hydrogen Production Facility, which includes a commercial scale electrolyzer, providing a locally produced supply of clean hydrogen to support its expanding network of refuelling stations for fleet customers. The facility combines hydrogen production via electrolysis with a fully operational liquid hydrogen gasification system, with an output of 1.8 TPD of hydrogen.

4. Events and Solicitations

Upcoming in 2026:
The **Canadian Hydrogen Convention**, to be held in Toronto April 21-23, 2026, in Edmonton, is the largest event in Canada showcasing hydrogen as a key enabler of net-zero. It brings together energy executives, government officials and Indigenous leaders and includes more than 100 exhibiting companies. It attracts more than 2,5000 delegates and over 10,000 attendees.

The second annual **Hydrogen East Halifax** event, to be held in Halifax, Nova Scotia on April 13, 2026, bring together experts across the hydrogen economy in Atlantic Canada. Held in conjunction with Smart Energy Halifax, the conference brings together policymakers, investors, Indigenous leaders and the private sector to network, facilitate business to business collaboration and discuss policies and regulations within the hydrogen landscape.

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 Investments

- PacifiCan announced CAD467,000 (USD333,762) in new funding to help expand British Columbia's hydrogen and fuel cell companies into international markets. The funding, awarded to the Canadian Hydrogen Association, aims to support 40 small- and medium-sized firms by promoting exports, attracting investment, and showcasing B.C. companies at events like the hy-fcell conference in Vancouver. The support builds on a CAD9.4M (USD6.7M) investment last year to launch the Clean Hydrogen Hub at Simon Fraser University.
- Natural Resources Canada's Energy Innovation Program awarded CAD1.5M (USD1.07M) to Elemental Trucks to develop a 63.5-tonne hydrogen electric truck. The funding is part of a broader CAD21M (USD15M) federal investment in projects aimed at reducing emissions in the transportation sector.

Provincial Investments

- Ontario's Forest Biomass Program is providing CAD7.5M (USD5.3M) to Hornepayne Power to upgrade power generation equipment and advance research into on-site green hydrogen production from forest biomass. The project builds on a CAD2.5M (USD1.8M) hydrogen feasibility study funded in 2024.
- Ontario's Hydrogen Innovation Fund, supported with an expanded allocation of CAD30M (USD21M), opened a new funding round, seeking to support projects that integrate low-carbon hydrogen into Ontario's electricity grid and those that support applications of hydrogen across transportation, manufacturing and heavy industry.
- Nova Scotia awarded CAD3M (USD2.15M) in the second round of its Clean Fuels Fund to support seven clean fuel projects, including CAD793,000 (USD566,750) to support a hydrogen production hub in Halifax, $793,000 (USD566,750) to support a demonstration project to build a small-scale, mobile green hydrogen production unit, and CAD221,250 (USD150,970) to the Municipality of Richmond County to develop a clean fuels strategy for the Strait of Canso. Other funded initiatives include hydrogen transit demonstrations and feasibility studies on hydrogen supply chains.

6. Regulations, Codes & Standards, and Safety Update

Provincial Regulatory and Legislative Developments

- The Province of Ontario introduced a new bill—The Protect Ontario by Securing Affordable Energy for Generation—to expand the Independent Electricity System Operator's (IESO) mandate to include hydrogen, enabling it to fund projects through the Hydrogen Innovation Fund and incorporate hydrogen into long-term energy system planning.
- The Province of Ontario introduced a Hydrogen Interruptible Rate Pilot to offer hydrogen producers lower electricity rates in exchange for reducing use during peak demand. The province is also assessing the expansion of the Ontario Energy Board's (OEB) mandate to regulate dedicated hydrogen pipelines.
- The Province of Quebec proposed updates to updates to its construction and safety codes for gas installations to better accommodate hydrogen as part of its evolving energy landscape. The changes include adopting the Canadian Hydrogen Installation Code, recognizing new inspection bodies, removing outdated standards, and strengthening safety requirements such as mandatory requalification of gas tank relief valves and more rigorous permitting. These measures aim to modernize the regulatory framework for both current gas uses and future hydrogen applications.