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Toronto, ON M4V 1P5
Canada

January 18th, 2021

**Re: Consultation on Discussion Paper: Ontario Low-Carbon Hydrogen Strategy
ERO. No. 019-2709**

Dear Mr. Bishop,

In response to the call for comments on the province’s discussion paper, “Ontario Low-Carbon Hydrogen Strategy,” (“Hydrogen Strategy”) the Canadian Environmental Law Association, jointly with Northwatch, welcome actions by the province to move forward with its climate priorities and support investment in the renewable energy economy.¹ However, Ontario’s potential role as a leader in this new green energy industry, cannot be achieved if we rely upon non-renewable energy derived hydrogen, such as that from nuclear power.

In reviewing the discussion paper, we are concerned by the government of Ontario’s reliance on nuclear power-based hydrogen generation, and the acceptance of industry-based reports promising of job creation and trade.² A clear assessment of hydrogen’s potential, limitations and costs independent of industry should have been a prerequisite to this discussion paper. In absence of such independent analysis, it is critical that going forward, Ontario’s hydrogen strategy include credible analysis of greenhouses gas reduction potential alongside the relative costs of existing technologies, like nuclear.

Only renewable hydrogen is emissions free and truly aligns with the necessary levels of decarbonization required to tackle climate change. As such, Ontario’s hydrogen strategy

¹ Environmental Registry of Ontario, “Ontario Low-Carbon Hydrogen Strategy – Discussion Paper” (ERO. number 019-2709), online: <https://ero.ontario.ca/notice/019-2709> [Discussion Paper]

² Discussion Paper, p 12

should focus on enabling renewable hydrogen in order to have an emission-free hydrogen strategy.

Increasing hydrogen production and converting existing fuel systems will take time, and as such, new investments should be focused on a rapid transition to a carbon free energy system and put towards renewable hydrogen projects. Furthermore, available public resources should be reserved for renewable hydrogen systems in sectors that are the most difficult to decarbonize. As an example, hydrogen should be targeted at industrial sectors that cannot be electrified easily such as low carbon steel production.

Furthermore, we request that the Ministry of Environment, Conservation and Parks (MECP) advise as to the analysis it has undertaken as to environmental impacts of increasing hydrogen supply by way of nuclear power, including assessment of nuclear non-proliferation and security risks, nuclear waste, transportation and accident risks, and full life-cycle emissions of all carbon and non-carbon pollutants.

Regarding the linking of hydrogen energy to the development of small modular reactors (“SMR”), we share concerns of feasibility, costs, safety and timeliness of the technology. We object to hydrogen generated from electrolysis powered by nuclear power and the Ministry’s characterization of small modular nuclear reactors (SMRs) as “green” hydrogen at a recent online briefing. We note that this characterization was made despite being contrary to the Ministry of Environment, Conservation and Parks staff’s advice during the stakeholders’ briefing held earlier this month.³

Over the last five years, the cost of nuclear energy production has risen over 50%, while renewables have become the cheapest source of energy.⁴ Some studies have found nuclear energy from SMRs could cost up to ten times as much as renewable energy.⁵ Ontario should not be investing in non-renewable energy sources when renewable technologies are available and scalable *now*.

SMRs also carry with them the potential for severe accidents. Many SMR designs require the reprocessing of highly radioactive nuclear waste to make new fuel for reactors. The SMR currently furthest along review in Canada, the High Temperature Gas Cooled Reactor, could undergo severe accidents in the event that water or air get into its core, which would release radioactive materials

³ MECP, Webinar - Online Consultation regarding Ontario’s Low-Carbon Hydrogen Strategy Discussion Paper (12 January 2020)

⁴ Canadian Environmental Law Association, Primer on Small Modular Reactors (17 Nov 2020) online: <https://cela.ca/primer-small-modular-nuclear-reactors/> [SMR Primer]

⁵ Froese S. *et al*, “The energy costs associated with small modular reactors exceed those of diesel-based electricity. Policy-makers should focus on renewables” (26 Aug 2020), Policy Options, online: <https://policyoptions.irpp.org/magazines/august-2020/small-modular-reactors-arent-the-energy-answer-for-remote-communities-and-mines/>.

into the environment.⁶ Adding insult to injury, unlike solar and wind farms, SMRs are exempt from federal and provincial environmental assessments.⁷

Not only are SMRs expensive and dangerous, they distract from more viable, cost effective solutions.⁸ Additionally, nuclear energy development is too slow to effectively address the global climate crisis. Not only is nuclear powered hydrogen not renewable hydrogen, no SMRs have been built yet and will not be for at least 10 years. The United Nation's has warned that we only have ten years to get climate change under control. If Ontario invests in technology that will not have an infrastructure ready until the 2030s, our narrow window to decarbonize will have been missed.

For these reasons, we do not support any effort to link Ontario's hydrogen strategy to nuclear power which we believe is contradictory to the leadership necessary to shift our economy away from non-renewable derived sources of power. We urge the province to support a rapid transition to a carbon free energy system and in advancing Ontario's hydrogen strategy, prioritize a renewable energy system.

Sincerely,

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CANADIAN ENVIRONMENTAL LAW ASSOCIATION

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⁶ *Ibid*

⁷ *Ibid*

⁸ Lazard, "Lazard's Levelized Cost of Energy Analysis – Version 14.0" (Oct 2020), online: <https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf>.