



Arafura Resources Limited

“Accelerating Towards Final Investment Decision”

November 2018

Investor Presentation

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The information in this presentation that relates to Exploration Results or Mineral Resources is based on information compiled by Mr Kelvin Hussey BSc (Hons). Mr Hussey is a Member of the Australian Institute of Geoscientists and he has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 (The JORC Code)". Mr Hussey consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears. Mr Hussey is a full-time employee of Arafura Resources.

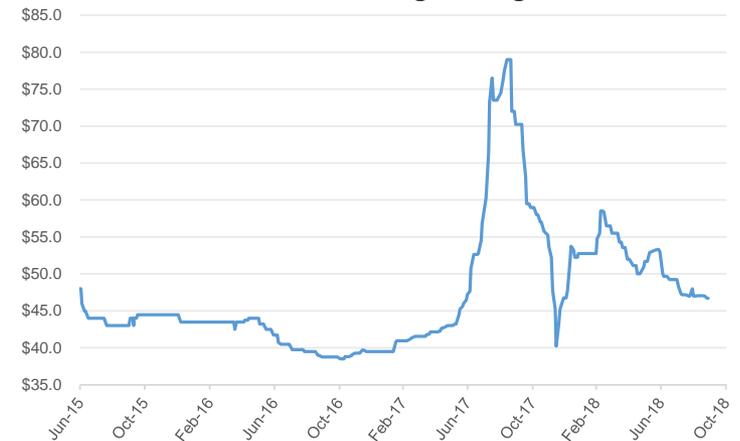
Introducing Arafura

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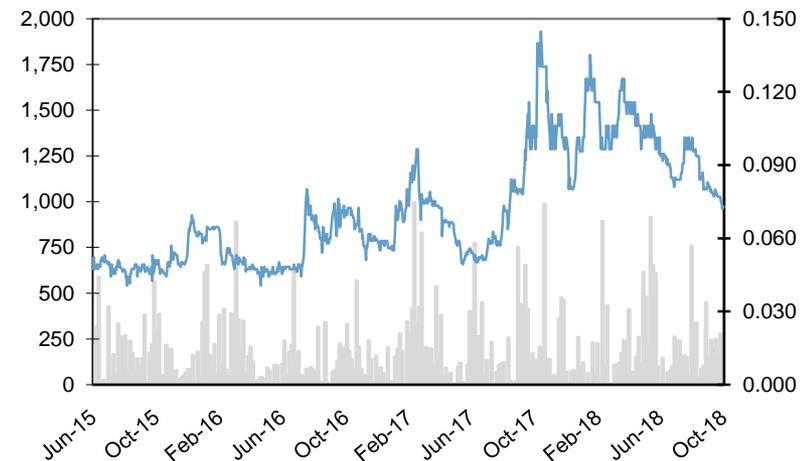
- Arafura Resources Limited (“**Arafura**”, “**Company**”) is an ASX listed company focussed on developing its 100% owned Nolans Rare Earths Project located in the Northern Territory, Australia.
- Neodymium-Praseodymium (“**NdPr**”) are two rare earth elements which are essential ingredients in rare earth permanent magnets. Rare earth magnets are used in electric vehicles, wind turbines and advanced weapon systems.
- China continues to dominate the global supply chain being the world's largest producer accounting for approximately 80%¹ of the NdPr for global rare earth permanent magnet production.
- Lynas Corporation Ltd (ASX:LYC) is the only significant miner and processor of rare earth materials outside China enjoying a market capitalisation in excess of \$1bn.
- With over \$150m spent on the Nolans Project to-date, the Company is now nearing final investment decision.

¹Source: Roskill

NdPr Oxide Pricing US\$/kg



Share Price Performance and Volume



Investment Highlights

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- **Globally Strategic Asset** – Nolans Rare Earth Project is one of the world's largest undeveloped NdPr projects with an existing JORC Compliant Resource of 56Mt at 2.6% TREO with 26.4% NdPr enrichment that could come to provide 5-10% of global demand of NdPr oxide for use in permanent magnets.
- **Lowest Cost Quartile** – Very low estimated OPEX of US\$6.23/kg TREO and US\$24.40/kg NdPr makes Arafura the lowest amongst peers and underpins a 30+ year mine life.
- **Highly Leveraged to Forecast NdPr Price Increases** – NdPr accounts for 85% of Nolans rare earth composition by value making Arafura highly leveraged to forecast increases in NdPr prices.
- **Tier 1 Jurisdiction** – 100% owned Nolans Rare Earth Project is located in the Northern Territory, Australia 10 km from Stuart Highway, 135km from Alice Springs railyard and adjacent to Amadeus natural gas pipeline.
- **Advanced Project** – Final stages of pilot program nearing completion, DFS expected December 2018 and final investment decision expected in 2019.

Australian Project

Lowest OPEX

Highly Leveraged
to NdPr Price

DFS December
2018

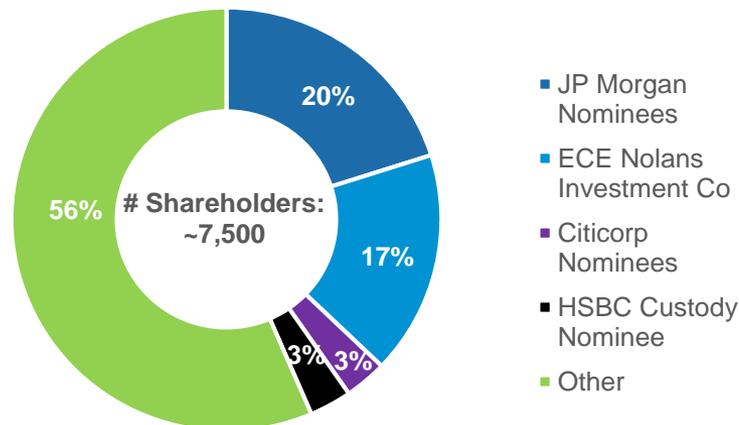
Final Investment
Decision 2019



Corporate Snapshot

Capital Structure	
ASX Code	ARU
ASX Share Price (15 Oct)	\$0.07
Shares on Issue	629,595,910
Market Cap (15 Oct)	\$44.1m
12 Month Liquidity	\$25.0m
Cash (30 Sept '18)	\$8.1m
Debt	Nil
Enterprise Value	\$36.0m
ECE Nolans Invest. Co	17.42%

Board	Position
Ian Kowalick	Non-Executive Chairman
Gavin Lockyer	Managing Director
Terry Grose	Non-Executive Director
Chris Tonkin	Non-Executive Director
Quansheng Zhang	Non-Executive Director
Mark Southey	Non-Executive Director



Experienced Board

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IAN KOWALICK
NON-EXECUTIVE CHAIRMAN

Ian Kowalick has qualifications in science, engineering, economics, and finance. From 1995 to 2000, he held the most senior management position in the South Australian public sector, and is currently the Chairman of the South Australian Forestry Corporation Board. Ian is a board member of the Northern Territory Power and Water Corporation.



TERRY GROSE
NON-EXECUTIVE DIRECTOR

Terry Grose has a strong commercial background gained over 30 years as a senior business executive, consultant, and director, in Australia and internationally. Terry worked in Hong Kong for over a decade in a senior financial role before establishing his own business, Grose International, a commercial and financial consultancy with clients throughout Asia.



GAVIN LOCKYER
MANAGING DIRECTOR

Gavin Lockyer's diverse, global experience has provided management and leadership opportunities in a range of disciplines including; Accounting, Financial & Investment Banking, Major Resource Development & Operations, and Global Bank Treasuries. Over the past 20 years his career has exposed him to business practices in North America, Europe, and Australasia.



QUANSHENG ZHANG
NON-EXECUTIVE DIRECTOR

Quansheng Zhang holds a Doctoral degree in Engineering and a Masters degree in Geophysical Prospecting. He is based in Nanjing in the Peoples Republic of China and is the General Manager of Hong Kong East China Non-Ferrous Mineral Resources Co Ltd (HKECE). Quansheng has over 30 years of mineral prospecting and exploration experience, and expertise in mineral resource surveys and geophysics.



CHRIS TONKIN
NON-EXECUTIVE DIRECTOR

Chris Tonkin has over 35 years' experience as a senior business executive with a broad industry background in business generation, management, and strategy development. He is a member of Arafura Resources' Remuneration and Nomination and Audit and Risk Committees and is also Chairman of Lakes Oil NL.



MARK SOUTHEY
NON-EXECUTIVE DIRECTOR

Mark Southey has previously held senior executive positions with Honeywell and ABB both in Australia and internationally, and more recently was part of the global executive leadership team within WorleyParsons, where he held the position of Group Managing Director for the Minerals, Metals and Chemicals Sector.

Experienced Management

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RICHARD BRESCIANINI
GENERAL MANAGER EXPLORATION &
DEVELOPMENT

Richard has over 30 years' experience in the minerals industry. He worked with BHP Minerals on base and precious metals exploration programs throughout Australasia and North America, contributing to significant economic discoveries at Eloise (copper-gold) and Cannington (silver-lead-zinc). Thereafter he led the Northern Territory Government's Geological Survey as its Director from 2003 to 2007 before joining Arafura.



LLOYD KAISER
GENERAL MANAGER SALES,
MARKETING & TECHNOLOGY
DEVELOPMENT

Lloyd has more than 10 years' experience in the sales and marketing of industrial minerals into high value sector markets including the nuclear, automotive, and advanced ceramics sectors. Prior to joining Arafura, he held several senior positions in account management, business development and marketing across a diverse range of commodities and chemicals including alumina, coal, industrial minerals, refractories, and ceramics.



PETER SHERRINGTON
CHIEF FINANCIAL OFFICER & COMPANY
SECRETARY

Peter commenced employment with Arafura in 2008 as Commercial Manager and was appointed Chief Financial Officer in July 2013. He has more than 20 years' experience in professional and corporate roles in Perth. Prior to working with Arafura, he held senior finance and commercial positions with several ASX and public unlisted entities. He has also worked in public practice for 10 years in the areas of business services and corporate advisory.



BRIAN FOWLER
GENERAL MANAGER NT & SUSTAINABILITY

Brian has worked for over 40 years in private sector mineral companies developing a range of commodities, including rare earths, base metals, and gold. Brian is a member of the Northern Territory Mining Board, Management Board of the Northern Territory Minerals Council of Australia, and a member of Work Health & Safety Advisory Council of the Northern Territory.



STEWART WATKINS
PROJECT MANAGER – NOLANS PROJECT

Stewart has 25 years' experience in many facets of the mining industry including operations, engineering consulting, project development and management. Stewart is a Fellow of the AusIMM.



NdPr Price Linked to Geopolitical Events



- 1** China imposes first rare earth export quota of 48kt REO pa; NdPr trades at US\$6/kg
- 2** China imposes 10% export tariff on rare earths; NdPr trades at US\$21/kg
- 3** NdPr trades at US\$30/kg Arafura's market cap hits \$270m
- 4** China reduces rare earth export quota by 15% to 30kt REO pa
- 5** China imposes embargo on rare earths to Japan following dispute over Sankaku Islands
- 6** NdPr trades at US\$104/kg; Arafura's market cap hits \$615m
- 7** US/China Trade War commences with US imposing tariffs of circa US\$30bn
- 8** Trade war intensifies with US increasing tariffs to US\$200bn
- 9** US Department of Defense prohibited from acquiring rare earth magnets from China, Russia, Iran and North Korea from fiscal 2019; NdPr trades at US\$47/kg

Geopolitical Tensions are Rising

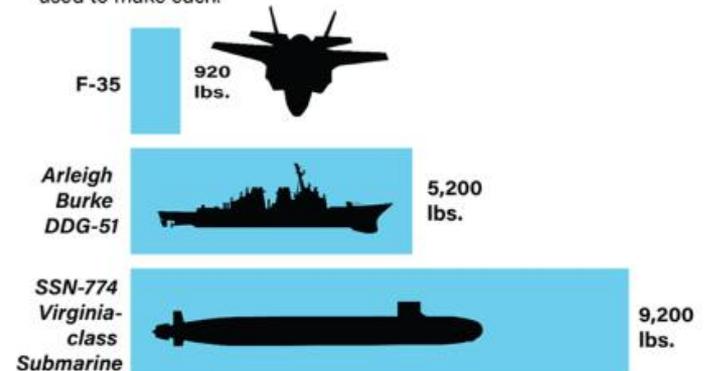
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- US dominated the rare earth market supply in the 1960s.
- In 1992, Chinese Leader Deng Xiaoping, said, “*The Middle East has oil; we have rare earths*”. China’s embarks upon coordinated policy to ramp up domestic rare earth production.
- China now dominates the rare earth market supplying circa 80% of NdPr for global magnet production.
- China/U.S trade-war continues to escalate with US recently imposing tariffs on an additional \$200bn in Chinese goods.
- President Trump recently signed into law the *John S. McCain National Defense Authorization Act for Fiscal Year 2019* prohibiting the US Department of Defense from acquiring rare earth magnets from China, Russia, Iran and North Korea.
- Japanese state-owned Japan Oil, Gas and Metals National Corp (JOGMEC) and Sojitz Corp provided project funding to Lynas Corporation to ensure supply of rare earths from outside China.
- Media reports a review of Lynas’ Malaysian operations scheduled for November by Malaysian Government.



Rare Ingredients

Here is the breakdown of rare-earth materials used to make each.



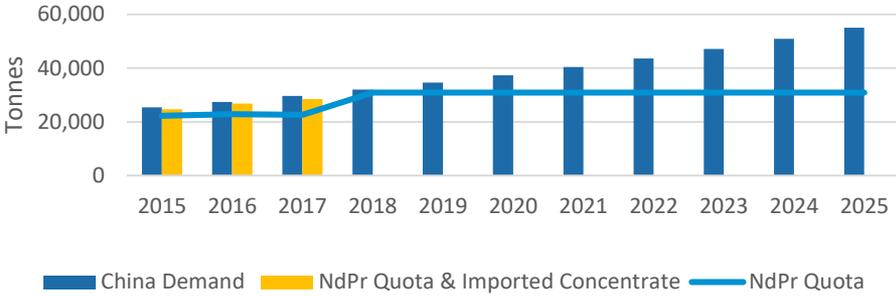
Source: Congressional Research Service



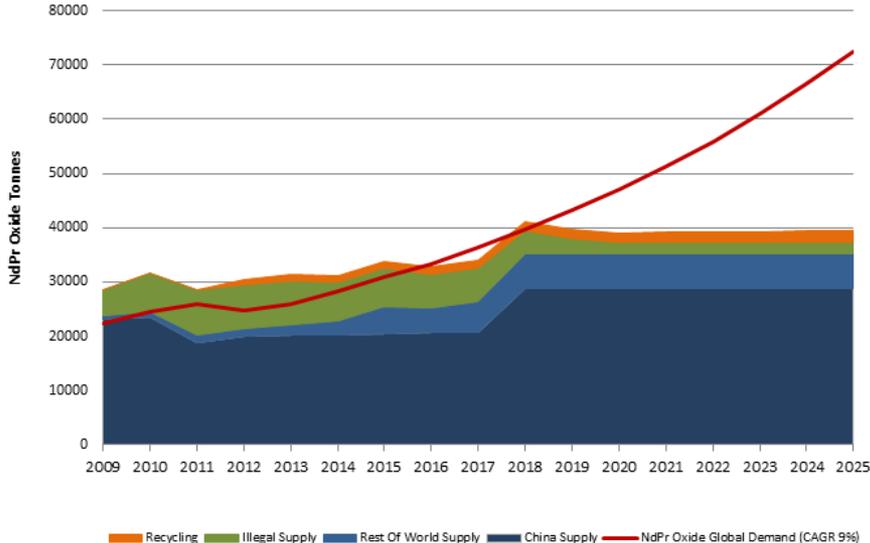
China Becoming a Net Importer of NdPr

- China’s domestic NdPr consumption will increase by over 30% in the next 5 years as it pursues clean energy objectives and global leadership in EV manufacturing.
- Supply reforms, industry consolidation and higher environmental standards will constrain China’s ability to rapidly increase NdPr production.
- ROW supply is being sourced from Malaysia and notionally illegal China sources.
- Increased NdPr consumption combined with constrained supply could result in China moving from being the world’s major source of NdPr to a net importer by the early 2020s.
- With overall NdFeB magnet growth at 9% CAGR additional non-Chinese supply will be required to meet demand as China struggles to maintain additional supply year-on-year.

NdPr Oxide China

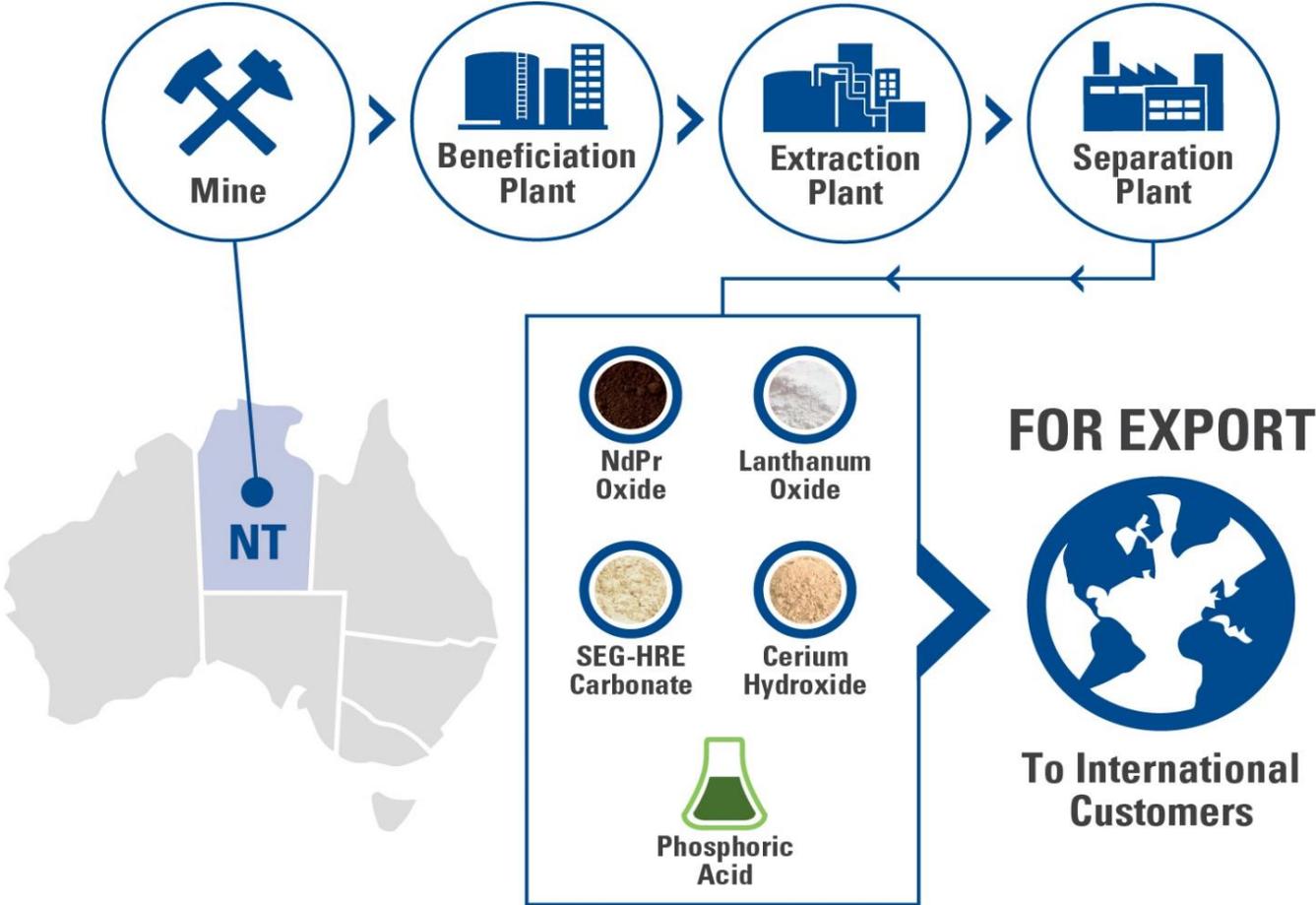


NdPr Oxide Supply & Demand



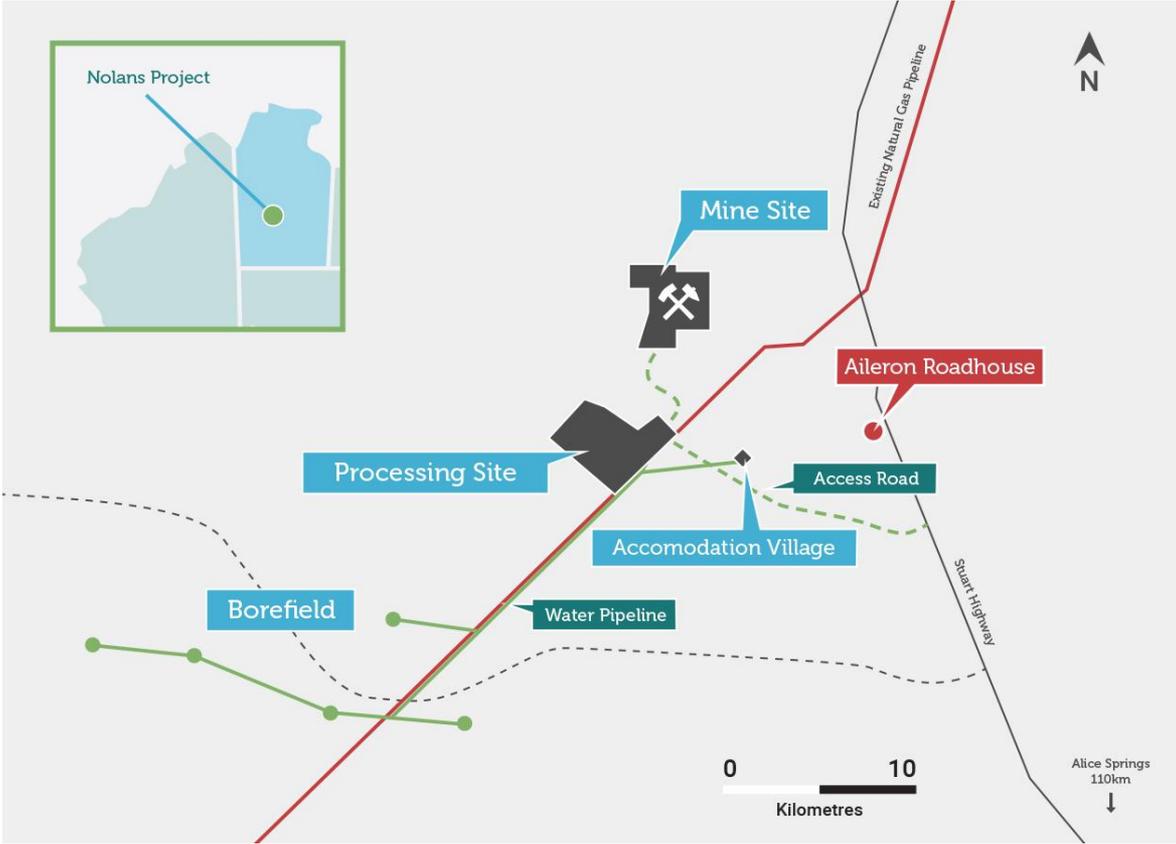
Source: ACREI, Adamas Intelligence, Asian Metal and Shanghai Metals Market

100% Australian Domiciled Project



Close To Key Infrastructure

- Stuart Highway is 10 km east.
- Alice Springs railyard, airport and other services are 135 km south.
- Amadeus natural gas pipeline is adjacent to project site.
- Water supply is 30 km south.
- Tailings and process wastes remain at site.
- Product traceability and waste management certainty





Flowsheet Piloting Nearing Completion

Phase 1 Beneficiation	Phase 2 Phosphate Extraction	Phase 3 Bulk Pre-Leach	Phase 4 Acid Bake	Phases 5 & 6 Rare Earth Processing	Phase 7 Rare Earth Separation
<ul style="list-style-type: none"> • 5,000 kg high-phosphate concentrate • >82% NdPr recovery • >90% P2O5 recovery • Met performance objectives 	<ul style="list-style-type: none"> • Merchant grade phosphoric acid suitable for fertilizers • 3% TREO losses to gypsum waste • Met performance objectives 	<ul style="list-style-type: none"> • 2,000 kg pre-leach residue • Met performance objectives 	<ul style="list-style-type: none"> • Successful use of paddle dryer technology • Met performance objectives 	<ul style="list-style-type: none"> • Pilot setup and operation scheduled 	<ul style="list-style-type: none"> • Planning well advanced
SUCCESSFULLY COMPLETED	SUCCESSFULLY COMPLETED	SUCCESSFULLY COMPLETED	SUCCESSFULLY COMPLETED	ADVANCED	ADVANCED

- Program reduces execution risk by addressing all key engineering and operational considerations prior to commissioning of the commercial facility.
- Draws on independent expert advice from specialist consultants and equipment vendors.



Beneficiation Pilot Plant



Phosphate Extraction Pilot Plant



Bulk Pre-Leach Pilot Plant



Acid Bake Pilot Plant

Definitive Feasibility Study Expected December 2018

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External Team appointed

- Process plant, infrastructure and lead study engineer: **Hatch**
- Mine planning and ore reserve: **Mining Plus**
- Mine geotechnical review: **AMC Consultants**
- Transport and logistics study: **Qube Bulk**
- Water supply study and design: **GHD and Ride Consulting**
- Tailings impoundment design, geotechnical and surface water management design: **Knight Piésold**
- Human resources: **Strategic Human Resources**
- Darwin port infrastructure: **GHD**
- Process simulation: **Simulus Engineers**
- Project support and project services: **IPS Consulting and Wave International**

Internal Team appointed

- **Additional Director:** Mark Southey, previously WorleyParsons Group Managing Director for Minerals, Metals and Chemicals.
- **Nolans Project Manager:** Stewart Watkins, chemical engineer (FAusIMM) 25 years experience.



 Hatch logo in red, bold, sans-serif font.


 Qube logo in yellow, bold, sans-serif font with a grey shadow.


 Knight Piésold Consulting logo in green, italicized serif font with 'CONSULTING' in black below.


Favourable Project Economics

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- Ultra competitive operating costs US\$6.23/kg TREO or US\$24.38/kg NdPr oxide is the lowest amongst peers.
- Highly leveraged to forecast NdPr price increases with NdPr accounting for 85% of Nolans rare earth composition by value.
- 30+ years LOM.
- CAPEX of US\$680m can be significantly reduced through project sell down.
- Final investment decision expected 2019.

Mining & Processing	
Mine life (years)	30+
Production	
TREO equivalent (tpa)	14,000
NdPr oxide (tpa)	3,600
La oxide (tpa)	2,660
SEG-HRE carbonate (tpa TREO equivalent)	660
Phosphoric Acid (tpa MGA)	110,000
Financial	
Capital cost (US\$m)	\$680
Operating cost (US\$m pa)	\$125
Operating cost (US\$/ kg TREO)	\$8.89
Operating cost (US\$/ kg TREO; less credit phos acid)	\$6.23
Operating cost (US\$/ kg NdPr; less credit phos acid)	\$24.38

Refer Arafura ASX release 7 June 2017 for additional and qualifying information on the Mineral Resources that underpin the production target and provides the material assumptions on which the production target is based

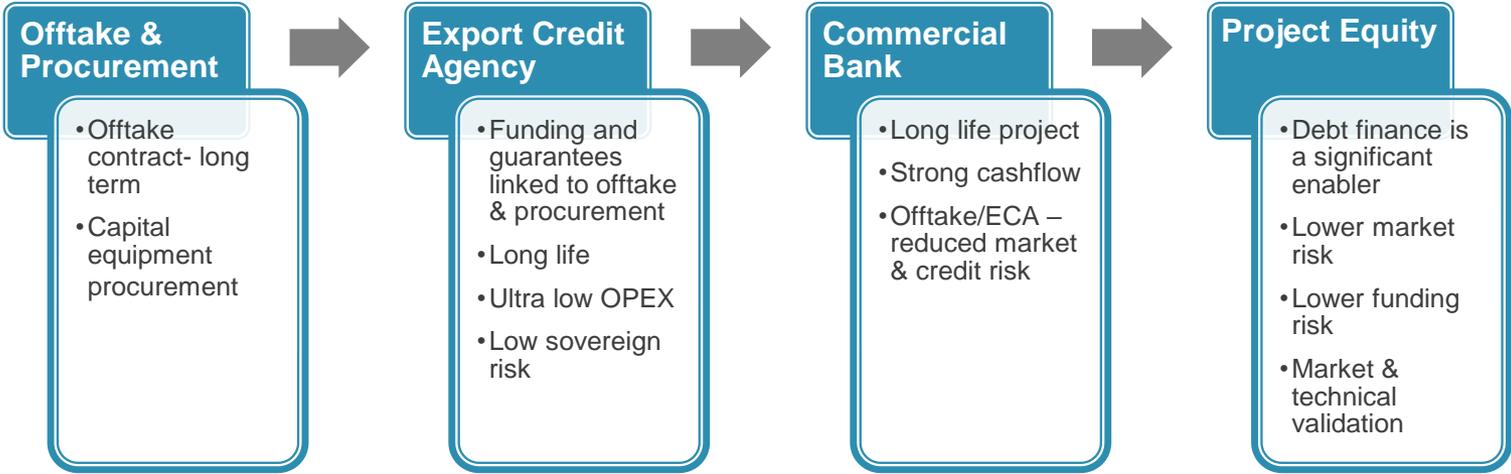
The Company confirms that all material assumptions underpinning the forecast financial information derived from its 14,000 tpa TREO production target and the production target itself, continue to apply and have not materially changed since the 7 June 2017 ASX release

Based on 14,000 tpa TREO production processing Measured and Indicated Mineral Resources as per Appendix A



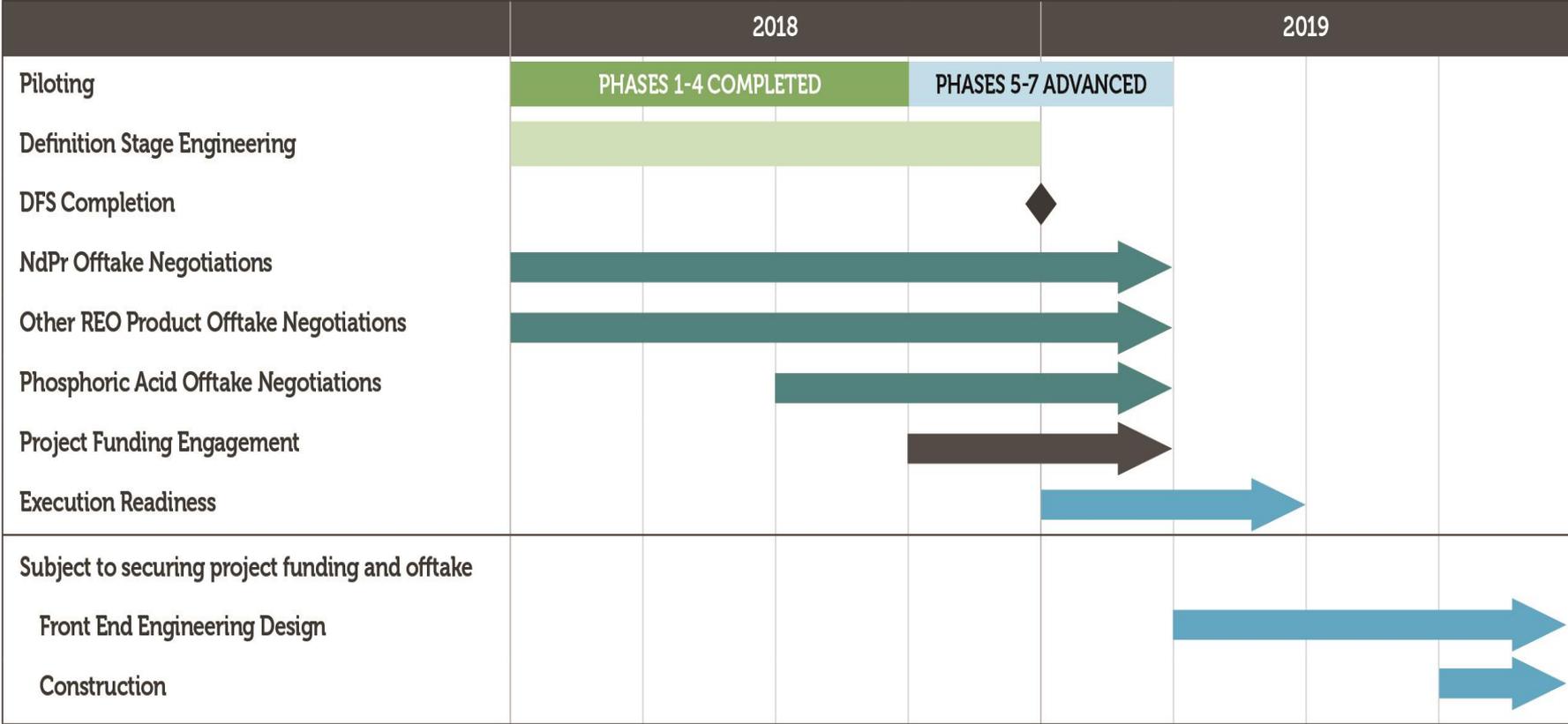
Project Funding Strategy

- Advancement of environmental approval critical enabler for engagement with offtakers, financiers and Export Credit Agencies (ECA).
- ECAs are key to providing government-backed funding and guarantees, leveraged against the strategic link to NdFeB magnet production. ECA funding linked to offtake arrangements, capital equipment supply, and construction.
- ECA-linked project finance is a catalyst to attract equity at corporate and/or project level.
- 100% project ownership provides flexibility for project sell down as a means to finance project.





Timeline & Targets



Why Arafura?

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- ✓ Australian project of global strategic importance.
- ✓ 100% owned asset with 30+ year mine life.
- ✓ Highly leveraged to forecast NdPr price increases.
- ✓ Environmental approval secured.
- ✓ DFS completion December 2018.
- ✓ Final investment decision 2019.

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Appendices

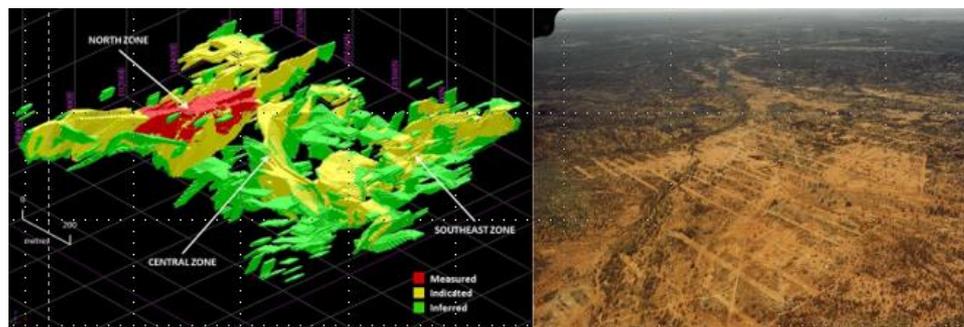
Appendix A: Mineral Resources

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RESOURCES	TONNES (m)	RARE EARTHS TREO %	PHOSPHATE P ₂ O ₅ %	NdPr Enrichment %
Measured	4.9	3.2	13	26.1
Indicated	30	2.7	12	26.4
Inferred	21	2.3	10	26.5
TOTAL	56	2.6	11	26.4

1% TREO cut-off grade. Numbers may not compute exactly due to rounding. "NdPr enrichment" is the proportion of TREO comprising Nd₂O₃ and Pr₆O₁₁.

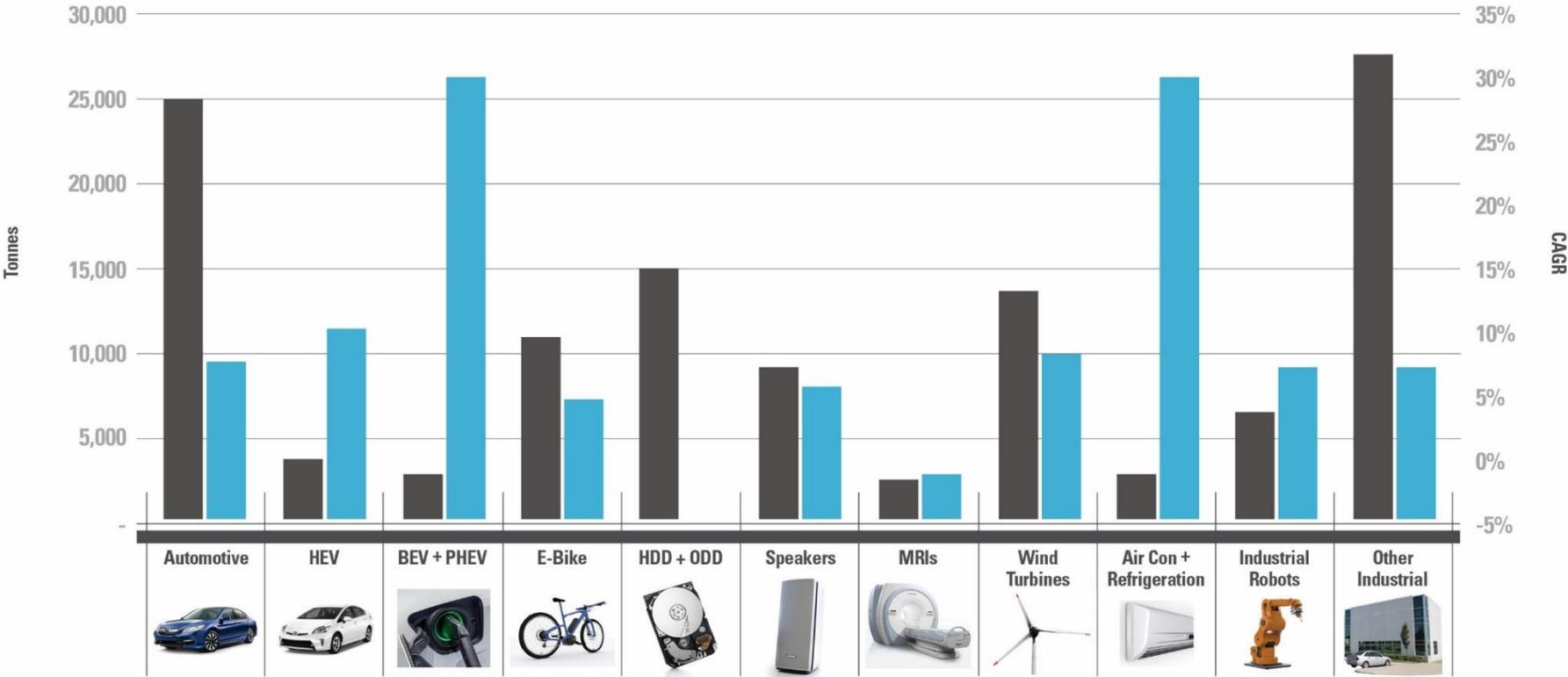
- Low resource risk via extensive drilling and detailed material type studies.
- Mineralization at surface and open at depth, below 215m.
- 90,000 metres of drilling.
- Amenable to low-cost open cut mining and standard beneficiation techniques.
- Apatite is the most abundant REE-bearing mineral.



Appendix C: Established Markets & Growing Applications

NdFeB Magnet Volume & Forecast Growth

■ NdFeB Magnet Tonnes 2016
■ Forecast CAGR% 2025



Source: Adamas Intelligence, Arnold Magnetic Technologies, Japanese industry participants, Roskill

Appendix D – NdFeB Magnet Vital To Automotive Market

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25,000 tonnes NdFeB magnets used in 2016 automotive market growing at 9% CAGR (total market 135,000 tonnes)

EVs and hybrids represent additional growth through Permanent Magnet Synchronous Motors (PMSM)

PMSM is dominant drive train technology for EVs

Recent announcements include:

- Most auto makers have EV targets of 10-60% by 2025.
- Tesla moving to PMSM for mass produced Model 3.
- Toyota to sell more than 10 EV models in 2020s and have EV versions of every Toyota and Lexus model by 2025 (December 2017).
- Ford increasing planned investment in EVs from US\$4.5 billion to US\$11 billion by 2022 and to introduce 16 EVs and 23 hybrid and plug-in hybrid models (January 2018).
- EV demand forecasts range from 'big' to 'very big' (HSBC March 2018).
- OPEC raises forecast global EV sales in 2040 from 50 million to 250 million; Bloomberg forecasts 500 million (March 2018).