

ASX Release

12 October 2023

Excellent heavy rare earth oxide results from Dubbo Project pilot plant testing

- Latest pilot plant separation work for the Dubbo Project demonstrates that the process can achieve terbium (Tb) and dysprosium (Dy) oxide purity of >99.99% and >99.95% respectively.
- Heavy rare earth oxides, Tb and Dy, are critical components in the production of permanent magnets, used in electric vehicles, wind turbines and other growth industries.
- Tb and Dy represent 18% (~\$151M) of annual forecast revenue from the Dubbo Project.



ASM's latest results for terbium and dysprosium separation at the ANSTO pilot plant have exceeded target specifications.

Australian Strategic Materials Limited (**ASM** or **the Company**) (**ASX:ASM**) is pleased to announce excellent results from its latest terbium (**Tb**) and dysprosium (**Dy**) heavy rare earth (**RE**) separation test work. The results confirm the design capability of the Dubbo Project's advanced process flowsheet to produce high purity Tb and Dy oxides at industry leading product quality.

The pilot plant test work was conducted by ANSTO, Australia's Nuclear Science & Technology Organisation. Results show the process is capable of producing Tb and Dy oxide product streams that meet or exceed target specifications of >99.99% for Tb and > 99.95% for Dy¹, at steady state.

¹ Relative to rare earth impurities.

The latest Tb/Dy separation work was funded via a \$500,000 grant secured under Stream 1 of the NSW Government’s Critical Minerals and High-Tech Metals Activation Fund.²

“These excellent results demonstrate the strength of ASM’s advanced technical capability. Producing both light and heavy rare earth oxides at high purity sets the Dubbo Project and ASM apart and allows us to offer industry leading product quality to our offtake partners,” said Ms Rowena Smith, ASM Managing Director and CEO. “Terbium and dysprosium oxides are not only scarce commodities they are very difficult to separate at high purity. With the continued expertise of the team at ANSTO and the welcome support of the NSW Government, we are positioning the Dubbo Project to be at the forefront of Australia’s rare earth and critical minerals evolution,” said Ms Smith.

Unique ore body & product portfolio

The Dubbo Project is ASM’s cornerstone rare earths and critical minerals deposit in Central West, New South Wales, Australia. ASM intends to produce a diverse suite of products, including light and heavy rare earth oxides (see *Table 1*), zirconium, hafnium and niobium. These elements are at the forefront of advanced technologies driving global decarbonisation and electrification megatrends.

In the case of ASM’s rare earth oxides – NdPr, Tb and Dy – these commodities are critical in the production of high-tech metals required to create permanent magnets, used in electric vehicles (EVs) and wind turbines. The global outlook for these industries is

extremely positive, with continuing growth forecasts coming off an increasingly higher base. For example, the International Energy Agency recently upgraded its projections for EV deployment under its Stated Policies Scenario to 20 million vehicles in 2025 and 40 million in 2030, up from 15.9 million and 27.7 million respectively last year.

Revenue contribution of heavy rare earths

ASM’s combined RE oxides account for 44% (~\$370 million per annum) of forecast annual revenue at the Dubbo Project (see *Graph 1*). The high value Tb/Dy oxides represent 18% (~\$151 million per annum) on their own.

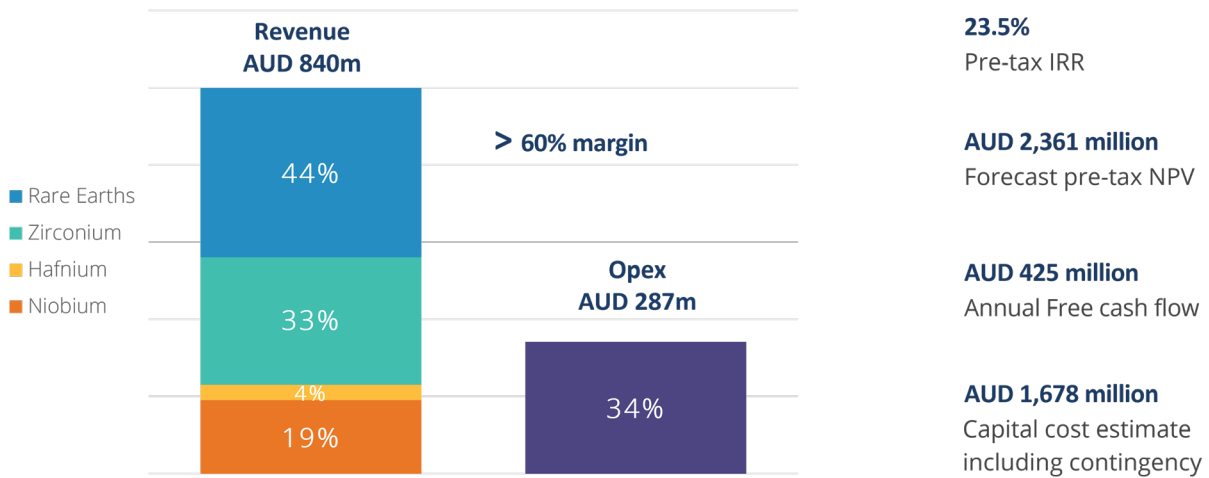
“Our heavy rare earth products will be an important element of the Dubbo Project’s diversified revenue stream. Demonstrating the quality at which will be able to produce these products, via these positive pilot plant results, adds further validity to our forecast financials and the compelling opportunity that the Dubbo Project presents,” said Ms Smith.

Dubbo’s Rare Earth Oxides
High Purity Neodymium & Praseodymium As mixed NdPr oxide
High Purity Terbium (Tb) As terbium oxide
High Purity Dysprosium (Dy) As dysprosium oxide

Table 1. The Dubbo Project will produce a range of light and heavy rare earth element oxides.

² Refer ASX Release 22 November 2022: ASM Dubbo Project study awarded grant from the NSW Critical Minerals and High-Tech Metals Activation Fund

Annual forecast revenue & opex at the Dubbo Project



Graph 1. The Dubbo Project's strong financials are based on ASM's Optimisation Study Work³.

Strategic investment & offtake partners

ASM is currently progressing investment and offtake opportunities for the Dubbo Project across multiple jurisdictions, targeting final investment decision by December 2024. The Company will update the market when binding agreements are concluded.

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This document has been authorised for release to the market by the Board.

³ Refer: ASX Release: 7 Dec 2021, *Dubbo Project Optimisation Delivers Strong Financials*. All data and financial information shown is taken from the Optimisation Study Work. The Company confirms that the material assumptions underpinning the estimates in the Optimisation Study Work announcement continue to apply and have not materially changed. Key assumptions are: Exchange Rate (A\$:US\$) - 0.75; Discount Rate (real, post-tax %p.a.) 8.0%; Corporate Tax Rate (%) 30%, Long Term Real price assumptions used in the 2021 Optimisation Study table 9, capital estimates in section 13.4, and matters described in Annexure A. Margin is defined as revenue minus opex. Annual free cash flow amount represents the average of years 7-10 in the Optimisation Study Financial Model