

PROJECT PHOENIX - FLORIDA, UNITED STATES

Advancing a domestic pathway from industrial phosphogypsum to qualified strategic-material products.

Project Phoenix is ARE's U.S. development program for Florida phosphogypsum. It is structured around representative-feed characterization, protected process integration, environmental and radiological coordination, subsystem engineering, integrated validation, and buyer-led product qualification.

REQUEST A PHOENIX BRIEFING

REVIEW DEVELOPMENT GATES

INDUSTRIAL CHALLENGE

Long-lived material obligations.

Phosphogypsum is a large-volume phosphate-industry byproduct that can carry rare-earth, radiological, toxic and bulk-mineral constituents within the same resource. A credible project must address all pathways rather than pursue only the most valuable fraction.

STRATEGIC OPPORTUNITY

An above-ground resource pathway.

Project Phoenix evaluates whether a representative Florida feed can support prospective rare-earth products while separately controlling volatile constituents, uranium-, thorium- and radium-bearing material, and the remaining mineral fraction.

DEVELOPMENT BRIEF

A domestic alternative-source platform.

Reference information is presented to explain the project model, not to claim a final design or commercial operating result.

RESOURCE

Florida PG

Industrial phosphogypsum working basis.

REFERENCE MODULE

1 x 40 STPH

Nominal planning reference; not vendor-locked.

PROCESS BOUNDARY

ARE-controlled

Protected architecture and integration.

COMMERCIAL STATUS

Development-stage

Products and outputs remain unqualified.

PHOENIX FRAMEWORK

Separate pathways from the outset.

01

Feed + site basis

Representative chemistry, mineralogy, variability, rights and utilities.

02

Protected validation

03

Product pathways

Define rare-earth and licensed-material outputs with counterparties.

04

Qualification

Test the remaining mineral body before any final end-use claim.

THE PHOENIX EVIDENCE PATH

Every output earns its next gate.

GATE 01 Feed & site basis Confirm representative feed, variability, access, utilities and constraints.	GATE 02 Bench closure Test partitioning, capture, residue and analytical methods.	GATE 03 Subsystem engineering Define OEM packages, controls, materials and safety basis.	GATE 04 Integrated validation Close mass balance, emissions, residue and operating evidence.	GATE 05 Qualification Establish buyer, recipient, regulatory and project acceptance.
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PATHWAY 01 Prospective REE products A mixed captured REE-bearing intermediate, followed by buyer-defined oxide, metal or alloy qualification where supported.	PATHWAY 02 Controlled radiological material Project-specific concentration, classification, packaging, receipt, treatment, storage, recovery and disposition evaluation.	PATHWAY 03 Captured volatile constituents A segregated control path for targeted early-fuming constituents and associated capture media.	PATHWAY 04 Prospective lower-risk mineral fraction An intermediate fraction that will receive testing and approval.
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CURRENT FLORIDA TARGET SUITE

A defined suite, not a product guarantee.

Nd

Pr

Dy

Tb

Sm

Y

Gd

Sc

Ce

La

Er

Ho

Lu

Yb

Uranium, thorium and radium are tracked through a separate residue-side pathway. Feed composition, recoverability and product form remain subject to representative sampling and validation.

WHO SHOULD ENGAGE

■ Florida phosphogypsum resource owners and industrial hosts

■ Qualified analytical laboratories and technical reviewers

■ Engineering, controls and OEM workstreams

■ Rare-earth processors, metallizers, magnet and alloy producers

■ Licensed TENORM or source-material counterparties

■ Strategic investors and Government reviewers

DOCUMENTED GOVERNMENT-FACING RECORD ARE submitted “Project Phoenix-REE: Selective Sub-Melt Recovery of Rare Earth Elements from Phosphogypsum” under DIBC RPP-CM-26-01-026 on March 11, 2026. The submission received a MET RATING.

Advance the next evidence gate.	Bring a Florida resource or site. Submit product specifications. Request a licensed-material discussion. Request controlled Project Phoenix diligence.
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Project configuration, feed composition, capacity, recovery, purity, volumes, economics, schedule, permits, licensed-recipient fit, beneficial use and customer acceptance remain subject to representative feed, engineering, testing, approvals, financing, written agreements and qualification.