



# Resourceful Information

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## The Importance and Everyday Use of Critical and Strategic Minerals

Critical and strategic minerals are fundamental components of technologies and a variety of everyday items.

### Fast Facts

- For every job in metals mining, an estimated 2.3 additional jobs are generated, and for every nonmetals mining job, an additional 1.6 jobs are created.
- The U.S. is 100% reliant on foreign countries for 17 critical and strategic minerals.
- Rare Earth Elements are a group of 17 unique metal elements that are critical for manufacturing of high-tech, defense, renewable energy and everyday items.
- America has strategic and critical minerals that we aren't producing.
- Meanwhile, the U.S is dependent on China, which produces 97% of rare earth elements available in the world today.
- The U.S. imports \$8.1 billion worth of minerals from foreign countries.
- The U.S. contains \$6.2 trillion worth of untapped mineral resources.



(CRS: Report R42510)

## **National Security**

- The Department of Defense uses 750,000 tons of minerals annually
- Jet Engines
  - Rhenium and nickel
- Night-vision goggles.
  - Lanthanum, gadolinium, and yttrium.
- Military aircraft
  - Aluminum, and Copper.
- Armored vehicles
  - Manganese and Molybdenum.

## **Medical Devices**

- High-tech, life-saving medical devices use a number of rare earth elements as well as critical and strategic minerals.
- CAT Scans
  - Tungsten, Copper, Lead, Silver, Chlorine, Aluminum and Gold.
- X-rays
  - Thulium, Yttrium, Gadolinium.
- Lasers
  - Yttrium, Praseodymium, Neodymium, Samarium, Europium, Gadolinium, Terbium, Dysprosium, Holmium, Erbium.

## **Consumer Electronics**

- Modern electronics wouldn't exist without rare earth elements and critical minerals.
- Computers
  - Over 66 individual minerals are used to make the typical computer, including Silver, Aluminum, Copper and Gold.
  - iPods, iPads and iPhones require at least five rare earth minerals: Dysprosium, Neodymium, Praseodymium, Samarium and Terbium.

## **Renewable Energy**

- Renewable and advance energy components are heavily reliant on strategic and critical minerals.
- Wind turbines
  - Steel, Copper, Aluminum, Zinc, and Molybdenum.
- Solar energy technology
  - Silver, Copper, Gallium, Tellurium.
- Hybrid vehicles
  - Platinum, Dysprosium, Lanthanum, Neodymium and Praseodymium.
- Energy-efficient light bulbs
  - Europium, Terbium and Yttrium.