



# Arafura Resource Limited

## Investor Presentation

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Managing Director

March 2008



# Arafura Resources

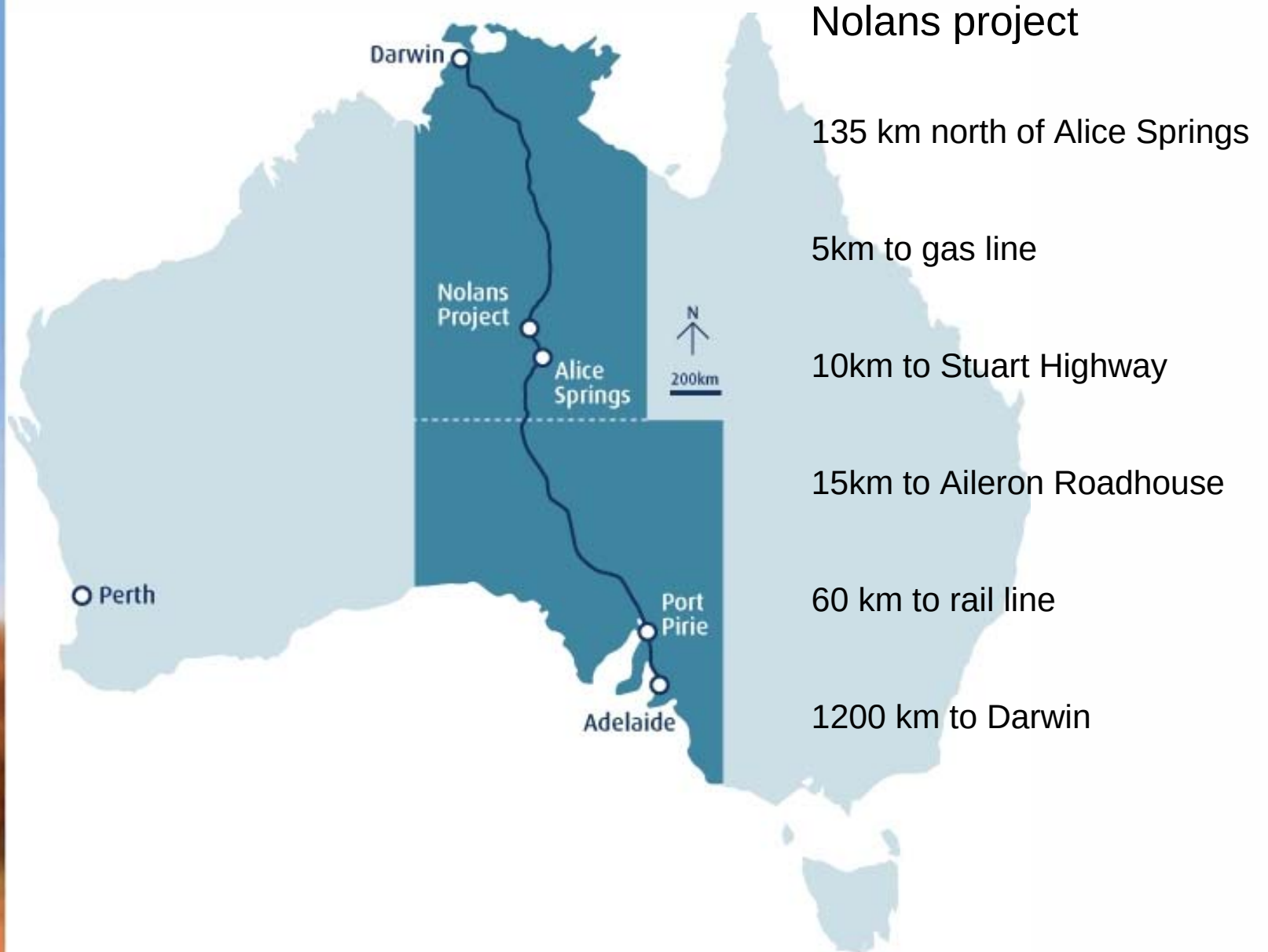
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# Nolans project location



# Nolans Resource

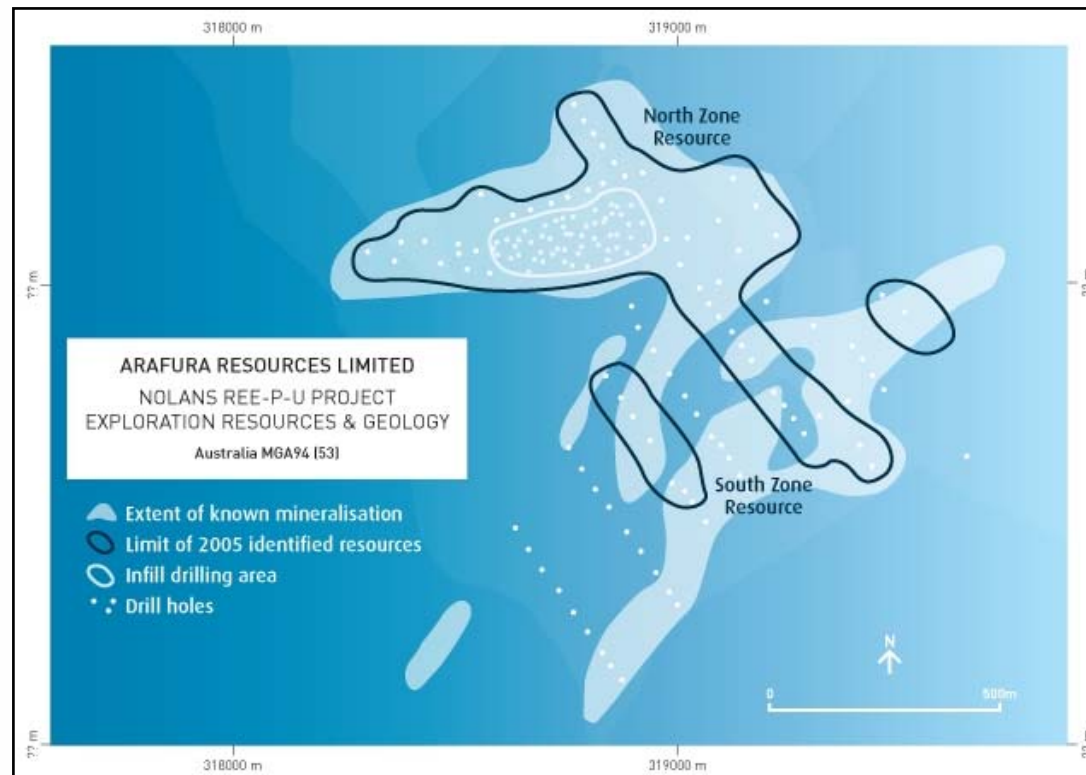
18.6 mt of indicated & Inferred resources - JORC standard

577,000 tonnes REO (3.1%) and 2.1mt  $P_2O_5$  (14%)

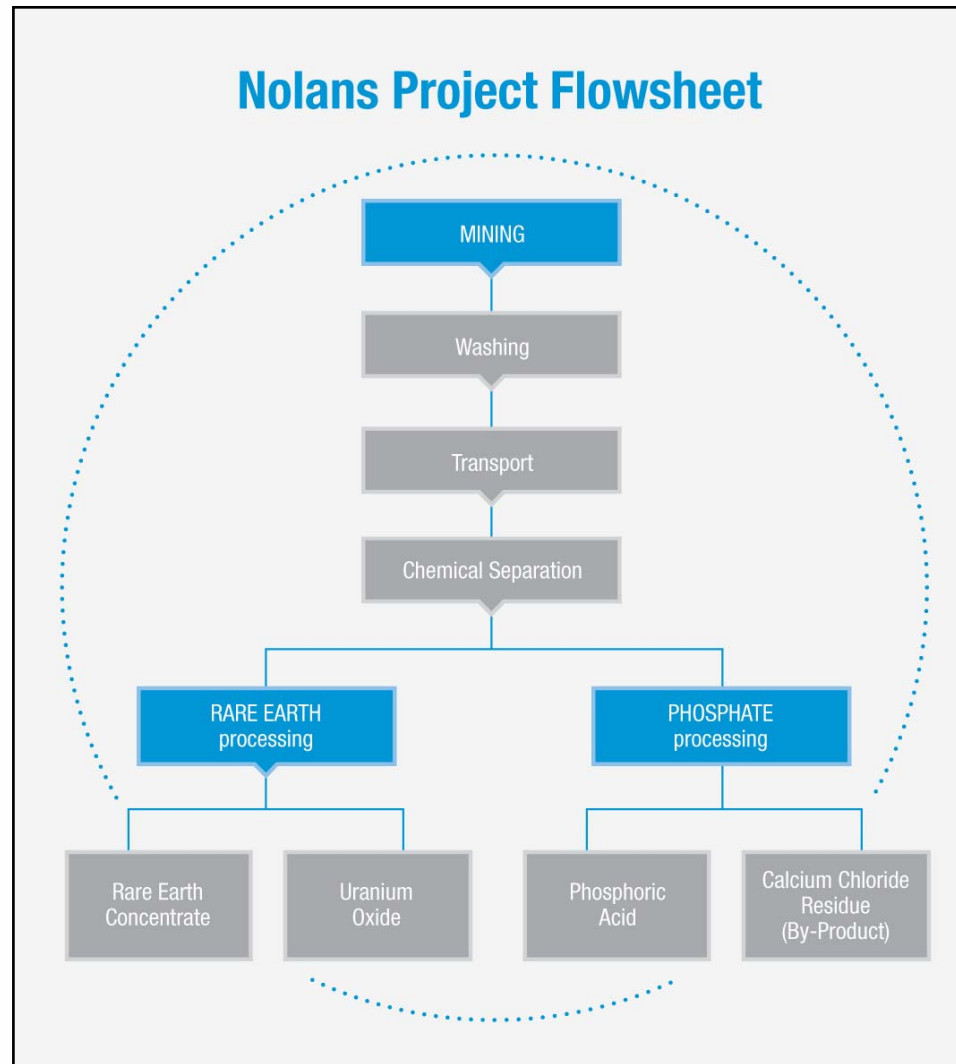
Only drilled to 100m below surface – open at depth

Current drilling looking for the lateral closure – still open along strike

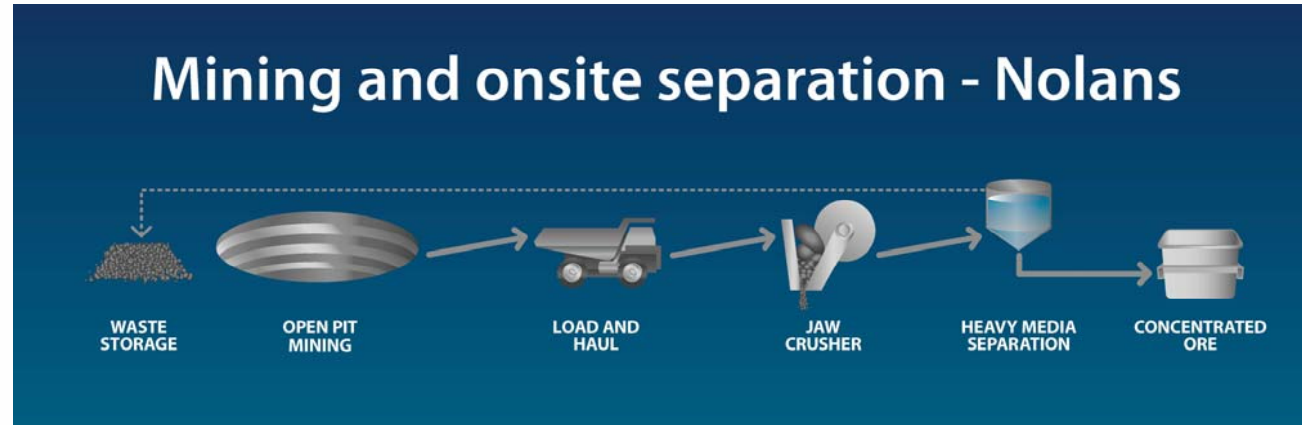
Is exposed at surface – no expensive pre-stripping



# Nolans project flowsheet



# Heavy media separation (HMS)



2007 test work returned positive results

- 30% rejection of waste and 95% recovery of REO and Phosphate
- Upgrades the resource from 3.1% REO to a process feed grade of 4.2%

Pilot plant trials currently 50% complete

- Initial results are replicating 2007 test work
- Material currently in transit to ANSTO for chemical processing
- Additional trials underway to improve waste rejection – looks promising
- An efficient method to reject waste and increase feed grade very cheaply



# Nolans capital costs

| <b>PFS Capital costs accurate to <math>\pm 30\%</math></b> |                                        |               |
|------------------------------------------------------------|----------------------------------------|---------------|
| Equipment costs $\pm 30\%$                                 |                                        | AUD\$ million |
|                                                            | Mine site capital costs                |               |
|                                                            | - mine, HMS and site offices           | 75            |
|                                                            | Processing plant*                      | 215           |
|                                                            | <i>Total</i>                           | <i>290</i>    |
| Direct costs $\pm 30\%$                                    |                                        |               |
|                                                            | Civil, concrete, pipes, electrical etc | 160           |
| Indirect costs $\pm 30\%$                                  |                                        |               |
|                                                            | EPCM                                   | 90            |
|                                                            | First fill and working capital         | 90            |
| <b>Sub total plant costs <math>\pm 30\%</math></b>         |                                        | <b>630</b>    |
| Project contingency                                        |                                        | 120           |
| <b>TOTAL CAPITAL ESTIMATE <math>\pm 30\%</math></b>        |                                        | <b>750</b>    |

\*includes all grinding, leaching, phosphoric acid, rare earths (to 99% separated product) calcium chloride and uranium plant – based on Australian built & manufactured plant



# Nolans operating costs

| PFS Operating costs accurate to $\pm 30\%$       |                         |
|--------------------------------------------------|-------------------------|
|                                                  | AUD\$ million per annum |
| Administration, mining and transport, and labour | 50                      |
| Chemicals                                        | 150                     |
| Power and maintenance                            | 50                      |
| <b>Sub-total operating costs</b>                 | <b>250</b>              |
|                                                  |                         |
| Transport of imported chemicals                  | 100                     |

Excludes royalties or corporate costs

Several chemical manufacturers have expressed strong interest in building and operating chlor-alkali and sulphuric acid plants on site that will eliminate transportation costs of imported chemicals





# Nolans revenues – at March 2008

|                                                      | Production per annum (tonnes) | Current price (\$US) | Total revenue US\$ million |
|------------------------------------------------------|-------------------------------|----------------------|----------------------------|
| Rare earths                                          | 20,000                        | *15,000/tonne        | 300                        |
| Phosphoric acid                                      | 150,000                       | 1,000/tonne          | 150                        |
| Calcium chloride                                     | 400,000                       | 100/tonne            | 40                         |
| Uranium                                              | 150                           | 75/lb                | 25                         |
| Total revenue                                        |                               |                      | US\$515                    |
| <b>Total Revenue at USD:AUD 0.90</b>                 |                               |                      | <b>AUD\$570</b>            |
| Less operating expenses (excluding transport costs)  |                               |                      | AUD\$250                   |
| Gross Margin                                         |                               |                      | AUD\$320                   |
|                                                      |                               |                      |                            |
| Revenue over 20 years undiscounted AUD\$11.5 billion |                               |                      |                            |

\*based on Nolans mix of rare earths

# Project timeline

Project Schedule

| Activity                     | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|------------------------------|------|------|------|------|------|------|
| Submit NOI Mine              |      |      |      |      |      |      |
| Studies for Mine approval    |      |      |      |      |      |      |
| Mine approval                |      |      |      |      |      |      |
| Pilot Plant Studies          |      |      |      |      |      |      |
| Definitive Feasibility Study |      |      |      |      |      |      |
| Process Plant Approval       |      |      |      |      |      |      |
| Pre-ordering & Construction  |      |      |      |      |      |      |
| Production 50%               |      |      |      |      |      |      |
| Production 75%               |      |      |      |      |      |      |
| Production 100%              |      |      |      |      |      |      |



# Nolans opportunities

## Increase in resources

Drilling has identified more mineralisation yet to be classified as resources

**Strategy** = resources available for future production expansion to meet market growth

## Heavy media separation optimisation

Improve waste rejection, optimise feed grade, & has cheap operating costs

**Strategy** = to reduce downstream operating and capital costs

## Pilot plant

To optimise the process in continuous conditions

## Capital costs

Seek overseas manufacture of some components to reduce capital costs

BFS will refine capital estimates to  $\pm 10\%$

## Operating costs

Onsite chemical manufacture will reduce transport costs by \$100m

Engagement started with sulphuric acid and chlor-alkali plant operators

## Revenues

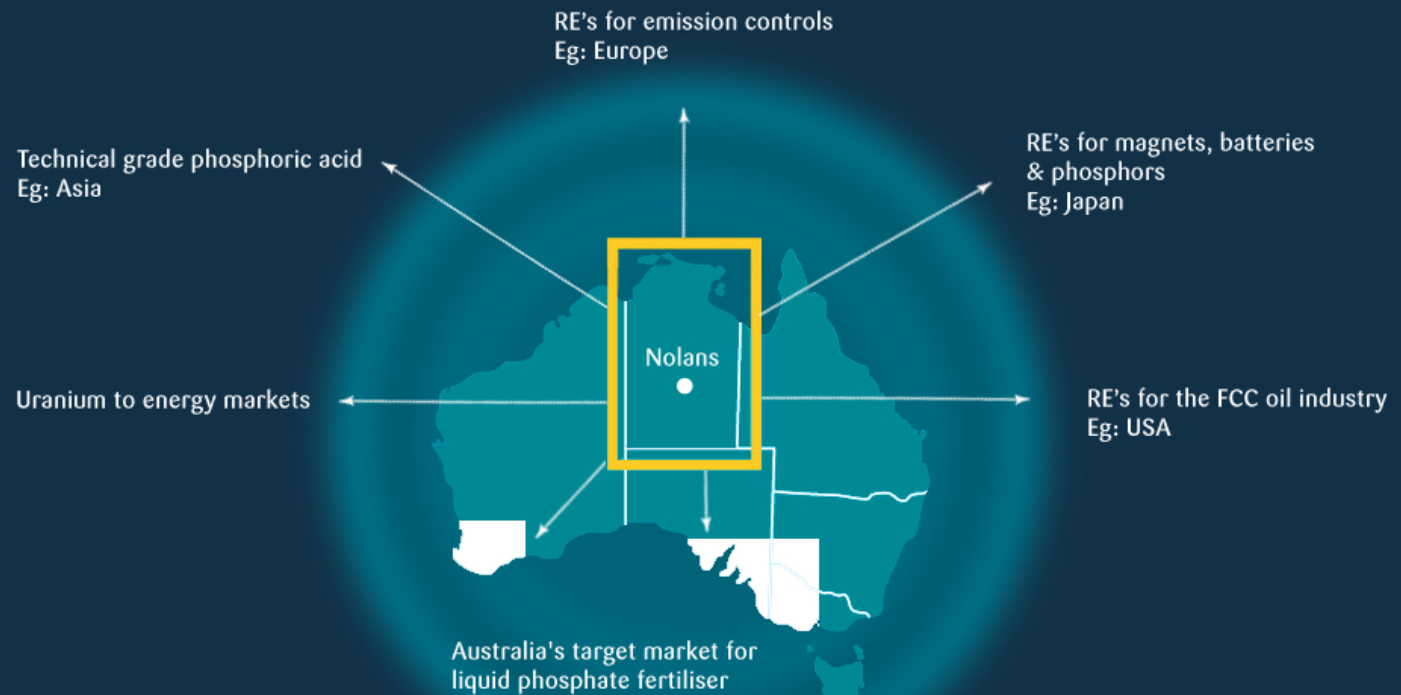
The rare earth and phosphoric acid markets continue to grow strongly

# Nolans markets



## OUR MARKETS

RESOURCES FOR THE FUTURE





## ENERGY PRODUCTION



### Petroleum Refining

Lanthanum oxide is used in petroleum cracking catalysts in the oil refining industry.



### High-powered Electric Motors

Neodymium, Dysprosium and Terbium are used in the strongest permanent magnets known. Electric motors use these magnets to achieve superior output in power generation from wind.



### New Generation Vehicles

Lanthanum is also used as a catalyst in hydrogen fuel cell technology.



## ENERGY REDUCTION



### UV Filters in Glass

Cerium added to glass is a filter of ultra-violet radiation used in many vehicles.



### Reducing Fuel Consumption

Neodymium is used in the electric motors in hybrid cars, which reduces fuel consumption.



### Lighter - Faster

Rare earths used in vehicles improve performance and lowers car weight resulting in reduced fuel consumption.



## ENERGY EFFICIENCY



### New Generation Vehicles

Neodymium and Samarium are used in the strongest permanent magnets known. Electric motors in hybrid cars use these magnets to achieve superior output and torque.



### Rechargeable Batteries

Lanthanum is a key component in the rechargeable NiMH batteries used in hybrid cars.



### Energy Efficient Lighting

Praseodymium and Europium are key elements in rare earths used in energy efficient lighting.



## LIFESTYLE



### Colour Screen LCDs/PDPs

Europium, Terbium and Yttrium are used as phosphors in electronic screens.



### Components to Hardware

Neodymium permanent magnets and other rare earths are used in computer hard disk drives.



### Medical Services

Rare earths are essential components in MRIs.



### Autocatalysts

Mixed rare earth oxides are used in environmental catalysts including exhaust converters, chemical scrubbers and other gaseous products and waste streams.



# Nolans market opportunities

## Rare earths are in demand

### 1. Chemical catalysts

Market outlook moderately strong at 5% to 10% per annum

### 2. Magnets

Strong growth in the hybrid car market – wind power is the sleeper

Current production of NdFeB = 50,000t to double to 100,000t by 2010

Market growth currently 15% to 20% per year

### 3. Phosphorescence

Strong outlook in the plasma panel market

Demand growing at 40% per annum

## Phosphoric acid

Agricultural productivity - the World's need for more protein

Biofuel market - growing rapidly in volume, strength and reputation

## Calcium chloride

Australia's need to reduce water wastage in mining & industry



# Nolans project flow-on benefits

## Regional

A stronger resources sector in the Northern Territory

Indigenous benefits and regional business opportunities

## National

Synergies with chemical production – growing on gas

Helping Australia to climate ready the world

## Global

Fostering products for sustainable energy

fostering efficient energy use - lights

fostering energy innovation – hybrid cars, wind farms

fostering innovating change in our lifestyle – smaller, faster, cleaner





# Nolans funding strategy - options

## **Arafura key stone investor(s)**

1. Strategic equity holders to assist in attracting further investment

## **Nolans Joint Venture**

1. A partner to support the Bankable Feasibility Study
2. Looking for a significant contribution to capital in return for a guaranteed off-take

## **Debt financing**

1. Structuring finance (eg: up to 30% debt)
2. Several approaches to Arafura indicate that some overseas banking facilities will finance nationally strategic projects at favourable rates – Rare Earths & Nolans fits this criteria.

## **Forward sales**

1. Can we forward sell \$100m or more of uranium by-product?
2. Strong demand and several informal approaches have already been made

## **Equity**

1. To minimise shareholder dilution for strong returns
2. Looking to keep the register below 300m shares





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