NWT & NUNAVUT CHAMBER OF MINES

September 15, 2022

Jonathan Wilkinson
Minister of Natural Resources
Natural Resources Canada's Critical Minerals Centre of Excellence
By Email to: cmce-cemc@nrcan-rncan.gc.ca

Dear Minister,

RE: Canada's Critical Minerals Strategy

Thank you for your invitation to provide feedback on *Canada's Critical Minerals Strategy: Discussion Paper*. The NWT & Nunavut Chamber of Mines is pleased to provide our detailed comments in the attachment. With four advancing critical mineral mining projects in the NWT, and with our strong history of providing northern and Indigenous benefits from mining, we look forward to Canada's strong support for Critical Mineral geoscience, exploration and mining in Nunavut and the Northwest Territories.

Yours truly,

NWT & NUNAVUT CHAMBER OF MINES

Tom Hoefer
Executive Director

Attachment:

#4, 5120 – 49th Street, Yellowknife, NT X1A 1P8 Phone: (867) 873-5281 Fax: (780) 669-5681
Email: executivedirector@miningnorth.com Website: www.miningnorth.com

NWT & NUNAVUT CHAMBER OF MINES

2022-09-15 – Submission on Canada's CM Strategy Discussion Paper

Thank you for the opportunity to provide our comments on *Canada's Critical Minerals Strategy: Discussion Paper*.

Who we are

The NWT & Nunavut Chamber of Mines represents mineral resource explorers, developers, producers and their service and supplier companies in the Northwest Territories and Nunavut. The territories comprise approximately one third of Canada's land mass and have huge, untapped mineral potential. The industry is proving that mineral opportunities are significant, as are the growing benefits to northern communities and businesses. Our member companies continue to grow Indigenous economic reconciliation successes. However, so too are the challenges significant, from our large transportation, power and communications infrastructure deficits to lower education levels in our communities.

All minerals are critical to Canada's North

We would like to provide this important ***proviso*** to your work to develop Canada's first ever Critical Minerals Strategy, and that you provide this context in the final Strategy.

The proviso is that the public understand that development of all minerals is critical to Canada's North.

The mining of diamonds, gold and iron over the past 25 years has generated billions of dollars in tax revenues, and in business and worker benefits. It has provided tens of thousands of person years of employment. The northern minerals industry continues to be Canadian leaders in responsible development creating significant new Indigenous business, employment, tax and royalty benefits. The NWT and Nunavut private sector economies rely on, and are dominated by, mineral resource development.

It is critically important that Canada's Critical Minerals Strategy does not inadvertently diminish in Canadians' and Northerners' minds the importance of, and continued support for, mining of "non-critical" minerals. We do not want Canadians to turn their back on the many other important minerals that Canada mines, in a rush to support just critical mineral exploration, development and production.

Industry is Governments' partner in developing Canada

Additionally, the following perspective that could also be reinforced in the Strategy. It is context to the comments we are providing in this submission.

Mineral resources in Canada are owned by governments, provincial, territorial, Federal and also Indigenous on behalf of their constituents and beneficiaries. Industry does not own them.

Industry is invited by governments as resource owners to help them to find and develop mineral resources to help governments to fulfil their responsibilities to their constituents and beneficiaries. Industry brings its risk tolerance, its money, and its geological and mining expertise to help governments find and convert mineral resources to their mutual benefit.

This creates a partnership between industry and government; it's an offer and acceptance to help.

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The Critical Minerals Strategy reinforces this partnership for mutual success.

Answers to Discussion Questions for the Canadian Critical Minerals Strategy

Introductory context relevant to our Northern Minerals Industry

The Discussion Paper has a particularly powerful and salient paragraph (page 20), which describes the situation we face in Northern Canada. We recommend it be retained and grown in the final Strategy. It reads:

> *"Mining companies, particularly junior companies, face the challenge of raising the private investment required to reach the production stage. In rural, Northern, and remote regions, infrastructure gaps also hamper mineral development. To boost or develop new mine production, and to do so in a cost-effective and environmentally responsible way, the Government of Canada will look for opportunities to partner with the private sector in financing new projects, support building the necessary infrastructure for priority deposits, advance innovation to improve efficiency and environmental performance, strengthen Indigenous engagement, and streamline regulatory and permitting processes."*

We will build on many of these points below.

In addition, there are 4 new critical mineral projects advancing closer to mining in the NWT, with one of them already mining on a small scale. It is critically important that they all become mines as they will all be required to offset the closure of the first diamond mine. In addition, they will of course contribute to Canada's production of critical minerals.

- **Nechalacho, NWT – Rare Earth Elements (REEs)**

Nechalacho has become Canada's first REE mine, producing small tonnages to develop a viable supply chain. The proponent needs to increase production by ten times in the near future and presumably will undergo a new approval and regulatory phase process. It is off the highway and removed from the hydropower grid, and must use diesel to generate electricity. Because no commercial refineries are available for REEs in Canada, the company has also been required to develop its own refining facility in Saskatchewan.

- **Prairie Creek, NWT – Zinc, silver, lead**

This project is off the highway and hydropower grids, and is in the financing stage to construct a 180-km long all-season road to supply its future mine site and to truck concentrates out to markets. With a road, it will have the option of using LNG for power, rather than diesel.

- **NICO, NWT – Cobalt, bismuth, copper, gold**

This project is off the highway and removed from hydropower grids. The proponent plans to construct a 50-kilometre all-season road to reach the highway system, to allow cheaper resupply, and to transport its mineral products to market. Despite being located only 22 kilometres from the Snare hydropower facility, there is insufficient capacity on that grid to power the mine. As a result, and because of road access, the company plans to use LNG for power. Because of its exotic mineral mix, there are no existing refineries that can upgrade their concentrate for markets, and they plan to build a refining facility in Alberta.

- **Pine Point, NWT – zinc, lead**

This project is planning to resume mining of a historical mine site, also called Pine Point. Because of the government's support for the previous mine, the site is served by hydropower, road and nearby rail. However, today there is insufficient hydropower on the Taltson grid, and the proponent will have to use LNG and/or alternative energy to augment limited hydropower supply.

Answers to DISCUSSION QUESTIONS

Prioritization and Areas of Focus

Question: Do you concur that the value chains identified and their associated minerals offer Canada the greatest opportunities for economic growth?

Answer: Canada has a tremendous opportunity with critical minerals to move beyond the "hewers of wood, drawers of water" history and build an integrated supply chain from mineral exploration to production to refining to manufacturing and recycling.

In addition, given recent events that have highlighted the problems with extended global supply chains, we need to do more at home in developing our own production in conjunction with our allies of most commodities, manufactured goods and services. We cannot throw away opportunities for economic growth with a "Not In My Back-Yard" attitude and become more reliant on external jurisdictions with poor ESG standards and very different world views and ambitions. More minerals should be considered critical such as iron ore and metallurgical coal as steel will remain critical for all peace-time infrastructural and consumer societies needs as well as a military imperative. The uncertainties over the Baffinland mine are a prime example of mixed priorities due to lack of understanding of the importance of a commodity like iron ore. Natural gas could also be seen now as a critical commodity given the current geopolitical issues caused by a dependency on unfriendly regimes and risky supply chains. We are a resource nation. Our advantage are our resources. Let's seriously start developing our own resources.

Question: Are the six areas of focus and their associated objectives the right ones to help Canada achieve its vision on critical minerals for domestic and global value chains?

Answer: Yes, the 6 areas below cover a sufficiently wide range of objectives.

Drive Research, Innovation, and Exploration

Question: What are priority areas for research programs (academia, industry, governments)?

Answer:

For many critical minerals, e.g., lithium, rare earths, bismuth, there are no established processing facilities or technologies in Canada to isolate these minerals and to produce products for down stream use. Canada should assist companies in developing and financing the new technologies required.

- **Our Recommendation: Canada should support research to improve process technologies to recover metals from complex ores, concentrates, silicates, brines, tails and other waste products, and to develop new methods to stabilize and dispose of waste products making refineries easier to develop and operate in Canada. Research could also be directed toward determining new commercial uses for mining and refinery wastes such as tailings, slags and process residues to make aggregates, fillers, chemicals and other commercial products.**

Question: What more should be done to drive critical mineral exploration and innovation?

Answers:

Natural Resources Canada's exploration investment statistics show that investment has declined quite steadily in the NWT and Nunavut and today they capture the lowest share of Canadian investment.

Such low exploration levels are not adequate to sustain and grow the strong community and government benefits that the minerals industry has been able to create in recent years. (see, for example, NWT government data). Work is required to increase exploration investment in the North.

We congratulate Canada on its decision to double the Mineral Exploration Tax Credit (METC) to 30% for critical mineral exploration.

However, a national METC at any level does not offer the north any advantage over the provinces. In fact, because the strong mining provinces also offer additional provincial mineral exploration tax credits, the north falls further behind as exploration investment favours those jurisdictions.

We have recommended a special, northern focused North of 60 METC (N60METC) of at least 40% to help level the northern playing field with the south and help attract much needed new exploration investment to the North. This would help find new critical and other mineral deposits.

All three territorial finance ministers submitted a request to Canada to support such a N60METC, and even with supportive comments from the Federal Northern Affairs Minister, we still have not seen it created.

- **Our Recommendation: Canada use the Critical Minerals Strategy and / or other tools to rejuvenate exploration with a North of 60 Mineral Exploration Tax Credit.**

Geoscience research and investment in northern Canada is not as advanced as in southern Canada.

With global focus now on critical minerals, more research and geoscience is required on these specific minerals to help industry focus in on specific geological regions to focus their exploration efforts.

- **Our Recommendation: Canada provide additional geoscience funding in northern Canada to investigate potential geological environments for Critical Minerals.**

As stated earlier, many Critical Minerals concentrates cannot be processed in existing smelters and refineries in Canada. Domestic process facilities either do not exist or, the existing facilities are not configured to process complex concentrates and ores containing technology metals. Typically, they do not have acceptable metallurgical recovery performance because they are optimized to recover base metals from traditional ores and concentrates. The existing refineries cannot, or their owners will not, invest in facilities to recover important by-products contained in complex feeds that might otherwise contribute revenues and are needed in new technologies. Commonly, by-products are assessed with excessive and punitive penalty charges reducing the value of the concentrates.

The additional costs for developing metallurgical flow sheets, and permitting, constructing, and operating a downstream process facility can double the capital costs for a new project, making the threshold for economic viability higher and increasing the financial and operational risks associated with the project.

- **Our Recommendation: Canada provide funding to reduce the financial burden of the higher capital costs and development risks associated with constructing downstream process plants. This support could come in the form of development grants, low interest loans, loans with attractive grace periods and other covenant for re-payment, or sovereign debt guarantees to make a project more attractive to commercial lenders.**

There needs to be better access to lands that are not sterilized by new parks, protected areas and Indigenous land claims, particularly in Canada's North where mining is essential to the local economy and to territorial Gross Domestic Product ("GDP"). The North has a robust co-management regulatory system that should allow for better decisions to be made in protecting lands without having to sterilized them from development by creating more parks and protected areas.

Expediting the settlement of unsettled Indigenous land claims could help with land access.

Already in the NWT, approximately 30% of the land is off limits to resource development. In Nunavut, a land use planning process is proposing at least as much or more be off limits. Additional initiatives by various government departments are underway for additional protections.

- **Our Recommendation: Given the north already has sufficient lands conserved, Canada should slow the conservation of lands where boundaries are drawn that put lands off limits forever to resource development. Government should instead rely on the co-management boards and the regulatory system to protect environmental values.**

Accelerate Project Development

Question How can we streamline the regulatory processes to better facilitate project development?

Answer:

Regulatory processes are unique in northern Canada. They are based in Indigenous land claims and comprise a suite of co-management regulatory boards representing Indigenous and public governments. Because of their transparency and Indigenous participation, these processes have high value in ESG assessments of our jurisdictions.

However, these processes have become quite complex over time and there are areas where improvements are needed.

An example of this is identified in the *2020 NWT Environmental Audit* required under legislation, which observed that the treatment of early exploration projects is too onerous now, quote: "Despite the efforts of LWBs, small exploration companies continue both to struggle with the application process and to meet its requirements. If allowed to persist, this disconnect between industry and regulators will continue to affect the level of exploration activity in the territory which, in turn, will affect the NWT's socio-economic environment." We continue to try and find a path through this.

The Federal Minister has the authority to provide policy direction to boards, and that tool could perhaps be used to help make improvements to assist with critical mineral strategy goals.

- **Our Recommendation: Canada investigate using policy direction to the Boards to find speedy improvements to assist with the advancement of critical mineral development for Canada.**
- **Further, Canada should fund regulatory boards with additional resources where justified to make regulatory improvements that support the advancement of mineral development. The process is too slow, too cumbersome and no timeline for expectations.**

Another example, water regulations in the NWT now make it very difficult for early-stage explorers to explore with multiple drills, something which is easier in many provinces. This would require regulatory change to make appropriate adjustments.

Additionally, consultation requirements under northern regimes has become complex for many investors. In other jurisdictions, government has adopted that role on behalf of the mineral exploration process. This should be considered in northern Canada too to help expedite exploration.

- **Our Recommendation: Canada work with territorial regulators to find changes that will still serve to protect the environment and to be transparent, but be more competitive with**

other jurisdictions, protect the environment and match the level of risk that a project provides.

- **Additional considerations include:**
  Impose mandatory timelines such as other jurisdictions (Ireland, Australia) with specific consequences and remedies if the regulatory bodies do not meet the deadlines
  Create a standard for all lower jurisdictions to follow similar to Canada Health Act to promote a minimum operating standard
  Provide funding for the above (as they have begun to do so) – should be very targeted to results
  Facilitate cross-jurisdictional cooperation either through a central office or steering committee etc.
  Fast track early exploration and critical minerals permitting

Feedback we received also included recommendations related to the stock market.

The number one issue facing junior mining companies is a terrible stock market. Unless investors stop getting burned, and actually start to make money on their junior mining investments, there will be no sustained mining development in this country.

Some recommendations:

- The Canadian Government needs to double down with the Securities Regulators at the Provincial Level to make naked short selling illegal, and a massive financial penalty for anyone conducting such trading activity.
- Tax Credits and Incentives for the largest financing institutions in this country related to making investments into junior mining companies – critical mineral specific. The former includes open market buying for portfolio diversification. For example, our Pension Funds. This in turn would generate sustained buying and reward the retail investors that are taking the risks at the early-stages that most Critical Minerals projects in this country are at…plus if we're lucky, maybe even encourage green-fields exploration as well.

Build Sustainable Infrastructure

Question: What regional infrastructure gaps must be addressed (e.g., transportation and clean energy) to enable the sustainable development of Canada's critical mineral resources?

Answers:

Northern Canada suffers the largest infrastructure deficit in Canada, with few roads, hydropower grids, ports, communications, etc.

Today, most projects in Canada's North must fund the construction and operation of their own access roads, airports, power plants, ports, camps to accommodate workers, and must construct additional tankage and warehousing to support a year of operations if access is seasonal. The lack of infrastructure in Canada's north can more than double the capital costs for a new Critical Minerals development and can also compound capital costs with additional bonding costs for new developments. Operating costs are also higher for maintaining the additional infrastructure and the costs for transporting and accommodating a rotational work force, further inflating the costs in otherwise high-cost jurisdictions. Consequently, the threshold for economic viability for a project in Canada's north are significantly higher and project finance and development risks are higher.

An industry study revealed that this results in exploration costs up to 6 times higher, capital construction cots of mines up to 2.5 times higher, and operating costs 60% higher.

In addition, the lack of hydropower or other green power, including Small Modular Reactors, means mines and communities must rely on diesel for energy. In many cases, with only seasonal shipping they cannot augment diesel with LNG which has a shelf life. And where companies wish to add alternative energy like solar and wind, they do so at extra costs as they still need to maintain fossil fuel power backup.

Higher costs make the north less attractive to exploration investment and less competitive in the market place.

From an ESG perspective, using diesel for energy reduces the north's investment attractiveness and we are learning that other jurisdictions like Quebec with so much hydropower becomes an investment destination of choice.

From the 1940s to the 1970s, Canada helped support mining projects in northern Canada to overcome the infrastructure and other challenges. See historical examples of *Federal Government Historical Support for Transportation Infrastructure*. In some cases, they were grants, and in other cases the investment was paid off over time by industry through rail or power tolls.

We are very encouraged with the wording in the Discussion Paper that: "*… the Government of Canada will look for opportunities to partner with the private sector in financing new projects, support building the necessary infrastructure for priority deposits, advance innovation to improve efficiency and environmental performance, strengthen Indigenous engagement, and streamline regulatory and permitting processes.*"

It is important to recognize that these infrastructure investments for resource projects typically become legacy facilities to support stronger communities with improved access to lower the cost of living and provide government services after the mineral resource has been depleted. Good historical examples from the NWT of legacy infrastructure from the mining industry include: the Snare, Taltson and Blue-fish hydro dams and electrical grids, the Pine Point railway, the highway to Yellowknife, and many of the airports and inland port facilities that now provide important public infrastructure.

- **Our Recommendation is that Canada uses the Critical Minerals Strategy to designate the four critical mineral projects in the NWT as priority deposits and assist them in building the necessary road and/or power infrastructure required.**
- **Further, that government support the cost of infrastructure investments associated with resource development projects with subsidies or grants for roads, airports, railways, ports and power plants, particularly for projects with infrastructure that would also benefit communities or Arctic sovereignty.**
- **Small Modular Reactor technology should be championed so that Canada can become a world leader again (like CANDU) in safe nuclear technology for the benefit of the North, the rest of Canada and the Developing World. This would also assist with another Canadian critical mineral, uranium.**

There is no clear area to identify recycling in these 6 areas of focus. World demand projections for critical minerals is bizarrely high, and we cannot just let new mines supply those needs without responsible efforts to recycle wherever possible.

- **Our Recommendation: Canada should support the domestic recycling of manufactured products including electronics and spent batteries.**

Advance Indigenous Reconciliation

Recommend that "Northern Development" be added to the title. We must take advantage of critical minerals to leverage the north into a stronger socio-economic position with respect to infrastructure, education and training, and reduced economic leakage.

Question: How can Indigenous governments and organizations, communities, and individuals partner and participate in critical mineral value chains (including regulatory processes)? How can government and non-Indigenous industry proponents support this effort?

Answers:

In the north, the co-management style of regulatory system based in Indigenous land claims, already provides for strong Indigenous participation in the regulatory system.

In addition, Indigenous participation in mining is also strong.

The northern mining industry has made major advancements in Indigenous training and employment and business development. Over the past 25 years, the mining of diamonds, gold and iron has generated billions of dollars in tax revenues, and in business and worker benefits. It has provided tens of thousands of person years of employment. The northern minerals industry continues to be Canadian leaders in responsible development creating significant new Indigenous business, employment, tax and royalty benefits. As a result, the NWT and Nunavut economies rely on, and are dominated by, mineral resource development.

Canadians should remember that socio-economic empowerment and self determination and Indigenous Reconciliation is dependent on self reliance and self sufficiency. For our Northern Communities and Indigenous Peoples to thrive they must be able to develop the mineral resources on their lands or forever be State supported and locked into an economic dependency trap.

We must maintain and even grow this significant progress towards Indigenous reconciliation. There is more opportunity for Indigenous employment for example. However, education levels are below the Canadian average, and not many youth are aware of the exciting and varied career opportunities that resource development provides, including critical minerals.

- **Our Recommendation: Focus efforts on mineral literacy in northern and indigenous communities and schools in order to attract more Indigenous and Canadian youth to mineral industry careers.**

In the NWT, diamond mining is maturing and the closure of the first diamond mine in 2025 threatens significant socio-economic benefits they have grown over the past 25 years.

There are four new mining projects advancing in the NWT and the benefit of all four will be required to offset the closure of the first diamond mine. It is critically important that they all become mines.

- **Our Recommendation: we recommend that the four advancing CM mines in the NWT be declared priority deposits for government support to help ensure they meet this window of critical mineral opportunity.**

Further, that government also provide opportunities to assist these projects to their mining phases with road and power infrastructure assistance. Further, that governments encourage youth to stay in school and reach higher education levels, to educate them on meaningful and exciting career

opportunities in the mineral industry field to attract new workers, and to support training programs to make northern and Indigenous residents valuable workers.

Further, we encourage governments to help Indigenous communities with business capacity development assistance to be able to take advantage of these mining opportunities. There is much success that has been achieved that can be built upon in the NWT and Nunavut. But more is required.

Note: supporting mineral literacy, education, training, and business development in Indigenous communities will also be of benefit to any other non-critical mineral mining projects and is a positive that should be sought.

An area that requires more work by governments is in Indigenous equity participation in resource development.

- **Our Recommendation: Canada should consider it can advance Indigenous Equity Participation in resources owned by Indigenous Governments so that project can be developed in true partnership with Indigenous peoples learning and directing the resource extraction businesses on their own land.**

Grow a Diverse Workforce and Prosperous Communities

Question: How do we leverage critical minerals investment into more diverse skills training, employment, and regional outcomes, including for local, rural and Indigenous communities?

A majority of the mining workforce in the north resides in southern Canada and flies in and out to work. This is a significant economic leakage that the north loses out on. The problem does not lie with companies, rather with low education levels in schools, drug and alcohol problems and worker reliability, low mineral literacy with too few understanding how the minerals industry works, nor the 100+ meaningful and lucrative career opportunities available to those who want them.

- **Our Recommendation: Undertake deliberate planning with communities, governments and companies to raise the level of northern employment at mines by improving community education levels, by raising mineral industry literacy within communities, by capturing the interest and abilities of youth to take up careers in the minerals industry. Imagine the improvement to individuals' lives and community health if we could double the northern employment.**

Many communities and residents in the north (and likely Canada too) do not realize how much the minerals industry benefits them. In the north, communities could see a billion dollar mine constructed and operating in their region, yet still suffer from sub-adequate housing and other community infrastructure. Too often it seems that the royalties, taxes and other financial contributions of mining disappears into government coffers, and loses its "mining" source identity. Communities are often critical that they are not benefitting. It would seem logical that if significant development occur in a region, that there are tangible benefits felt by communities.

- **Our Recommendation: Government should communicate better with communities the unseen benefits that resource development provides them. Additionally, governments should find ways to clearly link the positive consequences of resource development to positive consequences for communities like housing.**

Strengthen Global Leadership and Security

Question: How might the Government work with its partners and stakeholders so that greater value is placed on high ESG standards throughout the value chain?

Canada has some of the highest standards for ESG in the world when mineral developments are considered. Consequently, this makes Canada one of the best locations for the development of new Critical Minerals projects - not only at the mining stage but also through the refining of mineral products and their use in manufacturing and by society generally. Canada can be a world leader in this area given its wealth of mineral resources and the knowledge and skills that Canadians have to offer throughout the entire value chain for Critical Minerals and their use in EV's and other new technologies.

The Environmental and Social standards and practices do not come easily unless there is transparent and fair governance. Canada should remain a beacon of governance by requiring greater transparency at all levels of Government to benefit the Peoples and encourage investment. This should be part of Indigenous Reconciliation.

ESG is a growing requirement to capture investment. There is growing discussion and recognition that an "I" for Indigenous should be added to ESG. We recommend that Canada help move this forward. A selfish reason is that in northern Canada, in particular, a very good job is being done to provide Indigenous benefits from mineral development, which may be largely lost in ESG checklists. At the same time, we are forced to use fossil fuels for resource extraction, which counts against ESG, through no fault of resource developers. Indigenous benefits can help offset the fossil fuel penalty. Governments – public and Indigenous – could help address this.

- **Our Recommendation: Government investigate and take actions to have Indigenous reconciliation a significant part of ESG assessments.**

Because of the lack of road and hydropower grid infrastructure, most northern mines, along with communities, rely on diesel for energy. One mine has installed four wind turbines to help offset 10% of its power needs with wind. Others are considering this as well. Lack of green energy puts northern projects at an ESG disadvantage. It is ironic that our critical mineral mines – minerals that can help with climate change – are forced to use diesel fuel. Offsetting ESG credits for Indigenous reconciliation could help, but ultimately replacing diesel with cleaner energy is the goal.

- **Our Recommendation: Government assist mining projects with green infrastructure, advancing and connecting Taltson hydro to the Snare hydro system in the NWT, advancing Kivalliq-Manitoba hydro in Nunavut, advancing and trialing small modular reactor technology in the north, providing funding assistance for alternative energy from LNG for those who have all-season road access, to solar to wind options.**

Detailed comments page by page:

Page 2	Recommend a statement to start the text like this: *Mining is important to Canada's economy, and in many parts of the country, a variety of minerals from diamonds to iron to copper to nickel are, and will continue to be, critically important to provincial and territorial economies.* *Critical minerals are an added opportunity as they are essential inputs …*
Para 1	Agree small modular reactors are included as important to address climate change.
Para 3	Recycling is an important component of critical mineral supply. The demands for critical minerals as forecast by IEA to meet Paris Accord goals is mind-boggling, and it will be important that the supply is provided not just by new mines, but by efficient recycling of products into the supply chains.
	Add that the Critical Minerals Strategy will allow the value of critical minerals development to help leverage the advancement of a huge, unique and largely undeveloped northern Canada and its infrastructure and its residents.
Page 4	Building Blocks Projections we have seen from the International Energy Agency indicate even higher demand to reach Paris Accord commitments including: 42 times the lithium required, 25 times graphite, 21 times cobalt, 19 times nickel, and 7 times rare earth elements.
Page 5	Regarding the current list of Canadian critical minerals: - Revising the list of CM's every three years may prove challenging, particularly with METC tax filings. - Has there been consideration of adding silica sand to the current list? Information is showing that China has now become the dominant producer of polysilicon required for the manufacture of solar panels and could soon occupy 90% of that production. We note that sand is on Australia's list of critical minerals also because of its demand for electronic components.
Page 5	Early Prioritization Last paragraph: Add "climate change" to the end of the first sentence, for uranium will be also critical to not just the global economy, but reducing carbon emissions from power production and mitigating climate change.
Page 6	Given the huge projections for supply growth provided by the IEA, recycling will be very important. Without it, there would be a huge need for mining alone to provide all the supply which could be problematic from a social acceptance perspective.
Page 7	High quality silica sand can fit under all uses of CM's describe here: clean technologies, semiconductors and composites. See our comment above on page 5.
Page 7	ESG is a growing requirement to capture investment. There is growing discussion and recognition that an "I" for Indigenous should be added to ESG. We recommend that Canada help move this forward. A selfish reason is that in northern Canada, in particular, a very good job is being done to provide Indigenous benefits from mineral development, which may be largely lost in ESG checklists. At the same time,

	we are forced to use fossil fuels for resource extraction, which counts against ESG, through no fault of resource developers. Indigenous benefits can help offset the fossil fuel penalty. Governments – public and Indigenous – could help address this.
Page 8	These are good opportunity and objectives.
Page 8	Promote climate action and environmental protection. Canada did a good thing to leverage the value of mineral resources in the 1940s and 1960s to establish green hydropower (Snare and Taltson) in the Northwest Territories that was largely paid for by mining usage fees, but has far outlasted those mines to become legacy infrastructure for residents and for the region. This model can be used again if Canada partners by assuming the heavy lifting in financing capital construction of new power and infrastructure projects, and recouping it over time.
Page 8	Enhance global security and partnership with allies. Best practices: Governments lobby to have the "I" for Indigenous added to ESG as previously stated, above.
Page 9	**Advance Indigenous reconciliation [**and Northern Development] Recommend that "Northern Development" be added to the title. We must take advantage of critical minerals to leverage the north into a stronger socio-economic position with respect to infrastructure, education and training, and reduced economic leakage.
Page 9	**DRIVE RESEARCH, INNOVATION, AND EXPLORATION** In the North, we know where so many of the critical minerals are. We need infrastructure to help access them. Thus the arguments above to get it using CM's.
Page 10	Discussion Question - Q. What more should be done to drive CM exploration and innovation? - A. Provide infrastructure in the north. Help unique critical mineral projects to develop the customized extraction and refining technologies that is not available in Canada.
Page 11	First para, reference to developing projects in a more robust manner. Resource developers in northern Canada are often doing so on a small margin, due to the lack of infrastructure, remoteness, climate, etc. making the costs much higher. As a result, too many northern projects have sought bankruptcy protection, taken write downs, or even closed. Mining projects in the north are often not as robust as mining the same deposits in the south. We need the CM Strategy to help leverage improved and cost efficient infrastructure, to help with this robustness.
Page 11	First bullet: We have a unique polymetallic deposit in the NWT called NICO and another called Nechalacho that require unique processing not available commercially in Canada to capture their critical minerals. This fund could assist.
Page 11	Second bullet:

	Similarly with respect to robustness, exploration investment is not robust in the North. Yet exploration is key to mining success and sustainability. Exploration investment in the North continues to underperform what's required. This is due in no small part to overly complex regulatory processes. This $40 million investment to support northern regulatory processes perhaps could correct this. More powerfully perhaps, is if the Minister of Northern Affairs provides Ministerial Policy Direction to the Boards for urgent improvement under the powers he has in the Mackenzie Valley Resource Management Act.
Page 11	**BUILD SUSTAINABLE INFRASTRUCTURE** Be specific and speak to the particularly challenging (and the highest in Canada) infrastructure deficit in the North. It's negative effects need to be addressed to harness the north's full mineral and people potential by levelling the playing field. (The link is to a report produced by the minerals industry on just how much more expensive exploration and mining is in the north because of the infrastructure deficit.)
Page 12	Discussion Question: What regional infrastructure gaps must be addressed (e.g., transportation and clean energy) to enable the sustainable development of Canada's critical mineral resources? Transportation and power infrastructure are really needed in the north, as we have described throughout this report. That would include roads and ports (e.g., Slave Geological Province Road, Gray's Bay Road and Port, Taltson and Kivalliq hydropower, solar and wind technologies, and Small Modular Reactor technology). There is an irony when Canada's first REE mine must use diesel because there is no green hydropower in the vicinity for it. There is a proposal with Taltson power that might help, but it will need significant Federal funding, and a faster track than is projected right now for 2030 energy flow.
Page 12	**ADVANCE INDIGENOUS RECONCILIATION** It is essential that we collectively equip and upskill Indigenous workers for participation in the resource sector.
Page 13	First para: The commitments made in Chapter 7 of Budget 2022 to create a National Benefits-Sharing Framework are good. We would recommend that in addition to leaping into early engagement and capacity building that investment be made in **communications**. There are many Canadians, including Indigenous Canadians, who do not understand how resource development works, and importantly, the 100 or more career opportunities available to them. We believe it is critically important to invest in communications and perhaps in the vernacular of NRCan to increase **mineral literacy** as committed to under the CMMP. Investing in programs like MiningNorthWorks! and MiningMatters can help.
Page 13	Discussion Question: How can Indigenous governments and organizations, communities, and individuals partner and participate in critical mineral value chains

	(including regulatory processes)? How can government and non-Indigenous industry proponents support this effort? In northern Canada, Indigenous governments are already by law part of the regulatory processes. It is unique in the country, and is a valuable contributor to ESG ratings. Indigenous northerners are already participating in other northern mineral supply chains, notably diamond, gold and iron mining. This participation could be increased with education and with communications to help the public support the CM strategy as it will help "heal the world" by addressing climate change. Communications and education should be focused in Indigenous communities too to get kids to stay in school, and to pick lucrative and meaningful careers in the minerals industry. Governments – public and Indigenous – along with industry need to encourage participation, and support for development. We are trying to help with MiningNorthWorks! but could use help.
Page 13	**GROW A DIVERSE WORKFORCE AND PROSPEROUS COMMUNITIES** Training and reskilling workers can be important in northern Canada too, where diamond mining is maturing and critical mineral mining is beginning. We have not seen any discussions yet on transitioning workers from one kind of mining to another.
Page 14	Answers to Discussion Question: How do we leverage critical minerals investment into more diverse skills training, employment, and regional outcomes, including for local, rural, and Indigenous communities? Prepare communities with increased mineral literacy so there is more reason to get support for projects that they understand. Encourage participation in regulatory processes. Put training and education programs into place to maximize opportunity to communities and Indigenous residents to learn about exciting and meaningful careers in the minerals industry, and stay in school to help increase their employability. Transition of diamond mining to critical mineral mining in the NWT
Page 14	**STRENGTHEN GLOBAL LEADERSHIP AND SECURITY** In regards to "we have a role to play in powering the green and digital economy at home and around the world", Canadians should be proud to do our part and through the Critical Minerals Strategy. A communications strategy should be attached to the CM Strategy to help this happen, e.g.: "We are in a war on climate change, and we all must do our part."
Page 15	Answer to Discussion Question: How might the Government work with its partners and stakeholders so that greater value is placed on high ESG standards throughout the value chain? Lobby to have the "I" for Indigenous put into ESG. See previous comments. That will give us some ESG points.

	If Canada can finance green energy through infrastructure investment on Taltson hydro in NWT and Kivalliq Hydro in Nunavut, then we can offset a great deal of diesel and help address that negative in the ESG scoring. Similarly, investment in all season roads can help replace diesel with LNG, a cleaner fossil fuel.
Page 16	Add the Arctic & Northern Policy Framework here. It can have a strong role in supporting the CM Strategy in northern Canada.
	APPENDIX B: CANADIAN CRITICAL MINERALS
	Can silica sand be added? It is on Australia's list. Recent information shows China has now claimed global dominance in polysilicon for solar panels and other electronic uses. We have some very high quality silica sand deposits in the southern NWT that could fill that gap.
	APPENDIX C: BUILDING CANADIAN VALUE CHAINS Upstream – Mining or Extraction 3rd paragraph: Mining has done very well in creating Indigenous benefits. With the efforts of governments and communities, industry can help advance this into CM production.
	4th PARAGRAPH IS EXCELLENT AND SHOULD BE A PRIORITY: This is a particularly powerful paragraph on page 20 that we recommend is retained and even strengthened in the final Strategy. It reads: *"Mining companies, particularly junior companies, face the challenge of raising the private investment required to reach the production stage. In rural, Northern, and remote regions, infrastructure gaps also hamper mineral development. To boost or develop new mine production, and to do so in a cost-effective and environmentally responsible way, the Government of Canada will look for opportunities to partner with the private sector in financing new projects, support building the necessary infrastructure for priority deposits, advance innovation to improve efficiency and environmental performance, strengthen Indigenous engagement, and streamline regulatory and permitting processes."* We would observe that project specific support as offered here is what Canada provided its North from the late 1940s to the mid-1970s, with such things as hydropower, rail, roads, sea and air ports, and communities development. That Government really support helped advance the largely undeveloped north and its residents to a more modern, healthier state. Renewed partnership support by Canada with industry and communities in the development of critical minerals offers the chance to resume and further advance the country's North by leveraging the value of its mineral resources. We recommend that the final Strategy continue to advance this theme with appropriate actions for the North, perhaps enhanced through Canada's *Arctic & Northern Policy Framework*.

	APPENDIX C: MAP OF CANADIAN CRITICAL MINERALS There is a good region of copper and zinc critical minerals across the lower SW portion of the NWT you could highlight (that includes Pine Point, Prairie Creek, Coates Lake, Wrigley). There is also a sister geological basin to the Athabasca Basin in SK which makes it a global uranium producer, and it's called the Thelon Basin in Nunavut. You could highlight that region as well given the growing need and support for nuclear power.