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Government of Canada Announces \$11 Million to Advance Small Modular Reactor Research and Hydrogen Technologies to Support Clean Energy Development

From: [Natural Resources Canada](#)

News release

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Natural Resources Canada

As nations globally move to reduce carbon emissions and shift to non-emitting forms of energy, investing in advanced technologies will help ensure Canada remains a global energy leader. Through and beyond the energy transition that is already well underway, ultra-low carbon sources of energy such as wind, solar, hydro and

nuclear power will be key to seizing the enormous economic opportunities that are available to Canadians in all regions of the country.

It is in this context that federal, provincial and territorial ministers are meeting in Calgary, Alberta, from July 3 to July 5, 2024, at the annual Energy and Mines Ministers' Conference, to share perspectives and continue driving momentum in the energy and mining sectors.

Today, the Honourable Jonathan Wilkinson, Minister of Energy and Natural Resources, announced \$11 million in funding for nine energy technology projects — \$2.5 million in funding for small modular reactor research and \$8.5 million to support innovation in Canada's clean hydrogen sector.

Of this funding, \$5 million will be allocated to three projects in Alberta selected through the Energy Innovation Program's (EIP) Clean Fuels and Industrial Fuel Switching call for proposals, including:

- \$3,000,000 to Aurora Hydrogen Inc. to advance the use of microwave energy for pyrolysis technology to convert methane to hydrogen and solid carbon with minimal greenhouse gas emissions and no water use;
- \$1,000,000 to Quantiam Technologies for the production of carbon-negative methanol and e-fuels from captured carbon dioxide and green hydrogen; and,

- \$1,000,000 to Innova Hydrogen Corp for zero-carbon hydrogen production via catalytic methane pyrolysis.

The remaining four projects, also in Alberta, are funded through the EIP and support the Hydrogen Centre of Excellence, a strategic initiative led by Alberta Innovates. They include:

- \$1,300,450 to ATCO Gas and Pipelines Ltd., in partnership with Qualico, to conduct a feasibility assessment of a pure hydrogen pipeline network to heat new homes in the community of Bremner in Strathcona County, Alberta, including constructing a pure-hydrogen demonstration home;
- \$1,264,550 to Innovative Fuel Systems to reduce emissions from heavy-duty vehicles by developing a hydrogen and diesel dual-fuel retrofit system applicable to 90 percent of heavy-duty engines;
- \$508,935 to ATCO Gas and Pipelines Ltd. to develop the Fort Saskatchewan Operating Centre into the first commercial 100-percent hydrogen-heated building in North America and as a demonstration site for end-user heating technologies that utilize pure and blended hydrogen with natural gas; and,
- \$415,000 to New Wave Hydrogen Inc. to accelerate the time of methane thermal cracking for hydrogen production via shock wave heating technology in preparation for successive field pilots.

These projects will drive progress in energy innovation across Canada while positioning the country to become a leader in hydrogen and other critical energy technologies.

Nuclear energy is part of the suite of non-emitting technologies needed for the world to transition to a net-zero future. NRCan introduced the Enabling Small Modular Reactors (SMRs) Program in 2023 to support the development of supply chains for SMR manufacturing and fuel and fund research on SMR waste management solutions to ensure that SMRs, and the waste they generate, can be safely managed, now and into the future.

As part of the Enabling SMRs Program:

- The University of Regina will receive a total of \$941,651 over three years to study long-term disposal strategies for intermediate level and non-fuel high level wastes from SMRs within Saskatchewan; and,
- The University of Alberta will receive a total of \$1,656,000 over three years for its project on additive manufacturing (AM) of next-generation functionally graded materials for use in SMRs.

Canada is committed to achieving net-zero emissions by 2050 and recognizes that close collaboration with provinces and territories, Indigenous partners and key stakeholders is crucial to building a thriving, inclusive, low-carbon economy. By working together through gatherings such as the annual Energy and Mines Ministers'

Conference, Canada is advancing the most promising competitive advantages in every region of the country to drive a prosperous and sustainable economy for the future.

Quotes

“This week’s announcements are part of a series of significant steps the Government of Canada continues to take to support good jobs and promote sustainable growth, including the launch of the Hydrogen Strategy for Canada Progress Report, Canada’s Critical Minerals Strategy and Canada’s founding of the Sustainable Critical Minerals Alliance last fall. I will continue to work with all partners to ensure Canada remains a global supplier of choice for clean energy in a net-zero world — ensuring a prosperous and clean future for Canadians from coast to coast to coast.”

The Honourable Jonathan Wilkinson

Minister of Energy and Natural Resources

“New Wave Hydrogen is honoured to be a part of the Canadian clean energy transition. The vision and benefits of these funding programs offer vital support to emerging companies. This funding stimulates growth, not just for the New Wave technology — it extends to support Canada’s innovation ecosystem and networked growth through engineering, manufacturing and clean energy sectors.”

Kathleen O’Neil

CEO New Wave Hydrogen, Inc.

Quick facts

- According to an independent ranking from BloombergNEF, Canada has surpassed China as the world’s most promising jurisdiction for manufacturing lithium-ion batteries such as those used in electric vehicles.
- The EIP advances clean energy technologies that will help Canada meet its climate change targets, while supporting the transition to a low-carbon economy. It funds research, development and demonstration projects and other related scientific activities.

- Interest in low-carbon hydrogen in Canada has increased significantly since 2020, with over 80 low-carbon hydrogen production projects announced, representing over five million tonnes of hydrogen production capacity and an economic expression of interest of over \$100 billion in potential investment in domestic clean energy opportunities and jobs.
- Since 2020, British Columbia, Alberta, Ontario, Quebec, Nova Scotia and New Brunswick have published hydrogen strategies, identifying hydrogen as a provincial clean energy priority and describing provincial actions and objectives to realize regional low-carbon hydrogen objectives. Hydrogen has been identified as a key opportunity area by a number of jurisdictions as part of the Regional Tables and features prominently in the recently released *British Columbia Regional Energy and Resource Table – Framework for Collaboration on the Path to Net-Zero*.
- There are now 13 low-carbon hydrogen production facilities in operation across Canada, able to produce over 3,000 tonnes of low-carbon hydrogen per year.
- NRCan was allocated \$29.6 million over four years in Budget 2022 for research and development to support the conditions and frameworks necessary for SMRs to displace fossil fuels and contribute to climate change mitigation.

Funding announced today complements work taking place with a number of jurisdictions through the Regional Tables, as well as through the Canada-Alberta Working Group and a sub-working group on SMRs.

- The nuclear sector helps Canada avoid approximately 45 million metric tonnes of carbon dioxide emissions annually, compared to electricity produced from natural gas. In a country where 82 percent of our electricity already comes from low- or non-emitting sources, nuclear continues to be a complement to the strong renewables sector in continuous development.

Associated links

- [Canadian Critical Minerals Strategy](#)
- [Hydrogen Strategy for Canada and Progress Report](#)
- [Energy Innovation Program](#)
- [Hydrogen Centre of Excellence - Alberta Innovates](#)
- [Enabling Small Modular Reactors Program](#)
- [Budget 2024 – Attracting Investment for a Net-Zero Economy](#)
- [Backgrounder: Economic Growth and Productivity](#)
- [2030 Emissions Reduction Plan: Clean Air, Strong Economy](#)

- [Net-zero emissions by 2050](#)
- [Clean Hydrogen Investment Tax Credit](#)

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