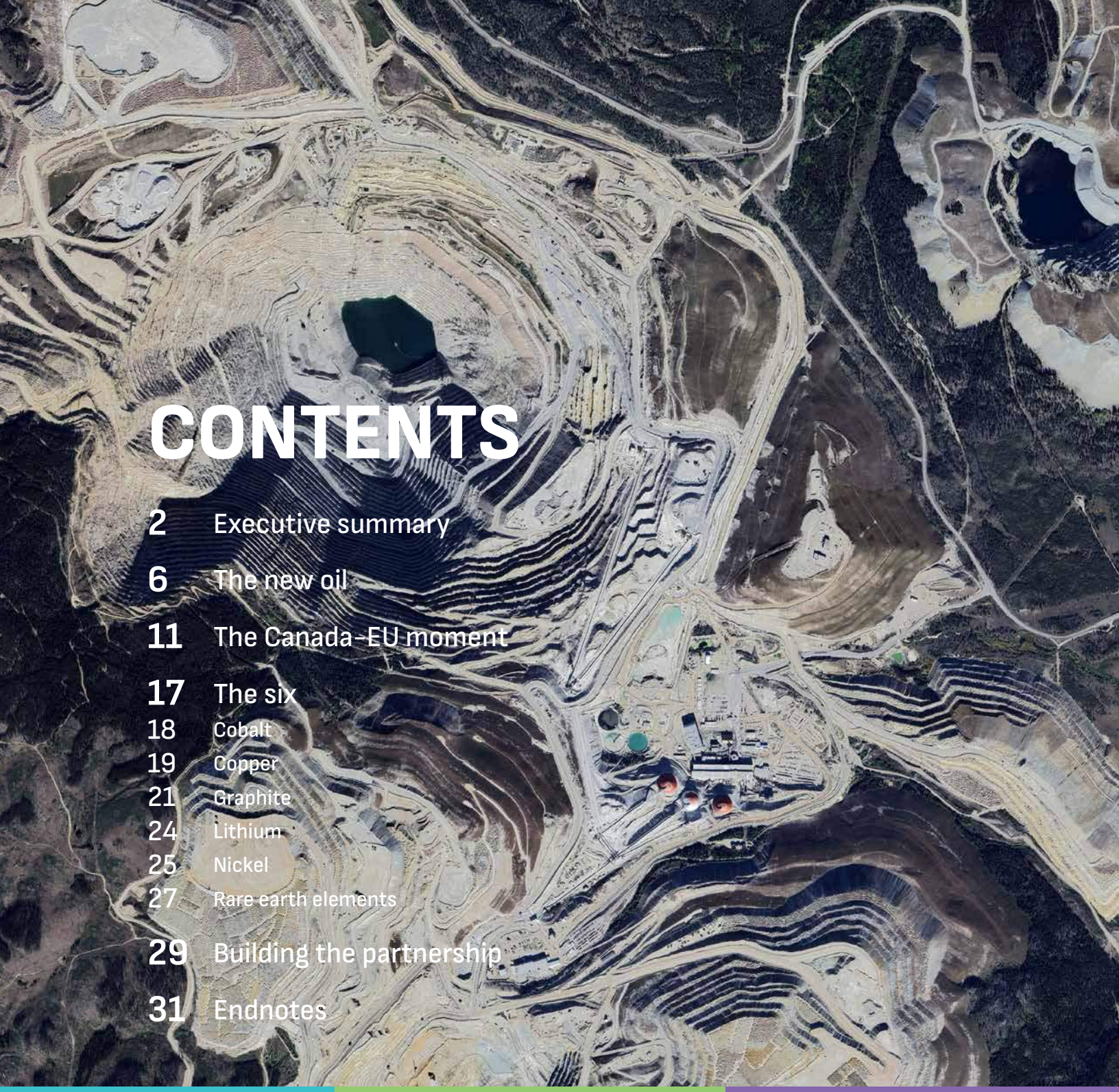


A CRITICAL MOMENT

The EU is looking to diversify its critical mineral supply chain as it builds a cleaner economy—and Canada has what it needs. Now is the moment for a stronger partnership

CLEAN ENERGY CANADA

August 2026



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A Critical Moment

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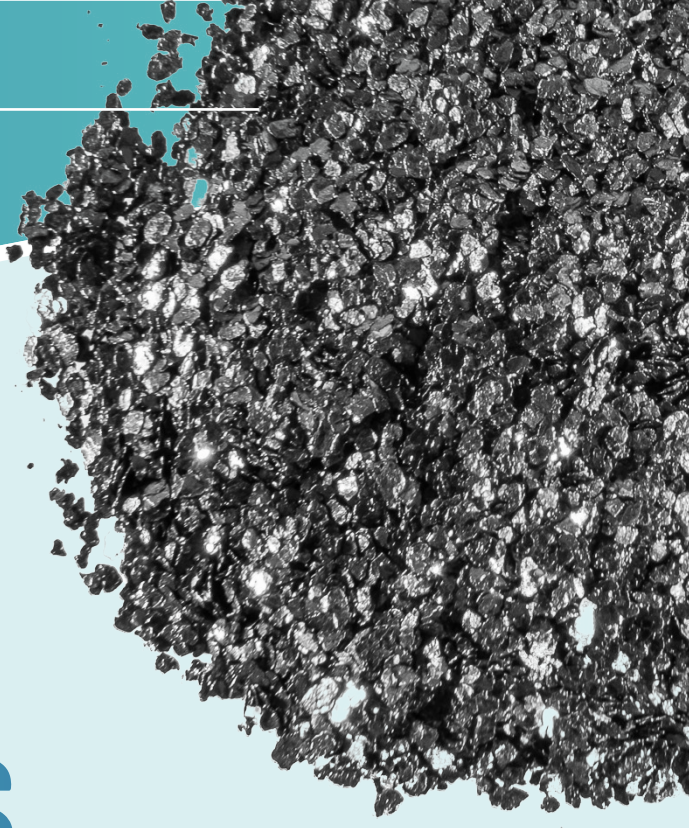


Graphite flakes from Nouveau Monde Graphite's Matawinie mining project in Québec.

Photo: Nouveau Monde Graphite

KEY TAKEAWAYS

Canada's current definition of critical minerals spans 34 different minerals, each with diverse supply chains that could require billions of dollars in financing to be developed. **We recommend focusing on just six: cobalt, copper, graphite, lithium, nickel, and rare earth elements.** These critical minerals are the backbone of the energy transition and Canada has major opportunities in all of them.

Critical mineral demand for these priority minerals and metals is set to skyrocket in coming years with much of their demand growth coming from clean energy applications. With Canada positioning itself as a clean energy superpower, critical minerals—in particular, a pursuit of both refined and processed value chains—should **form a central component of its clean economic agenda**.

Of the EU's current suppliers, **Canada is among the best placed to meet its preferred trade and ESG requirements, second only to Norway.**

However, despite the potential, the Canada-EU pipeline of the six key critical minerals barely changed over the last few years, with the exception of raw nickel.

While there has been great progress on signing MOUs with key EU member states, the next step is to **move to actual investments, offtake agreements, and joint financing.**

In this report, we identify the type of optimal supply form of each critical mineral and the most promising destination countries, finding that the type and opportunity varies.

Given the role that EVs—and specifically batteries—play in driving critical mineral demand, **graphite should be at the top of the priority list for Canada-EU trade given that every lithium-ion battery requires significant quantities.**



EXECUTIVE SUMMARY

Joint statements from global leaders summits present snapshots of the cross-border issues of the moment. And so the fact that critical minerals was the subject of one of nine joint statements from the most recent G7 summit in France speaks volumes.

Specifically, the statement described "the urgency of diversifying our supply chains and building our collective resilience."[1] With the majority of the world's critical mineral supply concentrated in a handful of countries, China in particular, reforging supply chains has become a priority for many of Canada's allies and trading partners.

Indeed, with the energy transition driving huge increases in demand for metals and minerals (a typical EV requires six times the mineral inputs of a conventional vehicle, for example), critical minerals are becoming the new oil.[2]

Canada is home to reserves of many of the minerals required to power the energy transition. Canada's lithium reserves, for instance, could supply around half of cumulative global demand from 2030 to 2050, with 95% of the demand generated by the clean energy transition—electric vehicle batteries in particular.[3,4] And with a widely touted vision of becoming a clean energy superpower, critical minerals are essential to realizing our global clean economic ambitions.

But vision and potential can only go so far. And if Canada is going to realize its huge critical mineral opportunity, it will need the right policy and the right trade partners.

When it comes to the energy transition, the EU is arguably Canada's most forward-thinking ally, with some of the world's leading clean energy and climate policies. And as the EU rolls out clean technologies—like EVs and renewables—in huge quantities, its demand for critical minerals is set to skyrocket. EU lithium demand from EVs and energy storage is projected to increase nine to 12 fold by 2030, for example.[12]

However, the EU does not have sufficient domestic resources to meet this demand without partnerships. The recent European Critical Raw Materials Act sets ambitious targets to diversify its supply chains and seek partners.[5] Notably, it is only aiming to supply 10% of its extraction needs domestically and so will require global partners that meet its high environmental, social and governance standards to help reduce reliance from single third-party countries.

With our clean grid, growing opportunities for Indigenous-led mining projects, and existing trade agreements, Canada is well-placed to be a key supplier.[6] **In fact, only Norway ranked higher than Canada in our analysis of how well the EU's current suppliers meet its trade and ESG criteria. But despite ticking all the right boxes, Canada's exports to the EU have barely increased in recent years.**

There have, however, been some recent signs of change. The last year or so has seen a flurry of MOUs and agreements on critical minerals, with Canada signing deals with numerous EU partners, including Italy, Germany, and Sweden.[7–9]

While these represent real progress, **the next step is to move past the MOU stage and focus on key areas of EU demand while leveraging Canada's existing strengths.** In this report, we recommend that, instead of trying to split investment resources across tens of critical minerals, **Canada should focus on just six that are essential to the global energy transition and the EU's growing clean energy sector: cobalt, copper, graphite, lithium, nickel, and rare earth elements.**

In each case, Canada has a number of specific opportunities, from sending our low-carbon raw cobalt to refineries in Finland to reduce the EU's dependence on the Democratic Republic of the Congo, to supplying graphite to German EV battery manufacturers to limit their reliance on Chinese supply.



With critical minerals clearly a priority for both the EU and Canadian governments, and the wheels already turning, Canada now needs to ensure it is playing to its strengths. Specifically, the federal government, working with its provincial and territorial counterparts, needs to:*

1 Prioritize

Prioritize the six critical minerals featured in this report (cobalt, copper, graphite, lithium, nickel, and rare earth elements) and in the updated Canadian Critical Minerals Strategy due to their long-term demand growth prospects that support electrification and energy security, while building supply chain resilience across Canada and the EU.

2 Promote

More aggressively promote Canada's clean critical mineral advantages.

3 Finance

Operationalize the European Investment Bank framework so that more EU financing can flow into specific Canadian mining and processing projects.

4 Secure offtake

Continue converting more of the existing MOUs with European partners into binding offtake agreements.

5 Build a portfolio

Build a Canada–EU "strategic projects pipeline" portfolio aligned with the EU's Critical Raw Materials Act.

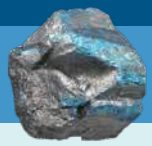
6 Develop trade corridors

Develop purpose-built "mineral corridors" marketed specifically to European industrial partners, with a Quebec-centred "low-carbon battery minerals corridor" as a top priority.

In a rapidly changing world, Canada rightly wants to be a clean energy superpower—and critical minerals are its new oil. Now it must translate its potential into action.

*A more detailed list of recommendations can be found on page 29.

6 IN DEMAND CRITICAL MINERALS



COBALT

Canada's share of EU supply (2023)

RAW: **N/A** Processed: **0%**

Total Canadian reserves (kt):

600

Annual EU demand in 2050 from EVs and/ or renewables (kt):

40 (+396%)

Key opportunities for Canada

- Prioritize and promote lower-carbon cobalt (for instance, from the Baptiste mine in B.C. and from the Crawford mine in Ontario) to meet requirements laid out in the EU's new Batteries Regulation.[13]
- Explore joint investments with the EU in cobalt recycling innovation and technology to meet the EU's ambitious recycling targets.

Priority EU countries to partner with:

- Finland
- Belgium



COPPER

Canada's share of EU supply (2023)

RAW: **4%** Processed: **0%**

Total Canadian reserves (kt):

3,300

Annual EU demand in 2050 from EVs and/ or renewables (kt):

845 (+792%)

Key opportunities for Canada

- Supplying the EU with raw copper exports, in light of recent increase in Chinese supply to EU following U.S. tariffs.
- Export recycled copper or recycling technology to meet EU's ambitious targets to use recycled copper.

Priority EU countries to partner with:

- Germany
- Italy
- Netherlands



GRAPHITE

Canada's share of EU supply (2023)

RAW: **1%** Processed: **0%**

Total Canadian reserves (kt):

5,900

Annual EU demand in 2050 from EVs and/ or renewables (kt):

712 (+2,079%)

Key opportunities for Canada

- Graphite should be at the top of the priority list for Canada-EU trade given that every lithium-ion battery requires significanta quantities.
- Canada's near term opportunity lies in positioning itself as a reliable and secure trading partner for natural raw graphite and potentially refined graphite products in the future.

Priority EU countries to partner with:

- Germany
- Sweden
- France

Sources: European Commission (2023),[10] Natural Resources Canada,[11] Carrara et al. (2023).[12]

Note: EU demand projections are for a high demand scenario. Percentage increase represents change between 2020 and 2050. For copper, values are for renewables only; for nickel, values are for EVs only.

For a summary of Canada's current state of play, as well as areas where Canada has the best opportunity to increase trade with the EU, see **page 17.**



LITHIUM

Canada's share of EU supply (2023)

RAW: **0%** Processed: **0%**

Total Canadian reserves (kt):

1,336

Annual EU demand in 2050 from EVs and/or renewables (kt):

102 (+1,983%)

Key opportunities for Canada

- With soaring EU demand driven by high EV sales and ambitious EV supply chain objectives, Canada has an opportunity to position itself as an important supplier of both raw and refined lithium.

Priority EU countries to partner with:

- Germany
- Finland



NICKEL

Canada's share of EU supply (2023)

RAW: **24%** Processed: **6%**

Total Canadian reserves (kt):

2,200

Annual EU demand in 2050 from EVs and/or renewables (kt):

369 (+1,484%)

Key opportunities for Canada

- Canada should focus on the higher purity nickel needed for batteries, and work on integrating its nickel trade with the EU's battery and automotive supply chains.

Priority EU countries to partner with:

- Germany
- Belgium
- Finland
- Netherlands



RARE EARTH ELEMENTS

Canada's share of EU supply (2023)

RAW: **0%** Processed: **0%**

Total Canadian reserves (kt):

15,200

Annual EU demand in 2050 from EVs and/or renewables (kt):

8 (+621%)

Key opportunities for Canada

- Rare earth elements are greatly exposed to geopolitical threats and Canada can offer the EU a secure source.
- Canada should prioritize turning its globally significant reserves of rare earth elements into a commercially viable industry.

Priority EU countries to partner with:

- Germany
- Estonia
- France

Sources: European Commission (2023),[10] Natural Resources Canada,[11] Carrara et al. (2023).[12]

Note: EU demand projections are for a high demand scenario. Percentage increase represents change between 2020 and 2050. For copper, values are for renewables only; for nickel, values are for EVs only.



Photo: Nouveau Monde Graphite

THE NEW OIL

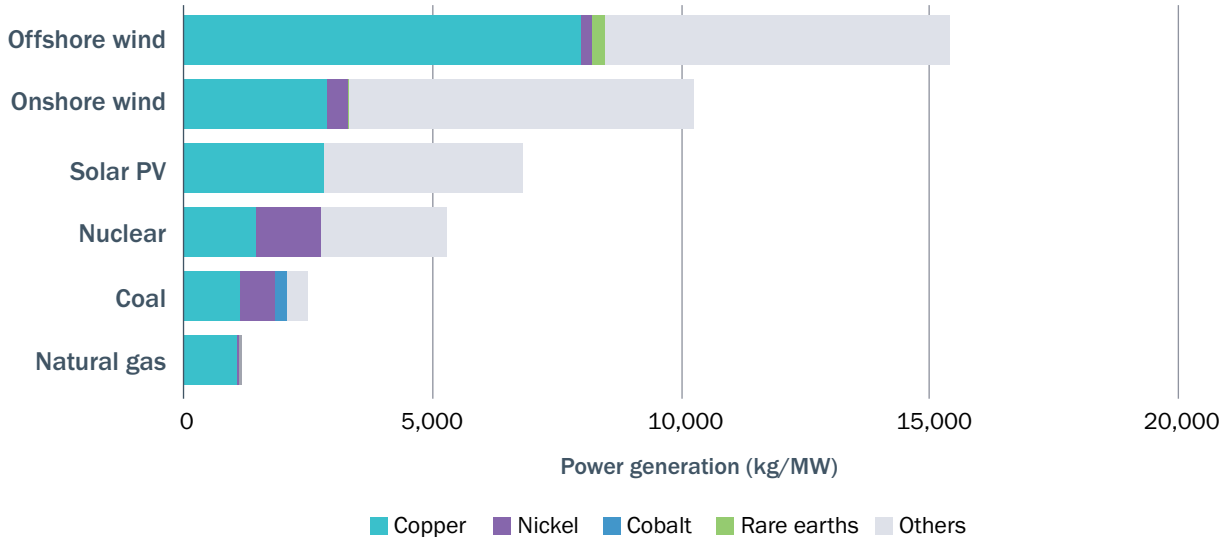
It's no secret that the world's energy systems are being rewired. The energy transition has been dubbed the next industrial revolution: one that won't be marred by pollution but fuelled by clean power. As the International Energy Agency put it, we have entered the Age of Electricity.[14]

Clean energy secured two-thirds of global capital spent on energy last year, while the electricity sector is now the largest energy employer globally.[15] And as the cost of clean technologies plummets, adoption is skyrocketing. Renewables are the fastest-growing source of energy globally, supplying all new growth in the world's electricity demand in 2025.[16] Meanwhile, EVs are poised to make up close to 30% of new car sales worldwide this year.[17]

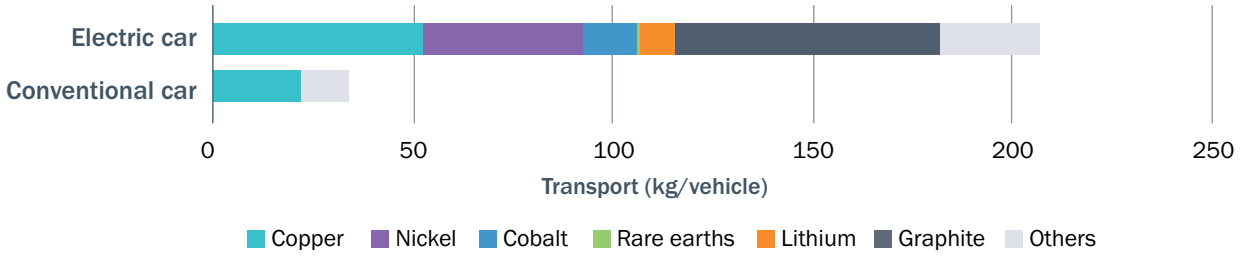
What's more, the recent war in Iran has accelerated clean energy agendas around the world. The EU has released a new strategy to further reduce reliance on fossil fuel imports and increase renewable deployment.[18] The South Korean government is advancing new commitments to nearly triple the share of renewables on its grid by 2030.[19] And China's latest five-year plan aims to reach peak carbon emissions by 2030 and further secure its dominance in clean energy and technology supply chains.[20]

While electrons might be the power source, critical minerals are the building blocks of the renewables that produce them, the wires that move them, and the technologies that use them. A typical EV requires six times the mineral inputs of a conventional vehicle, while an onshore wind plant requires nine times more mineral resources than a gas-fired power plant.[2] When it comes to natural resources, critical minerals are the new oil.

Minerals used in clean energy technologies compared to other power generation sources



Minerals used in electric cars compared to conventional cars



Source: International Energy Agency (2021).[2]

This realignment of resources is redrawing geopolitical power. While many oil producing countries in the West (Canada included) have been focused on legacy energy sources, China, particularly, has doubled down on critical minerals. As a result, the country dominates the supply chain: over 90% of graphite and rare earth refining capacity and huge shares of other critical minerals, along with a small number of other countries among the top-three most common suppliers.[4]

But supply chain dependence on a single country is a concern for many jurisdictions, opening up opportunities for other suppliers to take their slice of the critical minerals pie. And as countries weigh up their options to meet the coming demand, now is a critical moment for countries like Canada. **With the federal government touting Canada's potential as a clean energy superpower, it's reasonable that critical minerals provide an anchor for this new clean economic agenda—to ensure Canada takes its place in emerging clean supply chains, provides critical resources to its allies, and improves value-add where possible.**[21]



Rendering of the Phase-2 Matawinie Mine

Photo: Nouveau Monde Graphite

Canada is ready to build. By working closely with provinces, territories and Indigenous partners, we are moving faster, building smarter, and unlocking Canada's full potential as a global energy and critical minerals superpower.

—Minister Tim Hodgson, Canada's Minister of Energy and Natural Resources

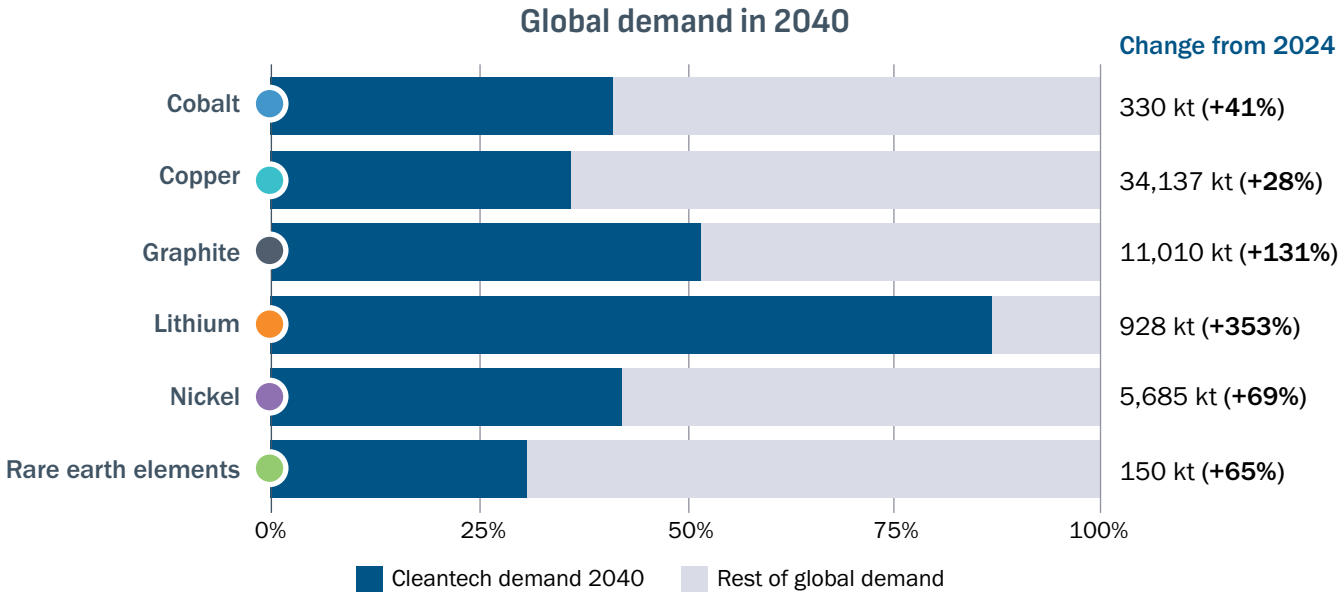


REFINING OUR FOCUS

Canada's current definition of critical minerals spans 34 commodities, each with diverse supply chains that could require billions of dollars in financing to be developed. With limited resources, rapidly moving competitors, and long development timelines, a more strategic approach is warranted, with a focus on a few resources where Canada has comparative advantages and can add the most value. Indeed, while Canada has previously set up funding streams to support critical mineral development, these have focused on a large number of resources. For example, the Critical Minerals Geoscience and Data Initiative has supported nearly 70 projects with a combined total of $79 million. However, this funding was spread over 26 different critical minerals.[22]

In this report, we focus on six critical minerals with significant Canadian potential: cobalt, copper, graphite, lithium, nickel, and rare earth elements.

These minerals have also been identified by the government of Canada as holding "the most significant potential for Canadian economic growth."[23]



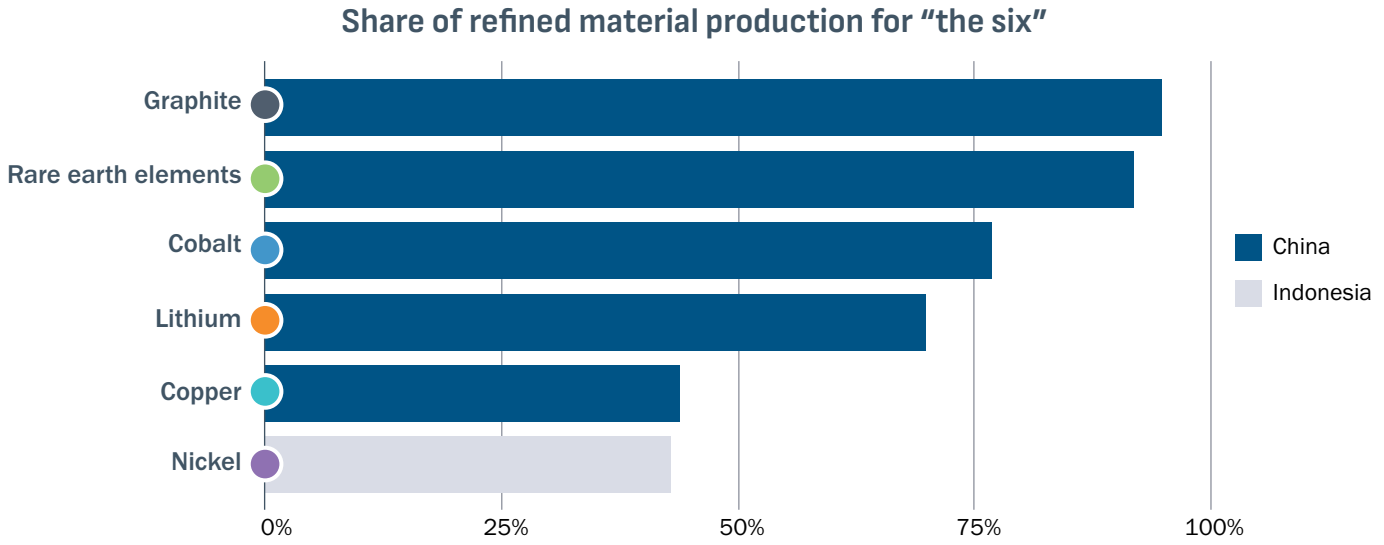
Source: International Energy Agency (2025).[4]

Each of these minerals is central to the energy transition, with cleantech expected to drive at least 30% (and in the case of lithium, as much as 87%) of global demand in 2040 even if no new policies to accelerate cleantech deployment are introduced.

Canada already produces five of the six, with only rare earth elements not in active production, although Canada does have several advanced exploration projects and holds some of the largest reserves globally, effectively positioning the country for future commercial production. Already, in 2023 these six key critical minerals contributed $6.9 billion to Canada's GDP, more than double forestry and logging.[24,25]

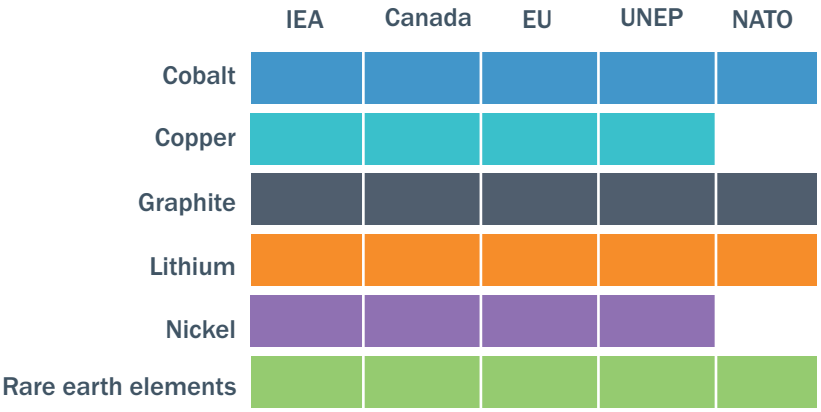
Their potential, however, is significantly greater. The value of known reserves is estimated at over $300 billion.[2,26] And developing them would bring an estimated $80 billion in capital investment and contribute over $500 billion in GDP over the lifetime of the mines while generating 95,000 full-time equivalent jobs and some $97 billion in tax revenues.[26]

Additionally, global supply chain concentration is currently high for most of these resources (refining in particular), with China currently dominating the global picture. This poses specific opportunities for Canada where trade partners, the EU especially, are motivated to diversify toward allied supply chains.



Source: International Energy Agency (2025).[4]

Additionally, each of these has been flagged in numerous Canadian, EU, and global lists as critical minerals that are both in high demand and exposed to supply chain concentration, including for defence applications.



Most of the six critical minerals’ are included in the International Energy Agency’s Global Critical Minerals Outlook, the Government of Canada’s list of critical minerals, the EU’s list of critical raw materials of high importance to the EU economy, the United Nations Environment Program’s list of minerals needed for the energy transition, and NATO’s list of 12 defence-critical raw materials.

Sources: International Energy Agency (2025),[4] *Government of Canada,*[141] *European Commission,*[5] *UNEP (2024),*[142] *NATO (2024).*[46]



Photo: Nouveau Monde Graphite

In addition to being home to reserves of these minerals, Canada has a small number of refining operations that allow exports of specific refined products, retaining more of the value chain within our borders. The type of exports for each of these minerals depends on the market and Canada's own processing and refining capacity. As Canada works to expand its share of raw production for key critical minerals, there will be a parallel opportunity to secure new investments that expand our refining operations. Generally in this report, we use the terms refining and processing in the following capacity:

Extraction	Processing	Refining
Exploration Mining/extraction	Separation/processing of ores from raw material	Conversion into product for industrial application (can be a multi step process with imports/exports sometimes occurring at different stages)

A SIGN OF THE TIMES

The attention garnered by Prime Minister Carney's speech at the most recent World Economic Forum was a bellwether for our times. The globalist vision that defined the post-war years is on increasingly shaky ground, strained by wars, tariffs, and a shifting world order. And so, the prime minister argued, countries are looking to dilute their supply chain reliance on "hegemons" (namely China and the U.S.) by reforging partnerships with like-minded jurisdictions. In short, "allies will diversify to hedge against uncertainty."[27]

This trend has taken form in numerous domestic policy changes. Canada has committed to double non-U.S. trade while expanding negotiations on free trade agreements with jurisdictions across the world, from the Indo-Pacific to the U.K. to Australia.[28–31]

Critical minerals are a central example of how Canada can expand its "middle power" as it builds new trade relationships—and the current government has already gone some way toward realizing this opportunity.[32]

Critical minerals have featured in many new strategic partnerships over the last year. Canada has new formal mechanisms for critical mineral cooperation with Germany, Australia, and Saudi Arabia, and it is continuing to implement existing frameworks with the U.K., the EU, France, Italy, Japan, South Korea, Chile, and Argentina.[32,33]

Canada has also initiated the G7 Critical Minerals Resilience and Production Alliance (also known as the G7 buyers club) which brings together trusted partners to diversify critical minerals supply, reduce market concentration, and create a reliable buyers' club that can attract investment and accelerate production for projects. So far, the alliance has mobilized over $19 billion in critical mineral projects across 69 partnerships and initiatives in just the last year.[34]





THE CANADA–EU MOMENT

The EU is home to some of the world's leading clean energy and climate policies, and clean technologies are already prevalent: battery EVs outsold gasoline cars in the EU in December 2025 for the first time, for example.[35]

And with demand for clean technologies comes demand for critical minerals. Lithium demand from EVs and energy storage is projected to increase nine to 12 fold by 2030 while demand for rare earth elements is on track to rise by up to five or six times.[36]

With the bloc taking new steps to reduce reliance on fossil fuel imports and increase renewable deployment and electrification following the spike in oil and gas prices triggered by the war in Iran, critical mineral demand will only intensify.[18] Indeed, it recently proposed another ambitious strategy which, if adopted, aims to double the electrification of energy demand—like energy used by industry, transport, and buildings—by 2040 to slash its fossil fuel import bill.[37]

With limited domestic supply, the EU is highly dependent on imports to meet this demand.[38]

At present, this import reliance is concentrated in a handful of countries: 95% of the EU's rare earth elements came from China, Malaysia, and Russia, for instance. And supply chain concentration is trending in the wrong direction. The average EU market share of the top three producers of "the six" increased from 82% in 2020 to 86% in 2024, with China taking the top spot for all but nickel.[39]

The issue has been top of mind for the bloc, which has been taking steps to build new supply partnerships over the last decade, including a Canada–EU Strategic Partnership on Raw Materials signed in 2021. **But despite these efforts, the Canada-EU pipeline of the six key critical minerals barely changed over the last few years, with the exception of nickel.** It's clear that additional steps are required to ensure Canada can meaningfully increase its critical minerals trade with the EU.

Canada's share of critical minerals imported by the EU

	2020		2023	
	Canada's share of raw imports	Canada's share of refined imports	Canada's share of raw imports	Canada's share of refined imports
Cobalt	5%	0%	Not available	0%
Graphite	2%	0%	1% ↓	0%
Copper	3%	0%	4% ↑	0%
Lithium	0%	<1%	0%	0%
Nickel	14%	4%	24% ↑	6% ↑
Rare earth elements	0%	0%	0%	0%

Source: European Commission (2020, 2023).[151,10]

In 2024, the EU legislated its most comprehensive and ambitious critical minerals supply policy to date: **The EU Critical Raw Materials Act.** The act is part of the EU's Green Deal Industrial Plan, which aims to enhance the competitiveness of EU industries in line with its ambitious climate targets.[5]

Specifically, the raw materials act will "ensure EU access to a secure and sustainable supply of critical raw materials, enabling Europe to meet its 2030 climate and digital objectives." It lays out minerals that are:

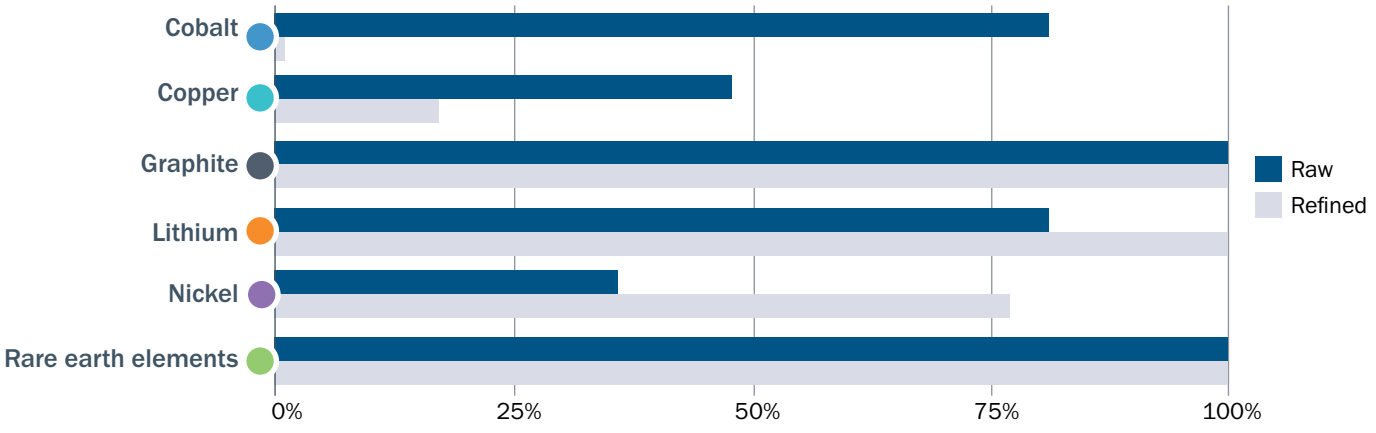
- **Critical:** raw materials which are important for the whole European economy and face a high risk of supply disruption.
- **Strategic:** raw materials characterized by high strategic importance with an emphasis on their use in technologies that underpin the green and digital transition, and which experience global supply and demand imbalances.

All six minerals in this report are identified in the act as either strategic or critical for the EU.[5]

The act sets a 2030 benchmark that at least 10% of the EU's annual consumption of raw materials and 40% of refined materials should be sourced domestically. However, this still means that the EU will need to look externally for most of its raw and refined resources.

Additionally, the act indicates that no more than 65% of the EU's annual consumption of any key material should come from a single third country by 2030—something that will require rapid supply chain diversification for certain minerals that are currently almost entirely sourced from China, like rare earth elements.

EU import reliance in 2023



Source: European Commission (2023).[10]

EU POLICIES THAT GIVE CANADIAN CRITICAL MINERALS A COMPARATIVE ADVANTAGE

When it comes to selecting new partners, the EU is leveraging a growing suite of regulatory tools to expand and diversify its international partnerships while seeking to increase the role that recycled products and low environmental footprint production will play in its supply chains. Combined, these policies give Canada an edge as it seeks to expand its own exports to aligned allies. These policies include:



Policy	Relevant requirements
Critical Raw Materials Act[5]	By 2030 the act sets benchmarks to source domestically (within the EU): • at least 10% of the EU's annual consumption for extraction • at least 40% of the EU's annual consumption for processing • at least 25% of the EU's annual consumption for recycling In addition, there is a target to source no more than 65% of the EU's annual consumption from a single third country by 2030. This last target is particularly relevant as Canada can position its expanding production as an alternative to existing trade flows that are less diversified.
EU Batteries Regulation[13]	Sets targets for critical mineral recovery from waste batteries: • targets for lithium recovery: 50% by the end of 2027 and 80% by the end of 2031 • targets for the recovery of cobalt, copper, lead and nickel: 90% by the end of 2027 and 95% by the end of 2031 Sets minimum levels of recycled content for industrial batteries, lighting and ignition batteries and EV batteries starting from 2031: • 16% for cobalt • 85% for lead • 6% for lithium • 6% for nickel Requires companies to identify, prevent and address social and environmental risks linked to the sourcing, processing and trading of raw materials such as lithium, cobalt, nickel, and natural graphite contained in their batteries. Includes labelling requirements related to the carbon footprint of batteries and recycled content that apply from 2026, which Canada—with its lower emission electricity grid—could seek to capitalize on.
Carbon Border Adjustment Mechanism[150]	Requires importers of carbon-intensive goods to declare embedded greenhouse gas emissions and surrender certificates matching the EU carbon price starting in 2026. Applies to carbon-intensive sectors, including aluminum, iron and steel, fertilizer, electricity, and hydrogen. **While raw extraction of critical minerals currently sits outside the initial Carbon Border Adjustment Mechanism framework, the EU regularly evaluates extending the scope of the mechanism to include other upstream materials and energy-intensive products.**

Canada has many advantages that would make it a preferred partner under these requirements. Indeed, when we compared the top five producers and refiners currently supplying the EU for each of the six critical minerals using a number of indicators that could represent the EU's priorities, **Canada was ranked as one of the top suppliers, second only to Norway. Canada's clean electricity grid, free trade agreement, and defence partnerships all give it advantages that could be recognized under the EU's current policy approach.** It is vital that Canada leverages these advantages as the EU expands its critical minerals trade.

Top five non-EU suppliers of each of "the six" (except those supplying less than 5% of the total) ranked according to desirable import criteria in its critical mineral regulatory frameworks:

	Trading partner	EU trade agreement	Governance score (0-100)	NATO membership	Net-zero commitment	Carbon price	Clean electricity
1	**Norway**	Yes	86	Yes	No*	Yes	99%
2	**Canada**	**Yes**	**81**	**Yes**	**Yes (2050)**	**Yes**	**77%**
3	**Switzerland**	Yes	86	No	Yes (2050)	Yes	98%
4	**Chile**	Yes	70	No	Yes (2050)	Yes	66%
5	**Japan**	Yes	81	No	Yes (2050)	Yes	33%
6	**Argentina**	Yes	54	No	Yes (2050)	Yes	42%
7	**Brazil**	Yes	51	No	Yes (2050)	Incoming	89%
8	**Australia**	In progress	83	No	Yes (2050)	Yes	39%
9	**South Africa**	Yes	54	No	Yes (2050)	Yes	18%
10	**Ukraine**	Yes	47	No	Yes (2060)	Yes	72%
11	**Peru**	Yes	50	No	Yes (2050)	No	64%
12	**China**	No	52	No	Yes (2060)	Yes	42%
13	**Mozambique**	Yes	36	No	No	No	83%
14	**United States**	No	72	Yes	No	No	43%
15	**Russia**	No	39	No	Yes (2060)	No	36%

**Has goal to reduce greenhouse gas emissions by 90–95% below 1990 levels by 2050*

Sources: European Commission,[143] World Bank (2025, 2026),[144,145] NATO,[146] Net Zero Tracker,[147] ICAP,[148] Ember.[149]

SIGNS OF PROGRESS

The last year or two has delivered some signs of progress on Canada-EU critical mineral trade. Both jurisdictions have been advancing high-level frameworks like the recent EU–Canada Joint Declaration on Critical Minerals, which re-affirmed the parties' commitment to collaborate across the critical minerals value chain. Canada has also been engaging bilaterally with strategic EU countries such as Germany, Italy, and France on critical mineral opportunities through similar joint declarations, trade missions, supply chain mapping initiatives, and potential stockpiling efforts.[7,9,43]

Notably, the two regions are moving past diplomacy efforts and towards more commercial ambitions, **pursuing mechanisms that allow Canadian suppliers better access to EU financing and buyers. For instance, the June 2025 EU–Canada Security and Defence Partnership allowed Canadian suppliers to join EU joint procurement platforms, creating reliable long-term supply opportunities for minerals with dual civilian and defence uses.**[44]

Similarly, a recent letter of intent between Canada and the European Investment Bank (one of the world's largest multilateral lenders that is specifically mandated to implement the EU Critical Raw Materials Act) opened the door to potential co-financing of critical mineral projects in Canada, although this has yet to translate into direct investment.[45]

While many of these developments still remain in the MOU stage, the most recent round of partnerships announced at the G7 Summit in Evian this June demonstrated the most significant progress yet turning statements of intent into actual commercial commitments, from Italian investments in Quebec graphite to a Portuguese partnership with a Vancouver-based lithium refining technology company.[34]

INDIGENOUS OPPORTUNITIES

Realizing Canada's opportunity to develop critical minerals is only possible by working hand in hand with Indigenous communities across the country. As a recent scoping paper from the Canadian Climate Institute detailed, this requires a commitment to four pillars: providing financial support, building First Nations capacity, ensuring First Nations governance and decision-making processes are respected, and meeting our constitutional requirements for consent.[140] Notably, a commitment to Indigenous partnership is reinforced by the EU's own requirements, including that any potential strategic project should prioritize Indigenous participation and consultation.[40] Indigenous communities in Canada are already leading the way in clean energy development as the third largest collective owners of clean energy assets across the country. The mining industry also benefits from Indigenous participation and there are some frameworks and funding in place to support involvement.[41] There have also been a few major critical mineral investments from First Nations. In 2025, for example, the Taykwa Tagamou Nation made a $20 million investment in the Crawford Nickel Sulphide Mining Project in Ontario. It is one of "the most significant direct equity investments by a First Nation in Canada's critical mineral sector."[42] When it comes to developing new critical mineral projects in Canada, Indigenous participation must be prioritized, even as the government works to accelerate project approvals to meet the moment.



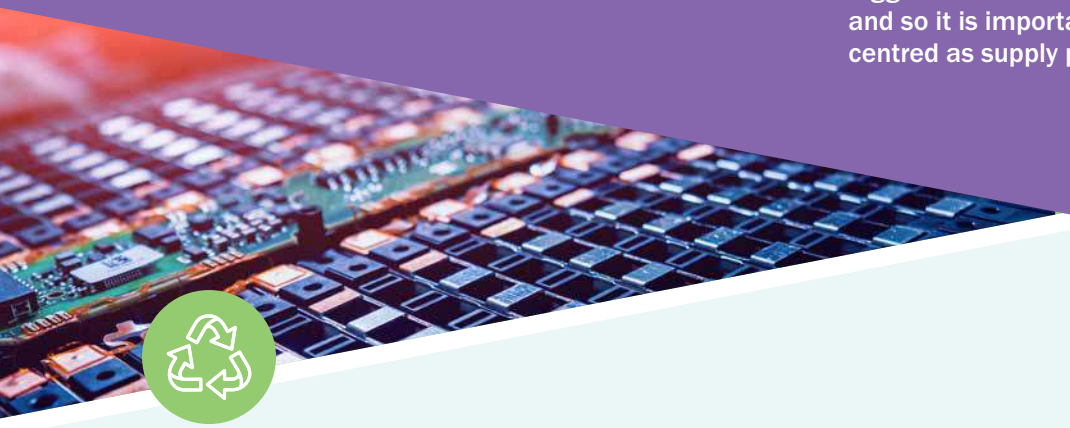
Highland Valley Copper Mine in British Columbia

A MATTER OF DEFENCE

Many of the critical minerals required for the energy transition are also needed for defence, from graphite in tanks to cobalt in submarines. In 2024, NATO published a list of 12 defence-critical raw minerals, many of which Canada can supply, as part of a roadmap designed to "protect Allied supply chains from disruptions that could affect NATO's deterrence and defence."[46] As many of Canada's allies are increasingly thinking about energy security and defence as interconnected priorities, Canada has a unique opportunity to be a secure, reliable supplier to allied powers—and partnerships are already being forged.

The security and defence partnership between the European Union and Canada signed in 2025 explicitly mentions "strengthening the resilience of supply chains and ensuring the secure sourcing of critical minerals essential for defence."[44] And in its defence industrial strategy of February 2026, the Canadian government recognized the mining and processing of critical minerals as an industry with substantial economic growth potential, highlighting secure supply chains as a key pillar.[47]

Despite this, the energy transition remains the bigger driver of demand for critical minerals, and so it is important that this opportunity is centred as supply partnerships are developed.



RECYCLING

Both the EU and Canada have put an increasing focus on growing their battery recycling footprints. The EU, in particular, is looking to expand the role that recycled content plays through establishing targets for critical mineral recovery from waste batteries starting in 2027, alongside minimum levels of recycled content for industrial batteries, lighting and ignition batteries, and EV batteries starting from 2031. Beyond a trade in minerals and battery materials, both the EU and Canada have an opportunity to more closely align their battery recycling industries, exploring opportunities to trade IP, expertise, and goods, especially in priority critical minerals, including:

Cobalt

In recent years, Canada has advanced its cobalt recycling capabilities, with several facilities now processing end-of-life batteries to recover cobalt, nickel, and other critical minerals.[48] As such, Canada should also explore joint investments with the EU in cobalt recycling innovation and technology given the EU's ambitious targets of recovering 90% of cobalt by 2027 and including 16% recycled cobalt in certain batteries by 2031.[13]

Copper

The EU plans to rely heavily on recycled copper (although it is focusing on domestic recycling). Canada is home to copper recycling leadership, with facilities in Rouyn-Noranda and Montréal, Quebec.[49] Canada could explore exporting recycled copper directly to the EU or its copper recycling technology solutions to member countries that either have existing recycling facilities or could be well-placed to house new ones, particularly Germany, Spain, Italy, and Poland.[50]

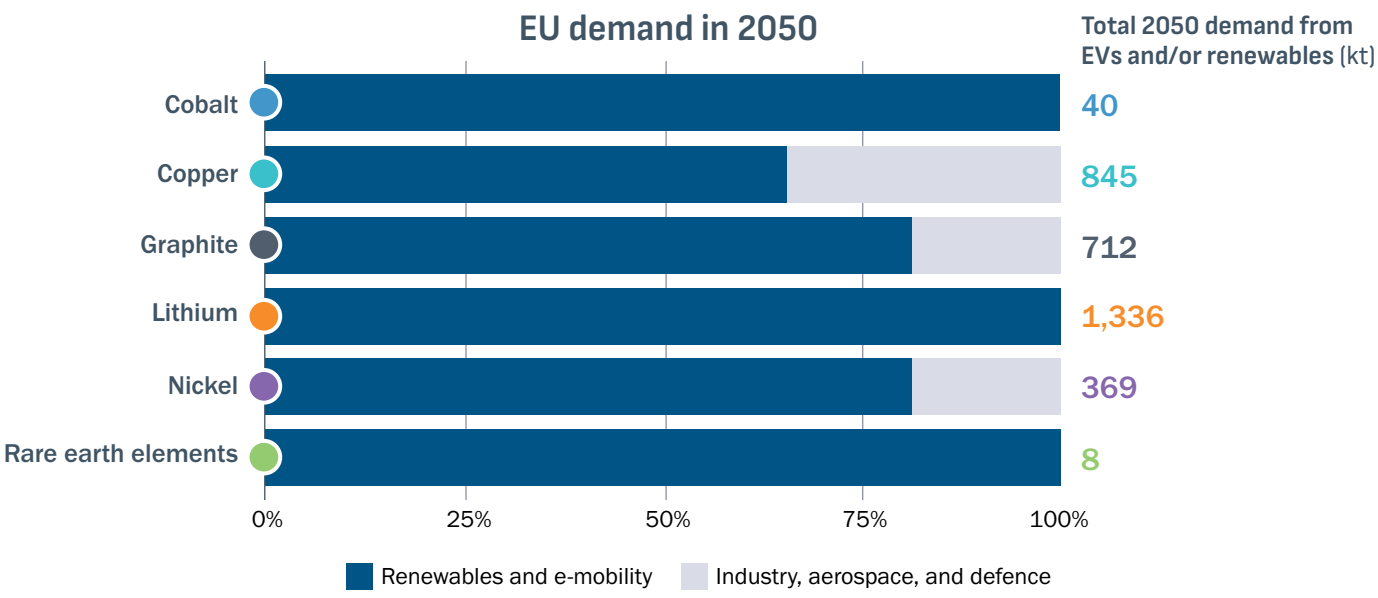
Rare earth elements

Although nascent in both countries, given the high degree of supply chain concentration in China and existing investments in other battery recycling facilities, there may be an opportunity for expanded collaboration and IP sharing between both regions to reduce reliance on globally insecure sources for these essential metals.

THE SIX

Each of the six critical minerals that form the focus of this report are set to see significant and growing demand both globally and in the EU out to 2050, driven largely by clean technologies, like EVs and renewables along with the build out of clean energy infrastructure like transmission lines. For each, we provide a summary of Canada's current state of play, as well as areas where Canada has the best opportunity to increase trade with the EU.

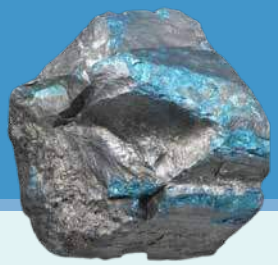




Note that this demand is only from five key sectors: renewables, e-mobility, industry, information and communication technology (not available for 2050), and aerospace and defence. It therefore does not represent demand from the entire EU economy. 2050 demand reflects a high-demand scenario.

Source: Carrara et al. (2023).[12]

COBALT



APPLICATIONS

Clean energy:

- **Li-ion batteries**
- **Fuel cells**
- **Electrolyzers**

Other applications:

- Data transmission networks
- Smartphones, tablets, and laptops
- Military aircraft
- Robotics
- Drones
- Space launchers and satellites

Global demand increase between 2024 and 2040: **49%**[4*]

Cleantech share in 2040: **41%**[4*]

EU cleantech demand increase between 2020 and 2050 (EVs and renewables): between **348%** and **396%**[12]

EU import reliance: **81% raw; 1% refined**[10]

**Under stated policies scenario*

Cobalt experiences more geopolitical pressure than supply and demand challenges, with mining overwhelmingly occurring in the Democratic Republic of the Congo, and refining dominated by China.[4] In the longer term, more diversification is expected, with Australia, Indonesia and Canada poised to produce more raw and processed cobalt, and new strategic refining investments in the U.S., Canada, and Finland aimed at reducing the Chinese stranglehold.[4]

Canada is currently the seventh-largest producer of cobalt, largely as a byproduct of its nickel mining, and already exports unwrought cobalt to the EU.[48,53] Cobalt concentrate produced at Canadian mines is also refined at three refineries that are reliant on imported materials, primarily from mines in the U.S. and Cuba.[48]

For the EU, cobalt demand is overwhelmingly driven by the use of cobalt in batteries for EVs and stationary storage.[12] In the longer term, actual cobalt demand may vary as the lack of supply diversity (specifically, a global reliance on cobalt from Democratic Republic of the Congo) incentivizes a shift towards lower-cobalt and cobalt-free battery chemistries along with a growing role for battery recycling.

The EU has a heavy dependency (81%) on raw imports for cobalt mostly from the Democratic Republic of the Congo, but processes nearly all of its consumption domestically from Finland (62%) and Belgium (29%).[10]

The EU Battery Regulation's recycled content mandates include cobalt specifically: 16% recycled cobalt content required from 2031, rising to 26% from 2036. These thresholds are ambitious relative to current recycled cobalt supply, creating a structural demand gap that needs to be filled.

THE OPPORTUNITY

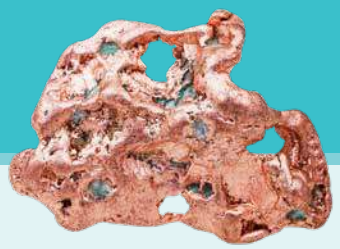
Given the EU's existing refining capacity, one of Canada's most immediate opportunities lies in expanding exports of raw and processed cobalt to the EU to help reduce its dependence on Congolese cobalt and meet its diversification targets. In 2024, Canadian exports of cobalt to the EU represented nearly 16% of the bloc's total cobalt imports, with the Netherlands and Belgium the primary export markets for Canadian cobalt (Belgium currently supplies 29% of the EU's refined cobalt).[48,53,54] Canada could increase exports to those countries and also explore opportunities in Finland, where an even greater proportion (62%) of the EU's cobalt is refined.[53]

Longer term, Canada could accelerate and scale projects that produce cobalt sulfate (the form used in lithium ion batteries), like the Strategic Response Funded investment announced in May 2026 for battery-grade cobalt sulfate production in Temiskaming Shores, Ontario.[55]

Across both processed and refined cobalt, Canada should prioritize and promote its lower-carbon cobalt (for instance, from the Baptiste mine in B.C. and from the Crawford mine in Ontario) to meet some of the carbon footprint and responsible sourcing requirements laid out in the EU's new Batteries Regulation.[13]

Clean industrial supply chain priorities	Optimal supply form for Canada-EU trade	Priority EU countries and illustrative opportunities to partner
EV batteries	• Unwrought cobalt (raw) • Battery-grade cobalt sulfate (refined cobalt)	• **Finland:** Umicore (the world's leading cobalt chemicals company) operates cobalt refining and chemicals production facilities in Kokkola, Finland—one of the largest cobalt processing hubs outside China.[56] • **Belgium:** Umicore is headquartered in Belgium and has two major battery material production facilities in the country, including a major recycling and refining facility in Hoboken.[57]

COPPER



APPLICATIONS

Clean energy:

- **Li-ion batteries**
- **Fuel cells**
- **Electrolyzers**
- **Wind turbines**
- **Traction motors**
- **Solar PV**
- **Heat pumps**

Other applications:

- Data transmission networks
- Data storage and servers
- Smartphones, tablets, and laptops
- Military aircraft
- Battle tanks
- Artillery
- Robotics
- Drones
- Space launchers and satellites

Global demand increase between 2024 and 2040: **28%**[4*]

Cleantech share in 2040 (renewables only): **36%**[4*]

EU clean tech demand increase between 2020 and 2050 (renewables only): between **269%** and **792%**[12**]

EU import reliance: **48% raw; 17% refined**[10]

**Under stated policies scenario*

***Does not include copper demand associated with the build out of the electricity grid. Globally, electricity grids represented more than 47% of the cleantech demand for copper, thus EU demand will likely be considerably higher in coming decades.*

Globally, demand growth for copper is driven first and foremost by construction and electricity networks.[58] While copper mining and refining see more diversity in production sources around the world than other critical minerals, China is still a dominant player for refined copper, representing more than 20% of total production.[58] More recently, the threat of U.S. tariffs on copper started to re-draw trade flows, causing Chile, the world's leading copper producer, to send more copper to the U.S. instead of the EU.[49,59]

In 2024, Canada produced 2% of global copper and was the 12th largest producer globally.[49] While Canada has 30 operational copper mines that produce copper as a primary product or by-product, it only has one standalone copper smelter and refinery in Quebec and two smaller sites in Ontario and Newfoundland and Labrador.[49,60] The United States was the primary destination for Canadian copper, accounting for over 99% of refined copper exports.[49] Canada currently represents only 2.5% of total EU copper imports, the vast majority of which is in the form of copper ores and concentrates.[54]

The EU has a well-diversified copper supply of which only about half is imported. Its supply is led by Poland (19%) followed by Chile (14%) and Peru (10%), as well as a number of other EU countries. Processed copper is even more secure, with domestic capabilities already meeting over two thirds of its demand. Top suppliers are Germany (17%), Poland (14%) and Spain (11%).[10,61]

THE OPPORTUNITY

Given the EU's large domestic copper processing capabilities, one of Canada's main opportunities will lie in supplying the EU with raw copper exports, providing a stable and reliable trading partner with high ESG credentials that keeps the EU supply chain diversified. This is particularly important in light of U.S. tariffs that have redrawn trade flows, resulting in the EU turning to China and the Democratic Republic of the Congo for an increasing amount of copper imports.[59,62]

Relatedly, Canada's relative deficit in copper refining operations today, and the high percentage of EU refined demand that is met domestically, the opportunities in the short term will be more limited. However, given the scale of copper demand increases expected in the EU and efforts in Canada to increase copper refining, there may be opportunities in the future to explore partnerships. Copper cathodes are the key copper material used in industrial processes to produce other copper products for use in electricity systems and EVs. Canada already produces both of these in facilities in Quebec.[63]

Clean industrial supply chain priorities	Optimal supply form for Canada-EU trade	Priority EU countries and illustrative opportunities to partner
EVs, electricity grid infrastructure, and solar	• Copper concentrate (raw) • Refined copper anodes and cathodes • Copper scrap and recycled copper	• **Germany:** Germany's industrial base is one of the EU's largest consumers of copper.[7] Germany's Aurubis AG (one of Europe's largest copper smelters and recyclers) already has a supply agreement with Canada's Troilus Gold for copper concentrate that could be the foundation of a broader opportunity.[64] The country's KfW state investment bank also has an explicit mandate to invest in critical mineral projects abroad.[65] • **Italy:** Italy is one of Europe's largest wire and cable manufacturers and one of the world's most important copper fabricating nations. There are also several Italian companies building the cables for Europe's offshore wind expansion and grid modernization.[66,67] • **Netherlands:** Rotterdam is Europe's largest port and the primary entry point for metal commodities into the EU market. It is being actively considered as a hub for stockpiling critical minerals.[68,69]

GRAPHITE



APPLICATIONS

Clean energy:

- **Li-ion batteries**
- **Fuel cells**
- **Electrolyzers**
- **Hydrogen direct reduced iron and electric arc furnaces (H2-DRI)**

Other applications:

- Data transmission networks
- Smartphones, tablets, and laptops
- Military aircraft
- Battle tanks
- Naval vessels
- Artillery
- Robotics
- Drones

Global demand increase between 2024 and 2040: **131%**[4*]

Cleantech share in 2040: **54%**[4*]

EU clean tech demand increase between 2020 and 2050 (EVs only): between **1,410%** and **2,079%**[12]

EU import reliance: (natural and synthetic): **~100% raw; ~100% refined**[10]

**Under stated policies scenario*

While graphite demand can be met through both naturally occurring deposits and synthetic production, its key and currently irreplaceable role in battery anodes and the high level of supply concentration in China make graphite particularly vulnerable to disruptions and supply shocks.[58,70] Unlike many other critical minerals where China has meaningful market share, China's domination of both the raw production of graphite (where it represented 79.4% total global production 2024) and refined graphite (where in 2025 it produced 95.2% of total global production) comes close to a monopoly.[58] The country has already demonstrated a willingness to use this monopoly position to impose export controls to disrupt global supply chains for graphite.[71]

While the current production and refining of graphite is highly concentrated, global reserves are more diversified, with Canada having the 10th largest reserves in the world.[70] North America currently only has one operational graphite mine, Northern Graphite's Lac des Iles site in Quebec that produced nearly 12 kilotonnes per year (0.7% of global production) of natural graphite in 2024, with plans to ramp up to 25 kilotonnes.[70]

Fourteen more projects are in development in Canada, including a second mine from Nouveau Monde Graphite, Matawinie Mine Phase-2, which began construction in May 2026 and would be the largest graphite mine in the G7 upon completion, supplying up to 106 kilotonnes of graphite concentrate annually.[72–74] Canada is also expecting to see meaningful graphite refining projects for both natural and synthetic graphite come online over the next few years, including Nouveau Monde Graphite's Canadian graphite refining facility in Becacour, Quebec, which will produce both coated and uncoated spherical purified graphite, a key input for EV batteries.[75] Vianode, a leading global manufacturer of synthetic graphite, has also made a $3.2 billion investment in a new state-of-the-art facility in St. Thomas Ontario, which at full production will produce enough synthetic graphite to supply roughly two million EVs each year.[76]

In the EU, clean technologies are set to make up a significant portion of its projected future graphite demand.[12*] The EU currently imports nearly all of its graphite, primarily from China (40%) followed by Brazil (13%) and Mozambique (12%), with Canada being its 10th largest exporter at 1%.[10]

THE OPPORTUNITY

Given the role that EVs—and specifically batteries—play in driving critical mineral demand, graphite should be at the top of the priority list for Canada-EU trade. Canada's near-term opportunity lies in positioning itself as a reliable and secure trading partner for natural raw graphite. Existing projects under construction in Canada could see the country become one of the top producers of graphite in the world. Coupled with secure governance and a clean electricity grid, Canada is an ideal partner for the EU.

Longer term, and depending on the success Canada sees in building out a graphite processing industry, Canada could look to export both natural and synthetic purified graphite products for use in batteries, prioritizing certification under the EU Battery Regulation traceability and carbon footprint requirements in a way that Chinese graphite is unlikely to achieve.

Clean industrial supply chain priorities	Optimal supply form for Canada-EU trade	Priority EU countries and illustrative opportunities to partner
EV batteries, anodes	• Natural flake graphite • Coated and uncoated spherical purified graphite • Synthetic graphite and coated synthetic graphite	• **Germany:** German companies have begun making investments into Canada's battery supply chain, including PowerCo (a subsidiary of Volkswagen) in a battery gigafactory in Canada.[78] This will create an important source of demand for graphite, representing a pivotal opportunity to integrate Canada-EU supply chains. The country's KfW state investment bank could also help, as it may invest in critical mineral projects abroad.[65] • **Sweden:** This EU country is looking to position itself as a key domestic EU supplier for both raw and refined graphite, with investments in both mining and refining.[79–81] It also has an established role in the EV battery ecosystem. Additionally, EKN (Sweden's export credit agency) has demonstrated a willingness to make export investments in other key critical mineral projects and could potentially play a role in a future Canadian investment.[82] • **France:** France has been positioning itself as a growing player in the EU battery ecosystem.[83] Importantly, France has seen a domestic graphite refining facility proposed by Canada's Northern Graphite named as one of the 47 Strategic Projects under the European Union's Critical Raw Materials Act, potentially presenting a future opportunity to embed Canadian-sourced graphite into the growing French anode manufacturing space.[84]



Photo: Nouveau Monde Graphite

SPOTLIGHT

Nouveau Monde Graphite, Matawinie Mine Phase–2

Nouveau Monde Graphite, Matawinie Mine Phase-2 is expected to be one of the cleanest graphite production projects in the world, with the company behind the mine already carbon neutral, powering its facilities by Quebec's low-cost, renewable hydroelectricity.[85] This mine was supported by the government of Canada's Major Projects Office and received an investment from the Canada Growth Fund.[86] It has offtake agreements in place with Traxys from Luxembourg and Panasonic from Japan.[87] The government of Canada also signed a seven-year offtake agreement for 30,000 tonnes annually of graphite concentrate from the mine, which is "reserved for Canada and allied countries," and is seeking strategic buyers and allied countries to sign an offtake agreement for half of this amount.[87] There are already meaningful partnerships taking shape between Canada and the EU, such as the Italian energy group Eni taking a minority stake in Canadian graphite producer Nouveau Monde Graphite.[50,88] This investment gives Eni the option to negotiate exclusive supply agreements for graphite and other materials to support its EU gigafactory that is aiming to produce stationary lithium batteries in Southern Italy.[50,88,89]

LITHIUM



APPLICATIONS

Clean energy:

- **Li-ion batteries**

Other applications:

- Data transmission networks
- Smartphones, tablets, and laptops
- Military aircraft
- Naval vessels
- Robotics
- Drones
- Space launchers and satellites

Global demand increase between 2024 and 2040: **353%**[4*]

Cleantech share in 2040: **87%**[4*]

EU cleantech demand increase between 2020 and 2050 (EVs and renewables): between **1,343%** and **1,983%**[12]

EU import reliance: **81% raw; 100% refined**[10]

**Under stated policies scenario*

Globally, electric vehicles and grid battery storage are set to drive most of the world's demand for lithium. While the production of raw lithium is more diversified, the refined lithium supply chain is highly concentrated in China, Chile, and Argentina.[58]

Canada ranks second globally in the lithium-ion battery supply chain, home to world-class expertise in extraction, processing, and manufacturing components for advanced lithium-ion cells, controls, batteries, and intermediate products.[90]

Of the six priority critical minerals, Canada holds the highest reserve share for lithium at more than 4% of world reserves, or over 1,300 kiltonnes.[91] Canada's lithium reserves could supply around half of cumulative global demand from 2030 to 2050, of which 95% is required for the clean energy transition, electric vehicle batteries in particular.[3,4]

Currently, Canada produces nearly six kilotonnes of lithium annually from two mines in Manitoba and Quebec, representing 2.5% of global production.[91] There are also 16 lithium extraction projects currently in development across the country. When it comes to refining, Canada recently opened its first operation in Delta, B.C., capable of producing a kilotonne of processed battery-grade lithium each year, or enough to supply 25,000 EVs annually.[92,93]

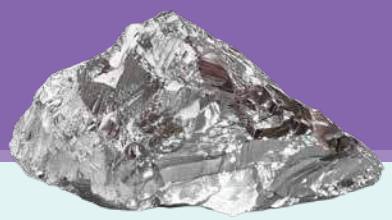
The EU on the other hand produces less than 0.1% of global lithium and has no lithium processing or recycling capacity, although projects are in the works.[38,94] The EU currently imports 81% of its extracted lithium and 100% of refined lithium, with 79% of the EU's refined supply coming from Chile.[95] While announced lithium mining projects are projected to supply half of EU lithium demand by 2030 and announced refining projects theoretically could cover all future demand, only a few projects are in advanced stages of development or are likely to proceed.[96]

THE OPPORTUNITY

With soaring EU demand driven by its EV supply chain objectives, and major projects in both the extraction and refining, Canada has an opportunity to position itself as an important supplier of both raw and refined lithium. With raw materials, Canada can look to feed growing lithium refining capabilities under development in the EU, providing a secure and stable alternative to otherwise concentrated supply chains. For refined lithium, Canada should focus on battery-grade lithium carbonate that is used in cathode manufacturing in lithium-iron-phosphate batteries, helping the EU meet its goals to reduce all strategic raw material reliance to no more than 65% from a single non-EU country and to build a strong EV sector.

Clean industrial supply chain priorities	Optimal supply form for Canada-EU trade	Priority EU countries and illustrative opportunities to partner
EV batteries, cathodes	• Raw lithium (spodumene concentrate) • Battery-grade lithium hydroxide monohydrate • Battery-grade lithium carbonate	• **Germany:** The country hosts the EU's largest EV manufacturing base and has been the most aggressive European country in pursuing lithium supply security.[97] Germany's BASF operates facilities that require battery-grade lithium hydroxide and has a responsible sourcing management framework to enable low-carbon footprints and a strong ESG performance.[98] Additionally, the country's KfW state investment bank has an explicit mandate to invest in critical mineral projects abroad.[65] • **Finland:** Finland is home to Europe's first integrated lithium-mine-to-refinery facility and the most advanced battery materials processing ecosystem, anchored by Umicore's and BASF's cathode precursor facilities.[99]

NICKEL



APPLICATIONS

Clean energy:

- **Li-ion batteries**
- **Fuel cells**
- **Electrolyzers**
- **Wind turbines**
- **Solar PV**
- **Heat pumps**
- **Hydrogen direct reduced iron and electric arc furnaces (H2-DRI)**

Other applications:

- Data transmission networks
- Data storage and servers
- Smartphones, tablets, and laptops
- Military aircraft
- Battle tanks
- Naval vessels
- Artillery
- Robotics
- Drones
- Space launchers and satellites

Global demand increase between 2024 and 2040: **69%**[4*]

Cleantech share in 2040: **42%**[4*]

EU clean tech demand increase between 2020 and 2050 (EVs only): between **1,083%** and **1,484%**[12]

EU import reliance: **36% raw; 77% refined**[10]

**Under stated policies scenario*

The global nickel market is projected to meet demand until 2030, but the growing demand for batteries will put increasing pressure on higher purity nickel production.[100] In fact, batteries (for EVs in particular) are expected to be responsible for almost all new nickel growth, with clean technologies going from representing 17% of total demand in 2024 to over 40% in 2040.[58] Indonesia has become an increasingly large supplier of nickel, representing more than 61% of the world's nickel production.[101] However, Indonesian mining is highly carbon intensive, reliant on a coal-dominated electricity grid and less able to produce the high-quality nickel required for EV battery supply chains.[100,101]

Canada already produces 3.5% of the world's nickel and holds 2% of the global nickel reserves. It also has the full nickel supply chain within its borders, with 13 nickel mines and five processing facilities for both domestic and international feedstocks.[102] Importantly, as a northern region, Canada possesses a large amount of nickel-sulphide ore, which generally has the higher purity nickel required for use in batteries.[103] While nickel is in high demand across the economy, and especially in stainless steel production, which can use lower-quality nickel, the metal's growing role in batteries makes this a vital strategic asset for Canada.

The EU, in turn, already has a well-diversified supply chain for both its raw and refined nickel: 81% of the EU's primary nickel supply comes from either the EU or Canada, with the greatest share (38%) coming from two sulphide nickel mines in Finland.[104] Canada is the second-largest primary nickel supplier at 24% (most of which is sent to Norway for refining).[10]

Yet for refined nickel, Russia is the EU's dominant supplier at 29%, followed by Finland (17%), Norway (10%), Canada (6%), and Australia (6%).[10] This dependency on Russia caused nickel prices to double at the onset of the war in Ukraine, as fears of sanctions caused a supply squeeze.[105] The EU has a clear desire to reduce trade with Russia but has so far excluded nickel from its sanctions, citing its necessity across many sectors.[105,106]

THE OPPORTUNITY

Given the scale of demand growth expected, as well as Canada's resources and experience in both the production and refinement of nickel, Canada should focus on the opportunity to integrate battery and automotive supply chains with the EU through its nickel trade. For EU battery customers, the target should be unwrought nickel or nickel sulfate, the latter of which is the precursor form used in nickel-manganese-cobalt batteries, which is still widely used in European EV manufacturing. While nickel sulfate production in Canada is nascent, the investment case is strong given Canadian nickel's low-carbon advantage over Indonesian-produced nickel sulfate.

By leveraging its supply of the higher purity nickel needed for batteries and that better aligns with the EU's Battery Regulation carbon footprint requirements, Canada can help to mitigate any future reliance on more energy-intensive jurisdictions (such as Indonesia) and regions that present greater energy security risks (such as Russia).

Clean industrial supply chain priorities	Optimal supply form for Canada-EU trade	Priority EU countries and illustrative opportunities to partner
EV batteries, grid battery storage, and wind energy	• Raw nickel ores and concentrates • Refined nickel (unwrought nickel, battery-grade nickel sulfate, mixed nickel hydroxide precipitate)	• **Germany:** German automakers and cathode manufacturers require nickel as a key input and have strong ESG frameworks in place.[107,108] Germany's KfW state investment bank has already committed to investing in nickel projects globally through its raw materials fund.[65] • **Belgium:** Canada is already a major exporter of unwrought nickel to Belgium (providing the country with over $400 million in nickel products in 2025).[109] The country offers opportunities for expansion and is home to Umicore's nickel refining, recycling, and production footprint.[57] • **Finland:** Canada is already a major exporter of raw nickel to Finland.[54] The country represents a major export destination, home to the one of Europe's largest nickel smelter and other nickel refining operations.[110,111] • **Netherlands:** In 2024, Netherlands was Canada's largest EU destination for unwrought nickel products.[54] Rotterdam is Europe's largest port and the primary entry point for metal commodities into the EU market. It is being actively considered as a hub for stockpiling critical minerals.[65,68]

SPOTLIGHT

Quebec nickel in demand

Quebec's Dumont Nickel project is one of only 13 strategic projects outside the EU identified in its Critical Raw Materials Act—and the only one in North America.[112] The project is construction-ready, permitted, and set to be one of the lowest-carbon nickel operations in the world. It has the capacity to produce an estimated 39,000 tonnes of nickel annually, which could supply over 780,000 EVs every year for nearly 30 years.[113,114]

RARE EARTH ELEMENTS

APPLICATIONS



Clean energy:

- **Fuel cells**
- **Electrolyzers**
- **Wind turbines**
- **Traction motors**
- **Heat pumps**

Other applications:

- Data transmission networks
- Data storage and servers
- Smartphones, tablets, and laptops
- Military aircraft
- Battle tanks
- Naval vessels
- Artillery
- Robotics
- Drones
- Space launchers and satellites

Global demand increase by 2040: **65%**[4*]

Cleantech share between 2024 and 2040: **31%**[4*]

EU Demand increase between 2020 and 2050 (EVs and renewables): between **142%** and **621%**[12]

EU import reliance: **100% raw; ~100% refined**[10]

**Under stated policies scenario*

Rare earths are relatively abundant in the Earth's crust, but minable concentrations are less common than for most other mineral commodities. Canada's measured and indicated reserves and resources of rare earth elements are estimated to be 15.2 million tonnes.[115]

Rare earth elements consist of 17 elements, including the 15 lanthanides from the periodic table, along with the transition metals scandium and yttrium. Typically in critical mineral discussions, four rare earths (neodymium, praseodymium, dysprosium, and terbium) are prioritized due to their use in magnets that are essential components for EVs and wind turbines.[116] These four are responsible for 30% of overall rare earth element volume but more than 80% of the value.[117] Unlike other key critical minerals, the quantity of rare earth elements needed in its applications is limited, meaning fewer sites are needed to fulfill projected demand. For instance, an estimated 550 grams are required for an EV compared to 50 to 100 kilograms of graphite.[118,119] The production of rare earth metals is highly concentrated, with China, the U.S., and Myanmar representing 89% of total global production, all of which present different geopolitical challenges.[4]

At the G7 summit in June, leaders specifically stated that they are aiming to reduce dependence on any one supplier for rare earths and permanent magnets to less than 60% by 2030, with a further goal of reaching 50% as soon as possible.[1]

Canada has the 10th largest known reserves and resources of rare earth elements.[120] While it does not currently have any extraction projects in operation, several are in development and nearing production, including the Torngat Metals' Strange Lake Project.[121] When it comes to refining, Canada currently has several processing demonstration plants, and a commercial rare earth processing facility funded by Saskatchewan Research Council is expected to become operational by 2027.[115,122]

The EU is currently overwhelmingly reliant on China for rare earth elements, with no current domestic production and limited processing capacity.[10] The EU has limited domestic reserves, with one extraction project in development in Sweden.[123] The bloc also has two rare earth processing facilities in France and Estonia, both focused on separating rare earth elements for magnets.[124] It is also working to build leadership in recycling, which could supply 20% of the EU's rare earth demand within the next few years, including by placing restrictions on the export of permanent magnet scrap and waste and developing recycling facilities.[125–127]

THE OPPORTUNITY

Canada's opportunity lies in turning its globally significant reserves of rare earth elements into a commercially viable industry, with a focus on the key metals used in magnet production.[128] Near term, the focus should be on securing offtake agreements for Canadian rare earth elements for processing in the growing EU rare earth refining industry.

There is already an example of this with Torngat Metals' Quebec facility securing an offtake agreement with a France-based operation, while a German permanent magnet manufacturer also signed a non-binding agreement with the Canadian company to pursue an offtake agreement.[129,130] Longer term, Canada should explore partnerships with EU manufacturers for processed rare earth elements.

Clean industrial supply chain priorities	Optimal supply form for Canada-EU trade	Priority EU countries and illustrative opportunities to partner
Electric motors, magnets	• Rare earth element concentrate	• **Germany:** Germany's dependence on China's rare earths remains high and has even increased for certain elements, with automakers already raising alarms and threatening to shut down production in response to Chinese export controls.[131–133] A long-term supply agreement with a Canadian rare earth producer would directly address Germany's most acute cleantech and defence supply chain vulnerability. And the country's KfW state investment bank has a mandate to invest in critical mineral projects abroad, which can be leveraged for further support.[65] • **Estonia:** This country is home to some of the EU's only rare earths processing facilities, including a facility that opened in 2025 that was backed by funding from both Canada and the EU. So far, the plant's raw materials are coming from Australia and Malaysia.[134] Canada could seek to supply the facility with its own rare earths too. • **France:** Canada already has an agreement to supply rare earth elements from the Torngat Metals Quebec-based facility to a separation plant currently being built in Lacq, Pyrénées-Atlantiques, France by Carester's subsidiary Caremag. As the company aims to produce these via an environmentally responsible, high-performance process, Canada is an ideal partner and should seek to build on this relationship to explore other opportunities in France.[135]



Photo: Nouveau Monde Graphite

BUILDING THE PARTNERSHIP

The case for strengthening a Canada-EU critical minerals supply pipeline is clear: both jurisdictions have much to gain. While there are already some solid frameworks in place to facilitate the relationship, there are several concrete steps that could help turn these frameworks into action.

1 Prioritize

Prioritize the six critical minerals featured in this report (cobalt, copper, graphite, lithium, nickel, and rare earth elements) in the updated Canadian Critical Minerals Strategy due to their long-term demand growth prospects that support electrification and energy security, while building supply chain resilience across Canada and the EU. The next step, which this report has begun, is to develop a more granular understanding of the specific form EU buyers want, the specific value chains they should be feeding into, and the EU member countries they could be marketed to.

2 Promote

More aggressively promote Canada's clean critical mineral advantages. The EU Battery Regulation, Critical Raw Materials Act, and carbon border adjustment mechanisms collectively create demand for Canadian supply that is not just about price or volume but also offers the low-carbon footprint, traceability, and allied-country supply chain security the EU is specifically seeking. Canada should more explicitly market these advantages and connect them to EU regulatory requirements in its trade promotion and investment attraction efforts.

3 Finance

Operationalize the European Investment Bank framework so that more EU financing can flow into specific Canadian mining and processing projects. The European Investment Bank Letter of Intent opens the door to allowing the bank to operate across Canada's critical minerals value chain, but no financial commitments have yet been made.[45] Canada should push hard to get from the current Letter of Intent to a signed framework and first transaction within the next 12 to 18 months, particularly as the EIB is simultaneously deepening relationships with other jurisdictions.[136] These efforts should focus on the six priority critical minerals discussed in this report.

4 Secure offtake

Continue converting more of the existing MOUs with European partners into binding offtake agreements. The "Greenland Resources' Malmbjerg Project" provides a template to be replicated. While initially securing MOUs for long-term supply with companies in Germany, Italy, Austria, Denmark, Belgium, and Sweden, as well as debt financing letters of intent from Export Development Canada alongside Finnish, Swedish, and Danish export credit agencies, ultimately the project secured a binding US$2 billion 10-year offtake agreement with Outokumpu in Finland.[137]

5 Build a portfolio

Build a Canada–EU "strategic projects pipeline" portfolio aligned with the EU's Critical Raw Materials Act. The Critical Raw Materials Act has already identified the Magneto Dumont Nickel Project in Quebec as one of its 13 strategic projects in non-EU countries.[138] Canada should actively support more Canadian projects gaining this status through its domestic policy and trade promotion efforts. This status can unlock EU financing and investment in Canada, provide project visibility to EU companies and investors, and help integrate critical mineral supply chains between the jurisdictions.

6 Develop trade corridors

Develop purpose-built "mineral corridors" marketed specifically to European industrial partners, with a Quebec-centred "low-carbon battery minerals corridor" as a top priority. The federal government is already exploring the development of regional mineral corridors—clusters of mines and shared processing infrastructure in, for instance, Quebec's lithium belt, Ontario's Sudbury nickel district, and B.C.'s northwest. Marketing these corridors collectively to the EU could be more investable and more legible to European buyers and financiers than a diffuse set of individual projects. Quebec provides a clear opportunity to pilot this approach. Across many of the minerals spotlighted in this report, Quebec appears repeatedly. Quebec also boasts world-class hydroelectric power (critical for the low-carbon credentials the EU increasingly requires) and proximity to Atlantic shipping routes to Europe. The federal government, working with Quebec, should develop a purpose-built investment prospectus for European industrial and institutional investors around a "Quebec Battery Minerals Corridor." This would position it as a low-carbon supply base for European battery and defence manufacturers that is well aligned with the Critical Raw Materials Act and is covered by a free trade agreement. Quebec and Germany have already signed a specific critical minerals agreement that could be leveraged.[139]



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