

# ASX ANNOUNCEMENT

## BELL POTTER UNEARTHED NATURAL RESOURCES CONFERENCE

7 February 2023

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**Arafura Rare Earths Limited (ASX:ARU)** ("**Arafura**" or the "**Company**") is pleased to attach a copy of its presentation delivered by Chief Financial Officer, Mr Peter Sherrington, at the Bell Potter Unearthed Natural Resources Conference held today.

**-ENDS-**

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Lewis Lowe and Matthew Foy  
Company Secretary



*"Our goal is to be a trusted global leader and supplier of choice for sustainably mined and processed rare earth products, helping our customers deliver clean and efficient technologies. We are committed to delivering positive intergenerational economic, environmental and social benefits to our stakeholders."*

# Bell Potter Unearthed Natural Resources 2023

February 2023





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This presentation has been prepared by Arafura Rare Earths Limited (Arafura, Arafura Rare Earths or the Company) and is of a summary form only and therefore contains general background information which may not be complete. It should be read in conjunction with, and full review made of Arafura Rare Earths' disclosures and releases lodged with the Australian Securities Exchange (ASX) and available at [www.asx.com.au](http://www.asx.com.au).

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## Mineral Resources and Ore Reserves

The information in this presentation that relates to Mineral Resources is extracted from the Company's ASX announcement dated 7 June 2017 (Detailed Resource Assessment Completed) and was completed in accordance with the guidelines of the JORC Code (2012). The information in this presentation that relates to Ore Reserves is extracted from the Company's ASX announcement dated 16 March 2020 (Major Increase in Mine Life for the Nolans Project) and was completed in accordance with the guidelines of the JORC Code (2012). Arafura Rare Earths confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the original market announcements continue to apply and have not materially changed. Arafura Rare Earths confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

## Production Targets and Forecast Financial Information

The information in this presentation that relates to production targets and financial information is extracted from the Company's ASX announcement dated 11 November 2022 (Nolans Project Update). The production target is based on 12% Proved Reserves, 62% Probable Reserves and 26% inferred resources as reported in the Company's ASX announcement dated 11 November 2022. There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised. Arafura confirms that all material assumptions underpinning the production target and forecast financial information derived from the production target set out in the Company's ASX announcement dated 11 November 2022 (including any assumptions referred to in the Company's ASX announcement dated 11 November 2022 that were used from the DFS as set out in the Company's ASX announcement dated 7 February 2019 (Nolans Project Definitive Feasibility Study) or from the Updated Mining Study as set out in the Company's ASX announcement dated 16 March 2020 (Major Increase in Mine Life for the Nolans Project)), continue to apply and have not materially changed.

# Nolans Project Overview



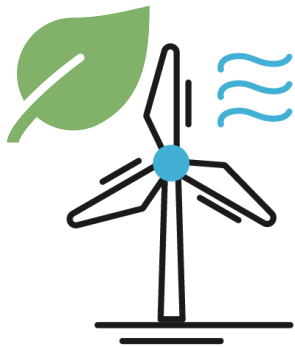
# Nolans Project

Australian based, NdPr focused and aligned with global energy transition

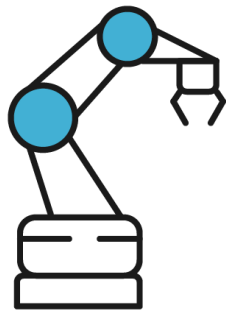
The Nolans Project contains all the Rare Earths but is particularly enriched in the 'Magnet Feed' Rare Earths NdPr



The dominant application for **NdPr Oxide** is in **NdFeB Magnets**, used in a wide range of specialty applications and key to electric vehicles (EV), offshore wind and more broadly energy transition.



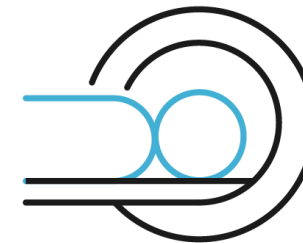
WIND  
TURBINES



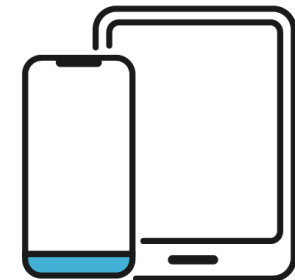
ROBOTS



ELECTRIC  
VEHICLES



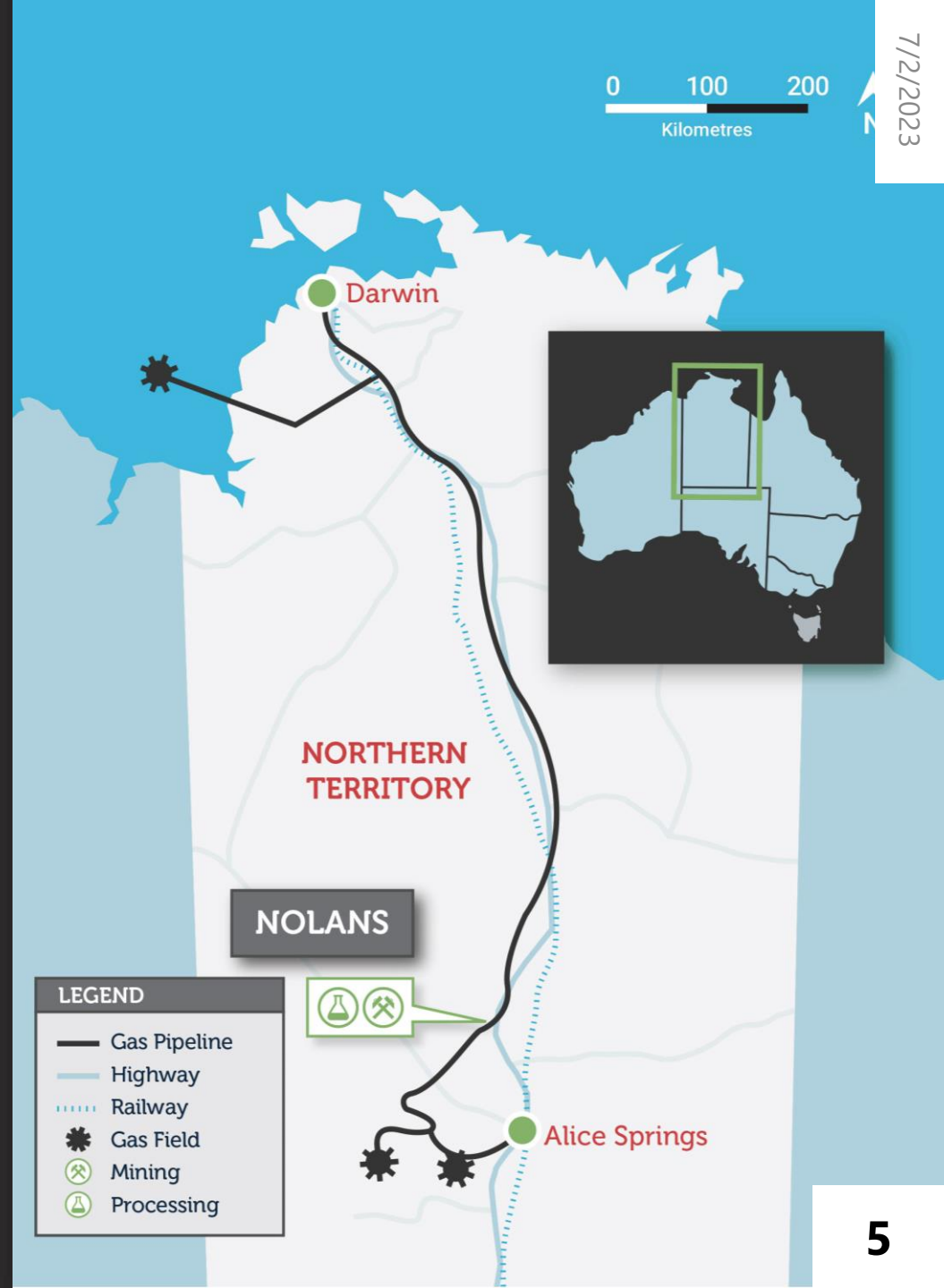
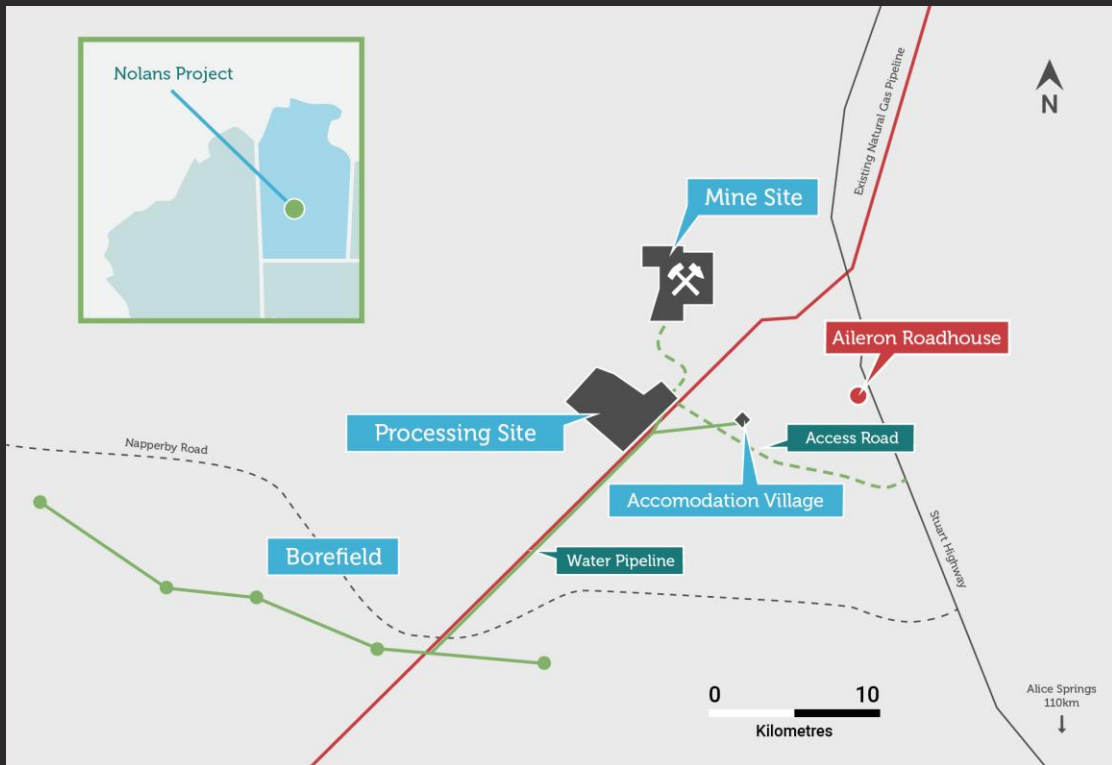
MRI  
MACHINES



PHONES &  
TABLETS

# Close to existing key infrastructure

- ✓ Stuart Highway 10km east
- ✓ Water supply 25km southwest
- ✓ Alice Springs railyard, airport and other services 135km south
- ✓ Amadeus natural gas pipeline- adjacent to project site
- ✓ Tailings and process wastes at site



# Delivering to an ESG World

Nolans **ore to oxide single site** processing solution is strongly aligned with the emerging ESG focus



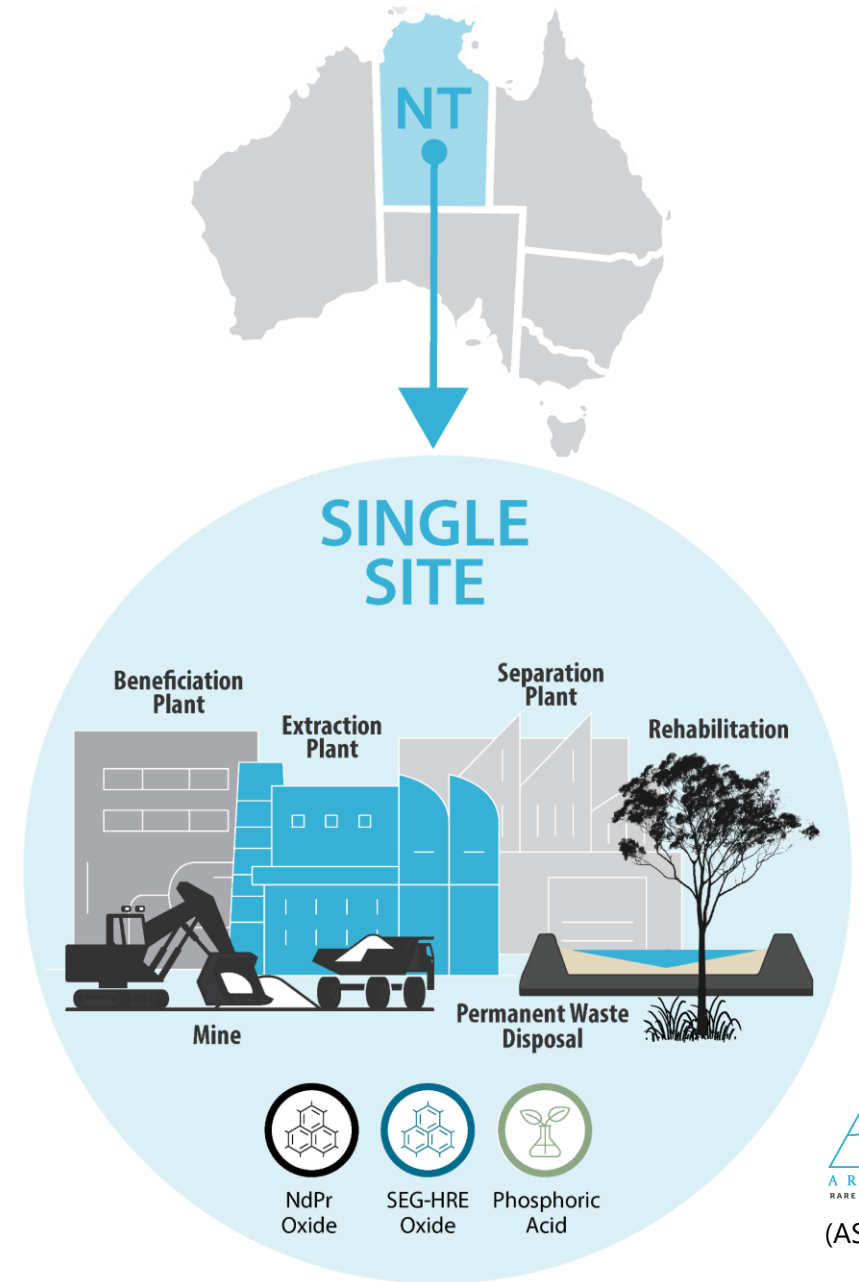
In a changing world a focus on environmental responsibility has become paramount



**Single site processing** provides traceable product and waste management certainty which is **aligned with customers' ESG expectations.**



**All environmental approvals** along with **Mining Authorisation** have been secured and waste management & site rehabilitation fully costed.



# Recent A\$141m capital raising de-risks the Nolans construction schedule



## Regulatory

- ✓ Federal & NT Environmental Approvals secured
- ✓ Government and Minister support for senior debt facility
- ✓ Mining Authorisation granted



## Tenure & Social License

- ✓ Native Title Agreement
- ✓ Mineral License Granted
- ✓ Federal & NT Major Project Status
- ✓ Indigenous Engagement Strategy



## Technical

- ✓ Piloting of ore to oxides flowsheet
- ✓ Appointment of KBR & Wave to in-house team
- ✓ Front-end Engineering & Design underpins latest capital cost update
- ✓ Expanding technical and operating team



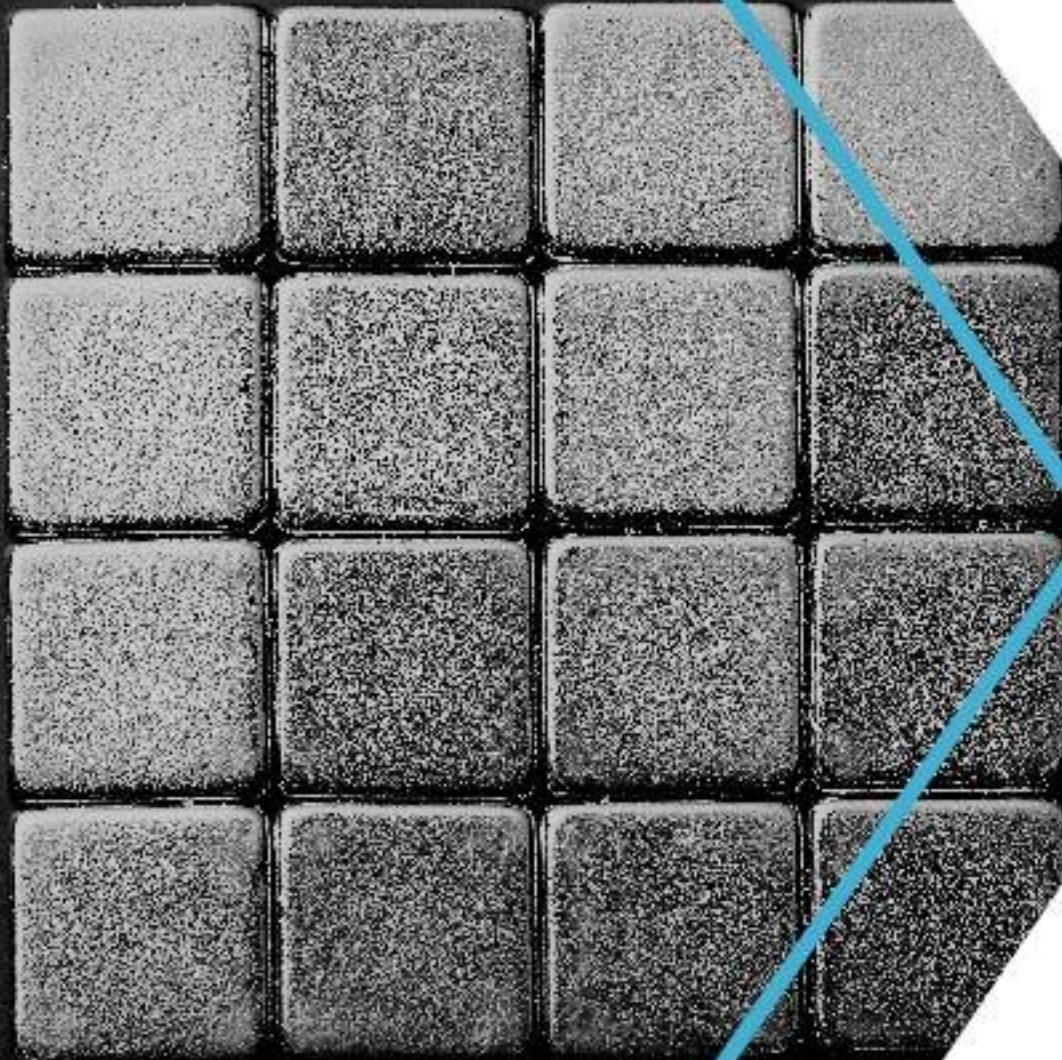
## Commercial

- ✓ Customer verification of oxide products completed
- ✓ Offtake agreements being advanced
- ✓ Project Funding with lead debt arrangers appointed

\*Milestone targets are indicative and subject to change and are contingent upon funding, offtake activities and general market conditions



# NdPr Market & Offtake

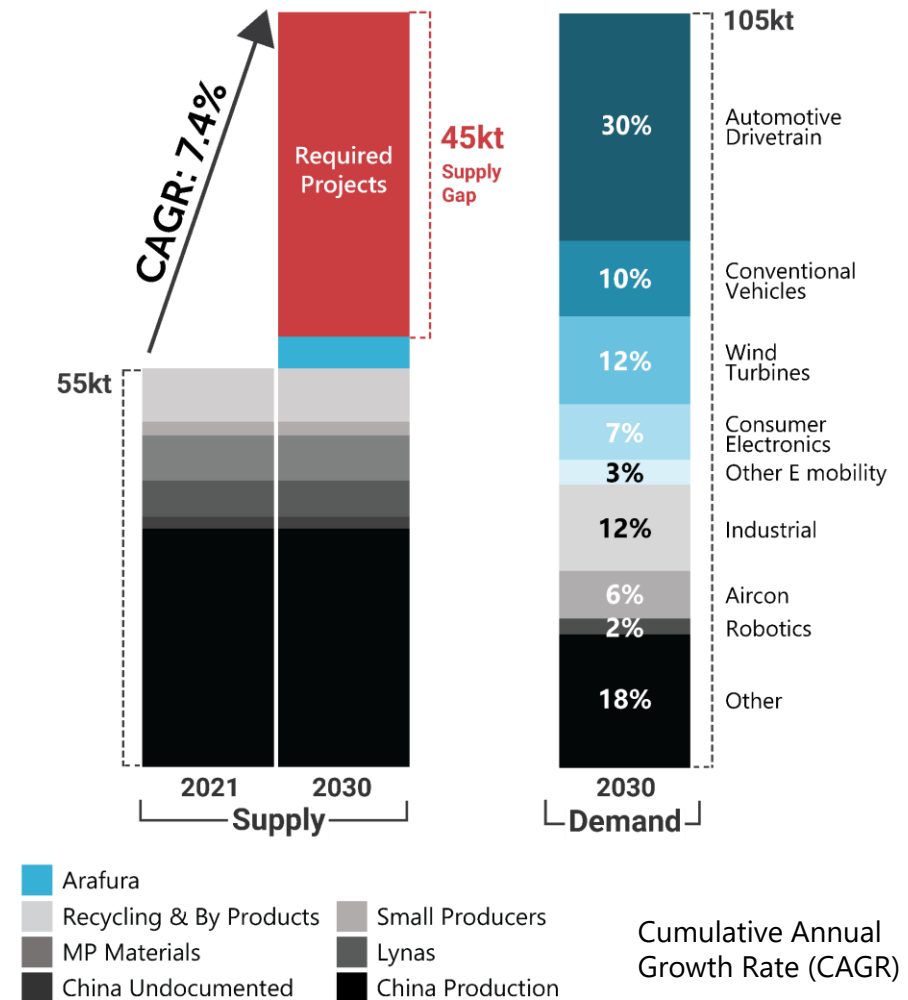


# NdPr Supply Gap

- ✓ Significant new production required to be on the trajectory to achieve global net zero by 2050
- ✓ Security of supply will be challenged, sustained higher NdPr prices will be required to stimulate the development pipeline
- ✓ Tighter regulatory and policy controls will constrain China's ability to expand at the same pace and open new mines
- ✓ China supply expansion will be prioritised for procurement linked to its own energy transition objectives and growth in downstream manufacturing
- ✓ Supply gap will largely be concentrated with non-China NdPr users

Investment in new projects is required to meet demand requirements

## NdPr Supply & Demand



Source: Arafura internal Supply Demand forecast referencing Wood Mackenzie - Rare earth market Outlook to 2050, 2021; CRU - Rare Earth Market Study, 2020; General Administration of Customs of China via Baiinfo January 2022. Supply is primary supply and excludes secondary source of NdPr supply from waste magnet production.

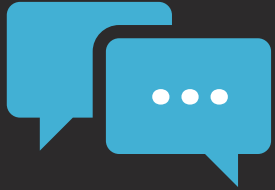


(ASX:ARU)

# Offtake & Funding



# Offtake



Offtake strategy aligned with NdFeB users who need a diversified supply chain

Binding offtake agreement entered into with Hyundai and Kia for up to 1,500 tpa oxide (or metal equivalent)

Four other companies including GE in contract negotiations representing 63% of Binding Offtake Target



**Arafura is targeting 85% of Planned Production<sup>1</sup> as binding offtake (Binding Offtake Target).**

Offtake Discussion Group	Location	NdPr Oxide (tpa) <sup>2</sup>	% of Binding Offtake Target
<b>Secured Offtake (binding agreement)</b>			
Hyundai & Kia	Korea	1,500	40%
<b>Offtake under discussion<sup>3</sup></b>			
Contract negotiations	Japan & Europe	2,375	63%
Advanced offtake discussions	Europe & US	2,600	69%
<b>Total</b>		<b>6,475</b>	<b>172%</b>

Targeting NdPr users not aligned with *Made in China 2025 Strategy*

1. Planned Production refers to the average annual production from Nolans of 4,440 tpa (Refer ASX Announcement dated 11 May 2021).
2. Product may be supplied as NdPr Oxide or Metal equivalent.
3. The Company, at this stage, has no certainty as to the timing and likelihood of successfully concluding binding agreements being entered into.

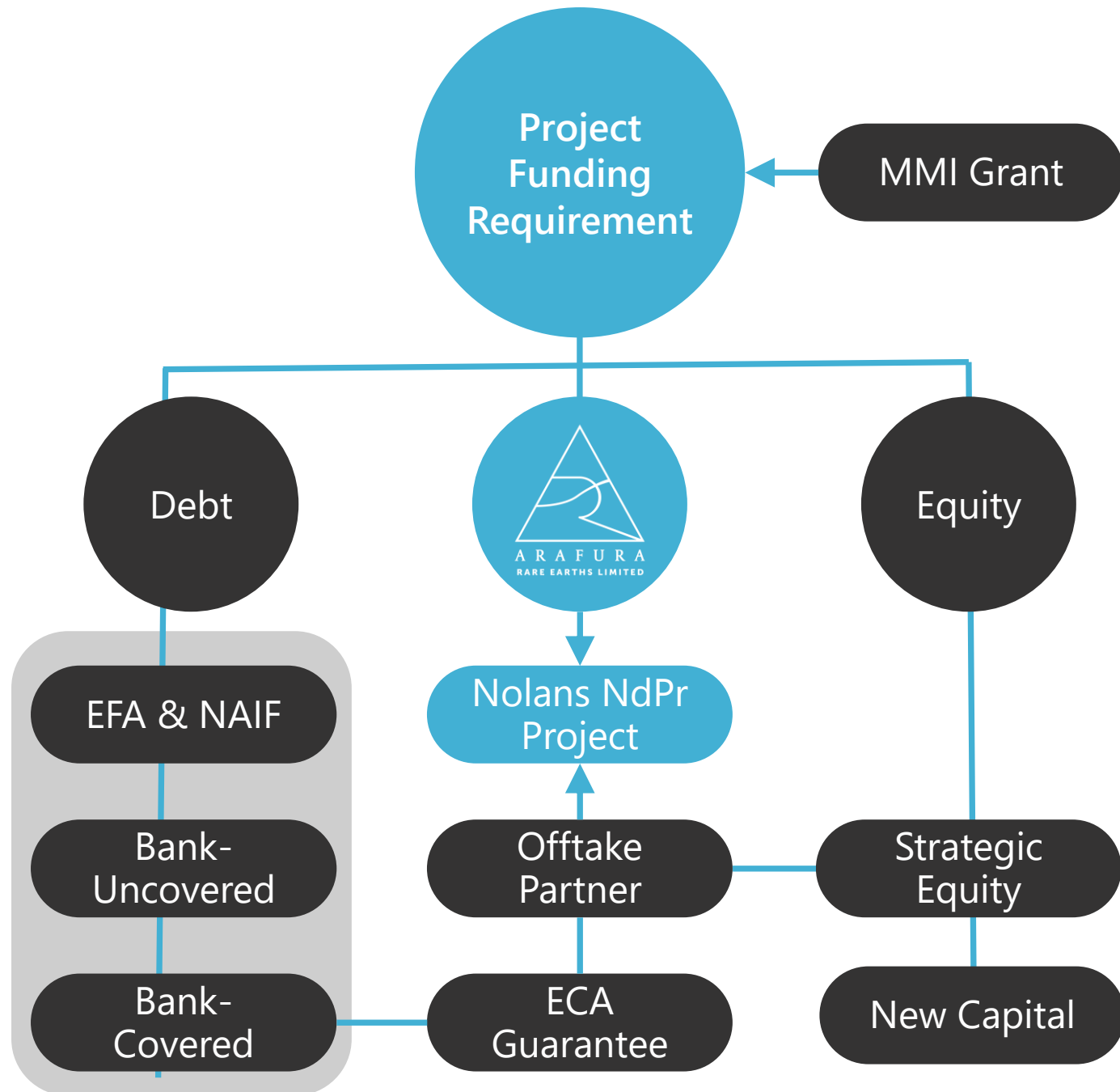
# Funding Structure

## Debt

- ✓ MLAs appointed, Societe Generale, NAB & KfW
- ✓ KfW appointed as the Export Credit Agency (ECA) structuring bank
- ✓ Offtake drives the participation of untied ECA funding and creates debt liquidity
- ✓ MLA financing will have a covered (supported by ECA g'tee) and uncovered portion
- ✓ NAIF & EFA letters of support A\$300m of debt subject to further DD and credit approval

## Equity

- ✓ Potential strategic investment being negotiated in conjunction with final offtake through an MoU with GE Renewable Energy and HoA with Hyundai
- ✓ Strategic equity linked to other potential offtakes partners.
- ✓ Potential strategic investment through Hancock Prospecting if they look maintain a 10% holding through to project funding
- ✓ A\$30m MMI Grant for construction of separation plant reduces equity requirement



# Key Takeaways



Nolans is an advanced Ore to Oxide project of scale to feed into a diversified NdPr value chain



Cornerstone Binding Offtake Agreement with Hyundai and Kia. Non-binding MoU with GE Renewable Energy to collaborate in establishment of sustainable supply chain for NdPr.



Debt process under way with Societe Generale, KfW and National Australia Bank, underpinned by NAIF / EFA and gaining support from ECAs. KfW also appointed as the ECA structuring bank.



Recent completion of A\$141m capital raising allows commencement of procurement and enabling works construction in Q1 2023. De-risking the Nolans construction schedule.



# Contact Information



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# Appendices





# Strong Project Economics

Key Project Information		
<b>Mining and Production</b>		
Mine Life (years)	38	
NdPr Oxide (tpa)	4,440	
SEG/HRE Oxide (tpa)	474	
Phosphoric Acid (tpa 54% P <sub>2</sub> O <sub>5</sub> MGA)	144,393	
<b>Product Pricing</b>		
US\$/kg NdPr Oxide price – offtake period	125.50	
US\$/kg NdPr Oxide price – LOM	130.10	
<b>Financial</b>	<b>US\$</b>	<b>A\$</b>
Capital Cost		
Pre-production Capital (\$m)	995	1,394
Contingency (\$m)	140	196
Total (\$m)	1,135	1,590
Revenue		
Rare Earth Sales Revenue (\$m/annum)	587	822
Phosphoric Acid Sales Revenue (\$m/annum)	65	91
Operating Costs		
Mining Costs (\$m/annum)	(31)	(44)
Processing Costs (\$m/annum)	(138)	(193)
General and Administration Costs (\$m/annum)	(26)	(36)
EBITDA (\$m/annum)	409	573
<b>KPI Analysis</b>	<b>US\$</b>	<b>A\$</b>
Operating Cost \$/kg NdPr	43.95	61.60
Operating Cost \$/kg NdPr net of P <sub>2</sub> O <sub>5</sub> credit	34.64	48.52
NPV <sub>8</sub> after tax (\$m)	1,693	2,358
IRR after tax (%)	19.3%	

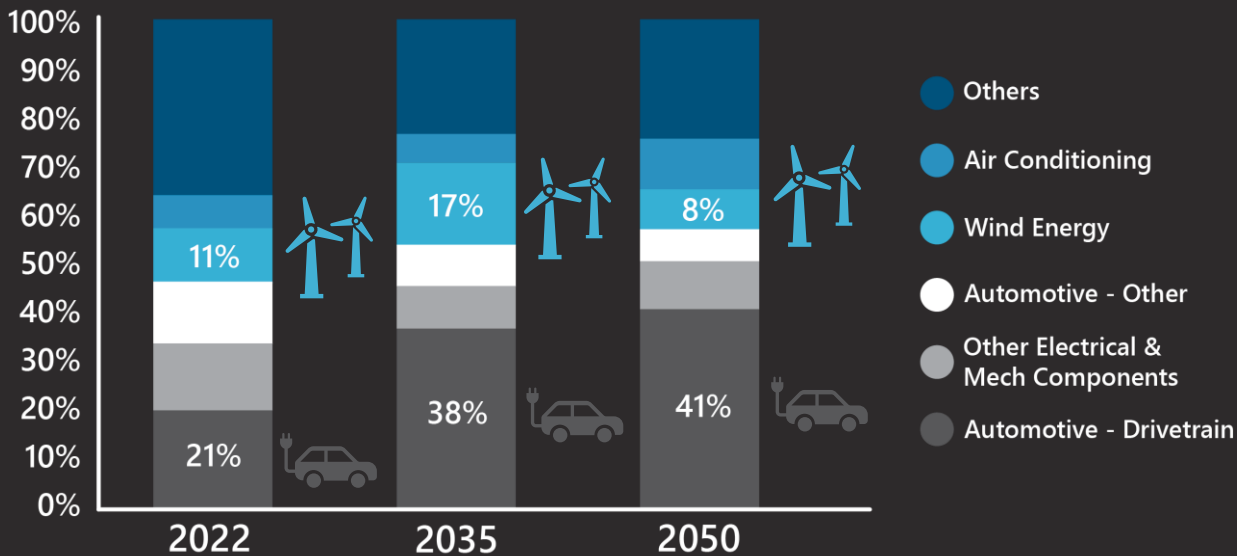
- ✓ Project Update released in November 2022
- ✓ **Post-tax NPV<sub>8</sub> of A\$2.4 billion** and IRR of 19.3%
- ✓ Capital cost **A\$1,394m** plus **A\$196m** contingency
- ✓ Annual average EBITDA of **A\$573m**
- ✓ NdPr pricing based on average over LOM of **US\$130 per kg**

*The Project Economics table is based on the assumptions and estimates set out in the Nolans Project Update (refer to ASX Announcement dated 11 November 2022). Numbers may not compute because of rounding. Product prices during the offtake period refer to the first seven years of production when offtake agreements will include discounts and other contract mechanisms put in place to underpin project finance for up to approximately 85% of NdPr oxide production with averages calculated as the weighted average over the specified period. Average revenue, costs and EBITDA are calculated as the arithmetic annual average following the anticipated two year ramp up period and excluding the final years of production from low grade stockpiles.*

# NdPr for Magnets Critical Component in Clean Energy Sector

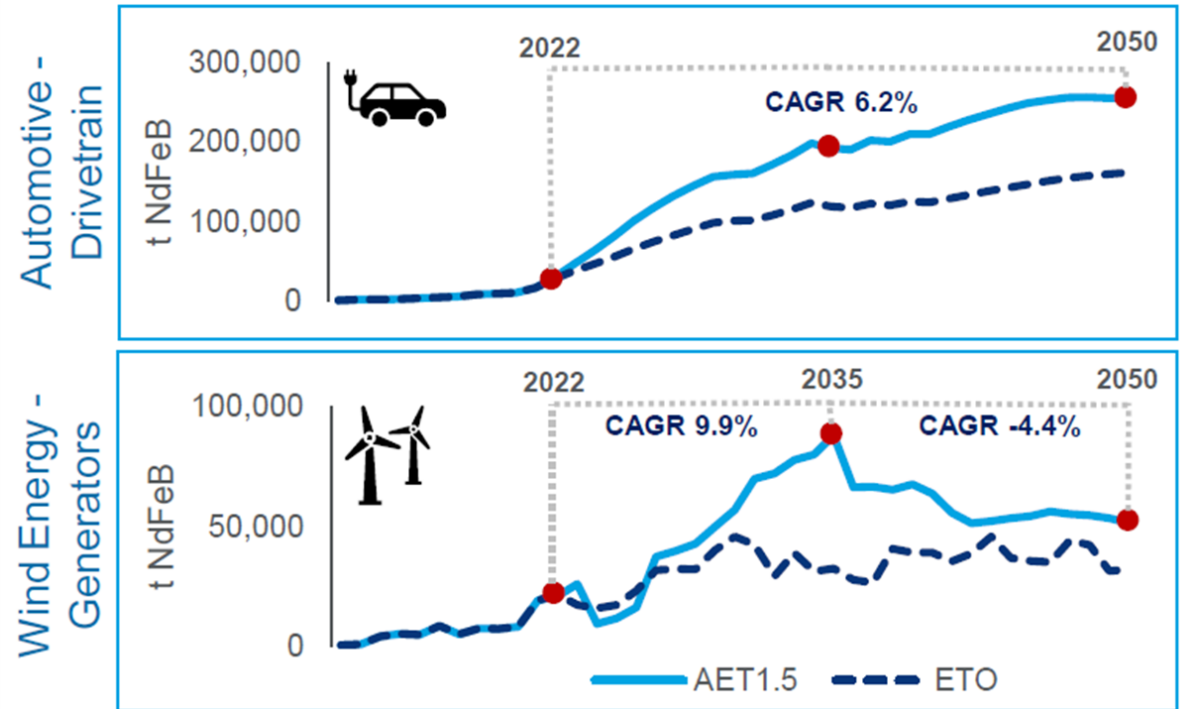
- Wood Mackenzie forecast an Accelerated Energy Transition (AET) 1.5°C scenario (Global net zero by 2050) requires significant and prolonged ramping-up of RE production
- Security of supply will be challenged, sustained higher NdPr prices will be required to stimulate the development pipeline
- Drivetrain automotive and wind energy to represent 55% of magnet demand in 2035

## NdFeB Magnet Demand by Major End-Use (AET1.5)



Source: Wood Mackenzie Business

Forecast supply gap emerging by 2030 represents in excess of **10 Nolans Projects**



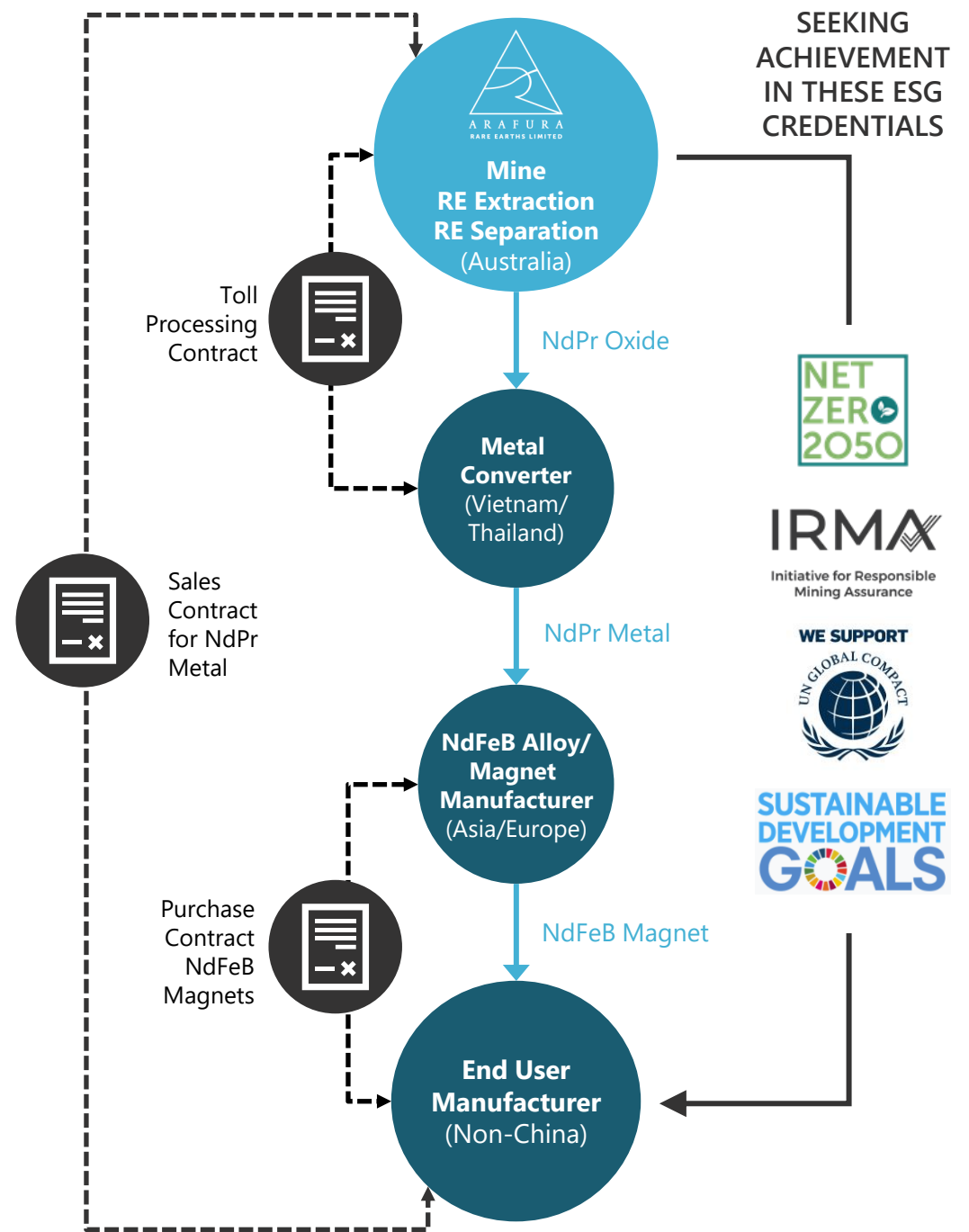
ETO = Energy Transition Outlook (Base Case)  
 AET1.5 = Accelerated Energy Transition 1.5°C (Scenario)

Source: Wood Mackenzie Business

# Offtake & Supply Chain

Sustainable producer of NdPr to align to "Green Procurement" strategy

- ✓ Enables access to a sustainable NdPr feedstock where provenance is easily traceable.
- ✓ Optionality of oxide or toll processed metal conversion
- ✓ Provenance will also be important in US and European markets



# Experienced Board



Mark Southey



Chris Tonkin



Quansheng Zhang



Cathy Moises



Darryl Cuzzubbo

## NON-EXECUTIVE CHAIR

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. He is Chair of Arafura Resources' Remuneration and Nomination Committee and is a member of the Risk Management Committee and Sustainability Committee.

## 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 Chair of Arafura Resources' Audit Committee and is a member of the Remuneration and Nomination Committee and the Risk Management Committee.

## NOMINEE 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.

## NON-EXECUTIVE DIRECTOR

Cathy Moises has extensive experience in the resources sector having worked as a senior resources analyst for several major stockbroking firms including McIntosh (now Merrill Lynch), County Securities (now Citigroup) and Evans and Partners where she was a partner of that firm. More recently in 2017-2019, Cathy was Head of Research at Patersons Securities Limited. Ms Moises is also a non-executive director of WA Kaolin Limited and an advisory panel member for Argonaut Resources Fund.

## NON-EXECUTIVE DIRECTOR

Darryl has over 30 years' experience in global roles in multi-commodity resources, services and manufacturing, holding both Senior Executive and Executive Director roles over a very successful career. He brings a wealth of knowledge and experience in both the resources and manufacturing sectors having run major operational assets and led the development and execution of significant breakthrough strategies to deliver major projects.

# Experienced Management



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.



Peter Sherrington

## CHIEF FINANCIAL OFFICER

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.



Stewart Watkins

## GENERAL MANAGER PROJECTS

Stewart has over 30 years' experience in many facets of the mining industry including operations, engineering consulting, project development and management. This has included a wide range of roles including corporate and business management, business development, project/study management, process design, commissioning and process plant operation. Stewart is a Fellow of the AusIMM.



Lloyd Kaiser

## GENERAL MANAGER SALES & MARKETING

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.

# Our Technical Team



Dr Alex Elliot



Kelvin Hussey



Lourdes Valle



Michael Robinson

## TECHNOLOGY MANAGER

BSc (Chemistry), BEng (Chemical), PhD (Chemical Engineering)

Alex has more than 20 years in the metallurgical technology development space, more than 10 years of which were focused on the Nolans Project, including the development and testing of the patented flowsheet which Arafura is currently working to commercialise.

## PRINCIPAL GEOLOGIST

BSc (Hons), MAIG

Kelvin is an experienced Geologist with a demonstrated history of working in the mining industry for more than 30 years. He has an extensive range of geological, exploration and resource skills which include more than 20 years on rare earths.

## PROCESS ENGINEERING MANAGER

FAusIMM (CP), FIEAust, NER (Chemical), RPEQ (Met, Chemical), MBA

Lourdes is a world-class, results-oriented Process Engineer with combined business knowledge and proven experience in end-to-end project lifecycle for more than 20 years. She has a strong technical knowledge backed with demonstrated practical experience and leadership gained from various roles and global exposures throughout her career.

## ESG MANAGER

BSc (Environmental Science)

Michael has over 20 years of experience in a broad range of environmental management roles including regulators, consultancy, and mining. With his strong environmentally focused ethics, and as an advocate for the environment, he works with Arafura to keep it focused on all things ESG.

# Our Project Team



Robert Gerrard



Sam Binnie



Alvin Chin



Graeme Perkins



Alex Buchan



Bhupesh Kalia

## DEPUTY PROJECT DIRECTOR

BEng (Civil), MBA (ongoing)

Robert has over 18 years experience in the engineering and construction industry globally, with over 10 years in leadership roles delivering major projects in Australia. Robert's most recent role was Deputy Project Director for the successful delivery of \$1B copper-gold mine in South Australia. Robert has a firm belief that embedding the right culture in a team early, is instrumental to a project's success.

## NPI PROJECT MANAGER

BEng (Civil) (Hons), BSc (Environment)

Sam has 15 years' experience in delivery and execution of major projects in oil and gas, and minerals industries in Australia. From engineering to project management roles, going from strength to strength gaining experience on Lump Sum and EPC style contracts ranging from AU\$120M to over AU\$1B. Building team of teams brings diversity, and with it innovation.

## PROJECT MANAGER E & I

BEng (Electronics & Comms), BSc (Computer), MIEAust, CEng, NER (Elec)

Alvin has over 19 years experience in the engineering and construction industry as an electrical, instrumentation and communications engineer and project manager. He has worked in mining, oil and gas, infrastructure and defence and has extensive technical and practical experience having worked across all phases of projects.

## PROJECT MANAGER – HYDROMET PLANT

BEng (Mechanical) (Hons), MIEAust.

Graeme is an experienced, principal-level mechanical engineer, area manager and engineering manager with project experience ranging from \$20 m lump-sum projects to \$2 b EPCM projects. He has executed projects in Turkey, UK, Canada, Ghana, Madagascar and Australia.

## COMMERCIAL & CONTRACTS MANAGER

MBA

Alex is a highly skilled contracts and procurement professional who has worked in mining, oil and gas and supply organisations. He has worked on major contract packages over the last 15 years with a value of over two billion dollars which include major construction, service and supply and manufacture contracts.

## PROJECT CONTROLS MANAGER

BEng (Mechanical) / NVQ ECITB

Bhupesh has over 30 years of experience in the Engineering and Construction industry, with over 20 years in planning & project controls, including recent 5 years in a management role at a multi-billion dollar project in NT. His mechanical engineering background has provided a strong foundation to build his project controls career.

# Long Life Asset

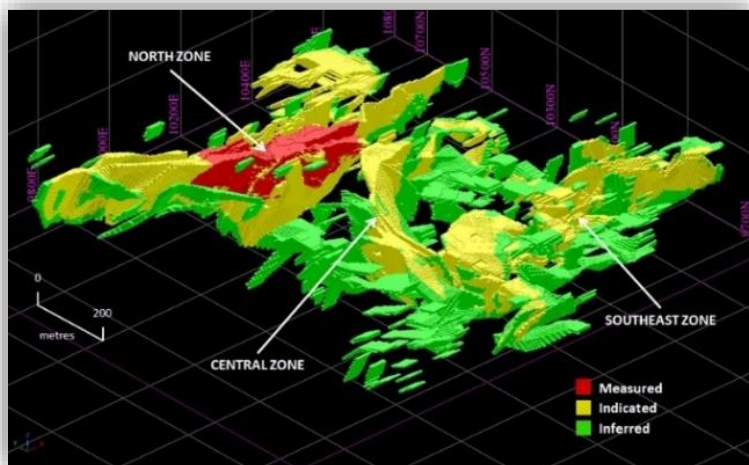
RESOURCES	TONNES (m)	RARE EARTHS TREO %	PHOSPHATE P <sub>2</sub> O <sub>5</sub> %	NdPr ENRICHMENT %
Measured	4.9	3.2	13	26.1
Indicated	30	2.7	12	26.4
Inferred	21	2.3	10	26.5
<b>TOTAL</b>	<b>56</b>	<b>2.6</b>	<b>11</b>	<b>26.4</b>

As announced on 7 June 2017. 1% TREO cut-off grade. Numbers may not compute exactly due to rounding. "NdPr enrichment" is the proportion of TREO comprising Nd<sub>2</sub>O<sub>3</sub> and Pr<sub>6</sub>O<sub>11</sub>.

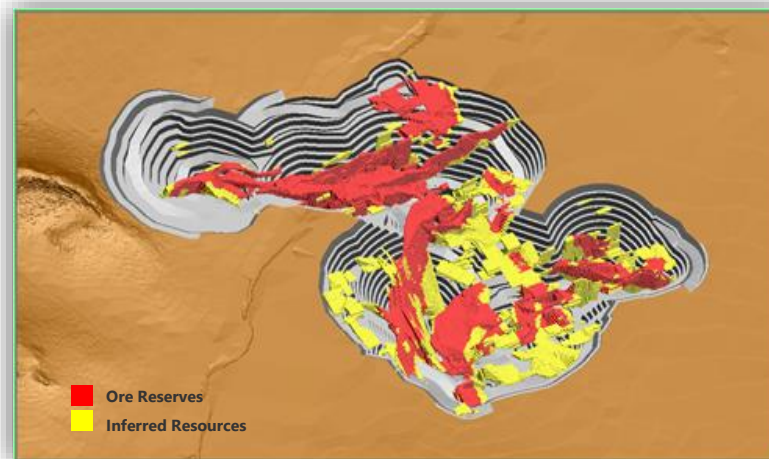
RESERVES	TONNES (m)	RARE EARTHS TREO %	PHOSPHATE P <sub>2</sub> O <sub>5</sub> %	NdPr ENRICHMENT %
Proved	5.0	3.0	13	26.2
Probable	24.6	2.8	13	26.5
<b>TOTAL</b>	<b>29.5</b>	<b>2.9</b>	<b>13</b>	<b>26.4</b>

As announced on 16 March 2020. Numbers may not compute exactly due to rounding. "NdPr enrichment" is the proportion of TREO comprising Nd<sub>2</sub>O<sub>3</sub> and Pr<sub>6</sub>O<sub>11</sub>.

## Mineral Resources



## Ore Reserves

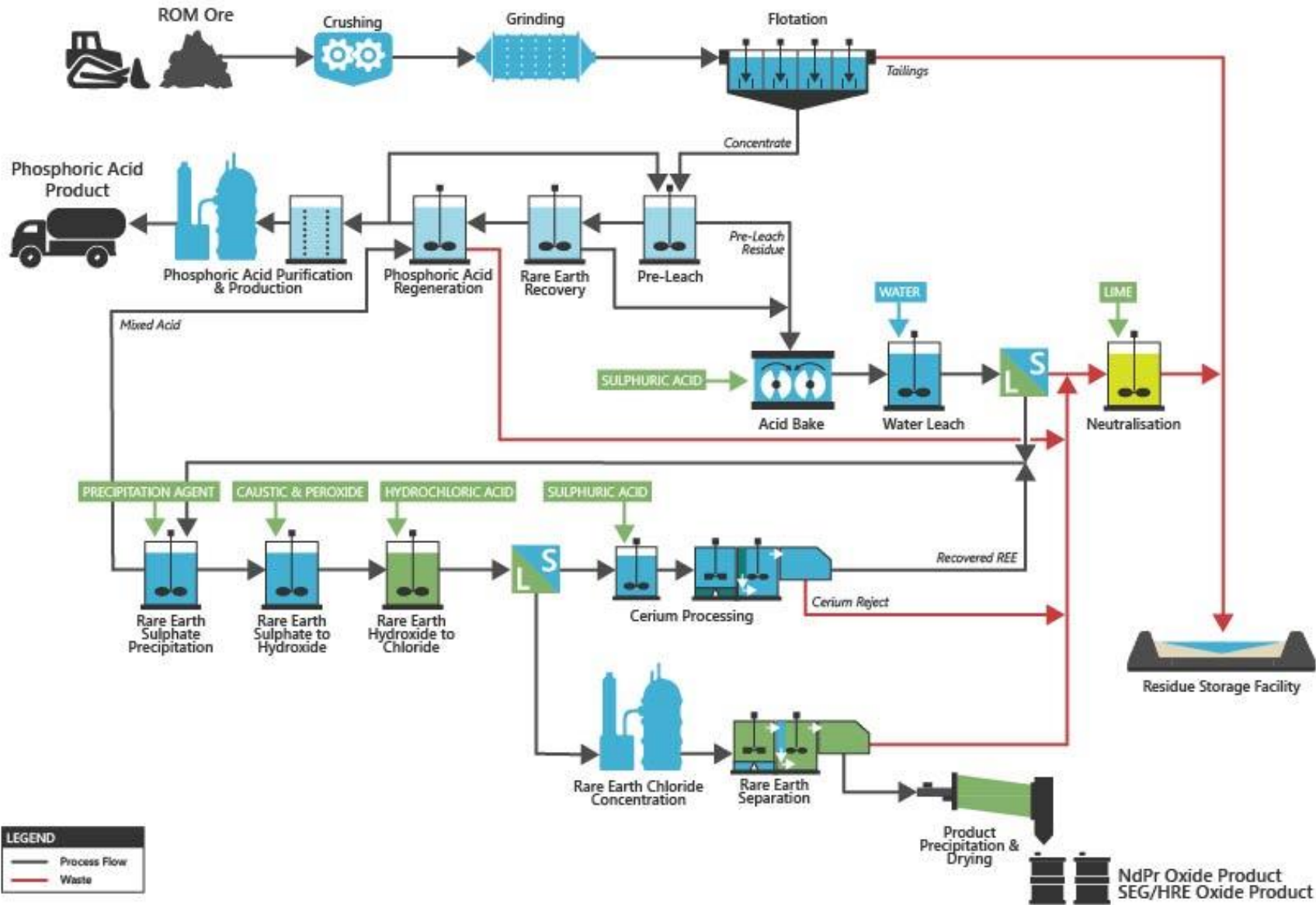


# Geology

- ✓ World class strategic resource
- ✓ NdPr enriched
- ✓ Apatite hosted
- ✓ Discovered through airborne radiometrics
- ✓ 90km of drilling to develop 29 yrs of reserves and 38 yrs LOM
- ✓ Open at depth

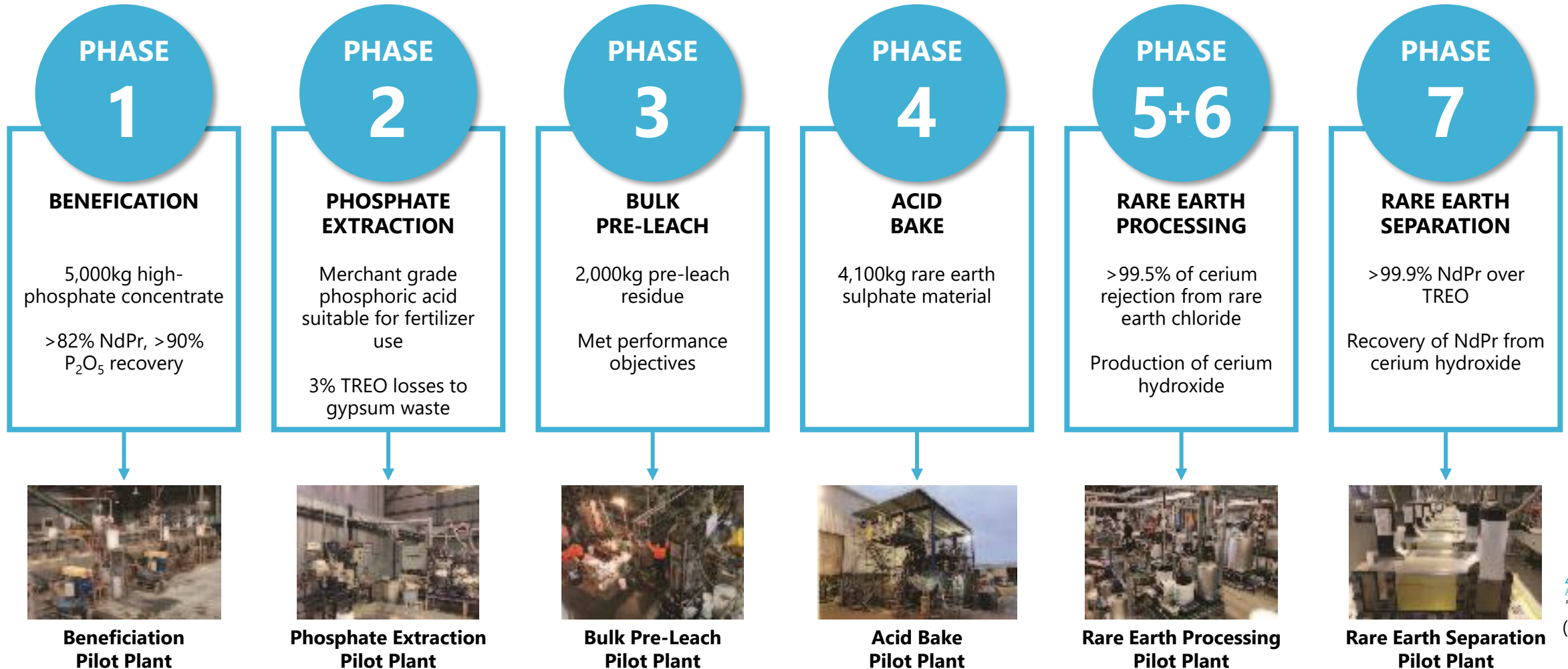


# Process Flowsheet



# Technology Program Complete

## Flowsheet Pilot



# Waste and Water

## Approved End to end Management

- ✓ Approved end to end waste management solution
- ✓ Waste rock dumps designed to “encapsulate” naturally occurring radioactive materials (NORM) rock at mine site
- ✓ Mine area surface water management captures sediment
- ✓ Residue storage facility (RSF) for containment of waste residue processed at site
- ✓ Progressive rehabilitation of RSF during Life of mine.



**Arafura’s single site processing model** provides traceable product and waste management systems which is aligned with customers’ ESG expectations.



**Environmental Approval** and Project Costing includes all costs for Waste Management System and Rehabilitation.

Rendering of Nolans Project Residue Storage Facility (RSF).

