

Livium Secures Exclusive Global Rights to University of Melbourne Microwave Technology for Rare Earth Elements Extraction

Highlights

- Livium executes binding Agreements with University of Melbourne (UoM) to secure exclusive global rights to the use of innovative Microwave technology in REE extraction
- REE testwork demonstrates recoveries of >95% Neodymium (Nd) and >80% Praseodymium (Pr) (potential to achieve >90%), with an estimated 85% energy reduction relative to "Hot Block" technology
- Option secured to expand rights to platinum group metals (PGMs), with laboratory recoveries of >90% Platinum (Pt), >95% Palladium (Pd) and >65% Rhodium (Rh), with Rh leaching >80% under development
- UoM's selective leaching approach obtains higher concentrates compared to traditional pathway, whilst reducing the usage of acids and reagents, and reducing wastewater
- Global REE market expected to grow to US\$7.3 Billion by 2026¹ with recycling largely untapped, while the PGM market is projected to reach US\$31.30 billion by 2033

Livium Ltd (ASX: LIT) ("Livium" or the "Company") is pleased to announce the execution of a binding IP License Agreement and a Research Project Agreement (collectively "**Agreements**") with the University of Melbourne ("**UoM**"). The IP Licence Agreement grants Livium exclusive worldwide rights to commercialise UoM's microwave technology for the extraction of rare earth elements (**REE**) for 20 years. Livium now has an option for exclusive worldwide rights to commercialise UoM's microwave technology for the extraction of platinum group metals (**PGMs**) — a right which was not contemplated in the previously signed Term Sheet².

The Agreements have been executed through Livium's subsidiary Resource Conservation and Recycling Corporation Pty Ltd (**RCARC**), the entity that holds all recycling-related intellectual property (**IP**) within the Livium Group.

RCARC will fund A\$65k under Stage 1, with total Stage 1–2 funding capped at A\$200k. A grant application has been submitted under the Australian Economic Accelerator (AEA) Ignite program to support Stage 2 activities, which will commence upon grant approval. Livium and UoM will now work together to complete the balance of Stage 1 activities.

Livium CEO and Managing Director, Simon Linge commented "Formalising our exclusive IP licence with the University of Melbourne marks a pivotal milestone in Livium's strategy to expand into adjacent recycling markets. The Agreements secure access to a transformative microwave leaching platform and positions Livium at the forefront of sustainable recovery of rare earths and platinum group metals from clean energy waste.

By integrating microwave-assisted leaching into our operations, we aim to unlock new value streams, reduce environmental impact, and support the global shift toward circular supply chains."

¹ Source: International Energy Agency (IEA) Global Critical Minerals Outlook 2025 (May 25)

² Refer announcement "Livium Signs Term Sheet to Secure Exclusive Global Rights to Microwave Technology for Rare Earth Elements Extraction", dated 9 September 2025

Delivering on Livium's Adjacency Strategy

The partnership with UoM is a key pillar of Livium's strategy to expand its circular economy portfolio and leverage its core focus on the recycling of clean energy waste.

Livium operates Envirostream, Australia's market-leading lithium-ion battery recycler, providing a strong foundation for adjacent growth including REE recovery. Envirostream's existing infrastructure, customer relationships in e-mobility and clean energy, and expertise in shredding, and separation, positions it uniquely to commercialise this technology at scale.

China's export-control measures on rare earth technologies³ have reinforced the need for secure, non-Chinese supply chains. With a global scope, this technology has the potential to support international requirements.

University of Melbourne's Microwave Technology

Microwave heating is a promising solution for replacing traditional methods of REE extraction due to its efficient, rapid, and sustainable heating transmission. Where traditional methods extract REE by acid leaching, solvent extraction, and ion-exchange processes, microwave technology can enhance chemical reactions and alter the morphology of minerals, which is key to selectively recovering rare earth elements, as well as other valuable metals such as copper, gold, vanadium and PGMs from metallurgical wastes.

Studies at UoM to date have found that microwave technology can deliver high REE recovery rates coupled with an estimated 85% reduction of energy consumption relative to "Hot Block" digestion technologies.

REE recovery rates of >95% Neodymium (Nd) and >80% Praseodymium (Pr) have been achieved in laboratory testwork, with potential to achieve >90% Pr with an oxidant.

Selective leaching also has the following advantages over complete leaching:

- ✓ Obtain higher target metal concentrates
- ✓ Reduce the usage of acids and reagents in the process
- ✓ Separation of solid and liquid is much easier
- ✓ Reduce the amount of wastewater

The recoveries of PGMs using microwave technology can achieve >90% Platinum (Pt), >95% Palladium (Pd) and >65% Rhodium (Rh). With further development of selective leaching solutions, the leaching recovery of Rh can be >80%.

Rare Earth Elements (REE)

A collection of 17 metallic elements, comprised of the 15 lanthanides found together on the periodic table in addition to yttrium and scandium. The recovery and repurposing of these sought-after elements from items, including permanent magnets, electric motors, and electronic refuse, is called REE extraction via recycling. Magnets containing these materials are crucial to the shift toward clean energy, as they are integral components in electric vehicle propulsion motors and wind turbine generators.

Worldwide demand for REE magnets has almost doubled, climbing to 93 kilotonnes between 2015 and 2023⁴, spurred by the sale of new electric vehicles and the installation of wind turbines to achieve climate goals. REE recycling is still a largely untapped market, given currently only about 1% of REE are being recycled. This presents a huge adjacent commercial opportunity for Livium with the global addressable market for REE expected to reach US\$7.3 billion by 2026.

Platinum Group Metals (PGMs)

PGMs are essential to a wide range of industrial and clean energy applications, including automotive catalytic converters, hydrogen fuel cells, and electronic components. The global PGM market is projected to grow from US\$21 billion in 2025 to US\$31 billion by 2033⁵, driven by rising demand for clean energy technologies and tightening emissions regulations.

Australia, with significant PGM reserves and growing focus on onshore critical mineral processing, is well-positioned to play a strategic role in global supply chains. As geopolitical risks impact traditional supply sources in South Africa and Russia, the need for secure, sustainable, and circular recovery solutions is intensifying.

³ Refer announcement "Livium Advances U.S. Critical Minerals Partnerships Amid Surging Strategic Demand", dated 23 October 2025

⁴ Source: International Energy Agency (IEA) Global Critical Minerals Outlook 2025 (May 25)

⁵ Source: <https://www.fortunebusinessinsights.com/platinum-group-metals-market-102082>

Material Terms of the IP Licence Agreement

- **Licensor:** The University of Melbourne (**UoM**)
- **Licensee:** Resource Conservation and Recycling Corporation Pty Ltd (**RCARC**)
- **Licensed IP:** Microwave Technology to extract REE, with an option to extract PGMs.
- **Territory:** Worldwide exclusivity granted
- **Fees:** Stage 1 and Stage 2 cap of A\$200k, which Livium may increase to A\$250k, in its sole discretion.
- **Royalty:** A percentage (undisclosed) of gross sales or sublicense revenue
- **Stage 3:** Livium must design, build and operate a pilot plant facility to demonstrate REE recovery at scale, within 24 months of Stage 2 completion.
- **Commercialisation:** Commercial use of Licensed IP, by Livium, within 12 months of Stage 3 completion.

Authorised for release by the Livium Board.

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About Livium

Livium Ltd (ASX: LIT) is Australia's leading battery recycler through its wholly owned subsidiary Envirostream — a profitable business focused on the recovery of valuable materials from end-of-life batteries.

Building on this foundation, Livium is expanding into adjacent opportunities including recycling of rare earth elements and solar panels, and the processing of black mass — strengthening Australia's clean-energy supply chain.

The Company also holds a portfolio of complementary technologies, including LieNA®, a patented lithium extraction process in joint venture with Mineral Resources Ltd (ASX: MIN), and VSPC, a developer of next-generation lithium ferro phosphate (LFP) cathode materials — the leading global battery chemistry.

Forward-looking statements

This announcement contains forward-looking statements. Forward-looking statements are subject to a variety of risks and uncertainties that it is beyond the Company's ability to control or predict and which could cause actual events or results to differ materially from those anticipated in such forward-looking statements. Investors should be aware that past performance should not be relied upon as being indicative of future performance.