



# *Securing the Future*

Saskatchewan's Critical Minerals Strategy

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Canada 





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# A Message from Premier Scott Moe

## **Saskatchewan is a world leader in producing the most sustainable and highest-quality food, fuel, and fertilizer.**

With this expertise as a significant head start, the province is rising to the challenge and expanding its leadership in the critical minerals sector.

In a time of geopolitical volatility and disruption of supply chains, there is a global race on to source strategic minerals that are essential to the economy, national security, and everyday life – minerals that are used in the production of everything from clean energy to consumer electronics.

With occurrences in the province of 23 of the 31 critical minerals on Canada's list, Saskatchewan has an opportunity to contribute to meeting the global critical mineral demand for potash, uranium, helium, lithium, copper, zinc, cobalt, nickel, and rare earth elements.

While Saskatchewan has long been a top global producer and exporter of potash and uranium, the province is now home to a burgeoning helium sector and to the first-of-its-kind minerals-to-metals rare earth processing facility in North America.

In this strategy, Saskatchewan has focused critical mineral goals that are ambitious but achievable. This includes increasing Saskatchewan's share of Canadian mineral exploration spending, doubling the number of critical minerals being produced in the province, establishing Saskatchewan as a rare earth element hub, and growing Saskatchewan production of potash, uranium, and helium.

The Saskatchewan critical minerals advantage is clear. The Fraser Institute's Annual Survey of Mining Companies, 2021 ranked Saskatchewan second in the world and first in Canada in the Investment Attractiveness Index. The province boasts among the most sustainable production of minerals in the world coupled with a highly competitive business environment for exploration, mining, processing and manufacturing. This strategy enhances some of the programs and incentives to facilitate further growth throughout the full value chain in the sector.

Critical mineral opportunities abound in the province. Saskatchewan is a critical minerals leader today and will be a critical minerals powerhouse tomorrow.



**Scott Moe**  
Premier of Saskatchewan



# Critical Minerals in Saskatchewan

Saskatchewan is the world's top producer of **potash** and the number one exporter, helping fight global food insecurity by sustainably producing the essential fertilizer farmers need to feed a hungry and growing world.

Saskatchewan has the world's highest-grade **uranium** deposits and is a leading global producer and exporter of this crucial mineral for powering a low-carbon, clean air world, today and for the future.

Saskatchewan is home to the North American hub for research, development, and processing of **rare earth elements** (REEs), with among the world's most sustainable REE extraction and processing facilities.

Saskatchewan has a thriving **helium** sector, with active drilling, purification facilities, and liquefaction efforts with a provincial goal of holding a 10 per cent global market share for the helium needed in medical research, semiconductor manufacturing, space exploration, and fibre optics.

Saskatchewan is home to rich **copper** deposits, with one current project being developed that could become the world's first net-zero copper mine, producing the copper in high demand for electrification of transportation and power grids around the world.

Saskatchewan is home to **lithium** resources that could be sustainably extracted from subsurface mineral brine waters with a minimal environmental footprint, as demand for lithium is skyrocketing in the electric vehicle (EV) and battery markets.

These are just six of the 31 critical minerals which the Government of Canada has identified as "essential for the sustainable economic success of Canada and its trading partners."

With occurrences in the province of 23 of the 31 critical minerals on Canada's list, Saskatchewan has an opportunity to contribute to meeting the global critical mineral demand for potash, uranium, helium, lithium, copper, zinc, cobalt, nickel, and REEs.





# What are Critical Minerals and **Why Do They Matter?**

Growing global populations, the adoption of clean technology, and geopolitical uncertainty are driving an unprecedented level of focus from governments and companies around the world on the sustainable and reliable supply of natural resources.

The presence of these minerals in Saskatchewan offers our province a unique opportunity to build upon its strong foundation as a global supplier of food and energy security, and to become a key supplier of the critical minerals that are essential to how the planet powers its future.



# 23

of 31 minerals on Canada's critical mineral list occur naturally in Saskatchewan.

There are **three main reasons** why governments and companies in the United States (U.S.), Canada, and many other jurisdictions are in a race to explore for, mine, process, refine, and manufacture these minerals.



They are of **strategic importance** to economic and national security, and they are also vulnerable to supply-chain disruptions.



They are **key inputs in renewable power generation, clean electricity technologies, and EVs.**



They are **essential for electronic devices** and other products we commonly use.





# Critical Minerals in Action

One example of critical minerals in action today is smartphones. Brands and devices vary, but on average there are a staggering **14 different critical minerals in a smartphone**. Critical minerals are also essential for a variety of other electronic devices such as laptops and tablets.

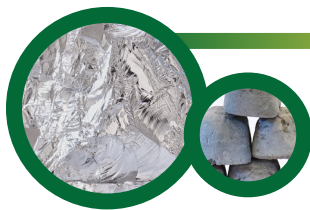
## DISPLAY

Rare Earth Elements



## CASING

Nickel and Alloys

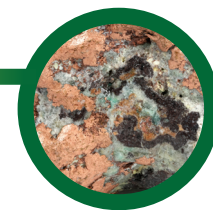


## MICROPHONE, SPEAKERS + VIBRATION UNIT

Nickel, Alloys and Rare Earth Elements

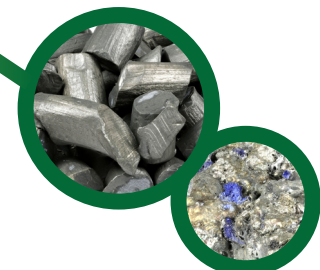
## CHIPS AND CONNECTORS

Copper



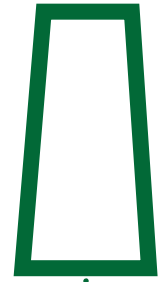
## BATTERY

Lithium and Cobalt





# (A few of the) Things Made with Critical Minerals Found in Saskatchewan



## **FERTILIZER** made with **POTASH**

Potash is a mineral containing potassium which is an essential nutrient to help plants grow. As a fertilizer, potash is used to produce healthy agricultural crops and feed the world.



## **CLEAN ELECTRICITY** generated using **URANIUM**

Uranium is used as a fuel to produce clean energy from nuclear power plants, which generate electricity with zero emissions.



## **ELECTRONIC DEVICES** made with **RARE EARTH ELEMENTS**

REEs are used in a variety of industrial applications including electronics, clean energy, aerospace, automotive, and defence. These minerals are processed into permanent magnets which are essential components of modern electronics used in smartphones, televisions, computers, automobiles, wind turbines, aircraft, and many other products.



## **SPACE TRAVEL AND RESEARCH** using **HELIUM**

Helium is used in many scientific, medical, and industrial technologies, including MRI machines, space travel and research. In space travel, it ensures rocket fuel and other gasses remain separated during lift-off. It is a non-renewable resource, often has no substitutes, and is in short supply.



## **SOLAR PANELS** made using **COPPER**

Copper is an essential ingredient for electricity transmission, EVs, and many other emerging and clean technologies such as solar cells. As EVs become more affordable and widely used, there will be an increasing need for copper.



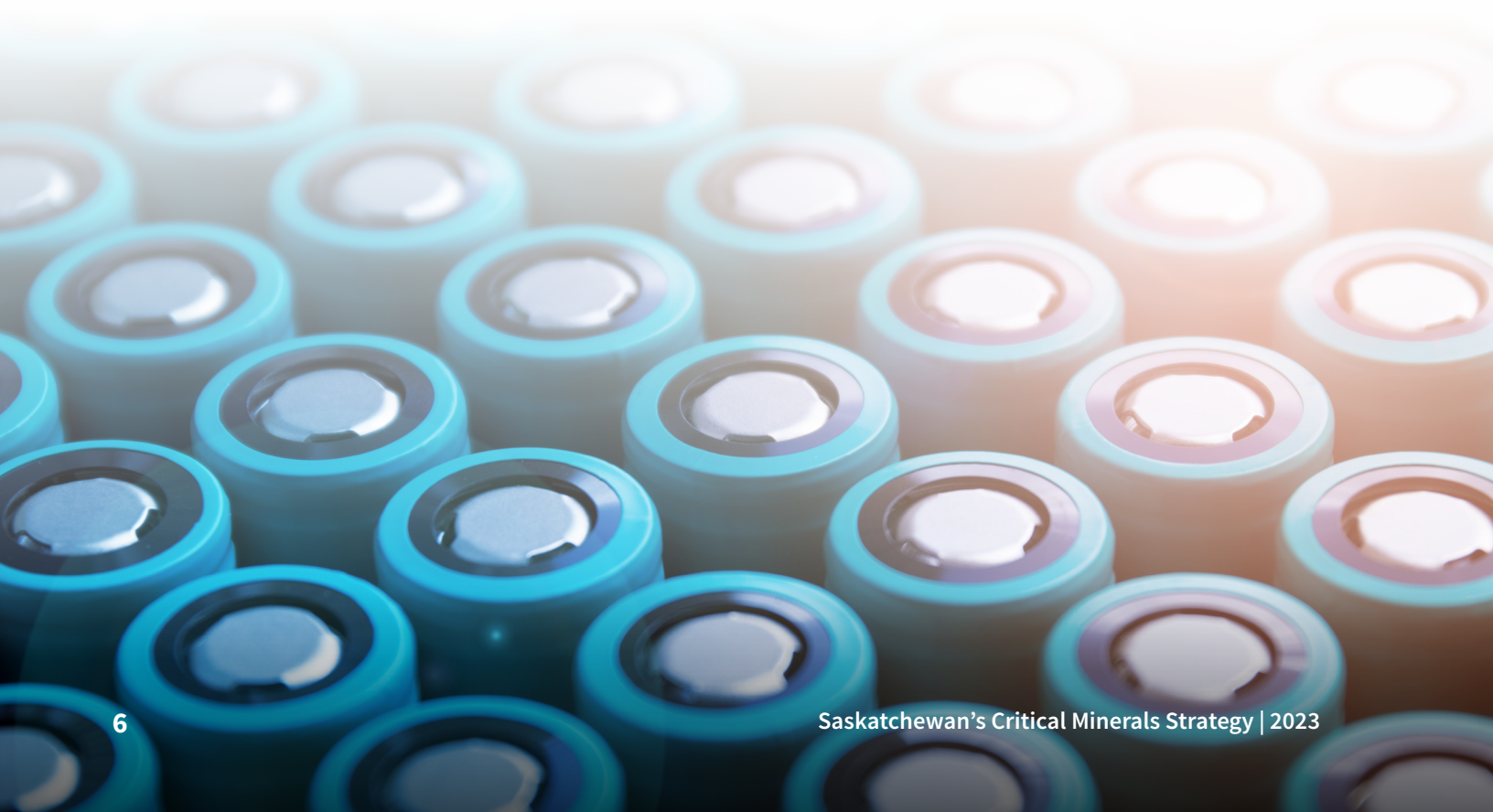
## **RECHARGABLE BATTERIES** made using **LITHIUM**

Lithium is used in rechargeable batteries for EVs and electronics such as laptops, cell phones, and grid storage. Demand for lithium-ion batteries has grown significantly in recent years, driving global exploration and enabling new lithium projects to be considered.



## **STAINLESS STEEL** made using **NICKEL** and **COBALT**

Nickel and cobalt are used in manufacturing rechargeable batteries, while nickel is also used in the production of stainless steel. Demand for both is projected to increase more than 40 per cent by 2030.





## The Global Race for Critical Minerals

*Critical minerals provide the building blocks for many modern technologies and are essential to our national security and economic prosperity.*

*These minerals—such as rare earth elements, lithium, and cobalt—can be found in products from computers to household appliances. They are also key inputs in clean energy technologies like batteries, electric vehicles, wind turbines, and solar panels.*

*As the world transitions to a clean energy economy, global demand for these critical minerals is set to skyrocket by 400-600 percent over the next several decades, and, for minerals such as lithium and graphite used in electric vehicle (EV) batteries, demand will increase by even more—as much as 4,000 percent.*

*The U.S. is increasingly dependent on foreign sources for many of the processed versions of these minerals. Globally, China controls most of the market for processing and refining for cobalt, lithium, rare earths and other critical minerals.*

- White House FACT SHEET: Securing a Made in America Supply Chain for Critical Minerals



The U.S. government's focus on reducing dependency on foreign sources (particularly China) for its critical minerals is one of the drivers of the global race to secure critical minerals. And the U.S. is not alone. Canada and other countries around the globe are equally concerned with ensuring secure and reliable sources of critical minerals.

Just as importantly, demand is being driven not only by growing consumption of today's technologies, but also by the technologies that will reduce carbon emissions – demand influenced by both consumer preferences and government policy decisions.

“

Critical minerals are to net-zero what steam power was to the Industrial Revolution... governments around the world have deemed maintaining a reliable supply of these key minerals to be in their national interests. Political momentum has grown for establishing resilient North American supply chains to increase sourcing from allied nations offering secure and sustainable market-ready products.

**Perrin Beatty**

President and CEO of the Canadian Chamber of Commerce

**Jonathan Price**

CEO of Teck Resources Ltd.

**Frank Voss**

President of Toyota Motor Manufacturing Canada





# Saskatchewan's Critical Mineral Goals

## **GOAL** Increase Saskatchewan's share of Canadian mineral exploration spending to 15 per cent by 2030

Saskatchewan's share of Canadian mineral exploration spending was 7.4 per cent in 2021, growing to 8.5 per cent in 2022.

Increasing this share of investment to 15 per cent will drive economic activity in the province and Saskatchewan's critical mineral sectors, and would represent the largest share of mineral exploration investment relative to the Canadian total in over a decade.

Exploration is an important first stage in the mineral development process. Investment in exploration drives the discovery and advancement of mineral projects which are needed to develop new mines, as well as establishing and growing the critical minerals value-chain.

Building on the Saskatchewan Advantage, the Government of Saskatchewan is taking action to ensure the province captures a greater share of mineral exploration and remains the best place in Canada for mining by:

- ▶ Increasing the Saskatchewan Mineral Exploration Tax Credit (SMETC) from 10 to 30 per cent, providing the highest tax incentive in Canada.
- ▶ Enhancing the Targeted Mineral Exploration Incentive (TMEI) from \$750,000 to \$4 million annually to support all hard-rock mineral exploration drilling in Saskatchewan and attract further investment.

## **GOAL** **Double the number of critical minerals being produced in Saskatchewan by 2030**

Saskatchewan has a long history of leadership in mining critical minerals and the Government of Saskatchewan is committed to growing and diversifying the critical minerals sector in the province.

Mine construction is capital intensive, but when mines are built, they provide significant economic benefits. One major potash project currently under development – with a commitment of more than \$12 billion – will be the largest investment in Saskatchewan’s history. Operating major mines are powerful drivers of Saskatchewan’s economy, with each mine accounting for about one per cent of provincial gross domestic product (GDP), on average.

Beyond existing production of potash, uranium, and helium, Saskatchewan has the potential to advance significant projects in lithium, copper, zinc, REEs, nickel, and cobalt to production.

## **GOAL** **Grow Saskatchewan production of potash, uranium and helium**

Due to world-leading geology, a competitive business environment, continued global consumption growth, and the ongoing geopolitical instability, there is a significant need for Saskatchewan to expand its existing critical minerals industries.

Saskatchewan’s mining sector accounted for 12 per cent of GDP in 2021 and directly employed nearly 12,000 people.

### **Potash**

Saskatchewan is the world’s largest exporter and home to the best quality deposits of potash on the planet, with resources so large that the province could supply 100 per cent of global farmer demand for decades and even centuries.

The Saskatchewan potash sector has seen \$30 billion of committed investment in mine expansions and new projects over the last 15 years. The industry directly employs about 5,400 people, contributes to the livelihoods of thousands more, and makes up approximately 11 per cent of provincial GDP.

The Government of Saskatchewan will continue to support the growth of the province’s world-leading potash industry by providing a competitive investment environment and by promoting the province’s resources internationally.



## Uranium

As the only producer of uranium in Canada, Saskatchewan supplied 10 per cent of the world's uranium in 2021, ranking it the third largest producer that year.

Saskatchewan production rose in 2022 as Russia – a significant global producer and player in the nuclear fuel cycle – began its invasion of Ukraine. The resulting supply chain concerns and the continued global movement towards carbon-free nuclear power has resulted in higher uranium prices and increased interest in Saskatchewan's uranium industry.

The Athabasca Basin of northern Saskatchewan is home to the largest high-grade deposits in the world, with exceedingly high ore grades compared to the average global level. The region is home to nine per cent of the world's known recoverable uranium, with uranium reserves and resources of over 1.5 billion pounds (lbs) of triuranium octoxide (U<sub>3</sub>O<sub>8</sub>).

## Helium

In 2022, Saskatchewan was Canada's largest helium producer with nearly 1.5 per cent of the world's helium volume from just 15 wells located in the southwest of the province.

Saskatchewan's unique geology offers world-class helium resources, with deposits of up to 2 per cent helium concentrations, where recognized global benchmarks for economic recovery from standalone helium wells is 0.5 per cent.

Saskatchewan is currently home to Canada's largest helium purification facility, which was an investment of more than \$30 million and the project received support through the Saskatchewan Oil and Gas Processing Investment Incentive (OGPII). This facility solidified Saskatchewan as a global player in the helium sector and has been successfully exporting helium for more than a year.



In November 2021, the Ministry of Energy and Resources released the *Helium Action Plan: From Exploration to Exports* (HAP), which is a comprehensive strategy to support growth in Saskatchewan's helium industry. HAP's ultimate vision is for Saskatchewan to supply 10 per cent of the global helium supply by 2030 and has introduced 10 new government actions to support competitiveness and drive investment.

Since 2021, overall helium production has increased by 79 per cent with Saskatchewan producing close to 2.4 million m3 in 2022.

## GOAL Establish Saskatchewan as a Rare Earth Element Hub

Saskatchewan will undertake a three-track approach to establish the province as a North American and global REE hub:

### (1) Leveraging the Saskatchewan Research Council's Position as a Leader in REE Processing

The Saskatchewan Research Council (SRC) houses some of the world's leading experts in REE processing and separation technologies. In addition to its extensive expertise in REEs, the SRC is home to the first minerals-to-metals rare earth processing facility in North America.

The SRC will continue to play a foundational and leading role in establishing Saskatchewan as a REE hub. The SRC's expertise, and the future opportunities presented by its processing facility, will capture increased value from REE's and serve as a catalyst for commercial scale private sector investment and development.



## **(2) Encouraging Private Sector Development**

Saskatchewan's competitive tax and royalty system combined with its position as one of the best places in the world for mining investment make the province an attractive jurisdiction for REE investment. Early success stories in northern Saskatchewan demonstrate the opportunity Saskatchewan provides for private sector investment and activity in all phases of sustainable REE production and processing.

The Government of Saskatchewan will continue to promote Saskatchewan's critical mineral opportunity by engaging companies in North America and from Canada's allies around the world to be a part of Saskatchewan's REE hub and the value-chain opportunities in the province – from exploration through to the production of magnets and other products using REEs.

## **(3) Pursuing Opportunities and Partnerships as Governments Seek Secure Supplies of REEs**

As governments around the world race to access and secure reliable supplies of critical minerals, the Government of Saskatchewan will actively pursue partnership opportunities with the Government of Canada and Canada's allies to secure REE materials, expertise, and participate in establishing Saskatchewan as a REE hub to enable secure North American supply chains.







# Saskatchewan's Critical Mineral Advantage

Saskatchewan is among the best places in the world to invest in critical minerals, as the province has a reputation as a world leader in mining investment attractiveness, resource potential, a strong stable government, and ethical and sustainable practices.

The Fraser Institute's Annual Survey of Mining Companies, 2021 ranked Saskatchewan second in the world (behind only Western Australia) and first in Canada in the Investment Attractiveness Index, based on factors such as jurisdictional stability, regulations, competitive tax regimes, infrastructure and geological attractiveness.

Saskatchewan has high-quality and easily accessible geoscience and mineral resource information to inform and attract exploration for new discoveries. The province offers attractive exploration incentives and tax credits, and has a highly competitive royalty system for base, precious, and emerging critical minerals.



Ranked  
**1<sup>st</sup>**

in Canada and second in the world in mining investment attractiveness, according to the Fraser Institute.

Saskatchewan has established world-leading extraction expertise in the potash, uranium, and energy sectors. The SRC has worked with every industry identified as part of Saskatchewan's critical minerals sector, including housing the world's largest uranium and potash laboratories. Further, the SRC has been working with REEs for nearly 15 years, making it one of the most knowledgeable, expert organizations in Canada.

## Saskatchewan's Growth Plan

*Saskatchewan's Growth Plan* includes economic goals such as increasing jobs, investment and adding value to the products Saskatchewan exports around the world. Goals focused on critical minerals include increasing the value of annual potash sales to \$9 billion and uranium sales to \$2 billion by 2030 while encouraging new opportunities for exploration and development of strategic metals and minerals in the province.

Included in *Saskatchewan's Growth Plan* are goals for "increasing mining exploration and the value of mining exports," and commitments to:

- ▶ Ensure a competitive royalty and taxation environment for the mining sector.
- ▶ Encourage the exploration and development of Saskatchewan mineral resources including strategic minerals and metals.
- ▶ Promote Saskatchewan's mining sector to attract international investment and to attract new exploration and mining companies to the province.
- ▶ Provide Provincial Sales Tax exemptions for exploratory and downhole drilling activity in the mining sector to encourage mining investment and exploration.
- ▶ Work with the federal government to remove barriers to global market access and foreign investment restrictions on uranium.
- ▶ Support the Targeted Mineral Exploration Incentive to increase exploration for emerging minerals in underexplored regions.
- ▶ Work to ensure regulatory and permitting decisions are clear, consistent, predictable, and timely to support industry investment decisions and community engagement.
- ▶ Support the development of the helium industry in the province.



*The Growth Plan* commits to increasing the value of Saskatchewan manufacturing exports by 50 per cent, improving competitiveness across Saskatchewan's natural resource sectors, developing opportunities through innovation to grow and increase the sustainability of Saskatchewan's economy, and growing Indigenous participation in Saskatchewan's natural resource industries.

The Saskatchewan Critical Minerals Strategy will help fulfill many of the key goals in the *Growth Plan* and achieve the desired outcomes of growing a stronger Saskatchewan, now and for the future.

## Highly Competitive Environment for Mineral Exploration and Mining

Saskatchewan offers a stable political and regulatory environment, as well as competitive land and utility costs. The province had the second-highest employment rate in Canada in 2021, one of the lowest net debt-to-GDP ratios among the provinces, and a projected economic growth of 3.7 per cent (real GDP) in 2022.

Saskatchewan also has several business incentives and tax credits available to encourage business growth and investment.

### **Manufacturing and Processing Profits Tax Reduction**

Cuts the corporate income tax (CIT) rate from 12 per cent to as low as 10 per cent.

### **Manufacturing and Processing Investment Tax Credit**

Refunds 6 per cent of the final installed cost of eligible capital expenditures to manufacturers and processors.

### **Research and Development Tax Credit**

A 10 per cent credit for eligible research and development expenditures.

### **Mineral Processing Tax Incentive**

Encourages processing of imported minerals or mineral concentrates by providing a five-year CIT holiday.

## Growing Mineral Exploration

### **Saskatchewan Mineral Exploration Tax Credit**

The Government of Saskatchewan is increasing the Saskatchewan Mineral Exploration Tax Credit (SMETC) from 10 per cent to 30 per cent, making it the most competitive and highest tax credit in Canada.

The SMETC encourages the exploration and development of mineral resources in the province, including critical minerals and emerging metals.

## **Targeted Mineral Exploration Incentive**

The Government of Saskatchewan is enhancing the budget for the Targeted Mineral Exploration Incentive (TMEI) from \$750,000 to \$4 million annually. The Incentive will now apply to all hard-rock mineral exploration drilling in Saskatchewan.

The TMEI program strengthens the province's competitiveness and is helping to further diversify the mining sector in Saskatchewan.

## **Growing Mining**

### **Base and Precious Metals Royalty Holiday and Capital Recovery**

New base and precious metal mines beginning commercial production are eligible for a 10-year royalty holiday.

Royalties on base and precious metal production are not payable until after the holiday period and the royalty payer has recovered 150 per cent of its initial costs of exploration and development.

### **Growing Helium and Lithium Development**

Over the last two years, the Government of Saskatchewan has expanded the Oil and Gas Processing Investment Incentive (OGPII) and the Saskatchewan Petroleum Innovation Incentive (SPII) programs to allow the inclusion of eligible helium and brine lithium projects, which will help further accelerate the development of the lithium and helium sectors in the province.

## **Growing Capital Investment in Potash**

### **Potash Incentive Tax Credits**

Potash producers are entitled to credits for 40 per cent of eligible expenditures for approved research and development projects and market development programs.

### **Potash Base Payment Holiday**

Producers receive a 10-year holiday from the base payment portion of the Potash Production Tax for production from approved new mine and mine expansions.

### **Potash Crown Royalty Reduction**

For new potash mines of sufficient size, the potash Crown royalty is eliminated for the first 36 months of production from the mine to a maximum of \$100 million over the period of the royalty reduction. Tax credits against the profit tax portion of the Potash Production Tax are reduced by an amount equal to the royalty reduction.





## Strong Public Geoscience

Saskatchewan has a world-class public geoscience program. Public geoscience data increases knowledge of deposits, generates new discoveries, enhances exploration efficiency, improves drilling and development outcomes, and is extremely valuable in helping explorers de-risk their investments. Exploration companies use public geoscience programs, such as geophysical and geochemical surveys, geological mapping, and raw critical minerals-related data to target investment over both the short- and long-term.

The Government of Saskatchewan will continue to enhance public geoscience programs that are foundational to the development of Saskatchewan's critical minerals sector. The budget 2023-24 allocates \$2.4 million for establishing an integrated system for the collection, management, and distribution of Saskatchewan's public geoscience data. Providing an online platform to support industry access and submission of geoscience information, the new system will improve service to Saskatchewan explorers and enhance the investment attractiveness of Saskatchewan's critical minerals resources.

## Leading Knowledge, Expertise and Innovation in REEs

The SRC is the second largest research and technology organization in Canada. With 350 employees, \$275 million in annual revenue and 75 years of experience, the SRC provides services and products to its 1,400 clients in 25 countries around the world. The SRC team consists of world leading experts in REE processing and separation technologies.

The SRC's experience includes working with every industry in Saskatchewan's critical minerals sector. Housing the world's largest uranium and potash laboratories, the SRC has been working with REEs for nearly 15 years, making it one of the most knowledgeable, expert organizations in the world.

Saskatchewan is home to the first-of-its-kind minerals-to-metals rare earth processing facility in North America.

The SRC's Rare Earth Processing Facility will be one of the world's most environmentally sustainable with zero liquid discharge and a target to be net zero within the first few years of operation. This facility is setting the foundation for a world-class REE supply chain in Saskatchewan, ensuring growth of the critical minerals sector and future commercial REE resource expansion in the province.

The Government of Saskatchewan is supporting the SRC Rare Earth Processing Facility with a \$71 million contribution for the build-out, which is now well underway.

The first phase includes a Monazite Processing Unit that will process ore and produce mixed rare earths. This unit will be operational in 2023.

The second phase includes a Separation Unit that will produce individual rare earth oxides (including cerium, lanthanum, neodymium, and praseodymium). From there, the Metals Unit will produce rare earth metals for sale to market – the metals are a key ingredient used to manufacture permanent magnets for applications in many different products. These units will be operational in 2024.

In August 2022, the first metal ingots ever produced in Canada were processed by the SRC during a successful test run of the metals smelting unit at the facility. (Metal ingots, made from rare earth metals, are the key ingredient used to manufacture permanent magnets which are used in EVs, wind turbines, and electronics.)

In addition, the SRC has designed and manufactured proprietary commercial-scale solvent extraction cells in-house for its Rare Earth Processing Facility's Separation Unit. Saskatchewan is now only one of a handful of jurisdictions in the world with this capability.





# Growing Indigenous Participation in Critical Mineral Development

Saskatchewan is committed to growing Indigenous participation in the natural resource industry, including in the critical minerals sector. Engagement and collaboration on critical minerals projects can support economic reconciliation, build on the long history of successful Indigenous participation in Saskatchewan's resource sectors, and continue to deliver the socio-economic benefits of mining to Indigenous communities. Critical minerals provide a new opportunity to work with Indigenous partners to advance economic growth for all Saskatchewan people.

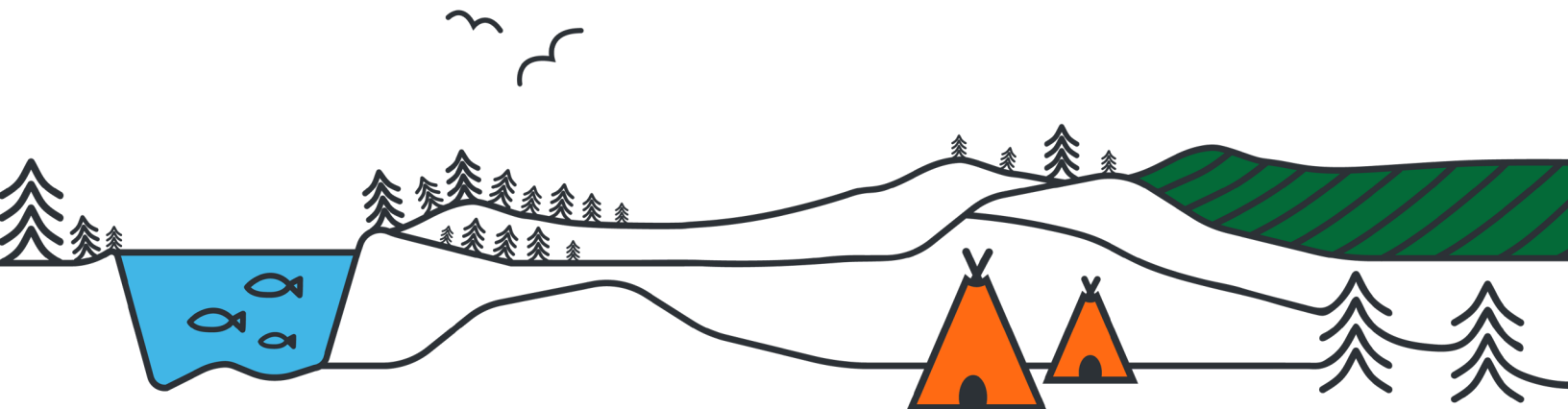


## Saskatchewan Indigenous Investment Finance Corporation

The *Saskatchewan Growth Plan* identifies the important goal of growing Indigenous participation in Saskatchewan's natural resource industries. As the Government of Saskatchewan is committed to economic reconciliation and increasing Indigenous economic opportunities, the Province launched the Saskatchewan Indigenous Investment Finance Corporation (SIIFC) in 2022.

The SIIFC will increase economic opportunities for Indigenous communities and organizations wanting to invest in natural resource and value-added agriculture projects in the province by providing up to \$75 million in loan guarantees (with minimum loan guarantees of \$5 million) to eligible applicants. This program will support Indigenous-equity ownership of major projects, including in the mining industry.

Providing Indigenous communities and organizations access to capital will facilitate investment in natural resource development projects. Saskatchewan is rich in agricultural land, forests, minerals, oil and renewable energy, and is seeing record investments in projects that utilize these valuable resources. The SIIFC was created to support Indigenous project proponents, and their partners, as they look to jointly advance investments and financially benefit from the entire life cycle of major projects, which will provide Indigenous communities with new sources of revenue to advance community priorities.



## Enhancing Saskatchewan's Regulatory Environment and Exploration Permitting

Saskatchewan ranks second in the world for investment according to the Fraser Institute's Investment Attractiveness Index, which considers both mineral and public policy perception. To maintain its global leadership position, Saskatchewan continues to bolster government policies and programs while also cutting red tape and enhancing certainty for industry.

The Government of Saskatchewan will undertake a review of environmental exploration permitting with the goal of enhancing transparency and improving the efficiency of processes. Building on recent actions that have included the reallocation of staffing resources, enhancing data management, and working collaboratively with industry on more flexible permitting options. This new initiative will increase understanding and awareness within northern First Nations and Métis communities about the mineral exploration industry and support sustainable growth within the province. The initiative will also enhance client support for the mineral exploration industry.

Supporting the efficient and effective permitting process will increase growth in the mineral exploration industry through robust early engagement and awareness at a community level. This process will help inform and support Duty to Consult obligations through all stages of mineral exploration.

## Sustainability of Saskatchewan's Mineral Products, Greening the Electrical Grid and the Province's Nuclear Future

Sustainably produced critical minerals in Saskatchewan are already a significant contributor to global food and energy security.

Potash mines in the province produce 50 per cent fewer emissions per tonne of potash compared to competing jurisdictions, making Saskatchewan the world's largest and greenest potash producer. As a top producer and exporter of uranium, Saskatchewan plays a key role in the production of zero-emission nuclear energy.

Saskatchewan helium production is exceedingly less carbon intensive than competing jurisdictions such as Russia and Qatar.

Without access to significant hydro resources, Saskatchewan is working towards a cleaner and greener grid.



- ▶ SaskPower is on track to reduce greenhouse gas (GHG) emissions from electrical power generation by at least 50 per cent by 2030, compared to 2005 levels, while the amount of non-emitting electricity in Saskatchewan's generation mix will increase from approximately 35 per cent today to between 40 and 50 per cent.
- ▶ A significant component of Saskatchewan's electrical production moving forward beyond 2030 may be produced by nuclear power.
- ▶ Saskatchewan, New Brunswick, Ontario and Alberta have signed a memorandum of understanding (MOU) to collaborate on the advancement of small modular reactors as a clean energy option to address climate change and regional energy demands, while supporting economic growth and innovation.
- ▶ In May 2022, the SRC and Westinghouse Electric Canada signed a MOU to advance very small modular reactors, also known as micro-reactors, in Saskatchewan.

## Promoting Saskatchewan's Critical Mineral Opportunity Globally

### International Trade and Investment Offices

The Government of Saskatchewan has a global network of nine international trade and investment offices to increase trade, attract investment, strengthen relationships, and assist clients in navigating business opportunities, including in the critical minerals sector.

Saskatchewan's network of international offices provides regional coverage across Europe, the Middle East and North Africa, Asia, and Latin America. The offices serve to advance the province's growth mandate, support provincial interests by strengthening and leveraging strategic partnerships internationally, and coordinate on behalf of government partners to achieve Saskatchewan's ambitious *Growth Plan* targets.



# 9

## international trade and investment offices to increase trade, attract investment and strengthen key relationships.

With a secure and stable supply chain in Saskatchewan that is providing the food, fuel, fertilizer, and critical minerals that a growing world needs, the government is committed to supporting a competitive business environment that facilitates investment and expansion of the province's export sectors.

The Saskatchewan offices support:

- ▶ diversifying markets;
- ▶ facilitating connections between Saskatchewan businesses and international buyers;
- ▶ increasing foreign direct investment (FDI) in Saskatchewan;
- ▶ establishing ongoing relationships and business partnerships; and
- ▶ providing exporters an understanding of the business environment, rules and regulations in these markets.

Saskatchewan's international presence also continues to attract significant interest from global partners to the province, including a record number of diplomatic and commercial delegations visiting Saskatchewan recently – more than 70 delegations visited Saskatchewan in 2022-23 to explore increased investment, trade, immigration, and partnership opportunities.

The Government of Saskatchewan is committed to increasing trade, boosting exports, and strengthening the province's international relationships to create opportunities and build a strong economy that benefits our entire province.

The international trade and investment offices will play a pivotal role in helping achieve *Saskatchewan's Growth Plan* goals to increase the value of exports by 50 per cent, grow private capital investment to \$16 billion annually by 2030, create 100,000 new jobs, and grow the number of international markets to which Saskatchewan exports more than \$1 billion.





# Critical Mineral Opportunities in Saskatchewan

## Critical Minerals Leader Today, Powerhouse Tomorrow

### Saskatchewan's Potash Opportunity

Saskatchewan is the world's largest producer of potash with an opportunity to further increase its global market share. According to conservative estimates, the province could supply global potash demand at current levels for hundreds of years.

Saskatchewan's potash industry typically accounts for approximately 30 per cent of world production, directly employs approximately 5,400 people and contributes to the livelihood of thousands more. Saskatchewan's potash industry procured \$1.8 billion in goods and services from Saskatchewan businesses in 2021, with \$217 million of this procurement from Saskatchewan Indigenous businesses.

Over the last decade, one new greenfield potash mine has entered production, two others have begun construction, and expansions of productive capability have been completed at every Saskatchewan mine. The total committed capital cost of these projects is over \$30 billion.

### Saskatchewan's Uranium Opportunity

Saskatchewan is one of the world's largest producers of uranium, with an opportunity to increase its global market share. The province has the largest high-grade uranium deposits in the world.

Saskatchewan's uranium industry was responsible for 1,842 jobs in 2021, including direct employees and contractors.

Saskatchewan's uranium industry contributed \$4.1 million to community investment including local organizations, Indigenous partnerships, and scholarships in 2021. That same year, Saskatchewan's uranium industry procured \$287 million in goods and services from Saskatchewan businesses, with 49 per cent of this procurement from Saskatchewan Indigenous businesses.

In 2021, \$75 million was spent on uranium exploration in Saskatchewan, jumping to an estimated \$126 million in 2022.

## Saskatchewan's Helium Opportunity

Saskatchewan is home to the largest helium purification facility in Canada. The province boasts high helium concentrations in underground reserves and some of the best geology in the world for low-emission helium production.

Saskatchewan is one of the few jurisdictions in the world that can support the drilling of dedicated helium wells, rather than as a by-product of hydrocarbon production. This makes helium production significantly more environmentally friendly in Saskatchewan, with production up to 99 per cent less carbon intensive than in other competing jurisdictions.

Canada has the fifth-largest helium resources in the world, and only a handful of other countries have significant helium deposits—namely, the U.S., Qatar, Algeria, China, and Russia. With the U.S. government actively depleting its helium stockpiles, Canada's allies will look to Canada to support their helium supply chains.

In 2022, Saskatchewan produced nearly 1.5 per cent of the world's helium volume from just 15 wells located in the southwest of the province. Through the deliverables in the *Helium Action Plan*, Saskatchewan is targeting supplying 10 per cent of the global helium supply by 2030.

1.5%

of the world's helium volume produced from just 15 wells in Saskatchewan in 2022.



## Saskatchewan's Lithium Opportunity

Lithium in Saskatchewan occurs primarily in subsurface mineral brines, but also has been found in hard rock. Exploration related to brines has been the focus to date in the province.

There are currently more than 10 companies that have acquired mineral dispositions to explore for lithium in Saskatchewan. In 2022, four of those companies reported spending \$4.5 million on lithium exploration in the province. Lithium exploration expenditures are anticipated to increase by 25 per cent in 2023.

One company operates a pilot plant near Regina which is expected to provide information needed to design a field demonstration plant to be deployed at the wellsite.

## Saskatchewan's Copper Opportunity

Copper occurrences in Saskatchewan are commonly associated with other critical minerals, including zinc, nickel, cobalt, and/or platinum-group metals.

Over 30 deposits have been mined in the base metal-rich Flin Flon-Snow Lake mining district of Saskatchewan and Manitoba over the past century, with total production of over 8 billion pounds of copper.

Since 2018, 20 companies have performed copper exploration activities in the province.

One copper project is approaching a construction decision and is projected to be the world's first carbon-neutral copper mine, with an initial capital cost of \$368 million and is projected to produce an average of 34.5 million pounds of copper annually over an 18-year mine life, based on current mineral reserves. The project also plans production of 58.6 million pounds of zinc annually.

Deposits like these are known to occur in clusters, thus there is strong potential for additional discoveries that could lead to further development in the project area.





## Saskatchewan's Nickel and Cobalt Opportunity

Nickel and cobalt occurrences in Saskatchewan are commonly associated with other critical minerals, including copper, uranium, and/or platinum group metals.

As the current cobalt market is dominated by the Democratic Republic of Congo and China, there is an opportunity for safe, secure, and sustainable jurisdictions, like Saskatchewan, to establish a nickel and cobalt industry.

Saskatchewan is a past producer of nickel, with the Rottenstone Mine producing approximately 1.44 million pounds of nickel when it was operational in the 1960s.

In the past five years, 12 companies have undertaken nickel exploration activities in the province, while four have explored for cobalt.

In the eastern part of Saskatchewan's Athabasca Basin, one company is exploring a high-grade cobalt-nickel deposit with over 3 million pounds of nickel and 3.7 million pounds of cobalt. This exploration project has the resources and potential to become a secure and ethically sourced cobalt producer.

There are several exploration projects in northern Saskatchewan in the process of conducting drill programs to delineate potential nickel-bearing deposits, including the area near the past-producing Rottenstone nickel mine where exploration is occurring to potentially develop the historic resource.



## Saskatchewan's REE Opportunity

Saskatchewan is positioned with an early advantage to be a key player in the REE supply chain. The Saskatchewan opportunity is generating interest, as the world wants a safe, secure, and sustainable supply of REEs – essential for growing a clean global economy.

There are huge challenges in the global REE market, as China is the dominant producer in both REE upstream mining and downstream processing, controlling more than 90 per cent of the global REE supply chain.

Saskatchewan has the opportunity to develop one of the few commercial processing hubs outside of China. The province is seen as a North American REE technology leader, a position that is now creating expansion opportunities throughout the REE value chain.

Canada has some of the largest known reserves and resources (measured and indicated) of REEs in the world, estimated at over 14 million tonnes of rare earth oxides as of 2022.

The Government of Saskatchewan has invested \$71 million for the construction of the first-of-its-kind minerals-to-metals rare earth processing facility in North America, the Saskatchewan Research Council's (SRC) Rare Earth Processing Facility. Planned to be the world's most environmentally sustainable, this facility is setting the foundation for a flourishing REE supply chain in Saskatchewan, ensuring growth throughout the value chain in the critical minerals sector and future commercial REE resource expansion in the province.

Canada's first REE producer, following the start of production at its rare earths project in the Northwest Territories, is investing \$56 million to construct a REE processing facility in Saskatoon, adjacent the SRC facility. Initial production of an intermediate rare earth oxide product is expected in late 2023 with full facility operation planned for 2024.

Other companies are advancing REE and gallium exploration projects in northern Saskatchewan.

The vast majority of REE occurrences in Saskatchewan are under-explored and require further evaluation. The Ministry of Energy and Resources is working to expand the understanding of Saskatchewan's distribution of REEs to further industry exploration efforts. Over the past five years, \$21 million has been invested in REE exploration by companies in Saskatchewan.







