

SUPPORTING URANIUM AND THORIUM EXPLORATION FOR BC'S ECONOMIC PROSPERITY

ISSUE

The Federal Government of Canada is investing heavily in critical minerals that includes uranium extraction for the purposes of Small Modular Nuclear Reactors¹. Climate change reduction policy based on targets have been implemented on an international scale. The BC Government has created a plan to become net-zero in terms of emissions produced in BC by 2050. Globally, the energy-sector's carbon emissions grew by more than 40% over the past 18 years. Countries like France and Germany are trying to diversify their energy production by utilizing a method that is both emission-reducing, and safe – nuclear power. BC currently has unexplored uranium and thorium deposits that can be exported to other provinces and countries, which will create economic prosperity in the province.

Background

In 1980, the British Columbia government introduced a seven-year ban on uranium and thorium exploration and mining. This ban was renewed until 2009 when the BC government established a "no registration reserve" under the *Mineral Tenure Act* for uranium and thorium. The ban ensured that no thorium and uranium deposits would be mined or explored.

Canada is the world's second largest producer of uranium with 15% of global production in 2012, has 20% of the world's deposits, and exports nearly 84% of its uranium product.² The value of uranium produced is approximately \$1.2 billion. The majority of uranium processing and nuclear industry is centered in Ontario and Quebec.

Due to the climate crisis, many governments are endeavouring to reduce emissions. Since 2019, the BC Government has undertaken an initiative to become carbon neutral. On the international level, renewable energy contributed to 36% of power delivered to German consumers, and 34% of power delivered to United Kingdom consumers.² The difference being that the German government shut down its nuclear power stations, resulting in a higher CO2 emission whereas the U.K. maintained its nuclear capacity.³

Nuclear power can be a way to reduce reliance on high-emission products such as oil and gas.³ The Convention on Nuclear Safety was adopted in Vienna in June 1994 that asks each participating state to provide a report outlining the measures in place to assure safe operation of nuclear power plants. In Canada's seventh report, it was outlined that various measures are in place including: robust nuclear regulatory framework; a mature and effective regulator, and; licensee organizations that are fully committed to nuclear safety.⁴ As a result of the Fukushima incident, Canada highlighted an action plan to improve safety based on lessons learned from the Fukushima Daiichi nuclear accident in 2015.

It is notable that the construction of large-scale nuclear power plants is not cost effective. Innovative renewable energy projects are exponentially invested in and are the waves of the future.; however,

¹ <https://www.nrcan.gc.ca/our-natural-resources/energy-sources-distribution/nuclear-energy-uranium/canadas-small-nuclear-reactor-action-plan/21183>

² <https://about.bnef.com/blog/liebreich-need-talk-nuclear-power/>

³ <https://www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/safety-of-nuclear-power-reactors.aspx>

⁴ http://www.nuclearsafety.gc.ca/pubs_catalogue/uploads/Canadian-National-Report-for-Convention-on-Nuclear-Safety-Seventh-Report-eng.pdf

Canada has seen many designs for small modular reactors (e.g., Candu) that could provide safe, clean, and economic energy.⁵

Small modular reactors (SMRs) are an effective mechanism of reaching carbon-neutrality. Nuclear CO₂ emissions over the lifetime of a plant has a mean value of 66 tonnes CO₂e/kWh.⁶ Comparatively, coal, oil, and natural gas emission rates means come in at approximately 888, 733, and 499 tonnes CO₂e/kWh.⁷

SMRs may be located on sites that differ from where traditional nuclear power plants have been built. For example, SMRs may be established on small grids where power generation needs are usually less than 300 megawatt electric (MWe) per facility and at edge-of-grid or off-grid locations where power needs are small – in the range of 2 to 30 MWe.⁸

While SMRs may not be effective for BC, which is a province that can utilize solar, wind, and hydro resources to generate green energy, other countries and provinces use nuclear. In order to generate nuclear energy, thorium and uranium are critical. BC has these critical materials, however, due to the moratorium, we are unable to export this natural resources.

Electrical utilities, industry groups and government agencies throughout the world are investigating alternative uses for SMRs beyond electricity generation such as producing steam supply for industrial applications and district heating systems and making value-added products such as hydrogen fuel and desalinated drinking water.⁹

The Provincial Government has implemented an Action Plan for Indigenous Reconciliation to build on the Declaration Act.¹⁰ Action 2.6 is concerned with environmental stewardship and resource use: “Co-develop strategic-level policies, programs and initiatives to advance collaborative stewardship of the environment, land and resources, that address cumulative effects and respects Indigenous Knowledge. This will be achieved through collaborative stewardship forums, guardian programs, land use planning initiatives, and other innovative and evolving partnerships that support integrated land and resource management.” It is important that when utilizing natural resources, indigenous knowledge must be considered and so ensuring that any exploration and extraction aligns with Action 2.6 is critical.

To drive the economy forward, we need to look at utilizing our existing natural resources. Without the ability to explore uranium and thorium deposits, we are missing out on a large revenue source that is being used by other countries. In 2014, the BC Chamber of Commerce had advocated for a policy requesting that the BC government lift the ban on the exploration of uranium and thorium and reduce our reliance on carbon-emitting products such as oil and gas. The BC Chamber has been a proponent for uranium, which is a key fuel for nuclear electricity. Ontario and New Brunswick already utilize Uranium¹¹

⁵ <https://www.aec.ca/science-technology/small-modular-reactors/>

⁶ Sovacool, Benjamin, K. “Valuing the greenhouse gas emissions from nuclear power: A critical survey.” *Energy policy*, vol. 36, no. 8, 2008. <https://doi.org/10.1016/j.enpol.2008.04.017>.

⁷ http://www.world-nuclear.org/uploadedFiles/org/WNA/Publications/Working_Group_Reports/comparison_of_lifecycle.pdf

⁸ <https://nuclearsafety.gc.ca/eng/reactors/research-reactors/other-reactor-facilities/small-modular-reactors.cfm>

⁹ <https://nuclearsafety.gc.ca/eng/reactors/research-reactors/other-reactor-facilities/small-modular-reactors.cfm>

¹⁰ https://www2.gov.bc.ca/assets/gov/government/ministries-organizations/ministries/indigenous-relations-reconciliation/declaration_act_action_plan.pdf

¹¹ <http://www.bcchamber.org/policies/uranium-and-mineral-exploration>

and Saskatchewan has most of Canada's reserves.¹² The Canadian Chamber of Commerce supports the critical materials needed for nuclear energy and sees value in nuclear technology.¹³ It is important not only from an energy standpoint, but also from its application in the medical field.¹⁴

THE CHAMBER RECOMMENDS

That the Provincial Government:

1. Lift the ban on uranium and thorium exploration with consideration for the Declaration Act Action Plan item 2.6.

Submitted by the Surrey Board of Trade

The Policy Review Committee supports this policy

¹² <https://www.nrcan.gc.ca/energy/energy-sources-distribution/uranium-nuclear-energy/uranium-canada/about-uranium/7695>

¹³ <https://chamber.ca/criticalminerals/>

¹⁴ https://www.cdc.gov/nceh/radiation/nuclear_medicine.htm#:~:text=Nuclear%20medicine%20procedures%20are%20used,from%20some%20types%20of%20cancer.