



## Critical Mineral Supply Chain Vulnerabilities and Policy Recommendations

### Dramatic Growth of Demand for Critical Minerals

Rising demand is a huge challenge in the critical minerals supply chain, as critical minerals will play a key role in the clean energy transition: an International Energy Agency (IEA) assessment found that to reach the Paris Agreement goal of a less than 2° Celsius rise in global temperatures, clean energy technologies will demand four times the current mineral input by the year 2040. The IEA foresees mineral demand, specifically for electric vehicles (EVs) and grid storage for EV batteries, increasing by at least 30 times by 2040.

### Global Competition: The China Challenge

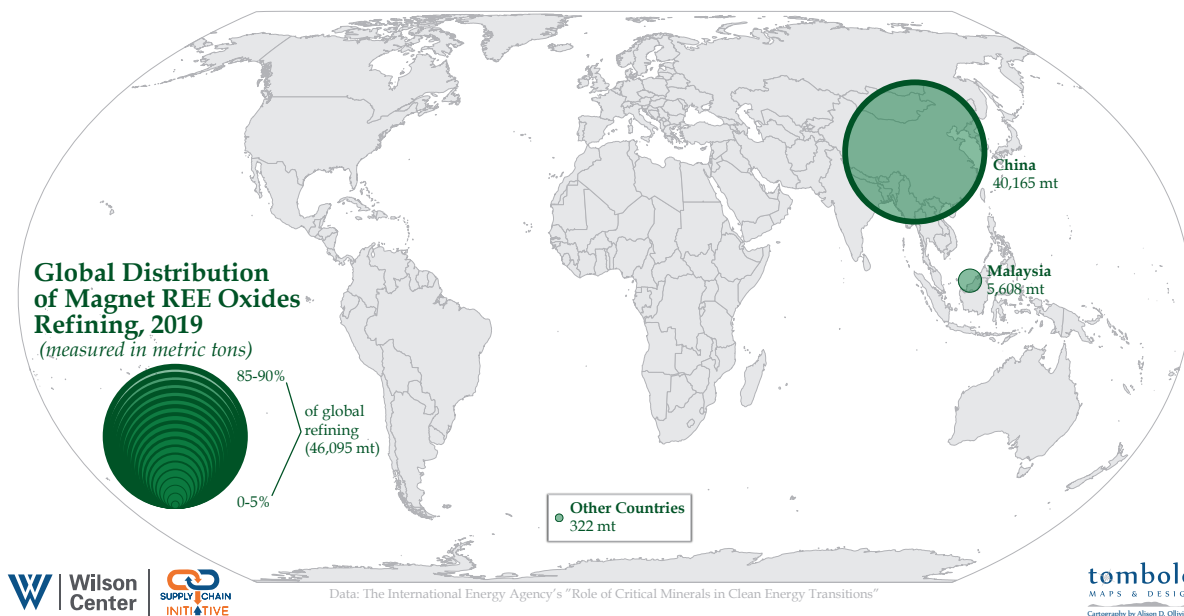
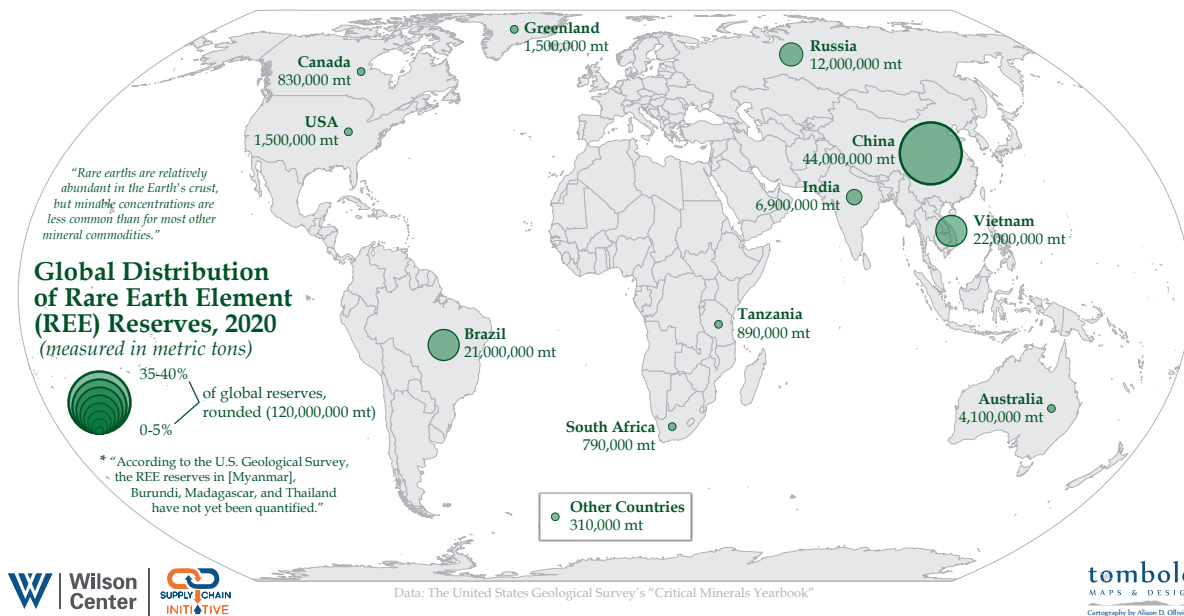
China has outstripped the United States in processing and producing critical minerals due to its lower ESG standards and more favorable financing terms. China is the world's largest producer and consumer of cobalt, most of which is imported from Chinese-owned mining companies in the Democratic Republic of the Congo (DCR).

In addition to leveraging its foreign investments, China has provided substantial government research and development funding in its drive for self-sufficiency and dominance of emerging technologies, such as electric vehicle battery production. The lack of these subsidies in the United States puts American firms at a huge disadvantage, creating a dangerous reliance on foreign imports which can undermine U.S. commercial competitiveness and national security interests.

### Production & Lead Times

Long lead times, which can be longer than 10 years in the face of common legal challenges, are often overlooked in conversations about vulnerabilities in the critical minerals supply chain. Especially in the US, extensive permitting processes are delaying production and threatening the critical minerals supply chain. In fact, the U.S. makes up only 11% of global spending on mining exploration, with most investment going toward existing mining projects, severely impacting its ability to compete on the global scale against formidable producers such as China.

## Critical Mineral Supply Chain Vulnerabilities and Policy Recommendations



For additional maps, visit <https://www.wilsoncenter.org/article/critical-mineral-maps>



## Critical Mineral Supply Chain Vulnerabilities and Policy Recommendations

### Processing Critical Minerals

Both processing and primary production are vitally important elements of the supply chain that must also be re-shored or near-shored if America's supply chains are to be made more resilient. US federal authorities should work with state and local governments to emphasize the economic, investment, and employment advantages that can be derived from encouraging primary production and processing. Explaining the positive spillovers from the entire minerals value chain will help to change perceptions and alter public policy. The US must invest in critical minerals production and build diplomatic ties with resource-rich countries.

### Policy Recommendations

Given skyrocketing demand, the U.S. must look to both domestic AND foreign solutions to secure supply for critical minerals. It will be necessary to "grow the critical minerals pie," rather than merely move slices around.

#### **U.S. Government:**

- Consider new legislation to encourage investment in U.S. mining
- Engage in strategic investment collaboration with the private sector and state governments to develop indigenous resources in the US, especially by providing a stable and streamlined regulatory environment
- Emulate international best practices for regulation and permitting to reduce project lead times
- Evaluate policy on stockpiling, strategic reserves, and recycling

#### **Private Sector/Industry:**

- Improve its perceived risk profile among investors
- Invest in human capital by financing professional education programs
- Better messaging to change the image of the mining sector among young people

#### **Private Sector/Industry and U.S. Government Collaboration:**

- Welcome new sources of materials, especially if they offer a path to faster resource development while respecting environmental and social standards
- Develop binding international standards to improve environmental, social, and governance effects while enforcing rules in order to level a playing field currently tilted heavily in favor of the Chinese