The Food Mineral:

What is potash, why does it matter and how can Canada maximize its benefits?

Policy Report
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CanadaWest Foundation

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Executive Summary

Everyone wants critical minerals. They have become a defining feature of the global economy, valued for their essential role in modern technologies. Silicon powers semiconductors, lithium underpins batteries, and titanium is integral to advanced manufacturing and defence. Countries that lead in these resources gain more than economic benefits, they secure supply chains and strengthen their geopolitical leverage.

There is no universal definition of “critical minerals,” only a growing consensus that dozens underpin modern economies. National priorities vary: Canada identifies 34 critical minerals, the United States 50, and the European Union 34.

Canada has some of the world’s most abundant reserves of recognized critical minerals and is a significant global producer of a variety of them. But we are the current market leader in only one: Potash.

Unlike higher-profile minerals tied to cutting-edge technologies like radars, solar panels or satellites, potash operates largely out of the spotlight. Yet it is indispensable. As a core nutrient in modern agriculture, potash underpins food production, and without it, maintaining a competitive agricultural sector is nearly impossible.

Potash sits at the nexus of a variety of global and domestic issues. It facilitates greater agricultural productivity at a time when global demand is increasing. Canada’s primary competitors are Russia and Belarus, placing it squarely in the middle of geopolitical tensions. It is also a resource for which the U.S. lacks a meaningful alternative supplier, which gives Canada an important strategic advantage in trade discussions.

These national interest factors are important considerations when taxing potash production. Natural resource taxation is a perennial problem for democratic jurisdictions. Taxes need to ensure proper returns for citizens, attract investment and create a properly competitive industry. The mere act of engaging in tax reform creates uncertainty, which can negatively impact investment decisions.

This report finds that Saskatchewan should emphasize legislative discipline when considering any potential tax review. Opportunities for improvement must be weighed against the risk of lost investment and market share.

It is also critical for Saskatchewan and the federal government to consider opportunities to enhance potash competitiveness. Three key opportunities include improving supply chains, identifying opportunities for talent attraction and retention, and continuing to support trade diversification.

Potash is a key strategic resource for Canada, and an essential contributor to global food security. It is therefore of significant importance that Canada and Saskatchewan continue to develop and grow this industry.

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Introduction

Potash is a crucial resource for global agriculture, and Saskatchewan is both the single largest producer and has the largest known reserves in the world. In a time when Canada is seeking to strengthen its economy, leverage critical minerals for security and wealth, protect itself from hostile international actors and build relationships with allies, the potash industry presents an indispensable opportunity.
In addition to the broader national considerations, potash is an essential component of Saskatchewan's economy.

Despite the importance of this resource, many Canadians do not know what potash is or why it matters. The Canada West Foundation has written this report to address the following:

- What is potash?
- How does potash strengthen global food security and help feed the world, while reducing reliance among Canada's allies on imports from other nations?
- Why does potash matter in Canada's current and future economic potential, and how can Canada unleash this potential?
- How is potash taxed, what are the pros and cons of the current regime and what are potential alternatives?

Specifically on the issue of taxation, the scope of this report does not include a full taxation and royalty analysis, nor does it predict the impact of specific levels of taxation on Saskatchewan's potash industry. This report sets out the current general state of taxation, summarizes key issues, analyzes aspects of policy alternatives and offers recommendations to attract investment and improve competitiveness.

What is potash?

Potash refers to minerals that contain high amounts of potassium, one of the three primary nutrients required for fertilizer (the other two being nitrogen and phosphorus). The name comes from the early extraction technique of leaching potassium from wood ashes and then evaporating the water in iron pots. Potassium is vital for maximizing crop productivity, as it helps facilitate water retention, enzyme production and plant productivity. Plants lacking potassium are more vulnerable to stresses such as water deficit, insects and pathogens. Because of these properties, potash increases agricultural productivity and is an essential component of modern agriculture.

Canada holds the world's largest known potash reserves, nearly all of which are located in Saskatchewan. The country is also the world's leading exporter of potash, with Russia and Belarus being its largest competitors. Due to a concerted effort by potash exporters, particularly through the creation of the potash marketing and export firm Canpotex, Canada exports potash to a variety of countries. The U.S. is the largest importer of Canadian potash (importing 39 per cent of Canadian production in 2023), but Canada also exports to many other countries, including Brazil (22 per cent), China (7 per cent), India (5 per cent) and Bangladesh (4 per cent).[1]

potash increases agricultural productivity and is an essential component of modern agriculture.

Global context: Why potash matters

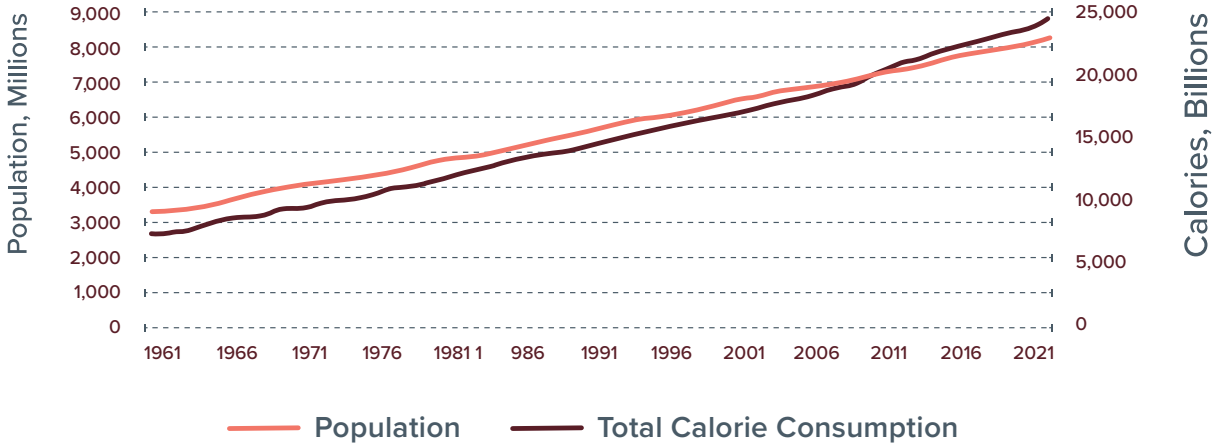
Agriculture drives demand for potash

Potash is important because it supplies potassium, a critical component for global food production.

Food demand is increasing

Demand for food has been increasing for many years. Population growth is the most significant factor: the global population nearly doubled over the past 50 years. However, demand is also increasing for more and higher-quality food. Global calorie consumption rose about 16 per cent between 1965 and 1999, and closer to 23 per cent in developing countries.[2]

[Fig. 1 Global population and calorie consumption]



Daily supply of calories per person. Our World in Data. [3,4]

Increased calorie consumption is tied to the growing global middle class, which tripled in size between 2000 and 2020.[5] The global middle class not only consumes more calories, but also demands more resource-intensive food which requires higher inputs per calorie consumed, such as meat and dairy.[6] 80 per cent of agricultural land is used for livestock (about 38 million km²), while only providing about 17 per cent of global calories.[7]

[Fig. 2 Agricultural land for livestock **vs.** food crops]

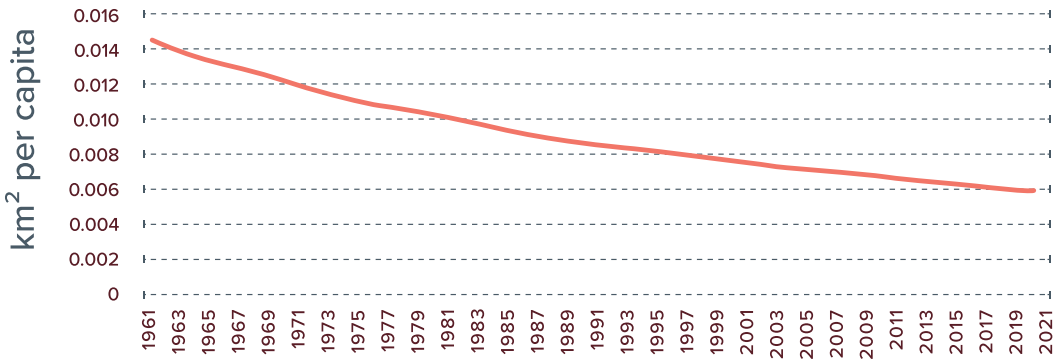
Half of the world's habitable land is used for agriculture - but most of our calories come from plants

Arable land is declining

While demand for food is increasing, the amount of global arable land is declining. As the global population increases, arable land per capita naturally declines, but the absolute amount of arable land on Earth is also declining due to factors such as land degradation, urban encroachment and drought. Potassium deficiency is a major factor impacting arable land, with about 20 per cent of current agricultural land being potassium deficient. One estimate suggests that the world has lost a third of its arable land in the last 40 years.[9]

The world contains a large amount of undeveloped arable land – about 54 million km^2. However, agricultural land accounts for about 35 per cent of the world's land surface and expanding this footprint comes with major ecological and environmental impacts. The bulk of underdeveloped agricultural land is concentrated in Latin America and sub-Saharan Africa.[10]

[Fig. 3 Agricultural land used for agriculture, per capita]



Our World in Data. "Agricultural Land per Capita."

changing weather patterns are reducing the amount of available arable land and exacerbating crop stressors

On the other hand, technological innovations such as modern fertilizers and precision farming (i.e., data-driven optimization of crop management) are also increasing agricultural efficiency. Agricultural land use peaked around 2000 and has since been in gradual decline (likely due to both increased efficiency and a decline in available arable land). As agricultural land is the primary driver of human land use (using 48 million km^2 vs. about 1 million km^2 for urban and built-up land), increasing the efficiency of agricultural land use has the potential to substantially reduce human impact on the world.

Crop stressors are increasing

Droughts and changing weather patterns are reducing the amount of available arable land and exacerbating crop stressors (i.e., conditions that negatively impact plant growth and yield).[11] Key factors include:

- Droughts
- Extreme weather events
- Proliferation of new insects and pests
- New diseases

Potassium makes plants more resilient to these stressors in a variety of ways:

- Increases drought tolerance
- Builds cellulose (facilitating crop strength and helping prevent plants from falling over)
- Reduces water loss and wilting
- Helps prevent the spread of diseases and parasites

Potash as a strategic resource

Changing global context

The rules-based international order, or the rules and norms spearheaded by the U.S. that have structured international relations for nearly a century, no longer seems as reliable as it once did. Therefore, countries such as Canada need to leverage strategic resources to safeguard both national security and prosperity, and few priorities are more critical than ensuring reliable access to food production. Producing critical resources such as potash can strengthen Canada's role in supplying allies, as well as potentially deter other countries from taking trade actions against Canada, such as tariffs.

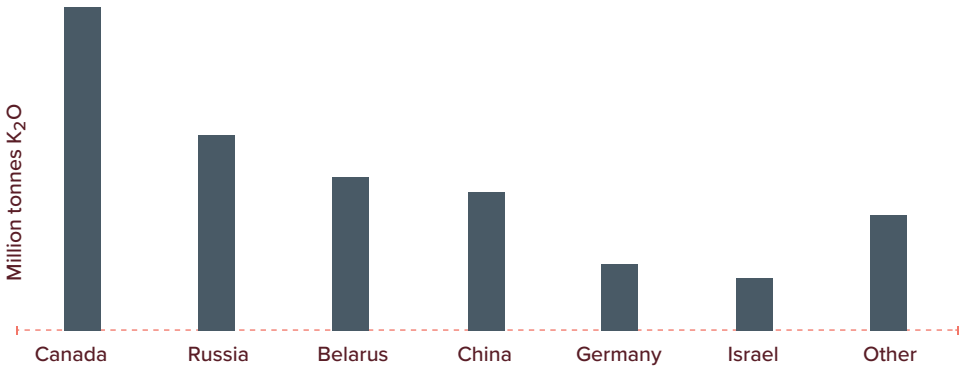
Food security is also particularly essential for stability. According to the World Food Programme, more than 300 million people globally will face crisis levels of hunger in 2026 due to conflict, climate change and the global economic downturn.[12] Countries such as China have responded by stockpiling food, exacerbating the crisis further.[13] The global food shortage has caused riots in countries such as Albania[14], Peru[15] and South Africa.[16]

Concentrated production

The importance of Canadian potash is heightened when considering the geopolitical context of potash production: Canada was the top producer of potash by potassium oxide equivalent volume (the industry-standard measure for potassium, hereinafter K2O) – accounting for 31 per cent of global potash production in 2024. Russia and Belarus were second and third, producing 19 per cent and 15 per cent respectively. China was fourth, with 13 per cent of global production[17] and is currently investing in Laos to unlock additional capacity.[18] For a more detailed history of the potash market, see Appendix A.

Countries such as Canada need to leverage strategic resources to safeguard both national security and prosperity, and few priorities are more critical than ensuring reliable access to food production.

[Fig. 4 Potash production by country, 2024]



Potash. Mineral Commodity Summaries. U.S. Geological Survey, 2025.

Critical resources can be used both defensively and offensively. Russia has made extensive use of its strategic resources as leverage to support its war in Ukraine. Though Canadian potash will never replace supply from Russia and Belarus, Canada's production could counteract Russia's leverage by providing an alternative source of this critical mineral.

Potash as a source of Canadian wealth and prosperity

Economic value and taxes

Potash is second only to Saskatchewan's oil industry in terms of single-industry contributions to GDP, though both represent a smaller portion of Saskatchewan's GDP than oil in Alberta (where oil represented about 25 per cent of GDP in 2024).[19] Between 2017 and 2020, the potash industry paid about $500 million in federal, provincial and municipal taxes per year. In 2021, the potash industry paid $2 billion, and in 2022, it paid over $5 billion due to record prices.[20]

Employment

The non-metallic mineral mining sector, of which potash is by far the largest constituent in Saskatchewan, directly employs around 6,000 people in Saskatchewan, with an additional estimated 12,000 jobs in the supply and service industries.[21] Not only does this make the industry a major employer in the province, but one of the highest paying. The average salary for workers in Saskatchewan's mining industry was nearly $110,000 in 2022[22], compared to Saskatchewan's median income of $45,400.[23]

Natural resource taxation and investment attraction

There are two main ways in which governments develop, manage and tax natural resources – either through public management or private-sector development. Public management means governments directly manage resource extraction and sales (e.g., through a Crown corporation). Privatized resource extraction secures regional compensation through the taxation of private companies.

Though state-owned enterprises (e.g., Belarus's state-owned potash company Belaruskali) allow a government to capture all profits from a natural resource, they are generally considered inefficient when compared with profit-motivated corporations. One paper, for example, found that in terms of inputs-to-output conversion (e.g., assets, oil reserves, employees), state-owned enterprises underperformed private companies by between 21 and 30 per cent.[24] This discrepancy can be observed in Saskatchewan potash as well. Comparing the five years before privatization (1984-88) with the 13 years after privatization (1994-2007), the study found an eightfold increase in sales revenue, a 250 per cent increase in sales per employee and a 270 per cent increase in sales relative to assets.[25]

However, higher returns for private companies do not necessarily mean higher taxes. When it comes to private extraction of natural resources, governments must perform a delicate balancing act. They must ensure, on behalf of their citizens, that they receive proper returns for the extraction of finite resources. At the same time, they must not tax industries so highly that they deter investors and undermine the local industry. Taxes are not the only benefits that accrue to a region through resource development. These industries also create direct and indirect jobs and facilitate the strategic use of the resource to strengthen international ties.

Taxes are not the only benefits that accrue to a region through resource development.

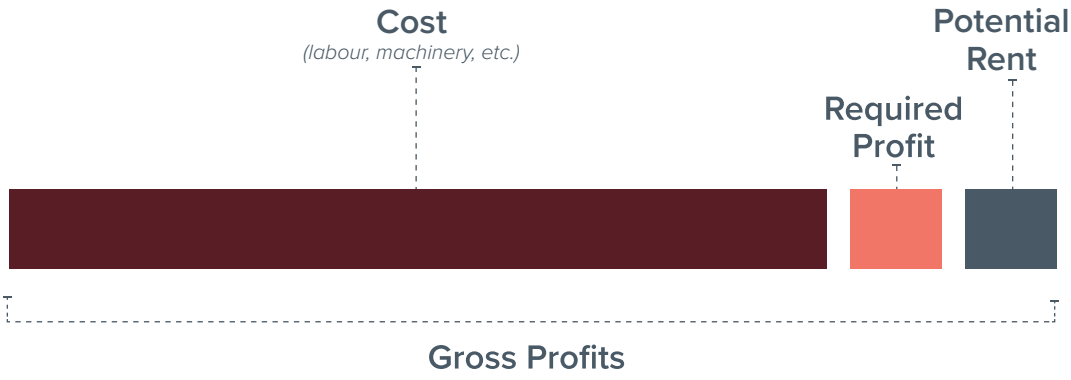
Taxation: Structure and challenges

Royalties and resource rent

The principles behind taxing natural resource extraction are often considered distinct from routine industry taxation. This is because resource deposits are legally considered the collective property of a nation or region. A resource royalty is therefore theoretically distinct from a tax because it is essentially a payment for the right to extract and sell a publicly owned resource. However, for the sake of simplicity, we will primarily use the term "tax" for the rest of this paper.

Potash is both a finite and unevenly distributed resource with three countries controlling most of the market. A limited number of suppliers leaves buyers at risk of volatile prices or shortages if production falters. Farmers are exposed since potash has few substitutes. These factors can generate surplus profit above and beyond what is required to incentivise investment (including competitive compensation for employees and an acceptable return for investors).

[Fig. 5 Resource Rent Theory]



The surplus profit in excess of that required to incentivise investment (accounting for the investment's risk or expected cash flow variability) is referred to as rent. Theoretically, the owners of a resource can tax the entire economic rent without deterring investment because investors already receive a sufficient return to motivate their investment. This is not usually the case in practice, however, for a few important reasons.

High investment costs

Resource extraction often requires very high investment, both up front and on an ongoing basis. The longer it takes for an investor to recoup these costs, the riskier and less attractive an investment becomes. To compensate, jurisdictions often give incentives for such investments. In Saskatchewan, for example, sales and production from new potash production are eligible for certain resource tax reductions and holidays.[26]

Varying extraction costs

Resource deposits vary in quality. For example, it may cost $50 to extract a tonne of ore in one location, and $80 for a tonne of ore in another. This poses a challenge for the resource-owning jurisdiction, which must choose between case-by-case taxes to maximize investment or blanket rates that are easier to manage and administer.

Jurisdictions that implement blanket rates often try to set up taxation schemes that target net profit, in line with the description of rent above, to avoid pricing out the development of lower-quality deposits. However, creating a scheme that clearly distinguishes between legitimate returns and economic rent across a variety of projects is challenging.

Industry also generally has significantly more knowledge and expertise regarding its own costs, creating informational asymmetry and potential for system gaming. For example, Australian oil and gas companies have been accused of understating the value of extracted resources while overstating the value added through processing to minimize their tax burden.[27]

Innovation Incentives

If a scheme were able to identify and capture 100 per cent of rent, the industry would have no incentive to innovate, because any gains in efficiency would just increase the rent tax they pay. This can be remedied in two ways. First, a jurisdiction can intentionally leave some portion of rent with the industry to incentivise efficiency investments. Second, investments in development or research may be incentivised through tools such as tax credits.

Auctioning resource rights

Another mechanism by which governments extract value from natural resources is by auctioning the rights to develop a resource within a specific area of land. A common structure is a blind auction, whereby companies submit a single sealed bid to develop a resource on a parcel of land. This incentivises companies to maximize their bid in line with their estimated value of the parcel lest they lose out to one of their competitors. However, auctions are highly dependent on predictability – the more uncertainty an auction participant faces, the lower the bid they will submit.

Case studies in natural resource taxation reform

Having reviewed general considerations in natural resource taxation, the following section examines three case studies in which jurisdictions struggled to implement schemes that were both effective at attracting investment and maximizing public returns.

Case Study 1: Oil sands taxation in Alberta

Alberta's oil sands taxation provides an illustrative case study of the challenges of effective resource taxation.[28] Oil sands development and taxation fall into four eras: those of Premiers Peter Lougheed, Ralph Klein, Ed Stelmach and post-Stelmach. Over these periods, Alberta struggled with how to best manage resource extraction and taxation.

Early development period – 1967 to 1995

Between 1967 and 1995, and primarily under Peter Lougheed, oil sands development was characterized by ad-hoc project-by-project agreements designed to drive investment in and support the burgeoning industry. The role of government was not primarily to collect taxes or regulate the oil sands, but instead to promote and incubate the industry.

Klein period – 1995 to 2007

In the 1990s, the Alberta government began transitioning away from ad-hoc agreements toward standardized tax regulations. In the context of a booming investment climate, the new system facilitated a surge in oil sands projects. Income from oil sands taxes increased drastically. However, costs also ballooned, diminishing Alberta's share of royalty rent.

Stelmach period – 2007 to 2015

Following the resignation of Ralph Klein in 2006, the Progressive Conservatives underwent a leadership race to replace him without triggering an election. The defining issue of this race was how (not whether) changes should be made to increase Alberta's share of oil revenue. Following his selection and a review process, Stelmach implemented a tax royalty rate tied to oil prices in 2009. Unfortunately, this change coincided with a drop in oil prices and was followed by an exodus of investment.[29] This led to a rapid cutback in provincial income in 2011.

Post-Stelmach – 2015 to 2025

Since Stelmach, oil sands royalties in Alberta have remained relatively stable. The succeeding Rachel Notley-led New Democratic Party (NDP) government considered raising taxes but ultimately decided to make minimal changes, in line with recommendations from an expert review panel.[30] Since taking power in 2019, the United Conservative Party (UCP) government has made minimal changes to the oil sands tax regime, resulting in

a relatively stable taxation environment for oil and gas in Alberta for the past decade. This system is characterized by low up-front rates until initial investment costs are recovered, and by standardized rates tied to global oil prices. The allowable costs and revenue used in tax payment calculations must be approved on a project-by-project basis by the provincial government.

This history shows Alberta's struggle to balance oil sands taxes with attracting investment. Both the Progressive Conservatives and NDP explored raising taxes but ultimately returned to or maintained the status quo established by prior governments.

Case Study 2: Mining taxation in Zambia

Zambia is a major producer of copper, which accounts for 70 per cent of the country's exports.[31] Since it gained independence in 1964, copper has been a foundational component of Zambia's economy. As a result, the country's prosperity has been directly tied to fluctuating copper prices, and copper taxation has been a major policy issue.

Copper mines were privatized in the country through the 1990s to attract foreign investment. Because of low copper prices, mines were sold at very favourable terms to international buyers. As copper prices rose in the 2000s, this stimulated a heated public debate over mining taxation. This led to a tumultuous period of policy reform. In 2008, legislation was enacted to capture windfall profits, but it was never fully implemented due to a sharp decline in copper prices in 2009. In 2012, copper royalties were increased from 3 to 6 per cent. In 2014, copper royalties were increased to 8 per cent for underground mines and 20 per cent for open-cast mines. In 2015, royalties were reduced. In 2016, the royalty system was replaced with a price-based system. Further changes were rolled out in 2019 and this turmoil deterred investors. In 2019, for example, companies withheld $650 million in mining investments.[33] This led to business-friendly reforms in 2021, with a corresponding rise in investment.[34] As of 2025, $10 billion in new investments is anticipated over the next five to 10 years.[35]

Zambia's struggles exemplify how institutional instability can lead to poor resource development outcomes. National efforts to capture additional taxes stumbled over volatile copper prices and led to reduced investment, which has only returned since Zambia has pursued a more business-friendly environment.

Case Study 3: Resource taxation in Indonesia

Indonesia is a major producer of a variety of metals and minerals, particularly nickel, for which it holds 42 per cent of global reserves and accounts for 60 per cent of global production.[36] Other notable resources include coal, oil and natural gas.

Indonesia gained independence from colonial rule in 1945[37], and attracted significant foreign investment in the latter decades of the 20th century. This led to significant economic growth, but also to conflict between multi-national resource companies and local communities who argued they were receiving minimal benefits from the exploitation of their resources. These tensions became increasingly acute through the 1990s, culminating in the 1997 Asian financial crisis. Rioting and protests led to the resignation of President Soeharto, who had held power for over 30 years, facilitating the transition to a more democratic society.[38]

Under President Yudhoyono (2004-2014), Indonesia began to pursue nationalist resource

policies. One of the most notable changes was a 2010 mandate requiring foreign companies to sell a 20 per cent stake to local parties, which accelerated to 51 per cent in 2012. Another was the 2014 ban on raw mineral ore exports to compel the development of Indonesia's downstream processing industry. These reforms had an immediate negative impact on the industry. For example, the World Bank estimated that revenue losses in 2014 were nearly half a billion USD following the ban on raw ore exports.[39]

Global commodity prices dipped in 2013, significantly impacting Indonesia's resource-based economy, but the country held firm on resource nationalism. When it comes to nickel, this has proved fairly successful – the value of Indonesia's nickel exports increased more than tenfold between 2013 and 2022.[40] However, this has come at the cost of making Indonesia heavily dependent on Chinese investment, as Western investors are primarily profit-motivated, while Chinese investment also seeks to secure access to critical minerals.[41] Indonesia seeks to replicate this success with other minerals, as evidenced by the 2023 bans and restrictions on bauxite ore and copper concentrate exports. However, it is unclear whether this strategy will succeed, as Indonesia does not have the same dominant position in those markets.[42] Caution should be taken when applying models across jurisdictions and industries.

Resource tax and royalty reform has a high transaction cost

These case studies demonstrate that tax and royalty reform can be unpredictable and have a high transaction cost. It is like applying for a new credit card. The mere act of a tax review (regardless of whether any changes are implemented) generates uncertainty and lowers a jurisdiction's metaphorical credit score. Investors and industry crave stability because it allows them to more accurately forecast the value of an investment, and tax reviews introduce significant uncertainty. Jurisdictions with a reputation for frequently changing their taxation schemes therefore receive a higher risk premium. When investors are deciding whether to invest, they will support fewer projects in these jurisdictions and only invest in those where the returns sufficiently offset the uncertainty.

Current taxation structure and rates in Saskatchewan

Potash producers in Saskatchewan pay a variety of taxes, including: a base payment tax, profit tax, Crown royalties, resource surcharges, income tax, sales tax and property taxes. They also paid industrial carbon taxes until April 1, 2025, at which point they were removed by the Government of Saskatchewan.[43] However, as the province is still responsible for covering the costs of emissions, it is uncertain whether this is a permanent change.[44] For a more detailed breakdown of taxes paid by potash producers, see Appendix C.

Saskatchewan tax and royalty considerations

The question of whether Saskatchewan is receiving its 'fair share' of tax and royalty revenue has been an ongoing debate. Duanjie Chen and Jack Mintz proposed reforming the taxation system in 2013.[45] Jim Marshall at the Johnson Shoyama Graduate School of Public Policy proposed reform in 2019.[46] In 2024, former Saskatchewan minister Eric Cline argued that Saskatchewan should capture a larger share of potash profits.[47]

Reform proponents focus on two perceived opportunities. Many of their arguments focus on the idea that Saskatchewan is failing to secure a fair share of potash profits for its citizens which could be used to, for example, reduce poverty and improve public services.

The second opportunity proposed by reform proponents is that the current system does a poor job of incentivising investment in lower-quality deposits (marginal investments).

Opponents of reform, meanwhile, argue that the current system is working. It's attracting investment (projects such as Mosaic's K3 mine, BHP's Jansen mine and K+S's mine upgrades in Bethune), generating jobs and providing returns to Saskatchewan's citizens. Opponents also point to the perils of tax reform, such as those experienced by Alberta in 2010. In addition, mineral rights auctions, introduced for potash in 2018, provide a way to capture excess rent that might be missed by other royalty or tax provisions. Saskatchewan Crown land sales for all minerals in 2025 generated over $63 million in revenue for the province.[48]

Arguments for reform

Outdated metrics

Reform proponents generally argue that key components of potash-specific taxes are not fit for purpose. In particular, they point to issues with the base payment and profit tax.

The primary criticism of the base payment is that the tax per tonne of potash sold seems disconnected from modern potash prices. Under the base payment, producers pay a tax equal to 35 per cent of resource profits, subject to a per-tonne floor and ceiling. This payment has a lower limit of $11.00 and an upper limit of $12.33 per K2O sold. Reform proponents point out how potash prices have been more than $300 per tonne for over a decade, meaning that the base payment amounts to under 5 per cent per tonne of potash sold. However, it is important to recognize that the base payment applies regardless of profits. Even if a producer loses money in a given year, they must still pay $11.00 per K2O tonne sold.

The profit tax is usually criticized because it only applies to a portion of a producer's production, particularly on the basis that, for relevant producers' production above and beyond 2001-2002 levels is exempt.[49] However, there is also a minimum floor of 35 per cent of production which is always subject to the profit tax.

Fair share

Many reform proponents look at the base payment and profit tax and argue that they are too low, with costing mechanisms disconnected from potash profits.

Because of the way potash taxes are structured, reform proponents argue, the taxes paid by industry are regressive – the more profit industry makes and the more potash it sells, the smaller the public returns are proportionately. Regarding these taxes, the base payment seems disconnected from industry profits, while the profit tax has the potential to only apply to 35 per cent of a producer's total sales.

Cline argues that Saskatchewan is failing to adequately capture potash profits, noting that as revenue has increased, there has not been a proportional increase in public returns (i.e., the province has failed to capture the surplus rent that it should theoretically be able to capture without deterring investment). However, it is worth noting that this analysis does not necessarily reflect the various amendments to potash taxation over time.

Leverage

A related but distinct argument to the fair-share argument is the proposal that Saskatchewan has the leverage to extract additional taxes from the potash industry.

Reform proponents argue, referencing countries such as Saudi Arabia, that because Saskatchewan contains a significant portion of global potash reserves, it can extract higher taxes without worrying about its competitors.[50,51]

Opponents respond to this argument by pointing out that Saudi Arabia's market dominance stems not just from its high levels of supply, but also from its low production costs. Other countries cannot outcompete Saudi Arabia on cost.[52] This is not the case in Canada, as will be explored in greater detail below.

Opportunities for efficiency gains

The other argument in favour of tax reform, most prominently put forward by Chen and Mintz, is that it could create opportunities to enhance marginal investment and profitability while decreasing the complexity of the current system. The focal point of Chen and Mintz's proposal is to shift to a rent-based royalty.[53] Theoretically, this would better facilitate investment in smaller developments and eliminate any unequal treatment between different industry players that the current system might generate.

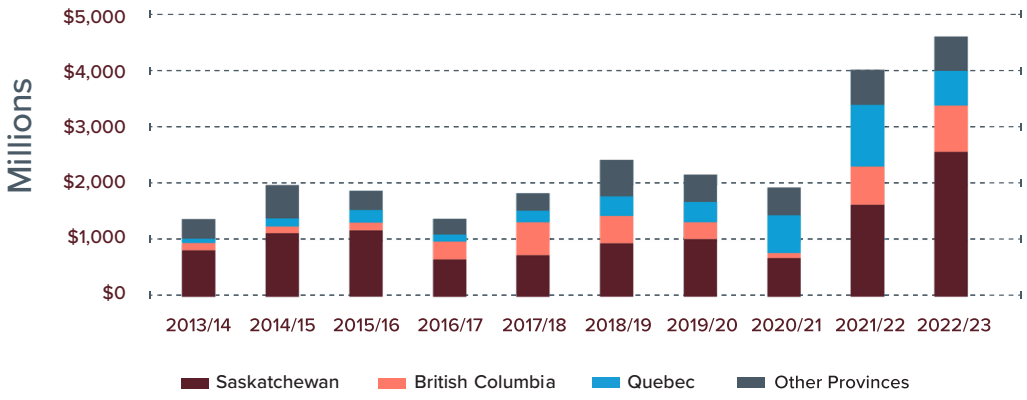
The primary challenge with Chen and Mintz's proposal is defining the details: where do the necessary costs and return on investment end, and rent begin? An extension of this problem is whether a reform exercise could successfully remain focused on the technical problems without becoming overly politicized.

Arguments against reform

In contrast to the Cline view, industry has challenged the argument that it does not pay its share in several ways, particularly that Saskatchewan producers already struggle to remain competitive due to differences in regulation, taxation and transportation.

For example, many in the industry argue that higher profits in one year offset high investment costs and lower profits in other years and that any structure needs to take into account the entire life cycle of a project. They also point to the fact that Saskatchewan's mining industry consistently pays the most taxes in Canada despite historically being only the fourth largest contributor to Canada's mining sector by value. In 2020 Saskatchewan's mining sector produced 11 per cent of Canada's minerals in terms of value ($5.1 billion), behind Ontario (24 per cent / $11.2 billion), Quebec (22 per cent / $10.2 billion), and British Columbia (18 per cent / $8.1 billion), yet paid 36 per cent of total mining taxes in Canada.[54,55]

[Fig. 6 Royalties, Mining Taxes, and Similiar Payments to Provinces and Territories]



Mining Sector Performance Report (MSPR) 2014 – 2023. Energy and Mines Ministers' Conference, 2025.

In addition, many historical analyses do not capture Saskatchewan's introduction of subsurface mineral auctions, which apply to potash. Since 2018, companies looking to explore and develop new mines have been required to bid for those rights.[56] This is irrelevant on a cash-flow basis for current mines but will represent an up-front cost for all new developments.

Since capital is globally mobile, investors consider the landscape of investment opportunities and costs worldwide. Analysis conducted for Brazil Potash estimated that the extraction cost for Canadian potash is about $80 per tonne, while Russian potash costs $50 per tonne.[57]

The potash policies of Canada's competitors, namely Russia and Belarus, can be challenging to verify, but their regulatory and tax burdens are generally assumed to be less stringent than Canada's. Belarus and Russia have slightly lower corporate taxes than Saskatchewan, both at 25 per cent (and prior to 2020, they were 20 per cent)[58,59] relative to Saskatchewan's 27 per cent combined rate.[60] Although conducting a review of the relative regulatory burdens in Saskatchewan versus Russia and Belarus is outside the scope of this report, it is generally accepted that Canada imposes significant regulatory burdens on industries such as mining[61], while Russia and Belarus are viewed as imposing significantly less stringent regulatory burdens. For example, one 2015 study found that, in Russia, there were "serious indications suggesting that the space for neglecting… environmental requirements… [and] also other aspects of… license[s], is significant."[62] These higher costs and regulatory burdens make it harder for Canadian producers to compete for market share.

Markets and logistics

Canadian exporters are facing a variety of current and potential challenges to market access. Both of Canada's largest markets, namely the U.S. and Brazil, are exploring domestic potash production. If the new Brazil and Michigan facilities were to come online, they could displace up to 2.25 million tonnes of Canadian potash a year, or 15 per cent of current production.[63,64,65,66]

Breaking into other markets is challenging. Russia, Belarus and China are better positioned to supply Europe (though demand for Canadian potash may increase in Europe due to sanctions on Russian and Belarusian fertilizers), and Russia has been gaining market share in India. These countries are also pursuing new capacity, with Russia in particular seeking to increase its potash fertilizer capacity by 50 per cent.[68] Canadian competitiveness is also held back by supply chain constraints (which are discussed in more detail below).

Other considerations

In addition to the arguments discussed above, several other factors should be kept in mind, such as employment, geopolitical strategy and the attraction of other industries that could face disruption if the potash tax and royalty system were reformed.

Preserving jobs

Potash employs about 6,600 people directly in Saskatchewan and supports an estimated additional 11,145 supply and service jobs, as well as corporate jobs at the headquarters of companies such as Mosaic and Nutrien.[69] Disrupting these jobs could have major negative repercussions for Saskatchewan's economy.

Potash as a strategic resource

Potash is a strategic resource. It is an essential component of modern food production, and mined potash will likely remain the primary source of potassium for at least the next half-century (at some point the depletion of potash mines will require sourcing potassium from other sources). In the current geopolitical context, this represents valuable leverage for Canada. Other countries want Canadian potash, which incentivises them to maintain good relationships with Canada to preserve access. For example, potash has been a focal point in discussions on Canada-U.S. trade, and some politicians have argued that the supply could be cut off if the U.S. continues to ramp up tariffs.[70]

A disruption to Canadian potash production would therefore weaken Canada's strategic position. It is easier to lose market share than to gain it, and on the timescale of investment decisions, regaining lost ground could take decades. Furthermore, Canadian potash would likely shift market share to Russia. This would provide Russia with more leverage over Canadian allies and bolster its unprovoked military actions against Ukraine.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This can also be placed in the context of potash as a critical mineral. Critical minerals, as a category, are almost exclusively defined by their strategic importance. Consider Canada's definition:[71]

1. The supply chain must be threatened;
2. There is a reasonable chance of the mineral being produced in Canada; and
3. At least one of the following is true:
    a. It is essential to Canada's economic or national security;
    b. It is required for the transition to a sustainable low-carbon and digital economy; or
    c. It positions Canada as a sustainable and strategic partner in global supply chains.

Under this definition, Canada has identified 34 minerals as critical. Potash is ranked third in terms of current exports, behind iron/steel and aluminum, and represented 6 per cent of Canada's mineral and metal exports in 2024.[72] This makes potash not only important in its own right but also a key case study as Canada seeks to develop other critical minerals.

Developing other resource industries

Another reason to be cautious about tax reform is that it could affect Saskatchewan's reputation for investment more broadly. There is no easy way to predict the effects of a potash tax review on a jurisdiction's perceived competitiveness among potential investors in other sectors. It depends on how likely those investors think that they will be hit with similar tax hikes.

For example, Saskatchewan has a variety of critical minerals besides potash, including uranium, helium, copper and lithium. According to the province's critical minerals strategy, it aims to increase Saskatchewan's share of Canada's mineral exploration from 8.5 per cent (in 2022) to 15 per cent by 2030, double critical mineral outputs, grow production of potash, uranium and helium, and establish Saskatchewan as a Rare Earth Elements hub.[73] These goals could be negatively affected if a potash tax review is perceived as poorly managed, as it could signal to investors that Saskatchewan is less attractive for investment.

Policy discussion and recommendations

Potash tax reform

Tax and royalty reform is a high-stakes endeavour, with both risks and possible rewards. Some of the key opportunities include:

- Reforming tax structures anchored to improper metrics (e.g., a base-payment range entirely disconnected from current potash prices)
- Moving to a more rent-based system to better incentivise investment
- Increasing the share of profits by Saskatchewan residents if the industry continues to expand

However, tax and royalty reform also comes with significant risks.

Potash is a globally competitive industry. Investment in Canadian potash is not guaranteed, and some of Canada's largest markets (i.e., the U.S. and Brazil) seek to reduce their dependence on Canadian potash. Due to existing taxes and environmental regulations, it is more expensive for Canadian producers to mine potash than in competitor countries such as Russia.

A disruption to Saskatchewan's potash industry would have major economic ramifications for the province and could weaken Canada's strategic position (while strengthening Russia and Belarus) amid heightened geopolitical uncertainty.

Finally, the current system is working. Under the current scheme, Saskatchewan's potash industry pays notable taxes and royalties while still investing in new projects such as BHP's Jansen Mine, which will increase Canadian market share. Provincial earnings are also augmented by subsurface mineral auctions, which deliver up-front revenue while placing the burden of risk on industry.

Saskatchewan should emphasize legislative discipline when considering any future potash tax review.

Saskatchewan should emphasize legislative discipline when considering any future potash tax review. This is not to say that tax and royalty reviews should never take place. The experience of other jurisdictions shows that there can be many pitfalls in the process, but there are also valuable opportunities.

Any tax and royalty reform exercise would likely be most successful if conducted in careful consultation with industry and with recognition of the uncertainty that reform can generate. Investments are often predicated on stability – a reform process would need to recognize that purchasers have made investments based on the systems currently in place.

Tax and royalty reform is therefore best undertaken infrequently and only when substantial public returns can be anticipated.

What else can be done to attract investment and boost revenue?

An alternative way to increase potash revenue is to help make the industry more competitive and attract more investment. Taking measures to improve competitiveness can help increase revenue and employment and enhance Canada's strategic position. Three opportunities to enhance the competitiveness of potash include improving supply chains, implementing policies to help attract talent and continuing to build relations with other jurisdictions to facilitate the diversification of Canada's potash exports.

Improving supply chains

Supply chain infrastructure, such as rail and ports, is an essential enabler for bulk exports, including potash. If you can't ship it, you can't sell it. Increasing supply chain efficiency makes Canadian exports more competitive in global markets.

Canada has a poor reputation for supply chain efficiency. Canadian ports (essential outlets for Canadian potash bound for destinations other than the U.S. and Mexico) rank poorly in efficiency, with no major Canadian port ranking higher than 348th out of 405 ports in the WGB Port Performance Index in 2023.[74] Between 2009 and 2019, the ranking of Canada's infrastructure in the WEF's Global Competitiveness Report dropped from 10th to 26th, with the quality of transportation infrastructure ranked 32nd.[75] Labour disruptions such as the 2023 and 2024 port strikes at the Port of Vancouver and the 2024 nationwide rail strikes also undermine the reputation of Canadian businesses.

These issues are illustrated in Nutrien's decision to build an export terminal in the Port of Longview, Washington rather than in Vancouver or Prince Rupert, likely because it is easier to build the terminal and expand rail capacity in the U.S.[76]

There are no quick fixes for these problems, but Canada does have options. Improvements and expansions in ports such as Vancouver and Prince Rupert are essential for enhancing long-term access to international markets, while investments in new and existing ports can enable new trading relationships. Canada also needs to work on finding long-term solutions to improve relationships between labour unions and ports and railway employers.

Talent attraction

One limiting factor for the potash industry is talent attraction. Positions such as miners, mechanics and heavy equipment operators are in short supply in Saskatchewan, and the potash industry must compete for these workers across other industries. Occupations such as mechanics and heavy equipment operators are also in demand across other goods-producing industries, including construction and the oil and gas sector. Saskatchewan and Canada more broadly need to improve their ability to train and attract the skilled workers industry needs.

Immigration & retention

Canada needs to attract more specialized international talent. When it comes to underground miners, for example, Canada has only had 220 permanent resident admissions since 2015, despite the Saskatchewan mining industry projecting a deficit of more than 4,500 workers by 2034.[77] Canada has long competed with U.S. firms for these professionals. Recent changes to U.S. immigration policy may present an opportunity, but Canada has implemented more restrictive immigration policies. There are currently exemptions for foreign workers in the construction, health care and agricultural sectors, so a similar exception could be made for the mining sector (particularly given the current emphasis on critical minerals).

Saskatchewan also struggles to retain immigrants. In 2016, Saskatchewan had the lowest provincial five-year immigrant retention rate in the country, retaining only 58 per cent.[78] Prior research on immigrant talent attraction and retention found that newcomers who have been in a location for fewer than five years prioritize inclusion, and that the faster they are able to find a job and an affordable home, the more likely they are to stay.[79] Working closely with immigrant-serving agencies to support newcomers at all stages of their immigration journey, and building bridging and pathway programs, would be one way to show newcomers that they can build careers for themselves and their children in the potash industry.

Local talent

Both government and industry can do more to attract local talent, particularly youth, Indigenous peoples and women.

Many programs in Saskatchewan that help youth explore future jobs were shut down during the COVID-19 pandemic and have since been slow to restart. The Canada West Foundation has previously recommended expanding apprenticeships where students combine on-the-job learning with classroom instruction, as a way to get youth into the workforce earlier.[80] This would require significant changes to the education system but could help address the perceptual issues that industries such as mining face (i.e., youth awareness and opinion of opportunities in mining).

Indigenous talent attraction and retention are also closely tied to youth attraction and retention, as the Indigenous population is comparatively younger than the non-Indigenous. Research has found that Indigenous youth place more focus on employment that benefits their community[81], and mining projects that build community partnerships may be more likely to attract youth in partner communities.

While women in mining are represented in administration, support and engineering positions, they are less represented in skilled trades and underground mining than men. Barriers to women entering or staying in mining include "gendered pay gaps, unequal access to support networks [and] higher rates of discrimination and harassment."[82] Taking measures to address these barriers, such as partnering with Women in Mining to build hiring and retention programs, supporting mentorship and career development opportunities, and undertaking annual pay equity reviews can help identify and reduce pay gaps in the workplace.[83]

Trade negotiations and diversification

Federal and provincial governments should continue to support Canadian industries such as potash by cultivating relationships with other countries. This includes ongoing efforts with other jurisdictions such as those with the EU, India, China, Indonesia and the Philippines.

The federal government should also continue its efforts to negotiate trade relationships with the U.S. The relationship with the U.S. federal government is challenging, and it is difficult to reach an agreement when the other country does not seem to consider itself bound by existing terms. However, despite ongoing difficulties, Canada and the U.S. remain bound together both by geography and highly integrated supply chains, and it is likely that the U.S. will remain Canada's largest trading partner for the foreseeable future.

Conclusion

Potash is a critical resource for global food production. It sits at the intersection of food security, economic value, and geopolitical leverage. It enables farmers to get higher yields on less land, improves crop resilience, withstands unpredictable weather, pests and disease and supports the productivity of modern agriculture. In a world of growing demand and increasing climate pressure, its global importance will only increase.

Potash production is primarily split between Canada, Russia and Belarus. New production is also likely in jurisdictions such as the U.S. and Brazil, though these new mines will likely serve only local demand. Within this context, Saskatchewan and Canada must balance regional returns, incentivising investment and the strategic advantage that potash imparts.

Effectively taxing resources such as potash is a perennial challenge. Many in Saskatchewan argue that citizens are not receiving their fair share of resource revenues. Others have argued that a new tax and royalty structure could better incentivise investments through a more effective calculation of rent, or the surplus profit that can theoretically be taxed without distorting investment.

Although tax and royalty reform could deliver these benefits, it is important to recognize that reform comes with significant risks. Reform creates uncertainty, which can drive away investment, and an improperly calibrated tax scheme could cause a significant long-term loss in market share for Canada at a time when it can ill afford to lose strategic advantages. A tax and royalty review could succeed if it is done in careful consultation with industry and with recognition of the uncertainty reform can generate.

Putting tax reform aside, this report recommends that Saskatchewan and Canada should consider opportunities to improve the competitiveness of Saskatchewan's potash industry. Key opportunities include:

- Improving supply chains
- Identifying opportunities for talent attraction and retention
- Continuing to support trade diversification

Potash may not command the same attention as other critical minerals, but its impact is no less significant. It helps feed the world and, in doing so, anchors one of Canada's most important strategic assets. The path forward is not simply about managing a critical resource; it is about securing a long-term advantage in something the world cannot do without, one Canada holds in abundance.

Appendix A: History of the global potash industry

BHP characterizes the potash market as having undergone four waves over the past half-century.[84]

1960-1980	The first wave was driven by the development of deposits in Saskatchewan, which drastically increased the global supply of potash and depressed prices.
1990-2000	The second wave was driven by the re-entry of potash production by former Soviet states into the global market, which caused a glut in the market and again drove prices down.
2000-2020	In the third wave, demand began to outpace supply as fertilizer use accelerated globally. This drove investment in new mines, which gradually increased supply and decreased prices between 2010 and 2020.
2020-2025	Prices began to rebound in 2020 and 2021, before skyrocketing in 2022 due to A) Belaruskali (Belarus's state-owned potash company) being denied access to a key port in Lithuania and B) a plethora of disruptions associated with Russia's invasion of Ukraine. This also drove some countries to hoard potash, driving prices up even further.

Appendix B: History of potash in Canada

Potash was first discovered in Saskatchewan in the 1940s, with mining commencing in earnest in the 1960s. Production grew rapidly, contributing to a global production glut. The provincial government responded by introducing a rationing system to limit oversupply.[85]

As the industry recovered, a new NDP government pushed for increased royalty revenues. Industry resisted, and Saskatchewan ultimately responded by nationalizing nearly 50 per cent of the industry in 1975.[86] This nationalization strategy lasted until about 1990, when Saskatchewan began to reprivatize the industry in response to losses driven by over-development and dropping potash prices. As it reprivatized the industry, Saskatchewan implemented a new potash taxation scheme in the 1990s.[87] Though there have been adjustments since then, such as the implementation of tax holidays for mine expansions[88], a tax floor on potash sales[89], and the elimination of deductions to the potash production tax in 2019[90], the overall system has remained relatively stable since the incentive framework was implemented between 2003 and 2010.

There are 10 active potash mines in Saskatchewan today, and three primary potash companies: Nutrien Ltd., The Mosaic Company and K+S Potash Canada.

There are currently two major potash expansion projects in the province. BHP, an Australian corporation, is entering the market with its Jansen potash project. When fully completed in 2031 it is expected to produce 8.5 million tonnes of potash annually.[91,92] K+S is expanding its Bethune Mine, which will increase production by an estimated 2 million tonnes annually.[93] Together, these will expand Canadian production by about 50 per cent, and global production about 15 per cent, over current production (based on figures in Appendix D).

An important component of the potash industry in Saskatchewan is Canpotex, a joint-industry firm created in 1970 that markets and delivers potash on behalf of Mosaic and Nutrien. Since it started operations, the company has shipped and sold over 250 million tonnes of Canadian potash.[94]

Appendix C: Saskatchewan Potash Taxation Summary

Tax	Description and Rate
Base Payment	35 per cent of resource profits, with a minimum and maximum thresholds per K2O tonne of potash sold within a range of $11.00-$12.33. If $350/tonne is assumed, this results in an effective rate of roughly 3 per cent to 3.5 per cent depending on profitability (e.g., if a year was net neutral or negative producers pay $11.00/tonne, if a year was sufficiently profitable producers pay $12.33/tonne).[95] Tonnes produced from approved new capacity (e.g., new mines and expansions) receive a holiday from the base payment for 10 years. They can also be reduced by incentive tax credits for spending on research and development and market development programs.

Tax	Description and Rate
Profit tax	Profit tax is calculated in two parts: 1. The tax rate is charged at 15 per cent for profits up to $87.31/ tonne sold, and 35 per cent for profit over $87.31. 2. The tax rate is charged against a percentage of producer's sales ranging from 35 to 100 per cent based on the producer's 'adjusted base tonnes', which is the common industry adjustment factor multiplied by the producer's "Base Tonnes", which are a. (For producers who were producing potash in 2001 & 2002) the average of producer sales in 2001 and 2002. b. (All others) The lesser of 1,000,000 K2O tonnes and 75 per cent of the producer's sales. The common industry adjustment factor is a formula which reduces the sales tonnes taxable for all producers as mines built by new companies enter the Saskatchewan industry. The 2001/2002 base tonnes applies to only two producers, Nutrien Ltd. and Mosaic, which are both mergers of companies that were mining potash in 2001 and 2002. When a producer's sales exceed 2.9 times its adjusted base tonnes (1 / 0.35), 35per cent of their sales will be taxed, increasing the volumes taxable above the adjusted base tonnes level. BHP's potash mine is anticipated to produce 8.5 million tonnes per year muriate of potash[96] (or about 5.1 K2O) and will have the potential to pay profit taxes on 35per cent of its sales. Profit tax can also be reduced by incentive tax credits.
Resource Surcharge	3 per cent of the value of potash sold
Potash Crown royalty	3 per cent of the value of potash produced from Crown Land
Income tax (prov.)	12 per cent of gross income after deductibles
Income tax (fed)	15 per cent of gross income after deductibles
Sales tax (prof.)	6 per cent on sales (only for sales in Saskatchewan)
Sales tax (fed)	5 per cent on sales (only for sales in Canada)
Property taxes	Dependent on assessed value of property
Carbon taxes	Industrial carbon taxes have been paused in Saskatchewan as of April 1, 2025. Prior to the pause, mines that exceeded their baseline emissions[97] were required to pay the federal rate per tonne ($95 in 2025 – it is increasing by $15/year until 2030). One study estimated that Canadian potash mines emitted 0.16 tonnes of CO2 per tonne of potash, would have resulted in a carbon tax rate of about $15/tonne of carbon[98], or about 4 per cent if potash is $350/tonne.

Appendix D: Potash Industry Snapshot

[FIG. D1] Potash production by country/region, 2024

Potash production is concentrated primarily in Canada, Russia and Belarus. Together these three countries account for 65 per cent of global production.

COUNTRY/REGION	PRODUCTION, MILLION TONNES (2024) (K2O)[99]	SHARE OF PRODUCTION (2024)
Canada	15.0	31%
Russia	9.0	19%
Belarus	7.0	15%
China	6.3	13%
Germany	3.0	6%
Israel	2.4	5%
Other	5.3	11%
World	48.0	100%

[FIG. D2] Estimated production and market share of major global potash producers, 2024

Potash production is concentrated in a small number of global companies and mines. The following table provides rough estimates for production and market share.

COMPANY	ESTIMATED PRODUCTION, MILLION TONNES (MOP) (2024)	EST. MARKET SHARE (VOLUME)	HEADQUARTERS
Nutrien	13.9[100]	19%	Saskatchewan, CAN
Uralkali PJSC	12.9[101]	18%	Berezniki, RUS
Mosaic	8.7[102]	12%	Florida, USA
K+S	8[103]	11%	Hesse, DEU
Belaruskali	7[104]	10%	Minsk, BLR
Total	**50.5**	70%	
Est. global demand	**72.5**[105]	**100%**	

[FIG. D3] Current and forthcoming production capacity by country/region

COUNTRY	CURRENT CAPACITY, MILLION TONNES (2024) (K2O)	NOTABLE FORTHCOMING AND POTENTIAL PROJECTS	PROJECT CAPACITY (K2O) (CONV. FROM MOP AT 60%)
Canada	15.0	BHP Jansen mine[106]	5.1
		K+S Bethune mine[107]	1.2
Russia	9.0	Unknown	4.8
Belarus	7.0	None	None
China	6.3	None	None
Germany	3.0	Unknown	0.5
Israel	2.4	None	None
Other	5.3	Brazil Potash[110]	1.4
		Michigan Potash and Salt Company project[111]	0.5
World	**48.0**		

[FIG. D4] Recoverable potash reserves by country

Global reserves largely mirror production, barring Laos which is only starting to develop its production capabilities.

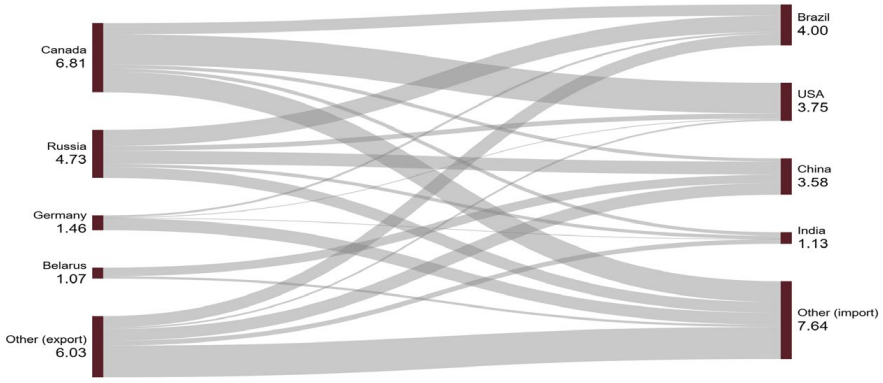
COUNTRY	RECOVERABLE RESERVES, MILLION TONNES (K2O)[112]
Canada	1,100
Laos	1,000
Russia	920
Belarus	750
U.S.	220
China	180
Germany	150
Other	480
World	4,800

[FIG. D5] Importers and market share

The primary importers of potash fertilizers are Brazil, China, the U.S. and India.

COUNTRY	VALUE OF IMPORTED POTASH,[113] BILLIONS (2023)	SHARE OF GLOBAL POTASH IMPORTS (2023)
Brazil	$5.65	22%
China	$4.94	20%
U.S.	$4.28	17%
India	$1.45	6%
Other	$8.88	35%
Total	$25.2	

[FIG. D6] Global potash trade flows among major exporters and importers, 2023 (US Billions)



Canada is the primary supplier to the U.S. (having provided over 80 per cent of its imports in 2024), but most major importers source potash from a variety of sources. Brazil, the single largest importer of potash, imported 27 per cent from Canada, 40 per cent from Russia, and 33 per cent from other sources in 2024.

Jurisdictions lacking access to potash

Many countries have poor access to potash, particularly in Africa and South Asia. These countries are generally priced out of the potash market because they lack the infrastructure and supply chains to effectively leverage the associated productivity advantages. This results in large swaths of potash-deficient land as intensive crop production depletes potassium faster than it can be naturally replaced. One study estimated that 20 per cent of global agricultural soils are potassium deficient, most critically in Southeast Asia (44 per cent), Latin America (39 per cent), sub-Saharan Africa (30 per cent) and East Asia (20 per cent).[114]

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