



STRENGTHENING RESILIENCE OF AMERICA'S SUPPLY CHAINS OF CRITICAL MINERALS

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WHAT ARE THE BENEFITS OF DEVELOPING A DOMESTIC SUPPLY OF CRITICAL MINERALS?

In addition to supporting our national security and economic prosperity, developing a domestic supply of critical minerals will:



REDUCE U.S.
DEPENDENCE ON
FOREIGN SOURCES



SUPPORT THE
CREATION OF NEW
MANUFACTURING
JOBS



SECURE DIVERSE,
RESILIENT, AND
DOMESTIC CRITICAL
MINERAL SUPPLY
CHAINS



SUPPORT
ENVIRONMENTAL
STEWARDSHIP AND
CLEAN UP OF
LEGACY WASTE



SUPPORT THE
TECHNOLOGICAL
DEVELOPMENT OF
A CLEAN ENERGY
FUTURE



- Light Rare Earth Elements
- Heavy Rare Earth Elements
- Other Critical Minerals

Source: US DOE

Green Energy Minerals

Conflict Minerals

4 minerals in Central Africa linked to conflict

Critical Minerals

50 minerals critical to U.S. national security and the economy

Green Energy Minerals

16 minerals key to green energy transition

Gold
Tin
Tantalum
Tungsten

11

Overlapping Minerals

Aluminum - Chromium
Cobalt - Graphite
Lithium - Manganese
Nickel* - Rare Earth Elements - Titanium
Vanadium - Zinc*

Silver
Lead
Molybdenum
Iron
Copper

Clean Energy Future



Economic Security

National Security



DEFENSE AND
HOMELAND SECURITY
APPLICATIONS



CELLPHONES AND
ELECTRONIC DEVICES



BATTERIES



SOLAR PANELS AND
WIND TURBINES



HYBRID AND
ELECTRIC VEHICLES



Demand for critical minerals is increasing as the world transitions to a clean energy economy. In fact, the global demand for critical minerals is set to skyrocket by 400-600 percent over the next several decades. The need for some minerals, such as lithium and graphite used in electric vehicle batteries, will increase even more – by as much as 4,000 percent.



CRITICAL MINERAL SUPPLY CHAIN INITIATIVES UNDER BIDEN



Feb. 24, 2021

U.S. President Joe Biden signed an executive order on supply chains prompting multiple federal agencies to review critical mineral, battery and semiconductor supply chains, among others, for vulnerabilities and opportunities to increase U.S. competitiveness globally.

April 29, 2021

The U.S. Energy Department awarded \$19 million to 13 projects related to rare earths and critical mineral production across the country.

June 8, 2021

The Biden administration presented its 100-day supply chain reviews, with federal agencies reporting on how the country could shore up its critical mineral supply chain, including setting in motion a national blueprint for lithium batteries.

Nov. 15, 2021

Biden signed the \$1.2 trillion bipartisan infrastructure bill into law, dedicating \$62 billion in funding to the energy sector.

Feb. 9, 2022

DOE established a new manufacturing and energy supply chains office to "modernize the nation's energy infrastructure and support the clean energy transition."

Feb. 11, 2022

DOE announced plans to distribute nearly \$3 billion to increase the manufacturing of advanced batteries as part of the bipartisan infrastructure package.

Feb. 14, 2022

DOE published a request for information to design and construct a new full-scale rare earth element and critical mineral extraction and separation refinery, saying it would allot \$140 million to the program as part of the bipartisan infrastructure package.

Feb. 22, 2022

The U.S. Defense Department awarded \$35 million to rare earth producer MP Materials Corp. to build out its separation and processing capacity at its rare earth facility in California.

The U.S. Interior Department launched an interagency working group to oversee potential revisions to the country's Mining Law of 1872. The working group, which will consist of specialists in mine permitting and environmental law, plans to offer recommendations to Congress by November and to "initiate updates to mining regulations" by the end of 2022.

Feb. 24, 2022

DOE dedicated \$44 million in funding opportunities for its Mining Innovations for Negative Emissions Resource Recovery program, which focuses on advancing commercially net-zero or net-negative emissions technologies to boost the country's production of energy transition metals and materials.

DOE published a plan to build a national energy sector industrial base, outlining steps to expand U.S. manufacturing capacity and critical material supply to advance the Biden administration's climate and clean energy agenda.

The Departments of Energy, Defense and State executed a memorandum of agreement to work toward a critical minerals stockpile to "support the U.S. transition to clean energy and national security needs."



Data compiled on Feb. 24, 2022.
Credit: Cat Weeks
Source: S&P Global Market Intelligence

WHOLE OF GOVERNMENT APPROACH

CRITICAL MINERALS - SUPPLY CHAIN



RECYCLING



DOMESTIC MINING



TRADE

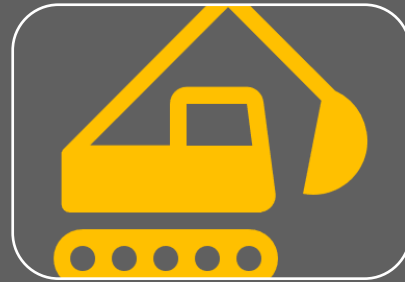
ENVIRONMENTAL EQUITIES



Recycling



Sustainability
Standards



Reclaim Mine
Waste



Environmentally
Responsible Mining



Review and Update
Mining Laws



Engage
Stakeholders