ASX Announcement

11 September 2025

ASX: OD6

OPTIONEERING STUDY SUPPORTS HEAP LEACHING AS LOW COST ROUTE FOR THE SPLINTER ROCK RARE EARTH PROJECT

CPC Engineering Optioneering Study validates heap leaching as the lower-cost and preferred primary leach option for the Splinter Rock Rare Earth Project, when compared with conventional agitated tank leaching. Splinter Rock hosts a JORC Mineral Resource of 682Mt @ 1,338ppm TREO

Highlights:

- **Heap leach confirmed lower cost than agitated tank leach** for Splinter Rock's clay-hosted rare earth mineralisation, based on CPC Engineering's multi-criteria optioneering assessment.
- **Superior Recovery:** Heap Leach offers a higher recovery than the equivalent tank leach process
- **Lower Capital requirements anticipated:** Simplified process eliminates large leach tanks, clay-washing, and complex separation circuits, and allows for modular, scalable construction.
- **Lower operating cost drivers:** Reduced energy and maintenance intensity; Chlor-Alkali Facility enables on-site reagent generation in conjunction with acid recycling benefits, further de-risking operating costs.
- **Process innovation maintained:** Heap leach liquor enables OD6's downstream flowsheet to utilise Nanofiltration (NF), Ion Exchange (IX), targeting a high-quality and low impurity Mixed Rare Earth Carbonate (MREC) product.
- **High-quality MREC product:** Heap leach integrates with OD6's downstream process to produce a premium, low-impurity MREC. OD6 plans to rapidly scale-up testwork to produce MREC samples for offtake discussions.
- **Fit-for-purpose:** Study supports the suitability of the simplified heap leaching and Impurity removal process for Splinter Rock's mineralisation style and planned scale.
- **Strategic partnerships with ANSTO and CPC Engineering** continue to guide the Optioneering Study toward selection of the optimal development pathway.
- **Positive Study Outcomes:** The results from the optioneering study to date are positive and the results justify progression of further exploration, testwork and study investigations.
- **Upcoming drill campaign:** Delivering high-quality material for advanced ANSTO testwork.

TREO (Total Rare Earth Oxide) = La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + Y_2O_3.

Managing Director Brett Hazelden, commented:

"The work being conducted by CPC's optioneering study confirms what our ANSTO testwork and flowsheet work have indicated – heap leaching combined with our innovative downstream steps appears to be the most capital-efficient and operationally simple route to unlock value at Splinter Rock.

Importantly, when benchmarked against other peers in the industry, it suggests a lower CAPEX profile is possible after removing the complex and expensive solid-liquid separation steps in an agitated tank leach process. Notably, integration of our impurity removal steps and a Chlor-Alkali Facility (CAF) suggests a lower capital cost outcome and supports production of a high-value MREC product.

We'll now move quickly to commence scale up testwork to optimise the Heap Leach and Impurity Removal conditions and produce MREC samples for testing and offtake discussions."

OD6 Metals Limited (OD6 or the Company) is pleased to report that the CPC Optioneering Study supports heap leaching as the lower cost and higher recovery option when compared to conventional agitated tank leaching. The work continues to evaluate the multiple technically viable flowsheets and techno-economic assessment of each flowsheet. This study aims to identify a preferred flowsheet based on cost, recovery, scalability, and product quality for the Splinter Rock Rare Earth Project.

Techno - Economic Review Criteria

CPC Engineering (**CPC**) and OD6 assessed primary leach options against the following criteria relevant to large-scale clay-hosted rare earth operations:

- Rare Earth Recovery
- Circuit Complexity
- Capital Cost
- Expandability
- Product Quality and Payability
- Operating Cost (including reagent, water and energy usage)
- Technical and Commercial Risk
- Robustness to Variability

The Company aims to be a 6,000 plus tonnes per annum (tpa) producer of REO (in either the form of Mixed Rare Earth Carbonate (MREC) or Mixed Rare Earth Hydroxide (MREH) in 5 years. On this basis, the optioneering study utilised an aspirational production target range of 5,750 to 7,300 tpa of REO equivalent (MREC or MREH) for the purpose of techno-economic comparison**, based on the current Indicated Resource of 119Mt @ 1,632ppm TREO at the Inside Centre Deposit** (refer ASX 24 May 2025), ANSTO Metallurgical Testwork outcomes from Inside Centre (refer metallurgical outcomes to date listed below) and publicly disclosed peer study metrics.

The Company considers the results from the optioneering study are positive and the results justify progression to the next stage of exploration, testwork and study investigations.

The Company cautions that the above aspirational statement of prospective production and the aspirational production target ranges adopted in the optioneering study are conceptual in nature and the target ranges were adopted solely to support comparative techno-economic assessment within the optioneering study. They are not production targets or forecast financial information derived from production targets for the purposes of the Corporations Act or ASX Listing Rules and there is a low level of geological confidence associated with any potential production parameters at this stage. Further exploration, engineering, and feasibility work are required before OD6 can determine the likelihood of establishing Ore Reserves and/or production targets or before making any final investment decision. There is no certainty that the conceptual ranges adopted within the optioneering study will be realised.

Benchmarking Peer comparison

Table 1 below indicates the ASX-listed industry peers (together with announced study metrics) which were used in the optioneering study.

Table 1: Benchmarking of Proposed Rare Earth Heap Leach and Tank Leach Projects Around the World.

	OD6	IXR	MEI	VMM	VTM
Location	**Australia**	Uganda	Brazil	Brazil	Australia
Ore Type	**Clay Hosted**	Clay Hosted	Clay Hosted	Clay Hosted	Clay Hosted
Processing Method	**Heap Leach at Ambient**	Heap Leach at Ambient	Leach Tanks at Ambient	Leach Tanks at Ambient	Leach Tanks at 60-90°C
Product	**MREC/H**	MREC	MREC	MREC	MREC
Resource Grade TREO	**1,338 ppm**	640 ppm	2,359 ppm	2,508 ppm	493 ppm
Feed Grade TREO	**1,632 ppm**	848 ppm	3,701 ppm	3,380 ppm	520 ppm
Annual Throughput	**TBA [2]**	**5 Mtpa**	**6 Mtpa**	**5 Mtpa**	**8 Mtpa**
TREO Recovery	**~70-75%**	35 %	55 %	57 %	86 % [4]
REO Production	**TBA [2]**	1,160 tpa	13,584 tpa	9,448 tpa	1,913 tpa excludes Ce+La
Payability Assumed	**70-75 %**	70 %	70 %	70 %	85 %
CAPEX	**TBA [2]**	**US$120 M**	**US$443 M**	**US$354 M**	**US$219 M**
Capital Intensity per tonne REO	**TBA [2]**	US$104,803	US$32,611	US$37,468	US$114,479
Annual OPEX $/kg REO	**TBA [2,3]**	US$52.99 /kg REO	US$13,53 / kg REO	US$9.30 / kg REO	US$69.32 /kg REO
Market Capitalisation [1]	**~$11M**	**~$96 M**	**~$370 M**	**~$142 M**	**~$180 M**
Link to Source		DFS Report 20 March 2023	PFS Report 21 July 2025	PFS Report 9 July 2025	Scoping Study 12 March 2025

1. *As at 9 September 2025.*
2. *For the purposes of the optioneering study, CPC Engineering and the Company adopted aspirational production target ranges based on (i) the current Indicated Resource at Inside Centre, (ii) metallurgical testwork outcomes to date, and (iii) the publicly disclosed peer study metrics in the table above. Further exploration, engineering, and feasibility work are required before the Company can establish any production targets.*
3. *OD6 mining cost work is in progress; current stripping ratio indicative estimate ~0.5:1 (waste:ore)*
4. *VTM recovery is based on post +53um material removal. Overall Head grade recovery not provided.*

Preliminary Techno - Economic Observations to Date

Based on the review criteria and benchmarking analysis conducted, key observations include:

- **Rare Earth Recovery**: OD6's Heap Leach Circuit indicates potential for higher recovery relative to peer studies and more Mixed Rare Earth Carbonate (**MREC**) to be recovered per tonne of ore processed at Splinter Rock.
- **Circuit Complexity**: Heap leaching provides lower total system complexity by removing the mechanical complexity of agitated tank trains, clay washing, and solid liquid separation filters. This advantage is partially offset by OD6's conceptual flowsheet including Nanofiltration, Ion Exchange, and Chlor-Alkali Facility components, but do enable a premium, low-impurity MREC or Mixed Rare Earth Hydroxide (**MREH**) product.
- **Capital Cost**: Initial capital cost ranges developed by CPC suggest Heap leach could offer a lower cost than agitated tank leach for a similar annual throughput. Benchmarking against publicly available data and peer studies suggest higher grade projects (such as certain projects in Brazil) have lower capital intensity per tonne of REO produced, with OD6 ranking in the middle of the peer analysis.
- **Expandability**: The Heap Leach process indicates the availability of staging and expandability of pad area but also solution handling, reagent production, acid recycling and impurity removal.
- **Product Quality and Payability**: As OD6 intends to sell product to Asia, Europe and America, a Uranium and Thorium Ion Exchange step to remove these radionuclides has been included. It is also important to not be classified from a transport cost and safety point of view, plus residue disposal requirements at the customers facility.
- **Operating Cost**: The Heap Leach circuit suggests lower operating cost drivers compared to some peers: including lower energy demand (no large solid liquid separation filters) and the potential for reduced mechanical maintenance. It is noted that reagent costs for OD6 are likely to be higher than Brazilian peers (that utilise a higher pH for removal of leach from rare earths and likely require less overall reagents), though could be more favourable than agitated tank leach at high temperatures (60°C to 90°C).
- **Technical and Commercial Risk**: Technical and commercial risks were considered, however due to the early development stage of all projects, it is clear that each project has its own challenges and risks, along with potential cost over runs, ramp up risk and product quality.
- **Robustness to variability**: Each project was considered to have some form of in-built Robustness to Variability.

Metallurgical and Study Outcomes to Date

As part of its advanced metallurgical program, OD6, CPC and ANSTO has successfully demonstrated a **multi-stage processing pathway** (Figure 1 below) that efficiently extracts and purifies rare earth elements from Splinter Rock's clay-hosted deposits. The flowsheet consists of:

1. **Heap Leaching** – Simple, low-acid usage leaching of rare earth-bearing clays to generate enriched leachate solution (refer ASX 16 October 2024)
2. **Nanofiltration (NF)** – Recycling of Acid, concentration of REEs and reduction of liquid volume produced downstream (refer ASX 4 August 2025)
3. **Ion Exchange (IX)** – Concentration of rare earth elements and enhanced removal of iron (Fe) and aluminium (Al) reducing downstream processing risk (refer ASX 7 August 2025)
4. **Impurity Removal (IR)** – Final removal of residual deleterious elements (e.g. Al, Ca, Fe, U, Th, P) to meet high product quality and low impurity specifications.
5. **Product Precipitation** – Recovery of high-grade Mixed Rare Earth Carbonate (**MREC**) or Mixed Rare Earth Hydroxide (**MREH**) from purified solution (refer ASX 13 August 2025)
6. **Chlor-Alkali Facility (CAF)** – Confirmed as a cost-reduction measure, producing key reagents onsite and materially lowering operating costs (refer ASX 2 September 2025)

The final MREC/MREH products contain elevated concentrations of **Nd, Pr, Dy and Tb**, collectively representing a **high-value magnetic rare earth mix** highly sought after in permanent magnet supply chains. Benchmark payability for MREC and MREH typically ranges between 70–85% of REO basket value.

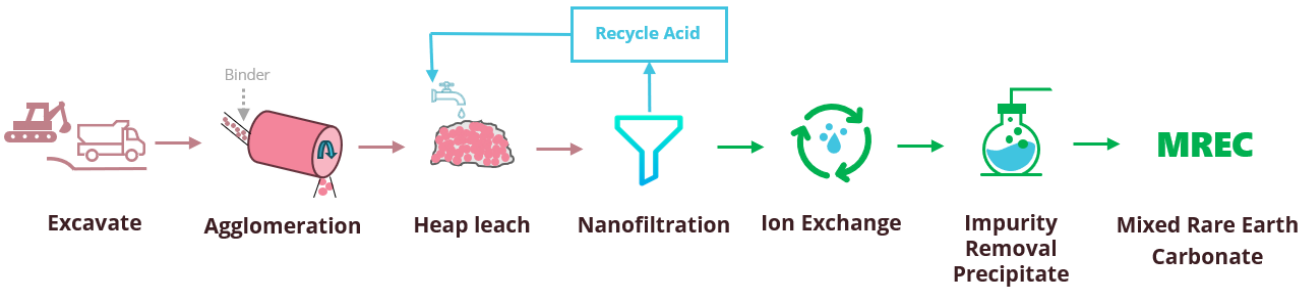

Figure 1: Indicative processing steps including Heap Leach, Nanofiltration plus Ion Exchange &Impurity Removal

Next Steps

Optioneering Study: CPC Engineering (CPC) and ANSTO are continuing to review the testwork performed over the last 9 months as part of an Optioneering Study. The study is evaluating the multiple technically viable flowsheets, to enable the techno-economic assessment of each flowsheet. This study will identify a preferred flowsheet based on cost, recovery, scalability, and product quality.

Engagement with potential offtake partners: To assess commercial payability options for MREC and MREH products.

Engagement with government and potential financing partners: OD6 has and continues to engage government and potential financing organisations. This is anticipated to be a continuous process over the development cycle.

Testwork Drill Campaign: OD6 is currently engaging drilling contracts to commence in September to undertake twin holed diamond core material of the original 6 holes. Six HQ or PQ drill holes (63 to 85mm core) will be drilled to provide 1.5 to 2.5 tonne of REE bearing material for testwork to be conducted at ANSTO.

ANSTO Testwork Scale Up: Heap Leach and Impurity Removal testwork would be scaled up by utilising twin holed diamond core material of the original 6 holes. Bulk testing 1 tonne of REE bearing material, which can be utilised to conduct multiple optimisation and validation tests findings from the current reported testwork. This volume would also produce ~1kg of MREC which would enable multiple samples to be produced for testing and offtake discussions.

Forward Looking Statements

Certain information in this document refers to the intentions of OD6 Metals, however these are not intended to be forecasts, forward looking statements, or statements about the future matters for the purposes of the Corporations Act or any other applicable law. Statements regarding plans with respect to OD6 Metals projects are forward looking statements and can generally be identified by the use of words such as 'project', 'foresee', 'plan', 'expect', 'aim', 'intend', 'anticipate', 'believe', 'estimate', 'may', 'should', 'will' or similar expressions. There can be no assurance that the OD6 Metals plans for its projects will proceed as expected and there can be no assurance of future events which are subject to risk, uncertainties and other actions that may cause OD6 Metals actual results, performance, or achievements to differ from those referred to in this document. While the information contained in this document has been prepared in good faith, there can be given no assurance or guarantee that the occurrence of these events referred to in the document will occur as contemplated. Accordingly, to the maximum extent permitted by law, OD6 Metals and any of its affiliates and their directors, officers, employees, agents and advisors disclaim any liability whether direct or indirect, express or limited, contractual, tortuous, statutory or otherwise, in respect of, the accuracy, reliability or completeness of the information in this document, or likelihood of fulfilment of any forward-looking statement or any event or results expressed or implied in any forward-looking statement; and do not make any representation or warranty, express or implied, as to the accuracy, reliability or completeness of the information in this document, or likelihood of fulfilment of any forward-looking statement or any event or results expressed or implied in any forward-looking statement; and disclaim all responsibility and liability for these forward-looking statements (including, without limitation, liability for negligence).

No new information

Except where explicitly stated, this announcement contains references to prior exploration results, all of which have been cross-referenced to previous market announcements made by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements.

The information in this report relating to the Mineral Resource estimate for the Splinter Rock Project is extracted from the Company's ASX announcements dated 24 May 2024. OD6 confirms that it is not aware of any new information or data that materially affects the information included in the original announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimate continue to apply

This announcement has been authorised for release by the Board of OD6 Metals Limited

About OD6 Metals

OD6 Metals is an Australian public company pursuing exploration and development opportunities within the critical minerals sector, namely rare earths and copper.

Rare Earth Elements

OD6 Metals has successfully identified clay hosted rare earths at its 100% owned **Splinter Rock Project** which is located in the Esperance-Goldfields region of Western Australia.

The Company released a Mineral Resource Estimate (MRE) for Splinter Rock in May 2024, confirming that the project hosts one of the largest and highest-grade clay-hosted rare earths deposits in Australia with an Indicated Resource of 119Mt @ 1,632ppm TREO and an Inferred Resource of 563Mt @ 1,275ppm TREO with an overall ratio of ~23% high-value Magnetic Rare Earths (MagREE).

OD6 Metals believes that Splinter Rock has all the hallmarks of a world class rare earths project with a conceptual heap leach development which utilises the large and high-grade Splinter Rock resource to support a long-life REE operation.

Copper

The Company is advancing the **Gulf Creek Copper-Zinc VMS Project** located near the town of Barraba in NSW, Australia.

Gulf Creek was mined at around the turn of the 20th century and was once regarded as the highest-grade copper mine (2% to 6.5% Cu) in NSW until its closure due to weak copper prices in 1912. Very little exploration has occurred at the project in over 100 years, with OD6 aiming to apply modern day exploration technologies.

The 2025 maiden drilling program successfully defined high grade copper below the historical mine plus confirmed the strong relationship between magnetism and massive sulphide mineralisation. Geophysical modelling has identified multiple, high priority and untested targets ready for drilling providing over >3km of untested strike in the immediate mine-stratigraphy, and over >10km across the tenement.

Corporate Directory

Managing Director	Mr Brett Hazelden
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