19 September 2022

Standing Committee on Environment and Sustainable Development
Sixth Floor, 131 Queen Street
House of Commons
Ottawa ON
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Via email: ENVI@parl.gc.ca

Dear Chair and Committee Members,

I am supportive of constructing all decarbonized energy systems including wind, solar, energy storage, hydro, tidal, wave, river, geothermal, and nuclear power generation to avert the catastrophe of climate change.

I am writing to you regarding your study on clean technologies in Canada to advocate for the use of non-emitting nuclear energy to reduce greenhouse gas emissions. Your report can meaningfully contribute to further improving the public perception of nuclear energy in Canada by avoiding some common errors as highlighted in this brief. Canadians are requesting more representation of nuclear energy in Canadian government policy and reports on our clean energy future as demonstrated by feedback from Canada's Federal Sustainable Development Strategy consultations. [i]

- Both Canada's Minister of Natural Resources [ii] and Minister of Environment and Climate Change [iii] have stated that it is difficult for nuclear energy to compete with the low cost of variable renewable energy of wind and solar backed up by batteries

When making this cost comparison the ministers are using a levelized cost of energy (LCOE) for comparing electricity sources, but it's not about cost. It's about value. Dispatchable electricity when you need it has more value than lower cost variable renewable sources that are not generating electricity when needed.

Batteries and storage are a system asset not "backup" for wind or solar. Research has shown batteries and demand flexibility do not substitute for firm low-carbon resources. In addition, the least-cost strategy to decarbonize electricity includes one or more firm low-carbon resources. Without these resources, electricity costs rise rapidly as CO2 limits approach zero. [iv]

Canada does not need to choose between renewable and nuclear power for our electricity future. The choice is between severe climate change and decarbonized energy systems. We need to be building as much low-carbon power as possible, and nuclear generates less carbon dioxide emissions over its lifecycle than any other electricity source. [v]

The Clean Power Roadmap for Atlantic Canada [vi] accurately highlights how *large supplies of variable renewable generation have already been integrated into regional electricity systems, so relying on additional supplies of renewables such as wind and solar to replace dispatchable coal and natural gas power plants creates challenges with system reliability. Pairing these technologies with new sources of firm, dispatchable baseload generation, including Small Modular Reactors (SMRs), upgrades to existing*

hydro generating stations, or new hydro generation stations, will be critical to ensuring that electricity systems remain stable and reliable.

As a result, in some instances, it can be more expensive to add cheap solar to the grid than to add expensive geothermal. [vii]

- The Canadian Climate Institute has stated low public acceptability is a drawback for new nuclear generating stations [viii]

However, a survey in early 2022 found that residents of Bruce, Grey, and Huron Counties in Ontario found that 90% of those surveyed "were confident the nuclear facility operates safely, and agreed Bruce Power is a good community citizen." [ix]

Through your report you can contribute to improving Canadian energy literacy. Sixty-three per cent of people surveyed in 2019 thought that nuclear energy generated about the same or more carbon pollution as oil. [x]

Through your report you can emphasize Canada's national strategy [xi] of nuclear development which is the most powerful instrument for enhancing acceptance of nuclear power, but it is more effective for those who have less knowledge. [xii]

Canada has the experience to be a world leader in decarbonizing with nuclear energy. One of the most significant climate change reduction initiatives in the world that has been achieved was the phase-out of coal in Ontario. Over ninety per cent of the electricity required to phase out coal came from nuclear power. [xiii]

I hope that you can highlight the benefits of non-emitting nuclear energy in your study on clean technologies in Canada.

Thank you,

Ross Horgan

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[i] https://www.placespeak.com/en/topic/6547-the-federal-sustainable-development-strategy-fsds/#/resources
[ii] https://twitter.com/PortCityHorgan/status/1463298413211041793?s=20&t=FxnrJufZn-dJ9A3gaqty6A
[iii] https://twitter.com/PortCityHorgan/status/1455297677110005767?s=20
[iv] https://www.sciencedirect.com/science/article/pii/S2542435118303866
[v] https://unece.org/sites/default/files/2022-04/LCA_3_FINAL%20March%202022.pdf
[vi] https://www.nrcan.gc.ca/energy/electricity-infrastructure/electricity-infrastructure-publications/clean-power-roadmap-for-atlantic-canada/24190
[vii] https://www.utilitydive.com/news/geothermals-surprise-cheap-renewables-could-keep-states-from-achieving-cl/569807/
[viii] https://climateinstitute.ca/wp-content/uploads/2022/05/Bigger-Cleaner-Smarter-May-4-2022.pdf
[ix] https://energy.ca/news-highlights/bruce-power-neighbours-comfortable-with-nuclear-power/
[x] https://abacusdata.ca/climate-change-worries-open-minds-to-modern-nuclear-technology/
[xi] https://smractionplan.ca/
[xii] https://www.sciencedirect.com/science/article/abs/pii/S0301421520306029?via%3Dihub
[xiii] https://youtu.be/sbM8RkCrvWk