

Importing Our Energy Future

MINERALS MINING, IMPORT DEPENDENCE AND U.S. ENERGY TRANSITION

From copper to nickel, silver to lithium, a wide range of minerals are absolutely essential to produce the building blocks of our energy future, and demand is growing. The World Bank Group estimates minerals production demands could increase by nearly 500 percent or more by 2050. The Center for Strategic and International Studies (CSIS) has cited a 1,000 percent jump.



The success of various green energy proposals – from the transition to an increasing amount of solar and wind energy to electric vehicle production and the infrastructure required to support it – depends on the U.S. taking action to strengthen our domestic mining industry to secure critical energy supply chains.

A wide variety of cross-cutting minerals are used across a range of advanced energy technologies, below are select examples of some of the minerals on which our energy future depends. The question for policymakers is why are we importing so many of these minerals, when we could be mining them here at home, creating jobs and upholding the strictest environmental standards in the world.

Electric Vehicles (EVs). EVs, and the transportation infrastructure required to power them, require an array of minerals including the following:

Copper. Known for its electrical conductivity and high flexibility, copper, for which the U.S. is currently 37% import reliant, is an essential component in most energy technologies.

Gold. Used in circuit boards for EVs, the U.S. is currently 50% import reliant for gold.

Silver. The U.S. is currently 80% import reliant for silver, whose conductivity and corrosion resistance makes it ideal for use in electrical connections.

Nickel. The U.S. is more than 50% import reliant for nickel, which is widely used in electric vehicle batteries.

Solar Panels. Many of the 35 mineral commodities listed as critical by the Department of the Interior play an important role in solar panels. These minerals include:

Indium. The U.S. is currently 100% import reliant for indium, which is used in solar cells and is typically found in zinc, iron, lead and copper ores.

Tellurium. The U.S. is currently 95% import reliant for this mineral, which is used in solar cells and can be extracted as a byproduct of copper smelting.

Wind Turbines. Each massive wind turbine requires vast amounts of mined materials, including:

Aluminum. The U.S. is 49% import reliant for aluminum, which is utilized in most parts of a wind turbine.

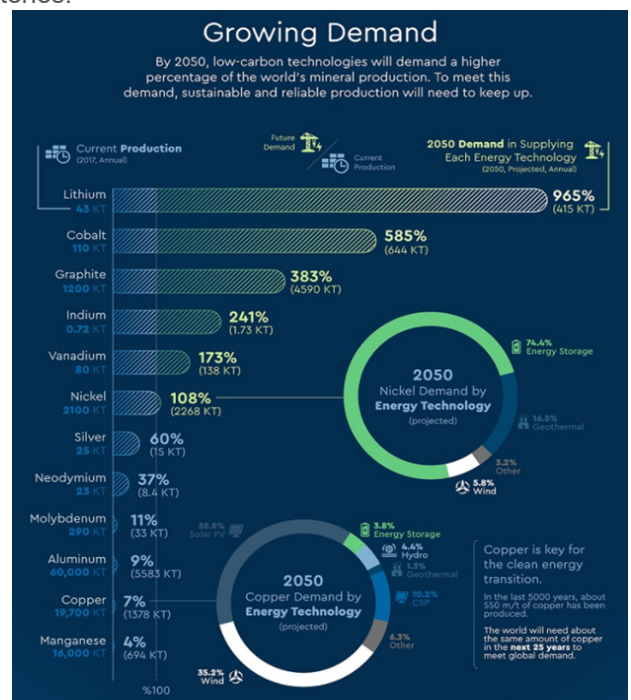
Zinc. The U.S. is 83% import reliant for zinc, which is key in preventing corrosion.

Batteries. The importance of batteries to our energy future cannot be overemphasized. From EVs to backup electricity, batteries - and the minerals that make them - are the cornerstone of our energy future.

Lithium. The U.S. is currently more than 50% import reliant for lithium, which is used widely in batteries.

Cobalt. The U.S. is currently 76% import dependent for this rechargeable battery essential.

Graphite. The U.S. is currently 100% import reliant for graphite, which serves as an electrode in many lithium batteries.



Source: World Bank Climate Smart Mining
The National Mining Association | nma.org