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Clean. Efficient. Energy.

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The Honourable Jonathan Wilkinson, P.C., M.P.
Natural Resources Canada
580 Booth St, 21st Floor, Room: C7-1
Ottawa, ON
K1A 0E4
via email: HonJonathan.Wilkinson@nrcan-rncan.gc.ca

Dear Minister Wilkinson,

Re: Green Building Strategy

The Canadian Hydrogen and Fuel Cell Association (CHFCA) represents world-leading Canadian organizations that provide solutions and technology in the hydrogen energy value chain: producers, distributors, equipment, technology, utilities, and service providers. We are pleased and proud to work with Natural Resources Canada, other associations, and stakeholders on implementation of NRCan's Hydrogen Strategy for Canada.

Canadians were recently offered the opportunity to comment on NRCan's draft Green Building Strategy. While the deadline for submissions has passed, CHFCA respectfully asks you to consider CHFCA's comments and recommendations as regards the role of clean hydrogen in the Green Building Strategy:

1. CHFCA endorses and suggests that NRCan incorporate the recommendations of the Canadian Gas Association (CGA) regarding to the inclusion of net-zero gaseous fuels, including low-carbon intensity hydrogen, in the Green Building Strategy and actions to support the development of net-zero gaseous fuels for building heat;
2. Ensure alignment between the Hydrogen Strategy for Canada and the Green Building Strategy;
3. Work internationally and with provinces and municipalities to accelerate the development of clean hydrogen codes and standards;
4. Incorporate clean hydrogen blending for building heat in hydrogen hub and corridor development;
5. Implement policy and funding to support low-cost, clean hydrogen production in line with the US Inflation Reduction Act that allow Canadian producers and project developers to compete for investment and develop and retain human capital.

Incorporate the CGA Recommendations

CHFCA strongly endorses the recommendations offered by the CGA for consideration and action in its letter submitted on September 16, 2022.

As outlined in the CGA letter, net zero gaseous fuels offer Canadians a viable, cost-effective and reliable alternative that can complement electrification and energy efficiency to achieve Canada's goals for net zero buildings faster, at lower cost and with greater overall resilience. The need for resilience has been amply demonstrated in recent climate-related weather events such as Hurricane Fiona and by political shocks such as the war in Ukraine with the consequent spike in energy prices and the need for energy diversification. Such events have demonstrated how critical it is not only to transition to clean energy, but also to diversify and ensure the resilience of our clean energy sources, not only to ensure the rapid transition to net zero, but to protect Canadians from price shocks and excessive cost.

Cost effective gaseous heating fuels have been a significant poverty reduction tool in Canada for decades – offering families clean, reliable, cost-effective heating for their homes and businesses. As is clearly articulated in the CGA letter, the combination of clean electricity and clean gaseous fuels will enable the decarbonization of residential and commercial building heat faster, with far less capital cost and disruption, and with a competitive or lower operating cost than electricity alone. Encouraging collaboration between gas and power utilities will provide Canadians not only choice, but the the benefits of integrating the gas grid with the electrical grid allowing them to select the clean heating option that best suits them while ensuring that one system is providing resilience to the other. The result will be a more resilient, integrated *and net zero* system well able to withstand market and environmental shocks.

The gas utilities are prepared to get behind the transition to a clean gaseous heating system and have articulated a pathway to achieve it. Canada's world leading hydrogen and fuel cell sector is eager to assist them.

Align the Hydrogen Strategy for Canada and the Green Building Strategy.

CHFCA recommends that resources be increased to support implementation of the Hydrogen Strategy for Canada. As noted in the Strategy, hydrogen will play a big role in a net-zero gaseous heating system - including in the production of RNG. The infrastructure and demand for hydrogen in the building heat sector will complement the use of hydrogen to decarbonize other hard-to-abate sectors:

- Canada will need large quantities of clean hydrogen to decarbonize hard-to-abate applications such as trucking, rail, marine, aviation, off-road, fleet, contractor, industrial processing, and process heat. A stable demand for low-carbon intensity hydrogen in residential and commercial building heat will assist in the buildout of vitally needed hydrogen production, storage, and distribution infrastructure at affordable cost to the consumer while maintaining system reliability.
- The engagement of Canada's gas utilities, with their reliable and resilient asset base and technical sophistication, will greatly assist in the rollout of clean hydrogen.
- Canada's world leading hydrogen technology and equipment sector will benefit from the demand for clean hydrogen in gaseous heating, which will help it maintain its global technology and business leadership.

Similarly, the development of hydrogen hubs, corridors and other infrastructure under the Hydrogen Strategy will make cost-effective, clean hydrogen available for building heat.

Accelerate Development of Hydrogen Codes and Standards

CHFCA recommends that NRCan increase resources committed to the development of applicable codes and standards, working closely with international bodies, industry, provinces, and municipalities.

1. International standards for the production and distribution of low-carbon intensity hydrogen are urgently needed, to foster national/international trade and to instill confidence in customers and end users. A clear source to use focused standards for clean hydrogen will ensure that incumbent gaseous heating fuels are on the path to net zero and allay concerns that hydrogen production will result in increasing GHG emissions.
2. Provincial adoption of codes and standards for hydrogen blending and regulations for the inclusion of hydrogen in natural gas distribution pipelines are needed. In addition, accelerated testing and certification procedures for hydrogen appliances, plus timelines for appliances to have dual fuel capabilities are needed.
3. Municipal building codes should not be a barrier to hydrogen heat, such as regulations banning gas pipeline hookup. Municipalities should be encouraged to enact building codes that allow multiple pathways to net zero buildings.
4. Additionally, regulations pertaining to the blending of hydrogen in pipelines must be consistent across different jurisdictions to support the transportation of hydrogen across Canada as well as into the United States. This harmonizes the spirit of the Canadian Hydrogen Strategy and others that have been released provincially and on the international stage.

Encourage and Fund Inclusion of Hydrogen Building Heating in Hydrogen Hubs and Corridors

A challenge - and advantage - of achieving net zero buildings with hydrogen, is that it cannot be done building by building, but must be done neighborhood by neighborhood. The local distribution network must be assessed and where required, upgraded to take the maximum tolerable amounts of blended gas and where possible eventually handle pure hydrogen. In addition, all future appliances must be hydrogen compatible. Only then can low-carbon intensity hydrogen be produced and used – at 100% concentration or blended with RNG. Urgency is needed – undertake the requisite studies and the work needed to convert appliances from a set timeline to accept a set percentage hydrogen blend up to eventually 100% pure hydrogen. Companies like Enbridge Gas has already started the work to shift to hydrogen blends with an eye for 100% hydrogen systems. This action serves to accelerate and the decarbonization of Canada's building stock in a cost effective, safe, and reliable manner towards a net zero future.

The aforementioned actions align well with the development of hydrogen hubs and corridors for transportation and industrial processing applications. Technical resources, hydrogen supply and communications will be available at hubs to assist in the safe and smooth implementation of hydrogen building heating.

In addition, a relatively quick win can be achieved through widespread blending of low carbon intensity hydrogen with natural gas for residential and commercial heating. Recognizing that each gas grid is different and requires its own assessment, studies are showing that up to 20% hydrogen blend in the natural gas system may require little to no change to piping or appliances and the newer high density polyethylene gas pipeline systems are capable of moving 100% hydrogen: stimulating the hydrogen market, building critical infrastructure and laying the groundwork for 100% net-zero gaseous fuel. This can be a quick add-on application for neighborhoods around a hydrogen hub. ATCO is pursuing this approach in Sherwood Park, AB around the Edmonton Heartland hub.

There are several domestic focused hydrogen projects that are now under development in Ontario, which creates the potential platform for future growth and export. These include projects planned by proponents such as Bruce Innovates (Bruce County and Saugeen First Nation), Hydrogen Blending leveraging Enbridge-Cummins Pilot (2.5MW Power-to-Gas hydrogen production facility in Markham Ontario), and Atura Power's Niagara Hydrogen Center located in the Niagara region, Ontario.

Internationally, the UK has established two £ 20 million funds for innovation in low-carbon hydrogen supply and innovation in large-scale storage, including Power-to-X. They also published a review of the evidence on options for achieving long-term decarbonization of heat, including hydrogen for buildings. They are testing blending up to 20% hydrogen in part of the UK's natural gas network. The demand for hydrogen from the UK is unknown at this time, but subject to the limits of their renewable electricity generation and the potential for natural gas from the North Sea and CCS, they could be an important hydrogen import partner for Canada.

The common thread for the UK and the US hydrogen program is dedicated funding for hydrogen development. To support the above, CHFCA recommends that funding – equivalent to funding for electrification – is provided to hydrogen hubs to enable municipalities to establish net zero neighborhoods with gaseous fuels. It is also recommended that this fund be solely dedicated to hydrogen to enable the nascent sector to bootstrap itself.

Enact Policy and Support for Large-scale, Low-cost Clean Hydrogen Production

Hydrogen heating for buildings will require very low-cost hydrogen to minimize the cost impact on consumers by allowing consumers to utilize their current heating systems to run on low carbon gases without incurring high capital outlay to replace existing systems. The US government has recognized the need for low-cost hydrogen production and is providing strong support through the Inflation Reduction Act (IRA). Production subsidies for clean hydrogen of up to US$ 3/kg are offered – which can make hydrogen competitive with natural gas if produced at large scale from low-cost energy sources.

To attract private sector funding for hydrogen production to support deployment in all applications, including building heat, the CHFCA advocates that Canada will need to match the scale, effectiveness, and simplicity of the US approach.

Furthermore, the CHFCA recommends including gaseous fuels in the next update to the Clean Fuel Standard/Regulation to help drive the adoption of hydrogen and RNG in heating applications.

Finally, federal strategies and policies should build on and enable each other. As it stands, federal policies and strategies too often work at cross-purposes. This is costly, inefficient, and ineffective. We recommend that all proposed federal strategies and policies undergo an assessment of how they support the government’s vision for the country. Canada has a

declared goal of net zero emissions by 2050. Hydrogen has a key role to play in this respect, including in the heating space as reflected in the government's development of a National Hydrogen Strategy. We must put forth the right set of enabling policies that jointly work to attain these goals.

The CHFCA is pleased to offer the above recommendations for your consideration. We hope that the proposals provide useful insights, and we would be most interested in your comments and further discussion to advance the above. Please contact me to arrange a time to discuss. Thank you!

Sincerely,

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Canadian Fuels Association

Canadian Biofuels Association

Renewable Gas Association

Industrial Gas Users Association

Canadian Federation of Municipalities

Home Builders Association

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