

## ASX RELEASE

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ASX: ARU



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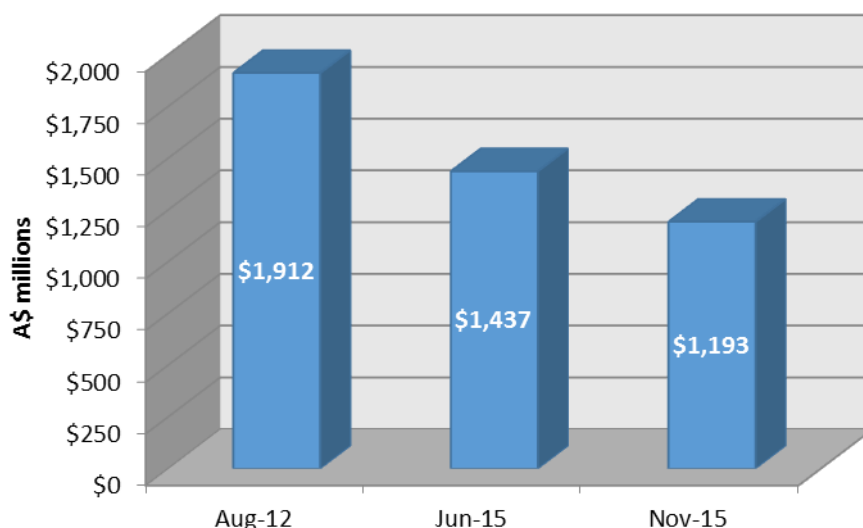
# INITIATIVES FURTHER REDUCE NOLANS PROJECT CAPEX BY A\$244M

- Independent engineering analysis further reduces Nolans capital costs to A\$1,193 million;
- Ongoing optimisation and value engineering initiatives expected to deliver additional CAPEX reductions

Australian rare earths company, **Arafura Resources Limited** (ASX: ARU, “Arafura” or the “Company”) is pleased to announce the results of the recent capital expenditure (“CAPEX”) review for its 100 per cent-owned Nolans Rare Earths (“RE”) Project in the Northern Territory.

As highlighted in the Company’s most recent Quarterly Report (ASX: ARU 27/10/15) independent engineering studies were commissioned to review the capital costs of the Nolans Project. The results of this review have to date identified CAPEX savings of A\$299 million (or 21%) from the June 2015 estimate (ASX: ARU 03/06/15). These savings have been partly offset by A\$55 million owing to AUD: USD exchange rate movements from 0.85 to 0.70. Since the Company commenced initiatives in April 2013 to improve the viability and fundability of the Nolans Project, the CAPEX estimate has been reduced by A\$719 million or 38% as shown in Figure 1 below.

Figure 1: Nolans Project CAPEX Reduction



The total initial CAPEX for the Nolans Project is now estimated at A\$1,193 million (or US\$835 million at A\$1 = US\$0.7) inclusive of 20% contingency but excluding deferred capital. It comprises direct costs of A\$764 million at the Nolans Site in Australia and A\$95 million at the offshore RE Separation Plant. Table 1 and Figure 2 show the CAPEX broken down by plant area. Figure 3 provides insight into the areas where savings have been realised, with further details provided from Page 4 of this document.

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Table 1: Total Capital Cost Estimate Summary

Project Area	Estimated CAPEX A\$m
Mine & Concentrator	137
RE Intermediate Plant	435
RE Separation Plant	95
Transport & Logistics	5
Infrastructure & Ancillaries	187
Indirect Costs	335
<b>TOTAL</b>	<b>1,193</b>

Figure 2: Nolans Project Capital Costs by Expenditure Type and Plant Area

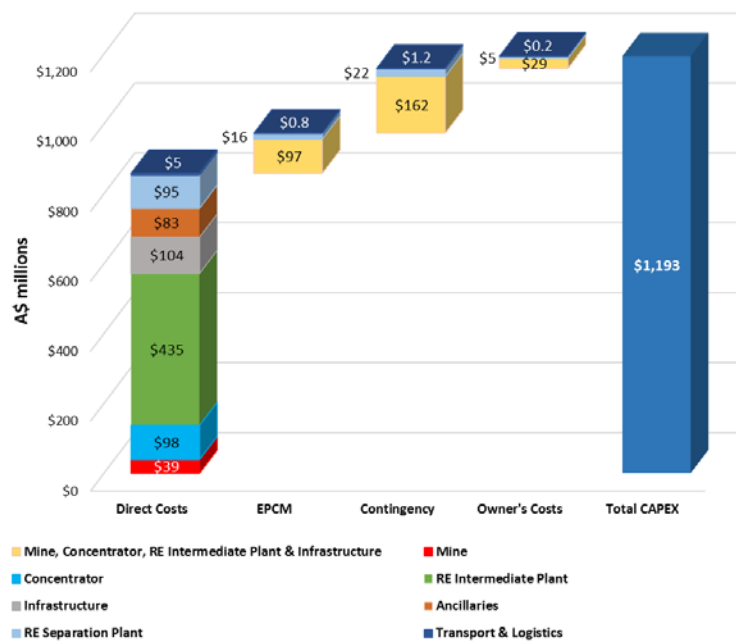
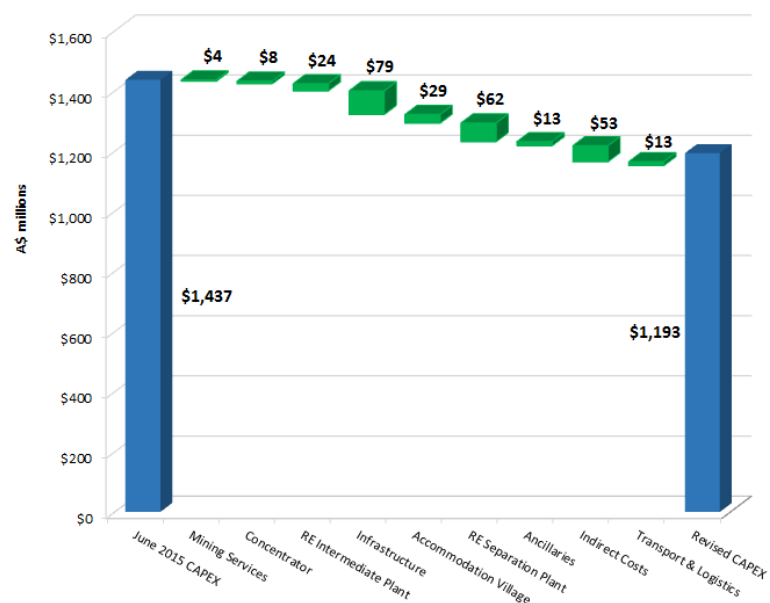


Figure 3: Details of CAPEX savings identified from June 2015 estimate



RE Intermediate Plant pre-production costs of A\$41 million are not shown in the above chart.



Capital estimates for both the Australia domiciled and offshore plant areas were generated by independent engineering consultants Lycopodium Minerals Pty Ltd ("Lycopodium"). Battery Limits Pty Ltd completed an independent analysis of previous CAPEX estimates to identify key areas to target savings along with additional analysis and review by tailings dam specialist consultants ATC Williams Pty Ltd and Orway Mineral Consultants ("OMC") on comminution circuit selection and sizing.

Further upside exists with the potential for additional CAPEX cost savings as not all of the optimisation opportunities identified in the Company's RE extraction program (ASX: ARU 27/10/15) have been factored into the revised estimates. Additionally due to longer lead times required for investigation, not all of the CAPEX reduction opportunities identified in the independent CAPEX review have been adopted at this stage.

The initial CAPEX investment for the establishment of the Nolans Project may be further reduced through ongoing value engineering including modularisation, review of plant layout to reduce construction costs associated with concrete, piping and electrical, and financial packaging, including build own and operate ("BOO") of the more conventional plant infrastructure requirements such as contract crushing. CAPEX savings from these initiatives are estimated to be A\$30 million, potentially further reducing the initial Project CAPEX to A\$1,163 million.

The Company will advise of any further updates to shareholders in due course.

– ENDS –

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## Details of Capital Expenditure Savings

### **Mine and Concentrator**

*CAPEX savings: A\$12 million*

Review of the mining services area achieved CAPEX savings through replacing permanent mining contractor facilities with conventional mining contractor semi-portable facilities such as workshops, warehouses and offices.

The three-stage crush to ball mill comminution circuit previously proposed was reviewed by OMC and replaced by a primary crusher followed by a SAG and ball mill circuit. As a result of the change, removal of redundant conveyors, feeders, screens, surge bins, dust collectors and metal detectors along with re-cost of mills has realised substantial cost savings. The revised comminution design also reduces dust generation associated with three stages of crushing and provides a positive outcome for onsite radioactive dust management control.

### **RE Intermediate Plant**

*CAPEX savings: A\$24 million*

CAPEX improvements in the RE Intermediate Plant area were achieved through rationalising the scrubber configuration by combining the scrubbing duty to larger single gas scrubbers. Other savings included rationalising the CCD circuit and a review of filter costs, and removal of previously duplicated filters in the June 2015 estimate.

### **Infrastructure**

*CAPEX savings: A\$108 million*

A complete review of the Nolans Site infrastructure was undertaken, including dams and ponds, power and water, plant buildings, accommodation village and access roads. Significant savings in estimated construction costs for tailings and storage ponds were achieved through a reduction in neutralised waste flows to the tailings ponds as a result of optimising sulphuric acid consumption in the pre-leach circuit. The impact of lower volumes on operating costs had previously been assessed and reported (ASX: ARU 03/07/15) but the flow on savings in CAPEX for the dams and ponds has been quantified for the first time in this estimate. The Company engaged geotechnical engineering experts ATC Williams to undertake an independent review of previous geotechnical investigations of the availability of suitable low permeability materials close to the Nolans Site for construction of dams and ponds, as well as the tailings management plan used in the engineering infrastructure cost estimate as the basis for the *Nolans Development Report* (ASX: ARU 02/09/14). The revised waste volumes resulted in lower material construction quantities and, with confirmation of sufficient suitable materials being available near the plant site, reduced overall costs associated with dams and ponds.





## **RE Separation Plant**

*CAPEX savings: A\$62 million*

The RE Separation Plant was reviewed as a result of cerium (“Ce”) no longer reporting to the final RE intermediate product having been successfully removed in the RE extraction process at the RE Intermediate Plant. This means that a Ce carbonate product containing approximately 10,000 tonnes of total REO (“TREO”) equivalent will be produced at the RE Intermediate Plant.

The Company also reviewed the solvent extraction (“SX”) circuit and final high purity separated REO products that it intends to produce and market. As a result of the removal of Ce, the Ce SX circuit is redundant and has been removed from the flowsheet. Arafura now intends to produce three final products to reduce the capital requirement for the RE Separation Plant. The SEG and HRE products are now combined to produce a mixed SEG/HRE carbonate product that can be marketed together with other high value products or further separated via a tolling arrangement. As a result of these changes substantial savings have resulted from reducing the number of mixer settler tanks and rationalising and removing equipment in the carbonate precipitation, calcination and packaging areas.

The Company will continue to produce and market separated NdPr and La oxide products and as a result of these initiatives the capacity of the RE Separation Plant is now reduced to 10,000 tonnes of TREO equivalent. Other savings to RE Separation Plant CAPEX have occurred through reduced reagents handling and plant services equipment, ancillaries, and smaller plant footprint.

## **Indirect Costs**

*CAPEX savings: A\$53 million*

Indirect Project expenditure for EPCM, owner’s costs and contingency have been factored using similar assumptions to the June 2015 CAPEX estimate but are now lower due to significantly reduced direct costs as detailed above.



## Nameplate Production

The CAPEX estimates in this document are based on a nameplate production target of 20,000 tonnes per annum of TREO equivalent from Measured and Indicated Mineral Resources at Nolans Bore. The Mineral Resources were estimated and reported by the Company (ASX: ARU 30/10/15) following the guidelines of the JORC Code 2012. Classification of total resources at Nolans Bore into Measured, Indicated and Inferred resources, using a 1.0% TREO cut-off grade, is shown in Table 2. Contained (in-situ) resources of rare earths are also shown.

**Table 2: Statement of Nolans Bore Mineral Resources at 30 October 2015 using a 1% TREO COG**

RESOURCES	TONNES million	RARE EARTHS TREO %	TONNES TREO	PHOSPHATE P <sub>2</sub> O <sub>5</sub> %	URANIUM U <sub>3</sub> O <sub>8</sub> lb/t
Measured	4.9	3.2	158,000	13	0.54
Indicated	30	2.7	816,000	12	0.44
Inferred	21	2.3	489,000	10	0.36
TOTAL	56	2.6	1,462,000	12	0.42

Numbers may not compute exactly due to rounding. 1 lb/t U<sub>3</sub>O<sub>8</sub> = 0.0454% U<sub>3</sub>O<sub>8</sub>.

## Competent Persons Statement

The information in this report that relates to Mineral Resources is based on information compiled by Mr Kelvin Hussey, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Hussey is a full time employee of Arafura Resources Limited. Mr Hussey has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Hussey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.