

A technological fix for energy woes is alluring. However, like the low-tar cigarette during the demise of the tobacco industry, so too are small modular nuclear reactors (SMRs). The global percentage of electricity created by nuclear power has been dwindling for years.

Yet, currently, the SMR love affair is squandering time thus delaying transitioning to renewable energies creating an 'opportunity cost'. Also, the risks of nuclear power remain and the public is largely unaware.

The website for Moltex, a British start-up company, already awarded millions of dollars by federal and provincial governments to build SMRs on the Bay of Fundy Point Lepreau site, claims that it has "better nuclear reactors to safely, cleanly and economically power the planet in the 21st century."

In fact, SMRs aren't 'green', safe, clean or economical.

Although a nuclear power plant will not produce Greenhouse Gases (GHG) during the 20 to 40 years of its operating life, its operations do emit radioactive gases. If a plant's complete life is taken into account from mining, trucking, fuel refining, building the concrete structure to eventual decommissioning of the contaminated building and trucking away the spent fuel, it is not GHG free.

The reprocessing of CANDU waste to make SMR fuel retrieves about 0.4% plutonium of its content and requires a lot of energy. Moltex's "Stable Salt reactor-Wasteburner" creates energy, but also produces chemically reactive liquid radioactive waste. This toxic waste is difficult to contain and has different and longer lasting radionuclides. There is no universally acceptable way of permanently handling current waste, which must be kept away from all living organisms for a period of time measured as longer than from now back to the age of invention of the bow and arrow.

Although plans exist to develop a deep geologic repository for Canada's existing waste, a 'willing host' has yet to be identified. Despite claims by Moltex that repositories 'work', in fact none currently exist in the world although Finland has plans. The Wolastoqewi-Elders, on whose land Lepreau power plant sits, translate 'nuclear' as 'Forever Dangerous', leading many groups to simply call for nuclear power to be put on hold.

The USA has experience with plutonium extraction, mostly for making nuclear weapons, thus creating some of the world's most radioactively polluted areas, such as Hanford, Washington. The plutonium produced for SMRs is sufficiently refined that it can be diverted for nuclear weapons. This risk was recognized by former US President Jimmy Carter who developed policies to prohibit plutonium extraction in USA in 1977. Although lacking a similar policy, nevertheless it has been Canadian practice to avoid plutonium extraction.

Economically, current nuclear power is more expensive to produce than renewable solar, wind or energy conservation measures. Also SMRs will take ten years (by industry estimate), to create a functional unit, thus positioning SMRs too late for climate action.

Now, seemingly without regulatory review, public consultation or Parliamentary debate, extraction of plutonium is to take place beside a delicate marine ecosystem! In addition, intense lobbying by the nuclear industry in 2019 led to weak policies rendering SMRs exempt from environmental review if placed on existing nuclear power sites. Indeed, Moltex reportedly chose Canada for their operations because of Canada's 'benign' regulatory climate.

People in NB have recognized that governments are not providing full information about SMRs and hence concerned citizens have decided to fill the gap by seeking out experts and providing analyses. Their site is: Coalition for Responsible Energy Development in New Brunswick <https://crednb.ca/about/>

Canadians need a trusted nuclear regulator, less industry sales pitch and more science.