

Next battle front?

Rare earths – metallic elements often found together in geologic deposits – are, in reality, not that rare. Here is a look at what they are and their importance.



WHAT ARE THEY?

• A group of 17 metals with many similar properties.

• Also known as "rare earth oxides" because many of them are commonly sold as oxide compounds.

• Despite their name, these elements are actually plentiful in the Earth's crust, with the exception of the radioactive promethium.

• Substitutes are available for many applications but generally are less effective.

WHERE ARE THEY FOUND?

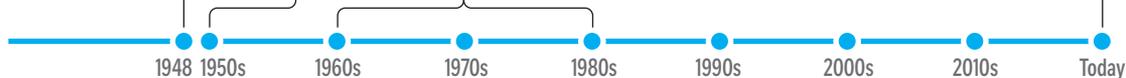
The US has one of the richest rare earth deposits in the world, but interest in them waned in the late 20th century even as China's exploitation of these assets ramped up.

Most of the world's rare earth elements were sourced from placer sand deposits in India and Brazil until 1948

South Africa emerged as the leading producer

California was the leading producer through these years

China is the largest producer (mostly from Inner Mongolia) even though it has only 36.7 per cent of reserves. It is followed by Australia in a distant second.

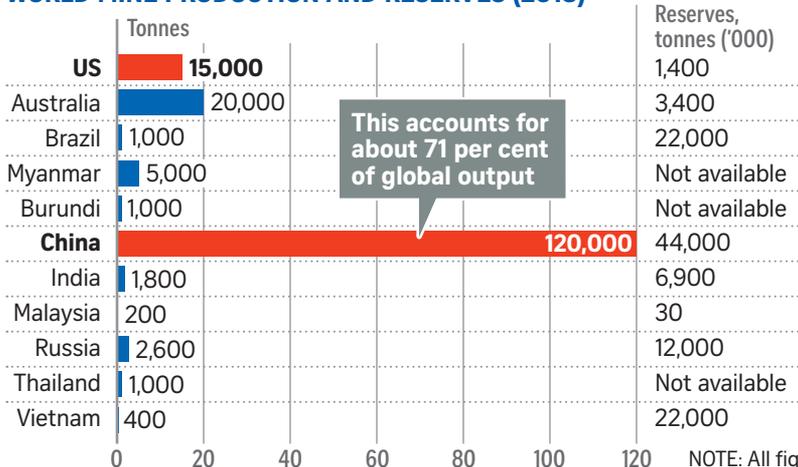


Deposits worldwide (million tonnes)

(based on US Geological Survey estimates last year)

120 million tonnes

WORLD MINE PRODUCTION AND RESERVES (2018)



Rare earth-producing regions in China



WHAT ARE THEY USED FOR?

Rare earth uses have expanded over the years, and include the production of high-performance magnets, catalysts, alloys, glasses and electronics.

Petroleum industry

• Rare earths such as cerium and lanthanum are important catalysts used for petroleum refining and in diesel additives.

Agriculture

• The elements are also used to enhance plant growth and stress resistance, with seemingly zero negative effects for human and animal consumption.

Military

• Uses include precision-guided weapons and night-vision goggles.

