

# Where do Strategic Minerals Come From?

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# Background

- The Energy Act of 2020 defines a “critical mineral” as a non-fuel mineral or mineral material essential to the economic or national security of the U.S. and which has a supply chain vulnerable to disruption
- Critical minerals are also characterized as serving an essential function in the manufacturing of a product, the absence of which would have significant consequences for the economy or national security.



# A sustainable future

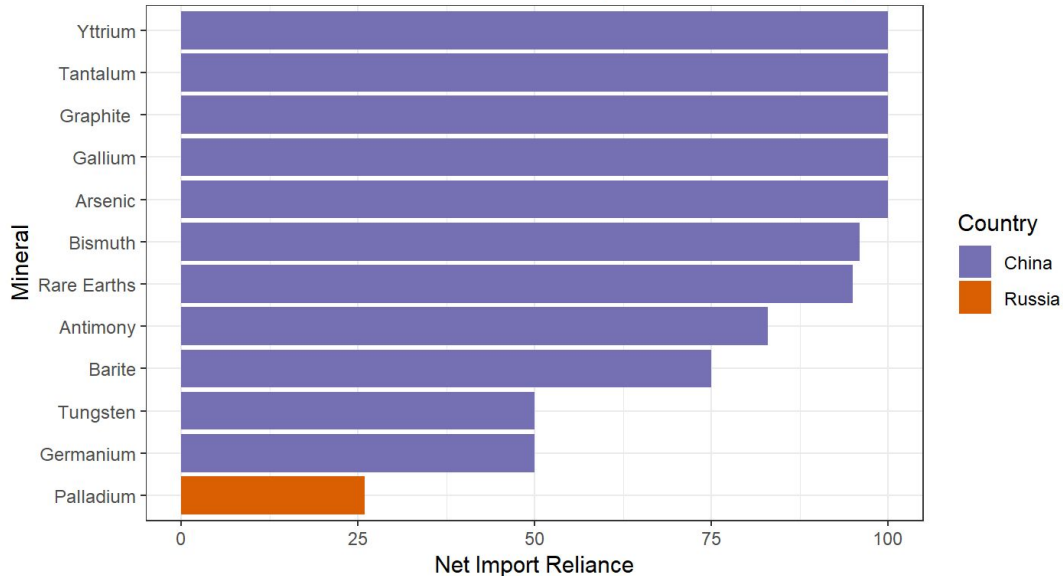
- The push towards a more sustainable future requires various key minerals to build the infrastructure of the green economy. However, the U.S. is heavily reliant on nonfuel mineral imports causing potential vulnerabilities in the nation's supply chains.
- Specifically, the U.S. is 100% reliant on imports for at least 12 key minerals deemed critical by the government



# Our Competitors: U.S v China

## Mineral Tensions: China's Impact on U.S Dependencies

Barriers and Bonds: Visualizing China's Impact on U.S Mineral Imports



- The U.S. was 50 % or more reliant on imports for 10 different minerals, with China being the primary import source for more than half of these

-Both gallium and germanium are used in the production of transistors and semiconductors along with solar panels and cells,

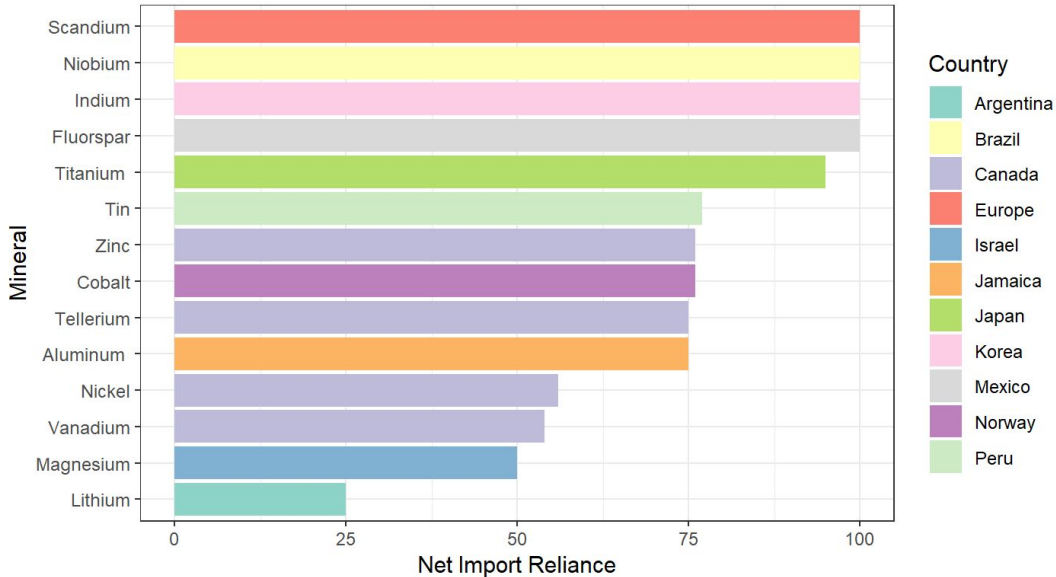
-It is a stark reminder of China's dominance in the production and processing of many key minerals.

- The reliance of key minerals from China has only highlighted the importance for the U.S. to reduce import dependence and diversify supply chains of key minerals and technologies.

# Mineral Imports From Allied Nations

## Allied Resources: U.S. Mineral Imports from Trusted Partners

Strength in Bonds: Charting U.S. Mineral Dependencies with Trusted Allies



-The United States enjoys an import of resources from its Allied Countries

- Following China, the U.S is heavily reliant on mineral imports from Canada

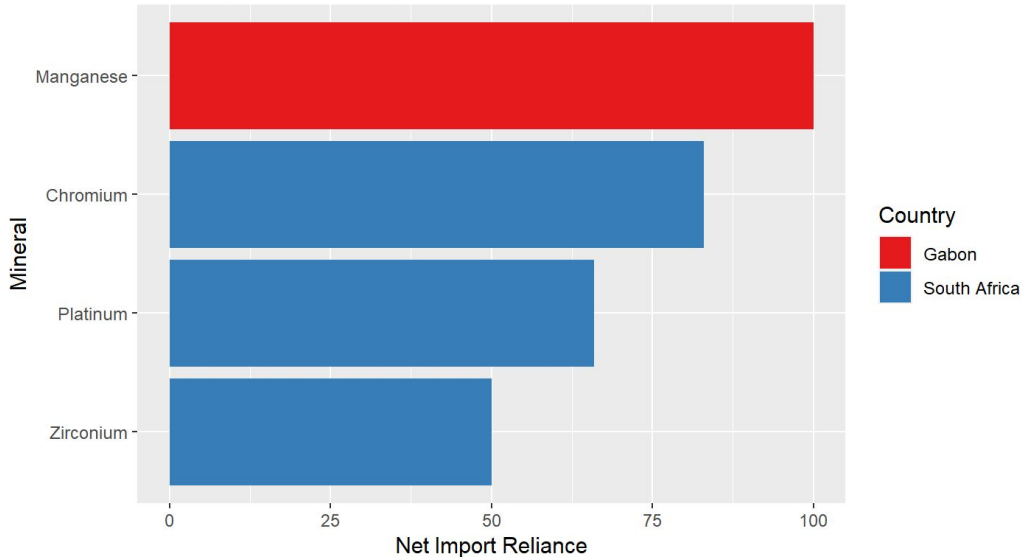
-Some other minerals on the official list which the U.S. is 100% reliant on imports for are arsenic, fluorspar, indium and niobium -

- Which are used in a variety of applications like the production of alloys and semiconductors.

# Strained Relations

## U.S. Mineral Dependencies with Neutral Nations

Balancing Act: Navigating U.S Mineral Imports

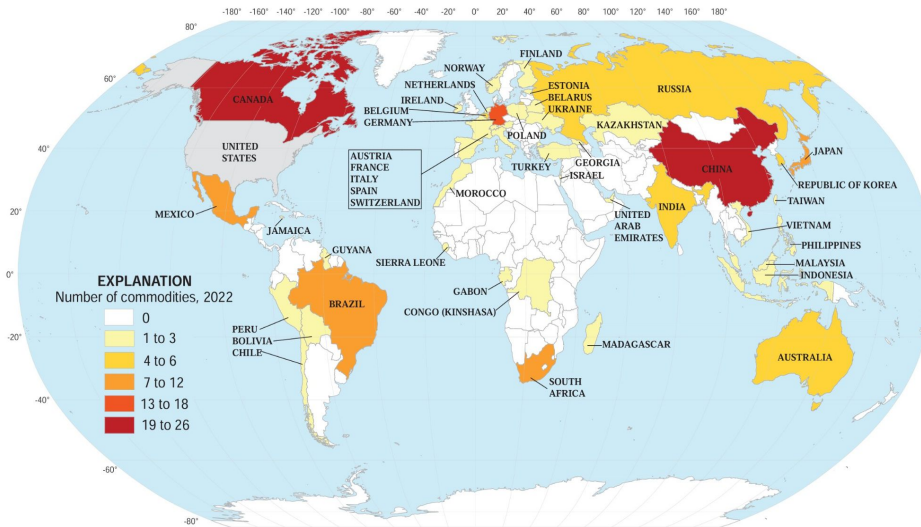


-South Africa supplies chromium, manganese, zirconium, and several platinum group metals to the United States.

-Platinum group metals have several characteristics that make them important to industrial economies, specifically properties that help reduce dangerous emissions from vehicle exhaust and oxidation resistance in electronics.

-Due to Russia/China intervention in African affairs and a recent coup in Gabon, the U.S has a neutral standing with most African nations, which may hinder trade relations with since the U.S fully relies on many platinum ores from Africa

**Figure 3.—Major Import Sources of Nonfuel Mineral Commodities for Which the United States was Greater Than 50% Net Import Reliant in 2022**



Source: U.S. Geological Survey

- A world view map of the countries that are sources of nonfuel mineral commodities for which each highlighted country was a leading supplier
- China and Canada supplied the largest number of nonmineral commodities

## Takeaways:

- China and Canada supplies the largest number of nonmineral commodities to the United States
- The U.S is 50 % reliant and more on many key minerals from China
- China's dominance in the production and processing of key minerals such as germanium and gallium has only highlighted the importance for the U.S. to reduce import dependence and diversify supply chains of key minerals and technologies.
- U.S enjoys many nonmineral commodities from its Allied Nations such as Canada, Europe and etc..
- Situations such as Gabon recent coup and Russia/China intervention in Africa has strained relationships with the United States which may impact mineral trades.



# Sources:

<https://elements.visualcapitalist.com/americas-import-reliance-of-critical-minerals-charted/> (Charted: America's Import Reliance of Critical Minerals)

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<https://www.energy.gov/cmm/what-are-critical-materials-and-critical-minerals#:~:text=Critical%20minerals%3A%20The%20Secretary%20of,%2C%20cobalt%2C%20dysprosium%2C%20erbium%2C> (What are Critical Minerals.)

<https://pubs.usgs.gov/periodicals/mcs2023/mcs2023.pdf> (U.S Geological Survey Where The World Map Visualization Source Was Found)

THANK YOU

