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# Energy transition and critical minerals in Canada

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With the increasingly ambitious global energy transition, the demand for metals used in emerging energy technologies continues to surge. As a current and potential source of many of these critical minerals and metals, Canada and its provinces have taken steps in recent years to promote development of these resources and to further cultivate a role in the critical minerals value chain on provincial, national and global levels.

These measures demonstrate a broad strategy that extends beyond just mining and seeks to address the entire value chain of critical minerals, from exploration and extraction, to processing, advanced manufacturing and recycling. Will these measures have a tangible positive impact on the development of mining projects in Canada? We explore the scope of change in Canadian, Ontario and Alberta critical

mineral policy and reflect on what impact it is expected to have in Canadian project development and finance in the mining industry.

## Canadian critical minerals strategy

Canada has taken significant steps to capitalise on increased global demand for critical minerals necessary to the global energy transition, including earmarking \$3.8bn in funding over eight years for critical minerals development in its 2022 federal budget, together with the release of the Canadian Strategy in December of 2022.

Canada is a significant source of the 31 critical minerals identified in the Canadian Strategy, including six priority minerals, lithium, graphite, nickel, cobalt, copper and rare earth elements, and the Canadian Strategy is characterised as “the roadmap to seizing a generational opportunity”

to establish Canada’s role in the critical minerals value chain and to become “the world’s green supplier of choice for critical minerals”.

The Canadian Strategy is notable for its focus on developing value chains, as opposed to supply chains, from exploration and extraction, to processing and manufacturing, to end product use and recycling. In particular, the Canadian Strategy identifies clean technologies (such as zero-emission vehicles, wind turbines, solar panels, advanced batteries, hydrogen fuel cells and small modular reactors), information and communication technologies (such as semiconductors) and advanced manufacturing (such as defence applications, permanent magnets, ceramics and electronic materials) as industries with strong potential for integrated value chains in Canada.

The Canadian Strategy also points to the importance of bilateral cooperation with allied countries on critical mineral supply as the energy transition continues. Canada aims to position itself as a trusted and reliable supply of responsibly sourced and sustainably produced minerals, while also recognising the strategic value and importance of critical minerals to Canada's own national security.

A significant driver of the Canadian Strategy has been the US' Inflation Reduction Act (IRA). The IRA includes tax credits for the purchase of electric vehicles. While these credits make electric vehicles more affordable, the IRA's more significant impact is that a proportion of the battery minerals in qualifying vehicles must have been extracted or processed in the US or free trade partner countries, including Canada.

Canada is well positioned to capitalise on the IRA. Electric vehicles are only eligible for the IRA credit if final assembly of the vehicle occurs within North America, no critical minerals are sourced from a foreign entity of concern (China and Russia, for example), a percentage of battery metal value is extracted or processed in the US or in a partner country with a free trade agreement, such as Canada, or sourced from material recycled in North America, and a proportion of battery components are produced in North America.

The Canadian Strategy also ties together several other federal initiatives that have come out over the last few years, including the Critical Mineral Exploration Tax Credit and the Strategic Innovation Fund, to help encourage exploration for critical minerals and develop projects. The new 30 percent Critical Mineral Exploration tax credit for specified minerals consumed in the production of batteries used in zero-emission vehicles, or in the production and processing of advanced materials, clean technology or semiconductors, is an expansion of the current 15 percent flow-through share regime available for exploration.

In addition, the Strategic Innovation Fund will provide up to \$1.5bn in funding for projects that decrease or remove reliance on foreign critical mineral inputs across

certain sectors and support critical minerals projects, with priority given to advanced manufacturing (such as electric vehicle manufacturing), processing and recycling applications.

A significant part of the Canadian Strategy is targeting reducing the length of time required to permit projects for development. The Canadian Strategy notes that it can sometimes take up to 25 years for a mining project to become operational under the current permitting regime. If Canada is to be a net-zero economy by 2050 as currently hoped, critical minerals will be needed in even greater quantities than the present.

Taking 20 to 30 years to bring new critical minerals mines into production will not allow for production of minerals required at a level that will permit Canada to achieve that goal. The Critical Minerals Centre of Excellence at Natural Resources Canada has been mandated to assist project developers in navigating regulatory processes and formulate one-stop permitting to streamline this process. Effective Indigenous consultation and engagement will also be an important part of this process.

#### **Ontario's critical mineral strategy**

Similarly, the Canadian province of Ontario has also pursued a complementary strategy to support critical mineral development. Ontario's March 2022 'Critical Minerals Strategy' is a five-year plan that is intended to secure the province's position as a reliable global supplier of critical minerals. The Ontario Strategy is conceived in concert with other government initiatives in the automotive and environmental sectors and taken together, these initiatives are intended to ensure that Ontario can grow advanced manufacturing supply chains, including those related to electric vehicle production, and create sustainable economic development opportunities.

A part of the Ontario Strategy, a Critical Minerals Innovation Fund (CMIF) was formulated to provide funding to projects that help strengthen Ontario's critical minerals sector. The CMIF will fund a maximum of 50 percent of eligible project costs, up to \$500,000 per project, for projects that: (i) support the research,

development and commercialisation of innovative technologies, techniques, processes and solutions for critical minerals; (ii) increase critical minerals exploration, mining, development, production and processing; (iii) stimulate investment in Ontario's critical minerals supply chain; and (iv) enhance collaboration between industry, academia, start-ups, and research and development firms to encourage innovation in the critical minerals sector.

The 'Ring of Fire' deposit in northwest Ontario is an example of a prospective mineral deposit that has had numerous owners without significant development progress. This is due, in part, to the remote and rugged terrain that makes development difficult. The Ontario Strategy is intended to ameliorate these challenges and provide support to projects in this region and other critical mineral-rich regions identified in the Ontario Strategy which are similarly remote and face development challenges.

#### **Alberta's new critical minerals regulations**

Alberta is diversifying its vital energy industry through the production of critical minerals. Most recently, in late December 2022, Alberta announced new and amended regulations "to strengthen Alberta's mineral regulatory framework". These include the Metallic and Industrial Minerals Tenure Regulation. These new regulations follow the prior introduction of the Mineral Resource Development Act and the corresponding Mineral Strategy and action plan for developing Alberta's minerals and mineral products industry, introduced in 2021.

Among other aims, the new regulations are intended to provide clarity for industry and ensure the safe, orderly and responsible development of Alberta's mineral resources within the emerging and evolving minerals sector.

Notably, the Tenure Regulations establish a new tenure regime for brine-hosted minerals. Brine-hosted minerals are defined as metallic and industrial minerals extracted or recovered from soluble components naturally dissolved in groundwater and are geologically common across west-central Alberta's sedimentary basin. One of the

most notable of these brine-hosted minerals is lithium, which is listed as a critical mineral in Canada and a number of other countries.

Additionally, the province introduced several statutory and regulatory amendments aimed at harmonising and modernising Alberta's legislative approach to critical minerals.

### **Impact on project development and financing**

As the Canadian Strategy notes, in reflecting on the results of the federal government's Mines to Mobility initiatives launched in 2019 to build a sustainable battery innovation and industrial ecosystem in Canada, the initiative has attracted more than \$7bn in announced investments to capture opportunities in the growing battery market.

Some of these investments include GM Canada's \$1bn investment to transform its

CAMI Ingersoll plant into Canada's first full-scale electric vehicle commercial van plant, Stellantis' investment of \$3.6bn to retool its Brampton and Windsor plants to produce electric vehicles and Ford Motor Company investing \$1.8bn to produce electric vehicles in Canada.

While all of this is quite laudable, it remains to be seen if these measures have a significant impact on mining companies at the exploration and development stage of projects. The federal 30 percent flow through tax credit has not seemed to have had substantial take up yet, though this may change. There is no doubt, though, that access to additional funding sources, even if relatively modest, must be beneficial to mining companies pursuing mining project development and finance in the critical mineral space. Perhaps most important is the recognition that efficient, one-stop permitting of development projects, in tandem with Indigenous consultation and

engagement, is vital to cut lead time on mining projects. Other jurisdictions seem to be demonstrating more effective strategies to address this issue. Canada needs to get this right. This improvement alone could make a significant difference in reducing costs and time required to bring key critical mineral projects into production.

Only time will tell how these measures tangibly impact the development and finance of critical mineral projects in Canada, but their rapid deployment will no doubt be essential to enable Canada to meet its ambitious net-zero emissions targets. ■

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