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## U.S. Called Vulnerable to Rare Earth Shortages

By KEITH BRADSHER

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HONG KONG — The United States is too reliant on [China](#) for minerals crucial to new clean energy technologies, making the American economy vulnerable to shortages of materials needed for a range of green products — from [compact fluorescent light bulbs](#) to [electric cars](#) to giant [wind turbines](#).

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China now produces nearly all the world's supply of the minerals.

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Jacob Kepler/Bloomberg News

Molycorp, an American company, stopped mining for rare earths in Mountain Pass, Calif., in 2002, but expects to reopen the mine in 2012.

So warns a detailed report to be released on Wednesday morning by the [United States Energy Department](#). The report, which predicts that it could take 15 years to break American dependence on Chinese supplies, calls for the nation to increase research and expand diplomatic contacts to find alternative sources, and to develop ways to recycle the minerals or replace them with other materials.

At least 96 percent of the most crucial types of the so-called [rare earth](#) minerals are now produced in China, and Beijing has wielded various export controls to limit the minerals' supply to other countries while favoring its own manufacturers that use them.

"The availability of a number of these materials is at risk due to their location, vulnerability to supply disruptions and lack of suitable substitutes," the report says, which also mentions some concerns about a few other minerals imported from elsewhere, such as cobalt from the Congo.

The Energy Department report is being released the same morning that cabinet officials from China and the United States will meet in Washington to discuss economic and commercial issues.

While no detailed agenda has been released, the talks are expected to include American objections to China's tightening restrictions on rare earth exports — like a two-month halt this autumn on shipments to Japan, and a shorter-lived slowdown of exports to the United States and Europe.

And on Tuesday, China's finance ministry announced on its Web site, and the official Xinhua news agency later reported as well, that China plans to increase its export taxes on some rare earths next year. The ministry did not say how much the taxes would increase. Although [World Trade Organization](#) rules ban export taxes, China has imposed them on rare earths for the last four years.

David Sandalow, the assistant secretary of energy for policy and international affairs, who oversaw preparation of the Energy Department report, said in a telephone interview that the timing of the report's release and the American-China cabinet meetings was coincidental.

But the report reflects an emerging view within the American government that domestic sources of rare earths are needed, in addition to suppliers in many other countries, to ensure the viability of clean energy manufacturing in the United States.

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“We can build a new industry and put our clean energy future on a sound footing, creating many new jobs in the process,” Mr. Sandalow said.

Still, the report presents a fairly gloomy assessment of the United States’ ability to wean itself from Chinese imports. For as long as the next 15 years, the supplies of at least five minerals that come almost exclusively from China will remain as vulnerable to disruption as they are absolutely vital to the manufacture of small yet powerful electric motors, energy-efficient compact fluorescent bulbs and other clean energy technologies, the report said.

The five minerals are medium and heavy rare earth elements of which China mines an estimated 96 percent to 99.8 percent of the world’s supply: dysprosium, terbium, neodymium, europium and yttrium.

China also increasingly dominates the manufacture of clean energy technologies that require such minerals, including the production of million-dollar wind turbines. Chinese export restrictions have added up to \$40 a pound to world prices, which makes a big difference particularly for some of the less expensive rare earths, like lanthanum, that sell for several dollars a pound in China.

That is among the reasons, along with cheap labor and extensive Chinese government subsidies, that many clean energy manufacturers have found it cheaper to shift production to China.

Mr. Sandalow said that wind turbine manufacturers were capable of building very large turbines without rare earths. But using rare earths could reduce the per megawatt cost of wind energy and improve its competitiveness through savings on other materials, like steel and copper.

He cautioned that the United States had been putting far fewer resources than China into exploring ways to use the powerful magnetic and other properties of rare earths.

“There are thousands of rare earth researchers in China and dozens in the United States, and that underscores both the challenge and the opportunity,” he said. “Their expertise in this area is significant.”

China’s finance ministry, in announcing plans to raise export taxes on some rare earths, did not indicate which minerals might be affected.

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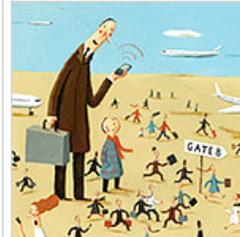


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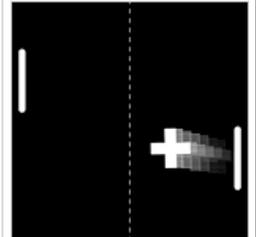
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