Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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Written submission from Gordon McDowell

Mémoire de Gordon McDowell

In the Matter of

À l'égard de

Decision on the scope of an environmental assessment of the proposed Micro Modular Reactor Project at the Canadian Nuclear Laboratories Ltd., in Chalk River

Décision sur la portée de l'évaluation environnementale pour le projet de microréacteur modulaire aux Laboratoires Nucléaires Canadiens ltée, à Chalk River

Hearing in writing based on written submissions

Audience par écrit fondée sur des mémoires

June 2020

Juin 2020

Canada

Submission from Gordon McDowell for Global First Power:

Micro-reactors need to be pursued in Canada to explore ways of reducing nuclear capital costs and operational costs. Fission remains the highest density source of energy, even denser than any presently-explored means of harnessing Fusion. Only Fission allows all waste associated with a fueled-source of power production to be contained. This is entirely due to energy density of nuclear fuel. These advantages are unique to Fission.

But cost challenges have not yet been addressed. Micro-reactors, such as those being developed by Global First Power, are a new means (among very few approaches yet tried) to address this remaining challenge. Canada, not having experienced any nuclear impact on the environment since the 50s, has used Fission to de-carbonize an entire province. Ontario has world-class electricity production, and sets an example for other provinces (such as my own Alberta) to follow. Practical applications here in Alberta would include: - carbon-free electricity (urban and remote communities) - process heat for our hydrocarbon sector - district heating - indoor agriculture.

All high-carbon provinces need some solution to lowering the cost of nuclear power. Decarbonization scenarios consistently show including nuclear in the mix already helps keep costs down, because the value of renewables diminishes with their penetration.

Nuclear is an essential source of FIRM low-carbon electricity. https://adgefficiency.com/getting-to-zero-jenkins/ https://www.cell.com/joule/pdf/S2542-4351(18)30562-2.pdf https://www.cell.com/joule/fulltext/S2542-4351(18)30386-6

Thank you for your time, -Gord Gordon McDowell