



DISCLAIMER

Since the official launch of the Canadian Minerals and Metals Plan (CMMP) in March 2018, the Secretariat, on behalf of federal, provincial and territorial governments under the Intergovernmental Working Group on the Mineral Industry, has engaged with governments, Indigenous peoples, industry, ENGOs, and public stakeholders on the future of mining.

The summary presented in this report represents the variety of perspectives and expertise heard during engagement activities all across the country, including experts meetings with industry and civil society, workshops and bilateral meetings.

This report summarizes what the Secretariat heard from stakeholders up until the end of July 2018. Further reporting (i.e., Part II) will be released as the Secretariat continues their engagement in the fall.

The input presented in this report has not been adjusted outside of the requirement to categorize the range of ideas discussed under the pillars. Statements made in this document are not consensus-based and should not be viewed as such.

The ideas and views compiled in this document are from CMMP-related engagement activities and do not necessarily represent the views of the Intergovernmental Working Group on the Mineral Industry or its individual members.

ACKNOWLEDGEMENTS

The ideas and views presented in this report could not have been possible without the countless contributions of partner associations and organizations, and dedicated Canadians. We would like to thank our provincial and territorial counterparts, organizations and associations for dedicating time to organize and participate in the CMMP expert roundtables and workshops.

Members of the Intergovernmental Working Group on the Mineral Industry thank you for making CMMP engagement sessions across the country a success.



THE CONVERSATION

YUKON AND NORTHWEST TERRITORIES

Whitehorse and Yellowknife (June 11–15)

BRITISH COLUMBIA

Houston (April 25), Vancouver (April 24, May 6–9, June 19, July 16)

ALBERTA

Calgary (June 14), Edmonton (July 25)

SASKATCHEWAN

Saskatoon (May 3–4), Regina (June 26)

MANITOBA

Winnipeg (June 20)

ONTARIO

Sudbury, Toronto, Ottawa (April–June)

QUEBEC

Québec (June 15)

NOVA SCOTIA AND NEW BRUNSWICK

Fredericton (Nov. 6, 2017), Halifax (May 25)

NUNAVUT

Iqaluit (April 11, July 26–27)



ANALYTICS



60+
In-person
Engagement
Sessions



20+
Expert
Report
Submissions



7,150
Unique
Visitors



1,236
Quizzes, Survey
and Comments
Submitted



602
Ideas on
Social Media

RESULTS FROM OUR ONLINE QUIZ

50% of people knew that there are **>61** minerals and metals in an iPhone

1 in 3 people knew that **GOLD** is Canada's leading mineral by value of production

76% of people knew that in the mining industry, a cage is a device (similar to an elevator) used for hoisting personnel and materials



ECONOMIC DEVELOPMENT AND COMPETITIVENESS

YOU SPOKE, WE LISTENED

Canada is falling behind its competitors, which calls into question the long-term sustainability of Canada's mining industry. We have strong potential to capture and retain a vital share of the evolving resource market globally and to strategically position mining in the modern, low carbon economy.

Canadian jurisdictions have developed a reputation for regulatory complexity, time delays and costly impediments to investment, despite the fact that many of our environmental, and health and safety systems, are regarded as world-leading.

To remain competitive, Canada needs to focus on incentives and programs for infrastructure, geoscience, and land access and land use planning.

TOP-OF-MIND PRIORITY ISSUES:

Remoteness: A good portion of Canada's mineral resources is northern, isolated, and/or remote, which makes it difficult to assess new sites and establish mining operations. This significantly increases costs and extends the whole process due to natural climate constraints such as barging seasons and ice road availability. We need technology to explore deeper and remote parts of Canada, and automation to decrease the cost and difficulty of accessing new mineral resources.

Infrastructure: The lack of infrastructure such as roads, ports, rail, energy transmission, and telecommunications, especially in northern, isolated, and remote communities, presents a significant barrier. Many industries feel that they have been left on their own to resolve these issues with no government support. Without basic infrastructure, projects with potential are not being considered. Although new technologies exist that help move goods without roads, this does not help local communities. It is worth noting that this issue goes beyond mining.

Lack of Clarity: Uncertainty around land ownership for both Indigenous communities and industry is hindering investment decisions. Given the ability of mines to create employment and economic activities, the designation of land as protected land, despite actual or potential mineral deposits, may have a negative impact on small and remote communities. Outstanding land agreements are also delaying the permitting process.





Burdensome Regulations: The interplay of federal, provincial and jurisdictional rules contributes to delays in project development and places the majority of the financial burden of project review on private companies. These unpredictable costs are forcing companies to reduce their margins and regional spending, and/or leave Canada to invest elsewhere.

Uncertain Regulations: Canadian companies expressed concern over competition with other leading mining jurisdictions in terms of regulatory certainty. The new bill C-69, Impact Assessment Act, may not reduce uncertainty, as even the creation of a new regulatory regime would dissuade investments (i.e., ambiguity surrounding how it would work in real life). Thus, companies lack confidence to recommend that their shareholders invest in Canada.

Cumulative Impacts: The cumulative impacts of federal proposals such as carbon pricing, Impact Assessment Act, and the Clean Fuel Standard, have critically affected the mining sector. Mining companies noted that they would suffer as production costs increase due to a proposed federal carbon pricing system. Canadian companies expressed concern that environmental regulations often force the industry to invest more into their operations with little benefit in return.

Project Window and Regulatory Timelines: Canada's mineral resources are depleting but are not replenished at equal rates. Mining companies are subject to a long, rigorous, regulatory process; however, the lifespan of new mines coming on the line has deteriorated from approximately 30 to seven years. This results in a limited window to operate and an unattractive investment climate.

Forecasting Minerals and Metals Demand: Canada needs to plan for minerals requirements in the next 20 to 30 years and shift its focus from what pays today to preparing for the needs of tomorrow. While gold will always generate wealth, Canada should prioritize the minerals and metals needed to transition to a low-carbon economy.





AREAS FOR ACTION THAT YOU WANT TO SEE:

Canada has vast amounts of untapped mineral resource potential that will require **enabling infrastructure and services** to reach. Accessing these stranded and new mineral deposits will contribute to significant regional socio-economic benefits. Possibilities could include:

- Strategic regional economic development for resource rich locations;
- Creative approaches to facilitate infrastructure funding applications in smaller, remote and northern resource-rich communities;
- Regional land-use planning on the availability of prospective land with affected Indigenous and non-Indigenous communities;
- Complete land use plans, supported by meaningful consultation (i.e., not just use and occupancy mapping), to provide support to companies in building partnerships; and
- Small Modular Reactors (SMRs), which may provide energy support for remote mining communities and operations.

Traditional and emerging minerals and metals are currently in high demand, especially for the **global transition to a low carbon economy**. Canada has an opportunity to re-examine exploration incentives (financial and non-financial) to increase companies' abilities to plan activities, broaden eligibilities, encourage innovation and consider alternative programs beyond tax measures.

A more **harmonized and streamlined regulatory system** (i.e., moving towards the one-window approach), coordinated among jurisdictions and with defined roles for participants, will diminish barriers to investment and innovation in Canada's mining industry.

A **strong national online presence** with clear and comprehensive investor toolkits can highlight Canada's investment opportunities and attractiveness to the international community.





SCIENCE, TECHNOLOGY AND INNOVATION

YOU SPOKE, WE LISTENED

Canada is a world leader in research and development, but lags behind in innovation performance. We need to leverage our research capabilities and our highly-skilled workforce and expertise across the sector. We need to collaborate and promote the spirit of working outside of our comfort zone.

Innovation is not an option. Canada has invested less in mining than other countries and has an overcomplicated funding environment.

Canada needs to recalibrate its fragmented innovation ecosystem with competing priorities, to a modern innovative industry that supports a clear and strategic direction across all phases of the mineral development cycle.

Support for innovation across the various branches of government, departments, and sectors is the key to tapping into Canada's vast mineral potential.

TOP-OF-MIND PRIORITY ISSUES:

Fragmented Innovation Ecosystem: Canada's fragmented innovation network limits the industry's ability to develop and adopt new technology. Without a shared purpose, innovations have no real-life application, which leads to no avenue for adoption, and little incentive for companies to be the "first mover."

Investments in Public Geoscience: Baseline funding for regional geological surveys has decreased significantly, which hinders an essential part of the mining cycle—understanding the land. Canadians also emphasized the need more centres of excellence in geoscience.

New Exploration Technologies: Currently, exploration expenditure is increasing, but the discovery rate of significant new projects is decreasing. Mining in the future will require deeper, more remote exploration and involve lower-grade deposits with more complex ores, all of which require innovations in geoscience, exploration techniques in processing and environmental practices.

Data Management Strategies: Current geoscience information is inefficiently organized and not easily accessible. There is a vast volume of valuable historical geoscience data that exists physically on paper, but are inaccessible or forgotten.

Unfocused Academic Research Programs and Funding: Canadian universities' research and innovation programs lack a mining-focus, which leads to competition between all players for funding in the natural resource sector. In addition, university research priorities are not aligned with applied research





in support of the industry and the local economy. R&D funding that is available to address key industrial concerns is not guided by a clear mining innovation strategy.

Artificial Intelligence and Automation: Both hold great promise for more efficient and safer operation. They also represent an enormous transformative risk for mining companies, including managing and training high-quality personnel to support high-tech operations.

AREAS FOR ACTION THAT YOU WANT TO SEE:

A **clear innovation agenda for the mining sector** that incorporates and aligns diverse perspectives will help drive an innovation ecosystem capable of unlocking Canada's resource potential. This could include efforts to drive social innovation, transparency, collaboration and engagement with communities through extensive communication.

New programs could **encourage industry to innovate in progressive ways**, through the provision of "risk-capital," scale-up programs, tax incentives, and various incentives for small and medium-sized enterprises.

Canada could stabilize and enhance support for the **acquisition and dissemination** of geoscientific knowledge through the introduction of stable and long-term tax incentives (e.g., a five-year flow-through share program).

An **integrated, accurate, and fully-accessible geoscience data portal** could raise awareness and educate Canadians on the importance of Canada's mining sector, support decision-making, and increase investment opportunities—especially in exploration activities. Individual regional statistics, including digitization of historical data, could help promote regional opportunities.

Nurturing talent and fostering leadership across the innovation pipeline could build future capacity in the exploration and mining sector. This could include efforts to facilitate and incentivize academic **collaborations** with industry to address social/sustainable innovation issues, exchange of experts across different disciplines, and develop novel online learning tools (for use in northern, isolated, and remote locations).

Canada needs **strong provincial geological surveys**, exploration expertise, and increased investment in state of the art geoscience programs. A whole-of-government approach is needed to better understand and support Canada's mining industry, for example junior mining companies (their role in the mining development cycle and how they operate).

The mining industry creates demand for innovative technology and processes, and provides the venue for their adoption and use. For example, industry should leverage Canadian depth-drilling expertise, develop novel deep drilling geophysical technology to see things clearer, as well as deep-refining chemistry. An opportunity exists for meaningful **Canadian innovation that is applicable** and can create tangible and accessible solutions.





COMMUNITY AND THE ENVIRONMENT

YOU SPOKE, WE LISTENED

Canada's mining industry has difficulty establishing a sustainable supply of labour that can withstand the volatility and cyclic nature of the sector. The mining industry predominantly employs men, with women representing only 14% of the mining labour force.

Mining-related activities can lead to significant benefits for the local community, such as increased commercial activities and revenues, but demands financial and business expertise. Remote, northern and isolated communities require holistic approaches to building capacity and ensuring readiness for mineral participation.

Canada has an opportunity to raise mineral literacy and awareness through campaigns that promote our resource potential, innovation capabilities, and our expertise.

Canada has an opportunity to re-think the mining sector in all of its dimensions to a more balanced approach—socially and environmentally—for the entire life cycle and value chain.

TOP-OF-MIND PRIORITY ISSUES:

WORKFORCE

Awareness and Interest: There is a lack of awareness and understanding of the mining industry by today's youth. Canadian youth expressed a vague and perhaps outdated view of what the mining industry is and what it entails (e.g., mining is 10 men in a cave), and thus, do not perceive mining as a viable career path. Canada needs to improve education on mining and geoscience from kindergarten to grade 12 and beyond. Mining is often negatively reflected in the media. The knowledge gap between mining communities (often in rural locations) and urban centers (where the majority of Canadians live) further contributes to unsubstantiated public perceptions of the mining industry.

Sustainable Supply of Labour: The quantity of students in mining engineering programs often follows the hiring trend of mining companies. Finding a labour supply that can withstands economic volatility is an ongoing challenge. There are occupational gaps and employers struggle to find and keep workers over the long-term. This creates a domino effect on business; when the quality and quantity of hires drops, it starts a downward spiral of lower productivity and higher costs. In addition, the percentage of the labour force that is 55+ years has increased and the share of older workers has outpaced that of younger workers (15–24).





Diversity of Labour: Mining remains an industry that predominantly employs men. Given Canada's and the mineral sector's aging population, the need for inclusive growth is increasing. The number of women choosing to enter into exploration and mining remains low. The gap partly stems from the perception of gender-based challenges, such as the existing workplace culture and perception (e.g., remote and isolated), which deters interest and impacts recruitment and retention.

Necessary Skills in Communities: Mining labour demands often require workers with at least a grade 12 education and specific skill sets developed from postgraduate education or advanced training that can be especially challenging for those in remote and rural communities to acquire. Mastering these skills requires extensive investment in time and money and select apprenticeships or educational programs can entail lengthy periods away from a home community. Additionally, education funding is fragmented and not easily accessible.

Artificial Intelligence and Future Workforce Demand: Digital disruptions such as the adoption of automated vehicles is expected to fuel a decline in some areas of employment in the industry. Canada will need to properly prepare for this transformation and find skilled workers that can fit into this "new workforce."

SAFEGUARDING COMMUNITY BENEFITS

Pre-existing Conditions: Pre-existing socio-economic conditions can prevent communities from taking full advantage of the opportunities related to mineral activities. The state of a community's physical infrastructure is also a key factor in determining whether it can attract and benefit from mineral resource development, as Canada's mineral resources are often located in remote, harsh environments that lack supporting infrastructure.

Trust and Partnership: For communities to prosper from mineral resource development, they need to be meaningfully engaged and viewed as partners in the resource development process. However, a lack of trust exists in governments, regulators and industry to mitigate or manage risks to the environment and communities surrounding developments. Community acceptance of mining projects will require exemplary environmental practices, early and continued community engagement, and inclusive economic benefits.





Capital: Given the scale of mining projects, most small communities lack the financial means to acquire equity in the projects. Developing a business requires a significant amount of capital financing. For entrepreneurs in communities looking to take advantage of mineral development, obtaining the capital to start a business can be challenging.

Information and Expertise: Central to community readiness is the ability to make informed decisions related to proposed development projects. Mineral development requires a community to be able to interpret financial statements, build strategic plans, and be prepared to evaluate complex risks. A lack of information and technical expertise can delay or prevent communities from seizing opportunities and can impede pursuing partnerships with industry.

AREAS FOR ACTION THAT YOU WANT TO SEE:

Canada is seeing an increase in the use of federal **capacity building and readiness programs** aimed at increasing local participation, including youth, and the realization of community benefits. The mining sector must ensure that Canadians can adapt, learn and have rewarding careers throughout their working lives. This could include:

- Pre-employment training and skills development initiatives (including local opportunities);
- Mobility programs for remote communities; and
- Support to reduce unemployment and ensure that displaced workers can more easily re-engage in the sector when the mining cycle rebounds or relocates to regions that are experiencing growth.

Governments and industry are recognizing the **importance of inclusive growth** in creating a sustainable supply of labour and long-term prosperity. Inclusive growth and gender diversity in the workplace demonstrates that a critical mass of women at all levels of an organization, including senior management, has been linked to higher organizational performance. Canada has an opportunity to develop **principles and commitments for gender diversity** in Canada's mining industry.





Canada has an opportunity, through mineral literacy and awareness campaigns, to promote our resource potential, innovation, and expertise. By **'making mining cool again,'** a re-branded public perception would encourage youth to choose mining as a profession. Quality mining programs at public institutions such as universities and colleges, with sustained financing, would help fill a gap for highly-qualified personnel.

Technological advances and programs are yielding higher efficiencies, **reducing environmental footprints**, and mitigating impacts to help change public perceptions and misconceptions towards the industry. Canada has an opportunity to showcase the positive changes and practices in mining and attract and retain future employees, including underrepresented groups such as women, Indigenous peoples, and foreign workers. These technological changes could also present new employment opportunities in areas initially unforeseen, and create greater opportunity for a diverse and inclusive workforce. For example, enhanced connectivity allowing machine operators to work at a facility several hundred kilometres away from the mining site.

There are many **success stories** across Canada where communities leveraged mineral development to diversify their economy, raise employment rates, and generate sustainable growth. **Case studies** also demonstrate how companies led successful initiatives and mine reclamation. Replicating such initiatives and sharing best practices can help communities develop and implement initiatives that create success. Canada should also look at what did not work in mining communities and how we could prevent previous mistakes.





ADVANCING THE PARTICIPATION OF INDIGENOUS PEOPLES

YOU SPOKE, WE LISTENED

The Indigenous talent pool must be supported with effective and responsive skills training that meets the needs of both Indigenous workers and those looking to hire them. Robust skills and training programs that promote apprenticeships and on-the-job learning will improve policy outcomes and create sustainable jobs.

Partnership with Indigenous peoples can increase the industry's competitiveness, while helping to achieve lasting and meaningful benefits for communities.

Decision-making processes should be inclusive, and modern land claims can serve as good practices for Indigenous peoples participation, where applicable.

TOP-OF-MIND PRIORITY ISSUES:

Pre-existing Systemic Challenges: Access to infrastructure, particularly in terms of a northern corridor, affordable housing, education, portable water, and safe communities is critical. The quality of K-12 education in these communities is not on par with Canadian public schools. Indigenous communities are facing numerous socio-economic barriers that absorb the majority of the communities' resources, leaving little capacity for business development. Addressing these issues should be the primary priority.

Capacity and Governance: Indigenous communities require capacity building to participate in research, negotiating, planning and regulatory processes to ensure that Indigenous rights and interests are consistently represented. Foundational governance elements are also required to develop and implement mineral resource development strategies, policies and protocols to more meaningfully participate in land stewardship and provide process certainty to project proponents.

Training Opportunities: Many Indigenous youth require hands-on training for mining jobs (e.g., operating heavy machinery), but access to these opportunities is limited unless they leave their community. Many may not be willing or are financially unable to due to a lack of funding. Opportunities for front-end training (i.e., before potential resource development) for Indigenous peoples are being missed because skills development is not happening until after the mine is built. This means that only low-paid and unskilled jobs remain.





Unequal Benefits and Opportunities: Indigenous communities in similar regions do not start on equal footing when it comes to making Impact Benefit Agreements. One community may have the expertise and capacity to make a good deal but a community with less experience cannot. An inherent unfairness also exists for “Indigenous lending programs,” as they often have higher interest rates than the bank and the process is more complicated.

Indigenous Representation and Culture Competency: Canadians highlighted that while hearings are held for resource projects, decisions are often made without ever visiting the impacted communities. Although industry usually has one or two Indigenous relations representatives/cultural competency experts on staff for awareness of Indigenous cultures beyond simple history, it is not integrated throughout companies as a whole.

Uncertainties: The permitting process and Crown engagement procedures between the government and Indigenous people (e.g., Section 35 of the *Constitution Act*) is unclear. Canadians emphasized the differences between Indigenous communities and the lack of flexibility in regulations and policies to address their various situations. They expressed concern over the lack of support from the government when there is no formal land claim agreements, and clarity on how Bill C-69 will be coordinated with the Government’s plans to implement the *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP), particularly with regard to free, prior and informed consent.





AREAS FOR ACTION THAT YOU WANT TO SEE:

The majority of mining operations are located within or adjacent to Indigenous peoples land and territories. Highlighting positive experiences between Canada's mining industry and Indigenous peoples can contribute to the development of **best practices, sharing of success stories** and identify new opportunities to grow Indigenous businesses.

Diversifying Indigenous peoples' **knowledge and understanding of the entire mining development cycle** will enable realistic expectations, and prevent misinformation on the potential benefits available from exploration and development to mine operation, monitoring and oversight and closure.

Indigenous communities need to **be engaged at the beginning** and with every step of development—including long-term community planning—and involved in trade missions. By better communicating that industry and Indigenous communities can work well together, Canada can attract more investment.

Canadians highlighted that Indigenous youth are the biggest resource that a community can invest in. **Training opportunities need to be accessible** in the communities through mobile or satellite training centres. To create long-lasting success, skills need to be diversified to go beyond just mining, which will breakdown the negative stigmas associated with industry (i.e., mining towns). Training should happen in partnership with industry.

Key values and principles could be created to guide industry and communities in establishing **collaborative partnerships**. This could also help **build internal capacity** to secure employment opportunities and progress towards corporate leadership positions, while contributing to a local and skilled labour force.





GLOBAL LEADERSHIP

YOU SPOKE, WE LISTENED

Canada has a great opportunity to demonstrate progress in innovation, true sustainable development and build Canada's reputation on the world stage.

Canada lacks a clear, coordinated mining brand to attract foreign investment, diversify and expand global market opportunities, and support the success of Canadian mining activities abroad.

Canada needs to brand its minerals and metals as best-in-class so that consumers in Canada and around the world know that Canadian resources originate from jurisdictions with robust environmental standards, and sustainable mining practices, and that Canada is a responsible supplier for the modern, low-carbon economy.

TOP-OF-MIND PRIORITY ISSUES:

A Strong Canadian Brand: Canada lacks a brand for its mining sector that encompasses a diverse narrative and is adaptable to different audiences. Canadians expressed concern that Canada is perceived as an uncompetitive destination for investment, and manufacturers and consumers want to know that their minerals and metals are responsibly-sourced.

Export Market Diversification: While Canadian minerals and metals exports have succeeded in diversifying from the United States and towards emerging markets over the past two decades, a high degree of reliance on the U.S. export market continues to expose Canadian producers to competitive pressures, fluctuating commodity prices, exchange rate volatility, and economic and political risks. Other markets, such as the European Union, Germany and Japan, have expressed interest in sourcing here, but Canadians feel that these opportunities have not been fully exploited.

Products to Market: Canadian companies highlighted the difficulties (e.g., access to rail and roads) and excessive costs (especially in land-locked communities) associated with getting mining products to market. For example, for northern, isolated and remote mines to get their products to market, they must annually fund a climate-dependent (ice) road and purchase ice-capable cargo ships.

Service and Supply Exports: Unlike Australian companies, Canada's mining service and supply companies lacks the support to take advantage of the growing global demand for their expertise and innovative technologies.





Global Presence: Despite the size of Canada's industry, Canadians felt that Canada is timid in the international realm. In many countries, Canadian investors face barriers to entry and operation due to issues involving security, tax policy, public confidence, and regulatory uncertainty. In addition, investment officers at key international missions often do not have the expertise or resources to answer questions from foreign companies regarding Canadian mining.

Foreign Direct Investment (FDI): Although there is a variety of information on Canada's FDI performance for the economy as a whole, there is little information on FDI specifically in the minerals and metals sector, and for government FDI promotion activities. Without this information, Canada's FDI performance in mining has lagged behind its peers, which could lead to negative economic implication.

AREAS FOR ACTION THAT YOU WANT TO SEE:

Governments, industry, Indigenous peoples and communities could work together to build a stronger "**Canada Brand**" — focused on social- and environmental-responsibility, competitiveness, and timely and effective regulatory processes. This will help attract more international investment so that the mining industry can continue to create jobs, benefit communities and advance reconciliation.

An **interactive online portal** could be leveraged to attract investment, connect investors and industry with services and supply companies, triage web traffic to relevant government agencies and explain Canada's regulatory environment and its stakeholders in plain language.

Canada has an opportunity to leveraged a clear Canada Brand to assist **the mining services and supply sector** in taking advantage of export market opportunities and to build public confidence in partner countries where there is limited local capacity in mining services and supply.

Promoting resource governance in key countries of interest to Canada's mining industry could create more **stable and predictable operating environments** for Canadian companies and the communities in which they operate. This would also be an opportunity for the Government of Canada to better **align its international efforts related to mining** with the activities of these organizations and to offer federal and provincial expertise (e.g., geoscience, tax policy, environmental management, regulations) in support of bilateral and multilateral capacity-building activities.





THE CANADIAN
MINERALS AND
METALS PLAN

