

Summary

Executive Overview 2025



# mining innovation zone

A Strong, Resilient Hub

## About Us

The **Mining Innovation Zone** (MIZ in French) is a unique ecosystem that brings together businesses, post-secondary institutions, research centres, communities, and governments with a shared goal: positioning Quebec as a global leader in the future of mining. MIZ is focused on innovation, training and sustainability. It supports the mining sector's shift toward responsible, high-performance practices by advancing the development of critical and strategic minerals—key to meeting the challenges of the energy transition.

## Quebec's Mining Industry: The Data that Speaks for Itself

**Over 100 years**  
of expertise in mining  
exploration, extraction and  
processing

Nearly  
**30 active mines**  
and more than  
**300 exploration  
projects**

Université du Québec en  
Abitibi-Témiscamingue  
(UQAT) ranks among the  
**world's top 3** in mining  
environmental studies and  
is the only francophone  
university in the top 10

**50,000** direct  
and indirect jobs,  
with a significant share  
in Abitibi-Témiscamingue

**\$10B**  
Annual contribution  
to Québec's GDP

**\$2.7B** Planned  
infrastructure investments  
tied to critical and  
strategic mineral (CSM)  
projects (e.g., copper,  
nickel, lithium, zinc, cobalt)

**70%** of Québec's mining  
training takes place in  
Abitibi-Témiscamingue

**\$4.2B**  
Total value of public  
and private projects in the  
Mining Innovation Zone  
(MIZ) by 2030

**\$1.2B** anticipated  
private investments  
by 2030 in critical and  
strategic mineral projects  
within the MIZ

**\$11B**  
Total projected value  
of projects within the  
Mining Innovation Zone  
(MIZ) by 2050

**40+**  
institutional, academic,  
industrial, and community  
partners, including mining  
producers, equipment  
manufacturers, First  
Nations, Inuit communities,  
and municipalities

## 1. Québec at the Forefront of the New Mining Era

Québec stands at the forefront of a new mining era—one where critical and strategic resources have become essential to the energy transition, industrial sovereignty, and decarbonization of economies. Given the current climate of tariff tensions with the United States, their role is more critical than ever. Mere resource availability is no longer enough; we must rethink how we explore, extract, process, and add value to these resources—right here at home.

This shift also comes with heightened demands for accountability. Environmental, Social, and Governance (ESG) criteria have emerged as new global benchmarks for performance and competitiveness. To maintain its leadership, Québec's mining industry must align innovation, sustainability, and social acceptability, ensuring that every step of the mining value chain reduces environmental impact and builds community trust.

**The Mining Innovation Zone (MIZ) embodies this transformation perfectly**, driving an industry that must reinvent how it explores, extracts, processes, and develops resources in the context of an energy transition and industrial sovereignty. It is designed to help Québec-based companies grow locally and eventually scale internationally, extending Québec's reach on the international stage. The MIZ not only addresses key provincial challenges in Québec but also actively contributes to global solutions. As such, MIZ is a strategic pillar of [Québec's Economic Vision](#) [full version in French only], led by the Ministry of Economy, Innovation and Energy, and is directly aligned with the [2030 Plan for a Green Economy](#) and [Québec's Plan for the Development of Critical and Strategic Minerals](#).

**Becoming  
a Key Player**  
in North American  
Mineral Sovereignty

**Supporting  
the Growth of  
Innovative SMEs**  
Capable of Developing  
Scalable, Exportable  
Solutions

**Accelerating the  
Adoption of Innovative  
Mining Models**  
that Balance Economic  
Performance, Environmental  
Responsibility, and Social  
Acceptability

## 2. MIZ: A Clear Mission, A Distinctive Vision

**MIZ is a one-of-a-kind global ecosystem for research and innovation**, bringing together companies, universities, research centres, municipalities, as well as First Nations and Inuit communities. Looking ahead to 2050, it envisions a world that is less reliant on oil, more accountable in the face of climate change, and committed to sustainable development, where mineral resources, particularly critical and strategic minerals, play a vital role in sustaining global economic value chains.

### MIZ's mission is built on three complementary pillars:



**Fostering technological innovation** by promoting the development and adoption of cutting-edge and digital technologies within the mining sector.



**Facilitating collaboration and driving ecosystem growth** by connecting businesses, research centres, teaching institutions, startups, and communities to accelerate knowledge transfer and unlock the full potential of Québec's mineral wealth.



**Promoting sustainable development** by supporting responsible mining practices that minimize environmental impact, maximize positive social outcomes, and enhance project desirability, while proactively embedding ESG (Environmental, Social, Governance) criteria throughout the entire mining life cycle.

MIZ's strategic goals reflect a clear ambition: to build a robust ecosystem capable of supporting the mining industry and its communities in the face of uncertainty, while maximizing economic, environmental, and social benefits.

**Innovation zones, as outlined in Québec's Economic Vision, are designed as world-class hubs—firmly rooted in Québec and globally connected. They aim to bridge academia and industry by bringing together universities, CEGEPS, and researchers.**

**MIZ is a prime example of this ambition: bringing innovation and collaboration to life.**

## Positioning Québec Strategically

### A Key Driver of Québec's Economic Vision

The Mining Innovation Zone is fully aligned with [Québec's Economic Vision](#) launched in 2023 [full version in French only], which aims to boost productivity, increase collective wealth, stimulate innovation, and expand exports.

By building on this vision and using innovation zones as key drivers of development, MIZ strengthens Québec's position as a global leader in the future of mining. It directly supports productivity gains, export growth, and the creation of high-quality jobs.

## MIZ: A Clear Mission, A Distinctive Vision (continued)

*Québec's Economic Vision* clearly states that “innovation is the name of the game” and identifies innovation zones as key levers to convert research into prosperity.

**MIZ** brings this vision to life by structuring a seamless research-to-industry pipeline, where ideas are transformed into high-impact, long-lasting projects.

### Strengthening the Energy and Economic Transition

In a context shaped by mounting economic tensions, supply chain vulnerabilities exposed by the pandemic, and reshoring strategies, control over natural resources has become central to economic sovereignty, national security, and the success of the energy transition.

Aligned with the [2030 Plan for a Green Economy](#) and the Québec Plan for the Development of Critical and Strategic Minerals (2020-2025), MIZ is contributing to a more resilient transition. It promotes the integration of game-changing innovations (so-called “disruptive technologies”), supports the adoption of diverse business models, and helps build stronger supply chains—all while supporting a competitive and socially responsible mining sector.

### A Global Showcase of Québec Expertise

MIZ also serves as a global showcase for Québec's know-how. It builds local expertise and capacity, while supporting an integrated approach from exploration to processing within a single ecosystem.

By harnessing the strengths of researchers, businesses, and communities, MIZ positions Québec as a reliable and strategic supplier on both the North American and international stage. In concrete terms, this means that mining practices and technologies developed in Québec can be commercialized and exported, thereby enhancing Québec's reputation as an innovative, sustainable, and credible player internationally.

*Québec's Economic Vision* emphasizes the importance of “Made in Québec” and boosting exports. Innovation zones are intended as world-class showcases connected to global markets.

**MIZ** fully embodies this vision, bringing Québec's mining and technological expertise to the world and positioning the province as a reliable strategic partner.

### ZIM: Fully Aligned with Québec's Economic Vision

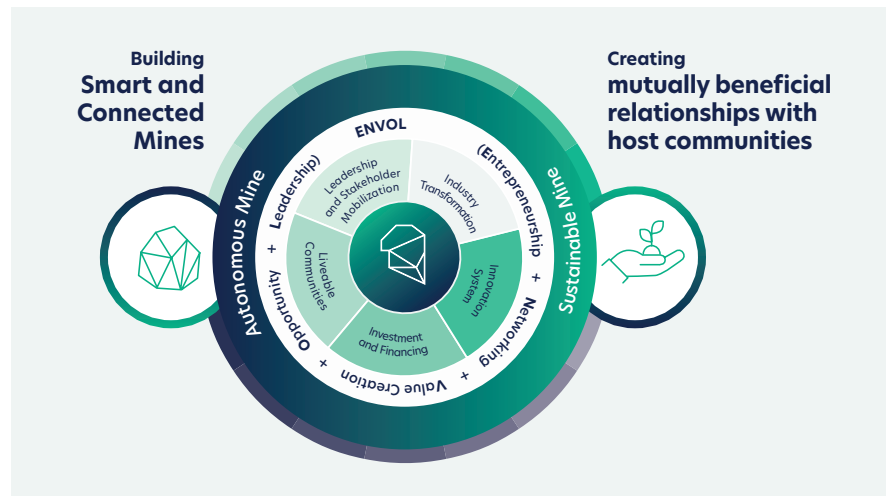
La ZIM is directly aligned with key priorities outlined in Québec's Economic Vision:

- **Made in Québec:** strengthening mineral sovereignty and local supply chains.
- **Exports:** expanding the global reach of Québec's mining technologies.
- **Innovation:** accelerating the sector's digital and sustainable transformation.
- **Skilled workforce:** training and attracting talent through a unique education-to-employment pipeline.
- **Green economy:** supporting the energy transition and reducing environmental impact.

In this way, ZIM serves as a strategic lever for advancing Québec's economic priorities.

### 3. Two Strategic Pillars, One Unique Ecosystem

MIZ's strategy is built on two complementary pillars that define the **mine of the future**: the autonomous mine and the sustainable mine. Together, they provide a unique framework for testing and deploying technological and environmental solutions.



#### The Autonomous Mine

MIZ aims to position Québec as a global leader in digital mining technologies.

This pillar focuses on developing, testing, and integrating digital and autonomous technologies across the mining industry. It leverages artificial intelligence, the Internet of Things, immersive systems, and cybersecurity to enhance operational performance and safety.

The **autonomous mine** makes mining operations safer, more efficient, and future-ready by harnessing data management and digital innovation.

**The 2030 Plan for a Green Economy targets reductions in GHG emissions, improvements in energy efficiency, and the development of clean technologies.**

**MIZ supports this initiative by focusing on footprint reduction, resource circularity, and the adoption of biotechnology.**

#### The Sustainable Mine

MIZ champions an industry that works in harmony with the environment and surrounding communities.

This pillar seeks to reduce the mining industry's environmental footprint and improve its social performance. It emphasizes site rehabilitation, secondary resource recycling, biotechnologies, industrial ecology, and circular resource flows. ESG certification and social dialogue are key levers for competitiveness and social acceptability.

The **sustainable mine** prioritizes environmental and social responsibility at its core, positioning Québec as a global model for sustainable mining.

#### ENVOL | A Strong, Mobilized Business Environment

Spanning both pillars, the ENVOL ecosystem acts as an innovation catalyst and springboard for SMEs. It fosters entrepreneurship by supporting startups, providing them with access to real-world testing environments, and accelerating the commercialization and global export of their solutions. ENVOL serves as a vital bridge between technological development and real-world application, strengthening Québec's ability to turn innovation into commercial success.

## 4. Solid Foundations for Long-Term Innovation

### An Integrated Ecosystem for Research, Training, and Innovation

MIZ is built on an integrated ecosystem that brings together research, training, innovation and industry (see Appendix 1). This foundation is anchored in world-class institutions, such as the Université du Québec en Abitibi-Témiscamingue, which is ranked among the world's leading institutions in mining environmental studies. Alongside the Cégep de l'Abitibi-Témiscamingue, the Centre technologique des résidus industriels (CTRI), and partner CEGEPS, it forms a cohesive network of education and research institutions that meets the needs of the industry while attracting talent from Québec and beyond.

**Quebec's 2030 Plan for a Green Economy calls for integrating climate innovation issues into post-secondary education.**

**MIZ is fully aligned with this direction, building a one-of-a-kind training ecosystem to support the energy and industrial transition.**

### A network of Industrial, Institutional and Community Expertise

Adding to its academic strength is a broad network of industrial, institutional, academic, and community expertise, including leading mining producers, equipment manufacturers, universities from across Québec, and members of First Nations and Inuit communities. This ecosystem grants MIZ a unique ability to mobilize stakeholders and establish a strong regional foothold, thereby creating an attractive living environment and laying a solid foundation for innovation.

**The Québec Plan for the Development of Critical and Strategic Minerals highlights that success depends on close collaboration between industry, research institutions, local communities, as well as First Nations and Inuit communities.**

**MIZ embodies this vision by bringing together all stakeholders in a unified, innovation-driven ecosystem.**

### International Recognition

MIZ also enjoys international recognition, thanks to its projects and exports. Its global reputation is built on decades of experience. Mining producers from Abitibi-Témiscamingue, by developing projects abroad, have brought along equipment suppliers, service providers, and educational and research institutions—helping to extend the region's mining expertise far beyond Québec's borders and solidifying the global reputation of Québec's know-how.

**The Québec Plan for the Development of Critical and Strategic Minerals aims to make Québec a global leader in this area of expertise.**

**MIZ is a concrete showcase of that ambition, developing innovative and responsible mining practices and sharing them globally.**

Solid Foundations for Long-Term Innovation (continued)

## A Sustainable, Innovation-Driven Community in the Heart of Rouyn-Noranda

MIZ is designed as a sustainable, mixed-use district in downtown Rouyn-Noranda, combining academic institutions, laboratories, housing, green spaces, and community amenities. Built on the principles of sustainable development, it promotes active mobility, biodiversity, and close connections among ecosystem stakeholders.

This strong local presence makes MIZ not only a hub for mining innovation but also an inclusive, welcoming living environment where students, researchers, workers, and both Indigenous and non-Indigenous communities live side by side. This unique social and urban setting supports both talent retention and attraction.

MIZ's programming is structured around a range of complementary projects, some already underway, others in advanced planning, and still others in early conceptual stages.

## A Leading Training Ecosystem

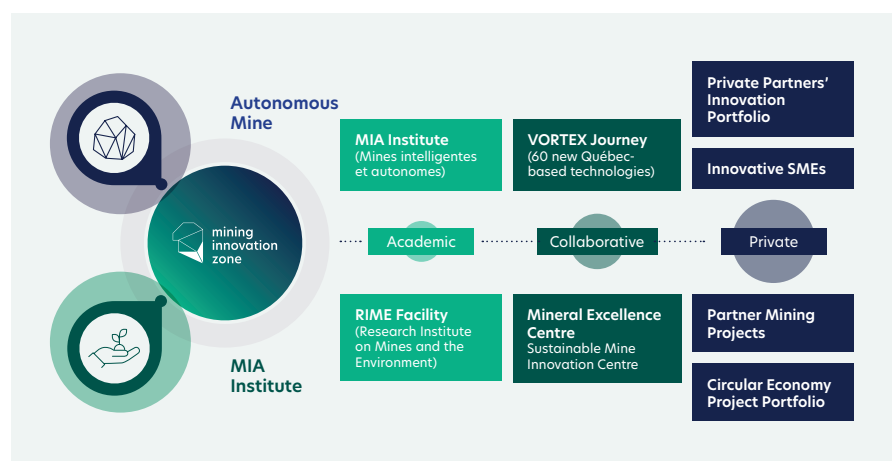
MIZ draws on a globally recognized training ecosystem, uniting the Université du Québec en Abitibi-Témiscamingue, the Cégep de l'Abitibi-Témiscamingue, and the Val-d'Or vocational training centre. It offers exclusive and specialized programs, customized continuing education, and international collaborations—positioning Rouyn-Noranda and the region as a go-to destination for mining-sector training.

# 5. From Vision to Action: Putting It into Practice

## Building a Full Innovation Pipeline: From Research to Commercialization

The implementation of the Mining Innovation Zone is guided by a progressive, robust, and integrated strategy designed to turn ideas into projects, projects into outcomes and outcomes into lasting impact.

It is structured around a fully integrated innovation pathway, connecting academic institutions, research centres, tech SMEs, major corporations, and experimental mining sites.



This pathway covers every stage, from technology maturation to urban development, to maximize stakeholder engagement and accelerate economic development. The key to long-term success lies in building strong links between research, innovation and industry.

## Solid Foundations for Long-Term Innovation (continued)

### Academic Hubs Driving Knowledge and Workforce Development

#### Intelligent and Autonomous Mine Institute

**(IAM):** A research and training hub focused on AI, augmented reality, and Industry 4.0 technologies applied to mining operations.

#### Research Institute on Mines and the Environment

**(RIME):** Affiliated with UQAT, now expanding with a new facility dedicated to geometallurgy, the circular economy, and mining environmental studies.

#### Vortex Journey (led by MISA Group):

A collaborative program already in motion, which has deployed 24 mining IoT solutions and is targeting 60 new Québec-based technologies by 2030.

**Mineral Excellence Centre:** A convergence point for academic research, private-sector innovation, and field expertise in ore characterization and processing.

This **innovation ecosystem is reinforced by strong private investment, supported by leading industrial partners** such as Agnico Eagle, Glencore, Newmont, Rio Tinto Fer et Titane, IAMGOLD, Falco Resources, who act as early adopters of innovation.

**The 2022-2027 Québec Strategy to Support Research and Investment in Innovation (SQRI<sup>22</sup>) aims to elevate research excellence and strengthen the entire innovation ecosystem, from knowledge generation to commercialization.**

**MIZ brings these priorities to life on the ground by bridging research, education and industry, mobilizing a strong regional network and turning innovation into real-world solutions with a global reach.**

### Designing a Place to Live, Work, and Innovate

MIZ is taking shape in a 72-hectare mixed-use district in the heart of Rouyn-Noranda, featuring labs, coworking spaces, housing, recreational and cultural amenities—all built with sustainable urban design in mind. This strong local presence makes MIZ more than just a workplace: it's a vibrant environment where people can live, collaborate, and innovate.

### Training, Attracting, and Retaining the Talent for Tomorrow's Mining Industry

Thanks to the collaboration between UQAT, Cégep de l'Abitibi-Témiscamingue, and partner CEGEPs, MIZ offers a unique training ecosystem that supports workforce renewal and boosts international appeal. The MIA Institute plays a crucial role in preparing the next generation of professionals in critical fields, including AI, cybersecurity, and IoT, as applied to the mining sector.

Solid Foundations for Long-Term Innovation (continued)

## Mobilizing Public and Private Capital for Major Projects

MIZ's implementation also relies on its ability to mobilize significant public and private investment: over \$160 million has already been committed since the qualification process began in 2021, with projections reaching \$4.2 billion by 2030 and \$11 billion by 2050. These large-scale projects ensure the MIZ's long-term growth and lasting impact.

## Recognizing and Integrating Traditional Knowledge

MIZ places traditional knowledge at the core of its founding principles, seeking to bridge technological innovation with respect for land and communities. First Nations and Inuit peoples are full partners in MIZ's industrial, institutional and community-based network of expertise.

The 2030 *Plan for a Green Economy* (PEV 2030) emphasizes the importance of close collaboration with Indigenous Nations and acknowledges the value of traditional knowledge in shaping the transition.

MIZ aligns with this priority by actively involving First Nations and Inuit communities in its ecosystem and embedding their knowledge in shaping the future of mining.

### ZIM: A Network of Academic, Support, Industry Partners

#### Academic Partners



#### Support Organizations



#### Private-Sector Partners



## A Community-Driven Innovation Zone

Above all, MIZ is a community-driven initiative, supported by the commitment and leadership of Abitibi-Témiscamingue and its national and international partners.

The 2025-2030 Implementation Plan of the Green Economy Plan highlights regional and community mobilization as a key lever for building Québec's economic and climate resilience.

MIZ is fully aligned with this approach, uniting universities, CEGEPS, First Nations, and Inuit communities, municipalities and businesses around a shared vision for the future of mining.

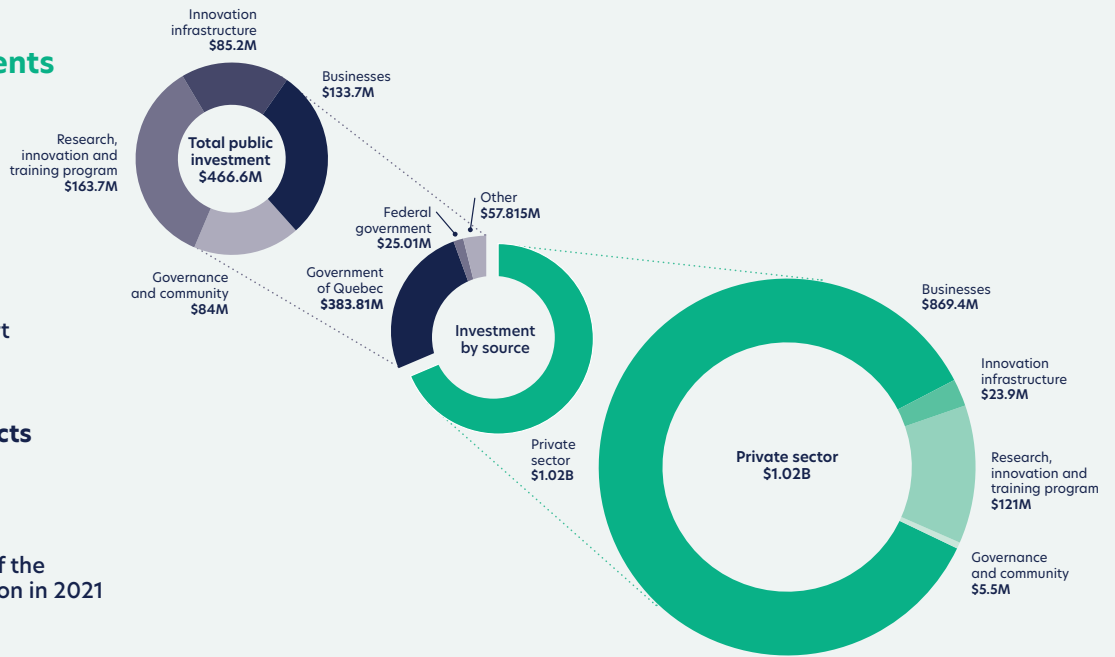
The following figures present the breakdown of planned investments and their respective timelines through 2030.

**\$1.2B**  
in private investments  
projected by 2030

**\$86M** in public  
funding by 2027  
(over two years)  
for core infrastructure  
and innovation support

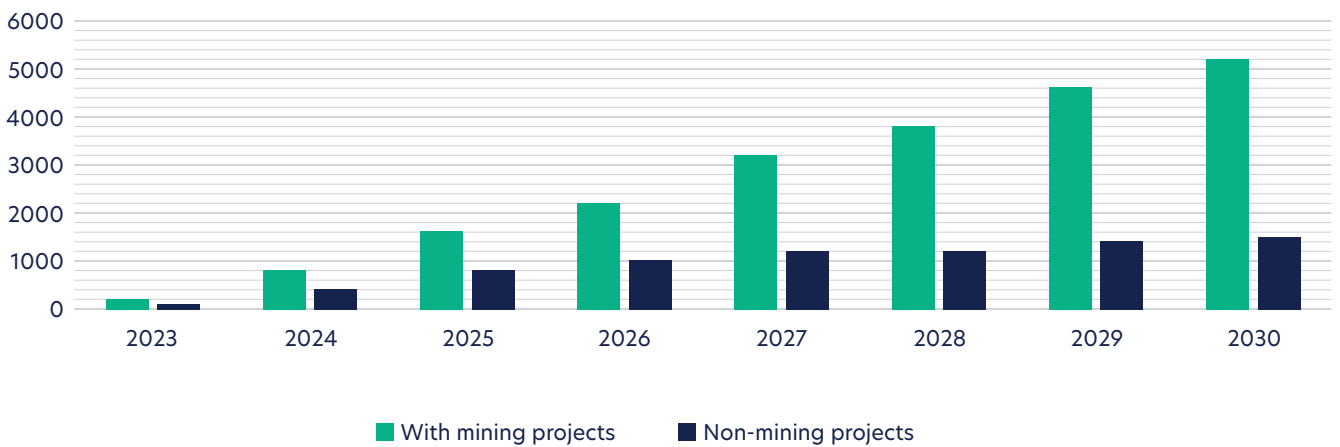
A program of  
more than 40 projects

Over \$160M  
already invested  
since the submission of the  
qualification application in 2021



Summary of Investments (by 2030)

Cumulative Investment Forecast for 2023-2030 (in \$ millions)



Cumulative investments needed through 2030

## Appendix 1: MIZ: A Business, Research, and Innovation Ecosystem

### Training

#### Cégep de l'Abitibi-Témiscamingue

ACDI  
 Corem  
 Cégep Édouard Montpetit  
 Association des collèges communautaires du Canada  
 Cégep international  
 UBC  
 Cégep Lévis  
 Cégep Sept-Îles  
 Institut national des mines

#### Université du Québec en Abitibi-Témiscamingue

École Centrale de Paris  
 Polytechnique Montréal  
 University of Alberta  
 Université Cadi Ayad  
 Université Laval  
 Université de Lorraine  
 Université de Montréal  
 Université de Sherbrooke  
 University of Waterloo



### Mining Industry

#### Mine construction

Blais Industries

#### Equipment Suppliers and Integrators

Agregat  
 Technosub

#### Engineering Services

AtkinsRéalis  
 Abitibi Géophysics  
 Metal Marquis  
 ADSR  
 HATCH  
 WSP  
 Golder

#### Mining Producers

Glencore CCR  
 Hecla  
 Sayona  
 Dumont Nickel  
 Ressources Falco  
 Agnico Eagle  
 Rio Tinto  
 Iamgold  
 Mine Raglan  
 Fonderie Horne  
 Mine Canadian  
 Malartic

### Innovation, Entrepreneurship, Exports

#### MISA Group Centre of Excellence

AEMQ  
 Scale AI  
 ÉTS  
 ainno-centre  
 IDP  
 CRIQ  
 INMQ  
 PINQ²  
 Hydro-Québec  
 + Industries  
 Fonds FTQ  
 Université Laval  
 Polytechnique Montréal

#### Centre local de développement Rouyn-Noranda

Investissement Québec  
 Communauté VORTEX (+20 startups)  
 Services Québec  
 CCIRN  
 MEIE  
 Desjardins  
 SADC  
 Investissement Québec  
 Cycle momentum  
 Centech  
 Ethos stratégie  
 CRITM

#### 48° Nord International

Relations internationales de la Francophonie Québec  
 Canada Economic Development (CED)  
 CLD  
 SADC  
 Conseil canadien pour l'Afrique  
 Chambre de commerce  
 Natural Resources Canada  
 Mining Supplier Trade Association  
 Affaires mondiales Canada  
 CNRC  
 Canadian Institute of Mining Metallurgy and Petroleum  
 Investissement Québec international  
 Québec Energy and Natural Resources  
 + industries

### Regional and Local Partners

Avantage numérique  
 Chamber of Commerce  
 City of Rouyn-Noranda

Collectif territoire  
 AAT  
 Mtlab

### Research

#### Research Institute on Mines and the Environment

FCI  
 FQRNT  
 CRSNG  
 MRNF  
 RQES  
 Terre-Net  
 ÉTS  
 CIRODD

CONSOREM  
 INQ  
 GEOTOP  
 CRIB  
 Centre-Eau  
 UBC

#### Industrial Waste Technology Centre

Valorix  
 Réseau Synchronex  
 COREM  
 CRIBIQ  
 BRGM  
 INRS  
 CRITM  
 + industries

A research and innovation ecosystem that brings together and showcases Québec's mining ingenuity



**mining  
innovation  
zone**

A Strong, Resilient Hub



Ville de  
**Rouyn-Noranda**