

BBY 2010 Rare Earth Conference

1 February 2010



67	68	69	70	71
La	Ce	Pr	Nd	Pm
62	63	64	65	66
Sm	Eu	Gd	Tb	Dy
67	68	69	70	71
Ho	Er	Tm	Yb	Lu
Lanthanum 138.905	Cerium 140.12	Praseodymium 140.908	Neodymium 144.24	Europium 151.964
Samarium 150.36	Gadolinium 157.25	Terbium 158.925	Dysprosium 162.5	Holmium 164.9303
Erbium 167.259	Thulium 168.9342	Ytterbium 173.04	Lutetium 174.967	

Disclaimer

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The information in this release that relates to exploration results and geological interpretation has been compiled by Mr Richard Brescianini BSc (Hons), and the information in this release that relates to metallurgical results and interpretation has been compiled by Mr Steve Mackowski BAppSc, both full-time employees of Arafura Resources. Mr Brescianini is a Member of the Australian Institute of Geoscientists and he has sufficient experience with the style of mineralisation being reported to qualify as a Competent Person as defined in the 2004 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code)” for reporting the exploration results. Mr Brescianini consents to the inclusion in this report of the contained technical information in the form and context in which it appears.

Mr Mackowski is a Fellow of the Australian Institute of Mining and Metallurgy and he has sufficient experience with the style of mineralisation being reported to qualify as a Competent Person as defined in the 2004 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code)” for reporting these metallurgical results. Mr Mackowski consents to the inclusion in this report of the contained technical information in the form and context in which it appears.



Arafura Resources Limited

Arafura is an Australian-based mineral exploration and development company which listed on the Australian Securities Exchange in 2003.

Our Vision is to be the pre-eminent supplier of rare earths to the world and we will do this by:

- developing the Nolans Rare Earths-Phosphate-Uranium Project; and
- pursuing long-term strategic growth opportunities in rare earths through exploration success and strategic partnerships.

We will relentlessly pursue growth in shareholder value in a sustainable way.



Corporate Structure (ASX: ARU)

As at 7 January 2010

Capital

259.2m shares; 15.5m Board/Employee options

Market capitalisation (ASX:ARU closing price @ 7 Jan 2010)

@ A\$0.88 = ~A\$228 million

Cash (@ 31 December 2010)

A\$12.2 million

Top shareholders

ANZ Nominees ¹	33.7%
ECE ²	24.9%
Board & management	3.6%
Citicorp Nominees	3.3%

1. Substantial German-based shareholding amongst many shareholders
2. East China Mineral Exploration & Development Bureau

Board & Management summary

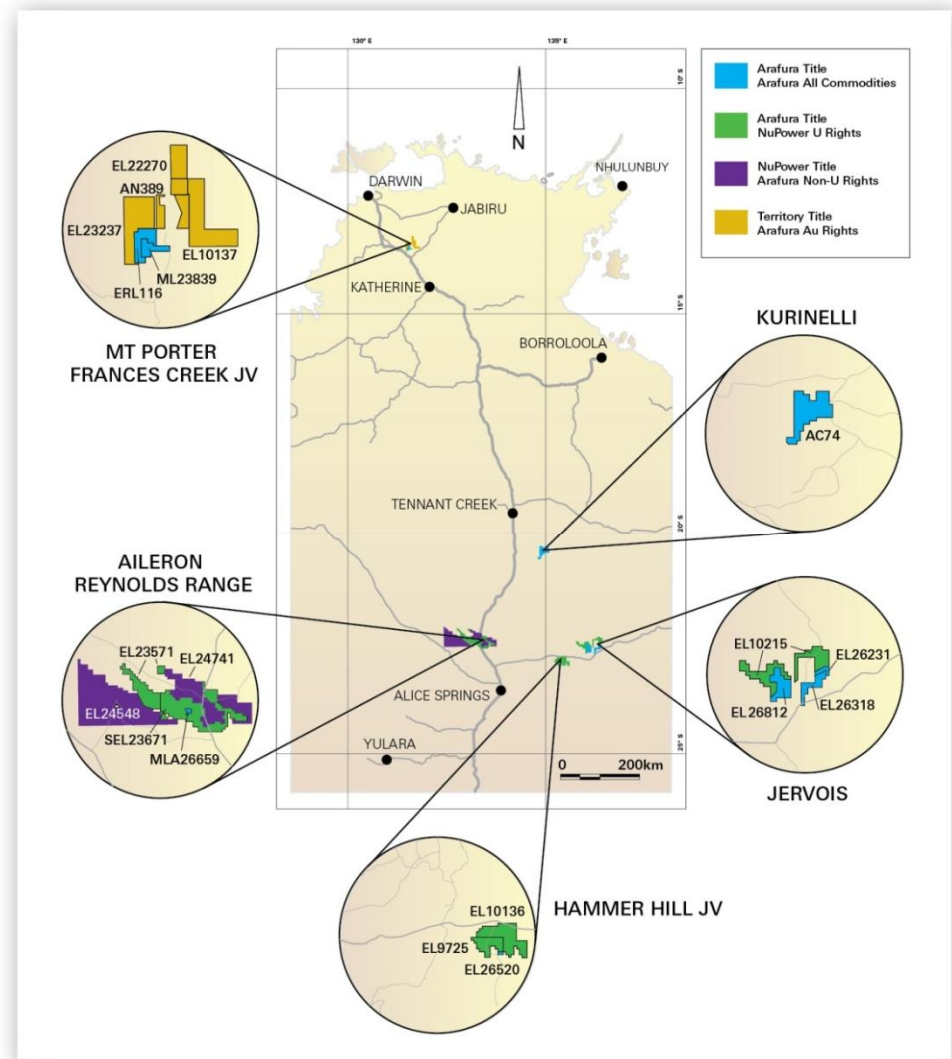
Proven skills and experience taking projects from greenfields exploration to production:

- Good blend of experience and skills.
- Start-up Directors / seed investors.
- New Directors with relevant experience added.
- Good blend of age distribution between board and management.
- Managerial specific expertise in:
 - Northern Territory
 - Fundraising
 - Political/Regulatory
 - Technical & Operations
 - Sales & Marketing
 - Community & Environment
- Board and Management leveraged to Arafura's success.

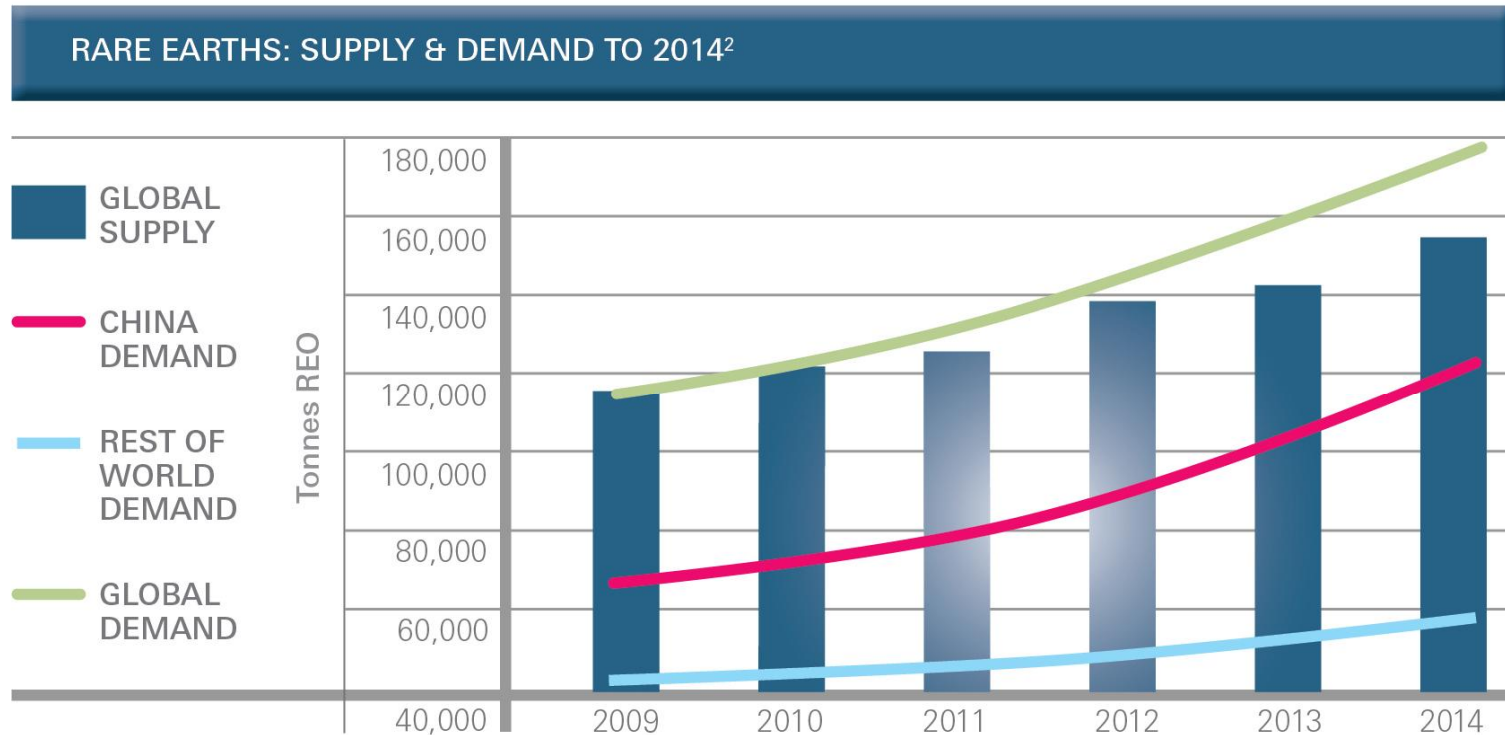
Business Plan

To create shareholder value by:

- focusing on the Nolans Rare Earths-Phosphate-Uranium Project.
- Identifying other rare earth projects
- JV or explore current projects in gold, base metals and iron-vanadium (ongoing JV discussions)



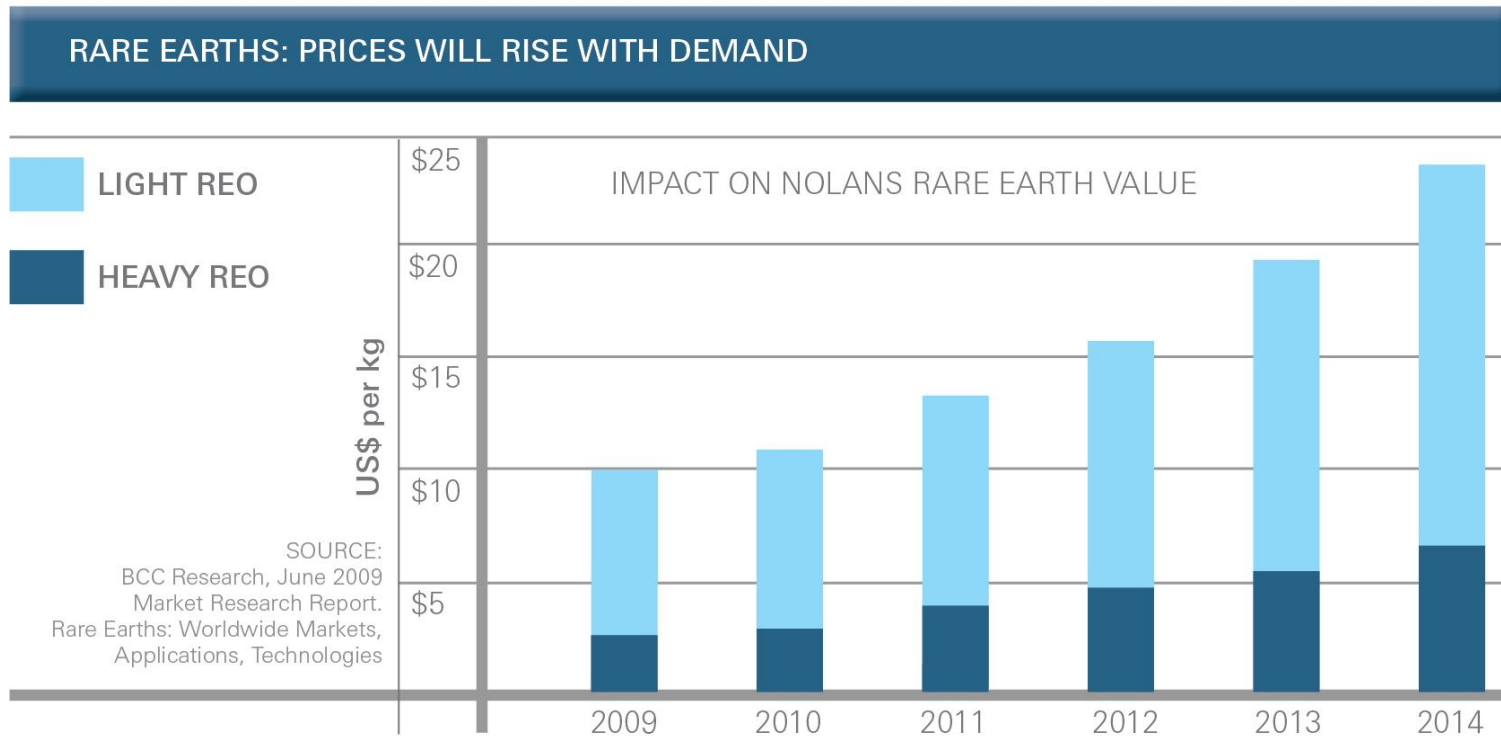
Rare earths ó demand growth, constrained supply



1,2: BCC Research, June 2009 Market Research Report. Rare Earths: Worldwide Markets, Applications, Technologies

BCC Research forecasts 7-9% Compound Annual Growth Rate increase in global demand for rare earths over the next five years. Equates to overall increase of +60,000 tonnes c.f. supply increase of +40,000 tonnes.

Rare earths ó prices forecast to rise significantly

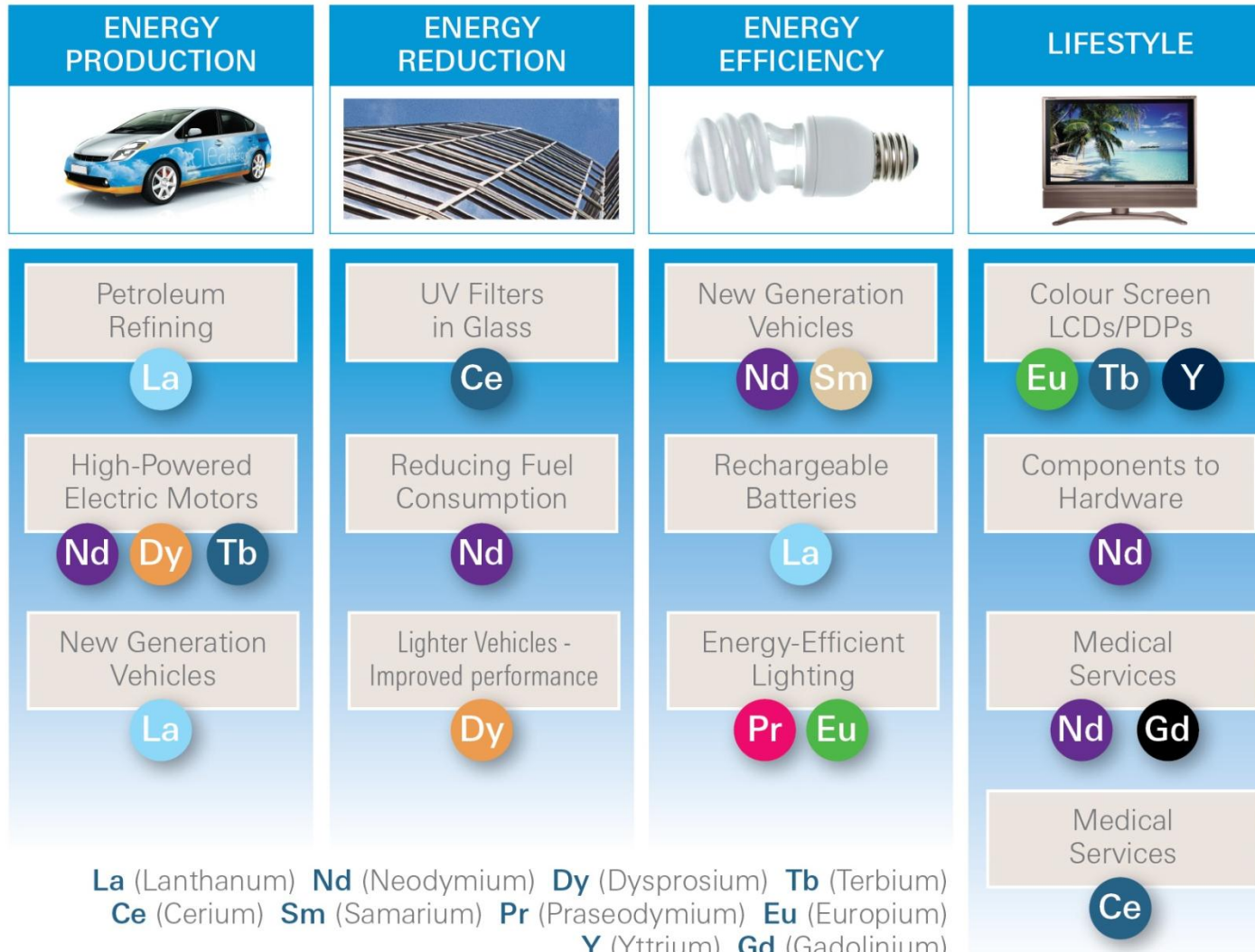


BCC Research forecasts 20-30% Compound Annual Growth Rate increase in rare earth prices over the next five years

Rare earths - global supply

- China currently supplies 95% of rare earths , Russia and India the rest.
- China restricting supply through industry consolidation, quotas and tariffs.
- New significant resources to supply the rest of the world in the near term are limited.
- Arafura well positioned to meet this growing demand.

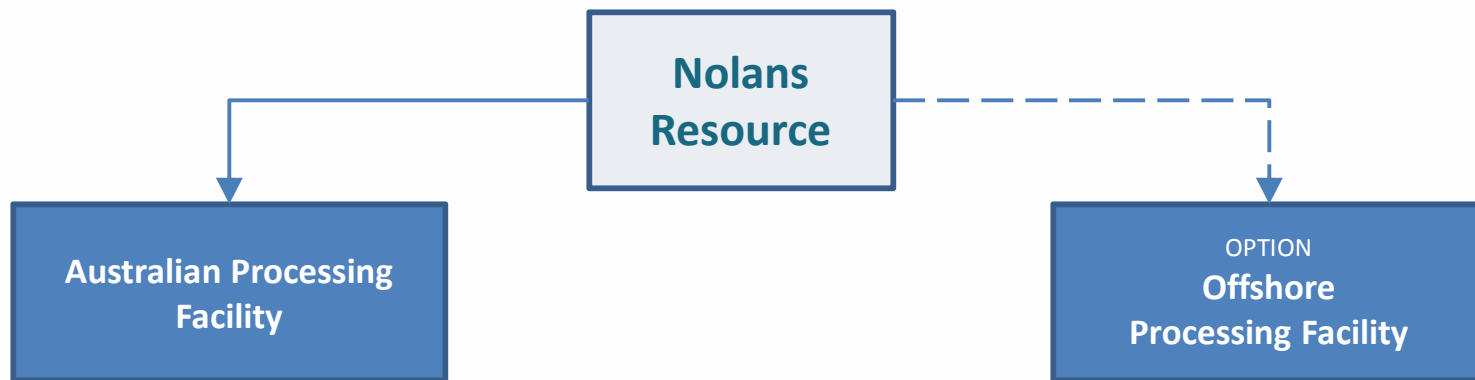
Rare earths - applications



La (Lanthanum) **Nd** (Neodymium) **Dy** (Dysprosium) **Tb** (Terbium)
Ce (Cerium) **Sm** (Samarium) **Pr** (Praseodymium) **Eu** (Europium)
Y (Yttrium) **Gd** (Gadolinium)

Arafura's rare earths business structure

- Nolans' current resource is sufficient to sustain production of 20,000 t of REO p.a for more than 20 years.
- With further drill programmes, Arafura is confident Nolans has geological potential to expand to support increased production beyond 20,000 t p.a.



Annual production	
REO	20,000t
P ₂ O ₅	80,000t
CaCl ₂	400kt
U ₃ O ₈	150t

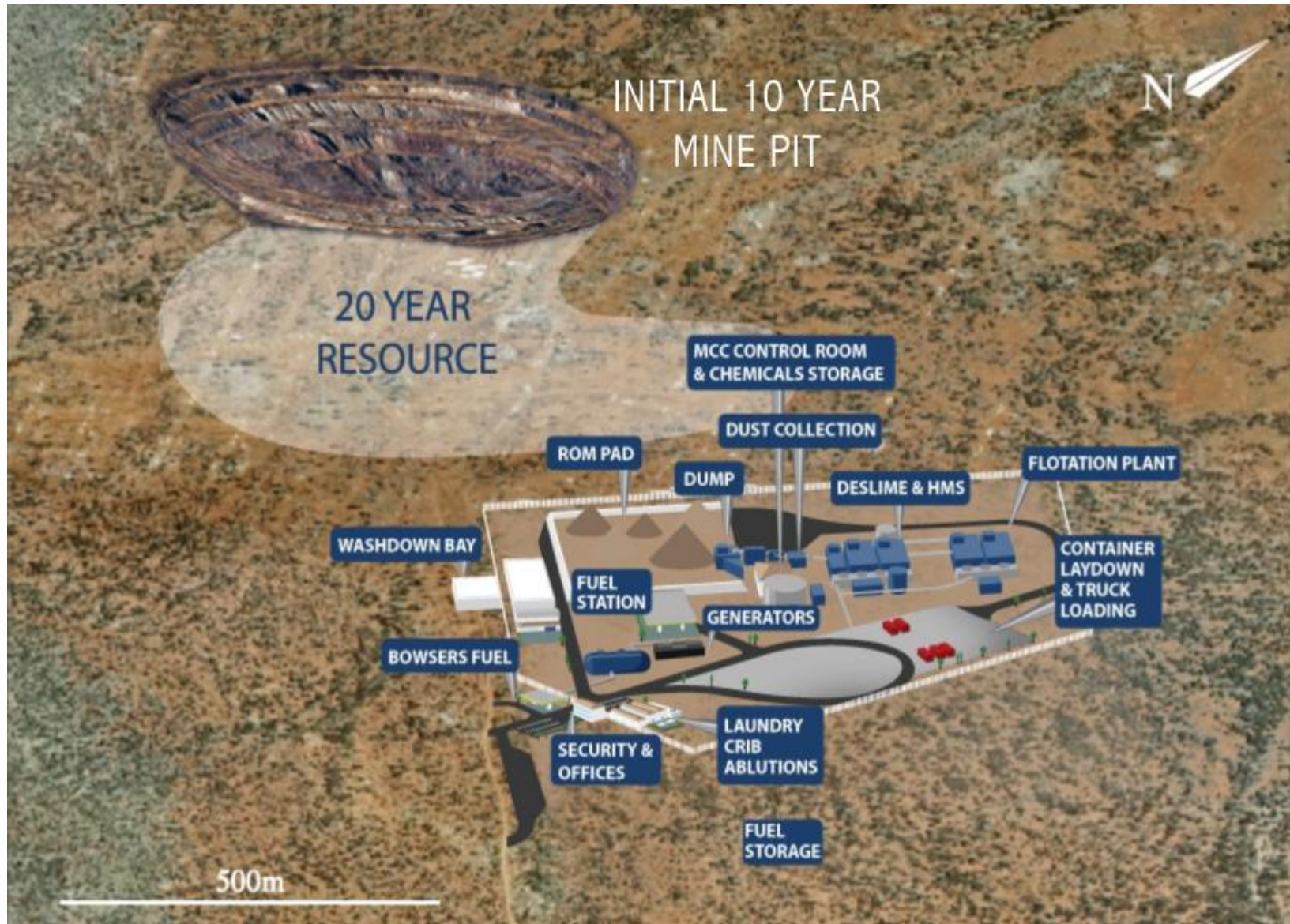
(if value creating for shareholders)

Nolans Location



- Central Australian location
- No competing land use but
- Not too remote from infrastructure
 - . 5 km to gas line
 - . 10 km to Stuart Highway
 - . 60 km to rail line
 - . 135 km north of Alice Springs
 - . 1200 km north to Darwin
 - . 1300 km south to Port Pirie

Nolans site design underway



A globally significant JORC resource

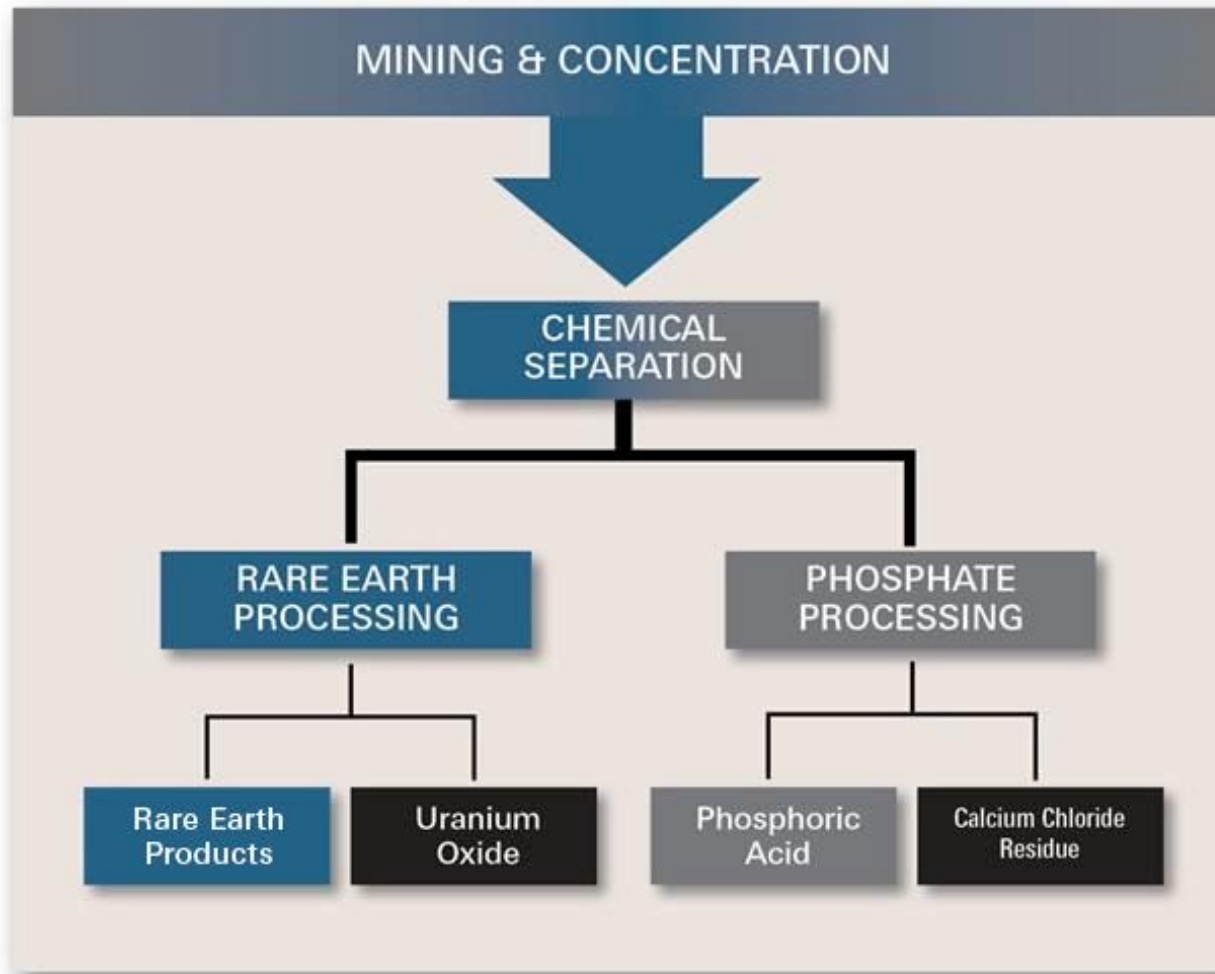
Total resources for Nolans Project

RESOURCES	TONNES ¹ (million)	RARE EARTHS REO %	PHOSPHATE P ₂ O ₅ %	URANIUM U ₃ O ₈ lb/t
Measured	5.1	3.2	13.5	0.57
Indicated	12.3	2.8	13.4	0.43
Inferred	12.8	2.6	12.2	0.40
TOTAL	30.3	2.8	12.9	0.44
CONTAINED METAL		848,000 t	3.9 Mt	13.3 Mlb

1. Using 1% REE cut-off grade

- Highly prospective deposit
- Ample scope to grow resource base (open at depth and along strike)
- Estimated initial mine life 20+ years, now planning further drilling with aim to increase resource base and confidence

Our Process



Processing technology makes a successful rare earths company

Arafura intellectual property developed to specifically exploit the Nolans deposit.

Proven process from mine site to product through Demonstration Plant

Demonstration plant



Heavy Media Separation



Froth Flotation

Utilising the expertise of ANSTO

Utilising the expertise of Bateman Litwin



Rare Earth Processing



Acid Bake



Phosphoric Acid SX



Rare Earth Carbonate



Uranium



Phosphoric Acid & CaCl₂

Nolans rare earths mix

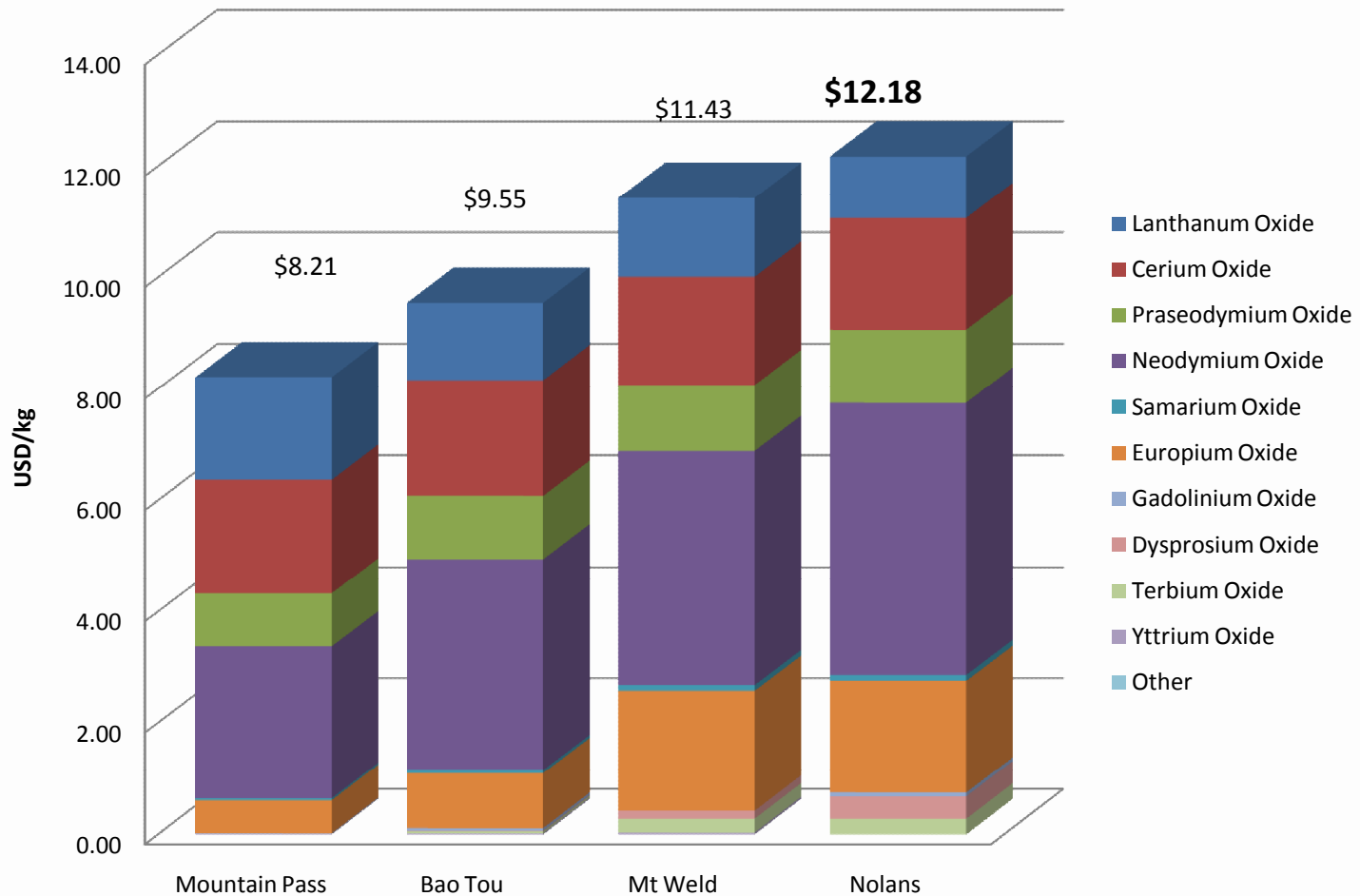
Nolans is enriched in higher value rare earths.

	RARE EARTH	REO Price 2009 ¹ (US\$/kg)	NOLANS CONTENT
LIGHT REO	Lanthanum	\$5.20	20.0%
	Cerium	\$3.95	48.2%
	Praseodymium	\$18.75	5.9%
	Neodymium	\$16.00	21.5%
LIGHT REO	Samarium	\$4.50	2.4%
	Europium	\$490.00	0.41%
	Gadolinium	\$6.75	1.0%
	Terbium	\$350.00	0.08%
	Dysprosium	\$110.00	0.34%
	Other	Unvalued	0.17%

¹ 4th Quarter December 2009, FOB China Domestic Price – Metals Pages

Superior rare earth mix ó a competitive advantage

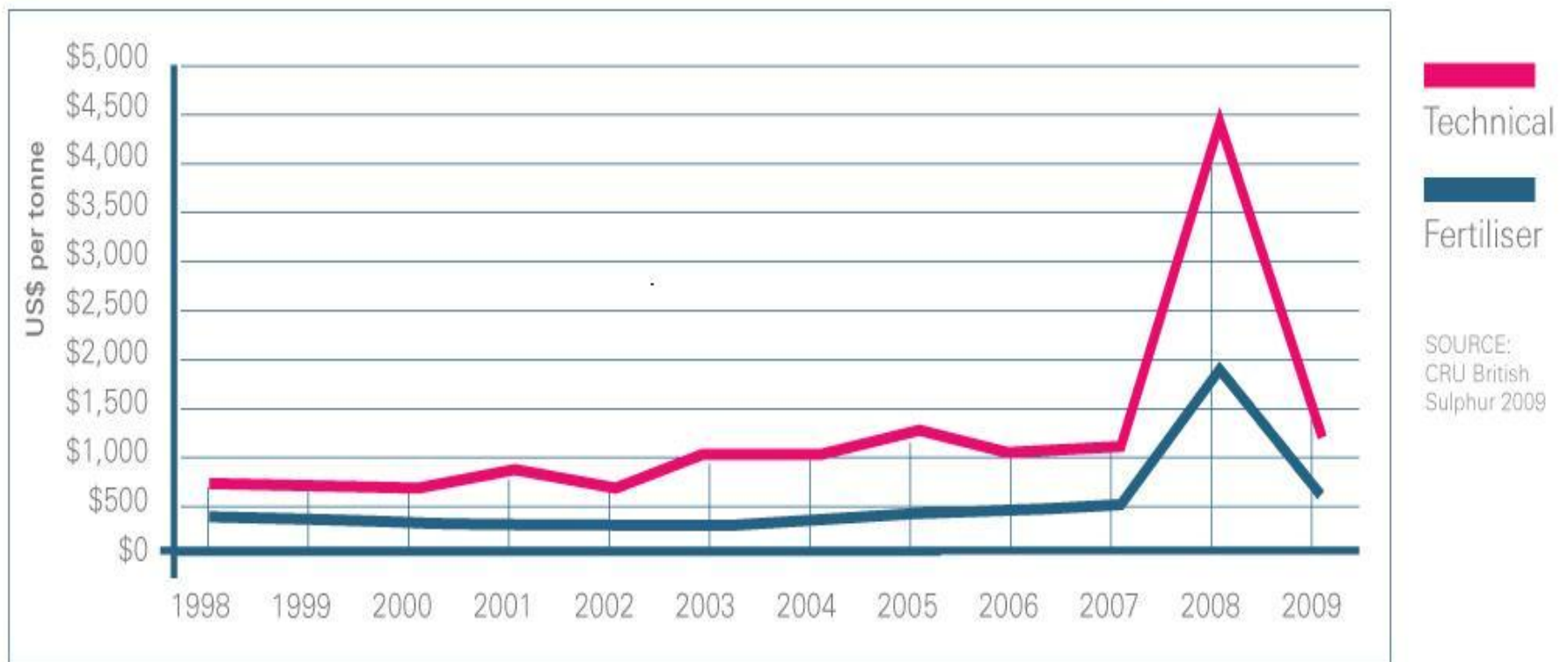
Relative REE Value
(December 2009 Pricing)



Multi-commodity deposit

Nolans has the additional benefit of other non rare earth products for value creation: phosphoric acid and uranium.

TECHNICAL vs FERTILISER-GRADE PHOSPHATE



Valuation update as at November 2009

Project valuation (estimated costs)	US\$ million
Capital Cost	\$420m
Sales Revenue	
Rare Earths separated products @ US\$10,000 per tonne	\$200m
Phosphoric Acid @ US\$750 per tonne	\$60m
Calcium Chloride @ US\$100 per tonne	\$40m
Uranium @ US\$50 per pound	\$15m
Total Revenue	\$315m
Annual Operating Costs	\$150m
EBITDA	\$165m
Net Present Value @10% after tax and capital payback	\$1.1 billion
Capital Payback	6 years
Production output per annum of: 20,000 tonnes of REO (@ 86% recovery) 80,000 tonnes of P ₂ O ₅ (@ 85% recovery) 330,000 pounds of U ₃ O ₈ (@ 80% recovery) 400,000 tonnes of CaCl ₂ (as residue)	

2009 ó key milestones

Arafura used the tightness in capital markets to concentrate on refining the chemical process which will add value by anticipated lower Capex and reduce Opex costs.

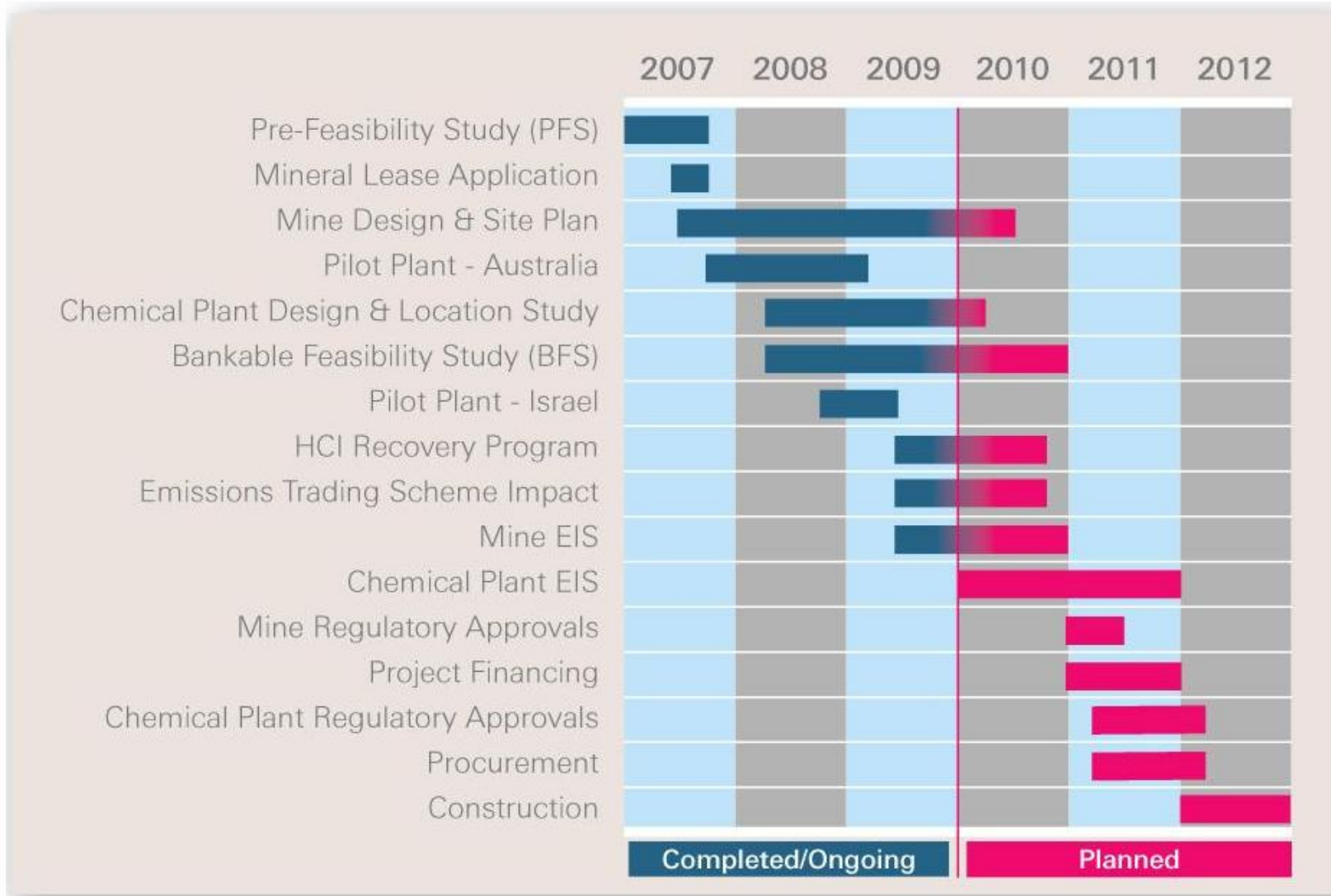
It also achieved the following key milestones:

- Established strategic relationship with Chinese investor, ECE
- Received A\$22.94 million investment from ECE
- Produced commercial grade rare earth carbonate from demonstration plant
- Improved the quality and recovery of phosphoric acid
- Identified significant capital and operating cost reductions since Nolans pre-feasibility study
- Increased rare earths recovery to 86% (previously 80%)
- Enhanced Nolans Project value with 63% increase in identified resources (now 30.3 million tonnes)
- Significant increase in share price

Moving forward ó the next steps

- Complete bankable feasibility study.
- Refine the debt/equity structure.
- Actively seek appropriate strategic partners and financiers
- Extensive drilling program to increase confidence and define resource.
- JV other assets.

Development timeline ó looking forward



Corporate Information

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For a copy of the 2009 Financial report
or further information please visit
www.arafuraresources.com.au



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Thank You