



***Submission to the Federal Standing Committee
on Environment and Sustainable Development***

Re: Clean Technologies in Canada - Advanced Small Modular Reactors

by the Atlantic Clean Energy Alliance

The Atlantic Clean Energy Alliance provides stakeholder and community support related to the energy, environmental and economic benefits/opportunities associated with successful development of advanced Small Modular Reactors (aSMR) and complementary clean energy technologies in Atlantic Canada.

The Alliance works in collaboration to support the business case to advance long-term aSMR and associated clean energy technology opportunities in New Brunswick.

The Alliance supports New Brunswick's positioning across the country and internationally as the centre for excellence for aSMR technology development and deployment, as well as advocating for the inclusion of aSMR technology as part of regional, national and international greenhouse gas reduction strategies.

This submission to the Federal Standing Committee on Environment and Sustainable Development's call for submissions on Clean Technologies in Canada will explore aSMR and the future contribution of this technology as a clean energy source for Canada and abroad.

Atlantic Canada must continue curbing emissions through leadership in energy efficiency, non-emitting electricity generation and the ability to store and move clean energy around the region. As the Atlantic provinces take steps to leverage and develop the region's capacity in emerging clean energy technologies, including the supply chain, the region will reap the rewards of building aSMR expertise here at home.

New Brunswick Leadership

New Brunswick has a particular advantage in making a clean energy transition with advanced Small Modular Reactors (aSMR); the province has aligned all the critical elements to succeed.

New Brunswick has long-standing experience in nuclear; for almost 40 years, the Point Lepreau Nuclear Generating Station has been run by the provincial utility, NB Power. The Utility has honed its nuclear expertise, a trained workforce, and has completed CANDU reactor refurbishments.

Nuclear in New Brunswick has support; the technology was introduced by the previous provincial Liberal government and is actively supported by the current Progressive Conservative leadership. With safe nuclear operations in our backyard since the 1980s, communities have recognized its importance to the workforce and to the economy.

First Nations in the province have publicly acknowledged support for aSMR development in New Brunswick based on active and direct engagement in the project. Indeed, all 15 recognized First Nation communities in New Brunswick support the development of advanced SMR technology here and the associated economic benefits, such as supply chain opportunities.

The provincial utility and private industry have made significant financial investments and commitments to growing the technology here at home. NB Power is working with two leading proponents, ARC Clean Technology and Moltex to establish an aSMR industry. With support from our academic and training programs at the University of New Brunswick and the New Brunswick Community College, our future workforce is also on board.

As New Brunswick pursues these technologies with rigor, the benefit from the associated investment, intellectual property, and job growth will be far reaching.

The work being done in New Brunswick will provide clean electricity, high-temperature steam generation and clean hydrogen for both domestic and export markets.

New Brunswick is on its way to becoming a world leader in aSMR technology.

Canada's Energy Security

Energy security is more important now than ever for Canadians. As we tackle the important goal of decarbonizing our economy, we must do so in a way that ensures each province and community is energy secure. Providing Canadians with access to diverse energy supplies is key to enabling energy security, and nuclear must continue to be part of this solution.

Important initiatives have taken place to move aSMR development forward: An SMR Roadmap and Action Plan, as well as a provincial Memorandum of Understanding (MOU) signed by Alberta, New Brunswick, Ontario and Saskatchewan, to work co-operatively to advance the development and deployment of aSMRs and to encourage the federal government to provide support for aSMR demonstration projects. As a result, several such projects are currently under consideration targeting the decarbonisation of hard-to-abate sectors such as the electrification of remote mining operations, Canada's oil sands, and industrial heat applications for heavy and hard-to-decarbonize sectors.

The SMR Roadmap identifies the potential for aSMRs to meet a range of energy needs, along with opportunities for the Canadian nuclear industry to export these technologies. The aSMR technology will be an important enabler for use in:

- grid electricity;
- electricity storage;

- electrification in remote areas, specifically in the North and at mining sites;
- heat used in industrial applications;
- high temperature steam generation for manufacturing and processing; and in
- the production of clean fuels such as hydrogen.

As Canada moves towards its 2050 net-zero targets, New Brunswick will leverage its capacity in emerging clean energy technologies, including advanced SMRs, to support other non-emitting forms of electricity, support the decarbonization of heavy industry, and produce hydrogen to meet energy needs around the globe.

NB Power, is working with two leading proponents, [ARC Clean Technology](#) and [Moltex](#), to establish an advanced SMR industry.

About ARC Clean Technology



CLEAN TECHNOLOGY

ARC is a clean energy technology company developing the ARC-100, an advanced small modular reactor (aSMR) offering inherently safe, reliable, and economical carbon free power. ARC has offices in Washington DC and Saint John, New Brunswick.

Leveraging proven technology from the 30-year performance of its prototype, the ARC-100's simple, modular design provides 100 megawatts of electricity that is cost competitive with fossil fuels and provides reliable and abundant energy to complement intermittent renewables.

Important additional applications include the decarbonization of heavy industry, the fueling of low-carbon hydrogen projects, and the creation of valuable medical isotopes.

The ARC-100 has been selected by NB Power for implementation on their Point Lepreau site with completion targeted for the late 2020s, which will make it the first grid-scale advanced SMR deployed in Canada.

More information on ARC Clean Technology is available online at: www.arc-cleantech.com

About Moltex



Moltex Energy Canada Inc. (Moltex) is a nuclear technology leader that has caught the attention of governments, utilities and investors worldwide. With its innovative Stable Salt Reactor - Wasteburner (SSR-W), Moltex provides a carbon-free electricity generation solution that combines low upfront costs with reliable, large-scale power (300-500 MWe per reactor). This,

coupled with inherently safe design features, makes the SSR-W suitable for siting in many communities.

The SSR-W is a molten salt reactor that uses recycled nuclear waste as fuel. This fuel is produced using Moltex's WASTE To Stable Salt (WATSS) recycling process, and offers a cost-effective, environmentally friendly, and socially acceptable solution to waste minimization.

Thanks to GridReserve, energy from the SSR-W can be stored as heat and dispatched to the grid during periods of peak demand. This allows the reactor to complement intermittent renewable sources such as wind and solar.

Moltex was selected by NB Power to progress development of its reactor technology in New Brunswick, Canada, with the goal of deploying first-of-a-kind SSR-W, WATSS and GridReserve units at the Point Lepreau site. More information on Moltex is available online at:

www.moltexenergy.com

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Colleen d'Entremont".

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