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US Defense Stockpile Is 'Ineffective', According To Report

ScienceDaily (Oct. 7, 2007) — To make the products people use every day, from mobile phones and computers to toothpaste, TVs, and cars, the United States relies on a variety of nonfuel minerals that have limited global availability. However, a new report from the National Research Council finds that neither the federal government nor industry leaders have enough accurate information to know how secure the supplies of these minerals are.

This lack of information also extends to the area of national defense; a second Research Council report finds that the National Defense Stockpile (NDS), a cache of material in place to deal with national emergencies, is wholly ineffective for responding to modern needs or national security threats.

"Industries dependent on minerals can be significantly influenced by supply disruptions, which might be avoided with better information," said Roderick G. Eggert, chair of the committee that wrote Minerals, Critical Minerals, and the US Economy, and professor and director of the division of economics and business at the Colorado School of Mines. "Consumers and producers would both greatly benefit from a systematic framework for evaluating minerals that are critical to the economy."

"In order to operate well, a stockpiling system needs to have detailed information about the specific material needs of the military and about any possible restrictions on the supply of those materials," said Robert H. Latiff, chair of the committee that wrote Managing Materials for a 21st Century Military, and a chief engineer and technology officer at Science Applications International Corp. "The NDS neither collects nor has access to these types of data, which essentially removes the stockpile as an effective component of our nation's defense. We need a more comprehensive approach to managing the U.S. defense material needs."

To determine supply needs, the NDS currently relies on economic models that have changed minimally since they were first instituted decades ago. However, global material supply chains have changed drastically since then, as have the threats faced by the U.S. The stockpile committee called the economic models "gross estimates that do not capture specific information relevant to the 21st century military needs" and found little connection between NDS' stockpiling policy and the nation's security objectives.

The stockpile report recommends that instead of improving NDS' systems, a new systematic approach should be adopted to manage the nation's defense material needs. Stockpiling could still be used within the new system, but other techniques such as planning ahead and building robust supply chains for essential materials, would better mitigate the impact of supply shortfalls or sudden surges in demand, vastly improving military's ability to respond to changing technologies and threats. The report offers a number of additional guiding principles for how the new system could operate, including the option of partnering with private industry.

Any mineral could at some point become critical to the economy or national security, depending on its uses and availability. Using a new tool that it developed specifically for its report, the critical minerals committee determined that platinum group metals, rare earth elements, indium, manganese, and niobium -- minerals used to make LCD TVs, catalytic converters, pacemakers, and other products Americans rely on daily -- are currently highly critical, meaning they are difficult or impossible to substitute, essential in their use, and have potentially at-risk supplies. Although committee members only had time to examine a limited number of minerals, their tool could be adopted by federal agencies to similarly classify minerals.

Decision makers in both public and private sectors need continuous, unbiased, and thorough information on the uses and possible supply restrictions of nonfuel minerals, but currently the federal government and the industries that use these minerals do not collect these data with enough detail or frequency, the report on critical minerals notes. Market fluctuations, limited sources, and even political shifts in foreign countries could drastically, and quickly, alter the price or availability of many essential minerals.

The U.S. Geological Survey's Minerals Information Team is the most comprehensive source for this sort of information, but the quantity and quality of its data are not sufficient because the agency lacks the resources, authority, and autonomy of a principal statistical agency. The critical minerals report recommends that the federal government give the necessary authority and funding to USGS, or whichever agency will ultimately be responsible, to collect minerals information.

The critical minerals study was sponsored by the U.S. Geological Survey and the National Mining Association. The NDS study was sponsored by the Defense National Stockpile Center of the Defense Logistics Agency at the U.S. Department of Defense. The committee rosters follow. The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council make up the National Academies. They are private, nonprofit institutions that provide science, technology, and health policy advice under a congressional charter.

The Research Council is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering.

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