

**STATEMENT OF  
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BEFORE THE  
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT  
SCIENCE, SPACE AND TECHNOLOGY COMMITTEE  
U.S. HOUSE OF REPRESENTATIVES**

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Good afternoon, Mr. Chairman and Members of the Subcommittee. Thank you for the opportunity to appear before you today to discuss the role of the USGS in informing decisions regarding a national critical minerals strategy.

The USGS is responsible for conducting research and collecting data on a wide variety of nonfuel mineral resources. Research is conducted to understand the geologic processes that concentrated known mineral resources at specific localities in the Earth's crust and to estimate (or assess) quantities, qualities, and areas of undiscovered mineral resources, or potential future supply. USGS scientists also conduct research on the interactions of mineral resources with the environment, both natural and as a result of resource extraction, to better predict the degree of impact that resource development may have on human and ecosystem health. USGS mineral commodity specialists collect, analyze, and disseminate data and information that document current production and consumption for about 100 mineral commodities, both domestically and internationally for 180 countries. This full spectrum of mineral resource science allows for a comprehensive understanding of the complete life cycle of mineral resources and materials – resource formation, discovery, production, consumption, use, recycling, and reuse – and allows for an understanding of environmental issues of concern throughout the life cycle.

Global demand for critical mineral commodities is on the rise with increasing applications in consumer products, computers, automobiles, aircraft, and other advanced technology products. Much of this demand growth is driven by new technologies that increase energy efficiency and decrease reliance on fossil fuels. To begin the process of understanding potential sources of critical mineral commodities, the USGS has recently completed an inventory of known domestic rare-earth reserves and resources (Long and others, 2010). This study restates basic geologic facts about rare earths relevant to assessing domestic security of supply and reviews current U.S. consumption and imports of rare earths, current knowledge of domestic resources, and possibilities for future domestic production. The report also includes an overview of known

global rare-earth resources and discusses the reliability of alternative foreign sources of rare earths.

Though rare earth elements are currently of most concern to many, including the Department of Defense, which funded the inventory, it should be noted that in 2010 the United States was 100 percent dependent on foreign suppliers for 18 mineral commodities and more than 50 percent dependent on foreign sources for 43 mineral commodities. Import partners include Brazil, Canada, China, France, Germany, Japan, Mexico, Russia, and Venezuela. In 2008, a National Research Council committee, funded largely by the USGS, developed a “criticality matrix” that combines supply risk with importance of use as a first step toward determining which mineral commodities are essential to the Nation’s economic and national security (National Research Council, 2008).

The USGS is currently preparing for a national assessment of undiscovered resources which will include an assessment of rare-earth and other critical mineral resources. The recent inventory of known rare-earth resources will be followed by other critical mineral inventories and used as a foundation for the assessment of domestic undiscovered critical mineral resources. The preparation for the assessment involves research and data collection on mineral deposit types that represent the primary sources of minerals to be assessed, research on techniques to assess for resources that are concealed below the earth’s surface, and research on techniques to characterize environmental aspects of mineral resources, prior to, during, and subsequent to resource development.

The USGS continuously collects, analyzes, and disseminates data and information on domestic and global rare-earth and other critical mineral reserves and resources, production, consumption, and use. This information is published annually in the USGS Mineral Commodity Summaries (USGS, 2011) and includes a description of current events, trends, and issues related to supply and demand.

The USGS is a member of the OSTP-convened interagency process on critical and strategic mineral supply chains. USGS domestic and global mineral production and consumption information and expertise in understanding this information are being provided to the interagency group to help inform decision-making and support the on-going activities that relate to a national critical minerals strategy. In particular, the USGS is taking a lead role, with other interagency members, in the recently established sub-working group to identify high-priority critical materials and establish the methodology and criteria necessary to make those determinations. This work will enable the Federal government to anticipate material shortfalls before they happen in the market and will be a core component in establishing a national critical minerals strategy.

The USGS stands ready to fulfill its role as the federal provider of unbiased research on known mineral resources, assessment of undiscovered mineral resources, and information on domestic and global production and consumption of mineral resources for use in global critical-mineral supply chain analysis.

Thank you, Mr. Chairman, for the opportunity to explain the role of the USGS on this very important topic. I will be happy to answer any questions you or the other Members may have.

#### For More Information

Long, K.R., Van Gosen, B.S., Foley, N.K., and Cordier, Daniel, 2010, The principal rare earth elements deposits of the United States—A summary of domestic deposits and a global perspective: U.S. Geological Survey Scientific Investigations Report 2010–5220, 96 p. Available at <http://pubs.usgs.gov/sir/2010/5220/>

National Research Council, 2008, [\*\*Minerals, Critical Minerals, and the U.S. Economy\*\*](#): Washington, D.C., National Academies Press, 264 p.

USGS, 2011, Mineral Commodity Summaries 2011, p. 128-129  
[http://minerals.usgs.gov/minerals/pubs/commodity/rare\\_earths/mcs-2011-raree.pdf](http://minerals.usgs.gov/minerals/pubs/commodity/rare_earths/mcs-2011-raree.pdf))