

# Rare Earth Elements

Understanding Untapped Potential in the U.S.

## Critical Domestic Importance

Rare Earth Elements (REEs) are a group of 17 metallic elements containing similar chemical properties, typically found in mineral deposits. REEs are used widely in technology and homeland security. Roughly 70% of REEs come from China. The United States primarily depends on these imports, which are subject to global trade and supply chain disruptions.

But it doesn't have to be this way. Mosaic has significant heavy REE deposits both in our reserves and byproducts with untapped potential to bolster domestic production in the U.S. The phosphate industry has a critical role to play in the commercialization of these minerals, lessening the reliance on Chinese imports.

## By the Numbers

1.75M

Estimated tons of Rare Earth Oxides and Yttrium (REO+Y) in Mosaic's Florida operations.

1.25M

Of that 1.75M, an estimated 1.25M of REO+Y are stockpiled at the surface in our phosphogypsum (PG) stacks, clay stacks and ponds.

35%

Estimated percentage of heavy REEs present from the mixed REO.

2-4X

Approximately 2-4 times more concentrated in heavies than other rare earth deposits.

## Rare Earth Elements in Our Lives



Hybrid & electric car batteries



Wind turbines



Military defense technology



Electronics

# Utilizing Our Reserves and Byproducts

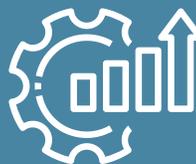
The domestic production of Rare Earth Elements will reduce our dependency on foreign countries to produce our energy sources, military defense equipment and medical equipment.

Right now, these REEs are locked in gypstacks - heavily regulated structures that store phosphogypsum (PG), a byproduct created during the phosphate manufacturing process.

Since the 1980s, the phosphate industry has required PG to be stored in stacks as technology has not kept pace with modern science. To date, more than 20 countries have found over 55 beneficial uses for PG.

But the United States continues to treat PG as a waste and not a resource. A lack of current, science-based regulation means valuable REEs and reusable PG remain locked in the stacks. Updating the regulations around gypstacks allows us to join the rest of the world in utilizing today's available technology and strengthening our domestic resilience.

# Gypstacks & PG Reuse in the U.S.



For every ton of phosphate, about five tons of PG are made.



Gypstacks are heavily regulated by multiple government agencies and monitored for at least 50 years after closure.



The Environmental Protection Agency (EPA) has approved a pilot project allowing PG to be used as part of a road base at our New Wales facility.



Approximately 40 million tons of PG are recycled and reused annually by countries including Belgium, Spain, India, China, Canada and Norway.

## Bottom Line: Crucial to our Future

### Statement on Rare Earth Elements

*"Mosaic's byproducts might represent the only readily available U.S. domestic stockpile of Rare Earth Elements that does not require mining to acquire and begin extraction."*

*– Mosaic public comment on Section 232, National Security Investigation of Imports and Processed Critical Minerals and Derivative Products, May 13, 2025*

### Without REEs, we lose out on:

- MRI scanners
- Missiles
- Lasers
- Tanks
- Smartphones
- LED lights
- Catalytic converters
- Electric car batteries
- Magnets
- Steel making
- Fuel cells
- Fighter jets
- Super alloys
- Metal alloys
- Portable x-ray machines
- Baseball bats
- Hard disc drives
- Microwave filters
- Nuclear reactor control rods
- Aerospace components
- Rechargeable batteries
- PET scan detectors
- Fiber optics
- Memory chips



For more information, visit our website at [mosaicco.com](https://mosaicco.com).

© 2025 The Mosaic Company  
We Help the World Grow the Food it Needs.