

Annual Report 2021



THE MINING ASSOCIATION OF CANADA (MAC)

The Mining Association of Canada (MAC) is the national organization for the Canadian mining industry. Its members account for the majority of Canada's production of base and precious metals, uranium, diamonds, metallurgical coal and mined oil sands, and are actively engaged in mineral exploration, mining, smelting, refining and semi-fabrication.

Representing members committed to sustainability, MAC's *Towards Sustainable Mining*® (TSM) initiative is an award winning and world-leading standard that fosters continuous performance improvement in environmental and social mining practices.

MAC promotes the interests of the industry nationally and internationally, works with governments on policies affecting minerals, informs the public, and promotes collaboration to solve common issues and foster progress. MAC works closely with provincial and territorial mining associations and other industries, as well as with environmental and community groups across Canada.

MESSAGE FROM THE CHAIR AND THE PRESIDENT AND CEO

David Clarry, Chair of the Board of Directors, and Pierre Gratton, President and CEO



David Clarry, Chair of the Board of Directors

As the world continues to address the ongoing impacts of COVID-19, there is no doubt that the pandemic continues to loom large over all facets of our lives. COVID-19 has impacted all industries to some degree, and Canada's mining sector was not immune to its effects, but the past two years have highlighted the resiliency of the industry in the face of unprecedented challenges. It has been critical that supply chains stay open so that mined products are readily available for the people and businesses who rely on them.

Globally, Canadian mining operations have withstood COVID-19 better than many peers in other jurisdictions, with companies adapting their health and safety policies to accommodate risks, build confidence, and ultimately return to production with comparably limited disruption. As people and their families continue to get vaccinated and follow public health guidelines, there is optimism in the mining sector that a return to normalcy may be ahead in 2022.

Alongside COVID-19, inflationary pressures and financial impacts of anticipated interest rate hikes, the other dominant issue facing the world today is climate change and the need for a lower-carbon future. Our industry provides the building blocks for clean tech like wind turbines, solar panels, nuclear energy and EV batteries and there is no question that the world needs mining in order to achieve a greener future. At the same time, Canadian mining companies are increasingly recognizing the role they must play in lessening their carbon footprint and are taking the initiative to embrace innovative technologies and practices to do just that. In addition to its work on climate change, and supporting the low-carbon initiatives of its members, MAC also donated \$50,000 to the United Way's *United for BC Flood Response Fund* during the flooding in November. These floods, following the forest fires of this past summer, must also be seen as a painful impetus to strengthen the resolve of everyone in the mining sector and beyond to fight climate change.

Canada produces some of the lowest carbon intensity mineral and metal products anywhere in the world and can and should play a much more significant role in providing the materials the world needs to get to net-zero. As a resource rich nation that sets the global standard of excellence in sustainable mining practices through the Mining Association of Canada's (MAC) internationally recognized Towards Sustainable Mining (TSM) initiative, countries want us for how we go about our business, how we work with communities and raise standards. This program has received international attention with nine mining associations outside of Canada, including most recently Australia and Colombia, having adopted it to support meeting society's needs for minerals, metals and energy products in the most socially, economically and environmentally responsible way.

In the spring of 2021 the new *TSM Climate Change Protocol*, designed to minimize the mining sector's carbon footprint while enhancing climate change disclosure and strengthening the industry's ability to adapt to climate change, was introduced. The *Climate Change Protocol* is supported by the publication of the new *Guide to Climate Change Adaptation for the Mining Sector*, a comprehensive, first-of-its-kind guidance for the mining sector focused on assessing and identifying potential physical climate impacts,

considering these risks in decision-making, and implementing corresponding adaptation measures. MAC's summer newsletter, entitled *Mining's Commitment to Climate Action*, focused on the new climate change protocol and how specific members are utilizing low-carbon tech on site to lessen the industry's GHG emissions.



Pierre Gratton, MAC President and CEO further align with the Standard, MAC is also expanding the application of the *TSM Tailings Management Protocol* to closed and inactive sites.

There is no doubt that Canada is one of the safest jurisdictions for mining in the world, and we are recognized for bringing these standards and practices wherever we go. The TSM commitment to responsible mining is constantly evolving, and in April MAC announced updates to its world leading guidance on tailings management. MAC has updated *A Guide to the Management of Tailings Facilities* to improve alignment with requirements of the *Global Industry Standard on Tailings Management*, published last year. These updates, the first step in a process of further strengthening TSM requirements and guidance for tailings management, are based on a detailed comparison of the equivalency of TSM requirements to those of the Standard. To

As demand for minerals and metals continues to grow, there is also an increasing focus on what are referred to as “critical minerals”. More than just rare earth elements, critical minerals encompass several minerals and metals critical to the functioning of both our economies and our livelihoods. One of the most frequently referenced benefits of enhancing Canada's critical minerals supply is due to the role these materials play as essential inputs in low-carbon technologies. Another is the fact that our allies in Europe and the US need reliable supplies from countries with strong ESG credentials and few countries can meet this need better than Canada.

Abacus' 2021 polling results focused on public perception of the sector reinforced the need for MAC to continue on its path of using strong messaging on critical minerals, Canada's leadership in sustainable mining, and the role mining plays in providing key inputs for low-carbon tech. MAC has been playing a very active role in communicating these facts, including through participation in the federal government's announcement unveiling Canada's critical minerals list, multiple House of Commons committee appearances, co-writing an op-ed with Minister O'Regan, then Minister of Natural Resources, on their importance alongside Canadian leadership in mining sustainability, and being key commentators in both national and international media on the topic, appearing in over 100 publications over the course of the year.

Critical minerals and sustainability also form a key pillar in MAC's communications efforts, with MAC's most comprehensive newsletter to date coming out in the fall of 2021 focused entirely on the opportunity before Canada in this space, and its public awareness campaign detailing how low-carbon, healthcare and communications technology all depend on mining and critical minerals to function. Many of these concepts, in addition to those focused on collaboration with Indigenous communities and sustainability, were featured in MAC's first ever expanded ESG campaign which was highly successful in reaching a more extensive and diverse audience than MAC's typical Ottawa focused advertising efforts. In order to enhance knowledge of TSM and mineral literacy generally, MAC completed a website redesign in the fall of 2021 that includes significantly more information on how mined materials are

used every day along and details on how TSM represents the gold standard of mining sustainability with new video assets providing in-depth details on the program and its protocols.

The fall election included the return of many familiar faces to Parliament, albeit with changes at the Ministerial level, providing an opportunity for MAC to focus its advocacy efforts with both new MPs and those with longstanding relationships with the sector. While COVID-19 continued to make face-to-face advocacy impossible, the many available web conferencing platforms actually enhanced MAC's government relations efforts given the fact that many politicians and senior government officials were more available than usual. In fact, MAC's annual lobby day was once again extended to a week in November and resulted in meetings with over 100 government decision makers, an increase over past years showing the interest in our sector from both the political, including numerous Ministers and members of the official opposition, and department levels. This close contact was essential with the myriad of issues affecting the sector and in 2021 MAC was once again recognized as being one of the top lobbying groups on Parliament Hill.

MAC's achievements in 2021 were due to the collective efforts of many people. These individuals include our Board of Directors, Executive Committee and TSM Governance Team, and the committed industry experts who give their time and lend their expertise to MAC committees, task forces and working groups. We also boast one of the strongest association staffs in Ottawa, composed of individuals who are recognized for their expertise and professionalism by government and other associations. With their mix of skills and experience, they deliver tangible outcomes that benefit the entire industry. Their work is much appreciated by the Board and members of MAC.

For more details on the topics discussed here, and on other aspects of MAC's work, we encourage you to read the Annual Report in full.

REPORT FROM THE CHAIR OF THE TSM GOVERNANCE TEAM

Chair: Carolyn Chisholm, Director, External Affairs, Rio Tinto Canada

The TSM Governance Team examines opportunities for improving the mining industry's performance and reputation with key communities of interest.



2021 TSM Performance

Aboriginal and Community Outreach: Facilities continued to demonstrate leadership and excellence on the *Aboriginal and Community Outreach Protocol*. There was a small decline in the number of facilities reporting a Level A or higher across the four indicators of this protocol, due primarily to performance from facilities in the initial stages of TSM implementation. In 2022, facilities will report for the first time on the new *Indigenous and Community Relationships Protocol*, which includes two new indicators: one focused on effective engagement and dialogue with Indigenous communities and one on managing impacts and benefits associated with mining operations. A few companies chose to report on the updated version of the protocol in 2021.

Crisis Management and Communications Planning: Facilities continued to demonstrate impressive performance on the *Crisis Management and Communications Planning Protocol*. There were slight declines in performance across all indicators for a variety of reasons, including facilities still in initial stages of TSM reporting working to improve their performance. On Indicator 3 (Training), following an actual crisis, at least three facilities failed to review implementation of the crisis management plan and identify lessons learned. This protocol will be undergoing a review in 2022 to consider whether updates to the criteria are needed.

Safety and Health: Facilities continued to demonstrate a high degree of performance on the *Safety and Health Protocol*, with minor declines in the number of facilities reporting a Level A or higher across Indicators 1 (Policy, commitment, and accountability) and 3 (Training, behaviour, and culture). There was a more significant decline in performance on Indicator 5 (Performance) due to five facilities reporting fatalities. This is, unfortunately, the highest number of facilities to be downgraded to a B due to a fatality since reporting began on the protocol in 2013. In 2022, facilities will begin reporting on a revised version of this protocol that includes new requirements related to critical controls, high consequence hazards, and mental health.

Preventing Child and Forced Labour Protocol: Facilities report on the *Preventing Child and Forced Labour Protocol* every three years during the external verification of TSM performance results. The first year of reporting on this protocol was 2018. In 2018, 2019, and 2021, facilities undergoing external verification consistently met all requirements associated with the protocol.

Tailings Management: Facilities reported for the first time on the 2019 version of the *Tailings Management Protocol* and its associated guidance documents. Despite these enhanced requirements, facilities were able to report slight improvements in Indicators 1 (Policy and commitment), 3 (Assigned accountability and responsibility), and 4 (Annual review). Minor declines in performance on Indicator 2 (Management system) and 5 (Operation, maintenance and surveillance manual) can be attributed to

facilities working towards implementation of the new requirements in these indicator areas. Note that performance on all indicators had previously declined in 2019, which was the first year of reporting on enhancements made in a 2017 version of the protocol.

Biodiversity Conservation Management: Facilities continued to demonstrate satisfactory performance on the *Biodiversity Conservation Management Protocol*, achieving improvements across all three indicators. Facilities began reporting on a slightly revised version of this protocol in 2021, which includes new requirements related to the mitigation hierarchy and no net loss.

Water Stewardship: Facilities reported publicly for the first time on the new *Water Stewardship Protocol* and demonstrated good results.

Energy Use and Greenhouse Gas Emissions Management: Facilities' performance varied across the three indicators of the *Energy Use and Greenhouse Gas Emissions Management Protocol*. A decline in performance on Indicator 1 (Management systems) is due at least in part to facilities in initial stages of TSM implementation. Performance on Indicator 2 (Reporting systems) remained strong and there was improvement in Indicator 3 (Performance targets) as more facilities met Level A and Level AA requirements. In 2022, facilities will begin producing their first internal reports on the new *Climate Change Protocol*, which will replace the *Energy Use and Greenhouse Gas Emissions Management Protocol*. First facility-level public reporting on the new protocol is scheduled for 2023. The new protocol takes a more comprehensive approach to climate change, incorporating mitigation and adaptation measures at both corporate and facility levels.

Celebrating Excellence

The *TSM Community Engagement Excellence Award* went to Agnico Eagle's Pinos Altos mine in Mexico for its drinking water distribution network. The *TSM Environmental Excellence Award* went to IAMGOLD for the innovative recycling program at its Essakane Mine in Burkina Faso. More information on the winning projects is available [here](#).

Climate Change Protocol: The MAC (Mining Association of Canada) Board approved a new *TSM Climate Change Protocol* in 2021 to replace the existing *Energy Use and Greenhouse Gas Emissions Management Protocol* in public reporting by 2023. The protocol supports mining companies in responding to emerging investor expectations around climate-related disclosures, including the *Recommendations of the Task Force on Climate-related Financial Disclosures*. At higher levels of performance, companies will be required to make commitments – supported by short- and long-term targets and actions – to climate action consistent with the ambitions of the Paris Agreement to limit global warming to well below 2 degrees, as well as commitments corresponding with ambitions to achieve net-zero emissions by 2050. At the facility level, in addition to enhanced requirements for energy use and GHG emissions management systems, the *TSM Climate Change Protocol* incorporates comprehensive requirements for the management of physical climate impacts and adaptation, supported by MAC's new [Guide on Climate Change Adaptation for the Mining Sector](#).

Equity, Diversity, and Inclusion (EDI): On instruction of the MAC Board, MAC convened a new working group to develop a scope of work for TSM requirements on EDI. MAC organized a workshop in September 2021 with 80 representatives from mining companies and communities of interest, including presentations from experts in human resources, institutional investing, global standards, and multinational mining companies, among others. Participants also discussed their key priorities for action

on EDI, critical factors to success, and considerations for scoping EDI requirements in TSM. A scope of work was then drafted and approved by the MAC Board, with the expectation that MAC will develop these new requirements in 2022.

Verification Policies: In 2021, the MAC Board approved a suite of new and revised TSM policies and guidance documents, including:

- A revised Terms of Reference for Verifiers
- A Verification Guide, to provide guidance on methodology alongside the Terms of Reference for Verifiers
- An Issues Resolution Mechanism Policy
- A Verification Oversight Process
- A Public Comment Policy
- A Claims and Labels Policy
- A Verification Summary Report Template

Community of Interest Advisory Panel

In 2021, the Community of Interest Advisory Panel held two virtual meetings and several intersessional activities. For more information on panel activities, please refer to the panel's [annual statement](#).

International Activities

Engagement with Supply Chain Stakeholders: MAC continued its engagement with supply chain stakeholders to increase the recognition of TSM. This engagement focused on the automotive sector and included the Canadian Automotive Parts Manufacturers Association, BMW, GM and Volvo. The priority for this engagement was stronger recognition of TSM as a demonstration of responsible mineral production in the battery supply chain and automotive components more broadly, TSM also explored opportunities to develop a TSM-backed gold bar that would be produced and marketed by TD Precious Metals.

Adoption of TSM in Australia and Colombia: The Minerals Council of Australia and the Mining Association of Colombia became the ninth and tenth national mining association to adopt TSM, joining Canada, Finland, Norway, Botswana, Spain, Argentina, Brazil, and Philippines. International interest in TSM continues to grow and MAC is engaging with governments and associations across the globe to support decisions around the program's adoption in the coming years.

Non-Member TSM Application: Responding to growing international interest in applying TSM outside of the jurisdictions in which national associations have adopted the program, the MAC Board approved a subscription fee model to enable such mines to formally report and externally verify TSM results through MAC, at a cost of \$6,000 per mine per year.

Standards Alignment

ResponsibleSteel: MAC worked closely with ResponsibleSteel towards recognition of TSM. Mines seeking to use TSM to sell products into the ResponsibleSteel supply chain will be able to do so from the outset of the standard. Due to personnel changes at ResponsibleSteel, including a significant renewal of their Board of Directors, finalization of the recognition of mining standards, including TSM, IRMA and Better Coal has been delayed until 2022.

London Metals Exchange: TSM was included in the inaugural list of standards recognized by the London Metals Exchange Passport program and formalized recognition for the environmental requirements, which require equivalency with ISO 14001 and 45001.

Alignment with other standards: TSM continued to demonstrate leadership in working with other standards to achieve stronger alignment, equivalency and interoperability. This year the TSM Responsible Sourcing Supplement became operational with the first successful verification conducted at Teck's Highland Valley Copper (HVC) achieving multiple standards recognitions. Through a single verification using the supplement, HVC was able to also achieve the Copper Mark and satisfy its assurance obligations through the ICMM Mining Principles. Additionally, through the the M3 Partnership (an ISEAL grant) TSM and its partners (IRMA, ResponsibleSteel and RJC) were able to begin work on a second version of the Integrated Audit Protocol. This work is being done by ERM and is expected to be complete in early 2022.

ENVIRONMENT COMMITTEE

Chair: Allison Merla, Advisor – Environment, Vale

The Environment Committee addresses general environmental issues and legislation affecting the industry.

In 2021, the Environment Committee operated through monthly virtual meetings held jointly with the MAC Science Committee. Virtual Committee meetings were augmented by work completed through task forces. The MAC Reviews Task Force focused its efforts on the implementation of the *Fisheries Act*, the *Impact Assessment Act* and the *Canadian Navigable Waters Act*. The MAC Reviews Task Force also engaged in consultations on the Canada Water Agency. The MAC Biodiversity Task Force was active on developments related to the *Species at Risk Act*, the *Migratory Birds Convention Act* and protected spaces.

The Committee continued its work related to air pollution, climate change, the Chemicals Management Plan, Federal Environmental Quality Guidelines, the National Pollutant Release Inventory, *Environmental Emergencies Regulations 2019*, and the review of the *Canadian Environmental Protection Act*. The Committee engaged with officials from Environment and Climate Change Canada (ECCC), the Canadian Wildlife Service (CWS), Fisheries and Oceans Canada, the Impact Assessment Agency, Transport Canada and Natural Resources Canada. As well, the Committee reviewed Ministerial mandate letters to guide its work planning.

Impact Assessment Act

The MAC Reviews Task Force monitored the implementation of the *Impact Assessment Act* and engaged with the Agency to explore how the planning phase can be improved to arrive at truly Tailored Impact Statement Guidelines for each project to focus assessment on key relevant issues. As well, the Task Force discussed with the Agency how to improve the scoping and communication of Indigenous engagement plans to ensure appropriate focus towards directly affected Indigenous groups.

MAC reviewed and submitted comments on the draft Tailored Impact Statement Guidelines for the Wasamac Gold and Suncor BMX projects and to the draft Ring of Fire Regional Assessment Agreement, and further provided revisions to the Tailored Impact Statement Guidelines Template, the draft Technical Guide Related to the Strategic Assessment of Climate Change and a draft Operational Policy Statement on Tailoring. MAC also continued to emphasize that designation of projects through Ministerial discretion be reserved for exceptional circumstances of federal jurisdiction.

Fisheries Act

Fisheries and Oceans Canada's implementation of the amended *Fisheries Act* has been very slow. Two years after the amendments came into force in mid-2019, the department continues to rely on site-specific reviews for most works, undertakings and activities near water, even though many have little or no impact on fish habitat. Other than six Interim Codes of Practice, compliance instruments to support routine, low-impact projects have yet to be developed.

Fisheries and Oceans Canada launched online engagement in 2021 in two "waves" which are to continue into future years. The department indicated that the core compliance tool, the *Prescribed Works and Waters Regulations*, will not be in place until late 2024. MAC has participated in the online engagement, submitting comments and attending webinars. In addition, the Committee met with the responsible

Assistant Deputy Minister, coordinated a cross-association letter to the Deputy Minister and organized a meeting of associations with the Deputy. The key request was accelerated deployment of additional compliance tools, particularly the Regulations, for common low-impact projects

Canadian Navigable Waters Act (CNWA)

MAC continued to engage with Transport Canada on implementation of the CNWA. Implementation of new provisions related to works in navigable waters has proceeded smoothly, with members not reporting delays in reviews. The Minor Works Order, which provides some reduction in compliance requirements for certain works, was amended in late 2021 to include water crossings on navigable waters of 30 m or less, a Class of Works that was previously advocated for by MAC.

MAC submitted comments on the department's Fee Proposal. As well, MAC has initiated discussions with Transport Canada on the department's approach to determining what is navigable water.

Canada Water Agency

MAC participated in a panel and submitted comments on the government's discussion paper on the mandate and structure of a proposed Canada Water Agency. MAC also submitted a brief to the House of Commons Standing Committee on Environment and Sustainable Development, which planned to study all legislation and government departments dealing with freshwater but did not proceed before elections were called. MAC's key messages in both submissions were to caution against adding to overlap and duplication and against diversion of resources from already under-resourced line departments. MAC noted that priority should be placed on addressing data sharing and access.

Following the 2021 election, Ministerial mandate letters reiterated the commitment to creating a Canada Water Agency and amendments to the *Canada Water Act*, but no further details have emerged to date.

Canadian Environment Protection Act (CEPA)

The government tabled Bill C-28 to amend CEPA in spring 2021. MAC formed a task force to support MAC engagement in the Parliamentary process and participates in industry networks related to CEPA. The Bill did not pass before elections were called. However, in anticipation that the Bill would be re-tabled, MAC analyzed and discussed potential improvements with officials. MAC's analysis concluded that, overall, the Bill was well drafted, but risks arise from possible further amendments and poor implementation.

Environment and Climate Change Canada formed an Advisory Working Group for its *Environmental Emergency Regulations, 2019*, to advise on future amendments to the regulations and on compliance. Anne Gent, an expert with Cameco, was appointed as MAC's representative.

Following the publication of a Draft Screening Assessment of long-chained aliphatic amines, MAC worked with members to confirm that all but a few unique processing facilities do not use these reagents.

Biodiversity

Species at Risk Act (SARA)

Throughout 2021, MAC remained active and engaged on issues related to species at risk, including monitoring proposed amendments to Schedule 1 of SARA, the publication of proposed recovery planning documents and the implementation of SARA Section 11 Conservation Agreements. MAC's advocacy has focused on encouraging a more effective and cooperative approach for species at risk.

MAC continues to support the use of the SARA Section 11 Conservation Agreements as a tool to recover species at risk and encourage federal-provincial/territorial coordination. In December 2021, MAC, working with the Ontario Mining Association, engaged in initial discussions on a proposed Canada-Ontario conservation agreement for boreal woodland caribou. MAC anticipates that Canada and Ontario will release a final conservation agreement in 2022.

In 2021, MAC commented on the proposed recovery strategy for the bank swallow and recommended that Environment and Climate Change Canada (ECCC) pursue a regional approach to recovery that would take the unique circumstances of the species into consideration and focus efforts where they are most needed. As the bank swallow's status varies greatly across regions, a targeted approach that facilitates and supports conservation management by provinces and territories is needed in order to progress towards the species' recovery objectives.

MAC was an active member of the Species at Risk Advisory Committee (SARAC) for many years. The last mandate of SARAC came to an end in April 2020. ECCC has since launched a new process to establish a Nature Advisory Committee that would replace SARAC and cover broader biodiversity issues, such as the *Migratory Birds Convention Act*, protected spaces, nature-based climate solutions and the post-2020 Global Biodiversity Framework. MAC is hopeful that the new Nature Advisory Committee will provide industry, environmental NGOs, and Indigenous organizations with a forum to collaborate and support improved implementation of SARA as well as advancement of other biodiversity-related initiatives.

MAC continues to participate in the National Boreal Caribou Knowledge Consortium (NBCKC), which was announced in the 2018 Action Plan for Boreal Woodland Caribou. The NBCKC is a forum for collaboration among federal, provincial, territorial, and Indigenous governments, NGOs, academics, and industry stakeholders to support information sharing, address knowledge gaps, pool capacity, identify and promote best-practices, and inform decision-making. The NBCKC and its working groups have produced practical tools over the past four years to inform action, including: a caribou monitoring toolkit, a boreal caribou conceptual ecological model, interactive map of caribou projects and a knowledge sharing portal. Since 2020, the NBCKC, in partnership with the Alberta Biodiversity Monitoring Institute, has coordinated a webinar series showcasing emerging research related to boreal woodland caribou conservation.

Migratory Birds

MAC continues to monitor developments related to the *Migratory Bird Convention Act* and the *Migratory Bird Regulations* (MBR). In 2019, MAC was engaged in the consultation on the proposed amendments to the MBR and submitted comments expressing support for many of the improvements proposed. During the consultation, MAC also recommended a constructive and reasonable path forward for unoccupied pileated woodpecker cavities that would focus protection on nests with high conservation value.

In anticipation of the final regulations being published in *Canada Gazette, Part 2* in spring of 2022, MAC has remained engaged with the Canadian Wildlife Service within ECCC on best practice implementation of the amended regulations as well as opportunities for further improvements to the regulations, including the feasibility of new and/or enhanced compliance mechanisms.

Conservation Exchange

The 2021 federal budget allocated renewed funding for conservation, with \$2.3 billion over five years being allocated for protected spaces, Indigenous-led conservation and species at risk. Through this funding, CWS will launch a pilot of a conservation exchange initiative. The conservation exchange is meant to incentivize private funding for conservation initiatives, where a private organization funds a conservation organization to undertake a specific conservation project. The biodiversity value of the project is then evaluated using CWS-established indicators and the private funder is issued a certificate indicating the biodiversity value of the project. If successful, there is potential for the conservation exchange to evolve and support programs and initiatives related to biodiversity offsetting disclosure of nature-related financial disclosures.

MAC participates in the Conservation Exchange Advisory Working Group established to provide CWS with advice on the design of the program, including methodology to assess biodiversity value and the certification process.

Biodiversity Goals and Targets

MAC has remained engaged on the implementation of Canada's 2020 Biodiversity Goals and Targets. This includes monitoring policy developments related to protected areas and engaging with other stakeholders to encourage recognition of privately protected areas and other effective area-based conservation measures as a contribution towards Canada's area-based protection target.

Canada and other Parties of the Convention on Biological Diversity (CBD) are working towards a Post-2020 Global Biodiversity Framework, which will establish new global biodiversity goals and targets and will guide the development of new Canadian goals and targets for the next decade. MAC is monitoring the development of the Post-2020 Global Biodiversity Framework and is engaged through an ECCC-led discussion group on Canada's involvement in CBD.

Taskforce on Nature-Related Financial Disclosures

In 2021, a new Taskforce on Nature-related Financial Disclosures (TNFD), modelled off the Taskforce on Climate-related Financial Disclosures (TCFD), was established to develop a disclosure framework for nature-related risks, impacts and dependencies. The TNFD will be consulting on its draft framework throughout 2022, with the goal of finalizing the framework by 2023. MAC is following this initiative closely and is engaged through the TNFD's multi-stakeholder forum.

INDIGENOUS RELATIONS COMMITTEE

Chair: Neil Rayner, Leader, Indigenous Affairs, Teck Resources

The Indigenous Relations Committee works to identify, evaluate and offer informed advice to the MAC Board of Directors on strategies to foster and strengthen the relationship between Indigenous peoples and the mining industry in Canada.

In 2021, the Indigenous Relations Committee met in February, May, September and October. Throughout the year, the committee discussed a range of issues related to Indigenous participation in the mining sector.

The committee focused on the following in 2021:

United Nations Declaration on the Rights of Indigenous Peoples Legislation

Throughout 2021, MAC engaged in the legislative process for Bill C-15, *An Act Respecting the United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP Act). The new UNDRIP Act, which received royal assent and came into force on June 21, 2021, requires the federal government to collaborate with Indigenous peoples on the implementation of UNDRIP in Canada through the development of a national action plan. It also requires the federal government to ensure that federal laws are consistent with UNDRIP.

During the legislative process, MAC expressed support for an incremental and thoughtful approach to implementing UNDRIP and encouraged the federal government to enhance communications related to the intent of the legislation, the implementation approach envisioned and how the legislation may affect regulatory consultation processes. Additionally, MAC emphasized the importance of clarifying the government's approach to free, prior and informed consent as well as the process for the development of the action plan. Over the course of 2021, MAC and its members engaged with Justice Canada, Natural Resources Canada (NRCan), Crown-Indigenous Relations and Northern Affairs Canada, Indigenous Services Canada and national Indigenous organizations through both bi-lateral meetings and formal events such as an industry round table hosted by NRCan. Additionally, MAC appeared before the House of Commons Standing Committee on Indigenous and Northern Affairs.

The mining sector has an important role in reconciliation and is positioned to meaningfully contribute to discussions related to economic development and regulatory consultation processes. MAC also has a strong track record of constructive collaboration with decision-makers, Indigenous organizations and non-governmental organizations in advancing public policy. As such, MAC will welcome opportunities to participate in the development and implementation of the national UNDRIP action plan.

Indigenous Inclusion and Awareness Training Standard

Throughout 2021, MAC continued to work with the Mining Industry Human Resources Council (MiHR) to support the mining sector's response to the Truth and Reconciliation Commission of Canada's Call to Action 92 (iii), which calls on corporate Canada to educate management and staff on the history of Indigenous peoples in Canada and provide skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism. In 2021, MiHR launched an Indigenous Inclusion Training Standard, which is currently being piloted by MAC members. MiHR's guidance in this area complements criteria in MAC's *Towards Sustainable Mining Indigenous and Community Relationships* protocol.

National Benefits Sharing Framework

The Indigenous Relations Committee is engaged with NRCan on the federal government's commitment to develop a national benefits sharing framework for major projects on Indigenous territories. In 2021, MAC and several members met with NRCan for an initial discussion on the framework to exchange information based on the mining sector's knowledge of similar initiatives in other jurisdictions as well as its extensive experience in forming mutually-beneficial relationships with Indigenous communities.

Ongoing Engagement and Collaboration

MAC continues to engage with the Assembly of First Nations, Inuit Tapiriit Kanatami, and the Métis Nation through the *Towards Sustainable Mining* Community of Interest Advisory Panel, multi-interest fora and through one-on-one meetings.

In 2021, members of MAC's Indigenous Relations Committee participated in a survey commissioned by the Métis National Council (MNC) on Métis participation in mining. MNC representatives met with the committee in May to present on the findings and discuss opportunities for future collaboration between the MNC and MAC.

MAC's Indigenous Relations Committee also met with representatives from the International Boreal Conservation Campaign to discuss the Boreal Champions Initiative, an initiative that brings together Indigenous leaders and members of the business community to facilitate collaboration on conservation in Canada's boreal region.

MAC was a proud sponsor of the 2021 First Nations Major Projects Coalition's annual conference and intends to participate as a sponsor again in 2022. Through annual donations, MAC also continues to support Indspire, an Indigenous-led charity that is improving educational opportunities for First Nation, Inuit and Métis students through various initiatives.

Committee Engagement

The IRC is an ongoing and open forum for MAC member sharing of all best practices related to Indigenous participation in mining. In 2021, the committee exchanged information and lessons learned on a variety of issues and topics, including:

- Implementation of the *TSM Indigenous and Community Relationships Protocol*
- Enhancing Indigenous participation in mining
- Company-specific actions to advance reconciliation
- Company initiatives to honour the National Day for Truth and Reconciliation
- Indigenous awareness and inclusion initiatives
- Regulatory consultation processes

PUBLIC AFFAIRS COMMITTEE

Chair: Dale Austin, Manager, Government Relations, Cameco Corporation

Vice-Chair: Steve Virtue, Director, External Relations, Yamana Gold

The Public Affairs Committee (PAC) provides MAC member perspectives and guidance on MAC's government relations and communications programming. The PAC is a national platform for MAC member sharing of best practices on issues relating to corporate and association communications and advocacy activities.

Over the course of 2021, MAC's PAC played an important role in providing a forum for communications and public affairs experts to exchange information on issues affecting the sector including, but not limited to, the ongoing pandemic, supply chain and labour market shortages, and the role the industry can play in supporting a low carbon future.

Federal Advocacy

By providing feedback on strategy, messaging and materials used to engage federal decision makers on Canadian mining sector issues, the PAC provides valuable member perspective and insights to enhance the full suite of MAC's government relations activities. The Committee also monitors and discusses policy developments and actively participates in MAC advocacy activities. Due to the ongoing pandemic, MAC's annual large scale advocacy event on Parliament Hill again went virtual in 2021. Over the course of the week of November 15th, MAC's staff and Board of Directors met with over 120 MPs, Senators and senior government decision makers, to discuss MAC priorities, including the industry's response to COVID-19, mining's contribution to Indigenous economic reconciliation, and the profound opportunity before Canada to expand as a best-in-class supplier of critical minerals, metals and energy products needed for the transition to a low carbon future. MAC's PAC participated in this advocacy initiative and also provided essential input into the presentations that were circulated as part of this important GR outreach. MAC's engagement with decision makers in the 44th Parliament continues to focus on issues related to the environment and climate change, including legislative and regulatory changes and ongoing implementation of recent changes to federal project review and permitting, leveraging Canada's critical and battery mineral advantage, implementation of government legislation related to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), issues relating to Canadian mining abroad, and transportation (rail, marine), and market access issues.

Communicating the Mining Industry's Challenges and Opportunities

In 2021, MAC's communications efforts highlighted the sector's commitments to sustainability, our strong record of Indigenous participation and the industry's innovation efforts. MAC also underscored the importance of the industry in a low carbon economy, which will serve to increase the demand for minerals and metals. Critical minerals development played a significant role in MAC's communications and advocacy efforts as did TSM and the ongoing expansion of the program continues to be an important element of our public outreach strategy. This narrative aligns with the government's priorities and serves to advance MAC's advocacy efforts.

Newsletters

In 2021, MAC highlighted numerous themes of significant importance to Canada's mining sector with newsletters focused on Indigenous collaboration in Canadian mining, critical minerals, how Canadian mining companies are committed to climate action, and leadership in sustainable mining practices.

Digital Communications and Social Media

Over the course of 2020 and 2021, MAC's PAC played an important role in guiding MAC's website redesign process, with the new site being officially launched in November 2021. MAC's new website includes substantial use of video content that creates a more engaging experience for the web visitor and also includes brand new pages focused entirely on in-depth information on both TSM and Canadian mining facts and mineral literacy. New video assets highlighting TSM and each protocol were also introduced on the new website to provide a more comprehensive understanding of the work being done to encourage sustainable and responsible practices in the mining sector. MAC continues to have a very active presence on both Twitter and LinkedIn, with a combined following of over 32,000 as of December 2021. The PAC plays a valuable role in providing social media content and suggestions and is key to MAC's success in social engagement.

In May, to coincide with National Mining Week, MAC introduced a commodity specific social media series featuring video elements providing details on how minerals and metals mined by MAC members are used in every day life. This series was well received and was integrated into MAC's new website. Now in its fourth year, MAC was pleased to highlight the contributions of women in the mining industry in conjunction with October's Women's History Month. Since 2018, MAC has highlighted the accomplishments of 65 different women in Canada's mining sector. This initiative has resulted in a surge of social media activity and positive feedback for MAC. Profiles of the women who have been highlighted in the series can be found on a dedicated [page on MAC's website](#).

Canadian Mining Campaign

Since 2012, MAC has produced annual communications campaigns to promote the contributions of Canada's mining sector, primarily to federal decision makers in Ottawa, with a focus on social media channels. The PAC plays an integral role in this process, from providing concept ideas to refining the campaign's messaging.

This year, MAC's annual public awareness campaign focused on the essential role of mined materials to the products we use every day, the industry's commitment to sustainable mining and the opportunity before Canada regarding critical minerals development. In addition to this campaign, focused as usual on the Ottawa political ecosystem, MAC piloted a new and ambitious ESG focused advertising initiative in 2021. This campaign featured a suite of creative concepts used to position MAC as a leader in responsible mining and a trusted and reliable supplier of many of the world's mined resources with the ads targeted at ESG oriented companies that have large supply chain needs for metals and minerals, ESG advisory professionals across banks, consultancies, rating agencies, media, investment firms, fund managers, ESG oriented influencers in the public affairs, and business advisory services sector VP level and above professionals across sectors that have supply chain needs. The ads developed were delivered 1.3 million times to the target audiences and due to high levels of engagement, MAC will be expanding its efforts in the ESG campaign space through 2023.

MAC Events

MAC staff attended and participated in domestic and international events throughout the year to promote Canada's mining industry, and to highlight its challenges and opportunities. The PAC helps identify speaking opportunities at key mining events and functions and supports MAC events through their attendance, promotion and, at times, sponsorship. Throughout the year, MAC participated in several mining conferences across Canada including the PDAC convention, Mineral Outlook Dialogue, and many others.

MAC participated in its annual flagship address to the Greater Vancouver Board of Trade in September of 2021, focusing remarks almost entirely on the opportunity critical minerals development represents for Canada. This speech was very well attended and was accompanied by an op-ed on critical minerals and Canadian mining leadership in sustainability that appeared in the Winnipeg Free Press.

Annual Opinion Polling on Canadian Attitudes on Mining

To understand how Canadians view our sector, MAC conducted its 9th annual national public opinion poll in 2021. The PAC provided input into the poll's development and helped assess the findings to inform MAC's activities and priorities for the year ahead.

The poll identified the importance of providing people with information that helps them understand the effort and prospects for mining to reduce emissions and the role that Canadian minerals and metals can play in building clean and emerging technologies and builds cross partisan and cross regional enthusiasm across the country. This becomes even more compelling for people when they see an opportunity to compete for market share against China, using superior sustainability credentials.

Public opinion urges continued action on climate change and is open to the idea that policy solutions should be found to make it affordable to make a low carbon transition in mining and in northern communities. People want to sustain momentum and to remain competitive, not choose one over the other. There is more openness to federal incentives and to technologies such as small modular reactors – because people believe in the potential of technology and in the need for pace.

SCIENCE COMMITTEE

Chair: Kent England, Senior Environmental Scientist, Cameco Corporation

The primary focus of the Science Committee is the application of sound science and technology towards mitigating and/or minimizing the impacts of mining on aquatic and terrestrial ecosystems.

The Science Committee focuses primarily on issues related to regulations under the *Fisheries Act*, specifically the *Metal and Diamond Mining Effluent Regulations* and proposed regulations for coal mines and oil sands mines. In 2021, MAC's Science Committee met jointly with the MAC Environment Committee in monthly virtual meetings.

Metal and Diamond Mining Effluent Regulations (MDMER)

On May 30, 2018, amendments to the *Metal Mining Effluent Regulations* (MMER) were published. These amendments renamed the MMER the *Metal and Diamond Mining Effluent Regulations* (MDMER).

Some of these amendments came into force on June 1, 2018, and others came into force on January 1, 2019. More stringent requirements for effluent quality came into force in 2021, including:

- Requirement for all mines that effluent be non-acutely lethal to *Daphnia magna*.
- Effluent discharge limits for all mines for un-ionized ammonia.
- Lower limits for existing metal and diamond mines for arsenic, cyanide and lead.
- Lower limits for new metal and diamond mines for arsenic, copper, lead, nickel and zinc.

To prepare MAC members for these more stringent requirements, MAC provided detailed information to members and addressed questions as they arose.

In 2020, MAC was engaged with Environment and Climate Change Canada (ECCC) on the continued development of new functionality in an electronic reporting system for MDMER compliance data originally introduced in 2019. This included preliminary discussions with ECCC about the potential for a future capability to bulk upload data. This capability would eliminate the current need for manual re-entry of all data, eliminating the potential for data entry errors. There was no follow-up by ECCC on this matter and this engagement did not continue in 2021.

There is an important outstanding issue related to the environmental effects monitoring (EEM) requirements of the MDMER. The 2018 amendments introduced a new requirement to measure selenium in fish tissue if conditions prescribed in the regulations are met. At the time, ECCC stated their intent to provide technical guidance related to the collection of fish tissue samples for this analysis. In mid-2018 ECCC released draft guidance for comment, and MAC and our members with relevant technical expertise submitted detailed comments. Since that time, ECCC has not released an updated draft. MAC has raised the issue on numerous occasions and has offered technical support. However, in late 2020, ECCC indicated that this project was on hold, with no timelines for release of an updated draft. In early 2021, MAC proposed to ECCC a collaborative approach to developing the guidance, including forming a working group that would be chaired by MAC or co-chaired by MAC and ECCC. However, ECCC did not respond to this offer. In late 2021, MAC convened a task force to undertake development of the guidance independent of ECCC. The plan is to complete this guidance in the first half of 2022, and have it peer reviewed before release.

Proposed Coal Mining Effluent Regulations (CMER)

In November 2017, ECCC released a detailed proposal for *Fisheries Act* regulations for coal mines. MAC and our members involved in coal mining had advocated for the development of a *Fisheries Act* regulation for several years and are supportive of ECCC's efforts in this regard. Consultations were held in early 2018 and MAC submitted detailed comments. In December 2018, ECCC released an update on their proposal for the CMER and MAC again submitted detailed comments.

In February 2020, ECCC released an updated proposal for the CMER. This was intended to be the final update before publication of the proposed regulations in the *Canada Gazette*, Part I (CGI), and was high level and did not provide substantive details. In response, MAC submitted a letter to the Minister of Environment and Climate Change and detailed comments were submitted to officials.

The proposed CMER would include stringent limits for selenium and nitrate in effluent and also in streams downstream from some coal mines. MAC expressed concern that the proposed limits cannot be consistently met using current treatment technology. However, the main focus of MAC's comments was on the lack of information that ECCC has provided since the consultation process was launched in 2017.

Specifically, MAC emphasized that:

- ECCC has not provided any evidence to justify the proposed limits, including no evidence to demonstrate:
 - Anticipated environmental benefits of the proposed limits, particularly in cases where they would be lower than science-based provincial permit requirements.
 - Achievability of the proposed limits using best available technology that is economically achievable (BATEA).
- The level of detail provided by ECCC to date about many aspects of the proposed CMER is insufficient to be able to assess whether the regulations would function as intended, and without any unintended consequences.

MAC requested that ECCC provide this information and an opportunity to provide input before the proposed CMER are published in CGI.

In mid-2021, ECCC informed MAC and other stakeholders that it was working on an updated proposal for the CMER that was expected before the end of 2021. However, in late 2021 ECCC advised that this updated proposal would not be released until early 2022.

Potential *Fisheries Act* Regulations for Oil Sands Mines

MAC and our members involved in oil sands mining have been advocating for several years for a *Fisheries Act* regulation for oil sands mining. At present, oil sands mines do not deposit any effluent. Instead, all water is stored on site. While some is reused in processing to recover bitumen, this means that volumes of water stored at oil sands mines continue to increase. Being able to release this water is essential to be able to close and rehabilitate oil sands mines.

Engagement with ECCC officials on the oil sands sector and the potential development of regulations began in 2017 and accelerated in 2018. ECCC officials had developed a work plan proposing to have a regulation in place in 2023. However, in 2021 ECCC stated that the goal was now to complete the regulatory process by 2025. ECCC was expecting to release an initial proposal for the regulation in the latter half of 2021 but this has been deferred until late 2022.

As of the end of 2021, ECCC's plan for formal engagement was not clear, although ECCC was engaging actively with Indigenous communities and a Crown Indigenous Working Group has been established. In November 2021, a workshop was held with representatives of MAC, members involved in oil sands mining, and representatives of ECCC and the provincial government to provide updates and re-establish the lines of communications.

Innovation and Support for the Canada Mining Innovation Council

MAC continues to track and support innovation activities and engage with the federal government as appropriate and is a supporting member of the Canada Mining Innovation Council (CMIC), including being represented on the Board of Directors. CMIC is a national non-profit organization that coordinates and develops projects and programs in response to life of mine challenges defined by its industry members. A key part of CMIC's vision is "towards zero waste mining" with the goal of enabling deployment of technologies that reduce energy use, water use and environmental footprint by 50% by 2027. Several CMIC projects are proceeding, and three projects for alternative ore grinding technology were selected as finalists in NRCan's *Crush It! Mining Challenge*.

National Orphaned and Abandoned Mines Initiative (NOAMI)

MAC has long been a member of the NOAMI Advisory Committee but the program has now been inactive for several years. The Canadian Minerals and Metals Plan (CMMP) makes specific reference to re-activating NOAMI and in June 2020, NRCan held a multi-stakeholder virtual workshop to discuss a path forward. There were almost 80 participants in this workshop, including representatives from MAC and several of our members. Topics included community relations, innovation, risks to remediating orphaned and abandoned mine sites and preventing future abandonments. Following the workshop, at their 2020 meeting the Energy and Mines Ministers (EMMC) approved establishing a group, to report to the Intergovernmental Working Group, that will address the proposed:

- Governance model for a continuation of NOAMI
- Funding model
- Workplan

This group began meeting in late 2020 with federal, provincial, and territorial representatives only, and in early 2021 the membership was expanded to include MAC and several other stakeholders. In the first half of 2021, the Working Group developed a proposal for a 5-year plan for NOAMI, including project priorities as well as governance and funding. This proposal was presented to EMMC in August 2021. However, as a result of the federal election, the federal Minister of Natural Resources was not in attendance at EMMC, and the decision on the future of NOAMI was deferred. As of the end of 2021, EMMC had not yet addressed this matter.

Mine Environment Neutral Drainage (MEND) Program

MAC chairs the multi-stakeholder MEND Steering Committee and is the sole source of funding for the initiative. One preliminary study of the Louvicourt site in Quebec, finalized in early 2020, was intended to provide the basis for designing a more detailed study at the site, aimed at understanding the biogeochemical interactions between tailings and the various types of plants that have been established. Due to restrictions related to COVID-19, this project was not continued in 2020 and no other field studies were undertaken. Instead, MEND focused on initiating a study related to the geotechnical implications of geochemical reactions in tailings and waste rock, to be completed in partnership with the International Network for Acid Prevention. This project was formally launched in late 2020 and was largely completed in 2021.

Canadian Ecotoxicity Workshop (CEW)

CEW 2020 was scheduled to be held in Halifax in October 2020 but was postponed until 2021 due to COVID-19. CEW 2021 was held in October 2021 and included a technical session on mining co-chaired by MAC.

TAILINGS WORKING GROUP

Chair: Mike Davies, Senior Advisor, Environment, Teck Resources Limited

The Tailings Working Group (TWG) reviews the management of tailings and mine waste to allow the identification of best practices that can then be used to develop industry guidelines for the safe and environmentally-responsible operation of tailings and water management facilities. The TWG also promotes effective facility management and risk assessment at MAC member facilities and throughout the broader mining industry. The TWG contributes to MAC's TSM initiative, specifically with the development and implementation of the TSM Tailings Management Protocol, and with joint delivery of tailings management workshops.

Background

MAC has played a global leadership role on tailings management since the 1990s when the first edition of MAC's *A Guide to the Management of Tailings Facilities* (the Tailings Guide) was released. The companion document, *Developing an Operation, Maintenance, and Surveillance Manual for Tailings and Water Management Facilities* (the OMS Guide) was released in 2003. In 2004, MAC launched the TSM initiative, with tailings management as a core component and the introduction of the *Tailings Management Protocol* (the Protocol) to measure performance. In 2015, in response to the failure of a tailings facility at the Mount Polley Mine in British Columbia, MAC launched both independent and internal reviews of the Protocol, Tailings Guide and OMS Guide. The internal review was led by MAC's Tailings Working Group (TWG), which consists of more than 50 representatives from MAC's membership with collective experience and expertise in tailings management in Canada and around the world.

As an outcome of these reviews, the Protocol, Tailings Guide and OMS Guide were revised to respond to recommendations of the independent review, reflect current best practices, and to reflect lessons learned in the implementation of the previous versions of these documents. Revisions were completed in two steps:

November 2017

- Third edition of the Tailings Guide
- Revised *TSM Tailings Management Protocol*
- Introduced a new Table of Conformance

March 2019

- Second edition of the OMS Guide
- Version 3.1 of the Tailings Guide (minor edits)
- Revised *TSM Tailings Management Protocol*
- Revised Table of Conformance

All documents are available for download at www.mining.ca/tailings-management and are available in English, French and Spanish.

Global Tailings Review and the *Global Industry Standard on Tailings Management*

In 2019, MAC became much more engaged in tailings management initiatives at the international level due in part to the Brumadinho tailings facility failure in Brazil. In the wake of this tragedy, the Global Tailings Review was launched in the spring of 2019 by the International Council on Mining and Metals (ICMM), the United Nations Environment Programme, and the Principles for Responsible Investment.

The objective of the Global Tailings Review was to develop a global tailings standard. A seven-member Expert Panel and Chair were tasked with this work. To support them, the co-convening partners appointed a 14-member multi-stakeholder Advisory Group, which included MAC's tailings-lead and a senior tailings expert from a MAC member (TWG Chair). The strong MAC role on the Advisory Group (the only representatives of the mining industry on the group) was a significant acknowledgement of MAC's global leadership and expertise on tailings management. The *Global Industry Standard on Tailings Management Standard* (the GISTM) was released in August 2020 and prescribes 77 requirements across the following six topics:

- Knowledge base
- Affected communities
- Design, construction, operation and monitoring of tailings facilities
- Management and governance
- Emergency response and long-term recovery
- Public disclosure

MAC Response to the Release of the *Global Industry Standard on Tailings Management*

After the release of the Standard, MAC conducted a detailed analysis of its requirements compared to those in the:

- *TSM Tailings Management Protocol*
- *TSM Indigenous and Community Relationships Protocol*
- *TSM Water Stewardship Protocol*
- *TSM Climate Change Protocol*

This analysis concluded that there is good alignment between TSM and the requirements in the GISTM, with TSM requirements as of 2019 exceeding many of the requirements in it, most related to the prevention of catastrophic failures. The analysis concluded that there are significant strengths to TSM, including:

- The tailings management component of TSM reflects continual improvement based upon more than 20 years of implementation at mines sites around the world, and input from a 2015 independent review.
- The Table of Conformance, first developed in 2017 as a performance measurement tool for the *Tailings Management Protocol*, and expanded in 2019, provides a very high level of rigor in performance measurement.
- The *Indigenous and Community Relationships Protocol* reflects almost 20 years of implementation experience and provides well defined and described performance indicators and criteria.
- TSM has a demonstrated system for performance measurement, third-party verification, and public reporting of results for nearly 20 years – core elements that the GISTM has now just introduced.

This analysis also identified a number of areas aligned with MAC's commitment to continual improvement in the tailings management component of TSM. In November 2020, the MAC Board of Directors approved a proposal to proceed with updates to improve alignment with the GISTM and further strengthen MAC's requirements and guidance for tailings management. The Board also approved expanding the scope of application of the *Tailings Management Protocol* to include closed and inactive tailings facilities.

Updates to the Tailings Guide and the OMS Guide

Following the MAC Board decision in November 2020, MAC proceeded with developing updates to the Tailings Guide and the OMS Guide. These updates, approved by the MAC Board in March 2021, include:

- Increasing the level of detail in the Tailings Guide about the roles and responsibilities for the key roles of Accountable Executive Officer, Responsible Person, and Engineer of Record.
- Adding details to the Tailings Guide regarding the documentation of site characterization information, the design and construction of tailings facilities, and closure plans. This information had been in the 2004 version of the OMS Guide but had been omitted in the 2017/2019 updates to the Tailings Guide and the OMS Guide.
- Moved text on control of documented information from the OMS Guide to the Tailings Guide and revised the text to make it applicable to a wider range of documents, not just OMS manuals.
- Added details in the Tailings Guide about communications, including moving relevant text from the OMS Guide to have a single, consolidated discussion of this important topic.
- Deleted the checklists previously included as an appendix. Given the role and scope of the Table of Conformance, it was agreed that the checklists in the Tailings Guide were no longer useful.

MAC Support to ICMM

In parallel with the development of the GISTM, ICMM undertook development of international guidance on tailings management. In 2016, during development of ICMM's Tailings Governance Framework Position Statement, a review of international best practices led to the conclusion that MAC's TSM guidance represented global best practice. MAC was approached to support development of the ICMM guidance.

MAC's support included having MAC's tailings-lead as a lead author of the ICMM guidance, collaborating with a small subgroup that included representatives of three of MAC's members who were also involved in the MAC TWG. The ICMM *Tailings Management Good Practice Guide* was released in May 2021, with MAC's tailings lead participating in the launch event.

TAXATION COMMITTEE

Chair: Jocelin Paradis, Vice President, Tax, Rio Tinto Canada

The Taxation Committee monitors finance-related issues of national importance, advocates for tax changes to enhance industry competitiveness, and serves as a useful network for members to exchange information on tax and fiscal issues.

Federal Fiscal Policy Engagement

Throughout 2021, MAC engaged with the federal government to underscore the importance of the fiscal environment to Canada's competitiveness for new mineral investment, and areas where government support is needed, including infrastructure investments in Canada's remote and northern regions. In general, 2021 was a quiet year on the tax front.

In April 2021, MAC welcomed the government's budget investment of a Critical Minerals Centre of Excellence and other measures in support of critical minerals.

OECD Developments and Engagement

MAC has continued to engage with Finance Canada on an evolving OECD tax proposal. The OECD has developed and is advancing a tax proposal that would provide a taxing right to importing jurisdictions on the goods and services they consume. The rationale offered for this proposal is that the markets in these jurisdictions have a value – the marketing intangible – that is currently undervalued and without which international transactions could not occur.

Principal concerns from the mining industry are over double taxation (where Canada, for example, is unlikely to reduce the current tax payable on mining companies despite the tax right for these same profits being made eligible for claim by importing jurisdictions) and social license for international operators (whereby developing countries for whom resource development is a major economic driver could see the value of mining reduced as a portion of that benefit now becomes taxable by another jurisdiction, in many cases, China).

Finance Canada has agreed with MAC's position to support a carve out for mining from Pillar 1 of the tax reforms. The practical implications of the carve out remain a subject of conversation but actions have been taken to implement the reforms as negotiations continue. ICMM is preparing a submission on Pillar 2 of the tax reform package, which MAC will endorse.

Beyond engagement with the Department of Finance, MAC participates in the OECD Tax Committee, the ICMM tax working group, liaises with the IGF, and has participated in OECD public consultations and through the issuance of written submissions.

TRANSPORTATION COMMITTEE

Chair: Michael O'Shaughnessy, Director, Logistics Strategy and Planning, Teck Resources

The Transportation Committee contributes to the federal policy, legislative and regulatory environment for the transport of minerals and metals to enhance the competitiveness of Canada's mining industry.

Each year, Canada's exports of minerals and metals amount to tens of billions of dollars. In 2021, Canada's mineral export value exceeded \$102 billion, representing 21% of the value of Canada's total exports. These mineral and metal products account for much of the volume handled at Canadian ports, and over half of the revenue generated (and comparable volume of traffic shipped) by Canadian railways.

A low-cost, effective and reliable system of marine, rail and truck transportation is essential to the Canadian mining industry's international competitiveness. This is especially important as Canada must compete against other countries that have significantly shorter logistical supply chains. Given that trade starts at home, it is also key to enabling the industry to take advantage of current and future trade agreements. 2021 proved a volatile year for supply chain fluidity due to the ongoing pandemic-related disruptions.

RAIL

As part of the implementation of Bill C-49, the *Transportation Modernization Act*, a number of important regulatory and policy activities remain ongoing on the rail file. Transport Canada (TC) is undertaking consultations on rail data transparency to establish a permanent data transparency regime and a Canadian Transportation Agency consultation took place in 2020 and 2021 on a plurality of measures that come to bear on railway cost of capital. MAC has made submissions to these consultations. On the former, TC released an updated proposal in September 2021 that was insufficiently granular or comprehensive to achieve the level of transparency required by shippers. MAC engaged with officials and political staff on this topic, and the consultation remains ongoing. On the latter, the consultation is multi-phase and remained ongoing over the course of 2021.

MAC also engaged in consultations concerning training obligations for the handling and transportation of dangerous goods. The Canadian Standards Association led a multi-stakeholder effort to develop general awareness training for employees that handle dangerous goods in their jobs. MAC engaged in this development process, as well with TC, following their publication of this standard in Canada Gazette 1 in December 2021.

MAC is committed to remain engaged on the rail file until balance is restored, and participates regularly in forums and processes to ensure the safe management and transportation of dangerous goods. Other activities include regular engagements through the Commodity Supply Chain Table, participation in the Collaborative Forward Planning Initiative, and through the Rail Resources Working Group, overseen by Natural Resources Canada.

A priority for the association remains focused on shippers receiving a right to a costing assessment in the context of a Final Offer Arbitration (FOA), one of the remedies under the CTA. For decades, the one useful remedy for captive shippers was FOA, and in order for it to work properly, there has to be reasonable access to information on both sides of an arbitration, including with respect to costing.

MARINE

Mining is a leading customer of Canadian ports. The Port of Montreal handles large volumes of iron ore and salt, as well as other mineral products such as fertilizer, ores, gypsum and scrap metal. Beyond Montreal, the mining industry is a major contributor to Canada's St. Lawrence Seaway. Shipments of iron ore, coke and coal represent ~20% of total seaway traffic, with iron ore accounting for the second-largest share of any commodity shipped. Steelmaking coal accounts for ~19% of the total overall volume of goods handled at the Port of Vancouver annually, which moves shipments to Japan, Korea, India, China and Taiwan, with movements also directed to Europe and South America. The ability to fluidly transition modes of transportation from ground to marine transport at ports is a critical determinant of Canada's supply chain competitiveness, reliability and credibility.

The International Maritime Organization (IMO) is the global body that regulates pollution and safety practices at sea. The evolution of the International Maritime Solid Bulk Cargoes Code has implications for the way mining companies ship their products. Over the course of 2021, MAC remained actively engaged on a corrosivity issue and a proposed ban on the carriage and consumption of Heavy Fuel Oil in Arctic waters. MAC participated on digital delegations to the IMO on each issue and has supported the development of technical work, policy recommendations and submissions on both files. An important part of this work is maintaining regular contact with the various aspects of the marine supply chain, including ports, carriers, terminals and others. MAC maintains regular engagement with decision makers on these files at TC, Northern Affairs Canada and Environment and Climate Change Canada.

INTERNATIONAL SOCIAL RESPONSIBILITY (ISR) COMMITTEE

Chair: Monica Moretto, Vice President, Social Sustainability, Diversity and Inclusion, Pan American Silver

The International Social Responsibility Committee's mandate is to review international issues that affect the interests of the members, as well as identify emerging issues, set priorities, and develop policy advice and strategies for the MAC Board of Directors.

Federal Policy Related to Canadian Mining Abroad

Canadian Ombudsperson for Responsible Enterprise (CORE)

The CORE formally launched its complaint process in April 2021. This launch was followed by a relatively quiet period during which the International Human Rights Subcommittee of the House of Commons Foreign Affairs and International Development Committee launched a brief study on the mandate of the CORE (addressed below). Over the course of the year, the CORE also began development of a methodology for how it will approach inquiries that it chooses to launch on its own.

In October, the CORE shared with MAC and other stakeholders that, since launching its complaint process, it had received over 40 inquiries. Of these, several failed to meet the eligibility criteria to be considered a complaint because the timing of the related incidents predated the eligibility date spelled out in the CORE's Order in Council (OIC). Ineligibility of the other inquiries was based on either the issue not meeting a threshold of an alleged human rights abuse or the inquiry relating to a sector not covered by the CORE mandate (i.e., agriculture). The CORE referred two complaints (one related to allegations related to working conditions and corruption at a mining operation in Congo for which the CORE did not disclose the company name, and one focused on textiles) to Canada's National Contact Point (NCP), and one related to peacekeeping to the United Nations. One textile industry complaint that the CORE initially referred to the internal process of the company in question, has now returned to the CORE.

In addition to working through the received inquiries, the CORE also announced that it was beginning work on a study related to forced labour in textile supply chains.

Study on the CORE by the International Human Rights Subcommittee of the House of Commons Foreign Affairs and International Development Committee

Over the course of the first half of the year, the International Human Rights Subcommittee of the House of Commons Foreign Affairs and International Development Committee launched a study into the mandate of the CORE. The study was relatively brief with only a small number of witnesses testifying over five hearing days. MAC appeared before the committee as part of an "industry panel" on April 20th. The study concluded with a report being tabled in June. Based on a report earlier in the year on the situation with the Uyghurs, it was widely anticipated that this report would contain a recommendation that the CORE should have more powers, including the power to compel evidence and testimony. Instead, the report contained only a single recommendation suggesting the need for legislation requiring mandatory human rights due diligence for Canadian companies. The issue of additional powers for the CORE was included only as a consideration rather than a recommendation.

Global Affairs Canada (GAC) Consultation to Develop a Responsible Business Conduct Strategy

Over the course of much of 2020 and the first half of 2021, Global Affairs Canada worked to develop a new Responsible Business Conduct (RBC) Strategy to replace the Extractive Sector CSR Strategy. When launched, this new strategy will apply to all sectors, rather than just extractive sectors, a key ask of MAC's. The strategy was reportedly completed over the course of the summer but was held back due to the federal election, though it ended up becoming a campaign commitment in the Liberal Election Platform. By the end of 2021, it had still not been released leading to an expectation that it will be announced sometime in the first half of 2022.

Coalition for Responsible Enterprise (CRE)

In 2021, the ISR Committee worked with members and other relevant associations including the PDAC, Chamber of Commerce and Canadian Apparel Federation, to establish an informal business coalition to act as an additional business voice on issues related to the CORE and RBC. Named the Coalition for Responsible Enterprise (CRE), the coalition will be supported by Fasken Martineau and was initially funded by individual contributions from several ISR Committee members. The coalition began engaging with the federal government shortly after Parliament resumed after the fall election. Feedback from GAC officials towards the end of 2021 welcomed the new and constructive business voice to advance effective and workable approaches to RBC.

“Private Members” Bills related to Modern Slavery, Human Rights and Canadian Businesses Operating Abroad

Picking up on previous efforts by Liberal MP, John McKay, two versions of Quebec Senator Julie Miville-Dechêne's *Modern Slavery Act* progressed through the 43rd (Bill S-216, prior to the federal election) and 44th Parliaments (Bill S-211, introduced in expanded form, following the election) in 2021. MAC continues to be supportive of legislative approaches to address modern slavery and found both of the Senator's bills to be largely aligned with our own work through TSM. MAC did, however, suggest a few opportunities on improvements to each.

A similar bill, Bill C-243, the *Ending the Use of Forced Labour and Child Labour in Supply Chains Act*, was introduced in the House of Commons in November by Ontario Liberal MP Marcus Powlowski, that seeks to amend to the public services/procurement Act, mandating the government to consider modern slavery issues.

As legislation on modern slavery was included in both the Liberal and Conservative election platforms, it is anticipated that the government will introduce related legislation during the current Parliament.

Outreach and Engagement

Outreach and engagement activities were significantly hindered in 2021 as a result of the pandemic. Below are some of the activities that were able to take place this year.

Dialogue with Investment Community

This year, the ISR Committee continued its ongoing partnership with Millani – an ESG consulting firm – to host another round of our annual dialogue sessions with Canadian institutional investors. The dialogue included MAC members, institutional investors and representatives from Indigenous communities and organizations and focused on how to meaningfully engage with Indigenous peoples on

ESG standard development and ensure that ESG assessments respectfully and accurately reflect the state of relationships on the ground. The session included a panel discussion with:

- Mark Podlasly, Director of Economic Policy and Initiatives, First Nations Major Projects Coalition, Chair of the First Nations Limited Partnership
- Matthew Pike, Aboriginal Affairs Superintendent, Vale
- Theresa Baikie, Impact and Benefit Agreement Coordinator, Nunatsiavut Government
- Ekaterina Hardin, Analyst, Sector Lead, Extractives and Minerals Processing Value Reporting Foundation
- Tara Shea, Senior Director, Regulatory and Indigenous Affairs, Mining Association of Canada

MAC and Millani subsequently published a report entitled *The Value in Indigenous Relations*. This paper was covered by Top 1000 Funds, an online publication focused on investments, and MAC promoted it on its social media channels.

ENERGY COMMITTEE AND CLIMATE CHANGE WORKING GROUP

Chair: Chris Adachi, Manager, Sustainability and Climate Change, Teck Resources Limited

The Energy Committee promotes overall energy management, including improved energy efficiency and greenhouse gas intensity performance.

The Energy and Climate Change committee had a very busy year in 2021, with multiple consultations on a range of climate change policies, mechanisms, regulations and legislation.

Carbon Pricing and the Output-Based Pricing System Review

MAC worked constructively with federal government decision-makers on the proposed output-based standards for mining, smelting and iron ore pelletizing. We were pleased to see several of our priorities recognized by Environment and Climate Change Canada (ECCC) in the final regulation released in 2019, including recognition of the need to treat process emissions differently than combustion emissions.

In August 2021, ECCC released an [Update to the Pan-Canadian Approach to Carbon Pollution Pricing 2023-2030](#). The release outlines the framework the federal government has issued to assess sub-national carbon pricing systems to establish both carbon-cost and systemic equivalency for the 2023-2030 time period. The government had previously announced its intent to increase the federal carbon price to \$170/tonne by 2030 increasing by \$15 annually starting in 2023. This framework sets out the process for how the federal government will work with provinces, and how the process will work, to ensure the backstop is applied equally across the country. Two key points were notable: 1) the framework was released unilaterally without consultation with the provinces and territories; and 2) it extends beyond carbon pricing and includes systemic elements of sub-national carbon pricing regimes. This approach suggests an emboldened federal government, likely resulting from the recent SCCC carbon pricing ruling, with the goal of creating greater unity across carbon pricing systems in Canada. While MAC is unlikely to engage in this consultation in a substantive way – due to differently situated member operations in different carbon pricing regimes across the country, and the unlikelihood of a consolidated meaningful position – MAC nevertheless hosted a meeting with ECCC on this topic to gain insight. The following were key takeaways:

- The federal government is committed to working with the provinces/territories to ensure their systems meet the benchmark. They do not expect to be leading any carbon pricing system in the future. They plan to be consistent in their requirements and support the success of provincial/territorial systems.
- The next re-assessment of the system will not be until 2026.
- In explicit price-based systems (i.e. levy + OBPS) the province/territory is committing to a carbon price but not to an emissions level. Thus, the federal evaluation is focused on ensuring that the system is designed to ensure that the marginal price of carbon in the system (i.e., the value of an emission reduction or the price of performance/ offset credits (i.e. purchases you need to make to satisfy compliance obligations) is equal to the required carbon price (i.e. the \$65 in 2023 rising to \$170 in 2030)).
-

- In cap and trade systems (i.e., Quebec, Nova Scotia), the province/territory is committing to a future emissions level, but not a carbon price. The caps must essentially be set at levels that could be achieved through putting in place an explicit price based system. They have already assessed Quebec’s proposed caps and communicated that they believe these are adequate to 2030. With regards to Quebec purchasing credits from California, they acknowledge that purchase doesn’t currently count towards Canada’s emissions reductions reported to the UNFCCC but hope it will in the future.

Carbon Net Neutrality Legislation:

First tabled in November 2020, the government’s neutrality legislation, Bill C-12, *An Act respecting transparency and accountability in Canada’s efforts to achieve net-zero greenhouse gas emissions by the year 2050* received royal assent on June 29, 2021. The legislation requires the federal Minister of Environment and Climate Change to set five-year targets for cutting carbon emissions starting in 2030, and ending in 2050, when the legislation mandates Canada to achieve its net-zero target. The legislation is essentially an accountability and reporting framework for the government to keep itself accountable to Canadians regarding progress and attainment of its net zero emissions objective. There are no obligations on companies under the proposed legislation. MAC was not invited to participate in the parliamentary review of the bill, but did send written comments to committee members.

Carbon Revenue Recycling

ECCC advanced a consultation on carbon revenue recycling early in 2021 soliciting further input on a proposal: 1) to give money back to “opt-in” provinces and territories, and 2) to develop a fund for application for companies located in “non-opt-in” provinces. Regarding the latter, MAC proposed that ECCC look to the CleanBC fund to replicate in the design of its proposed fund and include elements that maximize project eligibility and flexibility. We received positive feedback on our submission, which resulted in a request for a specific session with MAC and Teck Resources, where the following points were underscored:

- Investments should not focus explicitly on greatest abatement for dollar invested, but also utility, need and regionality.
- Investments need to coincide with company financial planning and internal budget cycles.
- Investments should fund between 50-90% of projects to maximize flexibility and number of eligible projects for proponents.

Just Transition

NRCan released a Just Transition consultation paper prior to the 2021 federal election to which MAC made a submission at the end of September. At a high level, NRCan’s paper proposes the establishment of a panel and a set of “people-centered” principles that would guide the panel in an oversight capacity on federal policy that comes to bear on just transition. Worker and community well-being are the central focus of NRCan’s white paper, and the proposed principles it advances. Conspicuously absent from the list of principles was one focusing on the broader economic implications and considerations around a just transition. To enmesh an economic logic into the development of a federal Just Transition policy, MAC recommended the government strengthen the initial set of principles to include the following:

- On the pathway to a low GHG economy, and in a manner consistent with Canada’s overarching climate goals and objectives, the government of Canada commits to a “least-disruption

possible” approach for workers and communities recognizing that doing so maximizes worker and community well-being.

MAC also communicated the need for greater policy coherence to prevent off-grid mines in Canada from becoming a constituency of concern in the context of a just transition dialogue, with materially negative trade-offs for local Indigenous communities, regional economies and sovereignty considerations. Publication of a “what we heard” report is expected in 2022.

Border Carbon Adjustments (BCA)

In August 2021, Finance Canada launched a preliminary consultation on BCA’s to inform the development of a broader white paper on the topic, which will serve as a platform for formal consultation in the future. To support the development of a MAC position, MAC hosted legal trade experts from BLG and the authors of a recent report on this topic (Aaron Crosby from IISD and Michael Bernstein from Clean Prosperity) to present to a joint meeting of the MAC Tax and CC committees. Discussions covered a series of risks and concerns, and helped underscore how complex this policy subject is, and the high risk of unintended consequences likely to occur should jurisdictions embrace these policies in growing numbers. Key Points that will inform MAC’s position are as follows:

- **Traceability and Life-cycle Carbon Intensity:** In the smelting and the refining space, technology does not yet exist to continually trace materials (and therefore carbon intensity) from pre- and post-smelting segments of the supply chain. This limits the ability to adequately map life-cycle carbon intensity across the industry.
- **Applicable Scope:** Noting the traceability limitation, the EU regime proposal is limited to scope 1 emissions. If pursued in Canada, implications for our enormous global scope 2 clean energy advantage – hosting 82% renewable and emission-free power – may be marginalized to our detriment.
- **Enforcement:** From an export standpoint, while Canada has a number of free-trade agreements which include Investor State Dispute Settlement (ISDS) mechanisms to resolve trade conflicts, many export markets are without such agreements and tools, creating reliance on WTO processes – around which huge uncertainty on this topic, and in general, exist – to settle potential trade disputes.
- **Primacy of EITE Protections:** MAC unequivocally supports EITE protections for exposed sectors, including mining and oil and gas, and does not support the displacement of these protections in lieu of a border carbon adjustment regime as has been negotiated in the EU context.

To expand our engagement, MAC requested a micro-roundtable with the Finance Canada leads on this file to share and gain perspective at this stage of the process. Next steps will include the formal release of a consultation white paper, and a broader public consultation on this topic, anticipated in 2022.

Carbon Offsets

MAC supports the use of carbon offsets to reduce GHG emissions. Offsets provide an important tool to achieve emissions reductions at a low cost. The use of offsets not only provides greater flexibility and liquidity within the market, but also promotes the economic benefit of developing a low-carbon industry and economy. Further, efficient access to a plurality of offsets is essential for many industrial

operations – including mining companies – to achieve net neutral carbon emissions. To maximize efficiency, offsets should be fungible amongst jurisdictions with comparable regulations, thereby broadening the market and driving down costs. MAC believes it is also critical that a rigorous assurance system be adopted to ensure carbon offsets are credible and of the highest quality and integrity. MAC

remains engaged in supporting the development of this system in a manner that promotes accessibility to industrial operators. Since 2019, MAC has prepared two submissions to ECCC on offsets as well as met with ECCC officials on this topic. MAC has also submitted comments to ECCC's proposed principles for Canada's negotiation under Article 6 of the Paris Accord - the article seeking to establish a global trading framework for offsets. In Q1 2021, the federal government published a national offset protocol framework in Gazette I to which MAC submitted comments as well as re-engaged with ECCC officials. Beyond the expected level of verification and administration to demonstrate additionality, the availability of offsets to mining companies based on ECCC's prioritized protocols seem very limited. Based on this, MAC's submission focused on and reiterated the need for ECCC to recognize pre-existing protocols in sub-national jurisdictions as eligible for trading within the federal system. No meetings of this group are scheduled at this time.

Sustainable Financing

MAC is leading the mining industry technical committee on the development of a transition financing taxonomy guidance document for the Canadian natural resources sector that is being financed by Canada's financial sector. In the spring, MAC led a successful push to bring a majority of associations on board with a proposal to soften what would have been the strictest scope 3 emission requirements for any sustainable financing standard anywhere in the world. Unfortunately, due to an inability to reconcile differences, the effort to develop the taxonomy has concluded.

Hydrogen and Small Modular Nuclear Reactors (SMRs)

MAC remained actively engaged in government consultations on hydrogen and SMRs over the course of 2021. Both technology spaces offer mining potentially significant opportunities for emissions reductions, especially at off-grid mines. In the hydrogen space, MAC agreed to Co-Chair a Hydrogen in Mining Working Group with CANMET Mining to support the development and deployment of hydrogen technologies in the mining sector. On SMRs, MAC continues to advocate support for SMR development as an important tool in the climate transition toolbox, while noting that social license is critical to the broader success of this technology's deployment and that more capacity and engagement from the federal government is needed if Canada is to succeed in this space

International Carbon Markets

In the winter, ECCC hosted a multi-sector meeting on a framework the department has developed for Internationally Transferred Mitigation Outcomes (ITMOs). The Paris Agreement (PA) recognizes that Parties may choose to pursue voluntary cooperation in the implementation of their nationally determined contributions (NDCs) to allow for higher ambition in their mitigation and adaptation actions. Article 6 of the PA sets out a framework for Parties to participate in international carbon markets through the use of internationally transferred mitigation outcomes (ITMOs). As laid out in the updated 2030 climate plan, the government is prioritizing action to reduce emissions within Canada, but also recognizes that ITMOs could complement domestic efforts and contribute to sustainable development abroad. As part of this process, the department presented a series of principles it intends to use as a basis for negotiations with international partners in this space.

Roughly half of them were standard principles around establishing meaningful and functional partnerships that would enable the establishment of an international market for offsets, while the other half were largely moralistic pleasantries that, were they to be adopted, would likely handicap Canada's ability to negotiate competitively. MAC made a submission communicating that these principles be abandoned to strengthen Canada's hand.

Building on this work, and as part of our engagement with the Public Policy Forum, MAC worked with partners to develop the following recommendations to shape international climate policy in Canada's interests:

- Pursue an international framework for accounting for GHG emissions that considers the effects of the country's exports on global carbon emissions in calculating its Nationally Determined Contributions.
- Develop formal and informal international arrangements with countries that have similar export-emission profiles as Canada and, therefore, share our priorities in establishing a fair international carbon emissions accounting framework.
- Advance and promote a position on Article 6 in the Paris Agreement that balances the interests of producing and consuming nations and does not penalize Canada for its low carbon advantage.
- Pursue ITMOs and other bilateral arrangements (including pilot agreements under Article 6) to experiment with different means of distributing carbon emissions among countries through a fair and transparent process.
- Step up efforts to ensure that adoption of CBAM in Europe and elsewhere recognizes Canada's carbon pricing system.
- Develop world-leading policy and technical capacity within the Government of Canada to advise Canadian companies on carbon-related trade issues, including continuing the efforts to have Canada become home to the headquarters of the International Sustainability Standards Board.

Clean Fuel Regulation

See Northern Affairs

2030 Updated Emissions Reduction Plan

In late December 2021, ECCC launched consultations on new climate commitments to achieve 40-45% emissions reduction below 2005 levels by 2030. The plan is required to be tabled in Parliament by the end of March 2022 in accordance with the recently legislated Net Zero Accountability Act. The following areas were highlighted as focus areas for deeper decarbonization:

- Mandating the sale of zero-emission vehicles so that 100 percent of new light-duty vehicles (cars, pickups, etc.) sold in Canada are zero emission by 2035 and at least 50 percent by 2030;
- Developing emissions standards for heavy-duty vehicles that are aligned with the most ambitious standards in North America, and requiring that 100 percent of selected categories of medium- and heavy-duty vehicles be zero emission by 2040;
- Capping emissions from the oil and gas sector at current levels and requiring that they decline at the pace and scale needed to get to net zero by 2050;

- Developing a plan to reduce methane emissions across the broader Canadian economy in support of the Global Methane Pledge and the goals in Canada's climate plan, reducing oil and gas methane emissions by at least 75 percent below 2012 levels by 2030 through an approach that includes regulations, as well as regulating methane landfill emissions and reducing agricultural methane emissions;
- Transitioning to a net-zero emitting electricity grid by 2035.

MAC produced a submission for this consultation that provided an overview of MAC's work in the climate space, of the opportunity that critical minerals presents for the country, and the centrality of policy success in this area to Canada's climate action ambitions and clean technology manufacturing objectives.

NORTHERN AFFAIRS COMMITTEE

Chair: Vacant

The Northern Affairs Committee (NAC) contributes to the federal policy, legislative and regulatory environment to enhance the competitiveness of mining companies operating in Canada's remote and northern regions and to facilitate sustainable growth in the Canadian mining industry.

Mining is the largest private sector economic driver in Canada's North, employing approximately 8,500 people (1 in every 6 jobs). Direct GDP contributions in the Northwest Territories and Nunavut are approximately 27% and 28%, respectively in 2019, and 6% in Yukon as of 2018. Mining has had a transformative effect on northern and Indigenous communities through generating employment, skills training and, in some cases, royalty or direct equity shares, all while paying taxes and royalties to governments. While these contributions are substantial, the potential is even greater. MAC research indicates that new investment could exceed \$35 billion given the right investment and market realities.

Locating, developing and operating mines in the northern regions of Canada's provinces and across the three territories is challenging. Raising awareness of the costs, challenges and opportunities that mining presents for northern Canada is a key priority of MAC's NAC. The committee's focus is to work with governments to ensure the industry has a clear, effective and efficient regulatory permitting process, and to highlight the need for strategic infrastructure investments.

Northern Infrastructure Developments

The future of Canada's mineral industry lies increasingly in remote and northern regions, and the current infrastructure deficit acts as a major barrier to opportunities for greater wealth discovery and production. Exacerbating this is the historic under-eligibility of the territories to access federal infrastructure programs due to "public use" program criteria and "per capita" funding formulas.

Characterized by disparate communities, extreme temperatures, and virtually no infrastructure or people for hundreds of kilometres, remote and northern regions have some of the highest per-capita living costs in the country. Similarly, industry research, detailed in the [Levelling the Playing Field](#) report, has found that it costs over six times more to explore and twice as much to build new mines in northern regions compared to their southern counterparts.

Building off this research platform, MAC has actively advocated for strategic programs that help reduce the infrastructure deficit, and improve the investment attractiveness of the North. In recent years, successful measures include the creation of a Northern specific allocation in the National Trade Corridors Initiative program, funding that was renewed in Budget 2021 reflecting recommendations in MAC's pre-budget submission. Beyond this, more project-specific funding for strategic projects has been forthcoming in recent years than in living memory, including the Yukon Resource Gateway, the T'licho Road in the NWT, a segment of the McKenzie Valley Highway in the NWT, and the Kivaliq Hydro Fibre Link. MAC has actively supported these projects through letters of support, joint advocacy with Indigenous communities, and presentations at northern forums.

In addition to the above, MAC provided support for two NWT government infrastructure applications: first, with a letter of support to renew the Frank Channel Bridge, which as at end of life, noting the criticality of this bridge in supporting broader supply chain and logistical activities that the territory's

diamond mines rely on; second, to review a preliminary mining power demand study that was undertaken for the territory by Ian Murray & Company Ltd. The report was projecting anticipated power demand and potential as a scoping exercise in support of the Taltson Power project.

ARCTIC AND NORTHERN POLICY FRAMEWORK

MAC has long supported the government's adoption of a new Arctic and Northern Policy Framework (ANPF) – an initiative that, as implemented, will plug a significant policy gap at the federal level and has as its goal bridging multiple gaps in the quality of life between northerners and southerners, including Indigenous communities.

After several years of engagement at multiple levels of government, MAC was pleased to see upon its release that the ANPF recognizes how critical addressing the infrastructure gap is to the social and economic objectives in Goal 2 that focuses on strategic infrastructure. The focus on the importance of optimizing resource development, including in the mining and energy sectors, as a foundation on which strong, sustainable, diversified and inclusive local and regional economies can be built, was appreciated. Unfortunately, work on the Framework was delayed due to COVID-19 and did not resume in 2021.

CLIMATE CHANGE AND ENERGY

High energy costs in the North have long served as a strong incentive to maximize energy and fuel efficiency, but evidence suggests that the proverbial “low-hanging” fruit are gone, meaning future improvements will be incremental and gradual, barring a technological breakthrough. Moreover, fuel switching opportunities in remote and northern Canada are limited and contingent on geographical considerations. Together, the infrastructure deficit and the state of currently available technologies do not provide sufficient options to displace diesel (and associated emissions) in the timeframe needed, nor on the scale required, so that companies absorb the carbon price almost exclusively as a cost of business.

A core component of MAC's engagement with decision makers, in all consultation contexts that pertain to climate change policy or regulation, is ensuring the sensitivity to remote and northern off-grid operations is understood and taken into account as well as advocating for recognition of off-grid mining operations in government programs. After years of engagement, recent conceptual recognition of the need to address off-grid carbon vulnerability has begun to translate into practical programmatic pathways at both ISED and NRCan. First, via NRCan, MAC was advised that the Smart Renewables and Electrification Pathways (SREPS) program would accommodate applications from off-grid mines. The SREPS program is capitalized at \$964 million and is set to run over 4 years. MAC was pleased to note the level of interest in this program. Second, MAC was advised that the Net Zero Accelerator in the Strategic Innovation fund that off-grid mining projects would be eligible for application under the decarbonization stream.

Building on MAC's 2021 submission to NRCan's Just Transition Legislation where we identified the need for greater policy coherence to prevent off-grid mines in Canada from becoming a constituency of concern in a Just Transition, with materially negative trade-offs for local Indigenous communities,

regional economies and sovereignty considerations, MAC secured a commitment from CIRNAC to form an inter-departmental ADM level working group to review this issue. MAC produced a memo outlining our perspective on the challenge, with a commitment for a meeting with ADMs in early 2022. The objective is to achieve a recognition of off-grid mining sensitivity in the Clean Fuel Regulation (CFR) prior to the regulation's finalization. On the CFR writ large, the publication of CG2 has been postponed until spring 2022, while the coming into force date is likely to be pushed to July 1, 2022. MAC advocacy on CFR has been for a phased approach to CFR implementation at off grid mines (five to ten years) to allow more time for emerging clean power technologies to develop (e.g hydrogen, SMRs). Members continue to pursue renewable options such as wind and battery storage to reduce diesel dependency, where feasible. The publication of new global data by Skarn Associates that reveals that Canada exports some of the lowest carbon minerals and metals in the world because of our clean grid-connected smelting and refining capacity, despite sourcing from off grid mines, has reinforced MAC's advocacy.

NORTHERN REGULATORY DEVELOPMENTS

Land and Water Boards of the Mackenzie Valley

MAC was approached by officials in the MVEIRB Land and Water Boards regarding a recently developed Engagement and Consultation Policy. As part of their consultation efforts, MAC met with them to provide feedback. After review, and comparison with the TSM Indigenous and Community Engagement Protocol, MAC's assessment was that there was quite a bit of consistency between TSM obligations in this space and what the board was projecting in this area.

MVLWB Judicial Review

MAC was approached to support financially and nominally the decision of the NWT & Nunavut Chamber of Mines decision to seek a judicial review of the decision of the Mackenzie Valley Land and Water Board (MVLWB) to deny more than a single Land Use Permit extension. The premise for requesting the review is a belief that the Mackenzie Valley Land and Water Boards (Boards) have jurisdiction to extend land use permits more than once, where it is appropriate to do so and where a project has not materially changed and community engagement is maintained. The Boards would retain their oversight role, while reducing unnecessary regulatory burden and duplication.

This view is supported by a belief that this will help align the Board's practice more closely with their mandate under the Mackenzie Valley Resource Management Act (MVRMA) "to provide for the conservation, development and utilization of land and water resources in a manner that will provide the optimum benefit generally for all Canadians and in particular for residents of the Mackenzie Valley." The decision to support this action nominally, and with a \$5,000 cash contribution, was made on the basis of consistency of views held between shared members between both the NWT & Nunavut Chamber and MAC.

The Notice of Judicial Review, filed by the NWT & Nunavut Chamber of Mines, was filed on May 26, 2021.

INTERNATIONAL TRADE AND INVESTMENT

MAC monitors and participates in government trade activities and works to promote open flows of trade and investment to enhance the international competitiveness of the Canadian minerals and metals industry.

The mining industry ranks alongside financial services and oil and gas as the most international of Canada's industrial sectors. Valued at \$102 billion in 2020, mineral exports accounted for 21% of Canada's total domestic exports and the industry consistently accounts for a significant share of Canada's direct investment abroad. Canada is also a global hub for mining finance, with the Toronto Stock Exchange (TSX) and TSX Venture Exchange (TSX-V) being the world's number one mining and exploration listing venues, where 34% (\$7.5 billion) of the world's total equity capital was raised in 2020. Canada's success in mining is influenced in part by the federal government's trade efforts. This includes the overseas network of embassies and trade commissioners, the trade finance capacity through Export Development Canada, and an array of Free Trade Agreements and FIPAs.

Critical Minerals

In 2020, Canada and the US finalized the Canada–U.S. Joint Action Plan on Critical Minerals Collaboration, advancing mutual interest in securing supply chains for the critical minerals needed for important manufacturing sectors, including communications technology, aerospace and defence, and clean technology.

Over the course of 2020 and 2021, MAC engaged in various conversations on battery minerals and electric vehicle supply chains, built partnerships with organizations across the supply chain, and worked to position Canada well for investment on the basis of Environmental, Social and Governance credentials, including *Towards Sustainable Mining*. This work included deepening relationships with key US officials in the State and Commerce departments, as well the US Embassy in Canada. These efforts culminated in MAC being a founding partner in the establishment of the Canadian Battery Task Force, alongside a host of other EV supply-chain representative organizations and businesses. Further, through MAC's extensive pre-budget engagement, the expansion of the SIF NZA better positions Canada's mining and metal manufacturing industry to feed into the stated public policy objective of establishing an up and downstream BEV supply chain and established initial programmatic supports for research and development in the critical minerals space.

Trade Working Group Activities in 2021

Considering heightened geo-political tensions, new trade disputes, and trends towards national protectionism, MAC established a working group focused on trade-related issues in late 2021. This resulted from an initial survey of MAC members about the association's trade-related engagement and members' respective trade-related priorities. Of the four survey respondents who saw opportunities for MAC to enhance engagement in this space, members felt that MAC could be more supportive in understanding how trade negotiations and irritants directly affect mining companies and the broader Canadian economy. MAC will engage with the small group of members interested in this work over the course of 2022. Earlier in 2021, the Government of Canada began consultations on Free Trade Agreements with Indonesia and the United Kingdom. In both instances, MAC made submissions, participated in workshops, and met with officials to discuss opportunities to deepen free trade, including related to critical minerals.

MINING INDUSTRY HUMAN RESOURCES COUNCIL

Executive Director: Ryan Montpellier

Board Chair: Keith Harris-Lowe, Vice President, People, Agnico Eagle

Board Vice-Chair: Jenine Ellefson, Vice President, Human Resources, North American Newmont

The Mining Industry Human Resources Council (MiHR) is Canada's knowledge centre for mining labour market information. An independent, non-profit organization, MiHR leads collaboration among mining and exploration companies, organized labour, contractors, educational institutions, industry associations and Indigenous groups to identify opportunities and address the human resource and labour market challenges facing the Canadian minerals and metals sector.

MiHR is the trusted source of industry driven, made-in-Canada human resource solutions specific to the minerals and metals sector. Financially supported by the Mining Association of Canada (MAC), the Government of Canada and program revenue, MiHR is governed by a 13-person Board of Directors that represent a national cross-section of mining industry employers, organized labour, mining associations, equity groups and educators. The Board ensures the organization's mission, values and activities deliver tangible results. MiHR also brings together a network of over 250 volunteers to help inform its research and guide its project committees.

Key Priorities:

MiHR's 2019-2024 Strategic Plan, which underwent a mid-term review in 2021, includes four key priorities focused on increasing awareness of mining careers, identifying and addressing skills gaps, delivering essential and work-readiness skills to Indigenous peoples and equity deserving groups, providing more work-integrated learning opportunities, increasing inclusion and diversity, and promoting recognition of skills and training across the sector:

- **Labour Market Information:** To be the trusted, relevant and responsive knowledge centre of labour market information, expertise and analysis for Canada's mining sector.
- **Inclusion, Diversity and Career Development:** To lead, develop and implement programs and tools that help build an inclusive, diverse and sustainable workforce for Canada's mining sector.
- **National Occupational Standards and Workforce Development:** To establish and maintain a suite of National Occupational Standards to develop, assess and recognize the training and competencies of workers in Canada's mining sector.
- **Strategic Engagement and Partnership:** To engage, coordinate and collaborate with partners to identify and respond to labour market trends that impact Canada's mining sector.

Program Highlights:

Labour Market Information (LMI)

MiHR's LMI forecasting model is sector specific and recognized as the go-to labour market resource for industry and stakeholders. It strengthens the mining industry's capacity to understand labour market demand and supply factors and how they are influenced by a variety of conditions – thus enabling the sector to address challenges such as recruitment, retention, inclusion, training, talent gaps and barriers to employment.

Program focus has been placed on custom labour market analysis since the 2021 release of several publications and labour market tools, including *The Canadian Mining Labour Market Outlook 2021*, the *COVID-19 and Labour Market Volatility in Canada's Mining Industry* report and an [Interactive Labour Market Dashboard](#). Custom analysis has centered on company-specific labour demand data, regional labour supply projections and an alternative approach to assessing workforce skills. Materials and tools will soon be published to increase industry awareness of MiHR's custom LMI capabilities.

Inclusion, Diversity and Career Development (IDCD)

Gearing Up: Developing Mining Talent Through Work-Integrated Learning: In 2018, the Government of Canada provided \$7.8 million in funding support over four years to MiHR for Gearing Up, which helps ensure the mining sector's sustainability and competitiveness by bringing industry stakeholders together to create new work-integrated learning (WIL) opportunities to better position post-secondary students to secure employment in their field of study. Gearing Up has since been extended in length and scope, with the Government of Canada providing a total of over \$14 million in funding and Gearing Up creating over 2,000 new WIL opportunities. Wage subsidies up to \$7,000 are available to employers who create new co-ops, internships, field placements, applied projects, capstone projects or case competitions. Over 1,500 students have received WIL placements since 2018 in collaboration with 182 employers – nearly 600 of which were filled in 2021.

Green Jobs: In 2021, the Government of Canada provided \$1.4 million in funding support over two years for the Green Jobs wage subsidy program, which provides job-ready youth aged 15-30 with 45 paid placement or training opportunities of up to 12 months that have a focus on clean technology and innovation and ultimately provide an environmental benefit to Canada. The program provides 80% of each participant's compensation to a maximum of \$25,000 for job-ready youth and \$32,000 for youth furthest from employment (Indigenous youth, youth in northern regions (Yukon, Northwest Territories, and Nunavut) and remote communities (a permanent or long-term (5 years or more) settlement with at least 10 dwellings that does not have year-round road access).

Online Learning: MiHR currently provides professional development and micro credentials for Canada's mining industry through three online learning training programs. Indigenous Awareness Training introduces Indigenous values, histories, peoples and experiences. Learners reflect on their understanding of Indigenous histories, peoples and the vital roles we may all play to advance reconciliation in Canada while enhancing awareness and ability to build respectful relationships with Indigenous peoples in communities as well as in the mining workplace and supply chain. Intercultural Awareness Training promotes intercultural competencies that are critical to our changing industry and strategies that help attract, integrate and retain a more diverse workforce. It deepens mining stakeholders' understanding of the value of inclusive and diverse workplaces, helps drive change and

encourages professional integration of more immigrants within Canada's mining sector. The 12-month Gender Equity in Mining Works (GEM Works) program includes an online learning suite consisting of four 30-minute modules that can be purchased separately from the 12-month cohort option. Registration is available at www.MiHR.ca.

Safe Workplaces for All: Addressing Sexual Harassment in the Canadian Mining Industry: In 2021, the Government of Canada provided \$375,000 in funding support over three years for Safe Workplaces for

All, which will support mining and mineral exploration companies to expand their knowledge of, and response to, sexual harassment in the workplace by developing and disseminating public legal education and information (PLEI) on workplace sexual harassment to employers, unions and employees.

We Need Mining. Mining Needs You. Career Ambassador Program: In 2021, the Government of Canada provided MiHR a \$30,000 grant to develop a modern, post-COVID-19 national career ambassador program that would involve industry leaders in promoting mining careers through outreach and engagement activities across Canada. Ten potential Career Ambassadors have been trained, and the program will soon be launched on www.MiningNeedsYou.ca.

We Need Mining. Mining Needs You. Career Profiles and Interactive World of Mining Careers: Six new mining career profiles were added to www.MiningNeedsYou.ca and its career book in March 2022 to help jobseekers, particularly youth, reconceptualize mining careers and identify career opportunities in the sector they may not have otherwise envisioned:

- Environmental Consultant
- Equity, Diversity & Inclusion Specialist
- Indigenous Relations Superintendent
- Instrumentation Technician
- Internet of Thing Technology Specialist
- Robotic Welder Operator

Each profile contains financial compensation, lifestyle expectations and job entry requirements – and has been incorporated into two new features that help youth in Canada see mining as an innovative, challenging and rewarding career choice. The [Interactive World of Mining Careers](#) allows users to explore an animated metaphorical representation of six different mine work environments and over 50 careers profiles. Users can also take the [Interactive Career Quiz](#) to build a profile, see what mining careers might be the best fit for them and how they can advance along a career pathway.

National Occupational Standards and Workforce Development (NOS-WD)

National Occupational Standards (NOS): In collaboration with industry, MiHR develops and maintains NOS for key mining occupations: Underground Miner; Surface Miner, Minerals Processing Operator, Diamond Driller, Industry Trainer, Hoist Operator and Frontline Supervisor. Building on MiHR’s existing Canadian Mining Certification Program (CMCP) to improve access to certification and explore alternative implementations of the NOS, MiHR has:

- In response to the Truth and Reconciliation Commission Call for Action 92iii, developed and piloted an Indigenous Inclusion Training standard that mining company training programs should strive to achieve with respect to Indigenous inclusiveness.
- Worked closely with the Canadian Diamond Driller Association (CDDA) to develop Diamond Driller training, align it to Ontario Common Core, and secure a training pilot delivery.
- Piloted curricula for both Common Competency training and Industry Trainer training.
- Worked with the Center for Training Excellence in Mining (CTEM) BC on delivering Underground Miner training based on MiHR’s Underground Miner NOS.

The Canadian Mining Certification Program (CMCP): Governed by a multi-stakeholder standing committee that reports to the MiHR Board, the CMCP is the industry standard for validating the skills,

knowledge, and experience of workers in the mining sector. The program has certified over 1,600 workers in the NOS occupational groups. Companies implementing this program include Teck-Highland Valley Copper, Hy-Tech Drilling Ltd., New Gold-New Afton and Osisko Development.

Mining Essentials and Mining Potential: Mining Essentials is the only industry validated national mining training program for Indigenous peoples. Developed in partnership with the Assembly of First Nations, it provides the skills and confidence needed to enter the mining workforce. Since the program's inception, over 680 learners have enrolled with 53% of graduates moving on to further education or gaining employment in mining.

In 2017, MiHR secured approximately \$1.9 million from the Government of Canada to update and enhance the Mining Essentials training program and increase opportunities for employment of non-Indigenous audiences who face barriers to entry into mining by developing and piloting a new essentials skills program for women, youth and newcomers. This resulted in the creation of the Mining Potential training program, which has been piloted with two cohorts (one in Timmins, ON and one in Sudbury, ON) with Collège Boréal in partnership with Huron Mining, Newmont and Pan American Silver.

FOR MORE INFORMATION:

Visit MiHR.ca, MiningNeedsYou.ca, or contact Ryan Montpellier, Executive Director, at rmontpellier@mih.ca.

MAC BOARD OF DIRECTORS

David Clarry 1st Chair Carolyn Chisholm 2nd Chair
Gordon Stothart, IAMGOLD

Brent Bergeron, Pan American Silver Corp
Ken Bell, Suncor Energy Inc
Joe Boaro, First Quantum Minerals
Bethany Borody, New Gold Inc
Laird Brownlie, St Barbara
Brendan Cahill, Excellon Resources Inc.
Andy Caruso, Antrum Coal
Jason Cho, Eldorado Newmont Goldcorp Inc
Carolyn Chisholm, Rio Tinto Canada
David Clarry, HudBay Minerals Inc.
Don Strickland, Copper Mountain Mining Corp
Alan Coutts, Noront Resources Ltd.
Leigh R. Curyer, NexGen Energy Ltd
Christina M. Erling, Barrick Gold Corp
Denis Flood, Foran Mining Corp
Pierre Gratton, Mining Association of Canada
Craig Ford, Yamana Gold Inc
Sara Harrison, BHP
Tim Hill, Impala Canada Ltd
Bradley Johnston, Cabin Ridge
Benjamin Little, IAMGOLD Corp
Amber Jonston-Billings, Teck Resources Ltd
Joseph Lanzon, NorZinc Ltd
Dawid Loots, Lundin Foundation Corp
John Wallington, Riversdale Resources Ltd
Erik Madsen, De Beers Group of Companies
Jon Mitchell, Suncor Energy Inc
Tina Markovic, Suncor Energy Inc
Clynton Nauman, Alexco Resource Corp.
Shawn Neilson, Canadian Natural Resources Limited
Mapi Mobwano, ArcelorMittal Exploitation Minière Canada s.e.n.c.
Steve Molnar, Travali Mining Corp
John Mullally, Newmont Mining Corp
Tom Paddon, Baffinland Iron Mines Corporation
Carol Plummer, Agnico Eagle Mines Ltd
James Powell, Marathon Gold Corp
George Read, Star Diamond Corporation
Peter Read, Syncrude Canada Ltd.
Neil Reeder, B2Gold Corp.
Luke Russell, Hecla Quebec Inc.
Rob Sargent, Royal Canadian Mint
Maciej Sciazko, Nyrstar
Alexis Segal, Glencore Canada
Mark Sitter, Lundin Foundation Corp
Dennis Wilson, Equinox Gold Corp
Mike van Akkooi, Kinross Gold Corporation
Ruben Wallin, McEwen Mining Inc
Jennifer Wagner, Kirkland Lake Gold Ltd
Paul West-Sells, Western Copper and Gold Corporation
Alice Wong, Cameco Corp
Steve Wood, Sherritt International Corporation
Penggui Yan, HD Mining International Ltd

EXECUTIVE COMMITTEE

Carolyn Chisholm, Rio Tinto Canada
Gordon Stothart, IAMGOLD
David Clarry, HudBay Minerals Inc.
Alan Coutts, Noront Resources Ltd
Craig Ford, Yamana Gold Inc
Pierre Gratton, Mining Association of Canada
Amber Johnston-Billings, Teck Resources Ltd

Dawid Loots, Lundin Foundation Corp
Tina Markovic, Suncor Energy Inc
Shawn Neilson, Canadian Natural Resources Ltd
John Mullally, Newmont Goldcorp Inc.
Peter Read, Syncrude Canada Ltd.
Alexis Segal, Glencore Canada
Carol Plummer, Agnico Eagle Mines Ltd
Alice Wong, Cameco Corporation

OFFICERS

Gordon Stothart, Vice-Chair
Marylin Fortin, Mining Association of Canada
David Clarry, Hudbay Minerals Inc
Pierre Gratton, President and CEO and Secretary

HONORARY LIFE MEMBERS

Jim Carter
Ross Gallinger
Doug Horswill
William James
Norman Keevil

TSM GOVERNANCE TEAM

Chair: Peter Read: Syncrude Canada Ltd, 2020 to Nov 2021
Carolyn Chisholm, Rio Tinto Canada: Nov 2021 to Present

Joe Boaro, First Quantum Minerals
David Clarry, HudBay Minerals Inc.
Brent Bergeron, Pan American Silver Corp
Ken Bell, Suncor Energy Inc
Bethany Borody, New Gold Inc
Katherine Gosselin, Mining Association of Canada
Ben Chalmers, Mining Association of Canada
Andy Caruso, Antrun Coal
Craig Ford, Yamana Gold Inc
Pierre Gratton, Mining Association of Canada
Carolyn Chisholm, Rio Tinto Canada
Mohammed Ali, Kirkland Lake Gold Ltd
Erik Madsen, De Beers Group of Companies
Tina Markovic, Suncor Energy Inc
Benjamin Maynard, Teck Resources Ltd
Josée Méthot, Québec Mining Association
Jon Mitchell, Suncor Energy Inc
Shirley Neault, HudBay Minerals Inc.
Leigh Curyer, NexGen Energy Ltd.
Charles Dumaresq, The Mining Association of Canada
Sarah Harrison, BHP
Shawn Neilson, Canadian Natural Resources Ltd
Chad Pederson, Teck Resources Ltd
Carol Plummer, Agnico Eagle Mines Ltd
Jean-Francois, Glencore Canada
Luke Russell, Hecla Quebec
Amber Johnston-Billings, Teck Resources Ltd
Dennis Wilson, Equinox Gold Corp

COMMUNITY OF INTEREST ADVISORY (COI) PANEL

Theresa Baikie, Nunatsiavut Government
Dan Benoit, Métis National Council
Brent Bergeron, Pan American Silver Corp
Ben Chalmers, Mining Association of Canada
Katherine Gosselin, Mining Association of Canada
Tara Shea, Mining Association of Canada
Pierre Gatton, Mining Association of Canada
Jocelyn Fraser, International Development Category

Tim Johnston, Economic and Community Development Category
Sujane Kandasamy, ENGO Category
Maya Stano, Expert Category
Stephen Walker, Finance and Investment Category
Chief David Walkem, Economic and Community Development Category
Dennis Howlett, Social NGO Category
Richard Paquin, Labour and Workplace Category
Carolyn Chisholm, Rio Tinto Canada
Genevieve Donin, Stratos Inc
Michael van Aanhout, Stratoes Inc
Leah Young, Stratoes Inc

INDUSTRY REPRESENTATIVES ON THE COI PANEL

Pierre Gratton, Mining Association of Canada
Josée Méthot, Association minière du Québec
Shirley Neault, HudBay Minerals Inc. (observer)
Peter Read, Syncrude Canada Ltd
Mark Wiseman, Avalon Rare Metals Inc.
Alice Wong, Cameco Corporation

TSM INITIATIVE LEADERS

Chair: Shirley Neault, HudBay Minerals Inc.
Vic Chair, Shane Borchardt, Cameco Corporation

Chris Adachi, Teck Resources Limited
Tracy Anderson, First Quantum Minerals
Grace Barrasso, ArcelorMittal Exploitation Minière Canada
Georgina Blanco, Equinox Gold Corp
Zara Boldt, Lundin Foundation Corp
Megan Bonn, Copper Mountain Mining Corp
Shane Borchardt, Cameco Corp
Ivan Budd, Cameco Corp
Micheline Caron, AMQ
Andy Caruso, Antrum Coal
Dustin Chaffee, Dominion Diamond Mines ULC
Ben Chalmers, Mining Association of Canada
Katherine Gosselin, Mining Association of Canada
Jodi Hackett, Marathon Gold Corp
Carolyn Chisholm, Rio Tinto Canada
Sheila Chernys, Dominion Diamond Mines ULC
Nick Cotts, Newmont Hope Bay Mining Ltd
Scott Davidson, New Gold Inc.
Denis Desbiens, New Gold Inc
Jean-Francois Doyon, Agnico Eagle Mines Limited
Martin Duclos, Canadian Malartic Corporation
Guy Dufour, Glencore Canada
Charles Demaresq, Mining Association of Canada
Stephane Gauthier-Maison, Rio Tinto Canada
Anne-Marie Fleury, Glencore Canada
Mathieu Boucher, Glencore Canada
Kristen Ketilson, Foran Mining Corp
Chris Stroich, Teck Resources Limited
Patrice Gilbert, Agnico Eagle Mines Limited
Nathalia Gomes, Pan American Silver Corp
Ivo Gonzalez, Sherritt International Corporation
Briony Coleman, Newmont Goldcorp Inc
Keivan Hirji, Newmont Goldcorp Inc
Brent Hamblin, First Quantum Minerals
Sara Harrison, BHP
Frances Hilderman, Rio Tinto
Toby Hofton, Impala Canada Ltd
Tracey Jacquemin, Teck Metals Ltd
Paul Keller, Excellon Resources Inc
Liane Kelly, B2Gold Corp.
Ed Kniel, Teck Resources Ltd

Mark Kruger, Syncrude Canada Ltd.
Norman Ladouceur, Agnico Eagle Mines Limited
Patrick Lauzière, Iron Ore Company of Canada
Pascal Lavoie, Agnico Eagle Mines Limited
Emma Leith, Agnico Eagle Mines Limited
Janice Linehan, Suncor Energy Inc.
Erica Ma, New Gold Inc
Mairi MacEchern, Yamana Gold Inc
Stephanie Meyer, Stratos Inc
Nathan Monash, Lundin Foundation
Paul Maideston, Glencore Canada
Kristen Mariuzza, Lundin Mining Corp
Anneline Marx, Trevali Mining Corp
Simon Maurice, Lundin Foundation
Tony Mauro, Antrum Coal
Casey McKeon, Rio Tinto
Sarah McLean, De Beers Canada Inc.
Maurice Moreau, Glencore Canada
Genevieve Morinville, Baffinland Iron Mines Corporation
Shirley Neault, Hudbay Minerals Inc.
Karen Osadchuk, Barrick Gold Corp
Nicole Pesonen, Nyrstar-Myra Falls
James Powell, Marathon Gold Corp
Guillermo Salgado, Lundin Foundation Corp
Karen Osadchuk, Barrick Gold Corporation
Nicole Pesonen, Nyrstar
Jennifer Prospero, Sherritt International Corporation
Neil Rayner, Teck Resources Ltd
Alina Shams, IAMGOLD Corp
Chretien Simons, Glencore International
Marie-Elise Viger, Glencore Canada
Mark Sitter, Lundin Foundation Ltd
Denis Therrien, Agnico Eagle Mines Limited
Tayna Thrope, Rio Tinto Canada
Ruben Wallin, McEwen Mining Inc
Glen Watson, Vale
Richard Weishaupt, Travali Mining Corp
Dennis Wilson, Equinox Gold Corp
Eric Westrum, Suncor Energy Inc.
Lynda Wilson-Hare, Glencore Canada
Scott Wytrychowski, Canadian Natural Resources Limited

INTERNATIONAL SOCIAL RESPONSIBILITY

Chair: Monica Moretto, Pan American Silver Corp.

Georgina Blanco, Equinox Gold Corp
Grace Barrasso, ArcelorMittal Exploitation Minière Canada
Hugo Bonilla, Lundin Mining Corp
Alannah Cervenko, Teck Resources Ltd
Marcel Cardinal, Excellon Resources Inc
Ben Chalmers, Mining Association of Canada
Brendan Marshall, Mining Association of Canada
Tara Shea, Mining Association of Canada
Geoff Smith, The Mining Association of Canada
Dominic Channer, Kinross Gold Corporation
Carolyn Chisholm, Rio Tinto
David Clarry, Hudbay Minerals Inc.
Silvana Costa, Equinox Gold Corp
Nick Cotts, Newmont Hope Bay Mining Ltd.
Christina M Erling, Barrick Gold Corporation
Alasdair Federico, Kirkland Lake Gold Ltd
Andrew Hastings, Lundin Foundation Corp
Andrew Hester, First Quantum Minerals
Fabiana Illescas, Lundin Foundation
Christina Jaworski, B2Gold Corp

Matt Johnson, Lundin Mining Corp
Ana Gabriela Juarez, CTA-Juarez Environmental Consultants
Kristen Mariuzza, Lundin Foundation Corp
Simmon Maurice, Lundin Foundation Corp
Louise McMahon, Eldorado Gold Corp
Nathan Monash, Lundin Foundation
Lindsay Napier, Husbay Minerals Inc
Gonzalo Rios, Lundin Foundation
Stephen Crozier, IAMGOLD Corporation
Alina Shams, IAMGOLD Corporation
Aidan Davy, International Council on Mining and Metals
Christian Del Valle, Pan American Silver Corp
Craig Ford, Yamana
Caitlin Glynn-Morris, First Quantum Minerals
Ken Jones, B2Gold Corp
Liane Kelly, B2Gold Corp
Thomas Lee, IAMGOLD Corp
Mark Liskowich, SRK Consulting Inc.
Steven Molnar, Trivali Mining Corp
Monica Moretto, Pan American Silver Corp.
John Mullally, Newmont Mining Corp
Javier Munzo Carrazana, Lindin Mining Corp
Kevin O'Callaghan, Fasken Martineau
Kathryn Franklin, BGC Engineering Inc
Nick Enos, BGC Engineering Inc
Ed Opitz, Kinross Gold Corporation
Jennifer Paterson, Canadian Natural Resources Ltd
Channa Pelpola, Teck Resources Limited
Jennifer Prospero, Eldorado Gold
Neil Reeder, B2Gold Corp.
Amelie Rouleau, Glencore Canada
Luke Russell, Hecla Quebec Inc.
Anne Rouleau, Global Affairs Canada
Guillermo Salgado, Lundin Foundation
Bret van Vliet, Kinross Gold Corp
Sharon Singh, Bennett Jones LLP
Aaron Steeghs, Yamana Gold Inc.
Mike van Akkooi, Kinross Gold Corp
Steve Virtue, Yamana Gold Inc
Eric Westrum, Suncor Energy Inc.
Tricia Wilhelm, Anglo American plc
Dennis Wilson, Equinox Gold Corp
Stephen Williams, Lundin Foundation

INDIGENOUS RELATIONS COMMITTEE

Chair: Neil Rayner Teck Resources Ltd

Charles Birchall, Willms & Shier
Bethany Borody, New Gold Inc.
Grace Barrasso, ArcelorMittal Exploitation Minière Canada
Tyler Birkhan, Okane
Renee Boucher, New Gold Inc
Ken Brophy, Lundin Foundation Corp
Darrel Burnouf, Cameco Corporation
Courage Bear, BHP
Jason Allaire, Agnico Eagle Mines Ltd
Brent Bergeron, Pan America Silver Corp
Georgina Blanco, Equinox Gold Corp
Kristin Cuddington, Cameco Corporation
Pamela Schwann, Saskatchewan Mining Association
Ben Chalmers, Mining Association of Canada
Jennifer Paterson, Canadian Natural Resources Limited
Greg Brady, Canadian Natural Resources Limited
Korah DeWalt – Gagnon, New Gold Ltd.
Bud Dickson, Agnico Eagle Mines Ltd.

Jean-Francois Doyon, Agnico Eagle Mines Ltd
 Marie-Christine Dupont, Rio Tinto Canada
 Mark Edwards, Teck Resources Ltd
 Alasdair Federico, Kirkland Lake Gold Ltd
 Denis Flood, Foran Mining Corp
 Seb Garside, Impala Canada Ltd
 Valerie Gourde, Eldorado Gold Corp
 Mubeen Hassain, Dogico Information Inc
 Carolanne Inglis-McQuay, Lundin Foundation Corp
 Stephanie Labelle, Kirkland Lake Gold Ltd
 Tim McEwan, Mining Association of British Columbia
 Louise McMahon, Eldorado Gold Corp
 Pierre Gartton, Mining Association of Canada
 Candice Murray, Cameco Corp
 Tara Shea, Mining Association of Canada
 Justyna Laurie-Lean, Mining Association of Canada
 Carolyn Chisholm, Rio Tinto
 Silvana Costa, Equinox Gold Corp
 Michael Goehring, Mining Association of British Columbia
 Luis Gonzalez, Rio Tinto Canada
 John Mullally, Newmont Goldcorp
 Geoff Smith, Mining Association of Canada
 Cynthis Waldmeier, Mining Association of Canada
 Matthew Pike, Vale
 Krista Maydew, IAMGOLD Corp
 Jon Wylie, Alexander Proudfoot
 Alina Shams, IAMGOLD Corp
 David Clarry, HudBay Minerals Inc.
 Jennifer Prospero, Eldorado Gold Corp
 Stephen Crozier, IAMGOLD Corporation
 Micheline Caron, Association de l'exploration minière du Québec
 Mark Edwards, Teck Resources Limited
 Jay Schlosar, Teck Resources Ltd
 Norman Fraser, Teck Resources Ltd
 Renald Gauthier, CIMA+
 Patrice Gilbert, Agnico Eagle Mines Limited
 Bryn Gray, McCarthy Tetrault
 Steve Virtue, Yamana Gold Inc
 Joshua Hardy, Rio Tinto
 Johnathan Huntington, Cameco Corporation
 Etienne Lamy, Rio Tinto
 Pascale Larouche, Mining Industry Human Resources Council
 Heather Lawrence, Teck Resources Ltd
 Mark Liskowich, SRK Consulting Inc.
 Sherri Crothers, De Beers Canada Inc.
 Dana Imbeault, Mining Industry Human Resources Council
 Ryan Montpellier, Mining Industry Human Resources Council
 Glenn Nolan, Noront Resources Ltd.
 Kevin O'Callaghan, Fasken Martineau
 Tom Paddon, Baffinland Iron Mines Corporation
 Danica Pagnutti, Vale
 Tara Ritchie, Vale
 Shena Shaw, Western Copper and Gold Corp
 Mark Prystupa, Suncor Energy Inc
 Neil Rayner, Teck Resources Ltd
 Sheila Risbud, Teck Resources Limited
 Martin Wilkins, Alexander Proudfoot
 Amelie Rouleau, Glencore Canada
 Jody Shimkus, HD Mining International Ltd.
 Sharon Singh, Bennett Jones LLP
 Harp Gosal, NexGen Energy Ltd
 Jeff Killeen, Prospectors and Developers Association of Canada
 Catherine Tegelberg, Newmont Goldcorp Inc
 Dennis Wilson, Equinox Gold Corp
 Bonnie Veness, Suncor Energy Inc.

ENERGY COMMITTEE

Chair: Chris Adachi, Teck Resources Limited

Stephanie Myer, Stratos Inc
Louiza Bell, Teck Resources Limited
Chris Adachi, Teck Resources Ltd
Charles Birchall, Willms & Shier
Russell Blades, Barrick Gold Corporation
Shane Borchardt, Cameco Corporation
Liana Centomo, Glencore Canada
Michael Aire, Newmont Goldcorp
Suzanne Balanger, Teck Metals Ltd
Ben Chalmers, Mining Association of Canada
Brendan Marshall, Mining Association of Canada
Marc-Andre Charette, Cameco Corporation
Carolyn Chisholm, Rio Tinto
Andrew Cooper, New Gold Inc.
R. Duinker, Hatch & Associates Inc.
Bill Ferdinand, Barrick Gold Corporation
Patricia Groulx, Teck Resources Ltd
Walt Halipchuk, Copper Mountain Mining Corp
Marianne Hout, ArcelorMittal Exploitation Minière Canada
Richard Langevin, ArcelorMittal Exploitation Minière Canada
Patrick Lauziere, Iron Ore Company of Canada
Jean-Francois, Glencore Canada
Glenn Lyle, MARARCO Mining Innovation
Kathy Downs, Ontario Mining Association
Mary Dubel, Vale
Shirley Neault, HudBay Minerals Inc
Travis Ofarrell, Equinox Gold Corp.
Stefan Parker, Eldorado Gold Corp
Mark Passi, Glencore Canada
Frank Petrolo, Vale
Frederic Picard, Rio Tinto
Adrianna Stech, Ontario Mining Association
Harold Todd, Teck Resources Limited
Lyle Trytten, Sherritt International Corporation
Liezl Van Wyk, Diavik Diamond Mines Inc.
Maarten Vankoppen, Newmont Hope Bay Mining td

ENVIRONMENT COMMITTEE

Chair: Allison Merla, Vale

Marko Adzic, Teck Resources Limited
Steve Aiken, Knight Piésold Consulting Ltd.
Lucienne Anctil, Hecla
Tracy Anderson, First Quantum Minerals
Matthew Andrews, Pan American Silver
Katherine Gizikoff, Hemmera Envirochem Inc
Natasha Essar, Teck Resources Ltd
Marjorie Bujold, Newmont Goldcorp
Valerie Bertrand, Golder
Sophie Bertrand, Yamana Gold
Mike Aziz, Goldcorp Canada Ltd.
Brady Balicki, Cameco Corporation
Lynne Barlow, Syncrude Canada Ltd.
Grace Barrasso, ArcelorMittal Exploitation Minière Canada
Munisha Basiram, PDAC
Suzanne Belanger, Teck Resources Ltd
Debbie Berthelot, BHP
Sophie Bertrand, Equinox Gold Corp
Charles Birchall, Willms & Shier
Georgina Blanco, Equinox Gold Corp
Fariel Benameur, Rio Tinto
Kofi Boa-Antwi, Diavik Diamond Mines Inc. (Rio Tinto)

Andréanne Boisvert, ArcelorMittal Exploitation Minière Canada
 Daniel Bouillon, Teck Resources Ltd
 Ken Brophy, Ram River Coal
 Stephane Brienne, Teck Resources Ltd
 Marjorie Bujold, Newmont
 Jean Cayouette, Agnico Eagle Mines Ltd
 Ben Chalmers, Mining Association of Canada
 Carolyn Chisholm, Rio Tinto Canada
 Derek Chubb, ERM Consultants Canada Ltd.
 Richard Cook, Knight Piésold Consulting Ltd.
 Jay Cooper, Hudbay Minerals Inc.
 Denise Cormier, Rio Tinto Canada
 Anne Currie, ERM Consultants Canada Ltd.
 Sheila Daniel, Wood (formerly AMEC)
 Tamara Darwish, Golder Associates
 Scott Davidson, New Gold Inc.
 Michael Davies, Teck Resources Limited
 Richard Deane, Teck Resources Limited
 Mark Deans, Newmont
 David Derosa, Teck Resources Limited
 Conner Devereaux, Baffinland
 Cora Devoy, Lundin Mining Corporation
 Chris D'Odorico, Teck Resources Limited
 Mary Dubel, Vale
 Guy Dufour, Glencore Canada
 Aurore Hay, Glencore
 Deena Duff, Knight Piesold Consulting (Pty) Ltd
 Charles Dumaresq, Mining Association of Canada
 Kent England, Cameco Corporation
 Aynsley Foss, Ontario Mining Association
 Glenda Fratton, Teck
 Stephane Gauthier, Rio Tinto
 Pierre-Andre Gignac, Rio Tinto
 Monika Greenfield, RWDI
 Brent Hamblin, First Quantum Minerals
 David Harpley, NorZinc Ltd. (formerly Canadian Zinc Corporation)
 Shane Hayes, Barrick Gold Corporation
 Holly Heffner, BHP
 Frances Hilderman, Rio Tinto
 Tom Hoefer, NWT and Nunavut Chamber of Mines
 Alexandra Hood, Agnico Eagle Mines Ltd
 Jane Howe, Advisian (WorleyParsons Group)
 Colleen Hughes, Copper Mountain Mining Corp
 Matt Hynes, Vale
 Christie Jeffkins, Glencore Canada
 Troy Jones, Teck Resources Limited
 Ana Gabriela Juarez, Juarez Environmental Consultants Inc.
 Lou Kamermans, Baffinland Iron Mines Corporation
 Jeff Killeen, PDAC
 Dale Klodnicki, Wood (formerly AMEC)
 Nural Kuyucak, Golder Associates
 Maxime Lachance, Association minière du Québec
 Lisa Lanteigne, Vale
 Martin Larose, WSP Group
 Simon Latulippe, WSP Group
 Justyna Laurie-Lean, Mining Association of Canada
 Patrick Lauzière, Iron Ore Company of Canada
 Carolina Leseigneur Torres, Glencore Canada
 Janice Linehan, Suncor Energy Inc.
 Mark Liskowich, SRK Consulting Canada Inc
 Megan Lord-Hoyle, Baffinland Iron Mines Corporation
 David Luzi, Stantec
 Gordon Macdonald, Diavik Diamond Mines Inc.
 John Machin, Syncrude Canada Ltd.
 Erik Madsen, De Beers Group of Companies

Melinda Mamer, Suncor Energy Inc.
 Kristen Mariuzza, Lundin Mining Corporation
 Dennis Martin, Vale
 Shane Matson, Newmont Goldcorp
 Samantha McGarry, Glencore Canada
 Amanda McKenzie, Baffinland Iron Mines Corp
 Sarah McLean, De Beers Canada
 Jennifer McPhail, Stantec
 Che McRae, Vale
 Allison Merla, Vale
 Sean Miller, Maxxam Analytics International Corporation
 Todd Milne, Nyrstar
 Mary Mioska, Western Copper and Gold Corporation
 Shannon Mitchell, Vale
 Liam Mooney, Cameco Corporation
 Christine Moore, Intrinsic Corp.
 Maurice (Moe) Moreau, Glencore Canada
 Maxime Morin, BHP
 Genevieve Morinville, Baffinland Iron Mines Corp
 Mary Murdoch, Stantec
 Kevin Nagy, Cameco Corporation
 Michael Nahir, Parsons Corp
 Shirley Neault, Hudbay Minerals Inc.
 Bryan Neeley, Nemont
 Kevin O'Callaghan, Fasken Martineau
 Karen Paquette, Vale
 Travis O'Farrell, Equinox Gold Corp
 Stefan Parker, Eldorado Gold Corp
 Mark Passi, Glencore Canada
 Dawn Paszkowski, BGC Engineering Inc
 Michael Patterson, Anglo American Metallurgical Coal Canada
 Chad Pearson, Glencore Canada
 Nicole Pesonen, Nyrstar
 John Petherick, Glencore Canada
 Greg Poholka, Sherritt International Corporation
 Kristin Pouw, SRK Consulting (Canada) Inc.
 Felipe Ramirez, Juarez Environmental Consultants Inc
 Chris Ransom, Glencore Canada
 Steven Raymond, Glencore Canada
 George Read, Star Diamond Corporation (Formerly Shore Gold Inc.)
 Audrey Reid, Glencore Canada
 Gonzalo Rios, Josemaria Resources
 Stephane Robert, Agnico Eagle Mines Limited
 Lindsay Robertson, Klohn Crippen Berger Ltd
 Keith Russell, Partners in Performance
 Anne-Marie Rushworth, ArcelorMittal Exploitation Minière Canada
 Mark Ruthven, Wood (formerly AMEC)
 Lyle Safronetz, Vale
 Jared Saunders, Vale
 Pamela Schwann, Saskatchewan Mining Association
 Sean Sharpe, Glencore Canada
 Tara Shea, Mining Association of Canada
 Isabelle Shelvey, Syncrude Canada Ltd.
 Jody Shimkus, HD Mining International Ltd.
 Brad Sigurdson, Saskatchewan Mining Association
 Sean Sinclair, Diavik Diamond Mines Inc. (Rio Tinto)
 Sharon Singh, Bennett Jones LLP
 Geoff Smith, Mining Association of Canada
 Helga Sonnenberg, EcoReg Solutions Inc.
 Adrianna Stech, Ontario Mining Association
 Sylvie St-Jean, New Gold Inc.
 Aaron Steeghs, Yamana Gold
 Allen Summers, Glencore Canada
 Janna Switzer, Denison Mines
 Stephanie Thibeault, Newmont Gold Corp

Yves Thomassin, BBA Inc
Kirk Tourout, Newmont Canada Corporation
Nick Tremblay, Rio Tinto
France Trépanier, Newmont Goldcorp
Richard Viflanzoff, Charles Tennant & Company (Canada) Ltd.
Steve Virtue, Yamana Gold
Glen Watson, Vale
Kelly Wells, Canada North Environmental Services
Kathryn Wherry, Hatch & Associates Inc
Carleigh Whitman Teck Resources Ltd
Lea Willemse, Glencore Canada
Mellissa Winfield-Lesk, Hatch & Associates Inc
Mark Wiseman, Avalon Advanced Materials Inc.
Jason Dietricj, Wood
Scott Wytrychowski, Canadian Natural Resources Ltd
David Yaschyshyn, Glencore Canada
Hasan Zolata, Juarez Environmental Consultants Inc.
Scott Wytrychowski, Canadian Natural Resources Ltd
Warren Zubot, Syncrude Canada Ltd.

PUBLIC AFFAIRS COMMITTEE

Chair: Dale Austin, Cameco
Vice Chair, Steve Virtue, Yamana Gold

Laural Adams, PDAC
Dale Austin, Cameco Corporation
Ryan Bergen, Canadian Institute of Mining
Georgina Blanco, Equinox Gold
Bethany Borody, New Gold
Ken Brophy, Lundin Foundation
Doug Brown, Teck Resources Limited
Heather Bruce-Veitch, Iron Ore Company of Canada
Candace Brule, HudBay Minerals Inc.
Ben Chalmers, The Mining Association of Canada
Cynthia Waldmeier, The Mining Association of Canada
Tara Shea, The Mining Association of Canada
Brendan Marshall, The Mining Association of Canada
Geoff Smith, The Mining Association of Canada
Carolyn Chisholm, Rio Tinto Canada
Lillian Chow, Newmont Goldcorp
Anne Currie, ERM Consultants Canada Ltd.
Nicolas Dalmau, ArcelorMittal Exploitation Minière Canada
Jennifer Paterson, Canadian Natural Resources Ltd
Dustin O'Leary, St Barbara
Joe Racanelli, Sherritt International Corp
Adam Scherkus, Eldorado Gold Corp
Shena Shaw, Western Copper and Gold Corp
Heather Smiles, Baffinland Iron Mines Corp
Amanda Strong, Lundin Foundation
Sarah Telsa, Lundin Foundation
Christina M. Erling, Barrick Gold Corporation
Nathalie Frackleton, Agnico Eagle Mines Limited
Peter Fuchs, Glencore
Alasdair Federico, Kirkland Lake Gold Ltd
Daniel Goodwin, Suncor Energy Inc.
Valerie Gourde, Eldorado Gold Corp
Tessa Jolly, Eldorado Gold Corp
Terry Kruger, De Beers Canada Inc
Luis Gonzalez, Rio Tinto Canada
Jeff Hryhoriw, Cameco Corp
Jeff Lewis, Vale
Tracey Irwin, Saskatchewan Mining Association
Gabriela Maceira, Pan American Silver Corp
Tim McEwan, Mining Association of British Columbia
Kristy Kennny, Prospectors & Developers Association

Lisa McDonald, Prospectors & Developers Association
Louise McMahon, Eldorado Gold Corp
Mubeen Hussain, Dogico Information Inc
Matt Johnson, Lundin Mining Corp
John Mullally, Newmont Goldcorp
Jeff Hryhoriw, Corporation Cameco
Graeme Jennings, IAMGOLD Corp
Mark Sitter, Lundin Mining Corporation
Julien Lampron, ArcelorMittal Exploitation Minière Canada
Joseph Lanzon, NorZinc Ltd. (formerly Canadian Zinc Corporation)
Benjamin Little, IAMGOLD Corporation
Andy Lloyd, Barrick Gold Corp
Chad Pederson, Teck Resources Ltd
Ryan McEachern, Canadian Association of Mining Equipment and Services for Export
Marie Peir Beaucauge, Agnico Eagle Mines Ltd
Adam Pommer, Suncor Energy Inc
Neil Reeder, B2Gold Corp.
Steve Shapka, PDAC
Cheryl Robb, Syncrude Canada Ltd.
Erin Satterthwaite, Impala Canada
Pam Schwann, Saskatchewan Mining Association
Alaina Shams, IAMGOLD Corporation
Jody Shimkus, HD Mining International Ltd.
Steve Virtue, Yamana Gold Inc.
Sturat Weinberg, Barrick Gold Corp
Erik Madsen, De Beers Group Managed Operation – Canada

TAILINGS WORKING GROUP

Chair: Michael Davies, Teck Resources Limited

Americo Delgado, Pan American Silver Corp
Mohammed Ali, Kirkland Lake Gold Ltd
Tracy Anderson, First Quantum Minerals
Chris Anderson, Teck Resources Limited
Matthew Andrews, Pan American Silver Corp.
Suzie Belanger, Diavik Diamond Mines Inc (Rio Tinto).
Debbie Berthelot, BHP
David Bleiker, Wood
Georgina Blanco, Equinox Gold
Kelly Boychuck, Equinox Gold
Cameron Brown, Western Copper and Gold Corporation
Bob Chambers, Klohn Crippen Berger Ltd.
Allison Brown, Barrick Gold Corp
Ben Chalmers, The Mining Association of Canada
Charles Dumaresq, The Mining Association of Canada
Erin Clyde, Glencore Canada
Scott Davidson, New Gold Inc.
Michael Davies, Teck Resources Ltd
Jay Corman, Western Copper and Gold Corp
Randy Donato, Vale
Norman Eenkooren, Suncor Energy Inc.
Barry Esford, Cameco Corporation
Ivo Gonzalez, Sherritt International Corporation
Helen Harper, Glencore Canada
Michael Henderson, BGC Engineering Inc
Carlos Iturralde, Yamana Gold
Karlis Jansons, Geomin Initiatives
Troy Jones, Teck Resources Ltd
Michel Julien, Agnico Eagle Mines Ltd
Simon Latulippe, WSP Group
Micheline Caron, Association de l'exploration minière du Québec
Gord Leavoy, Kirkland Lake Gold
Isabelle Levesque, Rio Tinto
Meriel Limoges, Golder Associates
Scott Martens, Canadian Natural Resources Limited

Jennifer Propero, Eldorado Gold Corp
Wayne Mimura, Suncor
Shirley Neault, HudBay Minerals Inc.
Greg Noack, Klohn Crippen Berger Ltd.
Luciano Piciacchia, BBA Inc.
Trevor Podiama, SRK Consulting Inc.
Conrad Savoie, Syncrude Canada Ltd.
Brad Sigurdson, Saskatchewan Mining Association
Ben Scott, B2Gold Corp
Greg Smyth, Knight Piésold Ltd.
Annie Ruksys, BGC Engineering Inc
Andre Gagnon, Lundin Mining
Mike Westendorf, Copper Mountain Mining Corp
Andre Perreault, Glencore Canada
Greg Puro, Vale
Daren Willems, BHP
Caius Priscu, Pircu & Associate
Harvey Walsh, WSP
Dennis Wilson, Equinox Gold Corp
Adrian Juarez, Jaurez Environmental Consultants
Ana Gabriela Juarez, Environmental Consultants
Andrew Witte, Klohn, Crippen, Berger
Clint Logue, BGC Engineering
Carolina Leseigneur Torres, Glencore
Chris McCombe, Minerals Council of Australia
David Eden, Kinross
Denise Chapman, Okane Consultants
Imran Gillani, Rio Tinto
Josée Sirois, Arcelor Mittal
Kent England, Cameco
Kirsten Ketilson, Foran Mining Corp
Marc Lincoln, DeBeers
Pascal Lavoie, Agnico Eagle
Paul Bedell, Golder
Stefan Parker, Eldorado Gold
Tommi Leinala, Vale

SCIENCE COMMITTEE

Chair: Kent England, Cameco Corporation

Marko Adzic, Teck American Incorporate
Steve Aiken, Knight Piésold Consulting Ltd.
Matthew Andrews, Pan American Silver Corp
Mohammed Ali, Kirkland Lake Gold Ltd
Brady Balicki, Cameco Corporation
Suzanne Belanger, Teck Metals Ltd
Grace Barrasso, ArcelorMittal Exploitation Minière Canada s.e.n.c
Stephane Gauthier-Maison, Cameco Corporation
Debbie Berthelot, BHP Billiton
Munisha Basiram, Prospectors & Developers Association of Canada
Valerie Bertrand, Golder Associates Annie Blier, Hecla Québec Inc.
Stephane Brienne, Teck Metals Ltd
Lucienne Anctil, Hecla Québec Inc.
Kofi Boa-Antwi, Diavik Diamond Mines Inc. (Rio Tinto)
Andréanne Boisvert, ArcelorMittal Exploitation Minière Canada s.e.n.c.
Daniel Bouillon, Teck Resources Limited
Allison Merla, Hatch & Associates Inc.
Carolyn Chisholm, Rio Tinto Canada
Jean Cayoutte, Agnico Eagle Mines Ltd
Richard Cook, Knight Piésold Consulting Ltd.
Kelly Boychunk, Equinox Gold Corp
Denise Cormier, Iron Ore Company of Canada
Sheila Daniel, Wood (formerly AMEC)
Chris D'Odorico, Teck Resources Ltd
Michael Davies, Teck Resources Ltd

Natasha Essar, Teck Resources Ltd
 Jennie Gjertsen, Newmont Goldcorp Inc
 Alexandre Hood, Agnico Eagle Mines Ltd
 Tamara Darwish, Golder Associates
 Richard Deane, Teck Resources Limited
 Mark Deans, Goldcorp Inc.
 David Derosa, Teck Resources Limited
 Cora Devoy, Lundin Mining Corporation
 Andrew Hastings, Lundin Mining Corporation
 Guy Dufour, Glencore Canada (Nickel)
 Glenda Fratton, Teck Resources Ltd
 Monika Greenfield, RWDI
 Holly Heffner, BHP
 Bradley Horne, Stantec
 Jane Howe, Advisian (WorleyParsons Group)
 Lou Kamermans, Baffinland Iron Mines Corporation
 Connor Devereaux, Baffinland Iron Mines Corporation
 Harry Kim, Hatch & Associates Inc.
 Colleen Hughes, Copper Mountain Mining Corp
 Nural Kuyucak, Golder Associates, Baffinland Iron Mines Corporation
 Micheline Caron, Association minière du Québec
 Martin Larose, WSP Group
 David Luzi, Stantec
 Justyne Laurie-Lean, Mining Association of Canada
 Patrick Lauzière, Iron Ore Company of Canada
 Sarah McLean, De Beers Group of Companies
 Simon Latulippe, WSP Group
 Janice Linehan, Suncor Energy Inc.
 Mark Liskowich, SRK Consulting Canada Inc
 Carolina Leseigneur Torres, Glencore Canada
 Megan Lord-Hoyle, Baffinland Iron Mines Corporation
 Gordon Macdonald, Diavik Diamond Mines Inc.
 Erik Madsen, De Beers Group of Companies
 John Machin, Syncrude Canada Ltd.
 Melinda Mamer, Suncor Energy Inc.
 Kristen Mariuzza, Lundin Mining Corporation
 Dennis Martin, Vale
 Shane Matson, Newmont Goldcorp
 Samantha McGarry, Glencore Canada
 Amanda McKenzie, Baffinland Iron Mines Corp
 Andrea McLandress, Mining Association of Manitoba
 Che McRae, Golder Associates
 Allison Merla, Vale
 Todd Milne, Nyrstar
 Mary Mioska, Western Copper and Gold Corporation
 Shannon Mitchell, Vale
 Liam Mooney, Cameco Corporation
 Maurice (Moe) Moreau, Glencore Canada
 Aurore Hay, Glencore Canada
 Kevin O'Callaghan, Fasken Martineau
 Michael Patterson, Anglo American Metallurgical Coal Canada
 Mark Passi, Glencore Canada
 Chad Pearson, Glencore Canada
 Nicole Pesonen, Nyrstar
 John Petherick, Glencore Canada
 George Read, Star Diamond Corporation
 Gonzalo Rios, Josemaria Resources
 Keith Russell, Partners in Performance
 Jared Saunders, Vale
 Pamela Schwann, Saskatchewan Mining Association
 Sean Sharpe, Glencore Canada
 Isabelle Shelvey, Syncrude Canada Ltd.
 Jody Shimkus, HD Mining International Ltd.
 Sarah McLean, De Beers Group of Companies
 Jennifer McPhail, Stantec

Sean Miller, Maxxam Analytics International Corporation
Christine Moore, Intrinsic Corp.
Maxime Morin, BHP
Genevieve Morinville, Baffinland Iron Mines Corp
Mary Murdoch, Stantec
Kevin Nagy, Cameco Corp
Michael Nahir, Parsons Corp
Shirley Neault, Hudbay Minerals Inc.
Karen Paquette, Vale
Stefan Parker, Eldorado Gold Corp
Dawn Paszkowski, BGC Engineering Inc
Greg Poholka, Sherritt International Corporation
Kristin Pouw, SRK Consulting (Canada) Inc.
Ana Gabriele, Juarez Environmental Consultants Inc.
Pierre Gratton, Mining Association of Canada
Steven Raymond, Glencore Canada
Audrey Reid, Glencore Canada
Anne-Marie Rushworth, ArcelorMittal Exploitation Minière Canada s.e.n.c
Stephane Robert, Agnico Eagle Mines Limited
Malcolm Shang, ArcelorMittal Exploitation Minière Canada s.e.n.c
Mark Ruthven, Wood (formerly AMEC)
Tara Shea, Mining Association of Canada
Aaron Steeghs, Yamana Gold
Allen Summers, Glencore Canada
Janna Switzer, Denison Mines
Stephanie Thibeault, NewmontGoldcorp Inc.
France Trépanier, Newmont Goldcorp
Richard Viflanzoff, Charles Tennant & Company (Canada) Ltd.
Steve Virtue, Yamana Gold
Lea Willemse, Glencore Canada
Kathryn Wherry, Hatch & Associates Inc
Brad Sigurdson, Saskatchewan Mining Association
Sean Sinclair, Diavik Diamond Mines Inc. (Rio Tinto)
Helga Sonnenberg, EcoReg Solutions Inc.
Sylvie St-Jean, New Gold Inc
Adrianna Stech, Ontario Mining Association
Yves Thomassin, BBA Inc
Kirk Tourout, Newmont Canada Corporation
Nick Tremblay, Rio Tinto
Glen Watson, Vale
Kelly Wells, Canada North Environmental Services
Carleigh Whitman, Teck Resources Ltd
Mellissa Winfield-Lesk, Hatch & Associates Inc.
David Yaschyshyn, Glencore Canada
Denis Wilson, Equinox Gold Corp
Scott Wytrychowski, Canadian Natural Resources Ltd

TAXATION COMMITTEE

Chair: Jocelin Paradis, Rio Tinto Canada

Brian Abraham, Fraser Milner Casgrain
Kyle J. Berstrom, Hudbay Minerals Inc
Ron Annesley, Barrick Gold
Johanne Brouillard, Rio Tinto Canada
Thomas Cheung, Teck Resources Limited
Carolyn Chisholm, Rio Tinto Canada
Michael Colborne, Thorsteinssons
Robert De Biasio, Vale
Clare Florence, BHP
James Collie, IAMGOLD Corp
Brenda Creaney, Pan American Silver Corp
Mark Caluori, Pan American Silver Corp
Marco Cavasin, Equinox Gold
Ian Gamble, Thorsteinssons
Jacob Kulinski, ArcelorMittal Canada

George Kyraleos, Glencore Canada
Jennifer Lobanov, Deloitte
Brendan Marshall, Mining Association of Canada
Pierre Gratton, Mining Association of Canada
Julie Morier, Rio Tinto Canada
Carole Miville, Association miniere du Quebec
Benjamin Maynard, Teck Resources Ltd
Chris McLean, Hecla Quebec Inc.
Pat MacNamara, Agnico Eagle Mines Limited
Elizabeth Mendonca, Sherritt International Corp
Julie Morier, Rio Tinto Canada
Susanne Playford, HudBay Minerals Inc.
Doug Powrie, Teck American Incorp
Sheila Risbud, Teck Resources Ltd
Mark Sitter, Lundin Foundation
Jackie Soo, Newmont Mining Corp
John Turner, Fasken Martineau
Don Strickland, Copper Mountain Mining Corp
Ryan Swedburg, Newmont Mining Corp
Jeff Todd, WCPD Inc
Jocelin Paradis, Head of Tax – Canada

TRANSPORTATION COMMITTEE

Chair: Brad Johnston, Teck Resources Ltd

Jamie Brecht, BHP
Francois Brisson, Iron Ore Company of Canada
Jean-Pierre Boucher, ArcelorMittal Exploitation Minière Canada
Brendan Marshall, Mining Association of Canada
Ben Chalmers, Mining Association of Canada
Justyna Laurie-Lean, Mining Association of Canada
Tara Shea, Mining Association of Canada
Marc-Andre Charette, Cameco Corporation
Jay Cooper, Hudbay Minerals Inc.
Vince D'Amico, Glencore Canada
Paul Graham, Vale
Brad Johnston, IAMGOLD Corp
Pierre Gratton, Mining Association of Canada
Thomas Hobbs, Norfalco Inc. a Glencore Company
Jane Howe, Worley Parsons Group
Mark Hagey, Syncrude Canada Ltd
Paul Kolisnyk, Teck Resources Limited
Brian Kurczaba, HudBay Minerals Inc.
Melinda Mamer, Suncor Energy Inc.
Gordon Mattson, Teck Resources Limited
John Mullally, Newmont Mining Corp
Benoit Méthot, Iron Ore Company of Canada
Pat Murphy, Glencore Canada
Stephen Nelson, Suncor Energy Inc.
Dorena Quinn, IAMGOLD Corp
Martin Pedo, Glencore Canada
Frank Petrolo, Vale
Kathy Piersanti, Hudbay Minerals inc.
Amélie Rouleau, Glencore
Anne-Marie Rushworth, ArcelorMittal Exploitation Minière Canada
Lyle Safronetz, Vale
Steve Suarez, Borden Ladner Gervais LLP
Daniel Sauve, Glencore Canada
Mikael Schauman, Lundin Mining Corporation
Don Smith, Teck Resources Limited
Jason Hall, Transportation and Logistics
Suresh Soundararajan, Suncor Energy Inc.
Jamie Veilleux, Glencore Canada
Patrick Walker, Rio Tinto Canada

NORTHERN AFFAIRS COMMITTEE

Chair: Vacant

Rebecca Alty, Diavik Diamond Mines Inc (Rio Tinto)
Carolyn Chisholm, Rio Tinto Canada.
Brad Armstrong, Lawson Lundell LLP
Julien Lampron ArcelorMittal Exploitation Minière Canada
Charles Birchall, Willms & Shier
Mike Clark, Alexco Resource Corp.
Richard Cook, Knight Piésold Ltd.
Dominique Girard, Agnico Eagle Mines Limited
Christine Kowbel, Lawson Lundell LLP
Ryan McEachern, Mining Suppliers Trade Association Canada
Bill Mercer, Avalon Advanced Materials Inc.
Amelie Rouleau, Glencore Canada
Clynton Nauman, Alexco Resource Corp.
Tom Paddon, Baffinland Iron Mines Corp
Kevin O'Callaghan, Fasken Martineau
Paul West-Sells, Western Copper and Gold Corporation
Mark Wiseman, Avalon Advanced Materials Inc.

MEMBER COMPANIES

Agnico Eagle Mines Limited
Alexco Resource Corp.
ArcelorMittal Exploitation Minière Canada s.e.n.c.
Arctic Canadian Diamond Company
Atrum Coal
B2Gold Corp.
Baffinland Iron Mines Corporation
Barrick Gold Corporation
BHP
Cabin Ridge
Cameco Corporation
Canadian Natural Resources Ltd
Copper Mountain Mining Corp
De Beers Canada Inc.
Eldorado Gold Corporation
Equinox Gold
Excellon Resources Inc.
First Quantum Minerals
Foran Mining Corp
FortHills Ltd
Glencore Canada
HD Mining International Ltd
Hecla Quebec Inc
HudBay Minerals Inc.
IAMGOLD Corporation
Imperial Metals Corporation
Kinross Gold Corporation
Kirkland Lake Gold
Lundin Foundation
Lundin Mining Corporation
Marathon Gold
McEwen Mining
New Gold Inc.
Newmont
Nexgen Energy Ltd
Noront Resources Ltd.
NorZinc Ltd
Nyrstar Canada
Pan American Silver Corp.
Rio Tinto Canada
Riversdale Resources Ltd
Royal Canadian Mint
Sherritt International Corporation

St Barbara
Star Diamond Corporation
Suncor Energy Inc.
Syncrude Canada Ltd.
Tacora Resources
Teck Resources Limited
Trevali
Vale
Western Copper and Gold Corporation
Yamana Gold Inc.

ASSOCIATE MEMBERS

Alexander Proudfoot
Ausenco Ltd.
Avalon Advanced Materials Inc.
Barr Engineering and Environmental
BBA Inc.
Bennett Jones LLP.
BGC Engineering Inc.
Bureau Veritas Laboratories
Canada North Environmental Services
Cementation Canada Inc
CEMI - Centre for Excellence in Mining and Innovation
Chamber of Marine Commerce
Charles Tennant & Company (Canada) Ltd.
CIBC World Markets
CIMA +
COREM
Deloitte
Denton
Dogico Information Inc
Ecological and Regulatory Solutions Inc
ÉEM Inc.
EPC Canada
ERM Canada Corporation
Fasken Martineau
Golder Associates Ltd
Hatch Ltd.
IMEX International Inc
Intersac
Intrinsic Environmental Sciences Inc.
Juarez Environmental Consultants Inc.
Klohn Crippen Berger Ltd.
Knight Piésold Ltd.
Lawson Lundell LLP
Marsh
McCarthy Tetrault
Mirapakon
MIRARCO Mining Innovation
NEAS Group
Newfields
OKane
Orica Canada Inc.
Parsons
Partners in Performance
Quadra Chemicals Ltd.
RWDI
SGS Minerals Services
SMS Equipment Inc.
SRK Consulting Inc.
Stantec Consulting Ltd.
Think Best Practice
Thorsteinssons LLP
Willis Towers Watson
Willms & Shier Environmental Lawyers LLP

Wood
WSP Group

NON-VOTING MEMBERS

Alberta Chamber of Resources
Association minière du Québec
Canada Mining Innovation Council
Canadian Institute of Mining, Metallurgy and Petroleum
Mining Association of British Columbia
Mining Association of Manitoba
Mining Association of Nova Scotia
Mining Industry Human Resources Council
Mining Industry NL
Mining Suppliers Trade Association
New Brunswick Mining Association
NWT and Nunavut Chamber of Mines
Ontario Mining Association
Prospectors and Developers Association of Canada
Saskatchewan Mining Association
Yukon Chamber of Mines

MAC STAFF

Pierre Gratton
President and Chief Executive Officer

Danielle Nantais
Executive Assistant

Ben Chalmers
Senior Vice President

Charles Dumaresq
Vice President, Science and Environmental Management

Justyna Laurie-Lean
Vice President, Environment and Regulatory Affairs

Geoff Smith
Vice President, Government Relations

Brendan Marshall
Vice President, Economic and Northern Affairs

Cynthia Waldmeier
Director, Communications

Marilyn Fortin
Comptroller & Member Relations

Tara Shea
Senior Director, Regulatory and Indigenous Affairs

Katherine Gosselin
Director, Towards Sustainable Mining

Debbie Villeneuve
Finance Officer

Debbie MacVicar
Administrative Assistant