

Silex World Demonstrates End-to-End Rare Earth Circularity Platform

New platform enables domestic rare earth supply from waste, reducing reliance on imports and energy-intensive refining.

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/EINPresswire.com/ -- Silex World Ltd, a University of Leeds spinout focused on clean critical materials processing, today announced the development of an end-to-end platform for the recovery and reprocessing of rare earth materials from waste into usable industrial forms, establishing a continuous pathway from feedstock to finished material.



Silex World - End-to-End Rare Earth Circularity Platform

The platform integrates Silex World's alkali-based extraction process with a proprietary low-energy conversion stage, enabling rare earth-bearing waste streams—including end-of-life

permanent magnets and industrial residues—to be transformed into materials suitable for reuse in manufacturing. The system is designed as a continuous process, moving beyond traditional batch recycling toward scalable, industrial throughput.

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From Waste to Magnet-Ready Materials: Silex World Launches Rare Earth Circularity Platform”

Michael Hodges

In parallel with this development, Silex World is progressing the rollout of production facilities in India,

creating an initial operational base for processing rare earth feedstock and validating the platform under real-world conditions. This deployment is intended to support near-term output while the company advances regional partnerships in the United States and Europe.

Rare earth elements are critical to high-growth sectors including electrification, renewable energy, semiconductors, and defence. However, recycling rates remain low, and existing

processes are often energy-intensive, chemically complex, or unable to deliver materials in a form directly usable by industry.

Silex World's platform is designed to address these constraints by enabling:

- * Recovery of rare earth materials from waste and low-grade feedstock
- * Elimination of conventional acid-intensive refining stages
- * Conversion into usable material forms within a single integrated process
- * Continuous operation with the potential for modular deployment

By linking recovery and material production into a unified system, the platform enables what Silex World describes as "full circular manufacturing" of rare earth materials—reducing dependence on primary extraction while creating a domestic supply of strategically important inputs.

Michael Hodges, Founder of Silex World Ltd, said: "Recycling alone is not enough. Industry needs materials in a form it can use, at scale, and within its own supply chain. What we are building is a system that closes that loop."

He added: "Our initial production rollout in India is about proving that this works in practice. The next step is to replicate this capability in the U.K., U.S. and Europe, where the need for secure, circular supply is becoming urgent."

The platform has been developed with flexibility across multiple rare earth-containing inputs and is compatible with downstream manufacturing requirements. Silex World is currently engaging with industrial partners, OEMs, and regional stakeholders to explore integration into existing supply chains and the deployment of localised processing capacity.

The company believes its approach aligns with global policy initiatives aimed at increasing recycling rates, reducing environmental impact, and securing domestic access to critical materials.

About Silex World Ltd Silex World Ltd is a clean technology company focused on the recovery and processing of critical materials, including rare earth elements, using environmentally sustainable methods. A spinout from the University of Leeds, the company is developing scalable solutions to enable circular supply chains and reduce dependence on imported refining capacity.

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