

# GLOBAL BUSINESS REPORTS

GBR SERIES

## QUÉBEC AND ATLANTIC CANADA MINING 2025



Regulatory Frameworks - Gold - Critical Minerals - Finance  
Sustainability - Engineering - Equipment & Technology - Services





MARCH 1-4  
2026

Don't miss the world's premier mineral exploration and mining convention

**SEE** Browse our exhibitors for investment ideas and ask questions.

**HEAR** Attend corporate presentations for the full value proposition. Explore insights shared by leading investors.

**CONNECT** Participate in curated meetings with company management. Join sessions tailored for investors and financial professionals.

**INVEST**

pdac.ca/convention | Toronto, Canada



# Dear Readers,

This year, GBR is expanding the focus of our annual report beyond Québec, to also cover the Atlantic provinces of Newfoundland and Labrador, New Brunswick and Nova Scotia. This region finds itself at a pivotal moment in its mining evolution, seeking to strengthen North America's supply chains, attract investment, and position itself as reliable source of critical minerals and metals, leveraging a wide variety of innovative tools to do so.

The past year highlighted both promise and strategic challenges. Despite strong global demand, 2024 saw no new mines begin production in the region – a stark reminder that execution, timing, and regulatory alignment remain critical. Rising geopolitical tensions, tariffs and supply chain bifurcation are reshaping global markets, reinforcing the need for Canadian mines to secure both domestic and international competitiveness. Québec and Atlantic Canada's companies are responding proactively, leveraging innovation in drilling, planning, airborne logistics and water management to ensure that projects remain resilient in the face of global uncertainty.

One of the most striking advantages of this region is its ecosystem of technology and service providers. From geophysics innovators to mine planning specialists, autonomous vehicle pioneers and modular infrastructure leaders, Québec and Atlantic Canada are home to a network of companies capable of turning strategic vision into operational reality. Even drilling, blasting, and explosives production are being reimagined to meet new technical and regulatory demands efficiently.

Environmental, social and governance standards continue to shape operations, as communities, governments and investors demand accountability and transparency. Québec and Atlantic Canada's response has been a proactive, innovative one, with companies advancing circularity in mining, implementing next-generation water management solutions, and developing logistical systems to support operations in some of the continent's most remote and challenging terrain.

The vision is clear: an eastern Canadian mining sector that not only produces wealth but also strengthens North America's supply security, while reinforcing the provinces' environmental, technological and societal leadership.

We want to extend our gratitude to the industry and government leaders who shared their expertise, insights and ambitions with us, along with our association partners at QMA, AEMQ, Mining Industry NL and MANS, all essential contributors to this edition of *Québec and Atlantic Canada Mining*.

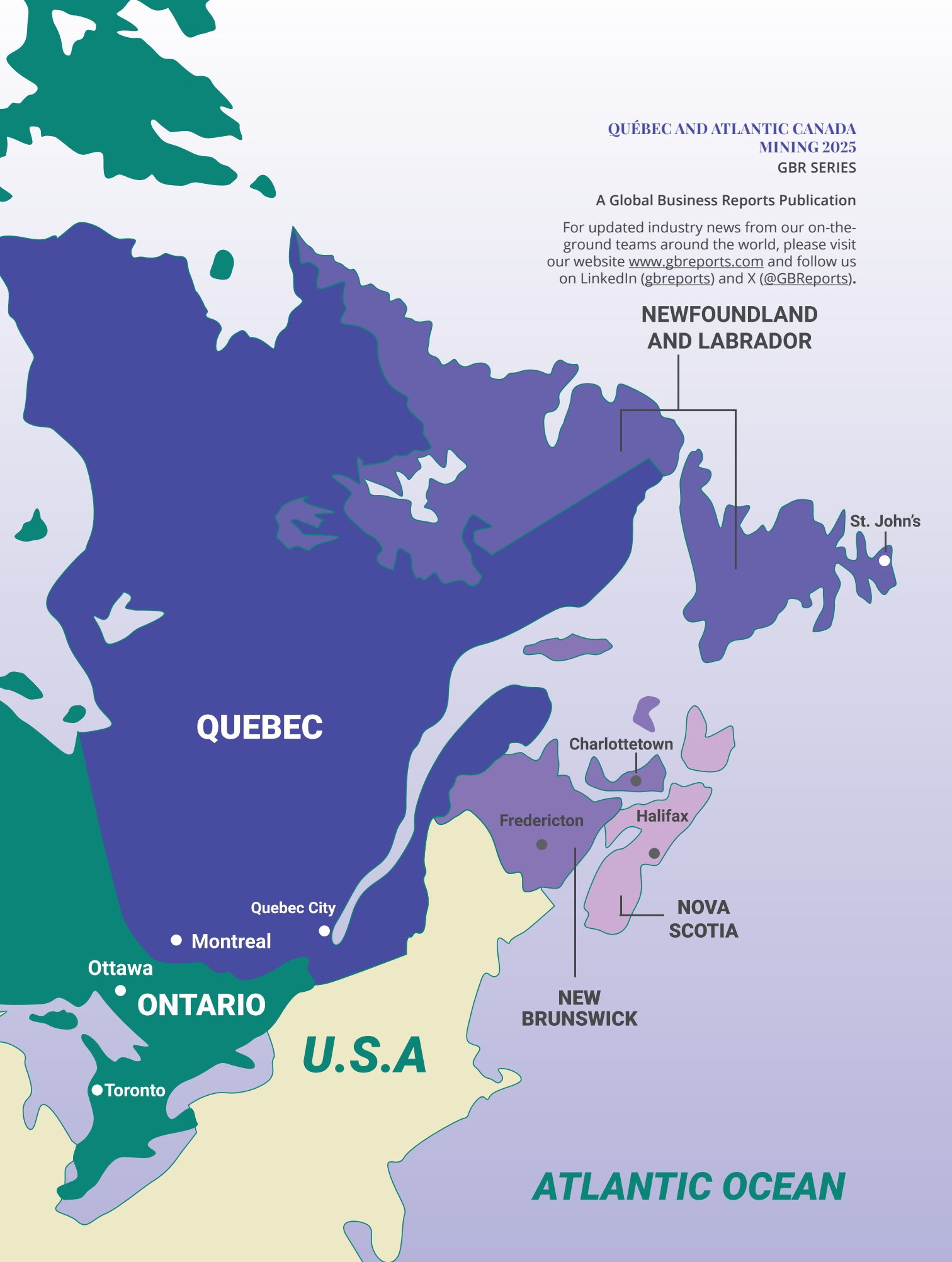


Alfonso Tejerina  
Director and General Manager  
Global Business Reports (GBR)

Scan QR code to read the digital interactive version of this report.







QUÉBEC AND ATLANTIC CANADA  
MINING 2025  
GBR SERIES

A Global Business Reports Publication

For updated industry news from our on-the-ground teams around the world, please visit our website [www.gbreports.com](http://www.gbreports.com) and follow us on LinkedIn ([gbreports](#)) and X ([@GBReports](#)).

NEWFOUNDLAND  
AND LABRADOR

St. John's

Charlottetown

Fredericton

Halifax

NOVA  
SCOTIA

NEW  
BRUNSWICK

QUEBEC

Quebec City

Montreal

Ottawa

ONTARIO

Toronto

U.S.A

ATLANTIC OCEAN



Québec and Atlantic CanadaMining 2025

Introduction to Québec and Atlantic  
Canada

- 8 Québec, Atlantic Canada, and the Start of a New Era
- 10 Interview with the Minister of Natural Resources and Forests, Government of Québec
- 11 Interviews with the Québec Mining Association and with the Québec Mineral Exploration Association
- 12 Factsheet: Mines and Projects in Québec and Atlantic Canada
- 14 Interviews with the Minister of Natural Resources, New Brunswick and with Mining Industry NL
- 15 Interviews with the Premier, Government of Nova Scotia and with the Mining Association of Nova Scotia

Finance and the Regulatory  
Environment

- 18 An Evolving Regulatory Environment
- 19 Interview with Lavery
- 22 Interview with EY
- 23 Business Insights: Mergers and Acquisitions
- 24 Trade and Finance
- 25 Interviews with Investissement Québec and with Gold Royalty
- 27 Interviews with SIDEX and with Société du Plan Nord

Gold

- 30 Gold Production
- 32 Interview with IAMGOLD
- 33 Interview with Eldorado Gold
- 34 Gold Exploration and Development
- 36 Interview with Gold Fields
- 37 Interviews with Abcourt Mines, Amex Exploration and with First Mining Gold
- 38 Interview with Emperor Metals
- 39 Interviews with Puma Exploration, Fancamp Exploration and with Sokoman Minerals

Critical and Strategic Minerals

- 42 Critical and Strategic Minerals Production
- 44 Interview with ArcelorMittal
- 45 Interview with Glencore
- 46 Interview with Northern Graphite
- 47 Critical and Strategic Minerals Exploration and Development
- 49 Interview with FireFly Metals
- 50 Interviews with Abitibi Metals, Cygnus Metals and with Pivotal Metals
- 51 Interview with PMET Resources

- 52 Interview with Brunswick Exploration
- 53 Interviews with Temas Resources, NioBay Metals, and with Lomiko Metals
- 54 Interviews with Strategic Resources, Manganese X Energy Corp. and with EDM Resources
- 55 Rare Earth Metals
- 56 Interview with Torngat Metals
- 57 Interview with Scandium Canada

Equipment and Technology

- 60 Closing the Loop
- 61 Interview with Adria Power Systems
- 62 Interviews with EPIQ Machinery and with Magotteaux
- 63 Interviews with Metso and with TotalEnergies
- 64 Interview with CGIS
- 65 Québec – A Tech Hub
- 67 Interviews with Nomadis and with KPI Mining
- 68 Interviews with Promine and with CAUR Technologies
- 69 Interviews with Abitibi Geophysics, Geophysique TMC and with Geomatic World

Services

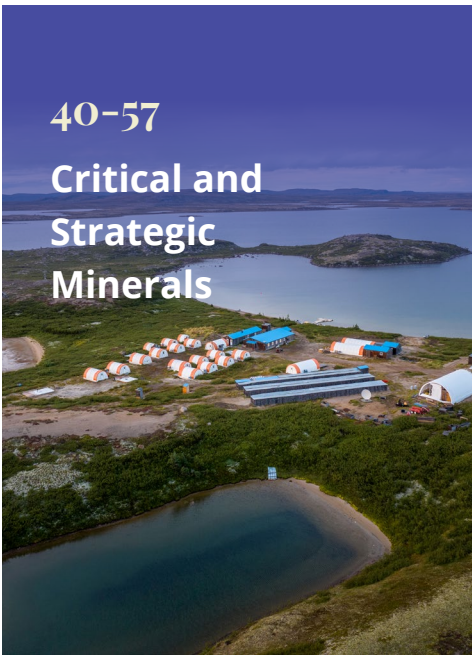
- 72 Engineering, Construction and Project Management
- 74 Interview with G Mining Services
- 75 Interview with AtkinsRéalis
- 76 Expert Opinion Article: The Project Owner
- 78 Water Management
- 79 Interview with ASDR
- 80 Interviews with Veolia and with Sanexen
- 81 Business Insights: HSE and Community
- 82 Airborne Logistics
- 83 Interview with Nolinor Aviation
- 84 Interview with Octant Aviation and Cardinal Aéro
- 85 Interview with Panorama Helicopters
- 86 Drilling and Blasting
- 87 Interviews with Diafor and with Groupe Rouillier

- 88 Company Directory

6-15  
Introduction  
to Québec and  
Atlantic Canada



40-57  
Critical and  
Strategic  
Minerals



70-87  
Services







# INTRODUCTION

“

The federal and provincial governments should seize the opportunity to strengthen Canada's mining sector. With rising global demand for gold and critical minerals, the country is well-positioned to lead.

”

Josianne Beaudry  
Partner  
**LAVERY**

GBR Series  
QUÉBEC AND ATLANTIC CANADA MINING 2025

Image by Bropradana at Adobe Stock



# Québec, Atlantic Canada, and the Start of a New Era

## Outlining the region

Québec stands out as one of the world's great mining powerhouses, and now more than ever. La Belle Province's bedrock contains many of the critical minerals required for the energy transition, as well as the strategic materials most in demand during the world's current moment of immense geopolitical tension. In one of Canada's most economically productive provinces, the mining industry is a major contributor: in 2023, the industry directly contributed CA\$11.3 billion to Québec's GDP, amounting to 19% of Canada's total economic output from mining (CA\$59.7 billion) and providing over 50,000 jobs, with its myriad products also used downstream for all manner of applications.

Québec's mining industry is deeply integrated, spanning the full value chain, from deposit discovery to mineral production, equipment manufacturing and service provision – all of which are explored in detail in this report's following chapters. The province is one GBR has explored in great detail for many years, tracking the ebbs and flows of its mining industry. In recent times, that story has seen Québec navigating the rise and fall of critical minerals – most notably lithium, which the James Bay region hosts in abundance – and benefiting from the continuously rising price of gold.

This year, GBR has expanded the focus of this annual report to include Canada's Atlantic provinces, a region it last touched upon in detail in 2021. Though its mining activities are perhaps lesser-known globally, this region, comprising of the provinces of Newfoundland and Labrador, New Brunswick and Nova Scotia, is one of both proven scale and enormous potential.

Newfoundland and Labrador is by some way its largest mining player, shipping minerals valued at a projected CA\$4.6 billion in 2024. In many ways, this province's reputation speaks for itself: it was ranked as the 8th best mining jurisdiction globally for investment attractiveness in the Fraser Institute's 2024 survey of mining companies, and 2nd-placed in Canada behind only Saskatchewan. It boasts major, global-scale operations in iron and nickel, as well as both new and historic prospects in gold, copper and other critical metals; as well as a mining-friendly government and culture. Darren Cooke, CEO of Newfound-

land-focused FireFly Metals, said: "From politicians and the community, we have been welcomed. They want mines to work, to create jobs and economic prosperity."

New Brunswick and Nova Scotia, meanwhile, are freshly emerging as exciting jurisdictions for exploration and near-term production potential. Both provinces offer ample gold resources; as well as their own selection of critical minerals including the likes of zinc and manganese, and important reserves of industrial materials like gypsum. Smaller and less remote than the mining regions of Québec and Newfoundland and Labrador, New Brunswick and Nova Scotia also offer virtually unparalleled mining access, with well-developed infrastructure across their territories. In both cases, work is ongoing to renew their regulatory frameworks. Relations between industry and government are close and friendly, poised to welcome a new era of mining to make the most of the great economic opportunities on offer.

Taken together, with their reserves of materials including iron, copper, nickel, graphite, lithium, which are essential for modern industrial development; rare earths like scandium and neodymium, irreplaceable for exotic scientific and military applications; and, of course, gold, Québec and Atlantic Canada represent a treasure trove of critical, strategic and precious minerals. At a moment of business uncertainty and global trade tensions, it also boasts exceptional records of political stability and environmental, social and governance (ESG) sustainability to boot. It is a region unique in North America, and ready for the industry's crucial role in the coming years and decades.

### Opportunity amid uncertainty

All the more relevant, then, that in the first months of 2025, Canada entered something of a new era. After several decades of liberalized trade with its southern neighbor, US president Donald Trump tore up the rulebook, announcing tariffs on US imports of many Canadian goods including steel, aluminum and automotive parts. Canada, in turn, responded with tariffs of its own. Trade cooperation pivoted rapidly to trade conflict.

Furthermore, Trump remarked in February 2025 that Canada should become the US' 51st state – a refrain he would return to regularly in the following months, up to and including his assertion in June, following a breakdown of trade talks between the two countries: "Frankly, Canada should be the 51st state, they really should. Canada relies entirely on the United States, we do not rely on Canada," he proclaimed.

Reactions from Canada's prime minister, Mark Carney, were uncompromising: "Canada's old relationship with the US is over," he declared in March. Adapting to this new reality, he stressed, would require Canadians to "fundamentally reimagine" their country's economy. It was a reflection of how close the two countries' ties had become – and how quickly they had been severed.

### Breaking down barriers

It has been estimated that the dissolution of interprovincial trade barriers alone could boost the Canadian GDP by as much as CA\$200 billion per year; a staggering figure amounting to around CA\$5,000 per person in the country on average. Legislation for the elimination of trade restrictions was introduced in June 2025, with provinces beginning work to dismantle a complex web of hurdles to cooperation which have long been a drag on Canadian economic productivity. In concert with a renewed push for diversified international trade, the provincial knock-on effects of a federal-level push for reintegration and renewal look highly promising. It is especially relevant for Canada's smaller and less economically robust provinces, which are less able to trade internationally or subsist on their own productive industries – making for an even more attractive opportunity for Atlantic Canada.

That sentiment was echoed by the mining sectors of Québec and Atlantic Canada. Maxime Guilbault, leader of PwC Canada's Québec mining and metals practice, saw possibility for the greater nationwide integration of Canada's mining industry in the breakdown of interprovincial barriers: "By building this kind of ecosystem, we can maximize the value of

our natural resources – assets we are fortunate to possess – and drive development collectively as a country," he maintained.

Similarly, Patrick Bertrand-Daoust, EY's lead for mining and metals in eastern Canada, saw potential for rising Canada-US tension to spur Québec to accelerate its mining strategy: "Québec has a unique opportunity to establish itself as a leader in critical minerals while diversifying its trading relationships – especially as the US' reliability as a partner appears to be shifting," he contended.

Political figures in Canada's eastern provinces shared similar thoughts. Tim Houston, the premier of Nova Scotia, who has set his government on a mission to kickstart economic growth by cutting red tape and attracting new industrial activity to the province, including mining, emphasized the potential for greater interprovincial exchange: "I have been very invested in removing interprovincial trade barriers. We should utilize the good trading partners we have within

Canada, and trade freely within our own country," he said.

Meanwhile, in Québec, Maité Blanchette Vézina, the province's minister of natural resources and forests until September 2025, also saw opportunity for international export diversification: "Geopolitical events – including developments since the re-election of President Donald Trump – highlight the need for flexibility. At present, just 6% of Québec's mineral exports go to the US, and we are strengthening ties with Europe and Asia."

Canadian trade with the US will inevitably remain significant, thanks if nothing else to the simple reality of their proximity. However, this push for greater interprovincial trade highlights how quickly and profoundly Canadian opinion has been galvanized toward a greater distance, even if only possible in political and economic terms, from its traditional partner and neighbor. Time will tell whether Canada, and the provinces of Québec and Atlantic Canada, are able to make the most of this potential. ■

Because your team  
is our priority



Building a legend on time

Yellowknife / Edmonton / Winnipeg / Mirabel / Iqaluit

Boeing 737-200 / 300 / 400 / 800 / Learjet 45

Toll Free: 1 888 505-7025 / nolinor.com

@nolinor @nolinoraviation @nolinoraviation nolinor\_aviation







## Maité Blanchette Vézina

Minister of Natural Resources and Forests\*  
GOVERNMENT OF QUÉBEC

### Now that Bill 63's Amendments to Québec's Mining Act are in force, how would you describe their significance?

The goal of amending Québec's Mining Act was to modernize the legal framework for managing natural resources. With rising interest in critical minerals, we aimed to ensure the law supports social acceptability and provides regulatory stability. The new framework offers clarity for both citizens and companies. Another key objective was to accelerate project development. We are updating and expanding our 2020 development plan, reinforcing Québec's leadership in environmentally responsible mining while maintaining a competitive business environment.

We also withdrew the possibility for exercising mining activities on private land and on lands located within urbanization perimeters, unless the lands where already subject to a mining right or exploration work had been performed and approved by the ministry. However, regional county municipalities may, after consulting the local municipalities concerned, ask the Minister for the partial or total lifting of such withdrawals.

Lastly, some of the amendments aim at encouraging dialogue and fostering better understanding and cooperation with local communities. For example, before beginning exploration work, companies must now transmit an annual exploration work plan to the representatives of every local municipi-

“Recognizing the high-risk nature of the sector, Québec has built a portfolio of tools to attract investment and support project success.”

ality located in the region of the land subject to the mining right and every Indigenous nation or community concerned. These representatives may also request that a company hold an information session with them concerning the annual work plan.

### Industry stakeholders have expressed concerns about the extension of discretionary powers granted to you as Minister. How would you respond?

Discretionary powers were included to improve coexistence between projects and communities. These are exceptional measures, rarely used, and not intended to block development. Since the law was adopted, I have had no intention of exercising them. Their purpose is to enhance social acceptability and ensure projects move forward more smoothly. Lastly, it is important to note that most of these discretionary powers require that a notice of proposed decision be sent to the mining right holder. The holder may submit any concerns or new facts to the ministry before the decision is made.

### What did the 2020-2025 Critical and Strategic Minerals Development Plan achieve, and what are your future plans?

The original plan concluded this spring, and we secured CA\$428 million in renewed funding to continue. We are now consulting to update the plan, focusing on accelerating the develop-

ment of 32 critical mineral and 49 advanced mining projects. Results have been strong: a 50% rise in project numbers and a 235% surge in exploration spending. Québec is now internationally recognized as a leader in mining, particularly in battery materials and processing.

### Could you offer a preview of the updated mining strategy?

The next phase of Québec's critical and strategic minerals strategy will emphasize accelerating mining projects but also on circularity and waste valorization. For mines in operation, as stated within the Mining Act modification, tailings content will have to be documented and sent to the Ministry for a better knowledge of potential valorization. The plan aims to convert passive sites into productive assets while streamlining permitting for projects with environmental benefits. Circularity will be a central pillar, supporting both sustainability and resource efficiency in the province's evolving mining strategy.

### How is Québec positioning itself internationally, particularly with respect to evolving relations with the United States?

At present, just 6% of Québec's raw mineral exports go to the US, and we are strengthening ties with Europe and Asia. Recent agreements with France and the Netherlands support cooperation in exploration, financing, and knowledge sharing. One Québec project was even named a priority by the European Commission, reflecting years of diplomatic work and boosting opportunities for our mining partners.

### What makes Québec such an attractive jurisdiction for mining investment?

Québec offers a stable, competitive environment with clear regulations and strong fiscal incentives, including tax credits for exploration and development. The government also partners with companies to advance projects and build social acceptability. Even as laws evolve, regulatory clarity remains a priority. Recognizing the high-risk nature of the sector, Québec has built a portfolio of tools to attract investment and support project success. This combined approach ensures that mining developments are both economically viable and welcomed by local communities. ■



## Emmanuelle Toussaint

President and CEO  
QUÉBEC MINING  
ASSOCIATION (QMA/AMQ)

### What has been your focus since your appointment as QMA's President and CEO in January 2025?

I began this role shortly before the Trump administration took office, so have focused on analyzing the implications of the US administration's tariffs, and Canada's countermeasures, for our members. We identified key challenges, particularly the need to streamline the permitting process, which many members cited as a major barrier to development. We used this input to engage with both provincial and federal governments.

### What is your perspective on Bill 63 and its implications?

Bill 63 introduced both positive changes and concerns. The harmonization of the BAPE consultation process and modernization of the claim system are improvements, addressing duplication and speculation, particularly regarding private land claims. However, the growing number of withdrawn territories limits exploration potential in a vast province, posing long-term risks, as few exploration projects result in a mine.

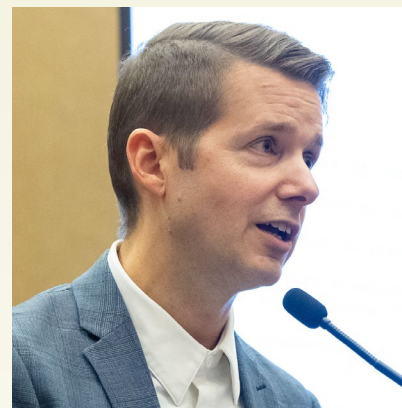
Additional concerns include expanded discretionary powers for the Min-

ister and reliance on regulation rather than clear legislation, creating uncertainty for investors. The new Environmental and Social Evaluation process, while promoting consultation, imposes administrative burdens on prospectors. Despite claims of streamlining, these changes risk adding complexity. A better balance is needed between accountability and practicality.

### What are QMA's priorities for the rest of 2025?

Communication will remain a top priority. Since the beginning of the year, I have conducted a regional tour and have visited Abitibi-Témiscamingue and the Côte-Nord. These visits are critical for engaging directly with mine operators and regional partners, fostering deeper collaboration across the sector.

We will continue to advocate for streamlined permitting and monitor federal and interprovincial developments. As Québec moves into the regulatory drafting phase of Bill 63, we are actively engaging with the government to ensure the final framework reflects industry realities. We will also continue to promote sustainability, innovation and best practices across the sector. ■



## Olivier Grondin

Chairman  
QUÉBEC MINERAL  
EXPLORATION  
ASSOCIATION  
(QMEA/AEMQ)

### How are changes to Québec's Mining Act being received by AEMQ and the wider industry?

While we were actively engaged in the process, we are disappointed with the final outcome, as the legislation introduces several unfavorable provisions. It removes more land from exploration, including private property and urban zones, even in established mining regions like Abitibi. More than 40% of the province is now affected, and areas with no exploration since 1988 are automatically excluded.

The law also increases regulatory complexity, introduces additional consultations, and grants broad discretionary powers to the minister, thereby increasing uncertainty. This is concerning, as mineral deposits are fixed, but investment capital is mobile. Unlike Ontario, which is streamlining regulations, Québec is heading in the opposite direction. However, the Ministry of Natural Resources and Forests has recently expressed a willingness to streamline regulations, and we remain engaged in discussions.

The legislation largely responds to concerns in southern Québec, where mining is less familiar and a surge in

claim filings has sparked a backlash. While the reduction of speculative claims is a positive aspect of the new law, it is counterbalanced by new burdens, which negatively affect Québec's attractiveness for both critical minerals and precious metals.

### How is the regulatory environment continuing to evolve at the provincial and federal level?

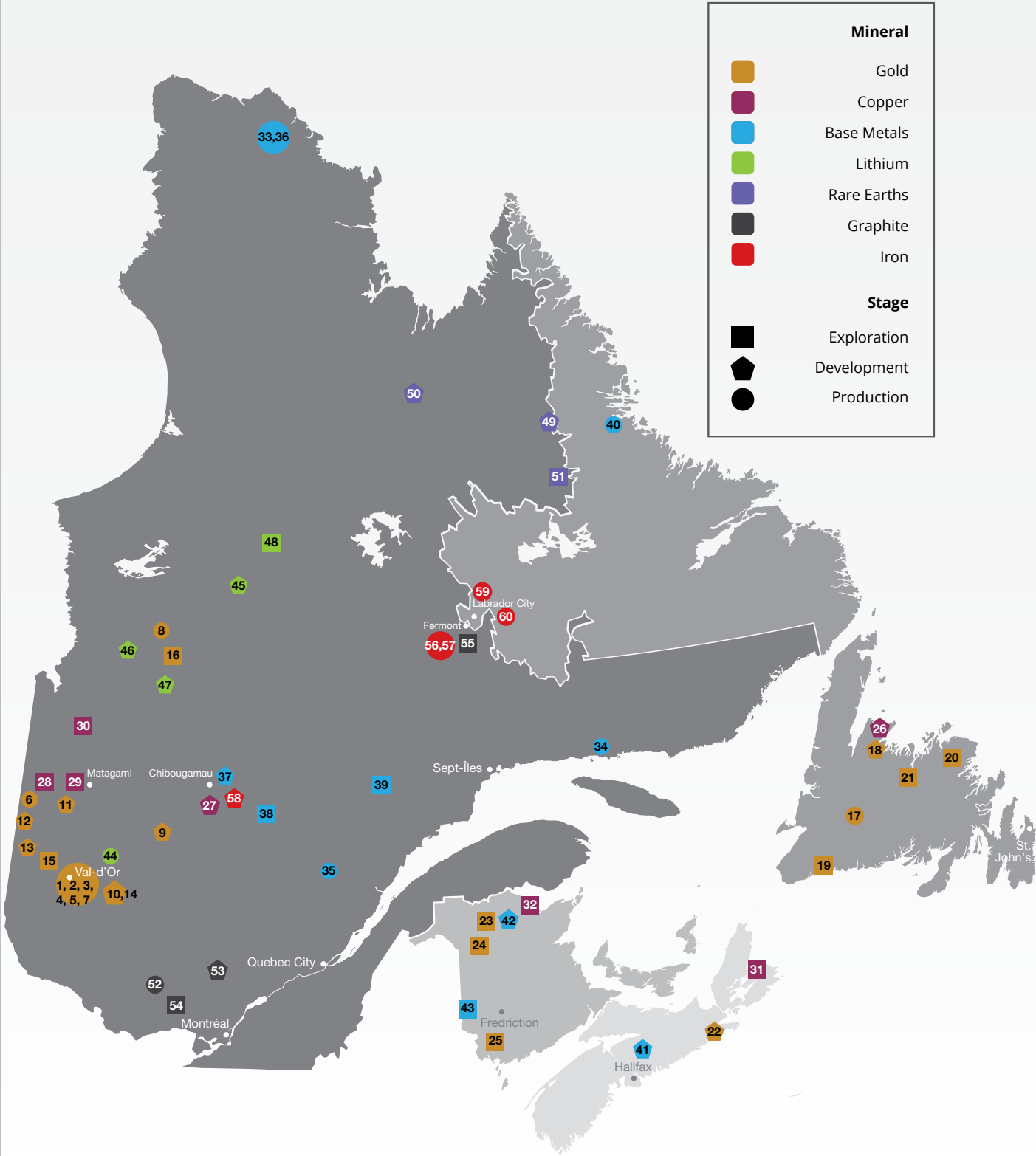
At the federal level, Mark Carney's pro-economy and pro-finance position is encouraging. Now, there is alignment at both levels of government on the need to streamline processes and support economic growth. Canada must embrace mining while ensuring it is practiced sustainably.

### What makes Québec a great jurisdiction for exploration?

It all starts with geology. Québec offers exceptional geological potential for precious metals, critical minerals and iron. The province provides a robust and accessible public database, supported by a strong ecosystem along with attractive tax incentives. Québec also benefits from a complete supply chain and a skilled workforce. ■



# Mines and Projects in Québec and Atlantic Canada



## Gold

- 1

**Canadian Malartic**  
Agnico Eagle
- 2

**Goldex**  
Agnico Eagle
- 3

**LaRonde**  
Agnico Eagle
- 4

**Westwood**  
IAMGOLD
- 5

**Lamaque**  
Eldorado Gold
- 6

**Casa Berardi**  
Hecla Mining
- 7

**Kiena**  
Wesdome
- 8

**Éléonore**  
Dhilmar
- 9

**Windfall**  
Gold Fields
- 10

**Marban Alliance**  
Agnico Eagle
- 11

**Sleeping Giant**  
Abcourt Mines
- 12

**Perron**  
AMEX Exploration
- 13

**Duparquet**  
First Mining Gold
- 14

**Novador**  
Probe Gold
- 15

**Duquesne West**  
Emperor Metals
- 16

**Eau Claire**  
Fury Gold Mines
- 17

**Valentine**  
Equinox Gold
- 18

**Hammerdown**  
Maritime Resources
- 19

**Hope Brook**  
Big Ridge Gold Corp
- 20

**Queensway**  
New Found Gold
- 21

**Moosehead**  
Sokoman Minerals
- 22

**Goldboro Gold**  
NexGold
- 23

**Williams Brook**  
Puma Exploration
- 24

**Riley Brook**  
Fancamp Exploration
- 25

**Clarence Stream**  
Galway Metals

## Copper

- 26

**Green Bay**  
FireFly Metals
- 27

**Chibougamau Copper-Gold**  
Cygnus Metals
- 28

**B26**  
Abitibi Metals
- 29

**Matagami Lake**  
Nuvau Minerals
- 30

**Horden Lake**  
Pivotal Metals
- 31

**Sydney Copper**  
Nova Copper
- 32

**Turgeon**  
Canadian Copper /  
Raptor Resources

## Base Metals: Nickel, Titanium, Niobium, Vanadium, Zinc, Manganese

- 33

**Raglan**  
Glencore Canada
- 34

**Lac Tio**  
Rio Tinto
- 35

**Niobec**  
Magris Performance Materials
- 36

**Nunavik Nickel**  
Canadian Royalties
- 37

**Lac Doré Vanadium**  
VanadiumCorp
- 38

**Crevier**  
Niobay Metals
- 39

**La Blache**  
Temas Resources
- 40

**Voisey's Bay**  
Vale
- 41

**Scotia Mine**  
EDM Resources
- 42

**Murray Brook**  
Canadian Copper
- 43

**Battery Hill**  
Manganese X Energy Corp

## Rare Earths

- 49

**Strange Lake**  
Torngat Metals
- 50

**Ashram**  
Commerce Resources
- 51

**Crater Lake**  
Scandium Canada

## Graphite

- 52

**Lac des Iles**  
Northern Graphite
- 53

**Matawinie**  
Nouveau Monde Graphite
- 54

**La Loutre**  
Lomiko Metals
- 55

**Lac Knife**  
Focus Graphite

## Lithium

- 44

**North American Lithium**  
Elevra Lithium
- 45

**Shaakichiwaanaa**  
PMET Resources
- 46

**Galaxy**  
Rio Tinto
- 47

**Whabouchi**  
Nemaska Lithium
- 48

**Mirage**  
Brunswick Exploration

## Iron Ore

- 56

**Mont-Wright**  
ArcelorMittal
- 57

**Bloom Lake**  
Québec Iron Ore
- 58

**BlackRock**  
Strategic Resources
- 59

**Carol Lake**  
Iron Ore Company of Canada
- 60

**Scully Mine**  
Tacora Resources

Source: Québec Ministry of Natural Resources and Forests; Newfoundland and Labrador Department of Industry, Energy and Technology; New Brunswick Department of Natural Resources and Energy Development; Mining Association of Nova Scotia; Global Business Reports





**John  
Herron**  
Minister of Natural  
Resources  
GOVERNMENT OF  
NEW BRUNSWICK

#### Where does mining fit in New Brunswick's economic strategy?

Once contributing 7% of provincial GDP, mining now represents less than half of that. However, global demand for stable sources of critical minerals positions New Brunswick as a potential safe haven. Its value proposition includes two deepwater ports, extensive existing road access to mineral resources, and one of Canada's fastest-growing container ports.

In addition, 40,000 km of forestry roads offer logistical advantages over other jurisdictions. The province also benefits from a collaborative relationship with Indigenous communities, with equity participation seen as the highest form of consultation. Combined with world class mineral deposits and a willingness to restart or initiate new projects, these factors suggest New Brunswick is poised for renewed mining-driven growth.

#### Could you outline the province's upcoming new mineral strategy?

The framework will outline best practices in Indigenous relations, capital attraction, and sector participation. Its foundation will rest on three pillars: environmental responsibility, regulatory predictability, and authentic First Nation partnerships. Project proponents will be rigorously tested on environmental grounds, but in exchange, the permitting process must be timely and reliable to attract investment. I have proactively engaged all 16 First Nations leaders, seeking early collaboration. Initial responses have been open.

We aim to unveil the new mineral strategy framework at our annual Exploration, Mining and Petroleum conference in October.

#### What factors would you say make New Brunswick a great mining jurisdiction?

The province hosts promising resources in indium, antimony, molybdenum, tungsten, gold, copper, zinc, and potash. Its extensive road network and port access strengthen its logistical appeal. The forthcoming strategy will balance a rigorous but not burdensome environmental regime with the predictability and speed capital markets require. ■



**Amanda  
McCallum**  
Executive Director  
MINING INDUSTRY NL

#### What role does Mining Industry NL play for the industry?

Mining Industry NL is a not-for-profit, industry-led organization supporting the entire mineral value chain in Newfoundland and Labrador. This includes prospectors, junior and senior explorers, developers, operators, producers, and the service and supply sector.

Our core mandate is advocacy and representation, but it also focuses on investment attraction, sector promotion, outreach and education, and business-to-business matchmaking. Through a comprehensive range of initiatives, the organization works to strengthen the province's mining industry and enhance its global competitiveness.

#### How does mining contribute to Newfoundland and Labrador's economy?

Mining is the second-largest contributor to Newfoundland and Labrador's GDP, accounting for 9.3% in 2024 – up from 7.3% in 2023 – behind only oil extraction. In 2024, mineral shipments totaled CA\$4.6 billion, with projections surpassing CA\$6 billion in 2025 due to new projects coming online. Exploration remains strong, with forecasted expenditures of CA\$258 million for 2025. Foreign direct investment in mining brings new money into the province, fueling economic and social activity in rural areas. With an area of 452,000 km<sup>2</sup> and just 550,000 residents, the province remains an underexplored, top-tier frontier jurisdiction with significant untapped mineral potential.

#### What is the province's geological profile?

Newfoundland and Labrador boasts exceptional geological diversity, hosting 27 of Canada's 34 critical minerals. The province's mineral richness spans both Newfoundland and Labrador, with world-class systems ranging from high-purity iron ore in Labrador West, with more than 30% of Canada's supply of iron ore coming from the Labrador Trough. Equally, the Voisey's Bay mine supplies more than 30% of Canada's nickel.

Gold exploration is particularly active, with Equinox Gold expected to pour first gold at its Valentine mine by Q4 2025. Remarkably, this is the first greenfield project permitted in Atlantic Canada in over 15 years. ■



**Tim  
Houston**  
Premier  
GOVERNMENT  
OF NOVA SCOTIA

#### What is the current state of the mining sector in Nova Scotia?

Over the last 20 years, Nova Scotia had moved away from natural resource development, and mining in particular. In recent times, world events – of course including tariffs and the Trump administration's language on Canada – and Nova Scotia's economic situation caused my government to re-examine our opportunities. Our Province may be small, but it is geologically rich. It holds lithium, zinc, indium, copper, uranium and more. This presents a major opportunity, and the focus now is on developing these resources.

#### What is guiding Nova Scotia's critical and strategic mineral strategies?

Our critical minerals list is extensive, and we continue to add to it with a focus on energy, defense and healthcare applications. We also have a strategic minerals list of materials that can benefit the Province in other ways, like potash for the agricultural sector. Our critical minerals strategy sends the signal to investors that we are committed to their development. Everybody wants a reliable, ethical and sustainable supply of these minerals – we can be that provider.

#### How did the ban on uranium mining affect the sector, and what can we expect now that it is lifted?

Due to the previous moratorium, it was challenging to determine exactly how much uranium Nova Scotia holds. Companies would avoid testing samples for uranium in order to not contravene the ban. We are now looking back at historical core samples for uranium that might have been missed – and finding a lot of it.

Uranium is in-demand, even within Canada. Thanks to our core samples, we hope to skip some early-stage exploration and attract major companies. We are putting out requests for uranium development. It is time for us to discuss this opportunity for Nova Scotia, and we will bring our community along with us with education on uranium mining. ■



**Sean  
Kirby**  
Executive Director  
MINING ASSOCIATION OF  
NOVA SCOTIA (MANS)

#### How does the Mining Association of Nova Scotia (MANS) support the province's mining industry?

MANS is the voice of the mining sector in Nova Scotia. Our membership spans individual prospectors and consultants through to the province's biggest producers. Our main areas of focus are on government relations, pushing for an improved regulatory and policy environment from the provincial government, and on public relations, helping to build the industry's social acceptance in Nova Scotia.

#### How does the industry contribute to Nova Scotia's economy?

There has been mining activity in the province for over four centuries. Today, the sector employs 3,000 people from a total population of around 1 million, making it an important industry for Nova Scotia, particularly in rural areas. Mining is the highest-paying resource industry here, with an average total compensation of around CA\$102,000 per year.

#### What is the current status of the industry?

Nova Scotia is a highly mineral-rich province, with gypsum, salt, coal, gold, molybdenum, tin, zinc, indium, graphite, lithium and other critical minerals. We have 12 large mines and quarries, plus a variety of critical mineral exploration activities. EDM Resources' Scotia mine looks set to restart production of zinc, lead and gypsum in 2026, which would be the province's first modern critical mineral mine.

#### Beyond geology, what else can Nova Scotia offer mining operations?

Our province is strong on infrastructure and has great potential in tidal energy. There is no need for 'fly-in, fly-out' operations or remote camps. The province has a very highly educated workforce – we have more universities per capita in Nova Scotia than anywhere else in Canada.

#### What progress has been made in your work with the provincial government?

The Government of Nova Scotia is a terrific partner. Most notably, in 2025 the Government repealed the province's uranium ban. ■





# FINANCIAL AND REGULATORY ENVIRONMENT

“

There is alignment at both levels of government on the need to streamline processes and support economic growth. Canada must embrace mining while ensuring it is practiced sustainably.

”

Olivier Grondin  
Chairman  
AEMQ

GBR Series  
QUÉBEC AND ATLANTIC CANADA MINING 2025

Image by Firefighter Montreal at Adobe Stock



# Evolving Regulatory Environments

## Changing with the times

The ripples of President Trump's return to the White House extend far beyond trade and top-level politics. His administration has moved to rapidly accelerate the permitting timelines of several key critical mineral projects in the US. The president's Immediate Measures to Increase American Mineral Production executive order, signed in March, asserted a need for the US to "reduce our reliance on foreign nations," arising due to what the Order labels "overbearing federal

regulation" of mining projects. It tapped into a commonly voiced concern from industry on both sides of the border: mines take too long to develop.

For Canadian jurisdictions, including Québec and Atlantic Canada's provinces, this poses a competitiveness risk – and so has spurred a redoubled desire to accelerate development. "With the US speeding approvals and easing rules, Québec risks falling behind," maintained Josianne Beaudry, partner at legal firm Lavery.

Emmanuelle Touissaint, president and CEO of the Québec Mining Association, agreed: "Other jurisdictions – including the US, EU and Ontario – have already acted to streamline permitting for critical minerals. Québec must show similar urgency."

It makes for a difficult and delicate puzzle. Québec, especially, has been long-renowned for its world-class environmental, social and governance (ESG) regulatory frameworks. At the same time, however, it is viewed as a slow and expensive jurisdiction. In the Fraser Institute's 2024 survey ranking global mining jurisdictions, Québec slid to 22nd on investment attractiveness, from 5th in 2023, with respondents citing concerns over taxation, regulatory inconsistency and legal hurdles. Industry insiders nevertheless insist that there is ample possibility to accelerate mine development without sacrificing sustainability.

Though the extent to which ESG regulation may be abridged in the US is still uncertain, reaction from industry in Canada has been swift, as noted by PwC's Québec mining lead, Maxime Guilbault: "Recent shifts toward loosening regulatory frameworks in the US mean that we have seen sustainability advisory begin to move down clients' priority lists," he said.

EY's Patrick Bertrand-Daoust observed the same: "The rollback of ESG and DEI policies under the Trump administration has created uncertainty for Canadian companies regarding potential shifts in domestic regulations."

The industry appears to be anticipating eastern Canadian jurisdictions will move in a similar direction to their southern neighbors, and is holding off on committing to sustainability initiatives until some new clarity emerges.

Offering developmental impulse, Canadian Prime Minister Mark Carney pledged to remove federal duplication of permitting reviews for major projects under what he called a new "one project, one review" approach. "It is time to build," Carney declared. Québécois Premier François Legault expressed his desire for accelerated permitting in March 2025, to the delight of many industry stakeholders.

It is unclear just how quickly this could happen without sacrificing ESG policy. Dominique Amyot-Bilodeau, partner at law firm McCarthy Tétrault, highlighted a need for "cultural shifts" and "gradual legislative change" to maintain high standards. Seeking to enhance their global competitiveness, while not sacrificing their world-class sustainability, regulatory environments across Québec and Atlantic Canada are in something of a state of flux in 2025.

### Mixed reviews for Bill 63

In 2024, Québec's government introduced amendments to the province's Mining Act in a legislative item known as Bill 63. The amendments, which came into force in November 2024, represent the most substantial update to Québec's

&gt;&gt;20



RB



JB

## René Branchaud and Josianne Beaudry

Partners  
LAVERY

### What are some highlights from Lavery's work over the last year?

RB: We had a busy 2024 and start to 2025, advising Newmont on the cross-border sale of its Éléonore mine in Québec, and supporting several ASX-listed companies with Canadian legal matters. We acted for Cerro de Pasco Resources on key transactions, including its TSXV listing and private placements with investors like Eric Sprott. We also advised Dynacor Group on a public offering and continue to support Abcourt Mines on private placements and the reopening of the Sleeping Giant mine. Internationally, we are assisting a TSXV-listed company with mining asset acquisitions in Morocco, handling due diligence and agreements with local counsel.

### How would you assess Québec's trajectory on permitting?

JB: Québec's government is giving mixed signals. Though there are promises of faster permitting, reduced red tape, and an accelerated energy transition, recent amendments to Québec's Mining Act have moved in the opposite direction. Large exploration areas are now off-limits. Claim renewals require 90% of planned work completed or risk loss of the claim, with no possibility of appeal. Additional layers on social acceptability regulations are making approval processes longer and more costly. Discretionary powers maintained by the government further increase uncertainty. Industry groups like AEMQ are advocating for better frameworks, but short-term change is unlikely. With the US speeding approvals and easing rules, Québec risks falling behind.

### How could changes to Québec's flow-through share regime impact exploration?

JB: Reduced tax credits in Québec's latest budget further hinder early-stage exploration, threatening critical mineral development. While companies are not hit immediately, the changes make flow-through shares less attractive to investors by removing key tax benefits, including the capital gains exemption. This raises the cost for investors, reducing deal values and limiting the capital companies can raise. With less funding, exploration slows – threatening the pipeline of future mining projects.

### Do regulatory changes at the federal level offer more encouragement?

JB: There have been some positive signs – like the federal proposal to remove environmental reviews for select projects – but these remain vague and limited.

### What is driving heightened M&A activity?

RB: M&A activity – especially in gold – has been strong since 2023 and is expected to continue through 2025, fueled by rising prices and geopolitical uncertainty. Once unthinkable, a CA\$5,000 per ounce gold price now seems possible. Copper is also seeing increased interest, driven by demand from the energy transition.

JB: M&A is also being driven by the financial strain on junior explorers, many of whom lack access to capital and are becoming acquisition targets. While consolidation is not inherently negative, it highlights the urgent need to boost exploration to sustain future supply. Majors still rely on juniors for early-stage work, so strategic partnerships and option deals remain common.

### How can Canada best drive growth in the mining sector?

RB: Canada has abundant natural resources and a strong pool of skilled mining professionals. This foundation will support continued industry growth. But social acceptance is critical. Groups like AEMQ and mining companies must invest in outreach to bridge the gap between public perception and the reality that responsible mining is essential to supply the minerals needed for modern life and clean technologies.

JB: The federal and provincial governments should seize the opportunity to strengthen Canada's mining sector. With rising global demand for gold and critical minerals, the country is well-positioned to lead.

### Where will Lavery be focusing in its mining practice in the coming months?

RB: A few years ago, we established a dedicated mining group and quickly recognized the breadth of our expertise – not just in mining, but also in environment, permitting, real estate, financing, taxation, securities, litigation, and IP. We meet monthly to align efforts and share insights. A key priority is engaging Canadian law firms without a Québec presence, helping them navigate the province's distinct and evolving regulatory framework.

JB: We remain actively involved with industry associations and serve on the committee reviewing TSX Venture Exchange policies. Mining continues to be one of the strongest sectors on the TSXV, alongside a growing but still smaller technology sector. We also advise securities regulators and stakeholders, helping identify solutions to improve capital market access. Since exploration depends on financing, our efforts focus on supporting associations and regulators to facilitate funding and advance mining projects in Québec. ■

A promise to leverage  
our talent for the benefit  
of the mining industry

ADDED VALUE,

Signed,  
Lavery





Dominique Amyot-Bilodeau  
Partner  
MCCARTHY TÉTRAULT

“

Short-term policy shifts – especially around green economy projects like lithium – are being closely watched. Some sectors, such as gold, have benefited from the market responses resulting from this economic uncertainty.

”



Frank Mariage  
Partner  
FASKEN

“

Every challenge brings opportunity. The current tariff situation may serve as a wake-up call for Canada to diversify its trading relationships. This comes with logistical challenges, but reducing dependence on the U.S. appears to be a wise move.

”



Andrew Disipio  
Partner and Head of Mining  
BENNETT JONES

“

There is growing engagement on the strategic importance of mining to Canada's economy and national interest. With rising national awareness, there is appreciation of the link between resource development and economic resilience and sovereignty.

”



Maxime Guilbault  
Québec Mining and Metals Leader  
PWC CANADA

“

Companies are seeking advice on everything from tax impact projections to logistical diversification, affecting both commodity sales and equipment purchases. All these areas are potentially impacted by tariffs, which in turn influence capital and operating expenditures.

”

18 >>

mining regulatory framework in a decade, including changes to exploration rights, new environmental assessment reporting requirements, and a selection of new ministerial powers.

Among the Bill's central changes were a series of alterations to requirements upon prospectors in Québec. Where speculators could previously accumulate land claims without intent to develop them further, passively awaiting a potential buyer, the Bill made those claims – now labelled “exclusive exploration rights” – subject to minimum work requirements, providing impetus for active exploration. There has also been some praise for updated environmental assessment processes, including evaluations by the Office of Public Hearings on the Environment (BAPE), which now apply to all new projects regardless of size. “These changes were well received, thanks to the industry's commitment to transparency,” said Frank Mariage, partner at Fasken; while Dominique Amyot-Bilodeau, partner at McCarthy Tétrault, similarly affirmed: “These steps promote credibility and transparency,” and called the changes “positive.”

Other amendments have instead been regarded as burdensome, including the prohibition of prospecting on lands covered by urbanization perimeters or private holdings. Québécois exploration has increasingly moved southward, closer to urban areas less acquainted with mining, as demand for the region's critical mineral reserves has risen. Amyot-Bilodeau commented on the challenge for mineral explorers: “This shift may hinder future discoveries, especially as demand for strategic minerals rises. Many of today's priority minerals were not considered critical a decade ago, underscoring the need for territorial flexibility.”

Mariage summarized explorers' responses: “Extra burdens for juniors, when they are already struggling to fund their activities, have not been well received. We have to make exploration easier, not harder.”

Meanwhile, new discretionary powers for the Minister of Natural Resources and Forests, allowing the Minister to restrict access to mining lands or roads in cases of safety

concerns, or to order the relocation or removal of mined material, were also widely regarded as concerning. Stakeholders identified the potential for these new powers to politicize project development and generate uncertainty: “The bill introduces uncertainty, adds regulatory complexity, and is seen as increasing operational risk,” asserted Andrew Disipio, partner at Bennett Jones.

Minister Maité Blanchette Vézina assured that the new powers did not present a barrier to mining: “These are exceptional measures, rarely used, and not intended to block development. Since the law was adopted, I have had no intention of exercising them. Their purpose is to enhance social acceptability and ensure projects move forward more smoothly, not to create obstacles,” she said.

Lavery's René Branchaud and Josiane Beaudry highlighted a potential knock-on effect: While the US moves to liberalize its regulatory framework, these Mining Act amendments could drive up costs for explorers, frustrating Québec's attractiveness. Bennett Jones' Disipio was explicit on this point: “While responsible governance is essential, Bill 63's amendments to the Mining Act do little to make Canada more attractive and competitive as a global mining jurisdiction,” he advised.

**Making Atlantic mining attractive**

Nova Scotia is aiming at a mining turnaround. It ranked a paltry 79th (of 82) in the Fraser Institute's 2024 survey – by far the lowest in Canada, and placed alongside international peers including Bolivia (76th), Mozambique (78th) and Niger (80th). Sean Kirby, executive director of the Mining Association of Nova Scotia, described how a four-decade buildup of red tape, including a total ban on uranium mining and exploration, which he described as “based more on politics than science,” had stifled the sector.

In early 2025, Nova Scotian Premier Tim Houston vowed to “take the ‘no’ out of Nova Scotia.” Since then, his administration has slashed through previous restrictions, including the aforementioned uranium ban. Speaking with GBR, he

said: “Some parts of Canada have been developing their natural resources, while others have not. Nova Scotia has been among the latter. It is time for us to step up, and I am trying to lead Nova Scotia in that direction.”

In New Brunswick, an upcoming new governmental mineral strategy – due for publication in October 2025 – aims to accelerate resource development while maintaining environmental and social standards. The province's minister of natural resources, John Herron, promised a “white glove” approach to welcoming new projects, and a focus on predictability. He emphasized how New Brunswick's agility and accessibility for miners, and a methodology of being “constructively impatient, but committed to getting it right” – pushing for speed, but committed to sustainability.

The Ministry will presumably be buoyed by the fact that it is a sentiment already echoed by companies in the province. Rajesh Sharma, president and CEO of gold explorer Fancamp

Exploration, said the jurisdiction's access is “excellent,” while Manganese X Energy Corp's CEO Martin Kepman described the provincial government as “highly supportive.”

Newfoundland and Labrador, meanwhile, has established itself as a top-tier mining jurisdiction. Fraser Institute rankings since 2020 placed the province in 8th, 21st, 4th, 9th and 8th on global attractiveness. Asked what could push the province to even greater heights, Amanda McCallum, executive director of Mining Industry NL, called for simplification of the province's “overlapping” permitting and land access systems. Since 2022, the province has been reviewing its Mineral and Mining Acts, aiming to modernize legislative and regulatory framework. It published its Critical Minerals Plan in late 2023, which labelled high-purity iron as a critical mineral. Newfoundland and Labrador was the first Canadian province to do so, signalling an intent from the province to remain on the front foot in its critical mineral ambitions. ■

XPLOR  
2025

presented by



October 27 – 30  
Le Westin Montréal



Connection  
Knowledge  
Excitement





“

If we were to conduct our survey again today, I suspect Geopolitics would emerge as our number one risk.

”

## Patrick Bertrand-Daoust

Mining and Metals East Leader  
ERNST & YOUNG (EY)

### Could you summarize EY's work with the mining sector in Québec and Atlantic Canada?

EY delivers a comprehensive suite of services tailored to the unique needs of mining and metals companies in Québec and Atlantic Canada. I lead our assurance services including financial audits, ESG reporting, and the evaluation of internal controls to ensure robust governance and compliance. Our tax team offers strategic advice on incentives, flow-through shares, and international structuring. Furthermore, we provide valuation services aligned with NI 43-101 reporting standards, facilitating project financing and capital expenditure planning. Our consulting division is equipped to support mining and metals companies through ERP implementation, strategic planning, innovation, digital transformation, cybersecurity measures, health and safety protocols, and contract compliance. Ultimately, we aim to empower companies to navigate the complexities of the mining sector while driving sustainable growth and operational excellence.

### EY found that Capital is the top risk for metals and mining companies in 2025. How does this risk differ between junior and major companies?

Both junior and major companies regard capital as a critical concern but juniors particularly struggle to raise funds, facing obstacles in securing the necessary investment. Although gold prices remain high and attract strong interest, critical minerals face challenging market volatility conditions. These projects would

benefit from government support, whether directly or through promotion to international investors.

For major companies, capital allocation involves a delicate balance between asset acquisitions and internal project development. Recent trends suggest a preference for acquisitions.

### How are Québec and Atlantic Canada balancing demands for accelerated extraction with environmental stewardship?

While some view permitting and environmental studies as overly burdensome, the government must balance process efficiency with the needs of local communities. There may be opportunities to streamline administrative processes without compromising environmental standards.

Additionally, the rollback of ESG and DEI policies under the Trump administration has created uncertainty for Canadian companies regarding potential shifts in domestic regulations. Achieving the right balance requires mining companies to integrate productivity and ESG objectives, rather than treating them as separate entities.

### How are geopolitical developments shaping the mining industry today?

If we were to conduct our survey again today, I suspect Geopolitics would emerge as our number one risk. Recent global events have driven countries to pursue greater self-sufficiency. Québec has already taken steps in this direction previously, aiming to transform its abundant deposits of critical minerals into a

value-added, end-to-end supply chain. This presents Québec with a unique opportunity to establish itself as a leader in critical minerals while diversifying its trading relationships – especially as the US' reliability as a partner appears to be shifting.

### How does Québec's hydroelectricity contribute to the sustainability of its mining industry?

Québec's abundant and cost-effective hydroelectricity is a strategic advantage. As more projects aim to decarbonize their operations, the demand for hydroelectric generation rises. Some Québec companies are set to renegotiate their contracts with Hydro-Québec in the coming years, and unit price increases seem likely. Québec has already had to be selective in its allocation of hydroelectric resources. Nevertheless, there is strong governmental commitment to develop infrastructure and maintain Québec's global reputation as a leader in sustainable mining.

### Cyber and digital risk dropped off EY's Top 10 list this year. Why do you think that is?

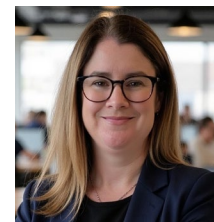
A few years ago, many mining companies faced cyber-attacks, which prompted significant investments in security measures and cyber insurance, ultimately leading to a reduction in this risk.

A more pressing concern is the digital risk associated with Canada's mining talent shortage. With a limited skilled worker pool, companies are increasingly investing in automation and remote work technologies to enhance productivity and reduce labor costs. However, recognizing this implication requires a cultural transformation. For instance, operating machinery underground differs significantly from managing digitized, remote-control tasks, requiring distinct skill sets. The sector is gradually adapting to this transition.

### How will EY help its clients to adapt to these risks?

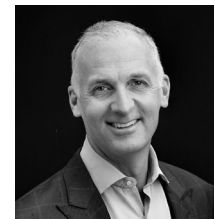
Our team regularly analyzes the latest developments and their implications. Simultaneously, we are helping companies make the most of tax incentives and other mechanisms to optimize their capital. We have observed a lot of activity in the M&A and joint venture space, a trend we expect to continue. Most critically, we will support companies in building and executing long-term investment strategies, fostering a more resilient and sustainable mining sector for future generations. ■

## Mergers and Acquisitions



“Partnering with Osisko Mining provided vital local expertise, community ties, and regulatory insight, enabling a fast and effective integration. French is now Gold Fields' third official language. When the chance came to acquire 100% of Osisko, the decision was easy and the transition seamless.”

Andreanne Boisvert, VP Environment and Community Relations, **GOLD FIELDS**



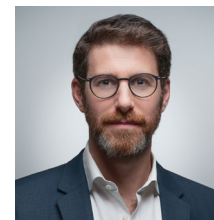
“Our acquisition of Québec Precious Metals was a strategic and mutually beneficial move. The transaction followed Newmont's sale of the Éléonore mine to Dhillmar, creating an opportunity to consolidate nearby properties and potentially supply ore to Éléonore's mill, while also enhancing our regional discovery potential.”

Tim Clark, CEO, **FURY GOLD MINES**



“I expect the consolidation trend to continue moving forward. Junior companies are currently undervalued, and access to capital and investment conditions have been challenging. A merger can be an effective way to advance in this current economic environment, provided you select the right partners.”

Ernest Mast, President and Managing Director, **CYGNUS METALS**



“I sought to 'buy low' during a downturn, and the NewOrigin acquisition was very much part of that thesis. In James Bay and critical minerals more broadly, consolidation is not only likely – it is necessary. Many small land packages lack sufficient scale.”

Rick Breger, President and CEO, **HARFANG EXPLORATION**



“M&A has been employed as a short-term solution due to a lack of new discoveries and currently serves as the primary growth strategy for companies in the sector. At present, investment is flowing almost exclusively toward producers and some developers. This is unsustainable in the long run.”

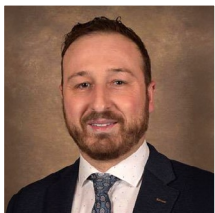
Mathieu Savard, President and CEO, **VIOR**



# Trade and Finance

## Uncertainty reigns

It was virtually unthinkable just a year ago – but an intensifying US-Canada trade conflict, and a consequent wider sense of business uncertainty, are hurting the Canadian economy. With US trade policy defined by unpredictability in early 2025, as president Donald Trump vacillated between sweeping tariffs, special conditions, trade deals and U-turns, businesses across Canada reined in their investments and sales outlooks. Canadian exports to the US – overwhelmingly its largest trading partner constituting 77% of its total exports by value in 2023 – fell by 15.7% from March to April 2025, as its exports to the rest of the world rose by 2.9%. Resultantly, Canada recorded a CA\$7.6 billion trade deficit in April – its largest on record.



**Sylvain Lépine**  
General Manager  
NQ INVESTISSEMENT MINIER

“

The federal and provincial governments are heavily investing in infrastructure in northern Québec, which is crucial. It is not enough to identify mineral projects; we need to connect those projects with roads, electricity, and essential services.

”

All that was before US tariffs on Canadian steel and aluminum import tariffs doubled to 50% in early June, piling further pressure on Canadian suppliers, as President Trump continued in his attempts to aggressively rebuild manufacturing capacity in the US. The two countries' bilateral mineral trade had reached CA\$146 billion in 2023, with Canada's exports comprising CA\$83.8 billion of that total, including CA\$20 billion of iron and steel, and CA\$15.2 billion of aluminum.

Tensions between the two countries have continued to rise, with Canada responding with tariffs of its own. Months of “will-they, won't-they” high-level trade discussions appeared to have passed beyond breaking point in late June 2025, before Canada dropped a planned tax on US big tech digital services in order to resume talks. In early September, the Canadian government dropped many of its retaliatory tariffs, with Carney signalling intent to return to trade negotiations.

It is possible that tariff policies and uncertainty will fade away before many of the projects discussed in this report produce their first metals. Given the undulating trajectory of trade policy under the Trump administration, it is difficult to predict what will happen even in the coming weeks. The impacts on Québec and Atlantic Canada's mining industries, meanwhile, will not be clear for perhaps years, as effects ripple across highly integrated supply chains. Eastern Canada is certainly highly exposed to trade disruptions, with over 70% of Québec and New Brunswick's exports sent to the US in 2023. With some economists forecasting a looming Canadian recession as tariffs pour fuel on smoldering inflation and unemployment, one thing remains abundantly clear: all this uncertainty is bad for business.

### While juniors struggle, investors look the other way

There is no easy way to say it – Québec and Atlantic Canada's junior mining companies, for the most part, are in dire straits. Although this region has a few standout success stories, the sentiment across the industry is broadly the same: despite excellent short-to-medium term outlooks for a range of critical minerals, and record prices for gold, junior stocks are trading at historic lows, leaving their operations high and dry. Mathieu Savard, president and CEO of gold explorer Vior, said plainly that many junior companies were “starving for funding” in 2025.

Left unresolved, this deepening challenge could become an existential one for mining. Juniors act at the industry's exploration arm, creating value through new discoveries. Without them, it will be impossible for the industry to meet explosive demand for critical minerals, nor to replace depleting gold reserves. David Garofalo, CEO of royalty and streaming company Gold Royalty, outlined the scale of the problem: “One of the mining industry's greatest challenges over the past decade has been the lack of capital available to junior explorers – the very companies responsible for grassroots discoveries that drive long-term growth.”

Paul Carmel, president and CEO of junior funder Sidex, branded the issue one of “investor apathy.” In many cases, a downward spiral effect is taking hold: with little investment, juniors struggle to explore; without exploring, they cannot generate results; and without results, they have a hard time

>>26



**Amyot Choquette**  
Senior Director –  
Investments Natural  
Resources  
INVESTISSEMENT  
QUÉBEC

**How would you describe the mining investment environment in recent months?**  
Market dynamics were challenging in the early months of 2025. In the gold sector, even with record prices, some junior companies have found it difficult to secure adequate funding. In lithium, graphite, and other critical minerals, falling prices have similarly made capital raising difficult for certain companies. Nevertheless, there have been notable successes which have raised substantial funds. This indicates that investor interest in mining remains, and we are hopeful that over the long term, more capital will return to support Québec's mining sector.

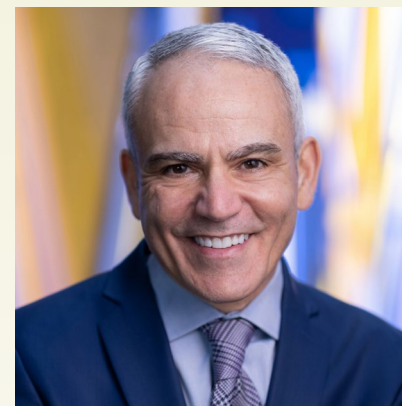
### How could US tariffs impact Investissement Québec's portfolio, and the Québec mining sector more widely?

Most of our investments remain in the development stage and so are not directly affected by tariffs. However, some projects plan to export their minerals or value-added products to the US. We hope that the US and Canadian governments will reach an agreement to avoid negative impacts on mining companies. Should exports of critical minerals to the US become more difficult, there is sustained demand in Europe and Asia, offering diversification options if necessary. For now, the outlook remains uncertain.

At the federal level, the recent extension to the refundable tax credit for mineral exploration is a welcome development. Greater federal engagement – through initiatives such as the Canada Growth Fund, Critical Minerals Infrastructure Fund, and support from agencies like Export Development Canada – is a clear advantage for Québec's mining projects during these uncertain times.

### What are Investissement Québec's priorities looking ahead?

Investissement Québec's mandate is to support companies over the long term and drive economic development and job creation. Our focus is on maximizing value-added projects within an integrated Québec-based critical mineral and battery value chain. It has already yielded strong returns for both our investments and the broader economy – and it will remain our guiding approach moving forward. ■



**David Garofalo**  
CEO  
GOLD ROYALTY

### How does the royalty and streaming model contribute to the financial sustainability of the mining industry?

One of the mining industry's greatest challenges over the past decade has been the lack of capital available to junior explorers. Since gold reserves peaked in 2012, global reserves have declined by 40%, with juniors unable to access consistent funding needed for exploration. Despite higher gold prices, this junior explorer segment has not benefited, leading the industry to cannibalize existing assets rather than create new value. Royalty and streaming companies have stepped in to fill that funding gap, becoming a critical source of capital.

### What makes Québec an attractive mining jurisdiction?

Québec combines world-class mineral potential with a government that truly understands the sector's economic value. The province's bureaucracy “gets it,” making Québec a standout example of how strong geology and pro-mining government can align.

### With IAMGOLD's Côté mine entering production, how does this asset enhance Gold Royalty's portfolio?

Gold Royalty holds a 0.75% NSR on Zones 5 and 7 of IAMGOLD's Côté mine, with Zone 5 representing the highest-grade portion of the open pit currently being mined. Due to both its high grade and lower royalty burden, Zone 5 will be a key revenue driver in the near term. IAMGOLD plans to increase output beyond the mill's 36,000 t/d nameplate capacity by debottlenecking – all funded by the operator. This speaks to the attractiveness of our model – with no capital obligations, Gold Royalty benefits from that production growth and exploration upside at no cost.

### How is Gold Royalty projected to grow in coming years?

With over 240 fully paid royalties and no future capital obligations, Gold Royalty is now positioned to realize the benefits of four years of disciplined growth. A projected 360% increase in gold equivalent ounces over the next five years with flat G&A and no cost-of-sales increases – will translate directly into free cash flow. ■



24 >>

attracting investors. “Mining has become an increasingly challenging business due to lengthy permitting processes, rising costs, skilled labour shortages, and growing community opposition – even in traditionally pro-mining regions,” said Carmel.

Juniors are also suffering a low investor appetite for risk, as investment has flocked to safe haven assets like gold. A defining feature of many recent junior success stories is their scale. For investors, this offers a degree of certainty – and majors’ active production even more so. “Much of the capital entering the sector comes from generalist investors focused on return rather than sector-specific dynamics. Given their higher risk profile, juniors are often overlooked by these investors,” explained Olivier Grondin, chairman of AEMQ, the association representing Québec’s mining exploration companies.

The effects for juniors in Québec and Atlantic Canada are real, and profound. “Market conditions have been challenging. We began 2024 with one-third of the previous year’s treasury. While we would love to have CA\$10-20 million to advance all of our projects, that is not our current reality,” said Tim Froude, president and CEO of Newfoundland and Labrador-based polymetallic junior Sokoman Minerals.

Yet, some still showed optimism for the future: “This lack of activity will constrain future mine supply – which, ironically, sets the stage for the next upcycle,” maintained Ivan Fairhall, managing director of Québec-focused copper explorer Pivotal Metals.

Impactful infrastructure investment

A bright spot for mining financing in Québec and Atlantic Canada in 2025 came in the announcement of the First and Last Mile Fund (FLMF). Announced by Canadian Prime Minister Mark Carney in March 2025, the FLMF will provide critical minerals projects, as well as others in the energy sector, with federal funding for infrastructure links. “We are going to aggressively develop projects that are in the national interest in order to protect Canada’s energy security, diversify our trade, and enhance our long-term competitiveness, all while reducing emissions,” pledged Carney in the run-up to Canada’s federal election.

The FLMF adds another arm to Canada’s robust suite of government-sponsored investment sources for critical mineral and energy projects, which also includes the Canada Growth Fund (CGF), Export Development Canada (EDC) and the Critical Mineral Infrastructure Fund (CMIF). The CA\$1.5 billion CMIF was launched in late 2023, with then-Minister of Natural Resources Jonathan Wilkinson hailing critical mineral development as a “generational economic opportunity” for Canada. It offers funding to support project development, as well as clean energy and transportation infrastructure projects, to accelerate towards critical mineral production.

Two of Québec’s own funds – the Plan Nord and NQ Investissement Minier – take a close focus on the province’s north, where infrastructure is sparse. Sylvain Lépine, general manager of NQ Investissement Minier, explained how region’s mineral potential can be unlocked: “It is not enough to identify mineral projects; we need to connect those projects with roads, electricity and essential services.”

Both Lépine and Patrick Beauchesne, CEO of Société du Plan Nord, which implements projects using Plan Nord funding, agreed that coordination is key. “Given the high infrastructure costs, combining funding sources is essential,” said Beauchesne.

The Atlantic provinces also offer provincial-level funding. With its larger industry, Newfoundland and Labrador unsurprisingly offers the most. Funding for exploration and critical mineral-focused projects include the Junior Exploration Assistance program totaling CA\$3.9 million in the 2024/25 budget, and Green Transition Fund. In Nova Scotia, the government’s Mineral Resources Development Fund provides up to CA\$1.5 million per year in grants. Tim Houston expressed his openness to raising that figure, based on industry needs. The provincial government also allocated CA\$500,000 in its 2025/26 budget to the advancement of its Critical Minerals Strategy. Finally, New Brunswick’s government delivers its Junior Mining Assistance Program, offering grants up to CA\$100,000, and Prospect Assistance Program, with grants up to CA\$15,000.

Through 2024, federal funding was announced for several projects across Québec and Atlantic Canada, including rare earth developer Torngat Metals, lithium developer Critical Elements Lithium Corporation, lithium producer Sayona (now Elevra Lithium), and FireFly Metals’ copper mine restart project in Newfoundland. Amyot Choquette, senior director for natural resources investments at Investissement Québec, summarized these funds’ importance: “Greater federal engagement, through initiatives such as the CGF, CMIF, and support from agencies like EDC, is a clear advantage for mining projects during these uncertain times.” ■



Paul Carmel  
President and CEO  
SIDEX

How would you describe the current investment environment?

Sidex has been in operation for 24 years, focused on supporting companies involved in early-stage exploration. Over this time, we have seen many market cycles, including the most recent one in lithium. Normally, a positive gold price trend in 2024 would have led to strong financing deal flow, but this did not transpire to the level we were expecting.

There still seems to be a broad sense of investor apathy in the mining sector, causing many junior companies to see their share prices trade at unusually low levels. This creates a difficult cycle: limited capital hinders exploration, and without exploration, attracting investors becomes harder. This is impacting several companies in our fund, but we continue to support the sector as we always have throughout our history. We understand it is a cyclical business.

What is causing that investor disinterest?

Mining has become an increasingly challenging business due to lengthy permitting processes, rising costs, skilled labour shortages, and growing community opposition – even in traditionally pro-mining regions like Québec.

In the conventional commodity space – gold, copper, nickel – Québec has not seen many major discoveries recently. Without these discoveries, it is hard to spark the excitement needed to attract investor interest.

What other challenges do you see ahead for the sector?

To sustain a healthy junior sector, the industry will soon need to address the challenge of cultivating a new generation of senior leadership. Several current CEOs of junior explorers have been at the helm for many years, and while their experience is invaluable, there is limited evidence of a strong pipeline of successors. Leading a junior company today requires versatility across multiple domains – community engagement, financial strategy, strong technical skills, and knowledge of capital markets – alongside the patience to guide a project through years of development. ■



**EMPEROR METALS**

**ADVANCING HIGH-GRADE GOLD PROJECTS IN QUEBEC'S PROLIFIC ABITIBI GREENSTONE BELT**

- ▶ **Duquesne West Gold Project:**
  - ▶ 2025 Inferred Resource: 1.46 Moz Gold Deposit
  - ▶ ~10,000m drill program expected September 2025
- ▶ **Lac Pelletier:** 100% acquisition, near-term production potential
- ▶ Strategic investor Rob McEwen now holds 9.6%

info@emperormetals.com

CSE: AUOZ | OTCQB: EMAUF





Patrick Beauchesne  
CEO  
SOCIÉTÉ DU PLAN NORD

The Société du Plan Nord is celebrating its 10th anniversary this year. How would you summarize that decade?

Over the past decade, Société du Plan Nord (SPN) has executed three major government-approved plans to develop Northern Québec, focusing on infrastructure rather than direct mining investments. Key achievements include a CA\$9 million logistics hub in Matagami for lithium transport, co-funded with mining partners, and a CA\$700 million restoration of the Billy-Diamond Highway. A CA\$315 million transformation of the Société ferroviaire et portuaire de Pointe-Noire’s iron ore transportation hub has further upgrades planned to double its capacity to 40 million t/y, with a feasibility study underway. The current Northern Action Plan (2023 2028) allocates CA\$2.6 billion primarily to infrastructure, emphasizing coordinated efforts with Investissement Québec and other agencies, showcasing SPN’s leadership in strategic northern development.

What are the key infrastructural bottlenecks still facing Northern Québec today?

Northern Québec’s mining sector still faces major infrastructure challenges, particularly in transporting minerals from remote sites. Société du Plan Nord promotes a multi-user approach to infrastructure, aiming to shift the sector away from isolated, mine-specific models. Encouraging shared logistics is difficult but seen as vital for sustainable development over the next decade.

How do you work with other funding sources, like the federal Critical Mineral Infrastructure Fund?

Société du Plan Nord coordinates closely with federal programs, including Canada’s CA\$1.5 billion critical minerals fund led by Natural Resources Canada, to avoid duplicating efforts. Given the high infrastructure costs, combining funding sources is essential. The organization informs developers about available federal and provincial tools, ensuring projects access the necessary resources. ■





# GOLD

“

Our PEA was based on a US\$1800 per ounce gold price. If re-run at today's higher price, the project's profitability would appear phenomenal – and with gold's upward trend continuing, the outlook is strong.

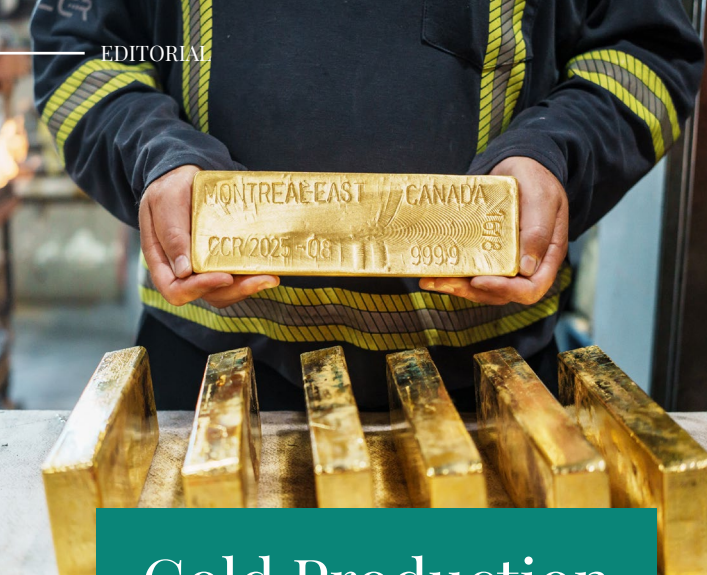
”

Dan Wilton  
CEO  
**FIRST MINING GOLD**

GBR Series  
QUÉBEC AND ATLANTIC CANADA MINING 2025

Image mlangsen at Adobe Stock





## Gold Production

### Still riding the wave

One story permeated every discussion during GBR's research for this report: The price of gold. In GBR's reporting last year, companies were described as "surfing on a high gold price" of over US\$2,500/oz (around US\$500/oz more than the previous year, when it was already described as high). In 2025, those waves morphed into tsunamis: Having peaked at US\$3,500 in April 2025, it moved between US\$3,200-3,400 throughout the summer months, be-

fore rallying to yet another new all-time high in excess of US\$4,000 in early October.

Gold's rise-and-rise has been driven by numerous factors. Worries spurred by recent years' inflation and increasing global debt; uncertainty in US economic policy and the robustness of the US dollar; and geopolitical tensions breaking out into wars, both military and commercial. Seeking a safe haven, investors have flocked to gold in their droves, with a climbing price only providing more momentum to drive increased retail investor interest.

For gold producers, this must make for enjoyable reading. 2024 and 2025's incredible rally has revolutionized the economics of gold production. Many operators saw record or near-record profits and output. Agnico Eagle recorded its highest-ever total annual gold production (3.48 million oz) and free cash flow (US\$570 million), while decreasing its net debt by US\$1.3 billion. Québec accounted for just short of a third of its global gold production, with a total of 1.09 million oz spread across its LaRonde, Canadian Malartic and Goldex sites representing almost a 4% boost over the previous year's 1.05 million oz.

For Eldorado Gold, Sylvain Lehoux, the company's VP for Canada, called 2024 the "best year ever" at its Lamaque operation in Québec. Production at Lamaque totaled 196,538 oz, exceeding Eldorado's annual guidance, growing 11% year-over-year, and cresting a total of 1 million oz since the mine began production in 2019. Eldorado is also developing its Ormaque deposit, part of the Lamaque complex, which had its inaugural reserve declared in December 2024 at 619,000 oz. It is targeting production at Ormaque in 2028. Lehoux was jubilant about the current moment in the gold space: "Now is the perfect time to be building a gold mine. Gold's price rise through 2024 has been driving margins, expansion and strong cash flow, above our expectations."

IAMGOLD's 2024 saw success on multiple fronts, too: The ramp-up of production at its Côté mine in Ontario and, in Québec, a return to full-scale production at Westwood and the 100% consolidation of its stake in its Nelligan project. Westwood was forced to close in 2020 following seismic activity, prompting a 'back to the drawing board' redesign of its mining methodology. Its production of 134,000 oz in 2024 – 44% more than in 2023's 93,000 oz – marked a return to its guidance production levels in 2019, accompanied by substantially reduced seismic disturbance. The mine generated US\$100 million in free cash flow in 2024. Meanwhile, at Nelligan, IAMGOLD has outlined 9 million oz of indicated and inferred resources. "Within a few years, I believe Nelligan may rank among the largest gold resources not only in Québec, but in Canada," predicted Renaud Adams, IAMGOLD's CEO. Overall, the company achieved record revenue in 2024 of US\$1.63 billion.

Hecla Mining reported record sales of US\$929.9 million in 2024. At its Casa Berardi mine in Québec, sales value rose 18% year-on-year, but higher gold prices masked a 4% decline in production, from 90,363 oz to 86,648 oz, caused by lower surface grades. Casa Berardi is expected to transition to surface-only operations in 2025, which Hecla anticipates will deliver stronger economics with a lower strip ratio. Production from the current open pit is forecast to continue until 2027 before pausing for new pit development.

Wesdome likewise delivered record results in 2024, including production, revenue, net income, and free cash flow. At its Kiena mine in Québec, annual production reached 77,472 oz, with 22,865 oz in the final quarter alone from the ramp-up of the 129-level horizon.

Another of 2024's major gold stories in Québec was the sale of the Éléonore mine by Newmont. Newly-incorporated British private equity firm Dhilmar Ltd paid US\$795 million in cash for the mine in November 2024. Described by Newmont, the world's largest gold mining company, as a "non-core" asset, Éléonore's sale came in a wave of six international divestments that raised a total of US\$3.6 billion. Details on Dhilmar's plans for Éléonore are scarce: in July 2025 the company did not yet have a functioning website, though it appeared to have retained a number of senior staff from Newmont's operations, and hired a new general manager for the mine in April 2025.

Québec's gold producers seem to be enjoying their moment in the sun. It remains to be seen what superlatives will be applied to its heights in this report's next edition. Producers are accelerating where they can, but ensuring to maintain and develop sustainable operations, while attempting to replenish the reserves they are depleting in this new-age gold rush.

### Atlantic prospects aplenty

Operating gold mines have been few and far between in recent years in the Atlantic Canada. Across Newfoundland and Labrador, New Brunswick and Nova Scotia, the only producing gold mine in the last five years was the Touquoy open-pit, which ceased production in 2023. Its operator, St Barbara, announced its intent to divest all its Canadian assets, including Touquoy, in February 2025. In New Brunswick, though some gold has been produced as a base metal by-product, the province has never hosted a primarily gold-producing mine.

All that is changing. The Valentine mine, located in Newfoundland and acquired by Equinox Gold in its merger with Calibre Mining in 2025, poured its first gold in September 2025. Combined with its Greenstone mine in Ontario, Equinox's total production at nameplate capacity across the two operations would make it Canada's second-largest gold producer.

In Nova Scotia, meanwhile, NexGold received Industrial Approval, one of the project's last key permits, for its Goldboro site in late August 2025. NexGold merged with Signal Gold in late 2024, with their combined portfolio comprising Goldboro and the Goliath gold complex in Ontario. Goldboro's industrial approval paves the way for its construction, following nearly two years of assessment by Nova Scotia's government.

Maritime Resources is restarting the former Hammerdown mine, which was in operation between 2000 and 2004. Utilizing the Pine Cove Mill, Maritime has already poured its first gold from stockpiles at the mill site. In New Brunswick, Puma Exploration's Williams Brook project has attracted the attention of major gold producer Kinross, sending a signal of the province's potential.

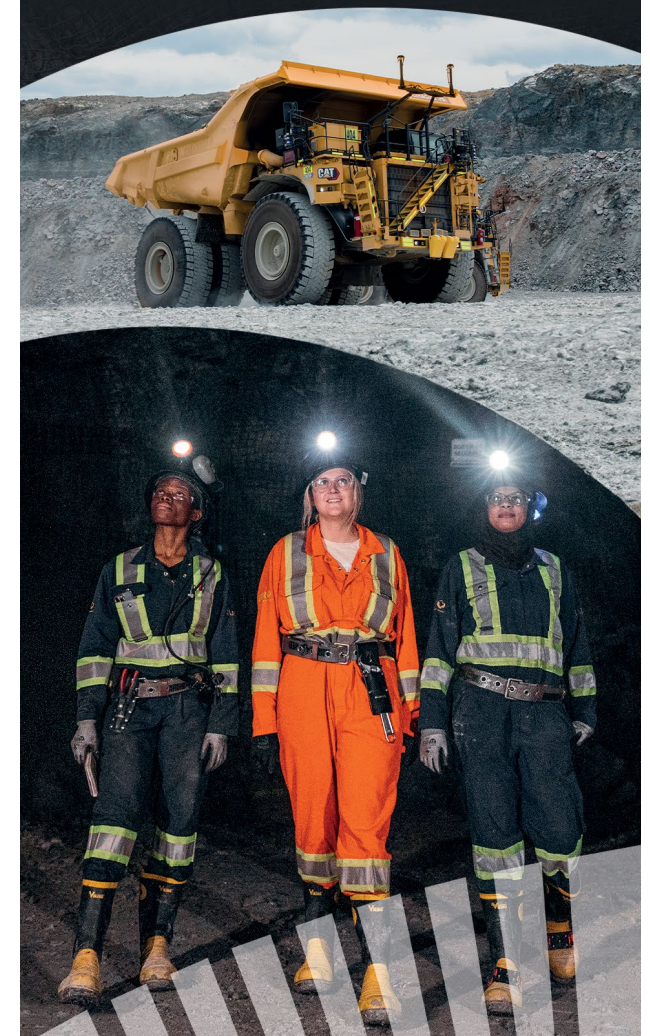
While Newfoundland's absence of gold production in recent years is set to be resolved imminently, new gold prospects have been much-welcomed in Nova Scotia and New Brunswick, providing some fresh momentum for the provinces' re-emerging mining sectors. ■

**IAMGOLD<sup>®</sup>**  
CORPORATION  
TSX : IMG | NYSE : IAG

## Excellence Innovation Responsibility

Building a leading Canadian gold producer to be a model for modern mining with an empowered workforce for the benefit of our stakeholders

[www.iamgold.com](http://www.iamgold.com)



Project Management  
and Engineering



Water Treatment



Industrial  
Services



Manufacturing

**We deliver value  
throughout the mining life cycle**



De l'ingénierie aux opérations  
From Engineering to Operations

**Your Challenges, Our Projects**

[ASDR.CA/EN](http://ASDR.CA/EN)





## Renaud Adams

CEO  
IAMGOLD

“

This year is an inflection point for IAMGOLD with strong free cash flow generation as our mines reach full stride.

”

### How has IAMGOLD performed over the last year?

IAMGOLD had a highly successful 2024, driven largely by the ramp up of the Côté gold mine in Ontario, which achieved commercial production four months later in early August. Further, we were able to raise production guidance and lower cost guidance for both Essakane and Westwood, and we followed this up with a strong second half to achieve these improved targets by year-end.

Specifically in Québec, Westwood had an excellent year. The mine completed its turnaround and generated nearly US\$100 million in free cash flow. At Nelligan, we are developing another large-scale resource that was scarcely on the radar just a few years ago.

I am even more optimistic about 2025. We will drill 45,000 m in Ontario and at least 30,000 m in Québec, while completing work at Côté to achieve full-scale production. We aim to continue growing reserves and resources, targeting a minimum of 20 million oz of measured and indicated resources at Côté, expanding the million ounces of reserves at Westwood, and growing our Nelligan Camp resources to over 10 million oz.

### What made Westwood such a success story in 2024?

Since starting up in 2013, Westwood struggled with seismic activity. A seismic incident in 2020 prompted a temporary closure while we completed a full review of the mine. Since restarting in 2021, we have redeveloped a considerable amount of the mine, utilizing new ground control processes and employing a revised mining method to manage the seismic energy underground.

Our goal now is to maximize Westwood's mill. With a 3,600 t/d capacity, we currently plan to mine around 1,200 t/d underground, with the remainder supplied by smaller satellite mines. Looking ahead, we are exploring opportunities for organic growth to fully utilize our installed capacity.

### What is the potential of the Nelligan exploration project?

Nelligan is located in the highly prospective Chibougamau district. It is an asset likely to reach 10–15 million oz, with significant exploration potential both at Nelligan itself and along the surrounding corridor, including Monster Lake just 15 km to the north. Together we call this the Nelligan Camp. Despite limited drilling over the last couple years,

the Nelligan Camp has quickly grown to nearly 9 million oz of Indicated and Inferred ounces. Seeking to capitalize on this potential, in February 2024, IAMGOLD acquired Vanstar Resources to consolidate 100% ownership of Nelligan. Within a few years, I believe Nelligan may rank among the largest gold resources not only in Québec, but in Canada.

### How has the rising gold price shaped IAMGOLD's performance?

The most important factor in IAMGOLD's success, more so than the gold price, is the quality of our people. Our ability to deliver on guidance, operational and financial metrics, health and safety, and other objectives depends far more on people than on market conditions. Thanks to our success, we have been able to retain and attract talent, bringing the company to where it is today. I believe our positive stock price performance over the past year has been driven largely by the successful execution of our work.

Even so, the gold price has been beneficial to our industry. In June of this year, we will complete the delivery of our gold prepayment facility, after which we can look to pay down debt to strengthen our balance sheet.

### How is IAMGOLD contributing to the development of mining's next generation?

Through our partnerships, such as that with Laurentian University, we have been advancing multidisciplinary approaches to modern mining. Whether in environmental or social specializations, artificial intelligence, engineering, or mechanics, we must do everything possible to attract the next generation of professionals. This work also supports our ongoing efforts to be a positive partner to our local First Nations communities.

### What are IAMGOLD's priorities looking ahead?

Our primary goal remains the continued ramp-up at Côté, as we aim to double 2024's production in the mine's first full year of operation. This year is an inflection point for IAMGOLD with strong free cash flow generation as our mines reach full stride. Next year, in 2026, we will publish an updated mine plan for Côté, outlining a larger mining operation that combines Côté and Gosselin into a single super-pit and targeting a subset of the total 20 million ounces of measured and indicated resources. ■



Sylvain  
Lehoux  
VP Canada  
ELDORADO GOLD

“

Now is the perfect time to be building a gold mine.

”

### Could you outline Eldorado's production performance in 2024, and guidance for 2025?

Eldorado Gold's full-year production for 2024 exceeded 520,000 oz of gold, representing a 7% increase over 2023, driven by operational upgrades at our Kisladag mine in Türkiye, and higher mining rates and ore throughput at Lamaque in Québec. That was above the midpoint of our tightened guidance range for the year, at an all-in sustaining cost (AISC) of US\$1,285/oz. Our balance sheet is robust, showing US\$978 million in cash and liquidity of US\$1.2 billion at the end of 2024. Our 2025 guidance outlines 460,000–500,000 oz of gold production, with an expected AISC of between US\$1,370 and US\$1,470. Our results from the early part of the year have us on target to achieve guidance.

### What are some highlights from the Lamaque Complex in 2024?

In Québec, we delivered exceptional results, breaking several records in terms of gold production, health and safety and other operational aspects. It was our best year ever at Lamaque. In total, we produced 196,538 oz of gold, with an average grade of 6.74 g/t and an AISC of US\$1,134/oz. Our investments totaled US\$80 million in sustaining capital and US\$23 million in growth capital, primarily relating to developments at Ormaque.

Lamaque is still a relatively young mine, having only started commercial production in 2019. This year, our guidance is between 170,000–180,000 oz of gold, with stronger production with higher grades expected in the second quarter.

### How are developments progressing at the Ormaque deposit?

The Ormaque deposit, discovered in 2019, had its inaugural reserve declared in December 2024. The first bulk sample confirmed reserve and block model expectations. A second bulk sample is set for Q4 2025, with full production targeted by 2028. A total of 1.2 million oz in reserves across Ormaque, Triangle and Parallel provide the Lamaque Complex with over eight years of mine life. Exploration continues for additional inferred resources and satellite targets, supporting long-term growth and future supply for the Sigma mill.

### What updates can you share about Eldorado's assets in Greece and Türkiye?

In Greece, we currently operate the Olympias polymetallic mine, and are advancing construction at the Skouries copper-gold project. Skouries will make Eldorado a significant copper producer in Europe, with commercial production expected in mid-2026. Its gold will also be a major contributor to the target of increasing Eldorado's gold production 33% by 2027. In Türkiye, we are focused on the continued optimization of our Kisladag open pit and Efemçukuru underground operations.

### How is the rise in the price of gold shaping Eldorado's operations?

Now is the perfect time to be building a gold mine. Gold's price rise through 2024 has been driving margin expansion and strong cash flow, above our expectations. Even if it continues to rise, we will remain disciplined in our capital allocation.

### How is Eldorado ensuring high sustainability standards across its operations?

Sustainability is at the core of our strategy, based on four pillars: safe, inclusive and innovative operations; engaged and prosperous communities; responsibly produced products; and healthy environments. In 2025, we will be updating our sustainability framework for the third time since its introduction in 2020.

On the environmental front, we have implemented several greenhouse gas emission reduction projects at Lamaque. It is already among the lowest-emission gold mines globally, thanks to Québec's low carbon electricity matrix. We have introduced electric haul trucks from Sandvik, mitigating up to 1,700 t/y of CO2 emissions and improving air quality underground. We were the first mining company in Québec to adopt this technology, and plan to add more electrified machines in future.

We always want to be a good neighbour and put people first. That means we are transparent from the very beginning, and in constant communication with our stakeholders. Our aim is for our mines to have a positive impact on communities, while mitigating negative impacts, and to ensure local stakeholders are well informed about what is happening at our operation.

### What are Eldorado's key priorities looking ahead?

Growth is a key priority for Eldorado, focused not just on increasing production but on enhancing profitability and long-term value. Our goal is to become a significantly larger and more profitable gold producer with sustainable operations, disciplined capital allocation, and stable production. ■



# Gold Exploration and Development

## Convergence and divergence

Perhaps the biggest story in Québec and Atlantic Canada's gold development scene in 2024 was Gold Fields' October acquisition of Osisko Mining. The CA\$2.2 billion transaction, which Resourcing Tomorrow named as its 2024 Deal of the Year, saw Gold Fields increase its previous 50% stake in the Windfall project and Osisko's other Québec properties to 100%. Andreanne Boisvert, Gold Fields' VP environment and community relations, emphasized the significance of the Osisko acquisition for Québec: "It is a major deal for the province's M&A landscape, and could serve as a catalyst for future transactions. I believe it signals a renewed global interest in the province, which continues to attract attention thanks to its predictability, political stability, abundant natural resources and skilled workforce."

Another notable acquisition was Agnico Eagle's CA\$204 million, 100% purchase of O3 Mining. Andrew Disipio, a partner at Bennett Jones, the legal firm advising Agnico Eagle during the acquisition, discussed key drivers of 2024's heightened M&A activity: "A continued disconnect between record commodity prices and public market valuations for exploration and development companies created opportunities for strategic buyers to unlock value through acquisitions."

In other words, while a seemingly ever-climbing gold price has filled the coffers of producers, at the other end

of the spectrum, smaller gold-focused juniors have remained undervalued, struggling to access capital to finance their exploration activities. Despite conventional wisdom that investor capital would 'trickle-down' from the high gold price, first to producers, then developers, then explorers, reality has been less forgiving. "In the current cycle, the trickle-down effect has been slower to reach the junior space, even as producers have built substantial cash reserves from rising gold prices," explained Dan Wilton, CEO of First Mining Gold, which is developing projects in Ontario and Québec.

### A look at the data

Mathieu Savard, CEO of gold explorer Vior, offered his perspective on the market, with a word of caution: "In Québec, gold discoveries have been limited in recent years. Yet, despite rising gold prices, capital is not being directed toward junior explorers. As acquisitions continue, the industry risks depleting its project pipeline."

This warning appears to reflect a broader shift in exploration priorities. Despite gold's price rally in recent years, investment in precious metal exploration in Québec has fallen sharply from its peak, dropping more than 50%, from CA\$707 million in 2021 to CA\$326 million in 2024, the lowest level since 2016 (Figure 1). In contrast, exploration spending on critical minerals such as lithium and rare earths surged by over 330% in

the same period, from CA\$75 million to CA\$337 million, fueling a wave of new discoveries.

Base metals have also attracted growing investment since 2020, with spending projected to continue rising, so that, since 2023, exploration spending on precious metals has fallen below the combined total for base and other metals. Early forecasts for 2025 suggest a possible rebound in precious metals exploration, but the broader shift toward critical and base metals appears likely to continue, despite a softening of the lithium and other critical metals prices.

At the same time, Québec's exploration landscape appears to be undergoing another major shift, marked by an apparent transfer of leadership from junior companies to major players. As shown in Figure 2, while majors have led exploration spending in Canada's Atlantic Provinces since 2022, juniors have long dominated in Québec. That dynamic is now changing. Natural Resources Canada's projections suggest that in 2025, majors will account for the majority of exploration investment in Québec for the first time in a decade, despite a modest rebound in junior spending. It marks a stark departure from 2022, when majors represented just a quarter of the province's exploration expenditure.

All this seems to chime well with the analysis of Pascal Hamelin, CEO of gold developer Abcourt Mines, suggesting that gold producers' could

take advantage of high revenues to expand their exploration and shore up their resources: "As cash accumulates, gold producers will need to re-invest to replace depleted reserves. Initially, this will drive exploration near existing assets, but over time, the search will expand outward – 5, 10, even 100 kilometers from current operations," he predicted.

### Tapping new veins

For some gold-focused juniors, the search for progress in a difficult market has led to the adoption of innovative and unconventional approaches to exploration. Emperor Metals' use of artificial intelligence (AI) and leveraging Maptec's geological modelling platform led to the discovery of its Duquesne West asset. CEO John Florek was bullish on AI's significance for the sector going forward: "AI technology saves time and money, making it essential for mining companies to adopt or risk falling behind."

Meanwhile, Puma Exploration has implemented an exploration strategy employing extensive sampling and minimal drilling, described by Mia Boiridy, its head of investor relations, as a "low cost and high return" approach. The New Brunswick-based explorer struck an option agreement for its flagship Williams Brook project with Kinross Gold in October 2024.

For others, a consolidating junior market has provided opportunities for inorganic growth. According to CEO Tim Clark, Fury Gold Mines' acquisition of Québec Precious Metals offered benefits for both parties: "From a market perspective, many junior companies have been trading at historically low valuations. By combining, we eliminated overlapping administrative costs and created a stronger entity," he said, while also highlighting possible rare earth exploration upside at Fury's newly-acquired Kipawa property.

Rick Breger, president and CEO of Harfang Exploration, which acquired Ontario-focused NewOrigin in 2024, predicted this consolidation trend was set to continue: "Historically, strong commodity prices have often spurred increased M&A activity. I believe we are on the cusp of another

wave of consolidation, particularly in gold."

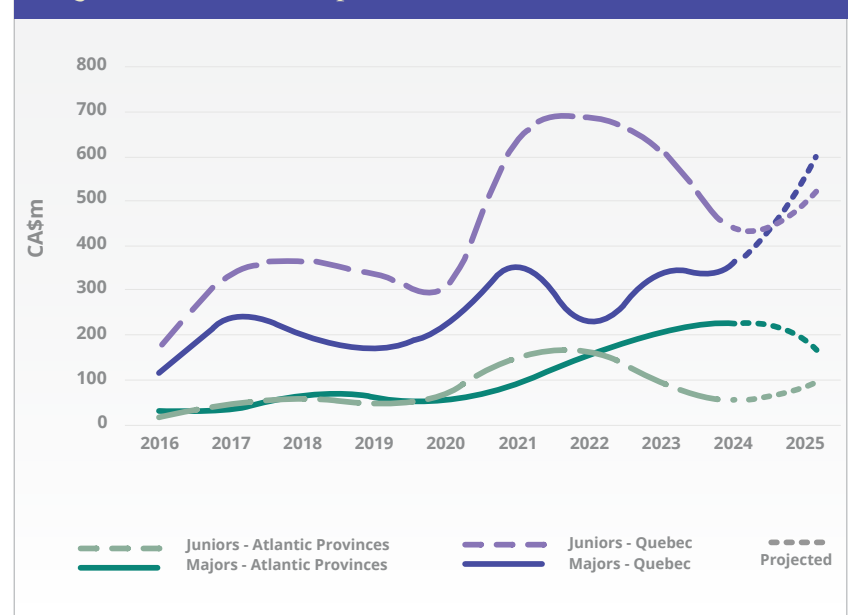
At both ends of Québec and Atlantic Canada's gold exploration sector a new wave of consolidation is underway. Major players are acquiring large-scale projects, while smaller explorers pursue strategic opportunities for growth. Yet, even as this

consolidation unfolds, the divide between juniors and majors appears to be widening. Juniors continue to grapple with limited access to capital, while producers, flush with cash from sustained high gold prices, are investing to push the boundaries of existing mine sites and enjoying a dominant position in expenditure terms. ■

Fig. 1: Exploration expenditure by commodity group, Québec



Fig. 2: Total Exploration expenditure by Majors and Juniors in Québec and Atlantic provinces



Source: Natural Resources Canada and l'Institut de la Statistique du Québec





## Andreanne Boisvert

VP Environment and Community Relations  
GOLD FIELDS

“

The intention is for Windfall to serve as a model for the next generation of mining in Québec, integrating cutting-edge technologies for the construction phase and beyond

”

### How does Gold Fields' 100% acquisition of Osisko Mining enhance its portfolio?

This US\$2 billion transaction enables us to fully leverage the world-class asset of Windfall, located in the tier-one jurisdiction of Québec. This acquisition fits with Gold Fields' growth strategy, bolstering our long-term asset portfolio production and cash flow profile. Deposits of Windfall's scale and quality are extremely rare. Combined with its wider regional exploration portfolio, Gold Fields has increased its exposure to high-grade gold while broadening our development prospects in Canada.

### Could you provide some broader background on the acquisition?

Windfall has been explored for decades, with major progress since Osisko Mining acquired it in 2015. A key milestone came in 2018, with the discovery of the Lynx deposit, now central to the project and the focus of 66% of Gold Fields' future operations at Windfall. At its peak, Windfall was the world's most active exploration site, with over 30 drills operating simultaneously. In 2022, a feasibility study projected a 10-year mine life producing over 300,000 oz/y of gold.

Gold Fields acquired a 50% stake in Windfall in 2023, plus Osisko's exploration assets at Quévillon and Urban-Barry – marking the company's entry into Canada. Partnering with Osisko provided vital local expertise, community ties, and regulatory insight, enabling a fast and effective integration. When the chance came to acquire 100% of Osisko, the decision was easy and the transition seamless.

### What are the next steps at Windfall?

Working through regulatory processes towards approval is one of our key areas of focus this year. We are working diligently towards that objective, while maintaining full and open dialogue with our host communities. In parallel, we continue our Impact Benefit Agreement negotiations with the Cree First Nation of Waswanipi and the Cree Nation Government, and our work with the city of Lebel-sur-Quévillon. We hope to attain those permits and approvals by the end of 2025.

Meanwhile, we are also working towards our target of our FID in Q1 2026. We are in the midst of producing our final design work and detailed engineering. Assuming a positive FID, we envision an 18-24 month construction period. We anticipate production starting in 2028.

### How is Gold Fields implementing high ESG standards in its Québec operations?

We are targeting highly energy-efficient, low-carbon operations. The mining complex's design is based on a minimal footprint, supported by strict water and tailings management, and protecting biodiversity. The intention is for Windfall to serve as a model for the next generation of mining in Québec, integrating cutting-edge technologies for the construction phase and beyond.

As well as our ongoing community dialogue, we are promoting local employment with the intention of boosting the regional economy. Inclusion of underrepresented groups, including the greater participation of women in mining, are key pillars in our strategy.

### How does the rise in the gold price shape Gold Fields' outlook?

A high gold price is naturally very positive for Gold Fields, supporting the profitability of our current operations and reinforcing the viability of our development projects like Windfall. It enables us to generate solid cash flow, and secures increased shareholder returns from our long-term investment. Furthermore, it allows us to invest more in energy transition projects and our ESG commitments.

Still, we are proceeding with caution – although the price of gold is high now, we must also prepare for times when it might not be so. Our portfolio optimization strategy is based on gold's cyclical nature, so we plan for all scenarios and are conservative in our predictions. That allows us to be confident that the scale and high-grade quality of assets like Windfall can be a hedge against any potential price headwinds should they arise in future.

### What does this acquisition mean for Québec as a jurisdiction?

It is a major deal for the province's M&A landscape, and could serve as a catalyst for future transactions in gold and perhaps even critical minerals. I believe it signals a renewed global interest in the province, which continues to attract attention thanks to its predictability, political stability, abundant natural resources and skilled workforce. In fact, the transaction was recognized by Resourcing Tomorrow as the Deal of the Year for 2024 – clearly illustrating that it is an acquisition with implications even beyond Québec. ■



## Pascal Hamelin

President and CEO  
ABCOURT MINES

### What highlights from 2024 would you like to share?

Abcourt Mines advanced the Sleeping Giant project significantly in 2024, following its drilling campaign launched in late 2023. The company completed a bulk sample at Pershing Manitou in spring 2024, stocked inventory at its mill, and moved into internal pre-feasibility work to support financing discussions. We also made a major discovery at our Floridin property.

### What are the final steps towards production restart at Sleeping Giant?

Gold production at Sleeping Giant will commence by late summer 2025. In the first 12 months, the output is forecast at 14,000 oz/y, rising to 20,000–23,000 oz/y in year two, and stabilizing at 30,000 oz/y.

### What more can you tell us about Abcourt's discovery at its Floridin property?

In early 2024, Abcourt's exploration strategy focused on unlocking value from its extensive portfolio of nearly 15 projects in the Abitibi mining camp. By July 2024, the team had exposed a high-grade surface vein – 22 g/t over 7 meters – later expanded to a 200-meter-long outcrop averaging 6.5 g/t gold. ■



## Victor Cantore

President and CEO  
AMEX EXPLORATION

### What has been AMEX Exploration's work at the Perron project to date?

Over US\$125 million has been invested, with an updated resource estimate published in mid-2025, and a new PEA on its way. The aim for the project is to become a near-term gold producer through a staged approach that mitigates financial and technical risks. This includes completing a feasibility study, conducting a bulk sample, initiating toll milling, and progressing to full-scale mining.

### Could you expand on the details included in the May 2025 MRE?

The MRE totals 2.3 million oz at 5.44 g/t across the property, with a growth of measured and indicated resources to 1.615 million oz at 6.14 g/t. The standout is the Champagne Zone, now hosting 831,000 oz at an exceptional 16.2 g/t.

Perron will also benefit from a low AISC supported by excellent metallurgy (98–99% recoveries), proximity to infrastructure in Normétal and La Sarre, and a local workforce that removes the need for fly-in-fly-out operations. The operation is primarily underground, complemented by four small open pits mined early and repurposed as backfill for tailings and underground waste. ■



## Dan Wilton

CEO  
FIRST MINING GOLD

### How is the Duparquet gold project progressing?

A good starting point is Duparquet's 2023 PEA. That outlined a robust project capable of producing over 200,000 oz/y of gold, with an upfront capital cost of US\$500 million and a total resource endowment exceeding 6.5 million oz. The 2024 program has identified promising new targets, including intercepts such as 6 g/t over 33m at a depth of just 350 m.

An additional aspect of the Duparquet story is the remediation of the significant environmental legacy left by earlier operations. We have been conducting baseline environmental studies, which remain ongoing this year.

### How would you plan to scale up development at Duparquet over time?

Not every project can start small. In remote, northern locations, a certain scale is required to justify the cost of infrastructure. Duparquet, by contrast, benefits from existing advantages: a paved highway, power line access, and proximity to a city with a skilled labour pool. Several smaller, high-grade pits at the site could serve as a starting point for production, enabling early returns on the initial investment. ■





## John Florek

President and CEO  
EMPEROR METALS

“

This cash flow would allow us to self-fund our team expansion, acquire larger assets, and scale the business without relying on external financing.

”

### What were some key developments for Emperor Metals in 2024?

Emperor Metals had a transformative 2024, centered on its Duquesne West project along the Porcupine-Destor Fault. Initially obscure by lack of a 3D model, the site revealed untapped potential during the 2023 drilling campaign. A key breakthrough came when the host rock surrounding high-grade gold lenses was also found to carry gold, supporting an open-pit vision. In 2024, infill drilling confirmed this with a standout intercept of 21.7 m at 35.2 g/t in the open pit environment, including 2.5 m at 301 g/t. With strong recoveries and low sulfide content, Emperor sees the potential for a 2–3 g/t open pit with high-grade underground upside.

### How does the Lac Pelletier project enhance Emperor's portfolio?

In early 2025, Emperor Metals acquired Lac Pelletier, a deposit previously divided between surface rights held with El Dorado Gold and underground rights with Maritime Resources. The deposit contains an outlined 227,000 oz of gold, with potential to quickly double. Lac Pelletier features 3.3 km of previous underground development and completed scoping, pre-feasibility, and feasibility studies, and a mining permit in place of 1,000 t/d, including two bulk samples averaging 4.35 g/t with 96% recovery, totaling over an estimated US\$70 million of previous investment. Now consolidated under Emperor Metals, our plan targets 1,000 t/d production yielding around 40,000 oz/y over a 10-year mine life, with potential to expand to over a million oz. Deeper extensions down to a kilometer or

more could multiply resources significantly.

### What are the next steps at these projects?

Two years of work at Duquesne West culminated in our MRE published in July 2025. It more than doubled the historical resource, increasing it by 104% to a total inferred gold resource of 1.46 million oz. Our next steps at Duquesne West are to keep working to surpass the 2 million oz milestone, growing our resource through systematic exploration. Our summer drill program, totaling around 8,000–10,000 m, is set to begin in August 2025.

At Lac Pelletier, we are conducting a gap study to identify required updated permits and understand production restart. Since the site has been abandoned and is underwater, permits will need updating, including environmental ones up to five years old. Early engineering assessments estimate about two years to bring the project back into production, aiming for operational status by Q4 2027/Q1 2028.

### How does gold's high price set Emperor up for growth?

Assuming US\$2,500 gold and producing 40,000 oz/y, we are looking at approximately US\$100 million in revenue. We plan to leverage existing mills in the district rather than building our own, which is a major advantage compared to many other juniors in Canada. Local mills are currently under capacity, allowing us to avoid the lengthy permitting process and high capital expenditures of constructing new milling facilities.

This toll milling approach reduces CapEx significantly, promising a good

rate of return and a quick payback period. This cash flow would allow us to self-fund our team expansion, acquire larger assets, and scale the business without relying on external financing. The vision is bold, ambitious, and firmly focused on growth and financial strength.

### Should more companies be leveraging artificial intelligence, like Emperor?

AI technology saves time and money, making it essential for mining companies to adopt or risk falling behind. It enables rapid model building that traditionally takes years, but still requires experienced geologists to input and interpret complex data correctly. We use the Maptek platform, customized to simplify extensive geological data for accurate modeling. Far from replacing jobs, AI is creating new opportunities – our AI-identified deposit at Duquesne West is expected to generate in excess of 100 future jobs. Overall, AI enhances efficiency, accelerates discovery, and supports workforce growth in the mining sector.

### What are the key catalysts we can expect over the next year?

We plan to launch a financing round to raise US\$3–5 million, depending on share price to minimize dilution. With the MRE's boost to investor confidence, we will be drilling at Duquesne West to grow our ounces, aiming to surpass 2 million oz of gold and continuing to attract majors and institutions. At Lac Pelletier, we plan to double resources and possibly deliver a 43–101 report by year-end or next year, progressing toward a revamped feasibility study, if needed. ■



## Marcel Robillard

President and CEO  
PUMA EXPLORATION

### What are the terms of Puma Exploration's option agreement with Kinross Gold?

It is an option agreement on Puma's Williams Brook gold project, offering up to a 65% stake through Kinross' investment of CA\$16.75 million over a period of five years. Kinross also acquired a 9.9% stake in Puma, injecting CA\$1 million into our treasury. Puma and Kinross are working together to plan exploration, with Puma acting as the field work operator.

### What are the plans for exploration at Williams Brook in 2025?

From the beginning of June 2025, we will begin a program of 5,000 m of drilling at Williams Brook in accordance with Kinross' option agreement. The first 3,500m of that will be targeting the Lion zone, testing the high-quality 3D mineralization models Kinross' expert geophysicists have produced.

### Will the McKenzie gold project see further exploration this year?

In January 2025, Puma announced results from surface exploration work, with grab sample results as high as 601.33 g/t gold. With plans for an inaugural drill program in Q3 2025, we will follow the same low-cost strategy at McKenzie as we did at Williams Brook. ■



## Rajesh Sharma

President and CEO  
FANCAMP EXPLORATION

### What are Fancamp's key exploration assets in Québec and Atlantic Canada?

One significant project is in New Brunswick – a region that is increasingly recognized as a major gold and base metal district. Our district-scale properties in New Brunswick consist of McIntyre Brook and Riley Brook, under our Acadian Gold 50–50 joint venture with Lode Gold Resources. Fancamp is the operator, and we are currently funding the exploration work, which is ongoing through 2025. The McIntyre Brook property is adjacent to Puma Exploration's Williams Brook property. Riley Brook, located 25 km to the south, shows promise for tungsten in addition to gold. We also have the Clinton property in the Eastern Townships of Québec; a copper-focused asset with historical resource estimates, which was a past-producing copper mine.

### Looking ahead, what are Fancamp's top priorities and milestones over the next year or so?

We want to see progress on our strategic investment in the Ring of Fire, a critical area of focus for Canadian and US governments. We expect strong results from our New Brunswick joint venture during the latter half of 2025. Positive outcomes at Acadian Gold could lead us into the next phase of exploration. ■



## Tim Froude

President and CEO  
SOKOMAN MINERALS

### Can you introduce us to Sokoman Minerals and its key assets?

Sokoman Minerals is a junior exploration company focused on Newfoundland and Labrador. Its primary focus has been the Moosehead gold project in central Newfoundland, part of the Exploits Subzone gold belt.

### What exploration has been completed to date at Moosehead?

At Moosehead, our first drill hole intersected 12 m of 45 g/t gold, attracting strong interest, including from Eric Sprott. Since then, we have drilled over 130,000 m across approximately 670 holes, identifying gold in seven high-grade zones, with values exceeding 50 to 60 g/t over intervals of 0.5 to 5 m. These zones span roughly 500 metres in strike and 200 metres in width.

To date, we have invested approximately CA\$28 million in exploration, maintaining a highly capital-efficient all-in drilling cost of under CA\$200/m, including assays.

### Could you tell us more about the Vinland Lithium spin-out?

Early assays exceeded 2% lithium, leading to approximately CA\$3 million in exploration, including 25–30 drill holes confirming at least six lithium-bearing dikes and a cesium-rich dike grading up to 8%. ■





# CRITICAL AND STRATEGIC MINERALS

“

Long-term demand for battery raw materials is projected to continue rising. Although price volatility has impacted project development, supply and demand in the battery minerals sector are expected to remain broadly balanced for the next few years.

”

Amyot Choquette  
Senior Director – Investments Natural Resources  
**INVESTISSEMENT QUÉBEC**

GBR Series  
QUÉBEC AND ATLANTIC CANADA MINING 2025

Image courtesy of Torngat Metals



# Critical and Strategic Mineral Production

## Betting on tomorrow, today

There is a common thread across the price outlook stories for many so-called 'critical and strategic minerals' – the likes of copper, nickel, lithium and graphite, among several others. While the price may be low right now (so goes the typical forecast), a look to 2030 or 2040 tells an entirely different tale. As demand for these materials continues and accelerates in its growth, it appears virtually inevitable that supply will struggle to keep up, given the long timeline of mine development.

Notably, despite an otherwise brusque approach to trade with Canada (and much of the rest of the world), President Donald Trump appeared to exempt critical minerals from his tariff regime. It was an indication of both the importance of these substances in myriad industries, and of the US' deep dependence on imports. China is an utterly dominant global force in the production and refining of many critical minerals; a stronghold that Québec and Atlantic Canada have emerged to help counterbalance.

### Iron: Back to the future

In 2024, iron became simultaneously the 'elder statesman' and the 'new kid on the block' of Canada's critical and strategic mineral scene. Iron has been extracted from Canadian lands for centuries, if not millennia. Archaeology has revealed evidence of Inuit and Viking ironworks, centuries be-

fore the arrival of post-Columbian settlers to the Americas. The Canadian Encyclopedia calls iron smelting and casting 'Canada's first industry'.

Yet, with high-purity iron's addition to Canada's critical mineral list in June 2024, its crucial role in modern industrial and economic development was acknowledged. Canada's government called high-purity iron "essential to green steel and integral to decarbonization." Around 1.9 billion t of steel are produced globally each year. While unquestionably crucial to virtually all aspects of modern life, the industry is also a major contributor to climate change, producing around 7-9% of global greenhouse gas emissions. That makes a transition to low-emission steel, for which high-purity iron is essential, doubly important.

It was greeted with delight by Canadian iron producers, during what was otherwise a difficult moment for the sector amid a downturn in iron ore prices. In 2023, Canada had the world's 8th largest output of iron ore, producing 59 million t. Over 90% of that iron came from the Labrador Trough region, which straddles Québec and Newfoundland and Labrador; 57% of it from Québec, and 34% from Newfoundland and Labrador. Mapi Mobwano, CEO of ArcelorMittal Canada, the country's largest iron ore producer, explained the move's significance: "High-purity iron is essential for several strategic industries in Canada, including advanced manufacturing, aerospace and defence. By ensuring a stable supply, Canada can strengthen its production capabilities in these key sectors, attract investments, and create highly skilled jobs," he said.

ArcelorMittal's Mont-Wright mine marked the 50th anniversary of its inaugural blast in October 2024, having produced billions of tonnes of iron ore during that period. It is one of the world's largest open-pit operations, still with around 5 billion t of reserves and a mine plan stretching beyond 2050. Between its Mont-Wright and Fire Lake sites in Québec, the company produces around 26 million t/y of iron ore concentrate.

Champion Iron, via subsidiary Québec Iron Ore's Bloom Lake mine, produces iron at a nameplate capacity of 15 million t/y of 66.3% iron ore concentrate. In December 2025, Champion is anticipating the commissioning of a project to upgrade half of its production capacity to 69% iron content direct reduction pellet feed. Champion applauded the decision to add high-purity iron ore, defined as that with 67% iron content or higher, to the critical minerals list.

Labrador Tacora Resources' Scully mine has an annual capacity of around 6 million t. Strategic Resources, which is developing a high-purity iron metallurgical facility in Port Saguenay, Québec, is exploring possibilities to use ore from Scully to produce high-grade, low-emission iron pellets. The two companies' agreement is just one example of how the industry is adapting and integrating decarbonization into their strategies.

### Lithium: Consolidating for the comeback

Québec's lithium space witnessed some standout M&A and investments in 2024 and early 2025, indicating sector optimism. Lithium continues to see high demand globally, thanks in large part to the continued demand for lithium-ion batteries. However, a surge in production capacity,

coupled with an exploration and discovery boom, has driven prices downward. Several producers around the world have opted to cut or suspend their lithium production. Recent M&A activity has seen the sector consolidate strategically amid this period of market correction.

North American Lithium (NAL), the continent's largest producing lithium mine, was at the center of one of the year's big stories in Québec. Elevra Lithium, the company emerging from Sayona Mining's merger with Piedmont Lithium, has been described as a 'lithium giant', with a post-merger market capitalization of US\$623 million. Completion of the merger was announced in late August 2025, hailed as a "transformative milestone" by Piedmont CEO Keith Phillips. Production at NAL grew 57% between H1 FY24 and H1 FY25, delivering just over 100,000 t of spodumene concentrate.

Another significant lithium acquisition – part of one of the world's biggest mining M&A deals in 2024 – was that of Arcadium Lithium, bought by Rio Tinto for US\$6.7 billion. It raised Rio Tinto's lithium reserves to the world's third largest. Among Arcadium's development portfolio is the shovel-ready Galaxy project, a spodumene prospect representing one of Canada's largest-known lithium resources.

Additionally, Arcadium owned a 50% interest in Nemaska Lithium, with the other half owned by Québec's government. In Q4 2024, Investissement Québec announced a CA\$250 million in Nemaska, with an aim for its Whabouchi mine to be in operation by Q4 2026. While prices may have dipped in the short-term, Québec's lithium production sector is positioned for long-term leadership in the global energy transition.

### Graphite: Mind the gap

North America currently hosts just one mine producing graphite. If that sounds like supply chain fragility, it is: After 35 years of continuous production, Northern Graphite's operation at Lac-des-Îles is nearing the depletion of its historic resource. The mine's roughly 20,000 t/y production has placed Canada among the world's top graphite producers. China is the world's superpower with its production of over

1.2 million t/y; over 77% of global output in 2023. With US imports of natural graphite totaling between 35,000-90,000 t/y between 2020 and 2024, Northern's production represents a substantial and strategically important source of localized supply.

Alleviating concerns over a potential halt to production, Northern received government funding for the expansion of its open pit in September 2025. Expansion will extend the mine's life by up to eight years, after a period of uncertainty over the project's future. Given its strategic importance, Northern CEO Hughes Jacquemin welcomed the crucial funding: "Lac des Îles is Québec's only producing critical minerals mine, and supporting existing operations is essential. We commend the government's decision to prioritize sustaining current production alongside new project development," he said. Nouveau Monde Graphite's Matawinie mine offers additional security for future North American graphite supply. The mine's 2025 feasibility study outlined an annual production of over

100,000 t of graphite concentrate at a purity of 97.5%, and a mine life of 25 years. NMG is sponsored by Investissement Québec, which co-invested CA\$71 million in the project in December 2024, alongside the Canada Growth Fund. NMG anticipates commercial production within three years of a positive FID.

The diverse range of critical and strategic minerals produced in Québec and Atlantic Canada continues as a strategic advantage. Glencore's operations at Raglan Mine and the Horne Smelter, for instance, make it "central to Canada's copper value chain, supporting critical minerals development, and helping fuel Canada's economy and the global energy transition," said Vincent Plante, executive general manager of the company's North American copper operations. Elsewhere, nickel from Vale's Voisey's Bay mines, titanium at Rio Tinto's Lac Tio, and several near-term production prospects in copper, zinc and other materials, position the provinces well to service projected demand growth in the coming years. ■



**OCTANT**  
Strong foundations.

450 678-4884  
info@octantaviation.ca



**CARDINAL**  
Smooth operations.

514 468-4884  
info@cardinalaero.com



**High-Grade Copper and Gold Explorer and Developer in Canada**

**FireFly METALS**

FireFly Metals Ltd (ASX, TSX: FFM) is an emerging copper-gold company focused on advancing the high-grade Green Bay Copper-Gold Project in Newfoundland, Canada.

fireflymetals.com.au  
info@fireflymetals.com.au





## Mapi Mobwano

CEO

ARCELORMITTAL MINING CANADA

“

By including high-purity iron in the list of critical and strategic minerals, the Canadian government has recognized its importance for the decarbonization of global economies.

”

### What is the strategic significance of high-purity iron for the Canadian economy?

Steel is essential in all sectors that will enable the decarbonization of economies. For example, it takes approximately 3.5 t of steel to build a wind turbine. However, global steel production is responsible for about 10% of greenhouse gas emissions, equivalent to all the CO<sub>2</sub> generated by all cars in circulation worldwide.

To reduce these emissions, it is crucial to decarbonize steel production. The best way to achieve this is to convert blast furnaces into electric arc furnaces. These furnaces need to be powered by high-purity iron concentrate. However, only 15% of the world's iron reserves meet these criteria, and we are fortunate in Canada to have access to such reserves in the Labrador Trough.

By including high-purity iron in the list of critical and strategic minerals, the Canadian government has recognized its importance for the decarbonization of global economies. By ensuring a stable supply of high-purity iron, Canada can strengthen its production capabilities in these key sectors, attract investments, and create highly skilled jobs.

### How has Mont-Wright contributed to the development of the city of Fermont over its 50-year history?

The Mont-Wright mine has played a crucial role in the development of the city of Fermont over the past 50 years. Since the inaugural blast in October 1974, the mine has been a major source of employment and economic growth for the region. It has attracted workers and their families, bringing vitality of the community. Additionally, continuous investments in local infrastructure and community services have improved the quality of life for residents. Reaching the 50-year milestone for a mine is remarkable. It demonstrates the world-class deposit that Mont-Wright is. This is a place that has generated work and prosperity in Québec for 50 years and continues to do so. It is truly phenomenal when you think about it, and we can all be extremely proud. Mont-Wright has a rich heritage, and its future will be prosperous.

### Looking ahead, could you outline the plans for continued development of Mont-Wright?

ArcelorMittal Mines and Infrastructure Canada recognizes that the business environment is constantly evolving, and we must adapt to achieve our goals. The cyclical nature of

iron ore prices requires us to continuously improve to operate effectively in a downturn market. As the Mont-Wright mine reaches deeper levels, we face significant operational challenges, including the efficient removal of overburden to access the ore and ensure the mine's longevity.

Our priority is to strengthen our competitiveness on the global market. Operating in a stable and predictable jurisdiction, albeit with high operational costs, we must compete with producers from Brazil, Africa and Australia. Continuous improvement across our entire value chain, from the mine to the port, is essential. This strategy has allowed Mont-Wright to thrive for decades and will secure its future.

We believe that optimizing our processes, particularly at the concentrator, to increase iron recovery rates and reduce tailings is crucial. Future growth will come from more efficient and innovative processing.

We are committed to developing our teams' skills, ensuring health and safety, and strengthening partnerships with local communities, notably the Innu Nation of Uashat mak Mani-utenam. Our operations on Nitassinan are conducted with the utmost respect for the people and nature that provide us with these resources. By continuing to strengthen our ties, we will create new opportunities for collaboration.

Furthermore, we are dedicated to ensuring the health and safety of our employees and the community. This includes implementing rigorous safety protocols and continuously improving our practices to prevent accidents and promote a safe working environment. We also prioritize environmental stewardship by minimizing our environmental footprint through innovative and responsible practices.

### For the remainder of 2025 and start of 2026, what are ArcelorMittal's key strategic priorities in Québec and Canada?

For the remainder of 2025 and the start of 2026, ArcelorMittal's key strategic priorities in Québec and Canada include implementing a true interdependency safety culture, improving operational efficiency, and reducing greenhouse gas emissions. The company also plans to strengthen partnerships with key stakeholders such as the communities and continue investing in sustainable technologies to minimize its environmental impact. ■



JFV



VP

## Jean François Verret and Vincent Plante

JFV: VP Raglan Mine

VP: Executive General Manager, North American Copper Value Stream

GLENCORE

### Could you give us a update on Glencore's operations in Québec?

JFV: Glencore's fully integrated model – exploration, mining, processing, recycling, trading, and marketing – gives it unmatched reach in Québec and includes the Raglan Mine in Nunavik, the Horne Smelter in Abitibi-Témiscamingue, the Canadian Copper Refinery in Montréal, and the Canadian Electrolytic Zinc Limited (CEZinc) refinery in Valleyfield.

Raglan Mine produces nickel, copper, cobalt and precious metals amid global oversupply pressures. We continue to evolve, recognizing that sticking to the status quo is not an option. Our transformation plan will help to secure competitiveness, and despite market challenges, Raglan Mine remains profitable, safe, and responsible, with the Horne Smelter and other assets supporting Québec's long-term mining operations.

VP: Currently, the state of the market presents significant challenges for our copper operations in North America. We are facing treatment and refining fees for concentrates that have reached historically low levels. Additionally, competition in the recycling sector is rapidly expanding.

### What work is Glencore doing to secure and extend Raglan's future?

JFV: Exploration at Raglan Mine has been highly successful, culminating in the opening of the Anuri mine in February 2024. Raglan Mine is Glencore's largest exploration camp in Canada. With only 20% of the property explored, including Anuri, the mine has 15-20 years of potential ahead.

### How are Glencore's copper smelting and refining operations evolving?

VP: Glencore's midstream copper operations, encompassing the Horne Smelter in Rouyn-Noranda and the Canadian Copper Refinery (CCR) in Montreal-East, form Canada's only complete copper value chain and are core to our business. In 2022, we reorganized these operations, including U.S. recycling sites, into a single business unit to maximize synergies, align priorities, and develop long-term strategy. This unified structure allows us to integrate technical expertise, optimize asset value, and make coordinated decisions across the copper value chain rather than in silos.

### What is the strategic importance of Canada's copper value chain?

VP: Glencore is central to Canada's copper value chain, supporting critical minerals development, and helping fuel Can-

ada's economy and the global energy transition through our midstream operations. China's expansion to over 40-50% of global smelting capacity has driven historically low treatment and refining charges, creating a challenging market. Navigating this dynamic is a key challenge for our operations, requiring strategic adjustments to remain competitive and sustain the value of our assets.

JFV: Canada's copper smelting and refinery capacity has declined, leaving Glencore's Horne Smelter as the country's only remaining operation of its kind. Without federal or provincial action to support greater domestic copper refining capacity, Canada risks losing this industrial strength as business will be driven beyond our borders.

### Where does copper recycling fit within Glencore's plans?

VP: Recycling is central to Glencore's short-, mid-, and long-term strategy. It has been part of our DNA since the Horne Smelter began recycling in 1984. Historically a mine-dependent smelter, Horne has evolved into one of North America's largest electronic material recycler, anticipating growing copper demand and declining concentrate availability.

The business of recycling is rapidly growing, so it is critical to invest and develop solid partnerships that ensure our competitiveness and longevity in this area. Glencore is expanding recycling capacity, adapting to evolving materials like electronics and batteries, and forming partnerships to secure new recycling streams. Our strategic agreement with Cyclic Materials announced in December 2024 is just one example of that. These initiatives enhance our ability to close the loop on the circular economy while maximizing the value and potential of our recycling operations.

### What are Glencore's priorities in Québec in the coming years?

JFV: Our operations demonstrate successful community partnerships, including Inuit engagement, and serve as models for responsible practices. Preserving and enhancing assets ensures competitiveness, supports jobs, and strengthens Canada's leadership in mining, critical minerals, and the value chain.

VP: Glencore's long-term priorities in Québec and Canada focus on three areas: increasing local feedstock sourcing to strengthen North America's value chain, adapting processes to capture evolving recycling materials, and maximizing the value of existing assets to ensure efficiency and competitiveness. Together, these priorities support sustainable growth, enhance Canada's industrial position. ■





## Hugues Jacquemin

CEO  
NORTHERN GRAPHITE

“

Lac des Iles has a strong customer base, experiencing strong demand from industrial clients even amid geopolitical uncertainty.

”

### What updates can you share about Northern Graphite's cornerstone Lac des Iles mine?

The Lac des Iles mine in Québec, North America's only operating graphite mine, marked 35 years of continuous production in 2025. Historically supplying the industrial, electronics, and defense sectors, the current pit is nearing depletion. However, exploration has identified new resources within the lease area, potentially extending the mine's life by eight years. To access these resources, the pit must be pushed back. Government funding was obtained in August 2025, securing the extension which is vital for maintaining supply to long-standing customers and supporting the dedicated workforce, many of whom have worked at the mine for decades.

Lac des Iles is Quebec's only producing critical minerals mine, and supporting existing operations is essential. We commend the government's decision to prioritize sustaining current production alongside new project development. The mine has a strong customer base, experiencing strong demand from industrial clients even amid geopolitical uncertainty and after prices were raised for 2025 and as a result, we were able to generate mining income. While our revenue is not yet enough to fund all of our growth and project development, we require much less external funding than many other junior mining companies. That said, we still need to raise capital to fully support our activities, including the Lac des Iles extension.

### What is the strategic importance of North American graphite production?

The United States has minimal domestic graphite resources and depends heavily on imports, with China supplying around 95% of processed graphite. In response, the Association of Graphite Producers petitioned the US government, resulting in duties of up to 720% on Chinese graphite anode material due to subsidies. More trade actions are expected. These measures aim to support North American producers. Canada's trade agreements with Europe also open access to global markets.

There are two key graphite markets: battery anode material and traditional sectors like electronics and defense. While battery graphite prices have dropped due to Chinese oversupply, recent trade actions may stabilize pricing and attract investment. Simultaneously, flake graphite supply is tightening, and demand remains high for industrial uses.

The US Department of Defense plans to stockpile 48,000 t by 2030, highlighting the material's critical importance. Overall, the long-term outlook for natural graphite across both markets remains strong.

### What was the significance of your German acquisition last year?

In 2024, we acquired a European carbon materials business from the Heraeus Group. This acquisition makes us the only graphite company globally with an in-house electrochemical laboratory.

### How does the planned Baie-Comeau plant align with your global strategy?

Baie-Comeau is central to our strategy of producing standardized graphite anode materials across continents, using feedstock from our own mines. It will host our main facility for processing graphite into battery-grade anode material. We have applied for essential power access and await the government's response. With BMI Group, we are advancing the repurposing of a former paper mill into an anode plant, significantly reducing capital expenditure compared to a greenfield build.

### What is the goal of Northern Graphite's partnership with Graphano Energy?

Lac des Iles is part of a larger graphite district, with adjacent claims owned by Graphano that share similar grade and crystallinity. Collaborating with Graphano allows us to take a district-level approach, sharing resources, combining data, and streamlining exploration and processing.

### What is the status of Northern Graphite's other projects?

We are progressing our Okanjande graphite project in Namibia, despite delays caused by investment challenges and market fluctuations. The project was selected under the European Critical Raw Materials Act and will supply a battery-focused processing facility in France. Both are being developed in tandem to support a secure supply chain. In Canada, we continue advancing our Bissett Creek project in Ontario. Alongside Lac des Iles, Bissett Creek will reinforce North America's graphite supply. It is being aligned with our planned Baie-Comeau facility, which will produce battery-grade anode material for electric vehicle applications. ■



## Critical and Strategic Mineral Exploration and Development

### Emphasis on 'strategic'

A common theme emerged across many conversations with Québec and Atlantic Canada's critical mineral explorers in early 2025: at a time of sky-high geopolitical tension, market uncertainty and looming supply deficits, eastern Canada holds many of the resources needed to meet the strategic needs of North America and the wider world – so long as they can be accessed in good time. It represents a shift away from previous years' primary focus on energy transition-focused mineral markets, towards discussions on self-sufficiency, national security and jurisdictional stability.

Abitibi Metals' Jon Deluce and Laurent Eustache emphasized the advantages Canada can offer to copper explorers. "Half of the world's copper supply comes from politically unstable countries. With rising geopolitical risks, there is a strong push for copper projects in stable Tier 1 jurisdictions," said Deluce, CEO and president. Eustache, executive vice president, added: "With new technologies and improved models, there is an opportunity to unlock value in areas that have been neglected by exploration efforts."

With electrification a key pillar of the fight against climate change, as well as copper's traditional uses in infrastructure and consumer appliances, demand for the red metal is projected to significantly outstrip supply by 2035. Ivan Fairhall, CEO of ASX-listed copper junior Pivotal Metals, put it so: "Discoveries are becoming rarer, exploration success rates are at all-time lows, and development cycles are increasing. The number of new mines coming online is insufficient to meet projected demand."

Seeking to bridge that deficit, several companies are pursuing mine restart projects across Québec and Atlantic Canada, which can offer proven resources, lower capital expenditure, and near-term production potential.

FireFly Metals, an Australian-Canadian copper developer, is focusing efforts on the formerly-operating Green Bay copper-gold project in Newfoundland. FireFly is targeting an annual copper production of 50,000 t, with a new, on-site plant. Firefly CEO, Darren Cooke, said: "Most copper projects being discovered today are porphyries, which will take many years to come online, require billions in capital investment, and are often located in challenging jurisdictions. Newfoundland

and Labrador is strongly committed to developing critical minerals. Green Bay is set to be one of few copper mines in the province, making it key to that strategy."

Cygnus Metals' Chibougamau copper-gold project, acquired in its late-2024 merger with Doré Copper, boasts an historic production of 1 million t of copper and 4 million oz of gold, with recent exploration showing intercepts of 7.3m at 4.2% CuEq, and 7.3m at 3.1% CuEq. For Cygnus' president Ernest Mast, pre-existing infrastructure offers a clear advantage: "The 2022 PEA outlined an initial capital cost estimate of CA\$180 million, ranking among the lowest capital-intensity copper projects currently in development. The hub-and-spoke operation model is supported by existing infrastructure, including a 900,000 t/y processing plant and tailings facilities," he explained.

### Lithium: The only way is up?

Lithium's depressed price seemingly did little to dampen optimism among explorers. There is a confidence in the sector that the challenging fundamentals of early 2025 – a glut of supply following 2022's exploration boom, mixed with under-expectations demand – will be resolved with time. Global uptake of electric vehicles has continued on a steady rise, while some producers have begun cutting output.

For Francis MacDonald, CEO of Li-FT Power, a Northwest Territories and Québec-focused lithium junior, all that spells a positive future – albeit as a return from rock-bottom: "I believe we are at the bottom of the lithium price cycle. Electric vehicle sales grew by 25% in 2024, and even conservative forecasts project continued double-digit growth. The longer prices remain low, the stronger the eventual rebound will be," he predicted.

Indeed, for Brunswick Exploration's president and CEO Killian Charles, this weak moment for the lithium market was an opportunity. "We take a counter-cyclical approach, prioritizing early-stage exploration even in weak markets. While most companies focus on late-stage or infill drilling, Brunswick sees downturns as opportunities – offering less competition, lower costs, and greater flexibility," maintained Charles.



Through 2024 and the first half of 2025, Brunswick expanded exploration to Greenland, leveraging a first-mover advantage to acquire many prospects. “With multiple discoveries already confirmed, we remain optimistic about the significant upside potential present in Greenland,” Charles said. Back in Québec, he highlighted advancements including an MRE to come at Brunswick’s flagship Mirage property in 2025, and drilling at its other properties.

At Shaakichiuwaanaan, boasting the world’s fourth-largest hard rock lithium production capacity globally, and the largest in the Americas, PMET Resources (formerly Patriot Battery Metals) continued its strong development progress in 2024. A PEA published in August 2024 outlined a 24-year mine life, with a feasibility study anticipated for publication in Q3 2025. The company also struck a US\$48 million offtake agreement with PowerCo, a Volkswagen subsidiary, in December 2024, which PMET CEO Ken Brinsden suggested shows the automotive industry’s “confidence in long-term lithium demand growth, particularly in North America and Europe.”

Brinsden also looked beyond market fundamentals of lithium when considering the project’s importance: “Developing a local North American supply chain is crucial both economically and geopolitically. It improves efficiency by reducing transportation costs and creates value closer to end markets, while also reducing dependence on China, which processes about 80% of the world’s lithium raw materials,” he said.

#### Graphite: Defense driving demand

At Focus Graphite, CEO Dean Hanisch has pivoted focused the defense market, including funding discussions with the US Department of Defense (DoD) and moves to open a US storage and shipping hub. Its natural graphite product is especially well suited to service critical defense uses, Hanisch claimed, given its flake size and purity, and its projects’ proximity to key nodes of the North American defense sector. The company is also developing its own silicon-enhanced battery innovation, which Hanisch envisioned as a future parallel revenue source.

Lomiko Metals has also expanded beyond exploring for graphite, with research and development on battery technologies, anode materials and processing techniques. The company has received funding from the US DoD and Canadian government for this work. Graphite projects can offer multi-faceted benefits: “Critical minerals play a vital role in industrial applications and geopolitical stability. When these projects succeed, everybody benefits – job creation, local community development, and economic and security gains at both provincial and national levels,” reasoned Lomiko CEO Gordana Slepcev.

James Cross, CEO of E-Power Resources, laid out the numbers on the strategic importance of North American graphite supply: “To achieve self-sufficiency by 2035, North America will need 40 new graphite mines, yet only 10 potentially impactful projects are in development,” he contended.

#### Transition metals, for a geopolitical transition

Strategic Resources’ CEO, Sean Cleary, commented on its BlackRock project’s international relevance, amid a moment of geopolitical and trade tension with Canada’s southern neighbor: “US tariffs are impacting Canada’s automotive, aluminum, and steel industries, which could affect us. However, we expect increasing demand from Europe, where our low-carbon production is well positioned to meet growing needs,” thanks to a heightened European focus on steel industry decarbonization.

Temas Resources’ CEO Tim Fernback highlighted the timing of Temas’ La Blache and Lac Brule titanium projects, which could come online as mines like Rio Tinto’s Lac Tio cease operations. Fernback emphasized the strategic importance of a seamless transition: “Ukraine holds Europe’s only remaining significant titanium deposits and both China and Russia remain significant global suppliers and refiners of titanium. Current geopolitical conditions make long term access to the strategic metal for Western economies uncertain,” he said.

For Niobay Metals’ president and CEO Jean-Sébastien David, the company’s niobium-tantalum properties offers an alternative to supply chains from China, Brazil and the Democratic Republic of Congo, which he regarded as insecure. “A potential client involved in US Army R&D conducted a background check to confirm we have no Chinese or Russian ownership, which makes our Canadian project attractive. Our independence and location position us as a secure supply source,” he asserted.

All this seems to confirm a rapid pivot for the critical and strategic mineral sector, reflective of change in geopolitical conditions over the past year. While the green transition certainly remains an important element of supply and demand fundamentals, priorities have shifted. ■



## Darren Cooke

CEO  
FIREFLY METALS

“Newfoundland and Labrador is strongly committed to developing critical minerals. Green Bay is set to be one of few copper mines in the province, making it key to that strategy.”

#### Could you give us an overview of FireFly Metals and the company’s recent developments?

Originally focused on gold, the company pivoted to copper with the acquisition of the Green Bay project in Newfoundland, a tier-1 jurisdiction. We saw limited high-quality copper opportunities among ASX-listed juniors, making Green Bay a compelling shift. As the project’s scale became clearer, we pursued a dual listing on the TSX to align with our Canadian presence. With over 90% of our workforce based in Canada, FireFly Metals is proud to be a Canadian-Australian company focused on delivering long-term value through copper development.

#### How did FireFly acquire the Green Bay project, and what work has it completed since?

Green Bay was acquired in August 2023 after Rambler Metals entered insolvency. The issues were not geological but operational. The previous mill processed only 500,000 t/y from a 40 million t resource, implying an 80-year mine life, with long transport distances further undermining viability.

Following the acquisition, we launched a strategy to unlock the asset’s value, beginning with a 130,000 meter drilling campaign to improve resource quality. Within a year, we achieved a 42% resource increase to 60 million t at 2% copper equivalent. Drilling and downhole EM suggest further mineralisation beyond current boundaries.

We are advancing feasibility and mine studies, including plans for an on-site mill and improved bulk mining methods, targeting annual copper production of over 50,000 t with strong grades and margins.

#### What advantages does pre-existing infrastructure offer the Green Bay project?

Working on a previously-operational underground mine provides a significant advantage, with much of the required infrastructure already in place. Underground drilling is more efficient and cost-effective, requiring shorter holes. After completing key underground development to position rigs correctly, each drill hole now adds substantial copper to the resource at a low cost.

Surface infrastructure, such as offices, workshops, and water treatment facilities, is also in place. Underground, a ventilation shaft and a decline reaching 950 m below surface provide access to over 700 m of strike, offering a strong foundation for exploration and future mining.

Considering new infrastructure, our planned on-site plant will process 1.8 million t/y, eliminating the former 40

km haul to an off-site mill. Additionally, a new agreement providing access to a port just 6 km away significantly reduces transport costs compared to the previous 140 km route.

#### What led to FireFly’s ASX-TSX dual-listing?

While many Canadian companies seek ASX listings, we are among the few moving in the opposite direction. Our asset is in Canada, several board members are Canadian, and the majority of our employees are based there. Additionally, both institutional and retail investors often prefer to invest within their home exchange. Our dual listing on the TSX therefore enhances access to capital by broadening our investor base and funding options.

#### How do you foresee the coming years in the copper market?

The strong fundamentals of copper remain unchanged. Although there has been some softness in the market, particularly amid uncertainty driven by the US’ tariffs and trade conflicts, the fact remains that we face copper supply shortages in the coming years. There is still a lack of quality projects coming online. Most copper projects being discovered today are porphyries, which will take many years to come online, require billions in capital investment, and are often located in challenging jurisdictions.

#### What does Green Bay’s development mean for Newfoundland and Labrador?

Newfoundland and Labrador is strongly committed to developing critical minerals. Green Bay is set to be one of few copper mines in the province, making it key to that strategy. From politicians and the community, we have been welcomed – they want this mine to work, to create jobs and economic prosperity. Having seen it operating previously and close, there is a great appreciation of the benefits this mine can bring.

#### What are your top priorities for the year to come?

Our focus is on growing and upgrading the resource, supported by strong recent drilling. We have submitted our environmental assessment and expect a decision by June 2025. A PEA is planned for late 2025, followed by a feasibility study in early 2026. We have also tripled our landholding since the acquisition, with surface exploration underway. We believe the area could host a broader mineral district, and further discoveries could be a game changer for FireFly. ■

brunswick  
brw exploration

A Leader in Canadian  
Lithium Exploration

brwexplo.ca



(TSX.V: BRW)







## Jon Deluce

President and CEO  
ABITIBI METALS

### What made 2024 transformative for B26?

We successfully optioned the B26 asset, previously developed privately by SOQUEM, and quickly advanced it. We raised US\$22 million between December 2023 and early 2024, funding 30,000 m of drilling, 13,500 m of which contributed to a resource update. The update boosted indicated resources by over 60%, reaching 11.3 million t at 2.13% CuEq, and inferred resources to 7.2 million t at 2.12% CuEq. Contained copper increased by 38%, and contained gold rose by 29%. We have positioned Abitibi Metals as one of the most active juniors in Québec, identified new geophysical targets for 2025, and strengthened our team.

### What is your message to potential investors in Abitibi Metals?

Abitibi Metals remains an under-the-radar story, despite having already outlined a significant critical mass at B26. With each step forward, as we continue drilling and de-risking, we are steadily unlocking value. We believe it is only a matter of time before the market fully recognizes the scale and potential of what we are building. ■



## Ernest Mast

President and Managing Director  
CYGNUS METALS

### What prompted Cygnus Metals and Doré Copper's merger?

Doré Copper sought to advance its copper-gold project in Chibougamau, while Cygnus Metals was looking for diversification. Cygnus' portfolio was primarily focused on its lithium projects in the James Bay area. The merger presented an opportunity to recapitalize the Chibougamau project and provide Cygnus with a new cornerstone asset.

### How has government funding supported Cygnus' efforts?

The Canadian federal government's Critical Minerals Infrastructure Fund (CMIF) supports both studies and execution phases of eligible projects. Cygnus met all the key criteria, including the project's critical mineral mix, robustness, community support, job creation, and development potential. Letters of support from the town of Chibougamau and the Oujé-Bougoumou First Nation were key to our application.

The CA\$1.3 million funding will be for our environmental and social impact assessment and infrastructure engineering studies. As we progress toward construction, we intend to apply for the CMIF's interest-free loan program to support the next phase. ■



## Ivan Fairhall

Managing Director  
PIVOTAL METALS

### Could you begin with an introduction to Pivotal Metals?

Pivotal Metals owns a suite of assets, including our flagship advanced Horden Lake copper project, as well as a large exploration portfolio, all within the top-tier mining jurisdiction of Québec.

### What exploration work has Pivotal completed at Horden Lake?

We conducted a comprehensive exploration program including infill and step-out drilling, geophysics, and metallurgical testing. This work culminated in an updated resource estimate that outlining the scale and quality of the project. Horden Lake now has 410,000 t of copper equivalent, of which 340,000 t fall within a pit-constrained resource. This is very important, as open-pit mining lowers capital and execution risks and enables scalability. Globally, there are few high-grade, open-pit copper projects available.

### How is Québec's investment environment for juniors right now?

The market remains challenging for juniors. Rising interest rates and inflation have reduced discretionary investment capital, especially at the retail level. Simultaneously, there has been a shift from active to passive fund management. Passive strategies inherently favor large-cap, liquid names and bypass juniors entirely. ■



## Ken Brinsden

CEO and Managing Director  
PMET RESOURCES

“

We believe Québec is key to establishing a diversified and resilient lithium supply chain for North America and Europe.

”

### What is the background and significance of PMET Resources' partnership with Volkswagen and PowerCo?

The partnership with Volkswagen and PowerCo is a significant step for our lithium project, marking the culmination of extensive engagement with the downstream battery and automotive industries. Their investment underscores the strength of our project, which boasts scale, high grades, and long-life potential. The offtake agreement, involving 100,000 t of spodumene concentrate over ten years, is a critical first step in securing financing and advancing the project toward construction.

The US\$48 million investment supports our progress toward the final investment decision, ensuring we are well-positioned to complete engineering work, secure permitting, and move toward construction. With Québec's proximity to major markets, clean energy access, and mining-friendly environment, our project is strategically positioned for success.

### What did Shaakichiuwaanaan's August 2024 PEA outline, and how is work progressing towards its feasibility study?

The PEA was a crucial milestone, establishing the project's 24-year mine life with competitive all-in sustaining costs of approximately US\$590/t. It confirmed the decision to pursue a hybrid mining approach, combining open-pit and underground methods, with the underground operation focusing on ultra-high-grade zones early on to enhance economic viability. This study validated the project as world-class, capable of competing under current lithium pricing conditions.

Resource modeling has been updated without significant surprises, and the study is on track for completion in Q3 2025. This will set the foundation for mine authorization and the final investment decision. Following the feasibility study, the Environmental and Social Impact Assessment (ESIA) and the Impacts and Benefits Agreement (IBA) with the Cree Nation are the next critical steps, leading to mine authorization and construction by late 2028 or early 2029.

### What is the significance of the recent cesium discovery at the project?

The discovery of cesium is highly significant. It confirms that our pegmatite system is a Lithium-Cesium-Tantalum type pegmatite, which is relatively rare and highly valuable. The scale of the cesium mineralization appears to be sub-

stantial, consistent with the overall scale of the geology we have discovered. The cesium mineralization is associated with the lithium-bearing spodumene, meaning it can be co-mined. The cesium credit, alongside the previously confirmed tantalum credit, enhances the overall economics of the project by providing additional revenue streams.

### How has PMET Resources built strong relationships with the Cree Nation?

We are fully committed to a true partnership with the Cree Nation. Recognizing that we are operating on their traditional lands, we sought to integrate their perspectives deeply into our project. We asked the Cree community for a name for the project. They chose Shaakichiuwaanaan, meaning "we are climbing a hill" in reference to nearby hills of cultural significance.

Beyond symbolism, we have established a local office in Chisasibi, the nearest Cree community, and we are prioritizing employment opportunities for Cree members. At times, up to 25% of our workforce has been composed of members of the Cree Nation. Building these strong, lasting relationships is a fundamental pillar of our project's future.

### How do you view Shaakichiuwaanaan's position in relation to future lithium demand?

The lithium sector is growing rapidly, with supply needing to nearly triple by 2030 to meet demand. If our project were in production today, it would be the second-largest hard rock lithium mine globally. However, to meet forecasted demand, approximately twenty projects of similar size would need to be developed by 2030, which is unlikely, increasing the risk of future supply shortages. Our timing positions us well to capitalize on the anticipated structural deficit in lithium supply.

Developing a local North American supply chain is crucial both economically and geopolitically. It improves efficiency by reducing transportation costs and creates value closer to end markets, while also reducing dependence on China, which processes about 80% of the world's lithium raw materials. Québec is emerging as a competitive jurisdiction, offering large, high-grade lithium resources, renewable hydropower, and excellent access to infrastructure and markets. We believe Québec is key to establishing a diversified and resilient lithium supply chain for North America and Europe. ■





## Killian Charles

President and CEO  
BRUNSWICK EXPLORATION

“

In 2025, Brunswick will advance our flagship Mirage project in Québec with a resource estimate, expand exploration in Greenland following its first-ever lithium discovery, and drill our other assets.

”

### How was the past year for Brunswick Exploration?

Brunswick has remained active despite a weak lithium market, focusing on significant drilling at its flagship Mirage asset in Québec. Strategically located between PMET Resources' and Winsome Resources' projects, Mirage is advancing toward a resource assessment, targeting a minimum of 50 million t with simple metallurgy and proximity to infrastructure. Metallurgical tests and extensive drilling have reinforced the project's potential.

In an especially exciting development, leveraging our expertise gained from systematic grassroots lithium exploration across Canada, Brunswick identified Greenland as a new frontier, becoming the first company to explore and confirm a lithium discovery there. This highlights our pioneering approach and capacity to unlock new lithium provinces.

### Could you tell us more about your work in Greenland?

Brunswick is benefitting from a major first-mover advantage in Greenland, consolidating virtually every opportunity identified. In summer 2025, we are planning a large-scale exploration program to expand existing discoveries and advance them to drill-ready stages. With multiple discoveries already confirmed, we remain optimistic about the significant upside potential present in Greenland. We hope to prove that where one lithium discovery exists, more are likely to be found, and demonstrate continued growth and exploration success throughout the year.

### How does Brunswick identify worthwhile exploration prospects?

Given that lithium mining is still a relatively young industry, there is limited understanding of the required scale of an asset. We believe the size threshold for economic lithium projects sits at 50 million t, so that is our minimum aim for all our exploration properties. Encouragingly, Brunswick's continued strong results – including intercepts up to 100 meters from surface drilled in 2024 – reinforce the Mirage project's potential to exceed that benchmark. With a maiden resource estimate targeted in the near future, all drilling to date has validated the team's geological model and strategic focus on scale and quality.

### How has Brunswick positioned itself for the current weak lithium market?

We take a counter-cyclical approach, prioritizing early-stage,

grassroots exploration even in weak markets. While most companies focus on late-stage exploration or infill drilling, Brunswick sees downturns as opportunities – offering less competition, lower costs, and greater flexibility. This strategy allows the company to remain active, generate new targets, and stretch exploration dollars further. Consistently deploying capital into high-impact, cost-effective exploration is essential to creating long-term value and justifying shareholder investment.

### Where do you see the lithium market heading in the coming years?

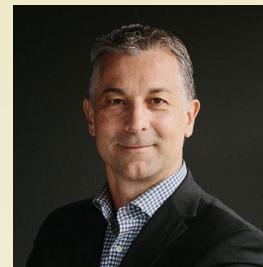
Unlike a typical downcycle driven by weak demand, this one is shaped by short-term oversupply. Despite current market weakness, we remain optimistic, emphasizing that lithium demand continues to grow steadily – even amid geopolitical uncertainty. With decarbonization goals still intact and end-use demand robust, we believe a rebound is inevitable. The next upcycle may arrive sooner than expected, and Brunswick is positioning to capitalize on it. Cycles are inevitable, but strong demand fundamentals offer long-term reassurance and validate continued investment in exploration today.

### How important is Québec to North American battery supply chains?

While refining and manufacturing can be located anywhere, something you cannot move is the rock beneath our feet – and Québec has the highest-grade, most abundant hard rock lithium in North America. Despite current price weakness, the province's superior resource base ensures it will lead the sector's future development. Ultimately, Brunswick Exploration sees Québec as critical to North America's lithium future, offering the quality and scale needed to anchor domestic production.

### What catalysts would you highlight for the year to come?

We are not slowing down. In 2025, Brunswick will advance our flagship Mirage project in Québec with a resource estimate, expand exploration in Greenland following its first-ever lithium discovery there, and drill our other assets like Anatacau. Our team is actively leveraging its grassroots expertise to scout new, underexplored jurisdictions globally – just as it successfully did in Greenland – aiming to uncover the next frontier in lithium exploration. ■



## Tim Fernback

CEO  
TEMAS RESOURCES

### Could you update us on progress at Temas Resources' projects?

In H1 2024, we published our PEA for the La Blache titanium-vanadium-iron ore project, outlining a 208 million t inferred resource, with an NPV of CA\$6.6 billion and a post-tax IRR above 60%. We are working to finalize drilling permits for the 2025 season, preparing for a 10,000-m winter drill program.

At Lac Brule, with the same commodity mix as La Blache, we expect to complete a PEA by the end of 2025. It is a smaller exploration property but higher-grade project, with nearby access to transport and energy infrastructure. We are applying for drill permits there.

### What does Temas' ORF Technology add to its offer to investors?

We currently hold 50% of the rights to our ORF metallurgical technology and are in discussions to secure full ownership. This proprietary technology allows us to process our material more cost-effectively than traditional methods. Unlike conventional approaches requiring superheating, ORF operates at near ambient temperature, reducing energy consumption. Additionally, the recycling of close to 95% of our chemical reagents reduces both operating cost and our environmental impact. ■



## Jean-Sébastien David

President and CEO  
NIOBAY METALS

### Could you summarize NioBay Metals' key assets?

Our flagship asset, the niobium-tantalum Crevier project in the Lac Saint-Jean region of Québec, offers solid infrastructure and road access. In Q2 2025, we began shipping samples from Crevier to potential customers, a key step in proving our ability to meet industry specifications.

### Could you elaborate on NioBay's titanium project?

In Q1 2024, NioBay signed an option agreement with Vior to acquire 80% of Foothills, a titanium project not far from Québec City, where familiar geology led to a promising discovery last August. Drilling is set to resume in September, pending final authorizations, with the goal of defining a resource estimate.

### What government support has NioBay received recently?

We recently received CA\$500,000 in funding from the Government of Québec to build the first pilot plant for the Crevier project, and an additional CA\$400,000 for the drilling program at Crevier. Government support has been very positive. Officials can visit the site easily, which helps them see firsthand the progress we are making and the seriousness of our work. ■



## Gordana Slepcev

CEO  
LOMIKO METALS

### Could you update us on Lomiko's graphite projects?

At La Loutre, our objective is to complete pre-feasibility level engineering studies by the end of Q1 2026. Meanwhile, we are advancing towards a PEA for our downstream processing activities.

### How does Lomiko's new Yellow Fox project enhance its portfolio?

Antimony, the primary commodity at our recently acquired Yellow Fox project, is on China's list of restricted exports, like graphite. Few other mines in Canada are currently extracting this critical mineral. The project is located approximately 25 km northeast of the former-producing Beaver Brook antimony mine. Historic results at Yellow Fox illustrate the property's potential, including 11% antimony, 60 g/t gold, 72 g/t silver, 7% zinc, and 5.5% lead. Our objective is to expand the land package and conduct new sampling to identify priority zones.

### Could you tell us more about your planned PEA on downstream mineral processing?

Our efforts extend beyond mining – we are developing anode materials and battery technologies. In collaboration with downstream partners, we are working towards a PEA for this. That includes research and development, testing innovations, and scaling up laboratory work. ■





## Sean Cleary

CEO

STRATEGIC RESOURCES

### Could you introduce us to Strategic Resources?

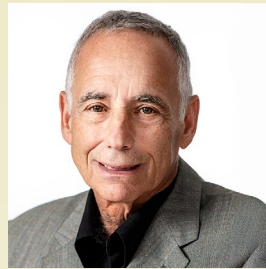
In 2023, Strategic Resources and BlackRock Metals merged through a reverse take-over. The combined company is listed on the TSXV, with Investissement Québec and Orion Mine Finance each holding 41% of the shares along with investment from the Lumina Group. Our project portfolio includes Mustavaara in Finland and BlackRock in Québec, both vanadium-titanium-magnetite projects. Since the merger, the company has focused on BlackRock, with Mustavaara on care and maintenance.

### What is the plan for the BlackRock project?

A challenging investment climate and inflationary pressures led us to consult our experienced shareholders, who advised a phased approach to enhance capital efficiency – beginning with the metallurgical facility, rather than the mine. Following this strategy, we completed a pre-feasibility study in spring 2024 to build a 4 million t/y DR-grade iron ore pelletizer, and expect our feasibility study to be completed by the end of 2025.

### What will be the next steps after phase one is complete?

That will involve construction of our mine and production of concentrate in Chibougamau. ■



## Martin Kepman

CEO

MANGANESE X ENERGY CORP

### What does Eric Sprott's investment mean for Manganese X?

The CA\$2 million investment by Eric Sprott, comprising a 26.6% stake in the company, has brought a new level of international visibility and recognition. Since the announcement, we have seen increased interest from European investors.

### What is the state of the North American manganese supply chain?

Our mission is to become the first supplier of critical high-purity manganese for the North American supply chain. Few projects are currently in development, and meeting purity standards requires advanced technology. After nine years, we are still refining our proprietary process.

### Can you tell us about Manganese X's partnership with C4V?

Since early 2024, we have been collaborating with C4V, a recognized leader battery technology and operator of a gigafactory in New York State. Our partnership is currently focused on C4V's Digital DNA Supply Chain Qualification Program, which includes rigorous testing to evaluate the long-cycle performance and durability of Manganese X's high-purity, battery-grade manganese material. ■



## Mark Haywood

President and CEO

EDM RESOURCES

### Could you introduce EDM Resources?

EDM Resources acquired the Scotia Mine in Nova Scotia out of receivership in 2011. Since 2019, we have completed multiple technical reports and mineral resource updates, revalidated the resource model, tripled the overall mineral resource, and completed two pre-feasibility studies. We have also engaged with potential off-takers to secure project financing.

The operation primarily focuses on zinc and lead, but we also discovered a substantial gypsum deposit, which could generate approximately US\$135 million in revenue.

### How does the project benefit from existing infrastructure?

The project is located near Halifax's international airport, along an all-season highway. It includes a fully built processing facility with conventional crushing, grinding, flotation, and dewatering infrastructure, which we will refurbish.

### What makes Nova Scotia an attractive mining jurisdiction?

Nova Scotia has a well-established mining history and is considered mining-friendly. I was invited to meet with the Minister of Natural Resources and Renewables, and the Premier has shown strong interest in fostering job creation and economic development. ■



## Rare Earth Metals

### At the crux of trade tensions

Another key group of minerals caught up in geopolitical wrangling are the rare earth metals. These 17 metals, comprising the lanthanide series of elements, plus scandium and yttrium due to their similar properties, offer a variety of exotic applications including in lasers, powerful permanent magnets and nuclear physics, as well as industrial and manufacturing settings, including as an agent in steel and aluminum alloys. As a result, the category has emerged as a subset of critical and strategic minerals of increasingly recognized importance.

China is unquestionably the dominant force in global rare earth production, accounting for 60% of their production and 90% of processing. That

made China's tightened restrictions on its rare earth exports to the US, following back-and-forth tariff rate and political ratcheting in early 2025, a significant concern for American strategic manufacturing interests. After continued trade tension and rare earth supply shortages in the US, the two countries struck a new agreement for the resumption of exports in June 2025, reportedly including caveated restrictions on certain military applications, potentially including use in building the F-35 fighter jet. The episode shone a stark light on US' dependence on Chinese rare earths, revealing a potentially painful thorn in the side of President Trump's mission to aggressively reshore strategic supply chains.

Paul Carmel, president and CEO of Montréal-based junior investment fund Sidex, commented: "With the potential for China to restrict exports of these critical minerals over the long term, Canada and North America would do well to secure their own supply."

China's dominance in rare earths, according to Torngat Metals' CMO Christine Burow, came as no accident. "These elements are irreplaceable. China recognized this early, dominating supply through state-backed investment and looser environmental standards," she maintained.

It makes the strategic relevance of Torngat's Strange Lake rare earth project, which received nearly CA\$10

>>57



## CANADA'S RARE EARTH SOLUTION

Home to one of the world's richest heavy rare earth deposits, Torngat Metals is poised to become Canada's first producer of key magnet rare earth elements.

With a focus on responsible development and processing, we're helping secure the critical supply chain behind tomorrow's clean energy technologies.

Explore the future with us: > [torngatmetals.com](https://torngatmetals.com)







## Christine Burow

Chief Marketing Officer  
TORNGAT METALS

“

We are seizing the opportunity to establish the large-scale commercial foundation of Canada's rare earth industry.

”

### Could you update us on key advances with Torngat Metals' Strange Lake project?

This is a pivotal year for Torngat Metals, as we have completed our prefeasibility study, which has confirmed the strength of our business model and the cost efficiency of our plan to produce separated rare earth oxides. We are completing a bridge financing round consisting of debt and equity. The full debt portion, CA\$165 million, has already been secured from Export Development Canada (EDC) and the Canada Infrastructure Bank (CIB) in June 2025. This financing, the first of its kind for EDC and CIB, underscores the strategic importance of our project, which offers a unique solution to the crisis in the rare earth permanent magnet supply chain.

### Could you highlight the sustainability aspects that Torngat Metals is focusing on?

Environmental and social stewardship is a core priority for us. We are developing a comprehensive Indigenous-Environmental, Social and Governance (IESG) strategy built around leading global frameworks, including the Equator Principles, International Finance Corporation Performance Standards, the International Council on Mining and Metals and Toward Sustainable Mining. Compliance with these standards ensures transparency and third-party verification; it also underscores our deep commitment to responsible resource development.

One key pillar of our IESG strategy is implementing a No Net Loss (NNL) policy that includes best-practice conservation measures, implemented through collaboration with Indigenous and local stakeholders. NNL is an environmental policy approach with the requirement to achieve no net loss of biodiversity and a net gain in critical habitats by integrating the mitigation hierarchy (avoidance, minimization, restoration and offsetting).

We have pledged to balance economic development with environmental protection, ensuring that biodiversity, Indigenous land use and traditional knowledge always guide our decision-making and operations. Our engineering and environmental teams are working together to minimize the environmental impact of our operations. For example, for the concentration plant in Sept-Îles, we are implementing a zero-discharge and closed-loop recycling for all process wastewater. While this has higher upfront costs, these are outweighed by the benefits from all perspectives, including environmental, social acceptability and total economic benefits.

### What is the strategic significance of rare earth elements?

Used across a wide range of advanced technologies, REEs are listed as critical minerals by governments worldwide. They are used in electric vehicle motors, wind turbines, electronics, smart appliances, medical equipment, and military systems; therefore, REEs are essential to innovation, the energy transition, and industrial sovereignty. Since REE uses are ubiquitous, the industries that depend on them are valued at many trillion dollars.

China recognized their strategic significance long ago, developing supply chains to drive its industrial policy to the detriment of Western industries. The West was slow to respond, although that is now beginning to change.

Rapid REE demand growth is no longer theoretical – EVs, renewables and robotics are the present and future. Meanwhile, supply disruptions, Chinese export restrictions on dysprosium and terbium, and other risks underscore the need to establish diversified, resilient, and responsible REE supply chains. The need to build an independent and competitive rare earth industry in Canada has never been more urgent.

### How is your government funding being allocated?

Torngat Metals is unique in having attracted a significant amount of private equity, which has brought us from exploration to the next project development stages. Robust government support is another key factor in our success.

The EDC and CIB bridge financing is being used to pull forward capital spending that can be completed in advance (detailed engineering, ordering long-lead time equipment, modular construction, etc.), as well as to completing development stage engineering and environmental studies required for permitting. In addition, in late 2024, we received nearly \$10 million from Natural Resources Canada's Critical Minerals Infrastructure Fund to support engineering, permitting and community engagement related to the infrastructure we plan to build.

We are completing the bridge financing with raising the matching equity portion. This sets us up for the fall to start the process for the full project financing. We are seizing the opportunity to establish the large-scale commercial foundation of Canada's rare earth industry and to demonstrate that a financially successful and responsible industry can be established by minimizing environmental impacts by collaborating closely with Indigenous and local communities. ■



Guy  
Bourassa  
CEO  
SCANDIUM CANADA

### Could you introduce us to Scandium Canada?

Scandium Canada, previously known as Imperial Mining Group, adopted its new name in 2021 to reflect its strategic focus on the Crater Lake scandium project. Since then, the company has completed a PEA in 2022, and has continued to expand the project's mineral resource estimate, with the latest update released in April 2025, following our 2024 summer drill program. In parallel, metallurgical pilot studies have progressed, including the completion of a 500 kg study in April 2025.

### How has the development plan for the Crater Lake project evolved?

We decided to revise our strategy. The PEA had proposed a seasonal, four-month-per-year operation supported by a winter road during the project's first five years, followed by the construction of a permanent road. Concentrate would then be transported by rail to Sept-Îles for processing into scandium oxide. We ultimately returned to the drawing board and now intend to construct the permanent road from the outset. While this increases our initial capital expenditure, we have also decided to relocate the hydrometallurgical plant to Wabush, Labrador, thereby eliminating the need for rail transport to Sept-Îles. This change reduces our reliance on third-party infrastructure, lowers greenhouse gas emissions, and improves operational expenditure. A major factor in this decision was the introduction of Canada's Critical Mineral Infrastructure Fund, which could cover up to 50% of the road construction costs.

### How is the company progressing in its metallurgical development?

In September 2024, we filed patent applications for two aluminum alloys designed for 3D printing, developed in partnership with McMaster University. We are now considering the creation of a subsidiary to commercialize this intellectual property, potentially through royalties or licensing agreements. This structure would allow Scandium Canada to generate revenue while continuing to advance the Crater Lake project. ■

55&gt;&gt;

million from the Canadian federal government under its Critical Mineral Infrastructure Fund (CMIF), as well as financial support from Québec's provincial research and development program, all the more clear. That funding is contributing to the project's pre-feasibility and feasibility studies, which the company expects to complete by the end of 2025.

Strange Lake is a project receiving industry-wide attention, including from Metso's North and Central America president, Giuseppe Campanelli: "Metso has supported the Torngat Metals rare earths project from its early stages, conducting extensive testing to help define the flow sheet. Unlike traditional commodities, rare earth processing is more complex, requiring extensive analysis to understand mineral compositions and recovery rates."

With the project's rare earth targets including dysprosium, terbium, neodymium and praseodymium, with potential to become the world's leading supplier of dysprosium, it demands highly refined processing.

The project is not without hurdles. It requires a 180 km access road to a new port in Voisey's Bay, Labrador, for shipping to a Sept-Îles, Québec separation facility, all of which will require funding, permitting, and the agreement of a number of local First Nations communities. With the mine site located in Nunavik, its operations would also be impacted by the region's harsh, far-north seasonality. Though the mine site could operate year-round, the road would see winter use only. For Burow, though, surmounting these obstacles sooner rather than later would deliver outsized, strategic benefits for Canada: "Our project aims to bring rare earth industry to Canada by transferring proven technologies and global expertise into the country. This can drive major eco-

nomie and social growth across northern Québec, Labrador and beyond," she said.

Another rare earth project presenting Canada with an opportunity to disrupt conventional rare earth supply chains is Scandium Canada's Crater Lake. Scandium is a metal with potentially wide-ranging applications (thousands of global patents utilize scandium-enhanced aluminum alloys), but one that also suffers from a miniscule and fragile global supply. In 2024, global scandium production totaled just tens of tonnes, with the majority of supply originating from China. The CEO of Scandium Canada, Guy Bourassa, expanded: "Scandium is almost exclusively a byproduct of mines focused on other, more abundant minerals. Most of the supply comes from China, which also raises geopolitical and strategic concerns. As a result, there is currently no dependable, long-term primary source of scandium, creating a major barrier to commercialization."

Bourassa expressed hope that the Crater Lake project would receive funding from the federal CMIF to support the build-out of its transport and hydrometallurgical infrastructure. Alongside efforts to develop its project site, Scandium Canada is also conducting its own patent-pending scandium-aluminum alloy R&D, which it plans to commercialize by collating scandium by-product from small-scale global producers as, effectively, a broker for the rare earth metal.

Though the amounts involved are often small when compared to the immense tonnages of critical metals like copper, the unique properties of rare earths make them indispensable. For their very particular use cases, there frequently is no alternative. That makes their role in high-level, superpower trade disputes something worth watching – and their development in Québec and Atlantic Canada perhaps even more so. ■





# EQUIPMENT AND TECHNOLOGY

“

Québec is an excellent place to innovate. There is strong government support for R&D through grants and subsidies. We benefited from this while developing our technology.

”

Jean-Philippe Mercier  
President  
**CAUR TECHNOLOGIES**

GBR Series  
QUÉBEC AND ATLANTIC CANADA MINING 2025

Image by VK Studio at Adobe Stock



# Closing the Loop

## Circular, sustainable, local

The United Nations Development Program estimated in 2025 that a global transition from a linear to a circular economy – one in which resources are widely reused, repaired and regenerated, rather than discarded – could deliver US\$4.5 trillion in economic benefits by as soon as 2030. At the 2025 World Circular Economy Forum, André Corrêa do Lago, president of 2025's COP30 UN Climate Change conference, called for urgent action, asserting the critical role of circularity to tackle climate change: "We have a few years

– very few years – to do the right thing. We need the circular economy," he affirmed.

Circularity is something Québec and Atlantic Canada's provincial governments are already pursuing. In the province's updated critical mineral development plan due for publication in October 2025, Québec's Minister Blanchette Vézina assured: "Circularity will be a central pillar supporting both sustainability and resource efficiency."

So what, one might ask, does mining circularity look like in practice? Mining's use of heavy and technologically advanced equipment makes use of many of the very same resources the industry extracts: copper for electronics, zinc for galvanization, or iron for steelmaking, for instance. For



Bringing together  
over 130 industry  
and government  
exhibitors to discuss  
mining + energy.

Be part of the event!  
November 17 to 20, 2025,  
Centre des congrès de Québec



Québec



David Anonychuk  
Global Vice President, Metallurgy and  
Consulting  
SGS



We are seeing interest in sustainable mineral processing methods, such as bio-mining using bacteria, and in regenerating reagents like acids to reduce costs and align with circular economy principles.



Robitaille Équipement, a distributor of equipment from a number of suppliers local to its Québec and New Brunswick operations, it is something that virtually happens naturally: "Much of the steel we sell comes from Canadian manufacturers. In cases where we sell equipment to mines that produce iron ore, we are supplying them with steel produced locally from Canadian ore. It reinforces the circular nature of the economy," explained business development manager Bruno Montesano.

At processing equipment manufacturer Magotteaux's Québec plant, locally-sourced scrap metal is recycled into mill grinding balls. Thanks to its 100% hydroelectric-powered manufacturing process, the company's products can offer significant sustainability gains. According to its North America sales director Lionel van Obbergh: "We recently implemented a full circularity solution. Used grinding balls gradually reduce in size during processing until they become too small. These are then returned to us, and we recycle the metal to produce new ones, making the process highly sustainable."

Another key aspect of circularity is ensuring equipment is built to last, and reusable. CANAM's modular and collapsible buildings epitomize this: Foldable Econox buildings can be customized for employment as maintenance garages, labs, admin offices or other uses, then relocated later. "You can install an Econox building temporarily, then fold it up and relocate it to the same or another site, and even add sections to enlarge it. That relocatability makes it cost-effective and sustainable. This also contributes to a high degree of circularity," said George Pombouras, the company's VP for business development.

The circular economy also has a role to play in cutting-edge mining technology. In 2024, a consortium of Québec-based institutions and businesses completed a multi-year project to design, assemble and test a 100% electric battery-driven 40-tonne mining truck – the first of its kind in the province. The vehicle is estimated to offer life-cycle savings up to 400,000 liters of diesel, and a greenhouse gas emission reduction of 66% compared to a conventional vehicle.

Jean-François Couillard, president of Adria Power Systems, which contributed its charging technology and infrastructure to the project, commented: "Collaborations like this, involving local resources, local manufacturing and local technology, showcase the potential for a circular economy where resources mined in Québec are used in Québec-made vehicles supported by Québec-made infrastructure."

While projected global gains of US\$4.5 trillion by 2030 may be aspirational, even a fraction of that would represent a transformative shift. Yet the pace of progress remains a critical concern. According to Circle Economy and Deloitte's Circularity Gap Report 2025, the proportion of recycled or repurposed materials in global use is still declining, exposing the gap between ambition and action. Initiatives emerging from Québec and Atlantic Canada across government, industry, and technology offer a compelling counterpoint, marking a move away from the 'take-make-dispose' paradigm, demonstrating that regional leadership can serve as both a proving ground and a catalyst for broader systemic change. ■



## Jean-François Couillard

President

ADRIA POWER SYSTEMS

### How was 2024 for Adria Power Systems?

Each year seems to be a record-breaking year for us, and 2024 was no different. The continued high price of gold has driven strong demand from both new and long-time customers.

The strongest demand has been for our portable power substations, also known as mine power centers. These are large, mobile power distribution units essential for supplying electricity throughout mining operations. Despite being portable, each unit weighs over 15,000 pounds and forms the backbone of a mine's electrical infrastructure. These units are seeing a significant surge in demand, particularly as feasibility studies and new operational projects multiply in response to high commodity prices.

### How are mines' electricity requirements evolving over time?

As mines move toward electrification of heavy machinery, the demand on the electrical infrastructure increases. Electrifying vehicles introduces an additional energy load that must be supported. While the core infrastructure remains the same, greater capacity and system resilience are required to integrate electric machinery. The primary challenge lies in ensuring the electrical systems can support the added load, rather than a complete overhaul of existing infrastructure.

### Can you tell us about your collaboration with OEMs and the importance of compatibility testing?

Adria is an independent company, and we do not manufacture mining machines ourselves. That independence allows us to collaborate with multiple OEMs. Compatibility is crucial to ensure our chargers work seamlessly with various electric vehicles used in mining. We engage in off-site collaboration to complete thorough compatibility testing. This guarantees that once equipment is delivered, it functions as intended without any integration issues. ■





**Éloïse  
Harvey**  
CEO  
EPIQ MACHINERY

#### What are EPIQ Machinery's origins and key sectors of operation?

EPIQ Machinery is a Québec-based equipment manufacturer with a global presence, providing material handling solutions for heavy industry.

#### Could you give us an overview of EPIQ's solution offering?

Everything we do is custom, which sets us apart in the material handling equipment sector. Our team of 250 engineers and technicians collaborates closely with clients, creating specialized engineering solutions grounded in EPIQ's proprietary technology – without relying on standard blueprints.

In the mining sector, our offering spans both material movement and refining. We manufacture autonomous, highly specialized custom vehicles, handling equipment, overhead cranes, rail and rail utility vehicles, and robotic systems for refining. We have implemented these bespoke solutions for clients such as the Iron Ore Company of Canada, ArcelorMittal, QIT-Fer et Titane, and Rio Tinto.

#### How is EPIQ integrating digital technology into its equipment, and what are its benefits?

Recently, through our new division EPIQ Digital – launched in September 2024 following the acquisition of Alizent Canada's metals and mining activities – we have advanced the digitalization of our equipment. We are delivering more connected solutions and supporting clients in realizing their Industry 4.0 vision. Our technology can fully remove human operators from certain plant areas, significantly enhancing both safety and productivity. These smart, connected systems enable faster and more informed decision-making, while also improving energy efficiency by ensuring equipment operates at optimal capacity.

#### How are you progressing towards the electrification of your equipment?

We are firmly committed to transitioning to a fully electrified fleet. At present, all of our autonomous vehicles are electric, and we are actively expanding electrification across the remainder of our equipment. ■



**Lionel Van  
Obbergh**  
Sales Director North America  
MAGOTTEAUX

#### How does Magotteaux serve Québec and Atlantic Canada?

Magotteaux operates a global network of foundries, exemplified by our Québec facility, active since the 1970s. The Québec foundry produces grinding media for major mining companies across Canada, supplying grinding balls designed to improve mineral recovery through favorable chemical interactions. This provides a measurable benefit to clients by enhancing extraction efficiency.

#### Could you introduce us to Magotteaux's key products for the mining sector?

Magotteaux offers an integrated suite of smart tools to optimize grinding and flotation performance. A key innovation is the MagoSense system, which provides real-time insights into mill conditions without requiring physical access. It measures critical parameters such as filling degree, pulp density, and ball trajectory during operation. When integrated with Magotteaux's automatic ball loading system, MagoLoad, the solution ensures continuous, precise ball addition and maintains consistent grinding conditions – enhancing both efficiency and process control. Further to this, MagoPulp monitors key flotation parameters – pH, Eh, and dissolved oxygen – downstream of the grinding circuit. Finally, MagoBulk provides real-time inventory tracking, helping ensure timely deliveries and uninterrupted operations for customers. We continue to work with strategic partners to advance automation, minimizing the need for manual intervention.

#### How is Magotteaux enhancing sustainability at mining operations?

Magotteaux leverages several sustainability levers. First is the product itself: grinding balls manufactured in Québec using 100% hydroelectric power and locally sourced scrap metal. Second, by optimizing the grinding process, customers can increase metal recovery while reducing energy consumption, enhancing both environmental and operational performance.

At an operation in Chile, we recently implemented a full circularity solution with Codelco. Used grinding balls gradually reduce in size during processing until they become too small. These used balls are then returned to us, and we recycle the metal to produce new grinding balls. Unlike other manufacturing methods, our cast balls can effectively reuse scrap metal, making the process highly sustainable. ■



**Giuseppe  
Campanelli**  
President North and Central  
America  
METSO

#### What benefits do Metso Plus technologies offer to customers?

Metso Plus, previously known as Planet Positive, is a suite of technologies designed to improve energy efficiency, reduce water consumption, and support customers' ESG goals. It includes both new innovations and enhancements of traditional equipment. For example, combining vertical stirred mills and high-pressure grinding rolls enables highly efficient flow sheets that reduce energy use.

#### How has Metso supported progress at Torngat Metals' Strange Lake project?

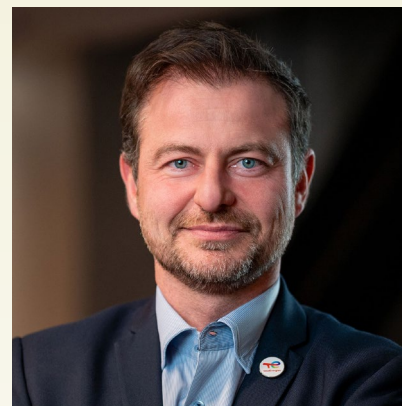
Metso has supported the Torngat Metals rare earth projects from its early stages, conducting extensive testing to help define the flow sheet. Unlike traditional commodities, rare earth processing is more complex, requiring detailed analysis to understand mineral compositions and recovery rates. As Torngat has advanced exploration and permitting, Metso has continued refining the process design and providing basic engineering support.

#### How are commodity price trends influencing Metso's activities?

Metso is closely aligned with broader industry trends: commodity prices are heavily influencing project activity. Gold is performing extraordinarily well right now, so those projects are moving at a faster pace. Iron ore and other base metal customers are also very active. In contrast, battery-related critical minerals are experiencing slower momentum due to depressed prices, with many projects paused at the pre-investment stage. Metso continues to support these with testing and flow sheet design, but typically sees more commercial activity once investment decisions are made.

#### What are Metso's key priorities for the remainder of 2025?

Metso's strategy remains focused on supporting customers through market cycles by staying close to their operations and new projects. This includes regionalizing resources, investing in local facilities and inventory, and offering technologies that improve project economics and environmental performance. ■



**Olivier  
Gauthier**  
President  
TOTALENERGIES  
MARKETING CANADA

#### What does TotalEnergies offer to the mining industry in Canada?

TotalEnergies Marketing Canada specializes in lubricants, delivering consistent, high-quality products across the country, including remote mining regions.

#### How has TotalEnergies' enhanced its Canadian distribution in recent years?

Back in 2023, we shifted from direct distribution to a partner-based model to better serve the vast Canadian market. By replacing third-party warehouses with trusted local distributors under a buyback system, efficiency and responsiveness improved significantly. The company also invested over CA\$6 million in a new 30,000-square-foot warehouse in Montréal, inaugurated in January 2025. Adjacent to our production plant, the facility includes 4,000 pallet spaces and six loading bays, streamlining operations from blending to distribution. Managing over 600 products, this centralized hub supports Québec deliveries and national distribution, enhancing stock reliability and positioning TotalEnergies for continued growth.

#### How can TotalEnergies' LabServices oil analysis help clients reduce their equipment's Total Cost of Ownership?

TotalEnergies' LabServices, launched in January 2025, provides easy-to-use sampling kits and delivers results in under a week, providing insights into engine, transmission, and hydraulic system health, accounting for harsh conditions like dust and extreme temperatures.

#### What benefits does TotalEnergies' range of synthetic technology engine oils offer?

In April 2025, TotalEnergies Marketing Canada officially announced its transition from mineral-based to synthetic technology engine oils. These can offer extended oil change intervals, enhanced engine cleanliness, energy efficiency and broader manufacturer approval. This combination delivers significant technical and economic advantages to customers. They also offer a lower carbon footprint than mineral oils.

Thanks to sustained development efforts, we have achieved a marginal difference in price between conventional and synthetic oils. ■





## Ross Waters

Chairman  
CGIS

“

Materials science continues to be a major driver of innovation in the valve industry.

”

### What is the current challenge in the valve industry?

One of the biggest challenges we see is the decline in valve expertise across the industry. Fewer young professionals are entering this field, and those who do often do not stay long enough to develop the deep application knowledge needed. At CGIS, we have learned that no valve is perfect – each one has its limitations – and our role is to understand the application well enough to ensure those limitations are not exposed.

Too often, decisions are driven by upfront cost rather than total cost of ownership, which can lead to serious failures. We have seen firsthand how a small savings on paper can lead to huge operational losses. One example – featured in a book I am currently writing – details how a US\$10,000 cost-saving choice led to nearly US\$1 million in downtime and damage.

That is why severe service valves matter. They require the right materials, the right design, and, above all, the right application knowledge. In 2010, CGIS helped define what severe service means in a standardized way, contributing to the MSS SP-161 standard. It is a resource the whole industry can now use to better align valve selection with real-world operating conditions.

### What recent technological advancements are shaping the future of valves?

Materials science continues to be a major driver of innovation in the valve industry. Advances in coatings and metallurgy are helping extend valve life in highly abrasive and corrosive environments, particularly in severe service applications. While some developments have improved abrasion resistance, challenges like erosion from turbulent flow remain areas of ongoing research and development.

At CGIS, we stay close to evolving trends in soft materials and elastomers, which are showing promise for higher temperature and chemical resistance. New formulations may soon offer better performance across a broader range of demanding applications. On the metallurgy side, exotic alloys and spark-resistant materials are being applied more frequently in autoclaves and oxygen-rich environments, especially in hydrometallurgical processes.

On the smart technology side, we represent Precognize, an Israeli AI platform that integrates with plant systems to detect anomalies and predict equipment failures. It gives

early alerts, allowing preemptive maintenance – critical as experienced technicians retire and institutional knowledge disappears.

### Can you explain CGIS's partnership with DHB Valves in Québec?

Success in Québec means more than just offering great products – it requires cultural fluency and a strong local presence. Recognizing this, CGIS partnered with DHB Valves, a respected Québec-based company with over 45 years of experience specializing in pressure relief valves. These valves are essential to many industries, given their legal requirements and frequent servicing needs.

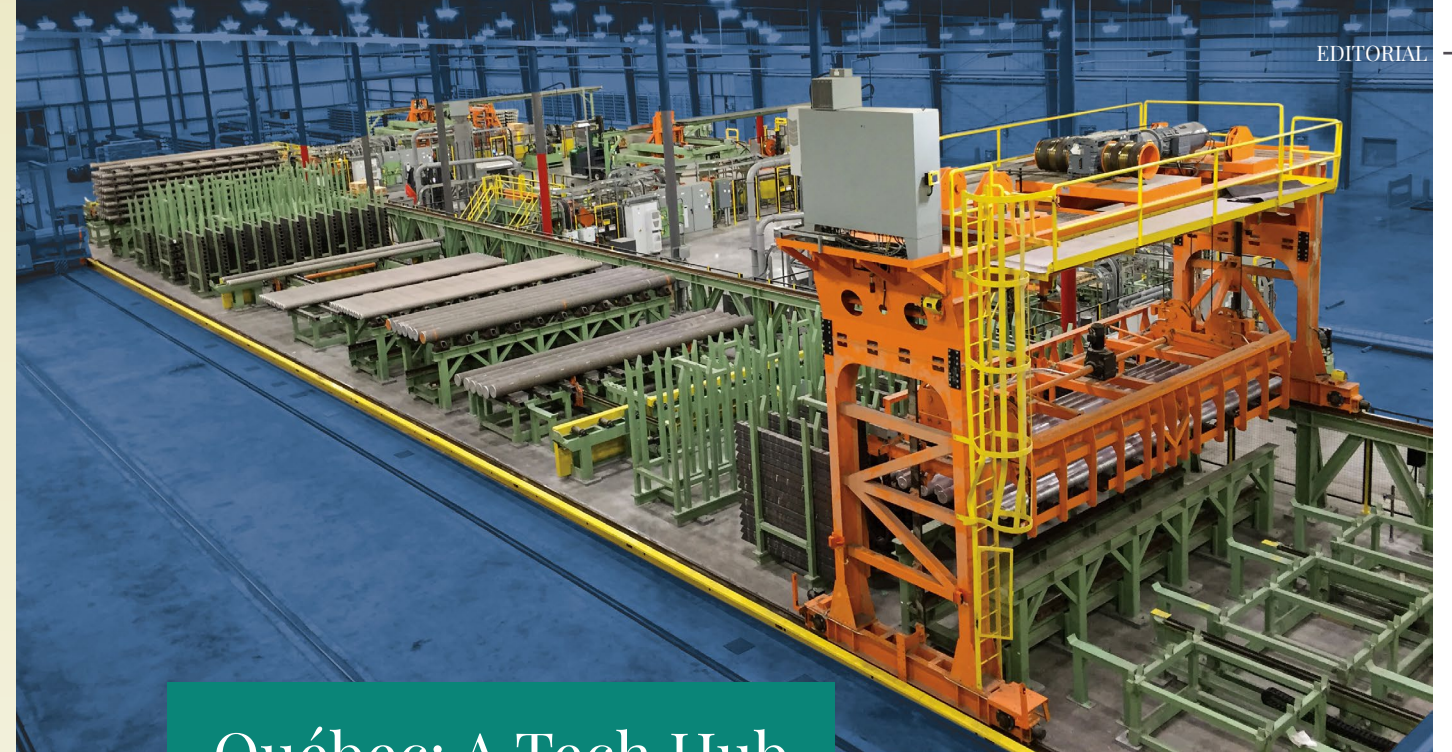
DHB continues to operate independently while benefiting from access to CGIS's broader severe service valve portfolio. This partnership has strengthened our market position in Québec, particularly in mining and processing sectors where advanced valve solutions are in high demand. We have also begun sending team members to support operations on the ground and are actively exploring opportunities to expand into Atlantic Canada, including potential facilities in New Brunswick or Newfoundland.

### What are CGIS's goals for the next year?

Our primary focus this year is on seamless global integration and continued growth. We are working closely with our recently acquired team in Australia to align operations, culture, and customer support with CGIS's values and standards. At the same time, we are expanding our international distributor network for DSS Valves, identifying partners who share our commitment to technical excellence and long-term customer success.

Talent acquisition remains a challenge across the industry, but we are investing heavily in hiring and training the next generation of valve specialists. We believe a strong, knowledgeable team is essential to delivering the level of support our customers expect.

We are also advancing our R&D capabilities to demonstrate how severe service valves, like those from DSS, perform under extreme conditions. Field testing and benchmarking remain a priority, as does our materials development program. By continuing to innovate with next-generation coatings and elastomers, we are ensuring our solutions stay ahead of evolving environmental, safety, and performance demands. ■



## Québec: A Tech Hub

### Full-stack mining innovation

Within Canada, Québec is recognized as a key hub for the development of high value-added technology. The Information Communications and Technology Council's 2030 outlook projected that by 2030, Québec's tech workforce would comprise a quarter of all tech jobs in Canada, with Montréal at its epicenter. The province boasts top universities for information technology studies, like McGill, HEC Montréal and Université de Sherbrooke, as well as ample public and private innovation funding schemes supporting R&D.

As became clear during GBR's research for this report, Québec's technology-forward economy also extends to its mining sector. The province's equipment and service providers are innovating across hardware and software, offering solutions for virtually every stage of the mining process, making mine planning and logistics more effective, discovering new resources, and improving the industry's environmental sustainability.

It begins before a potential mine has even been found. Geophysics has become an integral part of the modern explorer's toolkit, and in Québec, many companies offer a variety of techniques and technologies. "Here, it is not a question of whether to use geophysics," explained Gabriel McCrory, co-owner of Géophysique TMC, "It is about choosing the right method. Everyone understands that spending a little on geophysics can save significantly on drilling costs. As a result, geophysics is a standard part of exploration planning from day one."

That makes for a highly competitive and dynamic sub-sector, with its continued technological development exemplified by Abitibi Geophysics. The company's DasVision 3D IP Pro, currently in prototyping and expected to enter production in 2025, will provide users with day-by-day previews of their induced polarization (IP) survey results. Prior systems could only provide a final result once the survey was com-

plete and the hardware collected from the field, meaning opportunities to amend or extend a survey could be missed. "We are seeing the payoff from years of research, development and innovation. For our IP surveys, we have pushed to new depths while maintaining a high-resolution output," said Nadine Veillette, the company's president until her stepping down in May 2025.

CAUR Technologies is another Québécois geophysical technology company seeking to peer deeper beneath the surface. Utilizing proprietary seismic-sensing hardware, ambient noise tomography and AI, CAUR's solution can offer substantial savings over traditional seismic exploration methods, while also offering rapid turnaround and high-resolution imagery. "Our method can detect deeper deposits that would otherwise be invisible," asserted André Gauthier, VP business development and exploration.

CAUR's technology can sense and interpret seismic noise multiple kilometers underground. The company has ambitions for international expansion and has benefitted from





Québec’s governmental innovation funding. However, Jean-Philippe Mercier, CAUR’s president, believes that for companies like CAUR to grow beyond Canada, the province’s VC investment environment must increase its appetite for risk: “We need a more robust VC ecosystem in Québec if we want to see technology companies scale globally from here,” he reasoned.

Once a resource has been discovered and explored, a crucial next step is to create a plan of the future mine and its ore extraction. Traditional linear planning methodology, argued Benny Cohen and Bartira Carvalho from Québec-based KPI Mining, can result in lost value due to a lack of flexibility and “risky” decision-making. In what they called a “long-awaited breakthrough,” based on more than a decade of research at McGill and collaboration with major mining companies, KPI has brought to market a user-friendly stochastic mine planning solution. KPI’s technology generates many geological and operational simulations to optimize the mining value chain, with implications for value extraction, waste management, sustainability and beyond: “Optimized planning can delay or avoid disturbing communities and ecosystems. In one case, our solution allowed a company to delay the relocation of a village by 20 years,” said Carvalho, KPI’s director of corporate sales.

Operating mines often employ hundreds of people. Amid a widespread Canadian mining labour shortage, that often implies a need to source work from far-flung places – especially in a jurisdiction like Québec, where many mines are located in remote areas. That can entail a complex, fragile multimodal chain involving multiple journeys and perhaps even accommodation. Nomadis, a Montréal-based ‘human logistics’ software developer, offers clients an integrated platform to plan, book and track their workforce on the

move and on-site. “With most new projects located in remote regions, effective workforce logistics has become a strategic advantage. Increasingly, companies are flying in personnel from provinces such as Newfoundland and Labrador or British Columbia, underscoring a challenge we help address daily,” affirmed Jean-Philippe Lavallée, Nomadis’ founder.

Cutting-edge Québécois technology extends to the equipment used in day-to-day mining operations, too. In 2024, Arlyx launched its autonomous, electric, modular mining vehicle platform, following a grant from Québécois innovation funder Groupe MISA and collaboration with major mining companies. The vehicle offers benefits including time savings, safety, and zero-emissions operations. Yet Michael Samard, Arlyx’s CEO, argued that despite strong technical knowledge of robotics and AI, Canada’s mining sector can remain a difficult market for innovators to break into: “There is a cultural reluctance to adopt new robotics solutions domestically. Many Canadian robotics startups find their first clients abroad,” explained Samard.

Once materials are extracted, material handling and refining process come into play. EPIQ Machinery’s solutions provides solutions specialized for material handling and refining. EPIQ’s fully- customized, automated and electrified systems were further enhanced by the company’s 2024 addition of a new division, EPIQ Digital, which CEO Éloïse Harvey described as presenting multi-faceted benefits: “Our technology can fully remove human operators from certain plant areas, significantly enhancing both safety and productivity. These smart, connected systems enable faster and more informed decision-making, while also improving energy efficiency by ensuring equipment operates at optimal capacity.”

While not based in Québec, demand for CGIS’ cutting-edge valve solutions in the province is illustrative of its appetite for the latest and greatest in all aspects of the value chain. CGIS’ chairman, Ross Waters, explained how it continues to generate innovative solutions in the valve industry: “Advances in coatings and metallurgy are helping extend valve life, particularly in severe service applications. While some developments have improved abrasion resistance, challenges like erosion from turbulent flow remain areas of ongoing research and development.” The company has also implemented AI-based anomaly detection and failure prediction. CGIS distributes its severe services valves in Québec through its partner DHB Valve and is considering expansions into Atlantic Canada.

Taken together, these life cycle-spanning innovations underscore the depth and dynamism of Québec’s mining technology ecosystem. Anchored by world-class academic institutions, a supportive public funding landscape, and a growing base of entrepreneurial talent, the province provides fertile ground for the development of both hardware and software solutions tailored to the evolving needs of the mining sector. Yet if Québec is to consolidate its position as a global leader in mining innovation, it must not only nurture its technological strengths but also ensure that its most promising ideas are championed and scaled. The success stories outlined above offer a compelling blueprint. ■



Marc-Antoine Audet  
President and CEO  
SRQ RESOURCES

“

While many of the easiest deposits may already be known, new technology allows us to look deeper and smarter. Beyond 300 meters from surface, advanced tools are unlocking assets where we were previously nearly blind.

”



Jean-Philippe  
Lavallée  
Founder and CEO  
NOMADIS

**What does Nomadis’ product offer today?**

We offer a subscription-based cloud platform with multiple products and configuration models. Our clients can integrate it with their existing workflows, systems and suppliers to streamline their processes with a high level of customizability. The platform connects seamlessly with commercial airlines, travel agencies, HR, accounting, and access control systems, enabling end-to-end logistics and itinerary automation from an employee’s home to the work site and back. While our platform can cater to most clients with a vast array of features and integrations available “out of the box”, our team offers customized, turnkey solutions, including data migration, customization and personalized training. For complex deployments, on-site assessments and consulting ensure alignment between the platform and operational realities.

**How significant is mining in Nomadis’ business?**

Mining operations currently represent about half of our business, including major clients such as Agnico Eagle, IAMGOLD, Newmont, and Minerai de Fer Québec (MFQ), as well as many other projects of various scales.

**How does the platform enhance on-site safety?**

For safety, it is crucial to know who is on site, in transit, on shift, and so on. The Nomadis Platform can integrate with on-site swipe cards and scanners. During the Canadian wildfires in 2023, for example, some of our clients had to evacuate their camps, making a snapshot of workers’ locations an indispensable tool.

**Can Nomadis’ system help to alleviate the effects of Canada’s mining labour shortage?**

To remain competitive, companies must offer more than competitive wages – they must ensure appealing working conditions, particularly for rotational workers on demanding schedules. Efficient logistics, clear communication, and operational reliability play a key role in easing pressure on workers and their families. ■



BCo



BCa

Benny  
Cohen and  
Bartira  
Carvalho

BCo: President  
BCa: Director of  
Corporate Sales  
KPI MINING

**Can you introduce KPI Mining and its stochastic mining planning solution?**

BCo: KPI Mining originated from 15 years of research at McGill University’s Cosmo Lab, conducted in collaboration with major mining companies like Vale, Newmont, BHP and other major mining companies. About two and a half years ago, the consortium invited us to commercialize the research. Today, we are deploying this solution globally, offering a fundamentally different approach to mine planning by using stochastic optimization instead of traditional deterministic methods, resulting in more accurate, flexible, and value-driven planning outcomes.

**How have you translated academic research into a practical product for mining clients?**

BCa: The greatest strength of our work is that we have taken a complex concept and made it usable. Most mining professionals were never trained in stochastic methods. We are not just giving them a tool – we are working in an ecosystem development approach, providing the support and education necessary to help them use it effectively. When we start working with a client, we often begin with a proof of concept. In every case so far, the results have been so positive that the clients ask to move immediately to the next phase. That speaks to the power of transforming academic research into a practical solution that produces real results in the field.

**In what ways does KPI Mining’s technology support environmental and social sustainability?**

BCo: Our solution reduces waste by optimizing extraction and processing, increasing ore yield and lowering waste rock. It also minimizes energy use and chemical consumption, key sustainability goals. Additionally, it improves tailings and waste dump planning, reducing acid drainage risk and enhancing the overall environmental footprint of mining operations.

**What are your goals for the future?**

BCo: We want stochastic mine planning to become the default method used across the sector. ■





**Yvan  
Dionne**  
President  
PROMINE

**What has been your experience with integrating point clouds into mining workflows, and where do they provide the most value?**

Point clouds are useful in very specific applications, and do not automatically offer better production or increased profitability. They are most useful when surveying mining stopes to evaluate dilution. By comparing the actual excavation to the planned stope, users can determine where dilution occurred and adjust drilling, blasting, or support accordingly. They are also valuable in construction planning within the mine. For example, if a new electrical station or facility is being built underground, scanning the space ensures that prefabricated materials will fit properly. Another critical use is for monitoring ground movement for safety. Comparing point clouds over time can reveal deformations and help improve mine safety.

**How do Promine's tools enhance productivity and safety for clients?**

We recently focused on improving the rock mechanics component of Promine. One example is the Android application we developed for mapping geological structures in the field. Geologists can use this tool to quickly map faults, joints, and other features. Once the data is collected, it can be processed to automatically identify potential wedges. In active mines, geologists may only have a short window before shotcrete is applied, making the rock surface inaccessible for further observation. The app allows them to gather the necessary data rapidly. This supports both safety and operational continuity.

**Could you elaborate on other ways in which Promine's mobile app enhances mine operations?**

Our app is designed to streamline communication and decision-making directly at the mining face. For instance, when a development face exposes mineralized material, the geologist can use the tablet to estimate grade on-site. If the grade is above cutoff, they can immediately inform miners to send the material to the ore stream. We are also developing systems that use imaging and artificial intelligence to recognize ore and waste in real time, giving miners immediate guidance. ■



JPM



AG

**Jean-Philippe  
Mercier  
and André  
Gauthier**

JPM: President  
AG: VP Business Development  
and Exploration  
CAUR TECHNOLOGIES

**Can you give us an overview of the history of CAUR Technologies?**

JPM: CAUR Technologies was formed a year ago as a spin-off from GPR Geophysics to apply advanced technologies to mineral exploration challenges, starting with ambient noise tomography (ANT), but with a clear roadmap to expand into other advanced geophysical and geological technologies.

**What is ANT and why is it valuable for mineral exploration?**

JPM: The process involves deploying an array of sensors in a defined area to passively record seismic noise over a period of time. These recordings are then processed to create 3D images of the subsurface geology.

The method is cost-effective and environmentally benign. It does not require active seismic sources like explosives or heavy machinery. Deployment is straightforward, and the impact on the environment is negligible.

We have developed proprietary algorithms to transform this raw seismic noise into meaningful geological images. The process is computationally intensive, and we run our pipeline entirely in the cloud to ensure scalability and efficiency. AI and deep learning play a significant role in our processing pipeline. We use machine learning to automate aspects of data cleaning, pattern recognition, and interpretation. We are building a user-friendly interface for interactions with the processing pipeline and generation of reliable 3D models that help exploration geologists make informed decisions.

**Beyond cost-efficiency, what value does this technology unlock in mineral exploration?**

AG: Our method can detect deeper deposits that would otherwise be invisible. If you have two deposits separated by a zone of barren rock, traditional surface-based methods might miss the second one completely. ANT can detect both because it uses naturally occurring energy that propagates through all subsurface layers. This enhances the geologist's understanding and supports better drill targeting. We can also integrate ANT data with previous geological, geochemical, and geophysical datasets to refine interpretations. ■



**Nadine  
Veillette**  
President\*  
ABITIBI GEOPHYSICS

**What have been the most in-demand services over the last year?**

We are seeing the payoff from years of research, development and innovation in electromagnetic surveying and induced polarization (IP) resistivity surveys. Companies are appreciating the value of AR-MIT data we provide through our electromagnetics, which measures both the B-field and the dB/dT. For that, we have developed our own transmitter, loop configuration and receiver – the only setup in the world providing both data sets in one pass.

For our IP surveys, we have pushed to new depths while maintaining a high-resolution output.

**Could you tell us about your new technology, DasVision 3D IP Pro?**

The new system works through a distributed array of receivers connected together in a mesh network. This offers multiple benefits. All the data is sent automatically in a central console where we generate a preliminary projection of the data model, building up a picture of the anomalies throughout the survey process. That can highlight if the survey's design should be amended or extended – previously only possible at the end. ■

\*until May 2025.



**Gabriel  
McCrory**  
Co-Owner  
GEOPHYSIQUE TMC

**How do you view the role of AI in geophysics?**

Many clients now consolidate all their information – geophysics, drill results, resource projections – into unified 3D models. With that integration, computers can process and analyze the data much faster than humans. The results are highly valuable, and the role of geophysicists is becoming more about validating and refining the AI-driven insights rather than doing all the interpretation manually. AI helps them focus on the most meaningful work.

**How have drones made geophysical surveying faster and cheaper?**

With drones, we can survey 100 to 200 line-km per day at a much lower cost than ground, helicopter or fixed-wing aircraft. Drones also now fly low enough to achieve nearly the same resolution as ground surveys.

**What makes Québec such a strong environment for growing a geophysics business?**

In Québec, geophysics has been integrated into exploration strategies since at least the 1970s. Everyone understands that spending a little on geophysics can save significantly on drilling costs. Geophysics is a standard part of exploration planning from day one. ■



**Santiago  
Mayor**  
President and CEO  
GEOMATIC WORLD

**Could you tell us more about Geo World Insight Technology?**

With 70% of mineral deposits hidden under thick surface cover, discovery is increasingly difficult. To tackle this, Geomatic World developed Geo World Insight Technology – a platform combining geoscientist data and AI-powered tools to improve discovery accuracy and reduce costs.

**How does Geomatic World tailor its services to clients of different sizes and regions?**

In Québec, Geomatic mainly assists junior exploration companies. Québec's dense forests make geophysics more practical than remote sensing, and the region's robust geophysical industry allows smaller companies to access affordable services. Many juniors lack their own predictive analysis tools, making Geomatic a natural fit.

**What are the company's goals looking ahead to 2026?**

Our goal for 2026 will be to start our own exploration activity. We are currently seeking investment to help us move beyond just providing our technology as a service, to deeper partnerships in which we discover new targets and properties ourselves. ■





## SERVICES

“

Québec and the Atlantic provinces offer fertile ground for growth. The potential is strong, especially with public and private investments supporting infrastructure and innovation.

”

Mario Rouillier  
President  
**GROUPE ROUILLIER**

GBR Series  
QUÉBEC AND ATLANTIC CANADA MINING 2025

Image courtesy of Nolinor Aviation



# Engineering, Construction and Project Management

## All about timing

In 2024, not a single new mine began production in Québec and Atlantic Canada. This paints a somewhat concerning picture. Despite hosting two top-10 global mining jurisdictions, large reserves of critical minerals and precious metals, and a dynamic and mature industry, even eastern Canada

can experience fallow years. It has been well established that if demand for critical minerals grows as predicted, many new mines will be required. With global trade tensions bifurcating supply chains between East and West, every year without new production coming online in eastern Canada kicks the can not only

down the road, but towards the precipice, as major, strategically precarious supply shortages loom ever closer.

Against that backdrop, a segment of Québec and Atlantic Canada's mining industry playing a significant role in the advancement of key projects are its engineering, project management and construction service providers. Firms in this sector act as the industry's execution engine, playing a crucial role in ensuring projects are delivered on-time, on-budget and in compliance with provincial and federal ESG requirements – while also driving forward the implementation of sustainability and industry 4.0 principles.

G Mining Services, a Québec-based provider of services from economic and engineering studies through to construction, has been engaged in work at some of the province's most high-profile development projects in recent years. That includes PMET Resources' Shaakichiwaanaan lithium project, with engineering and feasibility study results anticipated in September 2025, and Arcadium Lithium's (now Rio Tinto's) Galaxy project, two of Canada's largest critical mineral prospects. Asked what 2024's lack of new mines might indicate about the industry, Michael Gignac, G Mining's VP finance, stressed that the industry is cyclical by nature, and anticipated more activity in coming years: "This is all about timing. Projects need permits, a good market price and financing to align to move forward. Though it seems 2024 was slow, things will pick up again. We also saw a num-

ber of major acquisitions in Québec in 2024, which indicates faith in the province's mining industry."

Gignac nevertheless added his voice to the chorus calling for accelerated permitting timelines. There are few aspects of the mining industry in Québec and Atlantic Canada that inspire more unanimous agreement than the notion that it takes too long to start a mine. As mentioned earlier in this report, these calls go right up to the top of the Canada's provincial and federal governments, with both Québécois Premier François Legault and Prime Minister Mark Carney seeking more rapid project approvals.

Between 2010 and 2019, new mines coming online in Canada had been discovered an average of 17 years prior to their first production. "Issuing permits faster than other jurisdictions would create a competitive advantage. That would be a catalyst for the whole industry. With the US also moving to streamline permitting, it is turning into a race to attract more capital," contended Gignac.

### Sky-high standards

Another common theme is a conviction that acceleration is possible without sacrificing one of Canadian mining's great strengths: its world-class environmental, social and governance (ESG) mining standards. Industry stakeholders broadly acknowledge the need for exacting assessments, close community engagement and delicate operational decision-making, even if they see ample space to cut back on onerous bureaucracy. Frank Mariage, a partner at legal firm Fasken, summarized this tension: "Canada has spent more than 50 years building its regulatory framework, and the result has been vastly improved industry standards. We do not want to compromise those world-leading practices, but we must find ways to bring projects to fruition more quickly."

EY's Patrick Bertrand-Daoust recognized the critical importance of the eastern Canadian provinces' high standards, even while stressing that operators face some overbearing bureaucracy: "While some view permitting

and environmental studies as overly burdensome and causing delays, the government must balance process efficiency with community needs. There may be opportunities to reduce administrative burdens," he said. In EY's mining survey, environmental stewardship ranked as the second-highest risk for companies in 2025.

Legal firm McCarthy Tétrault's partner Dominique Amyot-Bilodeau put it simply: "The focus remains on balancing efficiency with world-class environmental oversight."

Dominic Tremblay, VP and market lead for minerals and metals in North America at Montréal-based global engineering firm AtkinsRéalis, maintained: "Streamlining does not mean the processes will be less thorough. On the contrary, we believe that streamlining permitting processes must be done while upholding rigorous environmental standards and social integrity."

AtkinsRéalis saw strong growth through 2024 in Québec, and implemented a range of infrastructure proj-

>>>77



SEVERE SERVICE VALVES AUTOMATION  
SALES & SERVICE SOLUTIONS




**A WORLD WITHOUT VALVE PROBLEMS**

cgis.ca



## Building Together

Gratefully providing quality engineering, project development and construction services to the mining industry since 2006.

**How may we assist in de-risking and de-stressing your project?**

**G Mining Services**

www.gmining.com  
info@gmining.com  
450-465-1950





## Michael Gignac

VP Finance  
G MINING SERVICES

“

In Québec, where juniors have been unable to develop a project, companies with greater financial and technical capabilities have acquired promising projects to progress them faster. I see that as a positive.

”

### What projects has G Mining Services been working on recently?

Our project at Tocantinzinho in Brazil finished in 2024, and we will soon be completing detailed engineering at Foran's McIlvenna Bay project in Saskatchewan, where we are also managing construction. At Oko West in Guyana, we finished a PEA and moved immediately to feasibility, with results released in April 2025. In Ecuador, we will be advancing feasibility study from July 2025 at SolGold's Cascabel project; and on Lundin Gold's expansions at Fruta del Norte.

In Québec, we are in the final stages of engineering and feasibility study at PMET Resources' Shaakichiuwaanaan lithium project, with results expected in September. At O3 Mining's Marban Alliance gold project, we also worked on the pre-feasibility study prior to the company's acquisition by Agnico Eagle. Rio Tinto's acquisition of Arcadium Lithium means they are in a transition period, but we are hoping for a positive construction decision soon at the Galaxy lithium project, where we completed previous engineering and other work.

### No new mines came online in Québec in 2024 – what does that indicate about the sector?

This is all about timing. Operations need permits, financing and the market to align to move forward. Though it seems 2024 was slow, things will pick up again. We also saw a number of major acquisitions in Québec in 2024, which indicates faith in the province's mining industry. Where juniors have been unable to develop a project, companies with greater financial and technical capabilities have acquired promising projects to progress them faster. I see that as a positive.

### What changes do you expect with regard to permitting in Québec?

There is a desire to speed up permitting. At the end of March 2025, François Legault commented on his intention to reduce bureaucracy to accelerate mine development in Québec, and Mark Carney has said the same for Canada at large. Governments should want these projects to go ahead – they create growth and jobs.

If Québec could issue permits faster than other jurisdictions, it would create a competitive advantage. That would be a catalyst for the whole industry. With the United States also moving to streamline permitting, it is turning into a race to attract more capital.

### Where is G Mining Services expanding its international operations?

We opened our own office space in Belo Horizonte, Brazil in 2024, with a growing team of 15 employees. Our success at Tocantinzinho has served as excellent marketing. Many projects across Brazil have historically been completed late and over budget, so our demonstration of on-budget, on-time delivery has caught the industry's attention.

Elsewhere, we have some interesting prospects in the pipeline in Europe, and are seeing a lot of demand in South America.

### What led to SolGold selecting G Mining Services for work at Cascabel?

Ecuador can be a challenging jurisdiction. G Mining Services benefits from a lot of experience in the country and our strong track-record at Fruta del Norte. Additionally, SolGold has Franco-Nevada and Osisko Gold Royalties among its major stakeholders, both of which we have good relationships with.

### How are commodity price dynamics shaping demand for G Mining Services' offer?

Gold's unprecedented price rise through 2024-25 has generated more demand from gold-focused companies. With high prices, many projects become economically feasible.

We have also seen a steadily increasing demand in copper, including from juniors. Though the copper price has seen more volatility, there are still numerous copper projects in development, like Foran's McIlvenna Bay. A challenge with copper is that projects typically demand high CapEx, so are harder to finance. As G Mining Services continues growing we are keen to take on the challenge of large-scale copper project work.

### What are G Mining Services' priorities for the rest of 2025?

Across our international offices, we seek to grow headcount at all levels. Of course, we want to keep helping our clients succeed in their objectives, and hope they will spread the word about our good work. We are also looking at ways to integrate AI in our business to find new efficiency and productivity gains. Lastly, we are examining the possibility of creating a new copper-focused mining company, as we did with G Mining Ventures in the gold space – that project is only in its early stages, but I am confident we can repeat our success. ■



## Dominic Tremblay

Vice-President and Market Lead – Minerals and Metals  
North America  
ATKINSRÉALIS

“

To maximize its potential, it will be crucial to break down silos between mining companies, communities, and government in any accelerated delivery framework.

”

### How has AtkinsRéalis' Minerals and Metals business grown over the last year?

A surge in demand for our services has led to revenue growth in Québec of over 30%, driven by new contracts and project expansions, and a 40% growth in team size.

On the technological front, we continued to integrate digital transformation into our portfolio, using advanced data analytics, automation tools, and new software to enhance operational efficiency while mitigating risk.

### What are the company's key offers to the mining sector in Québec and Atlantic Canada?

By leveraging our global expertise and local capabilities, our team is actively collaborating with existing mines to optimize their operations and ensure sus-

tainable practices. We are also developing new feasibility studies for upcoming projects, offering our clients comprehensive analyses, and strategic recommendations as accelerated permitting schedule options or PMO solutions.

Beyond these initiatives, we are handling engineering and procurement mandates for several clients. This entails designing innovative solutions, managing procurement processes, and ensuring efficient fulfillment of all project requirements.

### How are commodity prices shaping project development?

In the gold sector, higher prices are driving companies to accelerate project development to capitalize on favorable market conditions. In the critical minerals sector, despite lower commodity prices, there is significant momentum toward localizing supply chains due to their strategic importance in technology and renewable energy. While immediate development has slowed, clients are positioning themselves for future opportunities.

### What effect will new infrastructure incentives from Canada's government have on the mining industry?

The First and Last Mile Fund will be a key differentiator for Canada's mining sector, driving projects in regions with infrastructure challenges. It is a vital initiative by the Federal government to improve project economics, while also enhancing environmental and social sustainability, and accelerating timelines. To maximize its potential, it will be crucial to break down silos between mining companies, communities, and government in any accelerated delivery framework.

As for the removal of the federal review for major projects, it is another important step toward speeding up project delivery. Streamlining does not mean the processes will be less thorough. On the contrary, AtkinsRéalis believes that streamlining permitting processes must be done while upholding rigorous environmental standards and social integrity.

### How does AtkinsRéalis build mutually beneficial relationships with Indigenous communities?

AtkinsRéalis is firmly committed to fostering mutually beneficial relationships with Indigenous communities that are guided by the principles of respect, collaboration and sustainability. In 2024, the company received Partnership Ac-

creditation in Indigenous Relations, an important and significant milestone. Throughout our operations, our firm strives to honor Indigenous rights and culture, and we actively recruit Indigenous people.

### What challenges can projects face in implementing sustainable practices?

Several obstacles can hinder the implementation of sustainability practices, including cost, risk, innovation, data, design, and understanding of these technologies, resource availability, and stakeholder engagement. Overcoming these challenges requires a comprehensive approach that balances financial constraints with the long-term benefits of sustainability.

AtkinsRéalis has adopted a holistic approach that prioritizes the quality of data, and the systems needed to analyze and visualize it. Additionally, we have worked to strengthen stakeholder engagement, a crucial component of mining projects, to ensure effective collaboration.

A common challenge in some projects is effectively demonstrating progress on key sustainability initiatives, such as water conservation, carbon emission reduction, and community engagement outcomes. To address this issue, AtkinsRéalis developed a suite of innovative analytical tools that accurately track and measure these vital metrics.

As for cost, it remains the main barrier to integrating sustainability initiatives. We work closely with our clients to understand their specific needs and develop tailored strategies that maximize efficiency and minimize risks. This can include helping our client understand the cost of inaction and/or course-correcting a decision that leads to lost time, disrupted operations, increased expenses, and wasted resources.

### What is AtkinsRéalis' Minerals and Metals strategy for the remainder of 2025?

We pride ourselves on delivering global expertise with local capabilities, collaborating with other engineering firms, suppliers, and stakeholders to ensure we provide holistic solutions. Additionally, our pit-to-port offering allows us to comprehensively tailor solutions to client needs, mitigate risk, and optimize efficiency. With over 40,000 employees worldwide with expertise across various disciplines, we are confident in our ability to provide customized solutions to the mining industry. ■



# The Project Owner

## The decisive factor in capital project success



**Riad Faour**  
President and CEO  
PROGESYS

Capital projects in mining are among the most ambitious undertakings in the industrial world. They involve important financial commitments, cross-disciplinary teams, many stakeholders, and high degrees of uncertainties related to the specific project or the market conditions. Despite decades of innovation in contracting strategies and project controls, the sector continues to grapple with a sobering reality: most large-scale projects still miss their targets. Industry studies repeatedly confirm that more than 60% of major projects suffer significant overruns, with average cost and schedule impacts often exceeding 40%. This raises a critical question: Why do projects with cutting-edge tools, experienced contractors, and robust technical expertise still fail to meet expectations? The answer, supported by rigorous research, is that the project owner plays the defining role in steering projects toward or away from success.

### More than a financier

The Construction Industry Institute (CII) has shown empirically that projects with strong and active owner involvement deliver 20–30% better results in cost and schedule predictability. The message is clear: Owner absence or quality of involvement is the single greatest project risk. Analyses by leading firms such as McKinsey, PwC, and EY have reinforced the same conclusion. Projects succeed not because risk is transferred to contractors, but because owners remain engaged, disciplined, and accountable throughout the process. This finding demands a shift in how mining companies and other capital project sponsors view their role. Owners are not simply the client team or the financial stakeholder. They are a major part of outcomes. Their leadership, decisions, and level of presence define whether a project generates value or falls into the cycle of disputes and overruns.

### Two decisive moments for owners

Two moments stand out as particularly critical in shaping outcomes.

The first is the project's beginning. Early activities such as defining scope, setting clear success criteria, establishing the governance structure, identifying the adequate delivery model or contractual strategy, all determine the foundation on which everything else will be built. When owners provide clarity of scope, lead risk identification, and align

stakeholders from execution to operation, they create an environment where parties and teams can execute successfully. However, that stage remains a challenge for any organization.

The second decisive moment is the transition to operations. Commissioning and startup form the bridge between capital expenditure and value creation, yet they are often underestimated in scope and complexity. Owners who actively oversee operational readiness, ensure alignment between technical and operating teams, and maintain a sharp focus on safety protect the investment and the years of effort in planning and execution. Projects that neglect this handover risk delayed revenues, asset failures, and safety incidents, and can erode business value at the very point it should be realized.

### Leadership and presence define success

Across these moments owners must be active participants, aligning stakeholders, making timely decisions, and safeguarding the project objectives. They must prioritize safety as a non-negotiable value, recognize that risk cannot truly be outsourced. Contracts, controls, and systems cannot replace the owner's leadership. Strong project owners provide the clarity and direction that enable integrated teams of contractors, engineers, and operators to succeed despite the inherent complexity of mining projects. In our support to project owners over the past two decades we have held four values: Leadership, Safety, Open-mindedness, and Integrity. We believe these values to be essential for building owner teams or integrating in owner teams to support them.

### Powering project owners for global success

As the mining sector faces higher complexity, tighter regulations, and greater expectations for sustainable performance, empowering owners becomes the defining lever for improving capital project delivery. This is where organizations like Progesys bring a decisive impact. Progesys is powering project owners around the world to plan, execute, and deliver successful capital projects by focusing on what matters most: effective project management and a seamless transition to operations. With tailored solutions, owners are equipped not only to protect project value but also to accelerate the benefits of their massive investments. The reasons for Progesys success in this field is related to all the factors aligned towards empowering project owners: independence which means that all Progesys contracts are with project owners, type of resources with high level of adaptability and interpersonal qualities to blend in existing owner teams, organization culture of excellence with three brand promises: Get things done, be responsive, and foster a fun and professional environment.

### Conclusion

The evidence is unequivocal: capital projects succeed or fail mostly because of the quality of the owner's leadership. By embracing their role and remaining engaged, project owners have the power to change the trajectory of their projects. Strong owners, supported by independent partners, like Progesys, create the conditions for projects not only to succeed but to unlock lasting value for their companies and stakeholders. ■

73 &gt;&gt;

ects in the Atlantic region including energy generation and road building. Looking beyond just permitting processes, projects seeking to advance their development also face other hurdles including straitened financing amid commodity price volatility, regulatory slowdowns and the myriad effects of geopolitical tension and uncertainty. Tremblay acknowledged that progress on critical mineral development in Québec and Atlantic Canada has been slowed in the short-term by low commodity prices, with AtkinsRéalis' clients "positioning themselves for future opportunities" – in other words, awaiting a more positive and stable market.

Moose Mountain Technical Services (MMTS) is an engineering collective with a British Columbia base, offering solutions to clients across Canada, including extensive work in recent years at the Touquoy open pit gold mine in Nova Scotia. MMTS leverages a network of worldwide collaborators to explore innovative practices and cutting-edge technologies in decarbonization, automation and mine design. Company president Jesse Aarsen suggests that Canada could still learn from the rest of the world: "Exposure to global methodologies allows us to identify opportunities and new approaches that may not yet be widely adopted in North America," he said.

### The race to the starting line

Even once a development project has completed all its necessary studies and compliance activities, its final investment decision may be delayed by the wait for the right moment. With 2025 presenting all manner of uncertainties, a number of mining projects in Québec and Atlantic Canada are experiencing delays.

PwC's Maxime Guilbault described an atmosphere of "significant uncertainty," with tariffs just one factor among many that may impact projects in the near future: "Many projects in Québec are slated to begin production within the next three to six years, and it is difficult to predict the trading environment at that time," he said.

Riad Faour, president and CEO of Québec-based, globally operating construction and project management firm Progesys, has seen this first-hand: "Funding for these projects, sourced globally, is increasingly impacted by geopolitical uncertainty. As a result, many projects fell behind schedule in the first half of 2025," he said.

Moreover, while it is one thing to advance a project from discovery to development, it is another to actually begin producing. What was in large part a primarily theoretical exercise – modelling, economics, permitting, engineering, planning – turns suddenly into a distinctly more physical endeavor, as buildings go up and machinery digs down. It is no sure thing that this transition will proceed smoothly. Active mines can draw many hundreds of individuals and tens of suppliers, contractors and other stakeholders into their orbit, requiring precise coordination to ensure safe, efficient and productive operations. Faour explained the importance of ensuring all those moving parts are synchronized: "With only one chance to start a plant successfully, the objective is to ensure that every function – HR, IT, supply chain, operations, and maintenance – is fully aligned and prepared by day zero." Ultimately, eastern Canada's mining sector will be defined by its ability to adapt swiftly, balancing opportunity, resilience, and responsibility. ■

# PROGESYS



## GET IT RIGHT FROM THE START

**Complete Project  
Management and  
Transition to  
Operation**

Contact:  
**Rami Faour**  
VP Business Development  
ramifaour@progesys.com

progesys.com





# Water Management

## The alchemy of added value

The mining industry's approach to water is not what it once was. A formerly primarily reactive approach has evolved into an early-stage, life-of-mine planning consideration, drawing in considerations of water treatment, circularity and reclamation. This change has arisen from multiple points of origin. Regulations governing water use have grown in number, scope and stringency. Communities have grown more aware of their rights and the risks poor water management can pose to their lives, and more vocal about protection and mitigation. At operations around the world, climate change-driven floods and droughts have made the tremendous power and treasured value of water to mining operators all the more obvious.

Through its responses to those developments, as well as an increased realization of its long-term benefits, not least due to high-profile and harmful failures around the globe in recent decades, the mining industry has adopted a proactive approach to water management. Today, some mines – though, it must be stressed, by no means all – output waste water in a cleaner state than when it entered their operations. This represents a still-underappreciated paradigm shift in the industry's operational practices.

There is an additional rising tide of acknowledgement not only of the need for sustainability-minded environmental protection, but of the potential to unlock new value and improve mining efficiency through the implementation of innovative water management science and technology. Tailings storage facilities – once seen as just that, storage – have emerged as an additional source of once-disregarded, now-critical minerals. This can offer a double benefit, with tailings re-processing offering an opportunity for dewatering or site reclamation, thus delivering both environmental and economic gains. Recent examples in this region include Cartier Resources' Chimo Tailings project, seeking to recover gold, or CoTec's reprocessing of tailings at Lac Jeannine for iron extraction.

This amounts to a textbook value-added proposition. Mine waste would otherwise be discarded, presenting a liability due to storage and maintenance costs. Instead, it can be transformed into a new source of revenue, with the

latest methods offering opportunities to recover in-demand materials including lithium, rare earths and precious metals. If it were not based on the achievements of rigorous science and technological prowess, one might even consider it alchemy. David Oliphant, Veolia Water Technologies' VP business development, offered his perspective: "It reduces environmental impact and disposal costs by minimizing waste volume, helps meet environmental regulations by removing contaminants from discharge water, and improves overall resource efficiency and sustainability. Additionally, the sale of recovered materials can offset water treatment costs." Veolia offers integrated and mobile water management solutions including water and wastewater treatment, tailings dewatering and water reuse systems.

Water itself is valuable, too. It is a critical asset at virtually every stage of the production cycle across various applications. Without water, you cannot mine. Although generally blessed with an abundance of water, Québec and Atlantic Canada's mining companies must also consider the water supply needs of their local communities, as well as the provinces' distinct seasonality. Furthermore, making use of water can demand large amounts of energy, and presents other challenges including corrosion. Therefore, water's efficient use, squeezing every drop of value from every drop of water, is another area where operations are increasingly optimizing for both economic and environmental benefit.

ASDR is working to deliver ever-more efficient water management solutions. The company's water management division has seen major growth since 2020, including the acquisition of New Brunswick-based water treatment and dredging firm ECO Technologies, and the development of new innovations. For example, ASDR has adapted its ECOMUD solution, developed in partnership with Eldorado Gold, to offer closed-loop water systems, optimized sludge processing, and lower energy use in drilling campaigns, for use underground. ASDR is implementing the adaption, known as ECOMUD LITE, with two clients aiming for net-zero mining operations. "We see this type of innovation and development as a win-win: The client optimizes their operations, and ASDR gets to test and design new technologies," said Marco Rebuli, ASDR's VP of business development.

Although the industry's approach is much improved, it is still not perfect. In eastern Canada, harmful chemicals continue to migrate into water sources, with PCBs (polychlorinated biphenyls, synthetic organic chemicals whose industrial and commercial use has been banned in many countries since the 1970s) one culprit. Although no longer employed in novel applications, PCBs remain present in some older equipment still used in operations through the mining value chain. As some large operations run for many decades, the potential for build-up of harmful chemicals like PCBs is heightened.

Offering some relief is Sanexen's PCBD, a mobile solution for the destruction of PCBs, as well as the company's treatments for other pollutants. "This specialized technology has positioned the company as a key player in a niche market where regulatory standards are stringent and the sources of pollution can be complex," Nathalie Viens, Sanexen's CEO, remarked. She emphasized the need for collaboration between business, government and communities to achieve effective, long-term water management. ■



SA



MR

## Stephen Authier and Marco Rebuli

SA: President Director

MR: VP Business Development

ASDR

### What developments would you highlight in recent years?

SA: Over the past five years, we have made significant progress, particularly in the areas of water treatment and technology, as well as our ability to deliver projects of up to US\$100 million in capital expenditure. Our strength lies in delivering turnkey projects and leveraging our fabrication capabilities to pre-fabricate and modularize as much as possible. We recently completed a \$40 million water treatment plant project for a major mining company in Ontario, which has led to follow-up work – a strong indicator of success.

MR: ASDR has almost tripled its revenues in recent years and our ambition for growth is yet to be quenched. Our geographic footprint has also expanded. Five years ago, around 90% of our revenue came from Québec. Now, 60% comes from outside the province, across Canada and internationally, including Europe, Morocco and other parts of Africa. We were also proud to be awarded Business of the Year and Best Employer of the Year by the Val d'Or Chamber of Commerce in 2024, reflecting both our innovative approach and the great support we have received from Québec's mining industry.

### How has ASDR's ECO Technologies subsidiary grown since its acquisition in 2022?

SA: The integration of ECO Technologies, a New Brunswick-based company, into ASDR was very strategic as it allowed us to expand our range of water treatment solutions. We now carry out projects within the government, mining and industrial sectors across Canada. This acquisition was also very tactical as it allowed us to acquire ECO Technologies' fleet of very specialized Amphibex dredges, which are ideal for tailings ponds given their ability to operate in as little as 1 meter of water. We since acquired larger sized Amphibex units and now have the largest fleet of Amphibex dredges in Canada.

MR: We are helping clients by providing end-to-end solutions to optimize their water treatment and management needs. With many mine closures and reclamation projects in the pipeline in the coming years, we foresee continued growth in this area.

### How is ASDR helping clients achieve net-zero emissions?

MR: We are currently working with two clients – one in Europe, one in the Ring of Fire – who are seeking cutting-edge solutions for net-zero mining. These are both underground

projects, so a key goal is to ensure as much water stays underground as possible, thus reducing energy consumption and environmental impact. Among the innovative solutions proposed, we adapted our ECOMUD LITE technology, originally developed to recycle water and cuttings during drilling campaigns, to underground operations. In doing so, we have enabled up to 80% water recovery underground and simplified sludge management, while also reducing the amount of water sent to the surface and wear and corrosion on pumps.

### What about digital transformation projects?

SA: We are currently investigating various ways to integrate AI into our operations, our Health & Safety team has deployed a Digital Confined Space Monitoring (DCSM). This technology improves health & safety conditions and improves productivity during shutdown maintenance work. It also addresses the challenge of manpower availability by reducing the need for on-site personnel by about 75%. In addition, it drastically cuts down on environmental impact caused by travel and logistics.

### How do partnerships drive innovation in ASDR's technologies?

MR: Our ECOMUD technology originated as an environmental demonstration project with Eldorado Gold, who were seeking solutions to optimize their sustainability in all aspects of operations. They approached ASDR for a system aimed at maximizing water recirculation, facilitating sludge management and reducing power consumption during drilling operations.

This was a great strategic partnership as Eldorado allowed ASDR to keep and commercialize the ECOMUD intellectual property. This type of innovation and development is something we have worked on with other clients too, including Agnico Eagle and Rio Tinto. We see it as a win-win: the client optimizes their operations, and ASDR gets to test and design new technologies.

### What are ASDR's priorities for the rest of 2025?

MR: We have a number of products which we hope to launch by the end of 2025, some of which will be game changers for ASDR. As is the case across the industry, strategic recruitment in a stretched labour market is another priority. We may also look at some more acquisitions, and further expand across Canada. ■





**David  
Oliphant**  
VP Business Development  
**VEOLIA WATER  
TECHNOLOGIES**

#### Are commodity prices affecting demand for Veolia's solutions?

We have been very active in the mining space in general, but we are seeing major activity especially in the gold sector and critical minerals, as shifting geopolitical and market conditions have led to increased interest in these types of projects. For example, in early 2025, we began Phase-II work on a gold project in Québec, following the successful completion of Phase-I in 2024.

#### How does Veolia's GreenUp strategic program support sustainability in the mining industry?

Veolia's GreenUp strategic program is focused on accelerating ecological transformation through sustainability and resource efficiency. In the mining industry, it supports the adoption of advanced water management, waste reduction, and decarbonization solutions to help mines operate more sustainably and meet environmental regulations. We're doing this by deploying advanced water treatment technologies to minimize water consumption and promote water reuse at mining sites. We also support clients in reducing their environmental footprint through solutions for treating acid mine drainage, recovering valuable by-products, and achieving zero liquid discharge. Digital tools and real-time monitoring are being used to optimize water management and energy use.

#### What value can mineral recovery add to mining operations?

Mineral recovery brings significant value to mining by creating new revenue streams through extracting valuable minerals and metals from waste streams that would otherwise be discarded. It also reduces environmental impact and disposal costs by minimizing waste volume, helps meet environmental regulations by removing contaminants from discharge water, and improves overall resource efficiency and sustainability. We help to ensure that clients can meet and exceed the demands of their local communities and environmental regulatory frameworks, which have become increasingly stringent. ■



**Nathalie  
Viens**  
CEO  
**SANEXEN**

#### What are the most in-demand services Sanexen provides to the mining industry today?

In the mining sector, Sanexen concentrates its efforts in three primary areas. One of these is polychlorinated biphenyl (PCB) contamination, which continues to pose a challenge – particularly in the aluminum industry, where substantial power requirements often lead to on-site electrical infrastructure. Second, increasing regulation of water discharge is driving demand for mobile treatment solutions, especially around tailings ponds and site runoff. Third, mine closure and expansion projects often uncover contaminated soil and water, requiring thorough decontamination and final site landscaping and greening.

With Canada's recent positioning regarding critical minerals on its territory, environment will be to the forefront of the federal government strategy and will require the innovative solutions Sanexen is able to bring.

#### Can you describe your ALTRA PFAS water treatment technology in more detail?

Sanexen's ALTRA PFAS treatment solution is a mobile, insulated and containerized foam-fractionation to extract PFAS from contaminated water. In mining, PFAS contamination typically arises from explosives or firefighting foams. The system's mobility allows deployment across various sites, even in northern sites, as their systems are insulated and heated, making them operational in wintertime.

#### How does your proprietary medium for PCBs differentiate Sanexen?

We have developed and trademarked a proprietary treatment medium designed to remove contaminants such as PCBs, dioxins, and furans from water-based effluents. This specialized technology has positioned the company as a key player in a niche market where regulatory standards are stringent and the sources of pollution can be complex. A central component of Sanexen's approach is its close collaboration with governing agencies, including Environment Canada, to both identify contamination sources and implement effective treatment strategies.

#### How is Sanexen working with Indigenous communities?

Sanexen also proactively seeks Indigenous partnerships, even when not contractually required, as demonstrated in a recent project where it invited a past partner community to participate. ■

## HSE and Community



“By detecting structural changes early, we help extend the lifespan of assets and prevent catastrophic failures, enabling safer, more efficient maintenance. This data helps operators adjust drilling to reduce risks.”

Reza Ghadim, Marketing Director, **GEOSIG**



“Tailings management is evolving rapidly, with innovations such as aerial and satellite monitoring and automated surveillance systems. Despite these advances, well-prepared personnel remain essential.”

Catherine Lajoie, Founder and President, **GO-MINE**



“Regulators and companies alike are becoming more proactive, aiming to balance economic growth with community and environmental concerns.”

Jean-Marc Leger, Director – Auditex, **TERRAPEX**





# Airborne Logistics

## Adapting to challenging conditions

Many mining and exploration operations in Québec and Atlantic Canada are remote, particularly in Canada's far north, where overland access routes often simply do not exist, or are seasonally limited – making travel by air to the site an unavoidable part of the mining process. So-called 'fly-in, fly-out' (FIFO) operations are thus a common feature in this region. Some operations bring all personnel, equipment and supplies by air, while others may supplement a limited local labour pool with flown-in workers from other areas.

Examples of FIFO at producing operations in eastern Canada include Vale's Voisey's Bay mine in Labrador and Glencore's Raglan mine in Nunavik. FIFO can be yet more relevant for explorers, with their penchant for seeking out untouched terrain, and with limited budgets to build out transport infrastructure to reach it. It can offer greater flexibility to reach far-flung areas of James Bay or the Labrador Trough and bring heavy machinery like drilling equipment to remote sites.

Remoteness often comes hand-in-hand with a high level of exposure to harsh and changeable weather conditions. By their very nature, exploration sites are largely undeveloped, meaning runways or landing areas may be of poor

quality, short in length, or otherwise unfamiliar to pilots. Moreover, although around one-third of Québec, particularly in its northern Nunavik region, has remained for millennia in a state of continuous permafrost, climate change has begun to significantly impact ice and ground conditions for landing planes in recent decades. Winters have shortened and weather is less consistent, adding further unpredictability. On top of all of that, remoteness itself presents dangers due to limited communication infrastructure and distance from any potential source of assistance in the event of an accident or unexpected problem.

Rigorous training of pilots for these unique and challenging conditions is essential. At Panorama Helicopters, which marks its 25th anniversary in 2025, maintenance of the company's reputation for reliability and pilot skill necessitates an intensive multi-year training program, followed up with weeks of continuous refresher training every year. "New pilots begin with lighter tasks and gradually progress under the guidance of experienced mentors, often requiring 3-5 years before advancing to complex operations like drill moves. Simulators play a key role in safely preparing pilots for high-risk situations," explained Patrick Côté, Panorama's general manager.

Rising commodity prices have delivered rising demand for Panorama's services, including transporting drill equipment and conducting electromagnetic surveys, which require complex, precise helicopter maneuvering. It is work that Côté called "inherently dangerous," making ensuring safety the company's number one priority.

Nolinor Aviation, which operates FIFO, cargo and other charter services from hubs in Québec, Alberta, Manitoba and the Northwest Territories, has made its pilot training program a value-adding component of its business. The company's 'Become a Pilot' scheme has trained more than 25 pilots, with its employees able to undertake the program alongside

&gt;&gt;85



## Marco Prud'Homme

President  
NOLINOR AVIATION

“As several carriers have been acquired by hedge funds or large corporations, Nolinor remains one of the few independent operators in northern Canada.”

### How has the last year been for Nolinor Aviation?

It was a strong, fast-paced year for Nolinor. In June 2024, we signed a new contract for the B2Gold mine, and have since increased our service from four to five flights per week. At our Edmonton facility, we expanded our operations in April 2025 by acquiring the fixed-base operator and hangar space formerly owned by North Cariboo Air. We have also placed an order for several Natilus Kona cargo aircraft, scheduled to enter production within the next three to five years.

### How does the expansion of Nolinor's Edmonton operation advance its strategy?

The expansion of our operations in Edmonton provides key strategic advantages. Serving as a gateway to northern destinations, it enables more efficient routing to remote mine sites by eliminating the need for a pit stop in Yellowknife. As a major transportation hub with greater air traffic than Yellowknife, Edmonton also offers access to skilled mining labour from both eastern and western regions. This development strengthens the company's presence in western Canada and supports growth beyond our base in Mirabel. It adds a third heavy maintenance line – our first outside Québec – which will increase our operational capacity, which could allow us to add additional contracts with mining clients. The move has also resulted in job creation, with 15 new staff hired in Edmonton.

### What more can you tell us about the Natilus Kona?

The Kona is a relatively small aircraft, capable of landing on shorter runways than the 737-200, which could open new markets for us. It offers improved fuel efficiency, longer range, and greater autonomy. We are the first company to move forward with this model for operations in northern Canada.

### How is Nolinor's fleet of Boeing 737-200 aircraft being updated?

For years, our 737-200s, and those of other carriers, operated under an AMOC waiver from Transport Canada for combined passenger and cargo service. Following an unexpected rule change with a June 2025 deadline, we engaged an engineering firm to design a compliant system, including new fire containment covers. This also allowed us to further enhance our safety and efficiency standards.

The 737-200 continues to be well suited to our operations, and we plan to keep it in service for years to come.

### What is the current state of electrification in aviation?

The electrification of aircraft is a widely discussed topic. However, the significant weight of batteries presents a major challenge for aviation. From an efficiency standpoint, if a large share of an aircraft's payload is dedicated to carrying batteries, the solution becomes unviable. Ground time is another issue – airlines aim for turnaround times of 30 minutes or less, yet current technology does not allow for battery recharging within that window. While I am hopeful for future advances, I do not foresee this becoming feasible within the next 20 years.

### How does Nolinor's pilot training program add value to its operations?

Nolinor is approaching the milestone of CA\$1 million invested in our Become a Pilot program, through which we have trained more than 25 pilots to date. In the wake of the pandemic, many companies were forced to cancel flights due to pilot shortages. Thanks to this program, we cancelled only one.

We have incorporated a virtual reality cockpit simulator into the training. Pilots complete safety checklists in a fully to-scale virtual model of our cockpits, preparing them thoroughly before training in the full-flight simulator in Miami. This technology saves time and improves familiarity with the cockpit workflow from early in training.

The program attracts young talent to Nolinor, operates at low marginal cost, boosts performance, and supports strong retention – our pilot turnover rate is under 10%. What continues to surprise me is that no one else has implemented a similar approach.

### What marks Nolinor out amongst other operators in this space?

The aviation market serving northern destinations has changed significantly. As several carriers have been acquired by hedge funds or large corporations, Nolinor remains one of the few independent operators in northern Canada. This independence offers substantial value – we are free to choose our destinations and set our own pricing. We offer fair rates that reflect the quality, capability, and efficiency of our service. I believe we are entering the golden years of Nolinor Aviation. ■







## Nathalie Tousignant

President

OCTANT AVIATION & CARDINAL AÉRO

### Could you introduce us to Octant Aviation's new Cardinal Aéro division?

Cardinal Aéro is a division of Octant Aviation that manages air logistics across remote and northern regions, with strong expertise supporting mining companies, among others. We do not just book flights: we build and run reliable, end-to-end logistics programs that move workers safely, efficiently, and on time. From daily operations to long-term planning, we act as a strategic extension of our clients' teams.

Our role includes organizing flight schedules, managing crew rotations, adapting to last-minute changes, and keeping track of performance and costs.

### In practice, how do Cardinal Aéro and Octant Aviation partner with mining companies to help control costs, measure performance and ensure resilience in their air logistics operations?

Our work often starts with the development or modernization of airport infrastructure – from runway improvements to terminal upgrades – making remote sites accessible and safe for ongoing operations.

Cardinal Aéro then ensures that air transportation runs smoothly. We design and manage tailored air logistics programs that align with production schedules, workforce needs, and cost control goals.

We provide clear performance indicators so our clients can optimize flight frequency, seat utilization, and opera-

“

A well-designed travel experience is a retention tool. An employee who travels comfortably, on time, and without unnecessary delays is much more likely to stay.

”

tional efficiency. Instead of reacting to rising costs, they understand them, adjust in real time, and plan ahead – with full transparency.

And when disruptions occur – due to weather, mechanical issues, or regulatory constraints – we are ready with contingency plans. Not just plan B, but plans C, D and beyond. Thanks to our team's field experience and constant coordination, we adjust quickly and maintain continuity.

### Across Octant's consulting services and Cardinal Aéro and Akila divisions, what can we expect in terms of developments in the future?

Akila provides real-time monitoring tools to track operations and ensure Safety Management System compliance at the airport. And Cardinal Aéro brings it all to life on the ground, handling the day-to-day air logistics of moving workers safely and efficiently.

We are also actively developing new tools – smarter planning software, custom KPIs, predictive routing etc.

### What role can air logistics management play in addressing the challenges posed by Canada's mining talent shortage?

A well-designed travel experience is a retention tool. An employee who travels comfortably, on time, and without unnecessary delays is much more likely to stay.

We work hand-in-hand with mining HR teams to create a seamless, efficient air travel experience for their

teams. Charter flights are a major advantage here: they are customized to work schedules, save time, and improve overall well-being. Many workers come from different parts of the province, and we coordinate their journey from home base to the mine site in the most efficient and cost-effective way.

Beyond logistics, we also act as trusted facilitators in discussions between mining companies and local communities or suppliers. Our long-standing presence in northern regions and strong relationships help us build bridges and support sustainable, people-first solutions. That trust is critical to sustainable success.

### How have women have overcome barriers to play an increasingly vital role in Canadian and global aviation?

For a long time, female leadership was seen as an exception. Today, it is recognized as a strength, one that brings collaboration, empathy, and a strategic outlook.

My approach is about bringing diverse expertise to the table and building strong, trust-based partnerships. At Octant Aviation and Cardinal Aéro, we have nurtured a culture that reflects this. Women are largely represented in our companies: operations managers, coordinators, even pilots – and that diversity of perspective is helping to move our industry forward.

### What are your key strategic priorities and goals?

We are continuing to invest in modernizing infrastructure, developing digital performance tools, and improving data accessibility so our clients can make faster, better-informed decisions. But beyond the tools, our main goal is to keep strengthening our role as a trusted, long-term partner. We understand the mining industry from the inside, and our support goes far beyond logistics.

We already act as a key expert in air logistics for Canada's mining sector and we intend to keep leading by providing not just services, but real operational insight and impact.

Above all, we are staying focused on our core objective: becoming and maintaining our position as a true operational ally to Canada's mining industry. ■

82 >>

their day job. “The program attracts young talent to Nolinor, operates at low marginal cost, boosts performance, and supports strong retention – our pilot turnover rate is under 10%,” said Marco Prud'Homme, Nolinor's president.

At its hub in Mirabel, Nolinor's cockpit simulator integrates the latest virtual reality technology into traditional pilot training, with a full-scale, extremely detailed virtual model of its aircrafts' controls, enhancing trainees' muscle memory of critical flight procedures and preparing them for more advanced work in its Miami-based flight simulator.

Still, even the most highly-trained pilots will almost inevitably face disruptions due to adverse weather conditions, unanticipated maintenance issues or regulatory constraints. For both airlines and mining operations, unexpected time spent with airplanes on the ground is costly. To help address this, Octant Aviation, an air logistics consultancy, launched its new Cardinal Aéro division in early 2025. “Cardinal's role includes organizing flight schedules, managing crew rotations, adapting to last-minute changes, and keeping track of performance and costs. Our deep understanding of mining realities help ensure that air transportation supports the rhythm of operations,” explained Octant and Cardinal's president, Nathalie Tousignant.

Cardinal accounts for production schedules, workforce requirements and cost controls to design efficient airborne logistics programs for its clients, generating contingency plans to ensure smooth, continuous operation.

### Technological enhancements

Nolinor's pursuit of technologies extends beyond just its virtual reality training systems. The company is the first in northern Canada to place an order for the Natilus Kona, a blended wing aircraft with a space-age visage which Prud'Homme assured will bring a range of benefits to its fleet: “The Kona is a relatively small aircraft, capable of landing on shorter runways than the Boeing 737-200, which could open new markets for us. It offers improved fuel efficiency, longer range, and greater autonomy,” he said.

Natilus, the Kona's manufacturer, is also developing a larger aircraft which may serve as a potential challenger to the 737-200 within Nolinor's operations in years to come.

Panorama, meanwhile, has embraced a range of digital tools for the upkeep of its fleet of helicopters. As well as an entirely digital aircraft maintenance system, Coté said: “We have implemented application-based tools like Helitrends to monitor engine health through regular power checks, and Helicloud to automate flight reporting via smartphone GPS and sensors. These innovations improve data accuracy, align maintenance with actual flight time, and streamline service delivery.”

Québec and Atlantic Canada's mix of remoteness, climatic conditions and demand for top-quality services makes it a unique hub for airborne logistics for the mining industry. As demand for critical minerals continues to push mines further north and further from population centers, the relevance of FIFO operations and their facilitators will likely only be reinforced. This region's airborne logistics providers therefore find themselves at the leading edge of innovation in the sector, pushing the boundaries of possibility on their pilots' skills and their equipment's efficiency. ■



## Patrick Coté

General Manager

PANORAMA HELICOPTERS

### What are the company's key drivers of demand?

Demand has surged on the strength of Panorama's reputation for skilled, dependable crews – particularly in complex drill moves and long-line operations where precision and trust are essential. That performance has fueled repeat business and rising demand across multiple projects.

At the same time, Panorama has pushed further afield, reaching remote areas thousands of kilometers from its bases. High mineral prices have made these locations viable, with short seasonal windows and complex logistics supported by a fixed-wing partner under shared ownership.

### How has Panorama expanded and enhanced its fleet?

Currently, the company operates 11 aircraft, primarily focusing on the Airbus AS350 'AStar' family. The BA+, a model unique to Canada, is an older version, while the B2 is considered the Canadian workhorse, having been in use for over 20 years due to its reliability and ease of maintenance. The latest addition, the B3e/H125, offers significant advancements in power and efficiency, allowing for the transport of heavier or more distant loads, such as larger drills.

### With use of drones on the rise, what makes helicopters still an essential tool?

Drones are gaining traction for visual inspections and monitoring site development, offering useful support tools in the field. However, they remain limited compared to helicopters in both adaptability and lifting capacity. With aircraft capable of transporting heavy loads and responding to dynamic, real-time demands, helicopters continue to play an irreplaceable role. While drones will find their niche, they are not yet a direct substitute for the flexibility and trust built into helicopter missions.

### What is your outlook for the rest of 2025?

There is strong demand in the mining sector, with new projects underway and ongoing work continuing. Panorama is also looking to introduce new operations and potentially expand its fleet, though specifics remain under wraps. ■



# Drilling and Blasting

## Minimal impact, maximum effectiveness

Regulatory scrutiny on drilling and blasting activity in Québec was stepped up a notch in 2024. The new Authorization for Impactful Exploration Work (ATI), a mandatory permit for exploration companies conducting activities with potential to cause environmental damage or social disturbance, came into force in May 2024. It requires the exploring company to submit a description of work to be carried out to their project's local authorities, including municipalities and First Nations communities, and answer any questions submitted within a period of up to 30 days. The policy thus offers a space for transparent dialogue and local community engagement.

In the run-up to the ATI's introduction, though, as exploration companies prepared for potential challenges during its rollout, Québécois drilling and blasting firms noted a delay in exploration contracts during the first half of the year. That effect was compounded by juniors' well-documented financial challenges, which have put a squeeze on their exploration spending, reducing the availability of drilling and blasting service contracts. Across Canada as a whole, meters drilled declined slightly between 2023 and 2024, falling by 1.5% to 4.6 million m.

The potential for environmental harm as a result of these activities is quite clear – the use of heavy machinery and explosives to excavate the ground causes significant ecological upheaval. That does not, however, mean it is impossible to reduce impact, as Québécois drilling company Diafor seeks to demonstrate. The company implements solution includ-

ing wood padding for use on delicate ground, mud recovery, sound dampening and other low-impact equipment to deliver an approach that is as environmentally friendly as possible.

Mathieu Dionne, Diafor's CEO, argued that the industry should place more emphasis on such measures for the sake of its long-term sustainability: "Environmental and social sustainability are core priorities. Naturally, these commitments imply additional costs, but sustainability and customer satisfaction are valuable too. While our services may be priced higher than some competitors, our operations are both sustainable and structured to generate long-term value for clients."

Groupe Rouillier, which provides both drilling services and equipment via its MBI Global brand, has also placed a focus on sustainable practices at the center of its operations. "Our sustainability strategy begins with understanding the full life cycle of drilling operations. We know the on-the-ground realities. This gives us a unique advantage when it comes to helping our clients improve efficiency, minimize waste, and reduce energy consumption," said the group's president, Mario Rouillier. He also emphasized the role drillers are playing in the strategic minerals market, driving forward the energy transition. It is a segment the group is targeting for expansion, with Rouillier highlighting how his company's "efficient, flexible and community-friendly solutions" leave it positioned well to contribute tools and expertise to clients across eastern Canada and beyond.

Another company approaching this issue from a different angle is HY2GEN. At its Courant project in Baie-Comeau, HY2GEN is gearing up to produce green ammonia and ammonium nitrate, for use in explosives destined for the mining sectors of Québec, Ontario, as well as in European explosives supply chains. The project, approved by Québec's government in March 2025 and advancing towards a final investment decision in early 2027, takes advantage of Québec's hydroelectric supply to generate the green hydrogen needed for its ammonia products. "This will contribute directly to decarbonizing the province's mining sector," asserted Pietro Di Zanno, HY2GEN's managing director for North America.

It offers an avenue to reduce reliance on traditional ammonia production – which releases climate-damaging carbon dioxide as one of its primary byproducts. ■



**Mathieu Dionne**  
CEO  
DIAFOR

### How has Diafor's fleet evolved as the company expands?

We expanded from two to four drill rigs, focusing on diversification and modernization. Our newest addition is a computerized drill offering automated functionality, real-time monitoring and data collection. It is going to be a multiplatform unit – heli-portable, skid-mounted, or track-mounted, or deployable on a barge.

### What is Diafor's approach to automated drilling?

I view automation primarily as a tool to enhance quality and safety, rather than as a substitute for skilled personnel. Drilling, in my view, is an art – and it requires professionals mastering that art.

Our main approach to innovation focuses on harnessing data to improve performance and lower both energy consumption and carbon emissions. Ultimately, our goal is to spend more time drilling and maximize client satisfaction with our quality.

### What does Diafor do to ensure sustainability in its operations?

We offer environmental protection measures including water treatment and closed-loop circulation systems, sound dampening solutions, and site preparation expertise for winter programs. On the social front, between 10–20% of our workforce is composed of First Nations personnel, and we partner with First Nations drilling companies.

We continue to reduce greenhouse gas emissions and ensure good salaries for our workers. At the same time, our programs are executed seamlessly, adhering strictly to both schedule and safety protocols. This ensures a reliable flow of drill cores to the shack.

### How have consolidation trends impacted the industry?

Over the past year, there has been limited consolidation within the drilling sector. However, the broader mining industry in Québec has seen significant M&A activity. In turn, contracts could become more consolidated too. ■



**Mario Rouillier**  
President  
GROUPE ROUILLIER

### What is MBI doing to incorporate automation and autonomous drilling solutions?

MBI Global, a subsidiary of Groupe Rouillier, has already developed and deployed semi-automated deep-hole drilling rigs in Chile. While these machines are not fully autonomous, they incorporate a high degree of automation that significantly enhances performance. Moreover, for the past two years, our R&D team has been developing AI-enhanced functionalities for our underground drills. The goal is to transform drilling operations by leveraging real-time data to optimize drilling paths, reduce human error, and enhance operational safety. Automation makes the work less physically demanding and more appealing to younger generations and underrepresented groups. We see autonomous drilling as an enabler for greater inclusivity in the workforce.

### What impact have commodity price dynamics had on demand for Groupe Rouillier's products and services in eastern Canada?

When prices rise, exploration and mining projects multiply, which stimulates activity for our drilling services and our specialized equipment offering. For example, during the second quarter of 2024, we observed a nearly 18% increase in requests for proposals in the drilling sector related to lithium-based projects.

As critical minerals become strategic for global supply chains, particularly in the areas of energy transition and battery manufacturing, we anticipate continued growth in this segment.

### Where do you see growth potential in Québec and the Atlantic provinces in the coming years?

Québec and the Atlantic provinces offer fertile ground for growth. First, Abitibi-Témiscamingue and the Côte-Nord region remain dynamic hubs for gold exploration and critical minerals. The potential is strong, especially with public and private investments supporting infrastructure and innovation.

Finally, the increased interest in the energy transition – particularly in the electrification of transportation and energy storage – is placing strategic minerals at the heart of industrial policies. This allows us to consider expansion in these markets. ■







COMPANIES	WEBSITE
Abitibi Geophysics	<a href="https://www.ageophysics.com/">https://www.ageophysics.com/</a>
Abitibi Metals	<a href="https://abitibimetals.com/">https://abitibimetals.com/</a>
Abitibi Metals Corp.	<a href="https://abitibimetals.com/">https://abitibimetals.com/</a>
Adria Power Systems	<a href="https://adria-corp.com/">https://adria-corp.com/</a>
AEMQ	<a href="https://aemq.org/">https://aemq.org/</a>
AMEX Exploration	<a href="https://www.amexexploration.com/">https://www.amexexploration.com/</a>
AMQ	<a href="https://amq-inc.com/">https://amq-inc.com/</a>
ArcelorMittal	<a href="https://corporate.arcelormittal.com/">https://corporate.arcelormittal.com/</a>
Arlyx	<a href="https://arlyx.com/">https://arlyx.com/</a>
ASDR	<a href="https://asdr.ca/">https://asdr.ca/</a>
AtkinsRéalis	<a href="https://www.atkinsrealis.com/">https://www.atkinsrealis.com/</a>
Bennett Jones	<a href="https://www.bennettjones.com/">https://www.bennettjones.com/</a>
Brunswick Exploration	<a href="https://brwexplo.ca/">https://brwexplo.ca/</a>
Canam	<a href="https://www.canam.com/">https://www.canam.com/</a>
Caur Technologies	<a href="https://caurtech.com/">https://caurtech.com/</a>
CGIS	<a href="https://cgis.ca/">https://cgis.ca/</a>
Cygnus Metals	<a href="https://www.cygnusmetals.com/">https://www.cygnusmetals.com/</a>
Diafor	<a href="https://diafor.ca/">https://diafor.ca/</a>
E-Power Resources	<a href="https://e-powerresources.com/">https://e-powerresources.com/</a>
EDM Resources	<a href="https://www.edmresources.com/">https://www.edmresources.com/</a>
Eldorado Gold	<a href="https://www.eldoradogold.com/">https://www.eldoradogold.com/</a>
Emperor Metals	<a href="https://www.emperormetals.com/">https://www.emperormetals.com/</a>
EPIQ Machinery	<a href="https://epiqmachinery.com/contact/">https://epiqmachinery.com/contact/</a>
EY	<a href="https://www.ey.com/en_ca">https://www.ey.com/en_ca</a>
Fancamp Exploration	<a href="https://www.fancamp.ca/">https://www.fancamp.ca/</a>
Fasken	<a href="https://www.fasken.com/">https://www.fasken.com/</a>
Firefly Metals	<a href="https://fireflymetals.com.au/">https://fireflymetals.com.au/</a>
First Mining Gold Corp	<a href="https://firstmininggold.com/">https://firstmininggold.com/</a>
Focus Graphite	<a href="https://focusgraphite.com/">https://focusgraphite.com/</a>
Fury Gold Mines	<a href="https://furygoldmines.com/">https://furygoldmines.com/</a>
Glencore	<a href="https://www.glencore.ca/en">https://www.glencore.ca/en</a>
G Mining Services	<a href="https://gmining.com/">https://gmining.com/</a>
Geomatic World	<a href="www.geomaticworld.ca">www.geomaticworld.ca</a>
Geosig	<a href="https://www.geosig.com/">https://www.geosig.com/</a>
Go-Mine	<a href="https://www.gomine.ca/en">https://www.gomine.ca/en</a>
Gold Fields	<a href="https://www.goldfields.com/">https://www.goldfields.com/</a>
Gold Royalty Corp	<a href="https://www.goldroyalty.com/">https://www.goldroyalty.com/</a>
Government of New Brunswick	<a href="https://www.gnb.ca/en.html">https://www.gnb.ca/en.html</a>
Government of Nova Scotia	<a href="https://beta.novascotia.ca/">https://beta.novascotia.ca/</a>
Géophysique TMC	<a href="https://geotmc.com/index.php/">https://geotmc.com/index.php/</a>
Harfang Exploration	<a href="https://harfangexploration.com/">https://harfangexploration.com/</a>
HY2GEN	<a href="https://www.hy2gen.com/">https://www.hy2gen.com/</a>

COMPANIES	WEBSITE
IAMGOLD	<a href="https://www.iamgold.com/">https://www.iamgold.com/</a>
Investissement Québec	<a href="https://www.investquebec.com/">https://www.investquebec.com/</a>
Kenorland Minerals	<a href="https://www.kenorlandminerals.com/">https://www.kenorlandminerals.com/</a>
KPI Mining Solutions	<a href="https://kpimining.com/">https://kpimining.com/</a>
Lavery	<a href="https://www.lavery.ca/en/home.html">https://www.lavery.ca/en/home.html</a>
Li-FT Power	<a href="https://www.li-ft.com/">https://www.li-ft.com/</a>
Lomiko Metals	<a href="https://lomiko.com/">https://lomiko.com/</a>
Magotteaux	<a href="https://www.magotteaux.com/">https://www.magotteaux.com/</a>
Manganese X Energy Corp	<a href="https://www.manganesexenergycorp.com/">https://www.manganesexenergycorp.com/</a>
McCarthy Tétrault	<a href="https://www.mccarthy.ca/en">https://www.mccarthy.ca/en</a>
Metso	<a href="https://www.metso.com/">https://www.metso.com/</a>
Mining Industry NL	<a href="https://miningnl.com/">https://miningnl.com/</a>
Moose Mountain Technical Services	<a href="https://moosemmc.com/">https://moosemmc.com/</a>
Niobay Metals	<a href="https://niobaymetals.com/en/">https://niobaymetals.com/en/</a>
Nolinor	<a href="https://nolinor.com/">https://nolinor.com/</a>
Nomadis	<a href="https://nomadis.co/">https://nomadis.co/</a>
Northern Graphite	<a href="https://www.northerngraphite.com/">https://www.northerngraphite.com/</a>
Octant Aviation	<a href="https://octantaviation.ca/en/">https://octantaviation.ca/en/</a>
Panorama Helicopters	<a href="https://www.helicopterespanorama.com/">https://www.helicopterespanorama.com/</a>
Pivotal Metals	<a href="https://pivotalmetals.com/">https://pivotalmetals.com/</a>
PMET Resources	<a href="https://pmet.ca">https://pmet.ca</a>
Promine	<a href="https://www.promine.com/">https://www.promine.com/</a>
Puma Exploration	<a href="https://explorationpuma.com/">https://explorationpuma.com/</a>
PwC Canada	<a href="https://www.pwc.com/ca">https://www.pwc.com/ca</a>
Robitaille Equipement	<a href="https://www.equipementrobitaille.com/">https://www.equipementrobitaille.com/</a>
Sanexen	<a href="https://www.altragroup.com/">https://www.altragroup.com/</a>
Scandium Canada	<a href="https://scandium-canada.com/">https://scandium-canada.com/</a>
SGS	<a href="https://www.sgs.com/en-ca">https://www.sgs.com/en-ca</a>
Sidex	<a href="www.sidex.ca/">www.sidex.ca/</a>
Société Du Plan Nord	<a href="https://www.quebec.ca/gouvernement/ministeres-organismes/societe-plan-nord">https://www.quebec.ca/gouvernement/ministeres-organismes/societe-plan-nord</a>
Sokoman Minerals	<a href="https://www.sokomanmineralscorp.com/">https://www.sokomanmineralscorp.com/</a>
SRQ	<a href="https://www.srqexploration.com/">https://www.srqexploration.com/</a>
Strategic Resources	<a href="https://strategic-res.com/">https://strategic-res.com/</a>
Temas Resources	<a href="https://temasresources.com/">https://temasresources.com/</a>
Terrapex	<a href="https://terrapex.com/">https://terrapex.com/</a>
The Mining Association of Nova Scotia (TMANS)	<a href="https://tmans.ca/">https://tmans.ca/</a>
Torngat Metals	<a href="https://torngatmetals.com/">https://torngatmetals.com/</a>
TotalEnergies	<a href="https://totalenergies.com/">https://totalenergies.com/</a>
Tres-Or Resources	<a href="https://tres-or.com/">https://tres-or.com/</a>
UQAT	<a href="https://www.uqat.ca/">https://www.uqat.ca/</a>
Veolia Water Technologies	<a href="https://www.veoliawatertech.com/fr">https://www.veoliawatertech.com/fr</a>
Vior	<a href="https://www.vior.ca/">https://www.vior.ca/</a>





## Editorial and Management Team

**Project Director:** Aya Turk  
**Business Analyst:** Freddy Nevison-Andrews



AT



FN

**Executive Editor:** Mungo Smith  
**Operations Director:** Miguel Pérez-Solero  
**Graphic Designer (layout):** Özgür Ergüney  
**Graphic Designer (infographics):** Andrea Suárez  
**Graphic Designer (cover):** Gonzalo Da Cunha  
**General Manager:** Alfonso Tejerina

Your opinion is important to us, please be in touch to share your comments on this report: [info@gbreports.com](mailto:info@gbreports.com).  
 For updated industry news from our on-the-ground teams around the world, please visit our website [www.gbreports.com](http://www.gbreports.com), and follow us on LinkedIn ([gbreports](#)) and X ([@GBReports](#)).

*Thank you!*

We would like to thank all the executives and authorities that took the time to meet with us.

Special thanks to:

QUÉBEC MINING ASSOCIATION (QMA / AMQ)  
<https://amq-inc.com/>

QUÉBEC MINERAL EXPLORATION ASSOCIATION (QMEA / AEMQ)  
<https://aemq.org/>

MINING INDUSTRY NL  
<https://miningnl.com/>

THE MINING ASSOCIATION OF NOVA SCOTIA  
<https://tmans.ca>

# GBR

GLOBAL BUSINESS REPORTS

From research and analysis  
 to print and digital distribution,  
 GBR acquires, delivers and diffuses

# Business Intelligence.

MINING AND METALS  
 ENERGY  
 CHEMICALS  
 LIFE SCIENCES



If you are organizing an event or are the leader of a trade association or chamber of commerce, GBR can produce your official, industry-specific report according to the highest standards of quality. Contact [info@gbreports.com](mailto:info@gbreports.com) for more details.

[gbreports.com](http://gbreports.com)





GLOBAL BUSINESS REPORTS

