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Rainbow Rare Earths Limited
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Rainbow Rare Earths Limited
("**Rainbow**" or "**the Company**")
LSE: RBW

Adoption of Industry-Standard Solvent Extraction for Rare Earth Separation De-Risks Phalaborwa Project to produce Products of +99.5% Purity

Correction to SEG+ production figures

- **ANSTO pre-feasibility report confirms solvent extraction ("SX") as the optimal rare earth oxide separation route for the project**
- **SX, the leading technology for rare earth element ("REE") separation, delivers oxides at +99.5% purity throughout the global industry**
- **ANSTO confirms Rainbow's high-grade mixed rare earth product ("MREP") will successfully produce separated NdPr oxide and the SEG+ Group at +99.5% purity**
- **The Company's technical analysis and economic benchmarking, based on its internal expertise, determined that Phalaborwa remains a robust, low-capital intensity project incorporating SX**
- **The choice of SX as the final separation route allows for the finalisation of the project flowsheet and subsequent completion of the definitive feasibility study ("DFS"), with construction and first production remaining planned for 2027 and 2028, respectively**
- **CEO George Bennett and Technical Director Dave Dodd will be giving a virtual presentation via London Stock Exchange SparkLive on Wednesday 26 November at 10am GMT - details are below or participants can register here**
- **The Company also today announces a correction to the annual production figures for the ancillary REE that will make up its SEG+ mixed rare earth product**

NEWS ANNOUNCEMENT

Rainbow Rare Earths is pleased to announce an important de-risking step for the Phalaborwa rare earths project in South Africa, with the determination of the final route to separation. The unique Phalaborwa project encompasses the recovery and separation of light, medium and heavy REE from phosphogypsum stacks, a waste product from phosphoric acid production, meaning that many of the costs, risks and long timescales associated with traditional mining projects are eliminated.

ANSTO, Australia's world-renowned research and mineral testing institution, was appointed to model a two-stage SX circuit required for the project to produce separated NdPr oxide and SEG+ high purity mixed rare earth carbonate ("MREC") from the high-grade mixed rare earth product that the Company successfully delivered from its in-house laboratory in Johannesburg.
ANSTO worked previously with Rainbow on the initial test work at Phalaborwa, and as such are very familiar with the project, plus they have world-leading expertise in SX test programmes and technology. Rainbow is working with METC Engineering, to engineer this final separation route.

George Bennett, CEO, commented: "*We are pleased to announce this important de-risking step for Rainbow via the determination that SX offers the optimal route to final separation for our proposed +99.5% purity products, being a separated NdPr oxide and a SEG+ product, combining the full suite of medium and heavy rare earths. The ability to design a small and efficient SX circuit has been enabled via the successes we have achieved in optimising the front-end flowsheet, and we are confident that Phalaborwa will retain its status as a low-capital intensity project.*"

Dave Dodd, Technical Director, commented: *"SX is the industry standard for REE separation and purity, and we have sought expert insight from Australia's ANSTO, who have designed most of the SX circuits for new Western REE projects in development. Our team has extensive experience with ANSTO, as we have worked together historically as lead process engineers on numerous studies, including the Lofdal, Ngualla and Songwe Hill rare earth projects, as well as having designed and built various uranium projects together that also utilise CIX and SX circuits in their design. We are very comfortable with these technologies and are pleased to finalise the process design for Phalaborwa which will allow for the timely completion of the Phalaborwa DFS."*

London Stock Exchange SparkLive Virtual Presentation
Rainbow Rare Earths will give a live presentation relating to today's announcement via the LSE's SparkLive platform on Wednesday 26 November at 10am GMT.

To register for and access the SparkLive webcast please click on the following link: https://sparklive.lseg.com/RainbowRareEarthsLtd/events/63e3b6a2-9ca3-4ab3-b5df-0d6ec0c3eca3/rainbow-rare-earths-decision-to-use-sx-separation-process

The presentation will be followed by a live Q&A session. Questions can be pre-submitted via the SparkLive event page or at any time during the live presentation via the "ask a question" button.

Decision on the optimal route for separation

As recently disclosed, Rainbow has been evaluating the optimal route to separation of the high-grade mixed rare earth product successfully achieved via Rainbow's pioneering IP to recover REE from phosphogypsum.

Previously, the Company had been focused on utilising continuous ion chromatography ("CIC") as the separation method as envisaged in the project's Preliminary Economic Assessment and the updated interim economic study released in December 2024. However, the significant reduction in volumetric flow to the separation circuit via the incorporation of a continuous ion exchange ("CIX") circuit for impurity rejection, as well the cerium depletion step, has been a major driver of project efficiency and made it feasible to consider SX as a viable alternative. Rainbow's success with impurity rejection therefore allows for a simpler and more cost-effective SX circuit than is the industry norm, given that traditional SX plants can be complex and convoluted, requiring hundreds of different stages for separation.

The ANSTO pre-feasibility report confirms that the Phalaborwa process will only require two small SX circuits; one for the NdPr separated oxide and one for the SEG+ high purity MREC. The SX circuits will have a total of ca. 75 mixer settlers, which compares to traditional SX plants which often hold ca. 1,500 mixer settlers or more, confirming that Rainbow is maintaining a low capital intensity for the project as a whole.

Whilst CIC remains a compelling method for REE separation, Rainbow has determined that SX, as the industry standard, represents a faster de-risking and commercially proven path to delivering Rainbow's proposed products and enables faster progress to the next development milestone for Phalaborwa.

The choice of SX as the final separation route allows for the finalisation of the project flowsheet and subsequent completion of the DFS. The project timetable therefore remains on track to commence construction in 2027 and first production in 2028. Whilst project development has taken longer than originally anticipated, it is still a fast-track timeline in the context of most mining and rare earth projects which can take up to 20 years or more from discovery to first operations.

Correction to annual production figures for SEG+ REE

The Company notes that the annual production figures of the medium and heavy REE that make up Phalaborwa's proposed SEG+ product were incorrectly stated in the announcement dated 10 November 2025. This was due to figures being based on extraction results from a single batch of gypsum not representative of the JORC Resource.

The following table provides the correct estimated annual production figures:

	As stated in 10 November 2025 announcement (tpa)	**Corrected figures based on the JORC Resource (tpa)**
Sm_2O_3	258	244
Eu_2O_3	51	50
Gd_2O_3	241	180
Tb_4O_7	19	20
Dy_2O_3	50	60
Y_2O_3	213	140
Others	-	24
Total	**832**	**718**

As noted above, the production figures for Gd and Y were overstated; however, this is offset by the fact that the production figure for Dy was understated. Overall, the Company calculates that the full value of the SEG+ production at mid-market European prices today assuming a payability of 70% is worth ca. US 160 million per annum of revenue. This compares to the US 80 million in the interim economic study published in December 2024, which is the expected revenue for separated Dy and Tb at 100% payability.

For further information, please contact:

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Notes to Editors:

About Rainbow:

Rainbow Rare Earths aims to be a forerunner in the establishment of an independent and ethical supply chain of the rare earth elements that are driving the green energy transition. It is doing this successfully via pioneering the first commercial recovery of rare earth elements from phosphogypsum that occurs as the by-product of phosphoric acid production. These projects eliminate the cost and risk of typical rare earth projects, which involve mining and the production of a rare earth concentrate that must be chemically cracked to form a mixed rare earth carbonate before further downstream processing. As such, Rainbow's projects can be brought into production quicker and at a lower cost than traditional hard rock mining projects.

The Company is focused on the development of the Phalaborwa Project in South Africa and the earlier stage Uberaba Project in Brazil. Rainbow's process will deliver separated rare earth oxides through a single hydrometallurgical plant on site, with a focus on the recovery of neodymium, praseodymium, dysprosium and terbium. These are critical components of the high-performance permanent magnets used in electric vehicles, wind turbines, defence and exciting new markets such as robotics and advanced air mobility.

The Phalaborwa updated interim economic study released in December 2024 has confirmed strong base line economics for the project, which has a base case NPV_{10} of US 611 million. Given Phalaborwa is a chemical processing operation, with its resource sitting at surface in a chemically cracked form, it has a much lower operating cost than traditional rare earth mining projects, and it is therefore estimated to be the highest margin rare earth project in development today outside of China.

More information is available at www.rainbowrareearths.com or by visiting the Rainbow Rare Earths Curation Showcase at: Curation Connect - Rainbow Rare Earths Showcase or https://app.curationconnect.com/company/Rainbow-Rare-Earths-90903

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