

Critical Minerals

Critical minerals are essential as the world transitions to a clean energy future. With significant and untapped geological potential and industry expertise, Alberta is poised to meet the growing global demand for critical minerals and battery metals.

Alberta's Minerals Strategy and Action Plan charts a path to sustainably unlock Alberta's untapped mineral resource potential.

The Alberta Geological Survey also makes its world-renowned geological research and data publicly available. Alberta is a global leader in energy with a large and well-established ecosystem.

The mineral industry is currently developing novel technologies to extract critical minerals from various sources, including lithium from brines, vanadium from ores and oil sands, titanium, and rare earth elements from oil sands.

The Numbers



134k+

Workforce in the Alberta energy industry



\$25M+

Invested in geoscience research



945

Cleantech companies



4th

Highest capital investment per capita among all provinces and US states.

The Opportunity



500%

Estimated increase in demand for critical minerals to support clean energy transition.



47Mt

Lithium carbonate equivalent inferred resources by industry players in Alberta.

Areas of Focus

Mineral Exploration & Extraction

Alberta has vast, untapped geological potential to meet the increasing demand for base metals and critical minerals.

Alberta supports efforts to advance the Canada-U.S. Joint Action Plan on Critical Minerals Collaboration and can help reduce North America's dependence on foreign energy and critical mineral supply chains.

Refining & Processing

Alberta is positioned to become a refining and processing hub for critical minerals. In addition to its natural resources and existing refining capacity, Alberta offers key industrial capabilities, transport hubs, and skilled labour.

These conditions have already attracted Fortune Minerals to locate a \$750M mineral refinery near Edmonton that will process cobalt, gold, bismuth and copper mined in the Northwest Territories.

Company Highlight

umicore



Umicore Cobalt & Specialty Materials has a plant located in Fort Saskatchewan, Alberta that uses a unique hydrometallurgical hydrogen reduction process to produce spherical metal powders.



Developing direct lithium extraction (DLE) processes to economically and sustainably unlock lithium resources globally.

E3 LITHIUM

An Alberta-based company plans to produce high purity, battery grade lithium products with reduced carbon emissions, using 97% less land and consuming no fresh water.

sherritt

Globally recognized in the production of high purity nickel and cobalt metal from lateritic ore. Sherritt has developed an expansion strategy that will upgrade and expand their Alberta refinery to enable increased finished production.

Next Generation Lithium Extraction

Alberta may contain globally significant lithium resources and lithium has been the focus of mineral exploration in Alberta in recent years. Almost half of Alberta's active exploration tenure is targeting lithium.

Lithium in Alberta is found in deep formation water and will be produced using direct lithium extraction technology.

Alberta's lithium eco-system includes junior mining, technology development companies, and innovation accelerators, actively undertaking efforts to unlock Alberta's lithium potential and supply chain.

Why Alberta?

Talent

Experienced Workforce

With the highest number of engineers per capita, Alberta has a workforce with deep experience in resource development.

Speed of Doing Business

Regulations & Licensing

Alberta has established a full life-cycle, one-stop regulator for brine-hosted mineral resources which will enable projects to move forward quickly and efficiently.

Red Tape Reduction

Alberta has received the best grade in Canada for regulatory accountability, regulatory burden and political priority. The Government of Alberta has prioritized reducing over-regulation. Through over 500 red tape reduction initiatives, the province sees faster approvals and cost savings for investors.

Designated Industrial Zone

Alberta is home to a Designated Industrial Zone which benefits from consistent, coordinated regulatory approvals and shared access to infrastructure and resources.

Access to Key Markets

Globally Connected

Alberta's established transportation and logistics infrastructure enables efficient access to markets across Canada, the United States and Asia.

Political Commitment

National Promise

In 2022, the Government of Canada committed \$3.8B in support over six years for projects related to the extraction and processing of critical minerals such as nickel, lithium, cobalt, and magnesium.

Low Cost of Doing Business

Infrastructure

Opportunity to repurpose and leverage existing oil and gas infrastructure.

Alberta's Tax Advantage

Alberta businesses and residents pay the lowest overall taxes in the country and amongst the lowest in North America.

Costs to Import & Export

Canada has the lowest combined compliance costs for importing and exporting goods across countries with lithium reserves.

Sustainable

Accessing Clean Energy

Alberta is home to Canada's only deregulated, energy-only power market which enables mineral extraction and processing companies access to clean energy through virtual power purchase agreements (VPPAs). VPPAs can be negotiated directly with renewable energy developers to achieve sustainability goals while creating long-term stability and certainty on the price of power.

Big. Bold.
Alberta.