



## **ARAFURA RESOURCES LIMITED (ASX : ARU)**

### **NOLANS PROJECT PRE-FEASIBILITY STUDY**

**15 OCTOBER, 2007**

Arafura Resources Ltd (ASX:ARU) today announced the outcomes of the pre-feasibility study and valuation of the Nolans phosphate hosted rare earths-uranium project. The study has identified that the project's post tax Net Present Value of the project is A\$1,100 million over the current 20 year life of the mine with annual revenues of \$A410 million. The capital cost of the project is estimated at A\$750 million.

The Nolans rare earths-phosphate-uranium deposit is located approximately 135 kilometres north-north-west of Alice Springs in the Northern Territory of Australia. The project has sufficient resources to sustain a mining operation in excess of 20 years. The mineralisation is exposed at surface, has little overburden, and is amenable to "low strip ratio" open pit mining

Pre-feasibility studies into the capital and operating costs for the project were undertaken in combination by Bateman, Sinclair Knight Mertz (SKM) and GHID Australia. Operating and capital costs are estimated within an accuracy of plus or minus 30%. Selected key results of the pre-feasibility are:

**Net Present Value – post tax                      A\$ 1,100 million**

- Rare Earths production ramps up to 20,000 tpa rates from 2011 to 2013
- Operating life of 20 years
- Discount rate of 10%, tax rate of 30%, Exchange rate AUD 1 = USD 0.90

**Capital Cost    A\$ 750 million                      (2007 dollars)**

- Includes \$120m of contingency and \$180m of first fill working capital (total \$300m)
- Escalation rates of 10% per annum on all capital costs are budgeted

**Revenue    A\$ 410 million per annum      (2007 dollars)**



The Board of Arafura Resources has approved this pre-feasibility study for release and has adopted the data as the basis for the pre-feasibility project valuation. The Board now formally approves the progression of the project to Pilot Plant study phase in early 2008.

“Today’s announcement is the culmination of a long-term comprehensive body of work into the Nolans project,” Arafura Chairman Mick Muir said.

“I have long believed that the project would deliver major value to our shareholders and the results of the study validate this. Today our team has delivered one of the most important potential project developments in Australia for many years. The rare earths from Nolans will have vital and strategic importance to the electronics industry worldwide. This is important not only to our shareholders, but also the Australian economy and the global environment.” Mr Muir added.

The results of the study are a major step forward for the project and the Company. It validates that Nolans can sustain long life production of specialty materials that will have a vital role to play in the latest technology in the electronics industry that only rare earths can deliver. In addition many of the products will have a direct impact in assisting with environmental abatement programs aimed at energy efficiency and reducing greenhouse gas emissions.

Rare earths have a range of uses such as catalysts in petroleum refining, rechargeable batteries, electric motors, phosphors and ceramics. The strongest areas of growth are for rare earths used in electric motors (like hybrid vehicles) and plasma panels where demand is growing at 15%pa and 40%pa respectively.

Further to this, strong growth in demand and solid price outlooks for by-products of phosphoric acid, calcium chloride and uranium make a significant contribution to the project’s competitiveness.

The Board has always been confident that the Nolans Project has the potential to be a major operation yielding multiple products over a long period. This study marks the start of a new and dynamic time for Arafura and the Company will now embark on a program to expand its human and capital resources delivering project development milestones and ongoing shareholder value.

The Company has been engaging and assessing the credentials of various organisations that could provide Arafura with technical, financial or marketing assistance to develop the Nolans Project. The pre-feasibility data will enable informed decision making processes for the potential of a Joint Venture. These discussions will focus on off-takes of products, their prices and the development of the optimum balance between equity and debt and partner capital that delivers the best return to shareholders.

Arafura has already identified many process improvements that will significantly improve the project’s financial return and improve operating outcomes. These include the manufacture of some key chemicals adjacent to the project process plant, which eliminates many operating and capital costs of transport associated with chemical imports.

In order to optimise chemical supply, costs and risks, the Company continues to build on its existing relationships with potential suppliers and to encourage supplier collaboration. Arafura also continues to assess the appropriate location for the processing plant on the basis that essential inputs of water, gas, power and appropriate industrial land are critical to the project’s economics and long term future.



The Company has used an exchange rate of A\$1 = US\$0.90. The Australian dollar is currently trading at long term highs and this is beneficial in the short term when some construction costs are in US currency. The effect of exchange rate has been modelled to determine its impact on the project's valuation in the long term.

Arafura believes the nature of the rare earths market and the ability to negotiate independent supply contracts will insulate the project to a large degree and therefore minimise the risk of exchange rate to the project.

Arafura Resources Ltd Managing Director, Alistair Stephens said "This result is testimony to the team work, persistence, belief and vision of our employees. John Goulevitch deserves credit for his initial insight into the projects potential for rare earths and our geological team has worked meticulously in resource definition. Our General Manager, and Chief Project Engineer, Steve Mackowski, has excelled in his dedication and innovation to deliver the optimum and state-of-art processing flowsheet. Nolans is a genuinely great project and we can now focus our minds and energy into feasibility and development"

In addition, in November 2006, the Commonwealth Government offered the company an AusIndustry Commercial Ready Grant of up to A\$3.3million to assist with the early development of the Nolans project. This grant confirmed that the Government recognises the potential of the Nolans projects and that it can deliver technical success and future commercial outcomes. It also demonstrated that the Board and management of Arafura Resources had the capacity and technical skills to take this project forward to commercialisation. To date Arafura has received over \$500,000 under the grant. A significant proportion of costs from the pilot plant in 2008 will be eligible to be claimed under the grant.

Metallurgical test work has been undertaken by the Australian Nuclear Science and Technology Organisation (ANSTO) in Sydney, New South Wales, in combination with Bateman Litwin (Bateman) in Israel. ANSTO have developed the recovery test work for the pre-leach separation and rare earth recovery (plus uranium) while Bateman have developed the recovery of phosphoric acid and calcium chloride.

The deposit has limited overburden (thin alluvial soils), is amenable to shallow open pit mining with low strip ratios, and can sustain operations for at least 20 years. The resource is still open along strike and at depth. The on-site treatment involves heavy media separation to remove waste before transportation to a coastal processing facility where the economics of chemical manufacturing and product transport are more cost efficient.

The chemical treatment involves an acid leaching process that effectively separates insoluble rare earths minerals from soluble phosphate-rich apatite minerals before standard industry techniques are used for rare earths and phosphoric acid production.

The Company has planned for commissioning in 2010 before production commences in 2011 at 25% production rates rising to 75% by the end of the year (annual average rate of 50%). In 2012 the plan allows for consolidate rates at 75% capacity before full utilisation in 2013.

Rare earths pricing has been derived from a combination of international sources in China, IMCOA from Australia, Roskills Information Services and the Company's own research.



Arafura has largely completed the Notice of Intent (NOI) for the project and expects that the NOI for the mine site and a separate NOI for the processing plant will be submitted in either late 2007 or 2008.

## Planned Activities

For the remainder of 2007, the Company will be planning and preparing for processes related to the pilot plant and undertaking drilling to identify additional resources and improve the classification of current resources to a measured status. The current proposed engineering and approval schedule going forward is;

2008	Pilot plant Submission of Notices of Intent Community consultation Environmental Impact Statement (EIS) Resource, mining and processing optimisation Commencement of detailed engineering design
2009	Completion of definitive feasibility study (DFS) Regulatory approvals for project Pre-ordering long lead items and commencement of construction
2010	Construction and commissioning
2011	Production ramp-up from 25% to 75% of capacity (annual average = 50%)
2012	Production rates at 75% of capacity
2013	Full production rates – 20,000tpa rare earths production.

The project timeline is conditional on all regulatory approvals being completed in 2009. In addition a critical assessment of essential infrastructure including power, water and the availability of heavy industry land, and the lead times associated with procurement, prefabrication, and construction for all materials and resources will be undertaken.

Further enquires should be directed to:

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Project valuation criteria over-page.



<b>Nolans Project</b>		<b>Valuation Criteria</b>			
<b>Resources*</b>		<b>Tonnes (millions)</b>	<b>RE0%</b>	<b>P<sub>2</sub>O<sub>5</sub>%</b>	<b>U<sub>3</sub>O<sub>8</sub> lb/t</b>
	Inferred	10.5	3.1	13.8	0.50
	Indicated	8.1	3.0	14.3	0.43
	<b>Total</b>	<b>18.6</b>	<b>3.1</b>	<b>14.0</b>	<b>0.47</b>
<b>Mining – open pit</b>					
	Tonnes per annum	750,000			
	Mine life	20 years			
	Strip ratio	1:1			
	Overburden	Nil			
	Feed grade	Average resource grade			
	Heavy Media Separation	30% mass rejection	95% recovery of apatite & rare earth minerals		
<b>Transport</b>					
	Road	90 km			
	Rail	1,200 km			
<b>Processing - leaching</b>		<b>530,000 tpa</b>			
<b>Recoveries</b>					
	Rare earths	83%			
	Phosphate	80%			
	Uranium	80%			
<b>Production</b>		<b>Tonnes per annum</b>			
	Rare earths	20,000			
	Phosphoric acid	150,000			
	Uranium	150			
	Calcium Chloride	400,000	Output reduced from 500,000 for conservatism		
<b>Revenue</b>		<b>\$410m per annum</b>			
	Rare earths	\$260m	An average price of \$US11,600 per tonne		
	Phosphate	\$68m	At a price of \$US400 per tonne		
	Uranium	\$37m	At a price of \$US100 per pound U <sub>3</sub> O <sub>8</sub>		
	Calcium chloride	\$45m	At a price of \$US 100 per tonne		
<b>Capital costs</b>		<b>\$750m</b>			
	Direct Mining	\$70m			
	Direct Plant	\$380m			
	Working capital	\$180m			
	Contingency	\$120m			
<b>Operating costs</b>		<b>\$350m per annum</b>			
	Chemicals	\$250m			
	Transport	\$36m			
	Power	\$32m			
	Other	\$32m			
<b>Financial assumptions</b>					
	NPV post-tax	\$1,100m	NPV pre-tax = \$1,540m		
	IRR post-tax	16%	IRR pre-tax = 18%		
	Discount rate	10%			
	Ex rate USD : AUD	0.90	AUD 1 = USD 0.90		
	Payback	8 years			
	Escalation –opex	3%			
	Escalation- capex	10%			
	Escalation - revenue	4%			

\*Mineral Resources that meet JORC Guidelines published 22 November 2005