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Critical minerals and metals

Natural Resources Canada

March 2019



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Outline

1. Introduction
2. EU Critical Minerals Import
3. Critical minerals and metals in Canada (focus on battery)
4. Conclusion and Discussion



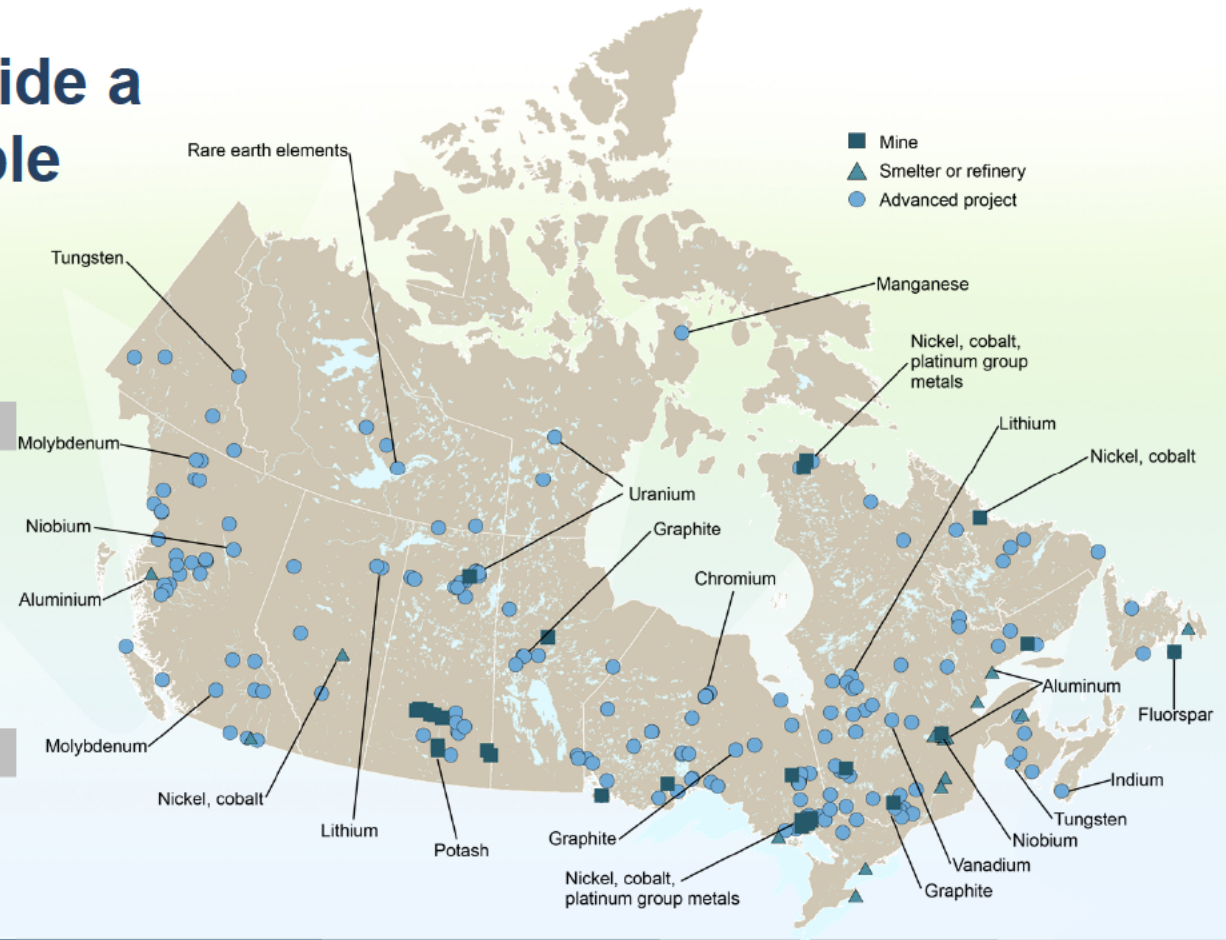
Introduction

- Security of supply of “critical materials is a global issue.
- US, EU, Japan, Korea, Germany, Australia have initiated analysis
- The EU is highly import-dependent for certain raw materials, which poses a risk to its security of supply (e.g. cobalt, niobium)



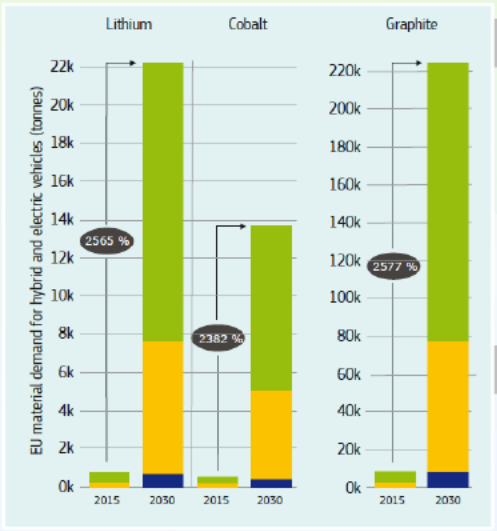
Canada can provide a secure and reliable source of critical minerals supply

Canada's minerals sector is an important global supplier of critical minerals and its diversified pipeline of advanced mineral projects offer further development potential

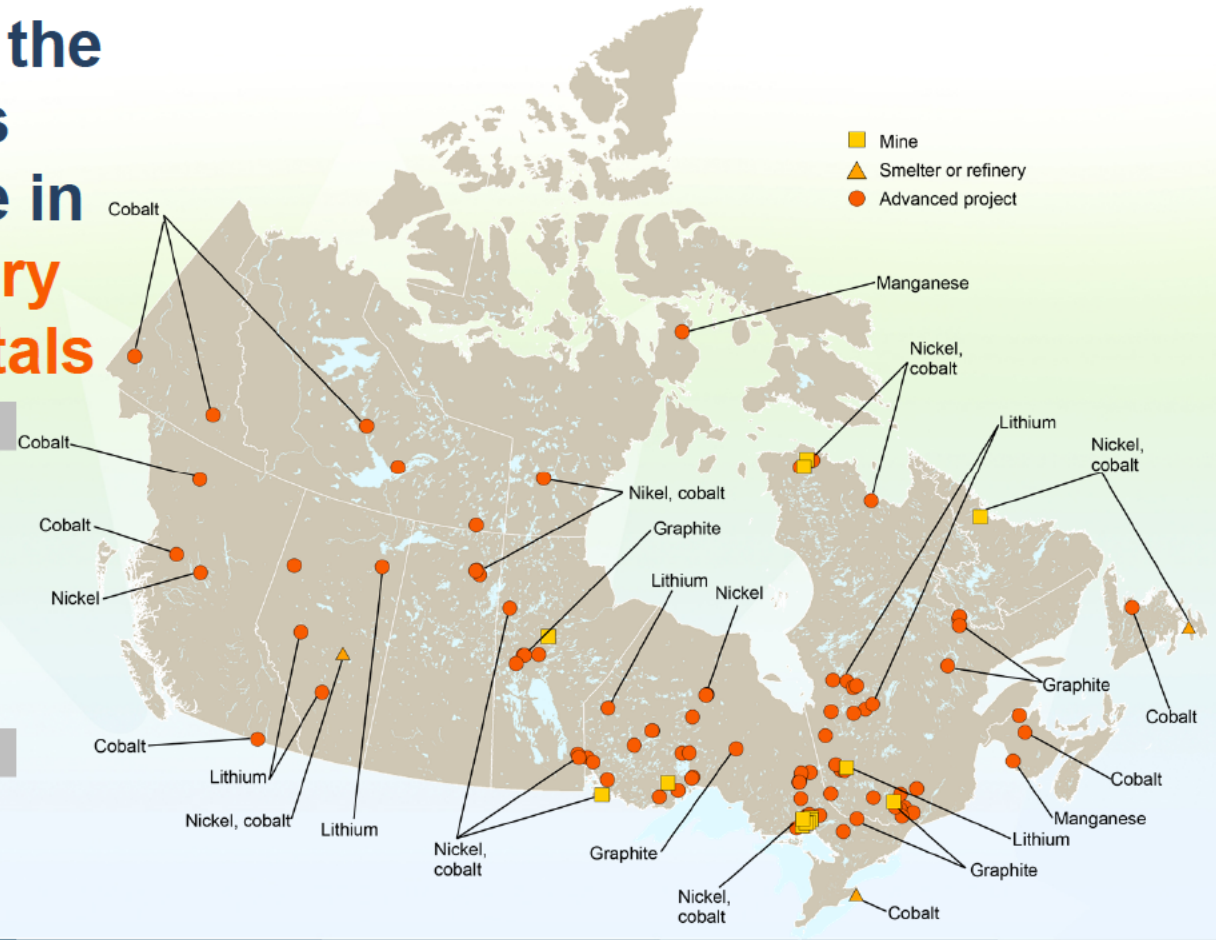


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Canada can help the EU respond to its anticipated surge in demand for battery minerals and metals



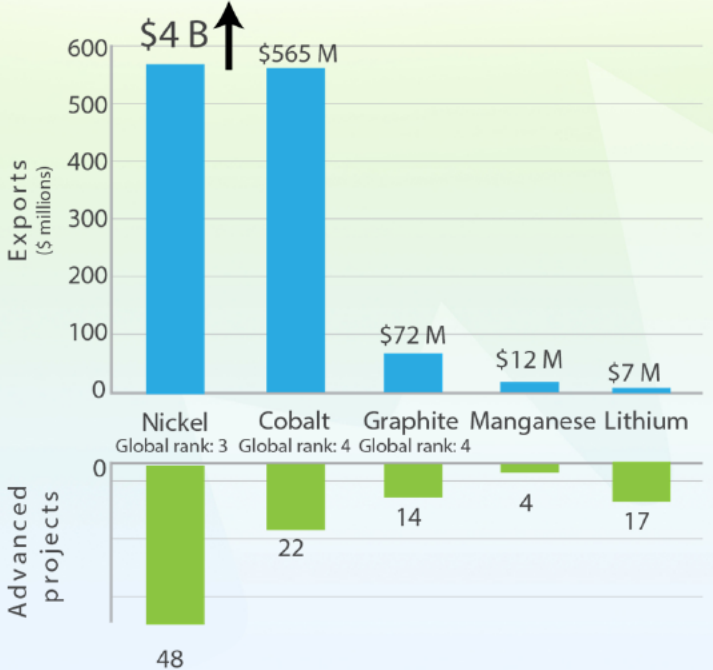
EU Raw Materials Scoreboard



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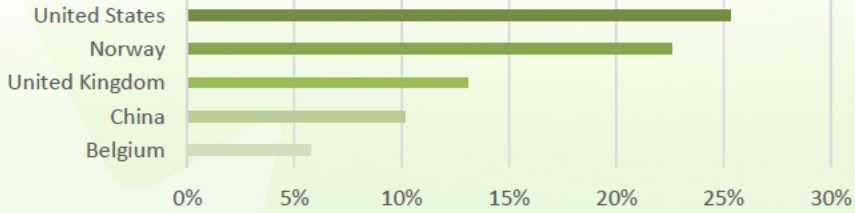
Battery minerals

Canada is an important global supplier of nickel, cobalt and graphite, and welcomed its first lithium mine in 2018.

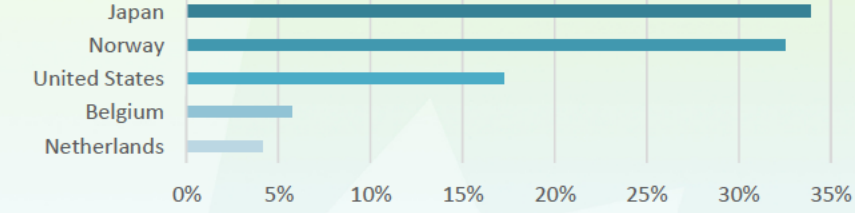


Top Canadian export destinations

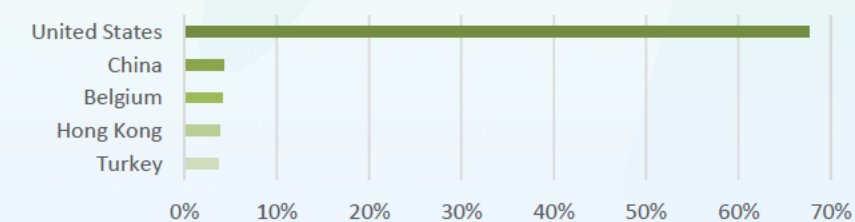
Nickel



Cobalt

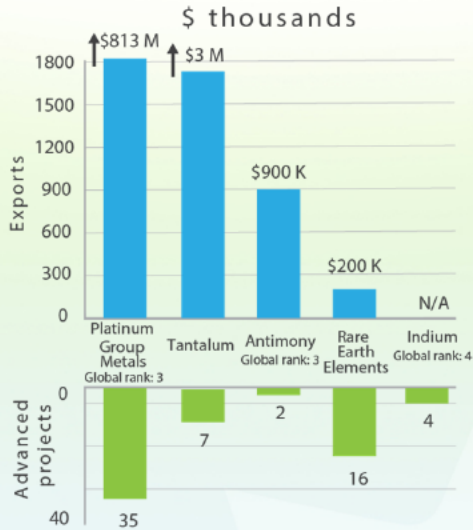


Graphite



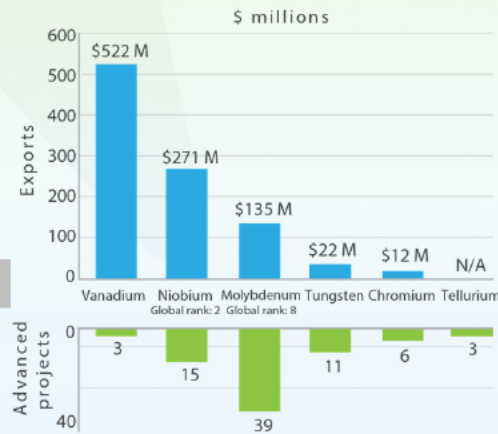
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Technology minerals



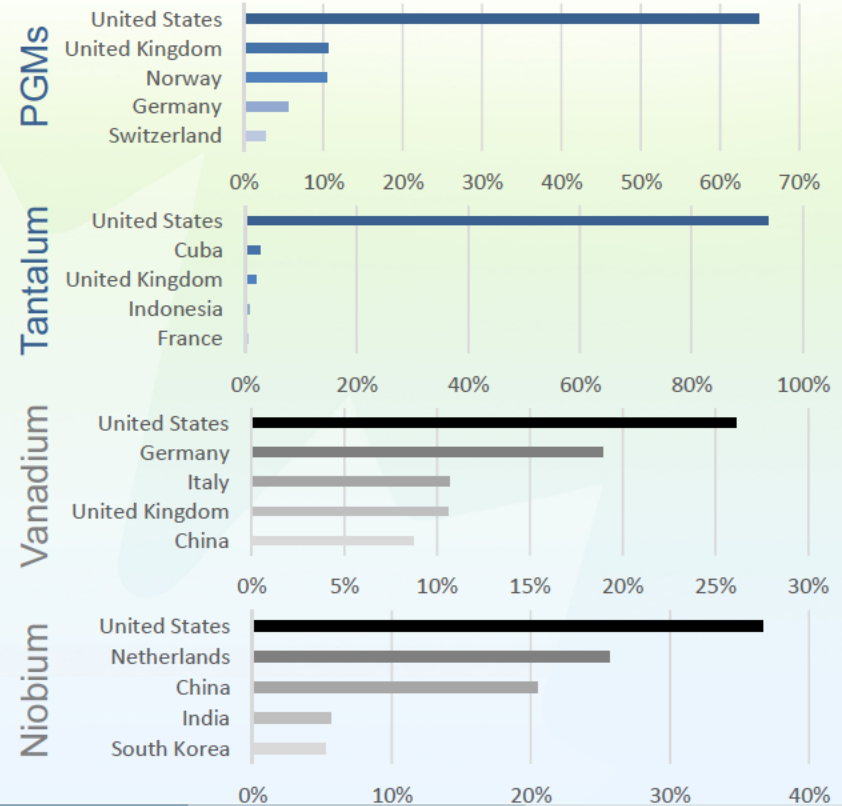
Canada is the third largest global producer of platinum group metals. Natural Resources Canada is working alongside private industry to optimize the rare earth elements extraction processes.

Steel minerals



Canada is a leading supplier of niobium and has a large number of advanced steel mineral projects.

Top Canadian export destinations



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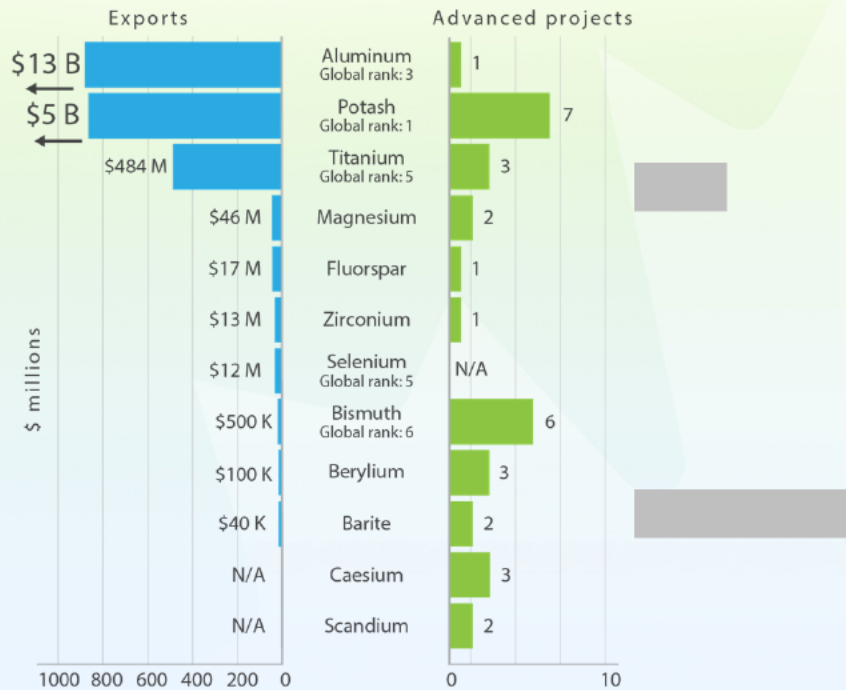
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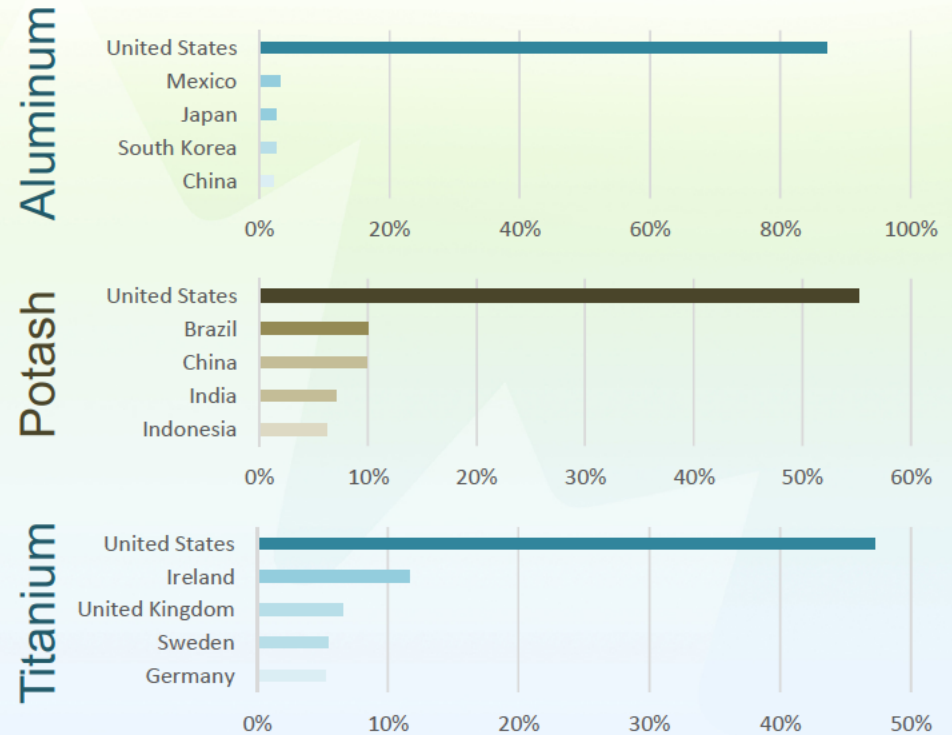
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Industrial minerals

Canada is a primary global supplier of potash and aluminum and has a variety of advanced industrial mineral projects, which offer great development potential.



Top Canadian export destinations



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Conclusions

- Canada is a secure supplier of minerals and metals that have been identified as critical by its trading partners and its diversified pipeline of advanced mineral projects offer further development potential.
- NRCan is a source of info (production, projects, etc..) and expertise.
- NRCan welcomes collaboration, knowledge sharing and dialogue.
- NRCan is prepared to work with governments and businesses to create opportunities through the responsible development of new supply



Discussion

- How can Canada work with EU partners to encourage the development of critical mineral projects?
- What research can be undertaken to better link Canada's mineral potential and EU's future demand?
- What steps can governments and manufacturers take to help upstream companies bring critical mineral projects to market?



Annex



Potential supply of clean technology metals

Cobalt

- Canada is the world's third largest producer
- Co-product from nickel mining and processing
- [Art. 4.1(a) third intend]
- Potential for primary cobalt mines
- Ethical source

Copper

- Copper dominates in all renewables energy
- Canada has 11 million tonnes of copper reserves (roughly 1.4% of the world total)
- Canada maintains a vibrant copper recycling industry

Lithium

- Favorable geology
- [Art. 4.1(a) third intend]
- Canada is well positioned to take advantage of future growth

Nickel

- Canada is a leading global nickel producer
- Large scale shovel-ready projects located in favorable jurisdictions
- Canada should benefit from the expected widespread shortage of nickel

