

New Brunswick Anti-Shale Gas Alliance, Inc.

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Standing Committee on Science and Research
Sixth Floor, 131 Queen Street
House of Commons
Ottawa ON K1A 0A6

June 14, 2022

Dear Members of the Committee:

This submission represents the views of the New Brunswick Anti-Shale Gas Alliance (NBASGA) in regards to the Committee's study on Small Modular Nuclear Reactors (SMNRs), and the proposal to support their development with funds designated for climate action, particularly via the Net Zero Accelerator Initiative.

NBASGA is comprised of Anglophone and francophone civil society groups from across our province, which for ten years have worked on two mandates: to keep unconventional fossil fuels out of our province – so far successfully – and to promote the transition to a clean energy economy in order to address the climate emergency.

In its efforts NBASGA has submitted scientific arguments in affidavits to provincial courts, appeals courts, and the Supreme Court of Canada on issues including shale gas, climate change and carbon pricing.

We have carefully considered the issue of Nuclear SMNRs in light of our two mandates and listened to the arguments on all sides, including arguments made before your Committee. As you are aware of the detailed scientific studies presented, we will not cite or repeat them again here, as we would if we were presenting new research.

Rather, here we simply present our analysis, reasons and conclusions (*in italics, preceded by **) based on that body of research.

Climate science clearly tells us that the catastrophic effects of the climate emergency are upon us faster than anticipated, partially due to the fact that the world has not to date seriously addressed the issue with measures to quickly reduce greenhouse gas (ghg) emissions from energy usage. As a result, by the end of this decade we must have drastically replaced or reduced our use of fossil fuel energy.

Even supporters of the best-case scenarios of SMNRs concede that SMNRs will not be capable of providing alternative energy on any meaningful commercial scale until the mid 2030's.

The effects of ghg on climate change are cumulative, meaning it is important to limit the amount of ghg going into the atmosphere as quickly as possible.

**Therefore, we believe that SMNRs should not be considered as a primary way to address the climate crisis, as any benefits that it might provide will not take place (if at all) until too late.*

**While waiting for SMNRs to be viable (if ever), energy needs will likely continue to be filled by existing fossil fuels, exacerbating the climate crisis.*

Investment in energy projects tends to be a zero sum game. Choices will be made.

**Both public and private investment funds for SMNRs would be better spent on solutions that will immediately and directly address our energy and climate needs, such as proven and inexpensive renewable energy, expanding our electric grid for nationwide electrification, and energy efficiency and conservation practices to reduce energy demand.*

With the immanence and seriousness of the climate emergency, we must overwhelmingly act with technology that we know will work. The various technologies suggested for SMNRs are all, to varying degrees, still theoretical or unproven. Since even proven technologies take many years to achieve a substantial market presence, we once again have doubts as to whether SMNR's will ever play a part.

We have observed the long development path that other unproven technologies such as Carbon Capture and Storage have taken. After a decade of trying, there are still no CCS facilities operating at scale or at an affordable cost.

Beyond the barriers of physics to getting either CCS and SMNRs to work efficiently and effectively, SMNRs face the additional challenges of developing new methodologies and/or technologies to solve problems with accessing, transporting, storing and disposing of streams of both old and new forms of radioactive fuel and nuclear waste.

As there are currently no long-term solutions to the fuel and waste stream problems of the existing nuclear industry after 60 years, finding new solutions, and procuring social acceptance for them from a

sceptical public, will require significant additions to the development timeline.

**SMNRs appear to create as many problems as they solve, thus making their already optimistic development timelines even longer, and the technology, thus, less useful.*

There are dozens of countries and firms developing SMNRs, some with technological head starts, and some with more resources to back them. Whichever projects get to market first will likely dominate, leaving the others as basically stranded assets.

It is a big financial risk for anyone, but especially for our small, relatively poor province of New Brunswick, which has limited funds to address its climate change challenges. Once again, choices for spending will be made.

**Money spent on SMNRs is not available for renewable energy or climate mitigation and adaptation. If we then don't finish among the first winners in the SMNR race, we will have wasted scarce money that could have been much more wisely and effectively invested.*

**Lastly, but necessary to consider, SMNRs will produce energy that will be expensive – the opposite of what investments in renewable energy would do. As energy is embedded in everything societies do, what kind of civilization will we, as a world facing numerous existential problems, be able to afford using expensive energy?*

Summary in terms of the 5 goals of the Net Zero Accelerator

- Lead by example, substantially reducing its emissions by 2030.

**SMNRs cannot lead by example, because their long development timeline means that they will not reduce any emissions by 2030, and very few in the following decade that it will take to roll them out.*

- Meet its goal of being a net-zero economy by 2050.

**SMNRs long development timeline and long roll out period, plus the inevitable delays, expenses and unforeseen problems that accompany any new highly technological endeavour raises doubts that SMNRs will have much effect on conditions by 2050.*

- Transform key sectors ensuring long-term sustainability and competitive advantages.

**Competitive advantages will fall only to those who win the SMNRs race – and simply gambling that Canada will be one doesn't qualify as responsible public policy. The sustainability of SMNRs is, at this point, pure speculation.*

- Accelerate the adoption of clean technology across the economy.

**By taking funds away from renewable energy, grid modernization, and efficiency/conservation projects, SMNRs will slow down the adoption of clean technologies.*

Waiting for SMNRs will encourage the continued use of fossil fuels until SMNRs are ready, as no one wants to do multiple transitions. The energy sector will remain largely dirty.

The need for new radioactive disposal methods and sites will challenge the concept of SMNRs being 'clean technology'.

- Establish battery innovation and an industrial ecosystem

**Battery innovation is another worthy goal that will be slowed by money diverted to SMNRs. If SMNRs main selling point is that they are not intermittent sources of energy, like wind and solar, we believe that the investment of public money would be better spent directly on energy storage technologies, many of which are already advancing exponentially, and which have more promise and shorter development timelines than SMNRs.*

In conclusion, we believe that SMNRs are a promise that can't be kept, a distraction from what is achievable, an enabler of fossil fuels, and an expensive energy producer that creates new long-term environmental problems. Public funds designated for climate action should not be spent on them.

Thank you for your consideration of our comments.

Sincerely, *James D Emberger*

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