Nickel mining in North America: it’s a US national security issue

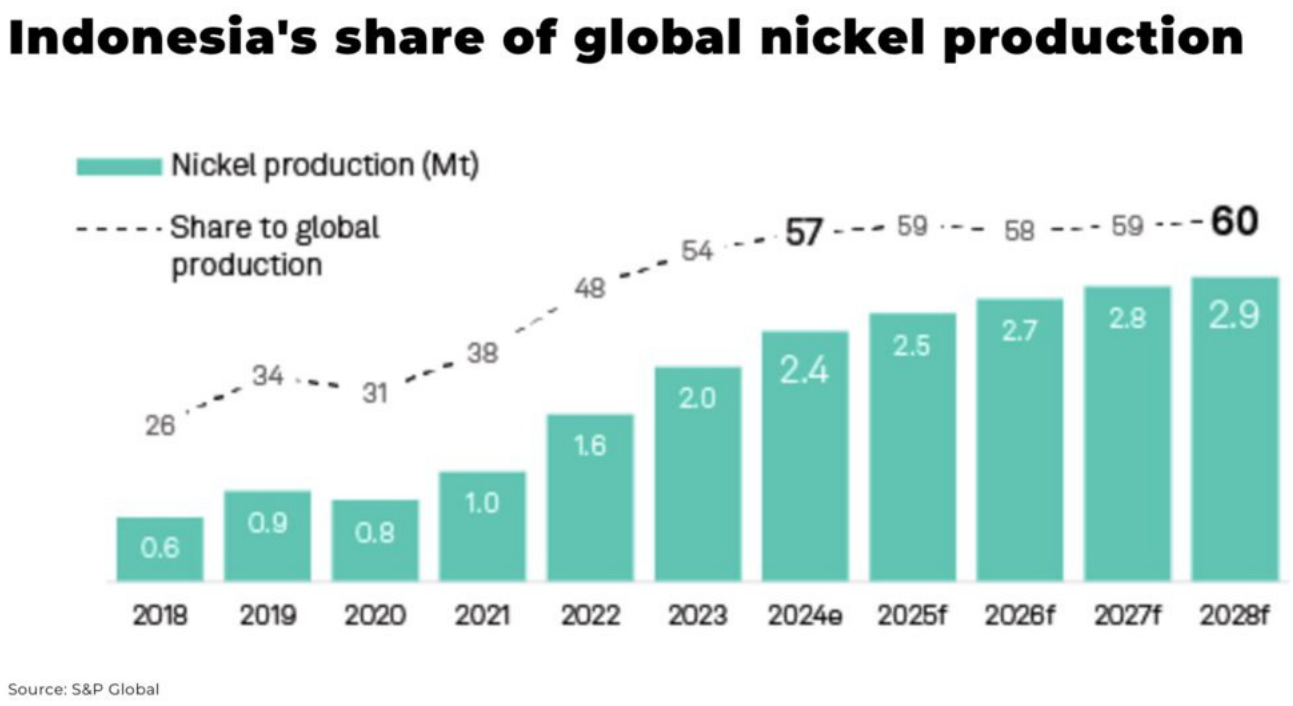
written by Anthony Milewski | January 23, 2025
By 2030, demand for battery-grade nickel is **projected** to **triple**, driven largely by production of electric vehicles (EVs) in the West.

The challenge for Western economies is that Indonesia, with the support of China, dominates global nickel production:

- **54% of mined nickel supply** coming from Indonesia in 2023
- Indonesia **forecast** to represent more than 60% of global supply by 2028

Concerns that Indonesia may use this market dominance to gain economic and geopolitical leverage intensified when an international **trade war was launched over nickel in 2024**.

Without access to secure supply of nickel, North America’s production of electric batteries is not secure – and it’s not just about EVs, but defence, the energy transition, and more.



Nickel

Nickel is **listed** as a critical mineral in the US for good reason, essential for:

- EVs
- stainless steel
- aerospace and defence
- AI and data centers
- the energy transition and nuclear power

Electric batteries

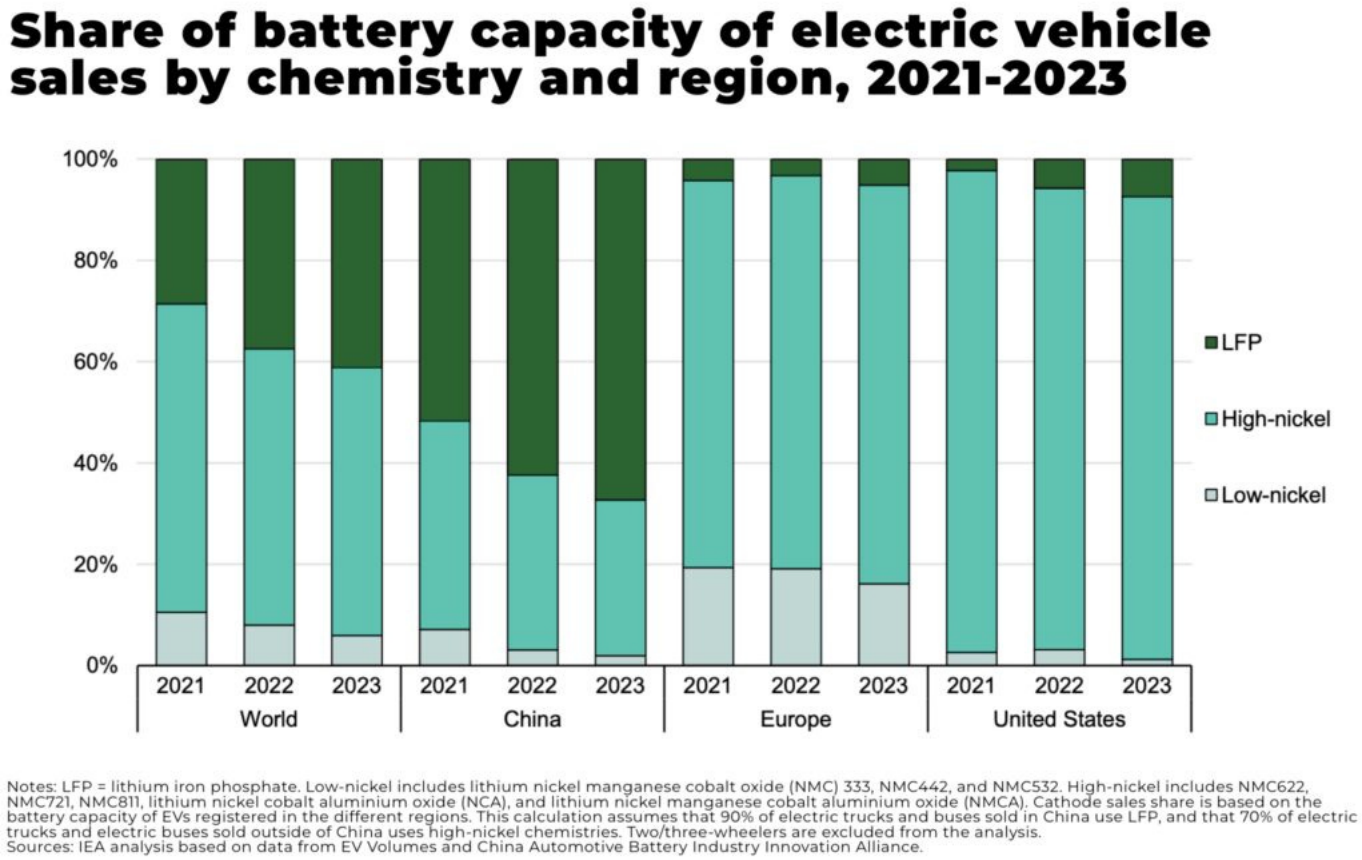
In particular, the importance of nickel to the energy transition cannot be overstated, especially as a critical component in electric batteries, enhancing their energy density and overall performance.

- **over 50% of batteries**, produced in 2023, use chemistries with relatively high nickel content
- electric battery **demand** for nickel stood at almost 370 kt in 2023, up nearly 30% compared to 2022
- China has increased its use of lithium-iron-phosphate (LFP) chemistry in batteries, but the share of LFP batteries in the US and Europe is **below 10%**, with high-nickel chemistries still most prevalent

There are alternative **electric battery chemistries** that do not use nickel, for example, China has increased its use of lithium-iron-phosphate (LFP) chemistry in batteries, but in North America and Europe the share of LFP batteries is **below 10%**, with high-nickel chemistries (eg nickel-manganese-cobalt-oxide (NMC)) still most prevalent.

Benchmark Minerals **projects** that nickel-based chemistries will capture 85% battery cell production capacity outside of China by 2030. Electric batteries are **forecast** to account for over 50% of nickel demand growth by 2030, reaching 1.5 million tonnes of nickel demand by the end of the decade.

And, even if the electric battery chemistry in the West can also push the nickel content down, demand is still expected to rise as sales of electric vehicles increases.



The Great Nickel Trade War

Nickel is at the centre of a global trade war over market share, with Indonesia forcing the **price down by more than 50%** since the recent peak in December 2022 to take out Western competitors.

As we highlighted in our recent analysis – **the Great Nickel Trade War** – the list of nickel mines closing is growing longer, especially in Australia, with at least 8 mothballing operations.

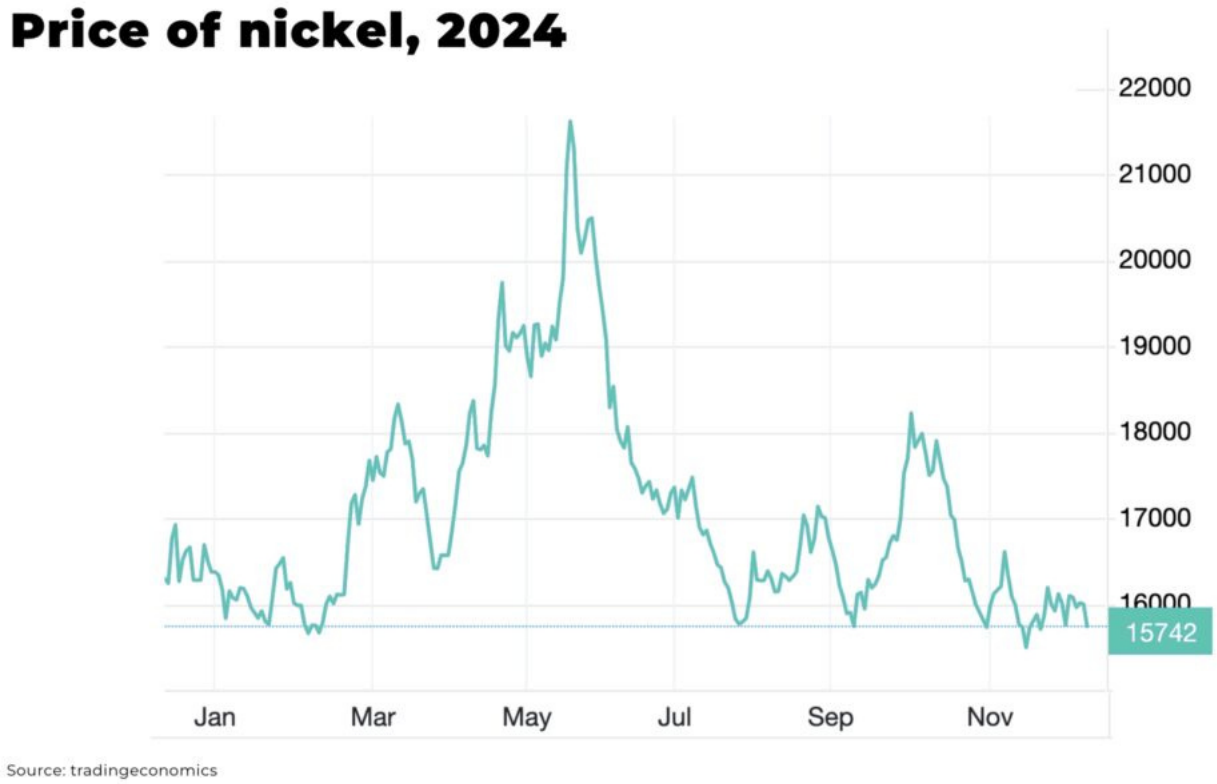
Indonesia is working to monopolise its market dominance of the nickel supply chain, from mining to refining to electric battery production.

This obviously makes Indonesia's position even stronger in the global supply chain.

"If we see a lot of non-Indonesia projects go to the wall, then

Indonesia's share goes even higher. At the moment, there is no alternative. There is no big source being developed or approved elsewhere"

*— **according** to Jim Lennon, commodity strategy consultant at Macquarie Bank*



Western companies are investing into Indonesia, for example, **Ford Motor has taken a direct stake** in a battery-nickel plant worth US$4.5 billion.

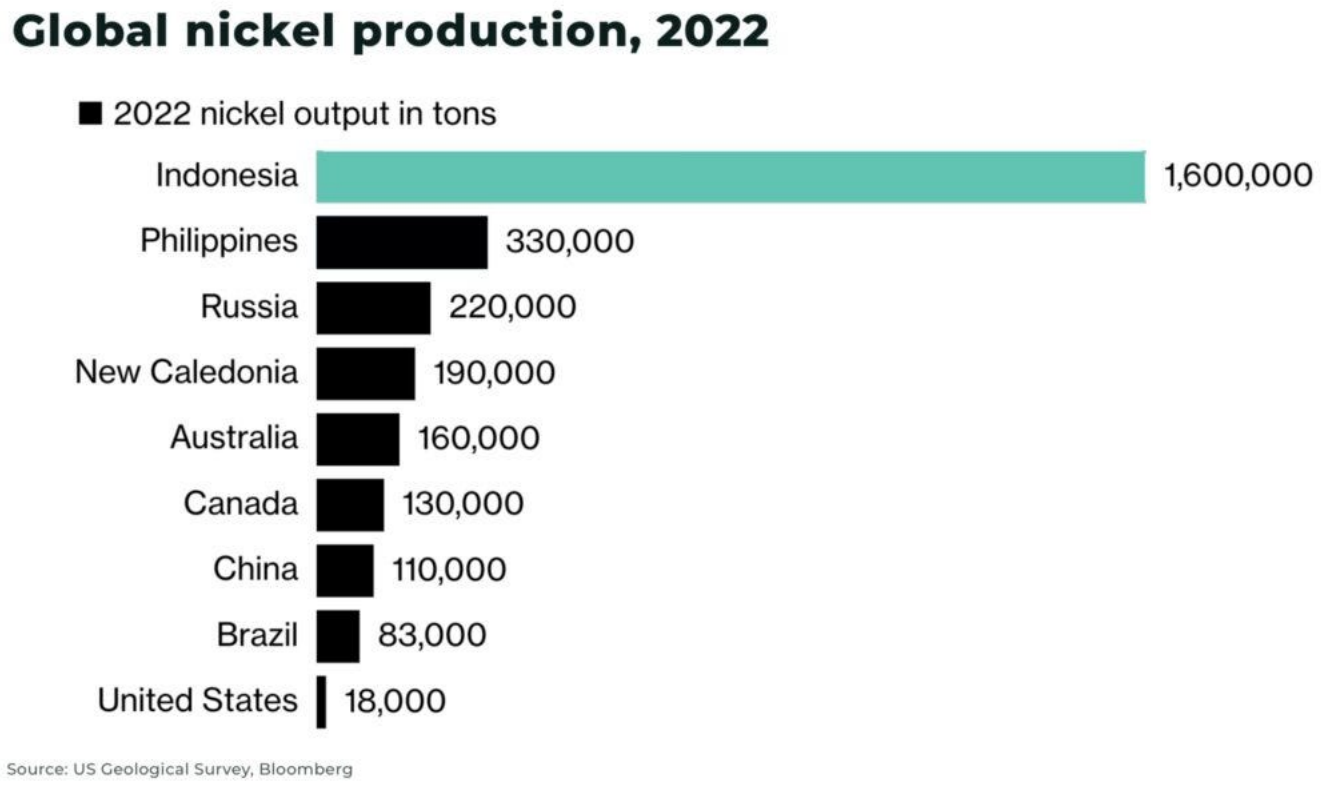
However, the concern in the West is, what happens if Indonesia wants to leverage its influence of these markets further, for example, as China has recently done with its **ban of antimony, germanium and gallium** to the US.

And, to note, China has been instrumental in developing Indonesia's nickel industry, with **54% of the country's nickel output in 2023** coming from China majority-owned producers.

Outside of Indonesia, Indonesia is also now **importing ore** from

the Philippines for refining, equivilent to 3% of supply.

It's **estimated** US FTA partners account for only 9.3% of global nickel production, without any of the top three exporters (Indonesia, the Philippines, and Russia).



Trump making mining great again

The Biden administration introduced a US$7,500 tax credit for new EVs available under the Inflation Reduction Act, available only if the vehicle is built in North America and at least 50% of its battery mineral content sourced in North America or a domestic trading jurisdiction (Indonesia does not have a free-trade agreement with the US, and **we do not expect one anytime soon**)

Donald Trump has **said** he wants to scrap the IRA EV tax credit, but **his priorities** remain the same: to secure vulnerable US supply chains.

So, how to do this?

Domestically:

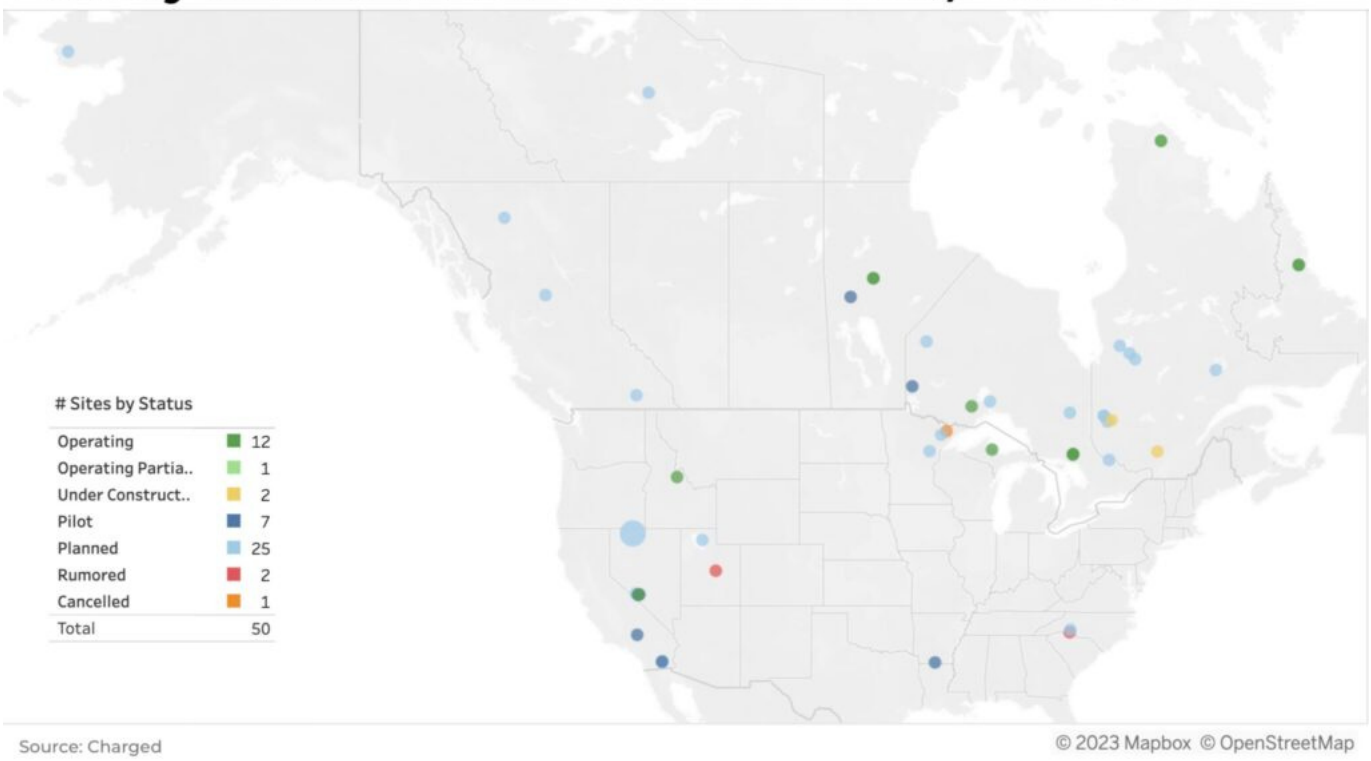
- Eagle Mine, the only operating nickel mine in the US, has **recently extended** its mine-life to 2029
- the US Department of Defense (DoD) has **announced** US$20.6m in funding for the development of a proposed Talon nickel mine in the northern state of Minnesota

However, Eagle mine produced 17,000 tons of nickel in 2023, which is not enough to make up for the more than **159,000 tons** of imports that year. And, until any permitting reform is done, new mines in the US can take up to **29 years** (the second longest timeframe in the world).

Instead, with **46% of US nickel imports** coming from Canada in 2023, which **accounts** for 4% of global production, one of the most secure and likely options will be to leverage the natural resources north of the border.

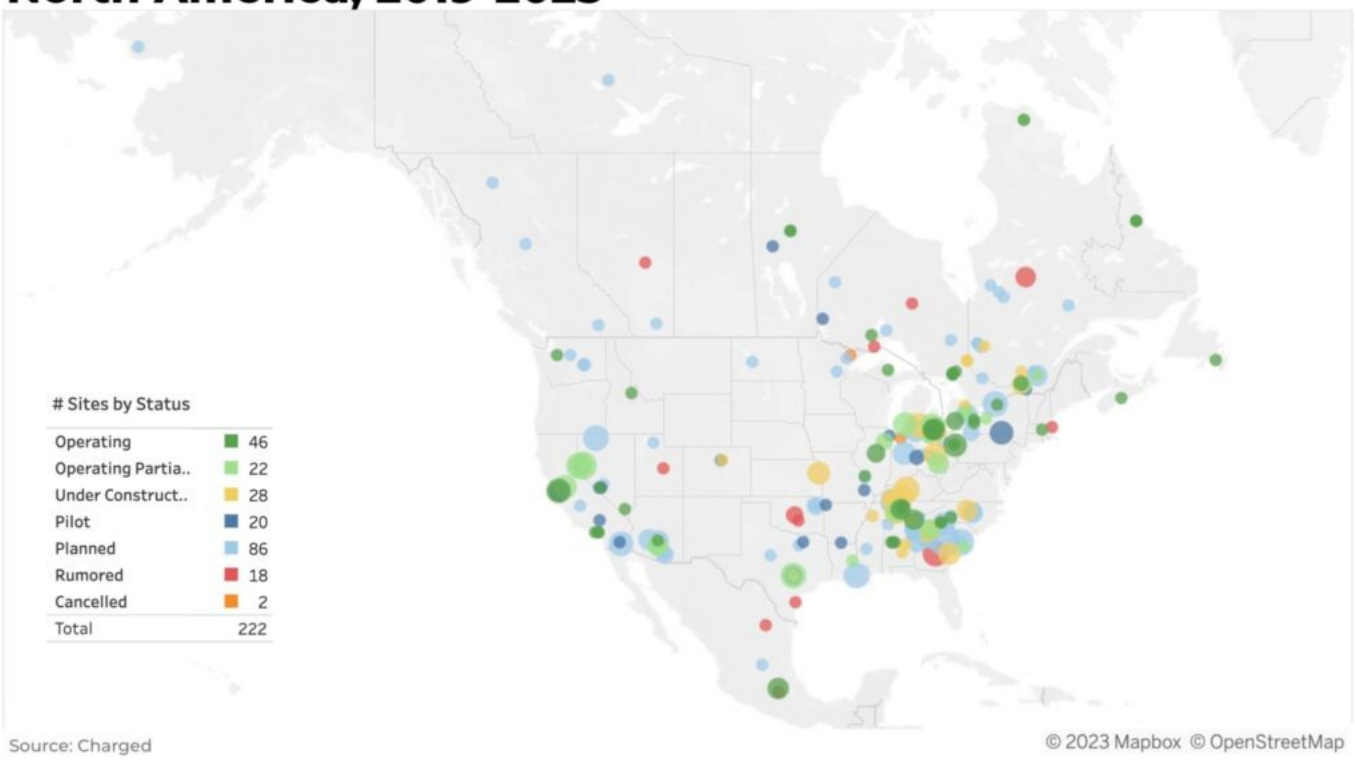
Below is a **map** of electric battery-related mining projects planned, operating across North America. Note, the concentration of mines in Quebec and Ontario.

Battery-related mines in North America, 2019-2023



Now, let’s overlay the EV and battery-related manufacturing and processing plants operating and planned.

EV and Battery-related mines and manufacturing in North America, 2019-2023



To support the integration of Canadian mines into the America battery belt, both Canada and the US are strengthening ties across the industry, for example:

- the Canadian government has started to **restrict** foreign owned investments in the critical minerals sector, particularly affecting Chinese investments. The **provinces** are also looking into ways to shorten permitting times
- the US Defense Department **awarded** US$14.8 million to two Canadian companies to mine and process critical minerals in North America. The US Defense Department investment comes with "no strings attached," Energy Minister Jonathan Wilkinson has **said**, "The only string attached is that we all want to see these companies actually move faster."
- in 2022, the US **announced** US$250 million in Defense Production Act (DPA) funding for US and Canadian companies to mine and process critical minerals for electric vehicle and stationary storage batteries

The **two largest nickel mines in Canada** are operated by Glencore (Raglan and Sudbury Area mines), then third and fourth largest by Vale (Voisey's Bay mine and Coleman mine).

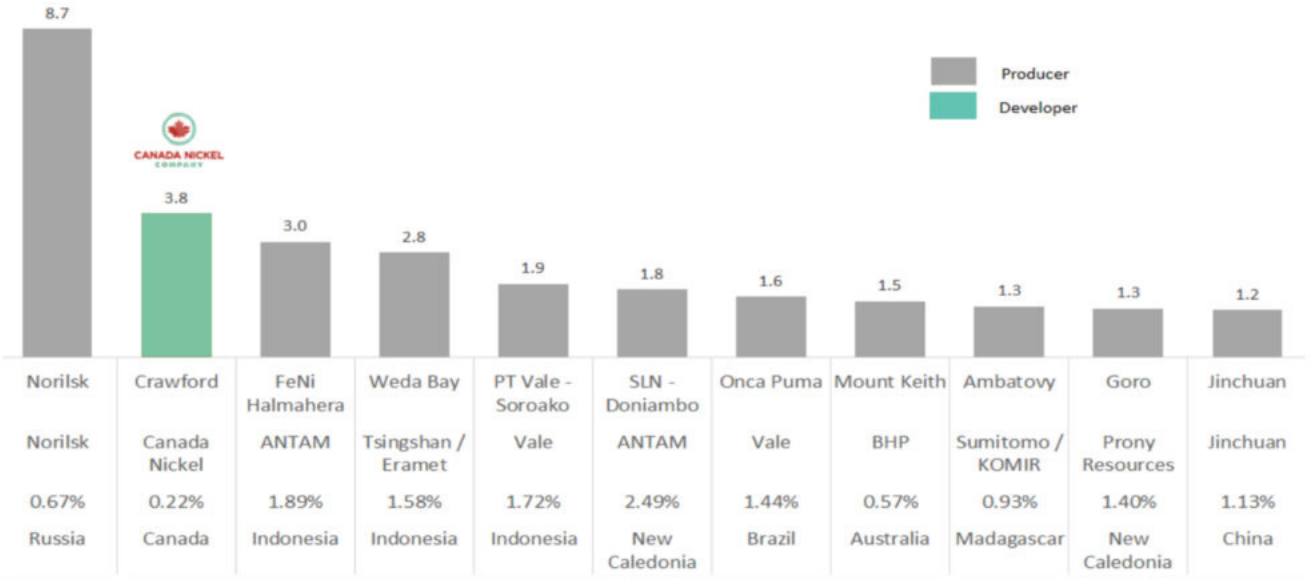
But current nickel mining capacity in North America is not enough to meet the tripling of demand that is **forecast**.

New exploration projects, like **Canada Nickel (TSXV: CNC | OTCQX: CNIKF)**, are working to meet this new expected surge in demand.

Canada Nickel **boasts** the largest nickel deposit in North America and are positioning themselves for Canada Nickel a global nickel market they believe is "fundamentally short of nickel in medium and long-term – little to no supply growth outside Indonesia/China."

Largest global nickel operations and projects by reserves

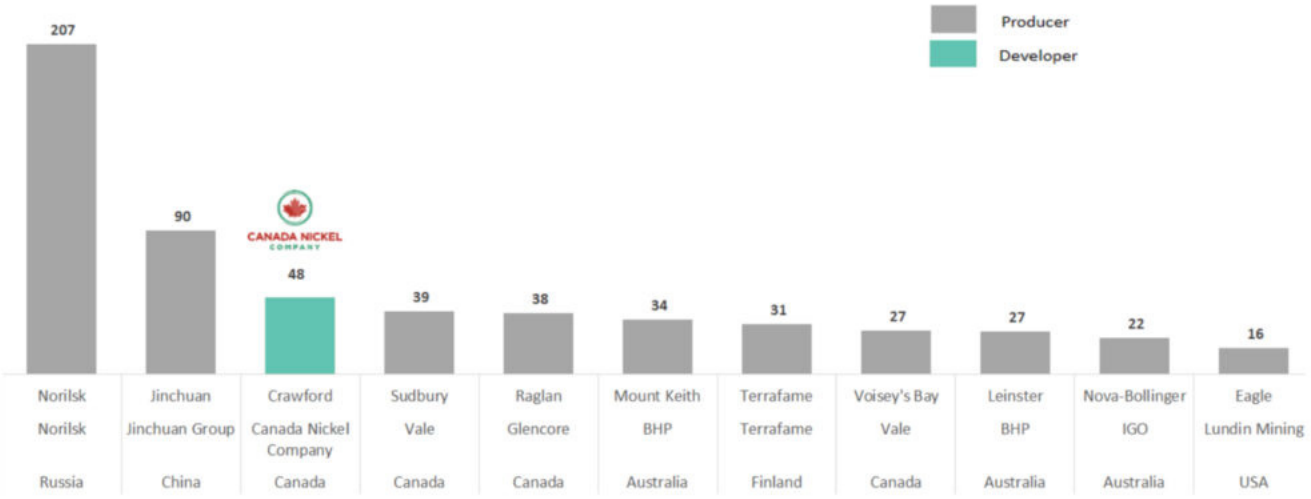
(Mt Contained Nickel)



Source: Wood Mackenzie, Canada Nickel Company fillings

Based on bankable feasibility study results, Crawford is **expected** to be the 3rd largest nickel sulphide operation globally.

Largest global nickel sulphide operations based on 2022 annual production



Source: Wood Mackenzie, Canada Nickel Company fillings

As public concerns **mount** over the environmental impact of mining in Indonesia, and governments and automakers push for responsibly sourced nickel, Canada Nickel is positioning itself as a market leader in sustainable nickel after just **secured** a US$20million investment from Ontario's First Nations (believed to be the first Indigenous funding into the Canadian critical-minerals industry).

"The Crawford Nickel Project represents a strategic opportunity to secure a stable, ethically-sourced nickel supply for the United States. As the largest nickel deposit in North America, it's poised to become a cornerstone of the continent's critical mineral production. Our commitment to zero-carbon nickel production aligns perfectly with the urgent need for sustainable materials in the electric vehicle and renewable energy sectors.

By developing this resource in Canada, we're not just meeting market demand; we're strengthening the national security of the entire North American continent by reducing reliance on geopolitically sensitive supply chains."

*– Mark Selby, CEO of **Canada Nickel***

Securing America's future: key players in North America's nickel mining supply:

Vale **(NYSE: VALE**), the Brazilian mining giant, is a major player in the North American nickel market. With significant operations in Canada, including the Voisey's Bay Mine in Newfoundland and Labrador and the Sudbury operations in Ontario, Vale is investing heavily in the region.

The company recently **completed** a US$2.94 billion expansion

project at Voisey's Bay, transitioning from open-pit to underground mining and boosting annual nickel production to 45,000 tons.

Glencore plc (LSE: GLEN | OTC: GLNCY) is a key player in the North American nickel sector, with significant operations in Canada. The company owns the Raglan Mines in Quebec and the Sudbury Area Mine in Ontario, which are among the **largest nickel producers** in the country.

Glencore's Raglan Mines produced an **estimated** 20,510 tonnes of nickel in 2023, while the Sudbury Area Mine contributed **approximately** 18,590 tonnes.

Canada Nickel Company (TSXV: CNC | OTCQX: CNIKF) is emerging as a significant player in the North American nickel industry with its flagship Crawford project in Ontario. The project is the largest nickel reserve in North America and **expects** to become the largest nickel sulfide operation in the Western world when fully operational.

The company's focus on producing "clean, green nickel" positions it well to meet the growing demand from the electric vehicle and stainless steel markets.

FPX Nickel (TSXV: FPX | OTCQB: FPOCF): is a Vancouver-based junior nickel mining company developing the large-scale Decar Nickel District in central British Columbia. The company's Baptiste Project is **projected** to be among world's ten largest nickel mines by annual output, with a focus on low carbon mining (2.4 t CO2/t Ni).

In 2023, FPX Nickel was one of the first companies to receive direct funding (of $725,000) for mining under Canada's critical mineral strategy, to accelerate demonstration of nickel sulphate production for the electric vehicle battery supply chain. And,

in 2024, the company **received** $14.4M strategic equity investment from major nickel producer Sumitomo Metal Mining.

In October 2024, the company **successfully completed** a pilot-scale hydrometallurgy refinery testwork and produced battery-grade nickel sulphate from its Baptiste Nickel Project.

Aston Minerals (ASX: ASO) is a development phase mining company, advancing its flagship Edleston Project in Ontario, Canada. The company's Boomerang nickel-cobalt sulphide deposit boasts a substantial resource of 1.044 billion tonnes grading 0.27% nickel and 0.011% cobalt, making it one of the world's largest undeveloped nickel-cobalt sulphide deposits.

The team brings **extensive experience** from successful ventures, selling 10 mining projects globally, including the 85,000tpa nickel producer LionOre, which was acquired by Russia's Norilsk in 2007 for $US6.4 billion.

Lundin Mining Corporation (TSX: LUN) operates the Eagle Mine in Michigan's Upper Peninsula, one of the few primary nickel mines in the US. The underground mine, acquired from Rio Tinto in 2013, produces nickel and copper concentrates. With a production capacity of **approximately** 2,000 tonnes per day, Eagle Mine is a crucial domestic source of nickel for the U.S. market.

Lundin Mining's continued investment in the Eagle operation underscores the strategic importance of maintaining domestic nickel production capabilities in North America.

Talon Metals Corp. (TSX: TLO | OTC: TLOFF) is advancing the high-grade Tamarack Nickel-Copper-Cobalt Project in central Minnesota, in partnership with Rio Tinto. The company has secured significant support from the US Department of Defense, **securing** a US$20.6 million grant to accelerate exploration in Minnesota and Michigan.

With an **agreement** to supply 75,000 metric tonnes of nickel concentrate to Tesla, Talon is well-positioned to capitalize on the growing demand for battery minerals in North America.

Conclusion

Securing supply chains are now a strategic imperative for North America’s national security – and this includes nickel – and time to develop new supply is running short. For investors, this is a compelling opportunity.