



© 2025 Global and National Security Institute

Critical Resources for National Security

Written by:
Sarah Brown, MPAP
Heather Ward, MLIS

February 14, 2025



UNIVERSITY of
SOUTH FLORIDA
Global and National Security Institute

Critical Resources for National Security

commodities.^{xiv} In 2023 the Department of Energy created a Critical Materials Assessment list, defining any non-fuel mineral, element or material that has a high risk of supply chain disruption while also serving as an essential function in one or more energy technologies. Critical materials for energy are dubbed the “electric eighteen” and include aluminum, copper, electric steel, lithium and silicon. Additionally, the United States Geological Survey (USGS) began assessing domestic mineral resources in 2013 and has determined that the U.S. is 100% reliant on imports for an additional 50 mineral commodities.^{xv}

Figure 1: Medium-term (2025–2035) criticality matrix (source/ [DOE](#))

Steel

Steel remains an integral part of national security as it impacts the military industrial complex and the nation's critical infrastructure. A country's ability to not only produce its own steel

importantly, in a national security context, REEs and other critical minerals are key to many U.S. military weapon systems. For example, it takes more than 900lbs of rare earth materials to build a single F-35.^{xxx} However, China leads the world production of REEs and accounts for more than 90% of global production and supply

The capacity of U.S. rare earth mining has decreased since 1980 and it imports 95% of the total REE it consumes.^{xxx} The U.S. does not have equivalent substitutes for many REEs which do not perform at the same level and cost more to produce.^{xxxii} Ukraine is a potential source for REEs that the U.S. could utilize.