

Canada's Critical Minerals Opportunity: Securing and Expanding Mining and Metal Manufacturing and Processing Activities

RECOMMENDATION 1: MAKE CANADA A GLOBAL CENTRE FOR ELECTRIC VEHICLE (EV) BATTERY MATERIAL PRODUCTION

- Accelerate green metal discovery and development, in support of the next generation of mines, through a focused and enhanced Mineral Exploration Tax Credit
- Ensure the Impact Assessment Act is implemented in manner that creates greater predictability and timeliness for permitting the future mines and value-added mineral, metal and battery material manufacturing facilities essential to Canada's EV objectives.
- Signal Canada's attractiveness as a destination for battery manufacturing by prioritizing a secure, sustainable and long-term supply of domestic battery grade materials, including expanded production of the raw inputs essential for their manufacturing:
 - Create greater coherence between climate and industrial policy objectives by recognizing Canada's regional and supply chain realities, including that off-grid critical mineral mines are essential to Canada's pre-existing smelting and refining industry, without which desired expansion into battery grade material, cell, module and manufacturing will not be possible.
 - Expand the Budget 2021 50% corporate income tax reduction for zero emissions technology manufacturing to include domestic raw material production and manufacturing across the EV supply chain.
 - Continue the "all tools on the table" technology approach by stewarding small modular nuclear reactors, hydrogen and renewable energy deployment, and the extension of electricity transmission, distribution and digital connectivity networks in Canada's North.
 - Accelerate and expand the allocation and deployment of trade enabling infrastructure funding needed to support the development of raw materials essential to Canada's EV supply chain objectives.

RECOMMENDATION 2: POSITION CANADA AS A SECURE AND RELIABLE

SOURCE OF RARE EARTH ELEMENTS (REE)

- Significantly expand the initial funding allocated in Budget 2021 to develop state of the art REE identification, extraction and refining processes, including from recycled mine waste streams. Expanded funding should take a two-tier approach to 1) commercialize projects across the REE supply chain, and 2) scale and sustain successful projects until a secure and sustainable supply-chain is established.
- Establish a joint industry-interdepartmental task force to provide regular and ongoing input in support of Canada as a secure and reliable source of critical REEs.

RECOMMENDATION 3: STRENGTHEN INDIGENOUS PARTICIPATION IN MINING

- Prioritize meaningful implementation of the TRC's 94 Calls to Action.
- Ensure adequate resources are allocated for the development of a national UNDRIP action plan to support meaningful engagement with Indigenous peoples as well as with industry sectors on aspects of the action plan that relate to economic development and regulatory consultation processes.
- Develop and enhance guidance, training and policies to ensure that federal officials can adequately and consistently engage in consultation with Indigenous peoples, and to clarify the role of the Crown, Indigenous groups and proponents in project approvals.
- Implement a national benefits sharing framework that supports improved mechanisms for government resource revenue sharing, skills training and entrepreneurship and strategically deploys government procurement as a tool to drive Indigenous economic reconciliation.

The Economic Cost to Canada of COVID-19

Following the federal response to COVID-19, the Canadian economy has rebounded gaining much ground. Bridging to recovery required significant COVID spending, and recent and rising inflationary pressures underscore the need for careful economic stewardship to ensure Canada's recovery persists sustainably. Sound fiscal management and strategic investments are needed to position Canada for continued recovery and future growth.

The Canadian mining industry is well positioned to support many of the government's public policy priorities, including critical minerals development, low carbon transition and Indigenous reconciliation. While ongoing, the Mining Association of Canada (MAC) acknowledges the significant effort to position Canada for longer term success in these areas. Commitments, including the "mines to mobility" EV supply-chain objective, a bolder climate plan including commitments to net-zero by 2050, initial investments in the critical minerals supply chain space, and the ratification of UNDRIP are positive. Without a sustainable and inclusive critical mineral and metal manufacturing supply chain, Canada's competitiveness as a destination for advanced technology manufacturing – and the benefits that accompany such investments – is significantly diminished.

In support of stated EV, climate, and reconciliation objectives, the government should strengthen and expand Canada's critical mineral extraction and manufacturing supply chains.

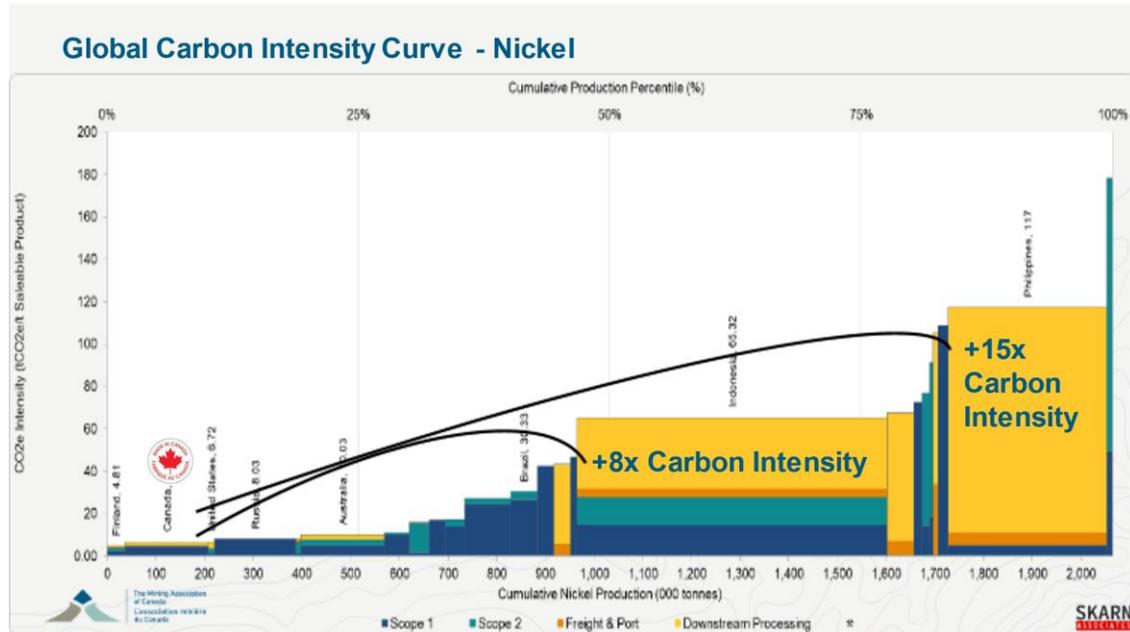
1. MAKE CANADA A GLOBAL CENTRE FOR ELECTRIC VEHICLE (EV) MATERIAL PRODUCTION

The World Bank forecasts up to 500% increases in the production of green mineral and metal inputs to produce the clean technologies essential to limiting global temperature rise to 2 degrees Celsius. It is in both Canada's and the world's best interest to expand domestic production of low carbon Canadian minerals and metals, including value added battery grade materials, to meet this growing need as sustainably as possible.

Even if mined off-grid, minerals processed in Canada are among the lowest carbon-intensity in the world. Nickel and cobalt are two metals that commonly make up 60%-80% of the material input into EV batteries. In 2018, 52% and 62% respectively of nickel and cobalt were mined at diesel-reliant off-grid mines in Canada – at higher operational and carbon cost exposure¹ – but processed at clean grid-connected Canadian smelters and refineries. When viewed on a supply chain basis, SKARN Associates affirms that Canadian nickel is the second lowest carbon intensity in the world, and 8 to 15 times less carbon intensive on average than

¹ *Levelling the Playing Field: Supporting Mineral Exploration and Mining in Remote and Northern Canada*

nickel produced in Indonesia or the Philippines.



While recent discourse has focused on the importance of obtaining a giga factory for battery production in Canada, such a factory would be overwhelmingly reliant on imports of battery grade materials from Asia – at emissions intensities such as those listed above – and with more vulnerable supply chain distances. This outcome is at odds with both the economic security and sustainability objectives that underpin the broader critical minerals policy rationale, namely, reducing global GHG emissions and increasing supply chain resiliency.

Building from our strengths, Canada should prioritize expanding current mineral production and developing new battery grade material, cell and module production. Doing so will position Canada as a reliable, secure, proximate and sustainable EV supply chain partner over the long term, while simultaneously increasing our domestic attractiveness as a destination for large scale and sought-after battery manufacturing investments. The sooner these signals can be sent to the market, the greater Canada’s overall proposition for giga factory investments becomes.

Prioritizing EV investments in this way presents lower risk. Whether Canada is successful in achieving the desired giga factory investment or not, the above sequential approach provides meaningful, tangible and expanded economic and environmental benefits consistent with Canadian values. The global climate will benefit from EVs produced with low carbon Canadian metals and EV materials. Whether for domestic or international EV production – and ideally both – one of the greatest climate actions Canada can take in support of Paris Accord objectives is to maximize domestic production of low carbon metals and materials needed to meet projected clean technology demand.

To make Canada a global clean materials capital, MAC recommends the following actions to bolster activity across the mining lifecycle:

- Accelerate green metal discovery and development, in support of the next generation of mines, through a focused and enhanced Mineral Exploration Tax Credit.
- Ensure the Impact Assessment Act is implemented in manner that creates greater predictability and timeliness for permitting the future mines and value-added mineral, metal and battery material manufacturing facilities essential to Canada's EV and clean technology objectives.
- Signal Canada's attractiveness as a destination for battery manufacturing by prioritizing a secure, sustainable and long-term supply of domestic battery grade materials, including expanded production of the raw inputs essential for their manufacturing:
 - Create greater coherence between climate and industrial policy objectives by recognizing Canada's regional and supply chain realities, including that off-grid critical mineral mines are essential to Canada's pre-existing smelting and refining industry, without which desired expansion into battery grade material, cell, module and manufacturing will not be possible.
 - Expand the Budget 2021 50% Corporate Income Tax Reduction for zero emissions technology manufacturing to include the domestic raw material production and manufacturing across the EV supply chain.
 - Continue the "all tools on the table" technology approach by stewarding small modular nuclear reactors, hydrogen and renewable energy deployment, the extension of electricity transmission and distribution and digital connectivity networks in Canada's North.
 - Accelerate and expand the allocation and deployment of trade enabling infrastructure funding needed to support the development of raw materials essential to Canada's EV supply chain objectives.

2. POSITION CANADA AS A SECURE AND RELIABLE SOURCE OF RARE EARTH ELEMENTS

Increased geopolitical uncertainty – amplified by COVID-19 supply chain disruptions – has magnified the precariousness of existing sources for many materials and goods on which Canadians depend. Countries have classified as critical minerals the primary materials fundamental to their economic security, but which they cannot procure in sufficient volume or from within their own borders. No set of materials characterizes the dilemma more than Rare Earth Elements (REEs), used in a wide range of essential medical, energy, defense and advanced manufacturing applications, including EV motors. Enhancing economic security by augmenting domestic production of these inputs is a key critical minerals policy objective.

The government has made public commitments to establish a domestic EV supply chain in Canada and allocated significant support toward achieving this goal. Comparatively less ambition has been demonstrated in the REE space, though an important first step has been made through commitments to establish a Critical Minerals Centre of Excellence along with a modest R&D allocation.

To advance the stated objectives of the Canada/U.S. Joint Action Plan on Critical Minerals Collaboration, and deliver on the recently announced Canada-EU Critical Minerals Alliance, MAC recommends:

- Significantly expanding the initial funding allocated in Budget 2021 to develop state of the art REE identification, extraction and refining processes, including from recycled mine waste streams. Expanded funding should take a two-tier approach to 1) commercialize projects across the REE supply chain, and 2) scale and sustain successful projects until a secure and sustainable supply-chain is established.
- Establishing a joint industry-interdepartmental task force to provide regular and ongoing input in support of Canada as a secure and reliable source of critical REEs.

3. STRENGTHEN INDIGENOUS PARTICIPATION IN MINING

Enhancing the participation of, and partnerships with, Indigenous peoples remains a top priority for the mining sector. MAC members are among the largest industrial employers of Indigenous peoples and are major customers of Indigenous-owned businesses. Beyond MAC, the nearly 500 mining relationship agreements with Indigenous communities in place are helping to advance economic reconciliation.

Across the country, there are partnerships between companies and communities that are directly contributing to reconciliation and the implementation of the Truth and Reconciliation Commission's (TRC) Calls to Action and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Notable action has come by way of recent updates to MAC's [*Towards Sustainable Mining*](#) (TSM) program, a globally recognized sustainability program that supports mining companies in managing key environmental and social risks. It incorporates measurable criteria reflecting the TRC's call to the corporate sector and establishes what is considered good practice in TSM that includes aiming to achieve free, prior and informed consent (FPIC) before proceeding with development where impacts to rights may occur.

To strengthen Indigenous participation in mining, government should:

- Prioritize meaningful implementation of the TRC's 94 Calls to Action.
- Ensure adequate resources are allocated for the development of a national UNDRIP action plan to support meaningful engagement with Indigenous peoples as well as with industry sectors on aspects of the action plan that relate to economic development and regulatory consultation processes.

- Develop and enhance guidance, training and policies to ensure that federal officials can adequately and consistently engage in consultation with Indigenous peoples, and to clarify the role of the Crown, Indigenous groups and proponents in project approvals.
- Implement a national benefits sharing framework that supports improved mechanisms for government resource revenue sharing, skills training and entrepreneurship and strategically deploys government procurement as a tool to drive Indigenous economic reconciliation.