

Geopolitics key as U.S. weighs critical-mineral needs – report

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The United States must consider geopolitics above all in planning to secure rare earth elements and other minerals vital to its energy, defense and high-tech sectors, according to a report released today by the Center for a New American Security.

Christine Parthemore, director of the natural security program at the Washington, D.C., think tank, said the United States does not need domestic production of all the materials but must understand its needs and how geopolitics can affect supplies.

China controls 95 percent of the global supply of rare earth materials, investing heavily in their production and using access to lure high-tech industries. As its domestic needs for those materials have grown, Beijing has been clamping down on exports, spurring a rise in global prices.

Last fall, after Japan detained a Chinese fisherman in a territorial dispute over the East China Sea, China cut off rare earth exports to that country. Peter Leitner, a former strategic trade adviser to the Pentagon, said that incident showed China's willingness to use its market dominance to influence politics.

The Chinese "have already signaled their intent," Leitner said. "We've already seen their muscle flexing with the Japanese when it came to tying access to raw material to political actions, so that's not a good sign."

The entanglement of mineral supplies and global politics is not a new issue, Parthemore said.

"In absence of any political stress in the world system, this is just an economic problem or a supply chain problem," Parthemore said. "But the thing is, it becomes woven into all the political problems that the world faces."

During the Cold War, uranium posed a similar problem, she said. For decades, supplies came primarily from two mines -- one in the Congo, which was then controlled by the Belgians, and one in part of Eastern Europe that fell under the Soviet sphere of influence.

"After the Belgians pulled out of the Congo, the region became a hotly contested Cold War proxy scenario," she said.

Later, mineral access was an important issue when countries decided whether or not to make purchases from South Africa during the apartheid era. South Africa held major supplies of a number of minerals, and nations that boycotted the country risked supply disruptions.

Today, the United States must face the reality that many of the largest producers of critical minerals do not operate entirely by free-market rules like those set up by the World Trade Organization.

"We buy and sell commodities on commodities markets, whereas nowadays other countries are more and more making these bilateral relationships with other countries that could have five different subjects wrapped into a single agreement," Parthemore said. "If some of the biggest traders in the world don't want to play by our rules, who is going to force them?"

In her new report, Parthemore writes that the United States risks falling behind China and other countries that are viewing their access to these minerals more strategically. Japan, for one, has taken steps to ensure a

continued supply by reducing use, looking for substitutes, promoting recycling and calling for more international cooperation.

The United States may "lose ground strategically if it continues to lag in managing minerals, as countries that considered assured access to minerals as far more strategically important are increasingly setting rules for trade in this area," she wrote in the report.

Military supply chain

It is not just wind turbines and cell phones that use rare earth elements. Jet fighter engines, smart bombs and antimissile defense systems all rely on the materials, too.

The Defense Department has estimated that it makes up about 5 percent of the U.S. demand for the class of minerals, but lawmakers say that is enough to require a solid strategy, and some are not pleased with what they are seeing from DOD so far.

"Clearly, rare earth supply limitations present a serious vulnerability to our national security," Rep. Mike Coffman (R-Colo.) and Sens. Mark Begich (D-Alaska) and Lisa Murkowski (R-Alaska), wrote in a January letter to Defense Secretary Robert Gates. "Yet early indications are the DOD has dismissed the severity of the situation to date."

Coffman has introduced legislation to secure the availability of rare earths for defense and other uses. Murkowski is also floating draft legislation. Both bills aim to increase coordination and boost knowledge on critical materials for both defense and broader purposes.

The military's needs for industrial materials -- referred to as the "defense industrial base" -- has evolved in recent years.

"So much of what DOD uses now is not just tanks and missiles and rockets; so much of it is dual use," Parthemore said. The same rockets used for missile delivery can now be used to put satellites into space, she pointed out, and Global Positioning Systems are not just in tanks any longer.

"That means that civilian demand for minerals matters for DOD in a way that it didn't 50, 60, 70 years ago when most of our defense industrial policies were created," she said.

At the same time, globalization has complicated the defense supply chain. A 2008 report by the National Academy of Sciences lambasted DOD for not keeping up with these changes.

"The Department of Defense appears not to fully understand its needs for specific materials or to have adequate information on their supply," the academy said. "The globalization of materials production and supply has radically changed the ability of the United States to produce materials vital to defense needs."

In the wake of that report, DOD undertook a revision of its stockpile policy with plans to establish a Strategic Materials Security Management System to assess the military's mineral needs and develop better stockpiling strategies.

But Parthemore agrees with the trio of Western lawmakers that DOD has been unable to get a grasp on what it needs.

DOD has long been promising it will release a congressionally mandated report on its rare earth element needs,

but so far, few experts are convinced that the Pentagon has enough information about which equipment in its supply chain requires the critical materials.

According to Parthemore, companies have been collecting and sharing better information in recent years, and she suggests that DOD begin adding a requirement that contractors include information about critical elements when it makes big purchases.

"If DOD is giving a company billions of dollars to build equipment -- major equipment like aerospace assets, things that we'll be building for years into the future -- it should be able to very simply ask, 'What are your requirements for these five to seven materials that we're kind of concerned about access to right now?'" she said.

That information could help the Pentagon make decisions about building a stockpile or requiring that private companies do so -- a controversial topic among experts.

Parthemore also pointed out that critical mineral issues span several Pentagon and front-line offices.

DOD's Industrial Policy Office is tasked with managing access to materials that are important in the military supply chain, but the regional offices and the combatant commands will often have better information about trade disputes and political events that could affect access to global supplies, she said.

Keeping an eye on the horizon

Congress and the Pentagon are too often reactive rather than proactive, according to Parthemore.

Among her recommendations is that access to critical minerals be included in war games that are frequently conducted by the military, war colleges and the intelligence community. These kinds of exercises help security officials think creatively about unexpected problems that could arise down the road.

"This is the way to get members of Congress and DOD officials to understand that these kinds of trade issues do matter for defense. They matter for the industrial base, but they also matter for the strategic environment that DOD has to operate in," she said.

Parthemore also cautioned that, while rare earth elements are a hot topic now, access challenges for other critical minerals loom on the horizon. Her new report looks at five other minerals in addition to the class of rare earths: gallium, rhenium, niobium, tantalum and lithium.

"This is not going to be a problem that we fix this year and then it's not a problem anymore. The nature of the world is changing too much to just have a static solution."