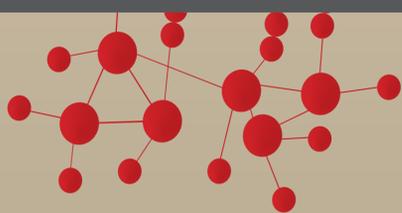


RARE EARTH ELEMENTS FROM COAL?



RARE EARTH ELEMENTS (REEs)

—chemical elements/metals found in the Earth’s crust—are integral to the way we live our everyday lives, from energy to technology to national security. They’re **used in transportation, health care, renewable products, and national defense technologies**, as well as things you use daily—like your computer hard drive and smart phone.



DEMAND FOR REEs IS VERY HIGH

—and continues to grow. But, they’re most commonly found in ores, or minerals, that are hard to break down and expensive to extract. That’s why the **United States depends heavily on imports for needed REEs**. Currently, China is the leading provider of REEs—controlling over 90 percent of the world’s supply.



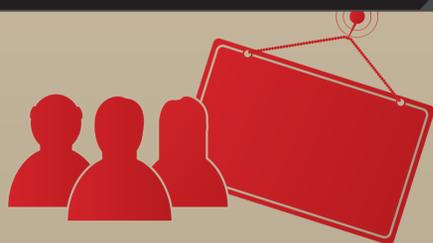
THE NEED TO IMPORT REEs MAY CHANGE

—thanks to our nation’s huge coal resources. The U.S. Department of Energy’s Office of Fossil Energy is **focusing on developing technologies** that can help recover REEs from coal and coal by-products, making it possible to recover REEs in a way that’s economical and environmentally friendly.



RECOVERABLE COAL RESERVES

Current U.S. REE reserves are estimated at **1.4 million tons**, and the coal basins across 10 states could **produce an additional 11 million tons of REEs**.



DEVELOPING REEs IN THE UNITED STATES MEANS MORE JOBS

A 2014 American Chemistry Council report estimates the REEs used in products and technologies support industries that generate **\$329 billion of economic output** and employ more than **618,000 workers** in North America.



DEVELOPING A SUSTAINABLE, DOMESTIC REE SUPPLY

from coal and coal by-products could help the United States **invigorate Coal Country**—attracting advanced manufacturing facilities and jobs to these areas.

From improving everyday technologies, to securing our energy independence, to creating jobs—there are plenty of advantages to developing an REE supply from U.S. coal and coal by-products. And the U.S. Department of Energy is working to make that happen.