

British Columbia’s Critical Minerals Strategy: Discussion Paper

Contents

- Overview** 2
 - What are Critical Minerals?**..... 2
 - Why do We Need a Critical Minerals Strategy**..... 2
 - Global Energy Transition 4
 - Federal Critical Minerals List/ B.C.’s Current Mineral Production 4
 - Interdependent Policy Priorities 5
- Key Areas of Focus**..... 6
 - 1. Advancing Recognition and Reconciliation with Indigenous Peoples 7
 - 2. Enhancing Public Geoscience..... 8
 - 3. A Competitive Fiscal and Regulatory Environment 9
 - 4. Innovation, Training and Environmental Stewardship 10
 - 5. Infrastructure and Climate Action..... 11
 - 3. Public and Investor Outreach..... 12
 - Additional Considerations 12
- We Want to Hear from You** 13
- Next Steps 13

Overview

What are Critical Minerals?

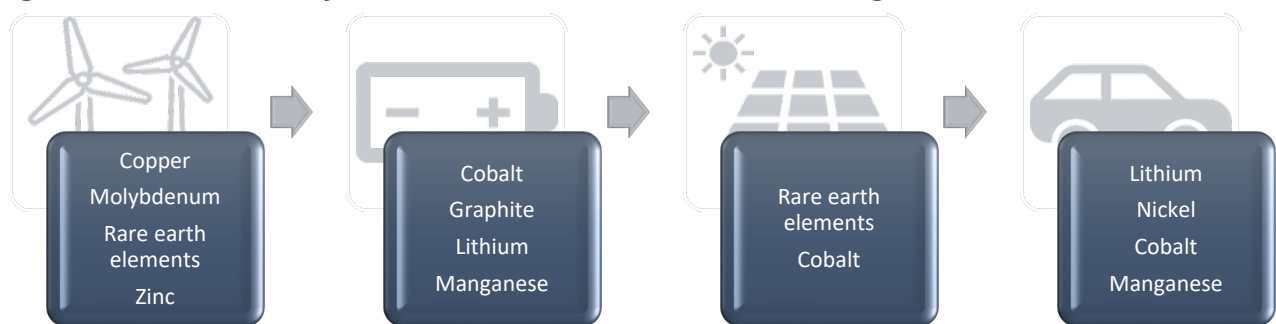
Critical minerals are minerals such as copper, lithium, and molybdenum that are essential components in products used for clean energy, digital technology, telecommunications, healthcare, and other applications. Critical minerals are used in the manufacture of electric vehicles, solar panels, wind turbines, electrical transmission lines, batteries, mobile phones, and medical devices.

Figure 1: Critical Minerals in Our Daily Lives

Critical minerals in our daily lives	Cell phones, computers, electric vehicles
	Solar panels, wind turbines, cosmetics, medications
	Surgical equipment, LED lighting, touch screens

Critical minerals are increasingly woven into our everyday lives - some might say they are indispensable. British Columbia is committed to achieving its legislated climate goals, in alignment with the CleanBC Roadmap to 2030, and to making the transition to lower carbon economies – but this transition cannot occur without critical minerals, which are required in the transportation, electrification, renewable energy generation and storage and technology sectors.

Figure 2: Common Uses of Critical Minerals in Low Carbon Technologies



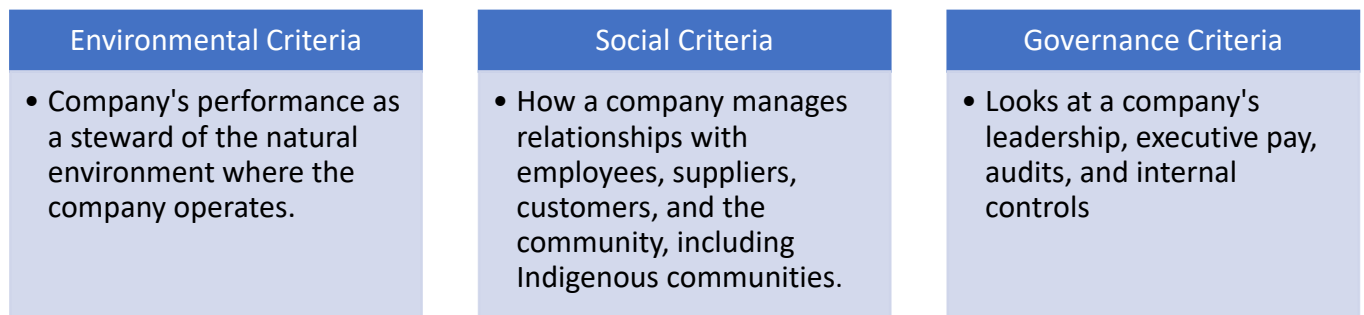
Why do We Need a Critical Minerals Strategy

Critical minerals serve essential purposes in our economy, and they may be at risk of supply disruption. Countries and regions have identified many different minerals as being of critical or strategic importance, depending on supply chain access, geography, and geopolitical circumstance, among other considerations. As demand shifts and technology evolves, the critical minerals list of any jurisdiction may change.

Mineral exploration and mining are foundational contributors to B.C.'s economy, particularly in rural and remote communities, and this contribution could grow substantially with expanded critical mineral development. In 2022, the sector contributed \$17.5 billion in production value, \$740 million in exploration expenditures, employed over 30,000 workers, and contributed \$7.3 billion (approximately 3%) to the provincial gross domestic product; more than any other natural resource sector. A Critical Minerals Strategy (Strategy) will help B.C. to build on these strengths and to capitalize on the critical mineral-intensive global transition to a green economy.

With B.C.'s strong geological potential and the solid environmental, social, and governance (ESG) performance of the mining sector, there is an opportunity to significantly expand and strengthen B.C.'s critical minerals activities and value chain. This will support the province's economy by attracting new investment and furthering meaningful reconciliation with Indigenous peoples.

Figure 3: Environmental, social and governance criteria model¹



Critical minerals present B.C. with economic opportunities for today and tomorrow. A Strategy will take a future-oriented approach; exploring critical minerals opportunities that benefit the lives and well-being of generations of British Columbians in both urban and rural communities.

This discussion paper seeks to drive action in six areas of focus:

1. Advancing Recognition and Reconciliation with Indigenous Peoples
2. Enhancing Public Geoscience
3. A Competitive Fiscal and Regulatory Environment
4. Innovation, Training and Environmental Stewardship
5. Infrastructure and Climate Action
6. Public and Investor Outreach

¹ Witold Henisz, Tim Koller and Robin Nuttall, "Five Ways that ESG Creates Value," McKinsey Quarterly, McKinsey & Company, 2019

These areas of focus are a starting point for Strategy development and are not intended to be final. Input on additional areas of focus is encouraged.

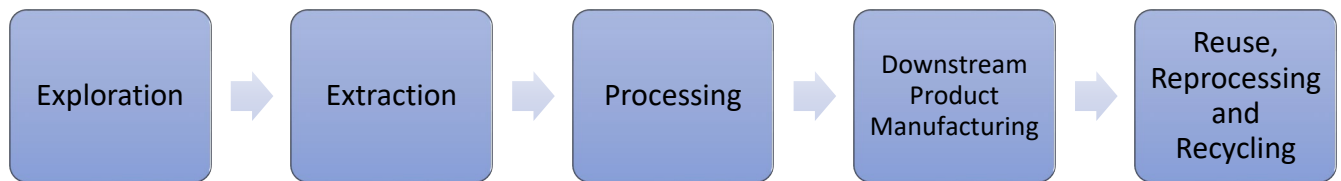
Global Energy Transition

The shift to a green economy is occurring globally which is creating a significant increase in demand for critical minerals and could potentially overwhelm current supplies of critical minerals in the coming decades. For example, the amount of copper, nickel, and cobalt required to produce electric vehicle batteries is expected to increase by 14x, 10x and 3x respectively by 2035 according to BloombergNEF.

The International Energy Agency estimates that mineral demand for clean technologies such as batteries, solar panels, wind turbines, and electricity networks will increase by two to six times by 2040, when compared to 2020. At the same time, demand is also rising for sustainably produced goods and services. Investors and consumers are looking to see if business plans promote inclusion, reconciliation with Indigenous peoples, environmentally sustainable practices, and the use of ethically produced materials.

B.C., with its mineral rich geology, already contributes to Canada’s critical minerals supply, and has the potential to increase its participation in the value chain. In this context, a value chain is a set of activities that add value (i.e., product or process innovation) at each stage of the production and delivery of a product to a customer. Figure 4 illustrates the range of critical minerals value chain activities.

Figure 4: The Critical Minerals Value Chain



The B.C. Government seeks to position the province as a trusted supplier of critical minerals and critical mineral products in domestic and global markets. The Province also aims to ensure that B.C. is an attractive and competitive destination for investment in all areas of the critical minerals value chain.

This discussion paper is intended to elicit feedback to identify and develop potential opportunities for all groups involved in these activities in both the short and long term.

Federal Critical Minerals List/ B.C.’s Current Mineral Production

In December 2022, the Federal Government of Canada released the [Canadian Critical Minerals Strategy](#) to support, prioritize, and fund Canada’s competitive advantage in the global market. The federal government has earmarked \$3.8 billion for implementation of its strategy. B.C. is collaborating with the federal government on critical minerals opportunities and investment in

B.C. The federal strategy has a list of [31 critical minerals](#) and an early prioritization of six critical minerals - lithium, graphite, nickel, cobalt, copper, and rare earth elements. Of the 31 elements on the Canadian critical minerals list, B.C. mines currently produce copper, molybdenum, magnesium, and zinc. B.C. also has advanced exploration projects focused on critical minerals such as nickel, cobalt, graphite, niobium, platinum group minerals, tantalum, and vanadium. Currently, the province produces over 50% of Canada's total copper², and is the only Canadian producer of molybdenum.

B.C. is well positioned to be a partner in the implementation of Canada's strategy. The federal strategy reflects many B.C. priorities such as clean growth, reconciliation with Indigenous Peoples, innovation, and investment in geoscience. In 2022, the federal government established bilateral [Regional Energy and Resource Tables](#) to collaborate on natural resource priorities, such as growing Canada's mineral resource wealth by utilizing long standing mineral expertise, extensive technology, mining capabilities, and abundant clean energy resources.

Interdependent Policy Priorities

The effectiveness of B.C.'s Strategy will be interdependent with continued progress in several other policy areas, including:

- Implementation of the [Declaration on the Rights of Indigenous Peoples Act](#) and the [Declaration Act Action Plan](#)
- [Mineral Tenure Act](#) modernization
- The [CleanBC Roadmap to 2030](#) (the CleanBC Roadmap) which sets out B.C.'s greenhouse gas emissions targets and corresponding actions (Paris emissions reduction targets for 2030 and net zero by 2050)
- Strong environmental protection laws and strategies
- A mining regulatory framework that protects the environment while ensuring competitiveness
- Development of a [Nature Agreement](#). B.C. is partnering with the federal government, industry, and communities, and working with Indigenous Peoples, to achieve the Nature Agreement's goals of 30% protection of B.C.'s land base by 2030,

Declaration on the Rights of Indigenous Peoples Act

The Government of British Columbia passed the *Declaration on the Rights of Indigenous Peoples Act* (Declaration Act) in November 2019. Developed in collaboration with the First Nations Leadership Council, the Declaration Act creates a framework for reconciliation in BC, in keeping with the Calls to Action of the Truth and Reconciliation Commission and creates a path forward that respects and furthers the inherent and human rights of Indigenous Peoples, including the rights of First Nations to own, use, develop and control lands and resources within their territories in B.C.

² [Copper facts \(canada.ca\)](#)

including Indigenous Protected and Conserved Areas³

- The [Old Growth Strategic Review](#) and modernized land use planning
- Implementation of the [StrongerBC Economic Plan](#), the Government's plan for inclusive and clean economic development in B.C.

These initiatives are foundational to B.C.'s critical minerals opportunity because they demonstrate the Province's ongoing commitment to being an ethical and sustainable jurisdiction in which to do business. It is essential that the Province maintains its momentum on advancing these initiatives as the Strategy is developed and implemented. ESG advantages provided by these interdependent policy priorities can be leveraged to ensure a balanced approach - maintaining competitiveness and attracting investment for the mining sector while continuing to work in alignment with the principles of sustainability, recognition and reconciliation with Indigenous Peoples, and economic prosperity for all British Columbians. Importantly, this balanced policy approach also provides increased certainty for all.

The First Nations Energy and Mining Council is leading the development of a First Nations Critical Minerals Strategy. Throughout the autumn of 2023 the First Nations Energy and Mining Council will host four workshops with First Nations with a goal of completing a strategy by January 2024. A *Critical Minerals Literacy Report for First Nations in British Columbia* has been recently prepared to assist with the development of their strategy.

Article 26 of the United Nations Declaration on the Rights of Indigenous Peoples states, *"Indigenous Peoples have the rights to the lands, territories and resources, which they have traditionally owned, occupied, or otherwise used or acquired. Indigenous Peoples have the rights to own, use, develop and control the lands, territories, and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as which they have otherwise acquired. States shall give legal recognition and protection to these lands, territories, and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the Indigenous Peoples concerned."*

B.C. and First Nations may consider aligning their strategies in 2024.

Key Areas of Focus

Through this Discussion Paper, the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) aims to gather a broad range of perspectives on the approaches B.C. can take to develop its critical minerals value chain. EMLI invites input on six areas of focus. A description of these themes, along with key discussion questions, can be found below.

³ [Minister Cullen mandate letter](#) p.4

1. Advancing Recognition and Reconciliation with Indigenous Peoples

The Declaration Act establishes the United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration) as the Province's framework for reconciliation. Government commitment to implementing the [UN Declaration](#) and adhering to the [10 Draft Principles that Guide the Province of British Columbia's Relationship with Indigenous Peoples](#) (10 Principles) will be central to ministry actions in moving forward.

A key part of implementing the UN Declaration involves advancing full and equal rights for Indigenous peoples, including the right to:

- Self-determination
- Participation in decision making
- Free, prior, and informed consent
- Determining and developing priorities and strategies for exercising their right to economic and other development
- The ownership, use, development, conservation and protection of their lands, territories, and resources

B.C.'s Strategy will highlight opportunities to grow the critical minerals value chain, with the goal of seeing greater First Nations participation in critical minerals development, through respect and recognition of First Nations rights and title, including an economic foundation to support First Nations title and rights, economic development, partnership, and employment opportunities. The Province is committed to developing trust-based relationships that respect and uphold title and rights of First Nations communities. This will support improved relationships and increased certainty between mining operations and the First Nations on whose territory the mining sector operates. For example, the Province has entered into a consent-based decision-making agreement based on Section 7 of the Declaration Act at a proposed mine in Northern B.C. This agreement advances reconciliation and honours jurisdiction in land-management decisions in recognition of First Nations' title and rights.

Identifying and acting on opportunities to promote further partnership, ownership and participation by First Nations in the critical minerals sector is an important goal. To this end, the federal government allocated over \$100 million in its 2022 budget to advance economic reconciliation with Indigenous Peoples, specifically through development of a [National Benefit-Sharing Framework](#) for major resource projects on Indigenous territory, and expansion of the [Federal Indigenous Partnership Office and Indigenous Natural Resource Partnerships Program](#), with part of the funding dedicated to capacity building to participate in critical minerals development.

In B.C., there is an opportunity to create targeted programs that build on current provincial revenue sharing and would complement federal initiatives and ensure that First Nations fully benefit from future critical minerals growth.

Discussion Questions:

- 1) How can BC increase opportunities for First Nations communities and other Indigenous-owned businesses to participate in critical mineral exploration, development, and supply chains?
- 2) What are the barriers that First Nations face in participating in resource development?
- 3) What are some ways to achieve the free, prior and informed consent of a First Nation?

2. Enhancing Public Geoscience

The mining sector is an important economic driver in B.C., creating good jobs and supporting the economy. However, mines are not possible without significant early-stage work prior to operation. Public geoscience information is the first stage in the mining life cycle and one of the principal enablers of mineral exploration.

The Province provides public geoscience to support mineral exploration through the B.C. Geological Survey (BCGS). BCGS is actively gathering new geological data, including geological mapping, geophysical surveying, and scientific assessments to better understand the critical minerals potential in B.C. This information enables B.C. to effectively position the province as a leader in sustainable critical minerals development and export. It allows government, First Nations, communities, and industry to better understand B.C.'s resource potential, participate in decision-making and realize benefits.

The BCGS will release a Critical Minerals of British Columbia Atlas, which includes detailed information on B.C.'s minerals found on the critical minerals lists of key allies and trading partners. The Atlas provides information on B.C. minerals and mines and provides baseline information on mineral potential. EMLI is also undertaking economic and market analysis to build on this foundational knowledge. Based on this information, the Province could consider prioritizing certain critical minerals and support further development of these resources across the value chain. Early prioritization considerations could include minerals that offer the greatest economic growth and employment opportunities, greatest impact to low carbon technologies, or greatest impact to Canadian supply chains.

Discussion Questions:

- 1) How should BC support critical minerals development through access to public geoscience?
- 2) Should BC consider prioritized attention to specific critical minerals and, if so, how should the priority be determined?

3. A Competitive Fiscal and Regulatory Environment

B.C. competes for global investment and B.C. producers of raw materials are price takers, not price makers in the international marketplace. Competitive regulatory and tax structures must be in place to maintain B.C. as an attractive jurisdiction for investment in Canada and to ensure the industry can grow jobs and sustain communities across the province. The federal critical minerals strategy includes initiatives to accelerate project development and provide targeted support to critical minerals development that could be reflected in a B.C. Strategy.

Mining project development can be a high-risk investment because of the high capital requirements and long lead times to develop mines. Government investment to increase the efficiency, transparency, and predictability of the regulatory framework can decrease investment risk by providing clarity and certainty for all stakeholders. As described in the [Regulatory Excellence and Continuous Improvement in the Mining Sector Intentions Paper](#), the Province is engaging in wide-ranging activities that support advancement of near-term mining projects into final investment decisions and reconciliation with First Nations, such as by improving B.C.'s statutory decision-making framework and advancing policy and legislative modernization. This ongoing work has resulted in successful outcomes, including the issuance of a *Mines Act* permit to the Blackwater Gold project in March of 2023 – a significant milestone that demonstrates the Province's ability to permit a major mining project with First Nations support in a timely manner.

Similarly, fiscal incentivization enhances B.C.'s mining sector competitiveness while providing a buffer against market volatility. B.C. has two mineral incentive tax credit programs:

- The [B.C. Mining Flow-Through Share Tax Credit](#)
- The [B.C. Mining Exploration Tax Credit](#)

Currently, exploration companies in B.C. benefit from Canada's unique flow-through share regime to secure financing. In 2021, flow-through share investment represented 69% of Canadian exploration financing. The Mining Exploration Tax Credit for flow-through shares makes the after-tax cost of qualifying flow-through, share-financed grassroots exploration expenditures in B.C. among the lowest in Canada. In 2022, Canada launched the [Critical Mineral Exploration Tax Credit](#), targeted at 15 of the 31 critical minerals on Canada's list. These programs show that governments can play an important role in the mining sector's competitiveness through fiscal policy, and there may be opportunity to modify B.C.'s fiscal framework to target critical minerals.

Additional Federal incentives such as the proposed [Investment Tax Credit for Clean Technology Manufacturing](#) and the [Strategic Innovation Fund's Net Zero Accelerator](#) target support for innovation, value added and manufacturing opportunities in the critical minerals sector.

Discussion Questions:

- 1) Are there new and/or existing fiscal tools that could support exploration, production, processing, manufacturing and recycling in the critical minerals sector in BC?
- 2) What areas of the regulatory system are creating barriers for critical minerals projects at different stages of the value chain?

4. Innovation, Training and Environmental Stewardship

The mining sector is transforming due to digitization, automation, workforce transformation, enhanced environmental stewardship and the transition to a lower-carbon future. This transformation offers an opportunity for the mining sector to enhance competitiveness, attract investment, and create economic growth while minimizing environmental impacts. Innovation can drive better environmental outcomes at mining projects, including the adoption of clean technologies, energy-efficient processes, and low-carbon solutions to reduce greenhouse gas emissions. For example, novel mineral processing approaches and water treatment processes can reduce water use and improve water quality.

The [Mining Innovation Roadmap](#) (the Roadmap) released in 2020 by the Mining Association of B.C. with support from the Province, recognizes the need to invest in research and development, technological advancements, and innovative processes to improve the efficiency and environmental performance of critical minerals extraction, processing, and recycling. The Roadmap emphasizes the need to support research and development initiatives, promote the adoption of advanced technologies, and foster collaboration between industry, academia, and government. The [B.C. Net Zero Innovation Network](#) and [B.C. Centre for Innovation and Clean Energy](#) are supporting innovation in the mining sector and the critical minerals and battery value chain.

Innovation requires a skilled and adaptable workforce. The [Mining Industry Human Resources Council](#) forecasts that up to 113,000 new workers will be needed by 2030 to meet new demand and replace workers anticipated to exit the mining workforce.

Through the [Future Ready Action Plan](#), the Province is committed to providing training opportunities and skills development programs to ensure workers have the knowledge and expertise required for the evolving economy. B.C. recognizes the importance of collaboration between industry, educational institutions, and government agencies to develop training initiatives that address the specific needs of the critical minerals sector.

Discussion Questions:

- 1) How can BC support research, development, and deployment of innovative approaches across the critical mineral value chain?**
- 2) How can BC grow the domestic labor supply and train the next generation of sector specialists across the value chain?**

5. Infrastructure and Climate Action

The CleanBC Roadmap prioritizes the Province's commitment to climate action and sustainability. The Roadmap recognizes the link between critical minerals and emissions reductions. There is emphasis on the importance of investing in clean infrastructure, such as renewable energy systems and electric vehicle charging stations, which rely on critical minerals. The development of sustainable mining practices and the reduction of the carbon intensity of mineral extraction and processing operations provide further areas of alignment with the CleanBC Roadmap and the Strategy. In addition, Implementation of the Roadmap included funding in 2022/23 to initiate a small critical minerals geoscience program to make incremental progress to the understanding of BC's critical mineral potential.

The CleanBC Roadmap focuses on electrification to decarbonize the industrial sectors of the economy, like mining, supports initiatives that encourage the use of renewable energy in mining operations and incentivizes the adoption of electric vehicles and machinery. By electrifying the mining sector, BC can reduce greenhouse gas emissions, improve air quality and promote cleaner and healthier communities near mining operations.

Investing in infrastructure for the mining sector supports the CleanBC Roadmap goals. Infrastructure opportunities include investment in power transmission and distribution systems, roads, port facilities, and in communities, ensuring benefits to those living near mines, as well as those working in the mining sector, while also benefiting other economic sectors.

Discussion Questions:

- 1) Where should government prioritize strategic infrastructure investments to best support critical minerals projects?**
- 2) How can varying levels of government and the private sector work together to support infrastructure and critical minerals development?**
- 3) How can new mining development be planned in a manner that advances economic development while meeting the Province's climate goals?**

6. Public and Investor Outreach

In recent years, there has been an increased focus on ESG investing, which explicitly considers environmental, social, and governance risk factors in investment decision making. A focus on ESG considerations provides a dual purpose for investors – it serves as a lens to help mitigate investment risks, and it provides a means to distinguish ethical investment opportunities. The Province is establishing an ESG Centre of Excellence (a [StrongerBC Economic Plan commitment](#)) to facilitate ESG investments in B.C., attracting socially and environmentally conscious investors, and diversifying markets for B.C.'s world-class goods and services under a respected and trustworthy ESG brand.

In the mining sector, B.C. has inherent ESG advantages, such as a commitment to reconciliation, low greenhouse-gas intensity mineral production and strong safety and labor practices. A commitment to continuous improvement, and provision of transparent information on ESG performance to the global investment community will be key to growing investment in the B.C. critical minerals sector and diversifying markets for B.C.'s goods.

At the same time, communication to British Columbians on the opportunities and implications represented by critical minerals growth is required. In 2019, the [B.C. Mining Jobs Task Force](#) found that there is a disconnect in public consciousness between technological advancements and the raw materials used to construct them, and a lack of understanding regarding the role that B.C.'s mining industry continues to play in supporting both rural and urban economies across the province.

Given the strong public support for meeting climate goals and adopting low-carbon technologies, communicating the role of critical minerals in this transformation is more important than ever. Engaging in meaningful dialogue around the future of this sector is key to building trust and ensuring responsible mineral development.

Discussion Questions:

- 1) How can BC best share our province's critical minerals opportunity with investors and buyers to encourage investment in projects and supply chains.
- 2) What can BC do to prepare communities to be ready for, and actively participate in, the critical minerals value chain?

Additional Considerations

We acknowledge that the development of a comprehensive Strategy is an ongoing process, and we value the input and ideas from the public in shaping it. While we have identified six areas of focus that we see as central to the Strategy, we welcome suggestions and insights beyond these areas. Your engagement and contributions will play a crucial role in refining and expanding the scope of the strategy to ensure its effectiveness and inclusivity. We encourage you to provide

feedback, propose alternative approaches, and share any additional perspectives that may enhance the overall framework of a B.C. Critical Minerals Strategy. Together, we can collaboratively build a strategy that addresses the diverse needs and concerns of our province.

Discussion Question:

1) Are there any other values or considerations in creating a framework for BC's critical minerals strategy?

Next Steps

We invite you to actively participate in shaping the Critical Minerals Strategy. Your feedback and insights are important to help inform the Strategy's direction. Please take this opportunity to provide your comments, ideas and suggestions via the online discussion forum and submissions regarding the discussion paper can be sent to the email address Critical.Minerals@gov.bc.ca. If electronic submission is not possible, please send your feedback addressed to:

Critical Minerals Secretariat
Ministry of Energy, Mines and Low Carbon Innovation
Responsible Mining and Competitiveness Division
Policy and Competitiveness Branch
6 – 1810 Blanshard Street
PO Box 9320 STN PROV GOVT
Victoria, B.C. V8T 4J1

We value your input. The feedback period will be open until November 5, 2023. All comments will be considered. Let's work together to develop a robust and inclusive Critical Minerals Strategy that meets the needs of our province.