

SMaRT Center Weekly Digest
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News

[Energy Secretary says it is concerned critical minerals vulnerable to manipulation](#)

U.S. Energy Secretary Jennifer Granholm said the government is concerned that supplies of critical minerals, used widely in clean energy technology, could be subject to weaponization as oil and gas have been amid the Ukraine conflict. "Our concern is that critical minerals could be as subject or vulnerable to manipulation as we've seen in other areas, or weaponization," Granholm said at the start of talks with Australia's resources minister and executives from 14 mining companies at the Sydney Energy Forum.

[Ucore Upscales its REE Demo Plant Capabilities and Streamlines the RapidSX Commercial Deployment Plan](#)

Ucore and partners had planned, designed and ordered equipment to construct an 18-stage RapidSX™ REE Demo Plant with subsequently planned incremental expansions to meet the broader commercial objectives of the Program throughout 2022 and 2023. However, in early 2022 Ucore received very positive results from the [independent RapidSX technology evaluation](#), including the conclusion that a RapidSX production plant can potentially have 2/3 a smaller footprint than a conventional solvent extraction ("SX") with the same throughput. The Team then met with and received the buy-in from all Program stakeholders to expand the design and construction of the Demo Plant to 51-stages (as shown in [this picture](#)) for the noted benefits described below.

[Panasonic to build \\$4bn battery plant in US to supply Tesla](#)

Japan's Panasonic is deepening its ties with electric vehicles (EVs) maker Tesla by planning a battery plant in Kansas, US, which will cost \$4 billion. The facility is expected to supply the EV giant with a new high-capacity battery and boost Panasonic Energy's production capacity by fiscal 2028 from the current level of roughly 50 gigawatt-hours per year to between 150 and 200 GWh. The Japanese company, the world's third-largest EV batteries producer behind CATL and LG Energy Solution, already operates a \$5 billion Gigafactory in Nevada with Tesla. Panasonic picked the site of the new facility based on factors including its proximity to Texas, where Tesla moved its headquarters last year, and favorable tax treatment. Oklahoma had also been considered as a candidate location. The factory is expected to hire as many as 4,000 employees and include a facility for research in next-generation 4680 battery, which it plans to mass produce from 2023.

[GE and Arafura Resources sign Memorandum of Understanding on Neodymium and Praseodymium](#)

Arafura Resources Limited and GE Renewable Energy have signed a non-binding memorandum of understanding to jointly co-operate in the establishment of a sustainable supply chain for NdPr central to energy transition. The parties will negotiate a long-term sales agreement for GE to purchase NdPr from Arafura's Nolans Project in central Australia. Commenting on the MoU, Arafura's Managing Director and CEO, Gavin Lockyer, said: "The signing of this MoU to collaborate with a Tier 1 OEM is a

terrific outcome. Long-term Nolans NdPr may be used in magnets critical for power generation from GE's Haliade-X 12 MW, one of the most powerful offshore wind turbines on the market.

[Ford, SK On finalize U.S. EV battery joint venture](#)

Ford Motor Co (F.N) and South Korean battery maker SK On Co along with its subsidiary on Thursday finalized setting up a joint venture for building and operating battery production facilities in the United States. The JV, BlueOval SK LLC, will establish a battery plant for electric vehicles (EV) in Tennessee and two other facilities in Kentucky, the U.S. automaker said in a regulatory filing. Both the companies had signed a memorandum of understanding for the JV in May last year. BlueOval SK is expected to produce about 60 gigawatt hours of power annually that could be raised further.

[American Rare Earths shares higher after results confirm "enormous" size, scale and consistent grades](#)

American Rare Earths Ltd has received promising results from exploration drilling in the Halleck Creek Rare Earth project in Wyoming, USA, with Total Rare Earth Oxides mineralisation observed up to 7,856 ppm. The company's shares surged as much as 12.5% higher intra-day to A\$0.25 after drilling revealed consistent high-grade mineralisation from surface which remains open at depth. Significant intersections include:

HC22-OM01 averages 4,219 ppm TREO over 88.8 meters;

HC22-OM02 averages 3,245 ppm TREO over 101 meters;

HC22-OM03 averages 3,749 ppm TREO over 99.4 meters; and

HC22-OM04 averages 3,497 ppm TREO over 105.5 meters.

Select Articles

[Alkali treatment–acid leaching of rare earth elements from phosphogypsum fertilizer: insight for additional resource of valuable components](#)

Phosphogypsum (PG) is the main by-product of phosphoric acid. In general, phosphate rocks contain from about 0.04 to 1.0% REE, which are precipitated with PG. This paper address a process for the separation of REEs and sodium sulphate as a product from PGF. This paper is based on the metathesis of the bulk of PGF with sodium carbonate to obtain calcium carbonate precipitated contain REEs.

Furthermore, sodium sulphate was obtained as a product. Calcium carbonate containing REEs was leached out by citric acid as a green acid or nitric acid. The REEs that were obtained in the leaching citrate solutions were purified by solvent extraction using 10% of di-2-ethyl hexyl phosphoric acid, HDEHP, in kerosene.

[Coordination–reduction leaching process of ion-adsorption type rare earth ore with ascorbic acid](#)

The magnesium sulfate (MgSO₄)–ascorbic acid (Vc) compound leaching technique can extract rare earth elements (REEs) existing in ion-exchangeable phase and colloidal phase from ion-adsorption type rare earth ore through the synergy effect of coordination and reduction. In the case of neodymium, about 45% of dissolved neodymium will exist as the complex species of NdVc₃(aq) in Nd–Vc–sulfate system. The Eh–pH diagrams of Ce–SO₄²⁻–H₂O and Fe–SO₄²⁻–H₂O together with the dissolution experiments confirmed that the added Vc initiated the leaching process of colloidal phase REEs through reduction–dissolution reaction.

Funding Opportunities

[NOTICE OF INTENT TO ISSUE FUNDING OPPORTUNITY ANNOUNCEMENT NO. DE-FOA-0002738 TITLED BIL: CARBON CAPTURE DEMONSTRATION PROJECTS PROGRAM](#)

- Funding entity: DoE, Office of Clean Energy Demonstrations
- Purpose: Carbon Capture Demonstration Projects Program, authorized under Sec. 962 of the Energy Policy Act of 2005, as amended by the Energy Act of 2020 (Division Z of the Consolidated Appropriations Act, 2021) Sec. 4002(b)(2)(C) and codified at 42 U.S.C. 16292(b)(2)(C)
- Areas of Interest:
- Two (2) projects designed to capture carbon dioxide from a coal electric generation facility **(AOI-1)**.
 - Two (2) projects designed to capture carbon dioxide from a natural gas electric generation facility **(AOI-2)**. and
 - Two (2) projects designed to capture carbon dioxide from an industrial facility not purposed for electric generation **(AOI-3)**.