



# Rare-Earth Metals: Anticipating the New Battle for Resources

By Nayef Al-Rodhan

Natural resources are pivotal in international politics. They create patterns of cooperation, dependencies and alter balances of power. The battle for resource is most commonly associated with energy resources such as oil and gas, or base metals indispensable for industries: aluminium, copper, lead, nickel and zinc.

In recent years, China has gained the reputation of a resource-avid country, pursuing deals for resource exploitation to its advantage. In numerous countries across Latin America, Asia or Africa, China has already established long-term deals with governments to obtain access to vital metals or resources.

In light of such narratives and records, a lesser-known fact about the geopolitics of resources has escaped public polemics. This refers to rare earth metals or rare-earth elements (REMs), a set of 17 naturally occurring non-toxic materials, which play a pivotal role for emerging technologies and which are predominantly produced and exported from China. Estimations of China's hold on the REMs market are as high as 97% of the world production.

REMs are grouped together in the periodic table and include 15 lanthanides, plus scandium and yttrium; they have similar properties, most importantly to discharge and accept electrons. Rare-earth metals have played a crucial role in most of the technological breakthroughs of the past three decades, although this fact remains largely unknown. In the USSR for instance, the importance of REMs was kept a national secret until 1993.

REMs are vital for making rechargeable batteries for hybrid cars, magnets of high performance, fluorescent light bulbs or for computer hard disks. REMs are also critical for modern military technology and are considered irreplaceable due to their life cycle and lack of other substitutes. The US now registers a nearly total reliance on REMs from China for producing military equipment, including guided bombs, missile defence systems or night vision technologies. They are also used for directed energy weapons, such as jamming devices, electromagnetic rail guns, or laser weapons (extensively used in Afghanistan), electric drive motors, radars, and sonar transducers. The use of night vision instruments, for instance, which is based on the REM lanthanum, is considered to have played a decisive role in the US military dominance during the Gulf War. Increasingly, the access to REMs is

acknowledged as a matter of national security and a special report in September 2013 for the US Congress singularized the relevance of rare earths to national defence.

Despite the name- “rare”- which denotes scarcity, REMs are not that uncommon. In fact, in total quantity, they are more available in the earth`s crust than silver, gold or platinum. However, while they are not altogether scarce, extraction and production is difficult, costly and polluting. Especially relevant from a geopolitical viewpoint is that now rare-earth metals are predominantly mined and exported from one country, China. Up until the mid twentieth century, India, Brazil and South Africa were major sources, followed by the United States from the 1960s to the 1980s. The United States still holds about 13 million metric tons of rare earth elements according to the US Geological Survey but these supplies have yet to be exploited.

A steady increase in global demand for REMs means that China, the main producer, is faced both with a strain on its resources but also a high leverage on supply, prices and availability. In order to prioritize its internal needs but also to limit exports and availability for others (given their importance for high-tech industries and the military); it already established a quota system for the export of REMs, set at 15,110 metric tons for 2014, which represents a 2.5% decline from last year. This will follow a trend that started in 2005 and was only briefly reversed in 2012 and 2013. The nadir of rare earth trade was reached in 2010, which emphasized the disruptive effects that China`s unilateral decisions regarding rare earths can have on the US, Japanese and EU economies. Then, China`s exports declined by 70%, spiking prices up to 40%, causing alarm among the economies and industries that rely on rare-earth metals and a so-called “rare-earth metals crisis”. Concomitantly, as smuggling and illegal mining thrived on this highly lucrative market, China has also recently started a vigorous crackdown on illegal activity and took steps for greater regulation of the rare earth metals sector.

In the United States and Japan, the leading buyers of China`s rare-earth metals, the prospects of reduced imports for the following year has already sparked warnings that some companies would have to reduce production. In this context, the US, Japan and the European Union submitted complaints against China`s illegal restrictions to the World Trade Organization dispute settlement body. In October last year, the WTO ruled that China`s export policies in the field of REMs violate the international trade regime.

The victory registered by the complainant parties (temporary, since China can still appeal it) does not obfuscate the deeper issue, which is that what is needed in the medium and long term is a strategy to curb or eliminate this precarious dependency.

The search for a diversification of suppliers is already underway. Explorations in Afghanistan in 2011 of rare volcanic rocks led to the discovery of a high concentration of REMs, enough to fill the world needs for the next ten years. Very recently, assessments in North Korea claim to have discovered the largest deposit of rare earth metals in the world. A high global competition over these resources is expected to surge, especially as the countries hosting these resources are volatile, unpredictable and weak. In the larger geopolitical picture of resources, the importance of rare earths promises to gain further momentum in the near future. Given their essential role to modern technology, they might replace the oil exploration rush of the 20th century and, in the process, reconfigure new powerful players on the international arena.

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