

# ASX ANNOUNCEMENT

## DECARBONISING THE RESOURCES SECTOR SUMMIT PRESENTATION

15 August 2022



**Arafura Resources Limited (ASX:ARU)** (“Arafura” or the “Company”) is pleased to attach a copy of its presentation delivered by ESG Manager, Mr Michael Robinson, at the Decarbonising the Resources Sector Summit today held in Perth, WA. Mr Robinson will present on the topic ‘Arafura Resource’s journey towards decarbonisation’.

The Decarbonising the Resources Sector Summit will examine pathways to decarbonisation and how Mining, Oil & Gas companies can prosper in a low carbon world using innovative solutions & emerging cost-effective technologies. The event is designed as a platform bring together resources companies, leading technology and innovation experts, energy industry innovators and investors to discuss and explore the latest opportunities, challenges, initiatives, innovative technologies, and developments for reducing the resources industry’s CO<sub>2</sub> emissions to zero.

**-ENDS-**

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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.”*

**Arafura Resources Limited | ABN: 22 080 933 455**

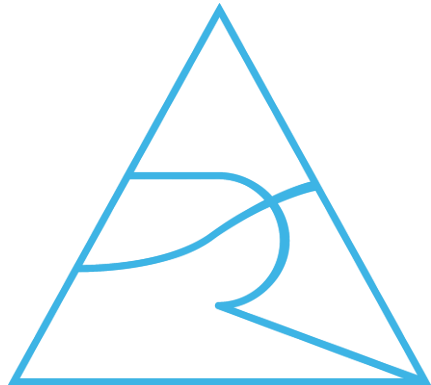
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**NdPr**

# Arafura's Journey Towards Decarbonisation

15 August 2022

Decarbonising the Resources Sector Summit



**A R A F U R A**  
RESOURCES LIMITED





# Disclaimer

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Information in this presentation which is attributed to a third-party source has not been checked or verified by Arafura Resources.

## 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 Resources 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 Resources 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

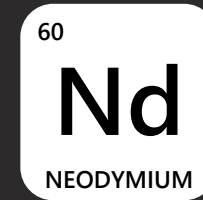
The information in this presentation that relates to production targets and financial information is extracted from the Company's ASX announcement dated 11 May 2021 (Nolans Project Update). The production target is based on 12% Proved Reserves, 62% Probable Reserves and 26% inferred resources as reported in the Company's ASX announcement dated 11 May 2021. 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 May 2021 (including any assumptions referred to in the Company's ASX announcement dated 11 May 2021 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.

# Rare Earths

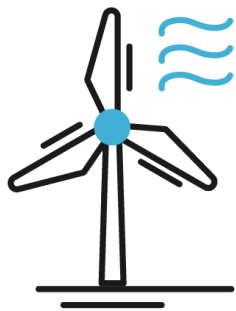
Rare Earths are essential to building a clean energy future. The transformation of the global economy relies on a secure and long-term supply



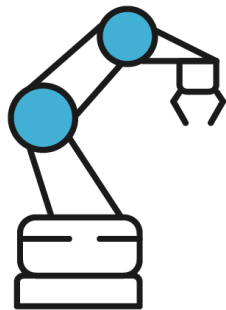
The Nolans Project contains all the Rare Earths but is particularly enriched in the 'Magnet Feed' Rare Earths NdPr



The fastest growing market for NdPr is in NdFeB Magnets. They are one of the reasons why everyday items have become smaller, lighter, mobile, more efficient and more affordable.



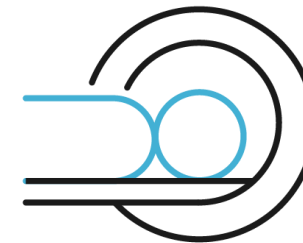
WIND  
TURBINES



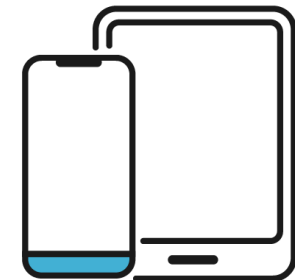
ROBOTS



ELECTRIC  
VEHICLES



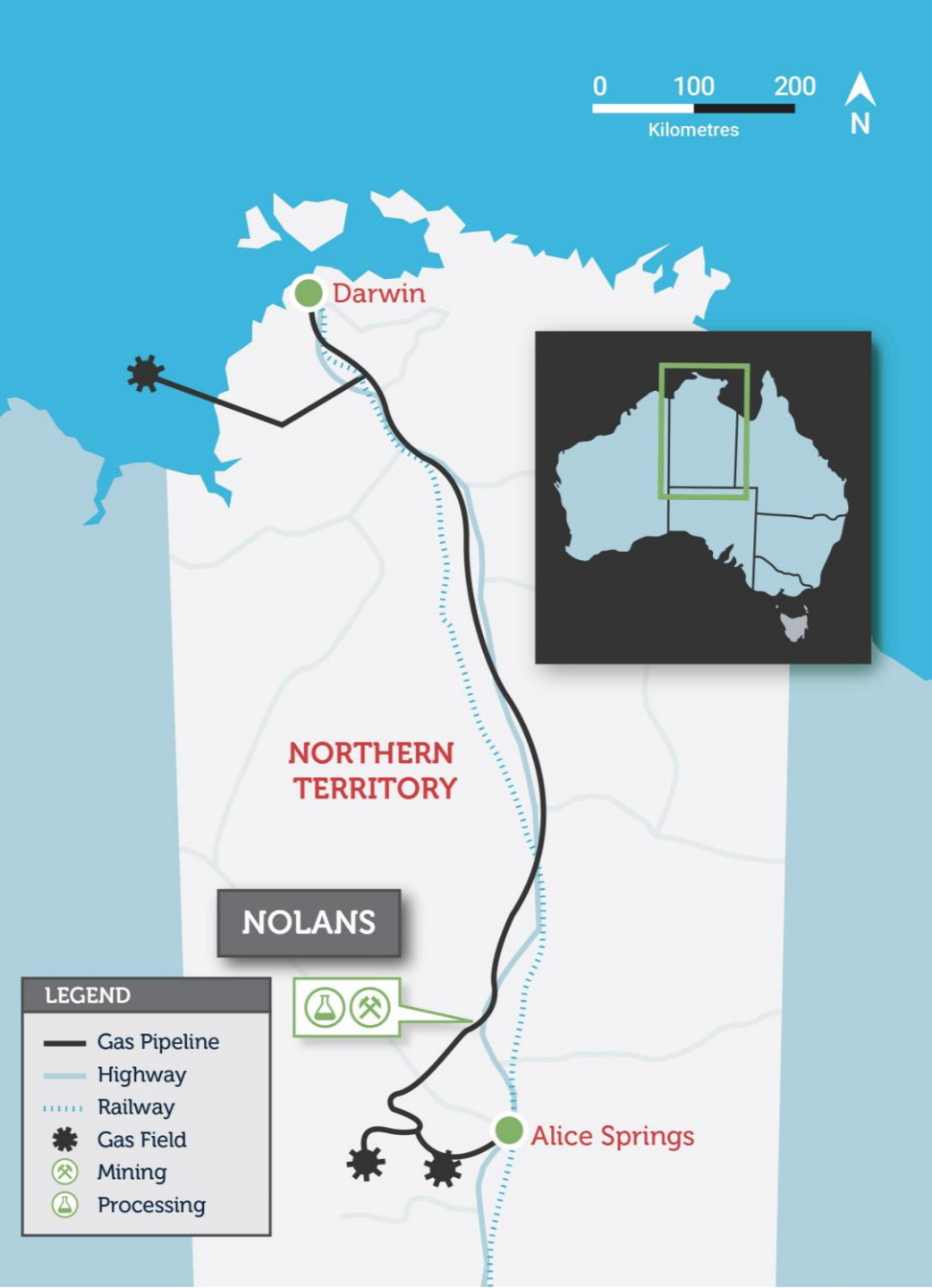
MRI  
MACHINES



PHONES &  
TABLETS



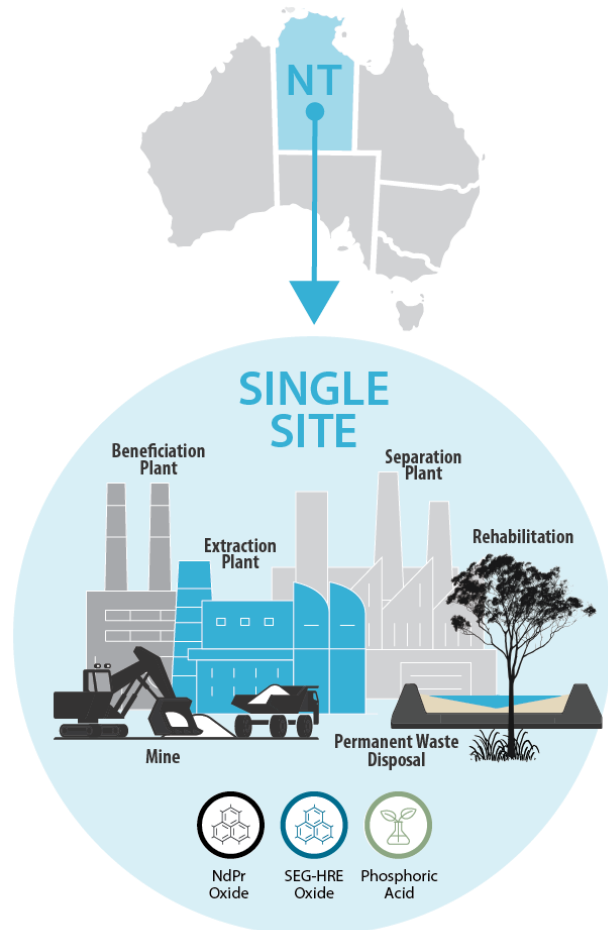
# Nolans Project



- ✓ An hour's drive north of Alice Springs it is one of the largest NdPr resources in the world. Will produce 5% of global demand.
- ✓ FID expected 2H 2022
- ✓ Nearing the end of front-end engineering and design. Construction January 2023 & Production in 2025
- ✓ Long Life strategic resource with project life of **38 years**. An advantage for sustainability and decarbonisation goals
- ✓ Arafura committed to be a **responsible transparent NdPr supplier** conforming to ESG standards
- ✓ **All environmental approvals secured** in Australia including appropriate waste management at site

# Key Facts

**Advanced manufacturing onsite**  
– Ore to oxide at Single Site –  
**First of its kind in Australia**



Nolans aims to supply  
**~5% of global demand** for  
NdPr 99.99% pure oxide



**28-month  
construction  
period<sup>1</sup>**

- \$1 billion initial capital spend
- Peak workforce of 650<sup>2</sup>



**Minimum  
38-year  
operational  
life**

- \$200 million annual spend
- 280 direct permanent jobs
- Expansion potential – open at depth

<sup>1</sup> Quarterly Activities Report and Appendix 5B – July 2022  
<sup>2</sup> 25% initially expected to be sourced from the NT

# Globally Significant Rare Earth Mine and Processing Project



Arafura Managing Director, Gavin Lockyer signing the MoU with GE VP & Chief Technology Officer, Danielle Merfeld. In attendance Minister for Trade and Tourism Don Farrell, Minister for Resources and Northern Australia Madeleine King and US Secretary of Energy Jennifer Granholm.

## On track for FID in H2 2022

15/08/2022

1

**NdPr pricing continued to hold currently US\$110/kg<sup>1</sup>** compared with \$87/kg in feasibility economics.

2

**Significant progress made with offtake MoU's signed.**

- Hyundai Motor Corporation
- General Electric Renewable Energy

3

Mandated Lead Arrangers **Societe Generale and National Australia Bank** appointed.

4

**Hydrometallurgical plant FEED nearing completion** and engagement with construction contractors advanced.



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<sup>1</sup> Shanghai Metal Markets 12 August 2022

# Strategic Importance of Producing an Oxide

## A complete diversified supply chain for the world

1. Mine  
2. Beneficiation

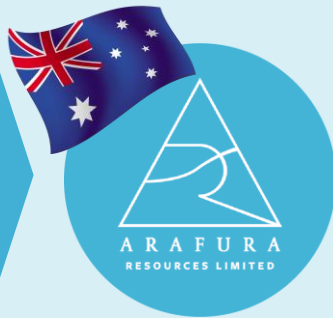
3. RE Separation  
4. Extraction

5. Metalisation

6. NdFeB Alloy/  
Magnet Maker

7. End User/  
Manufacturer

### Non-China Value Chain



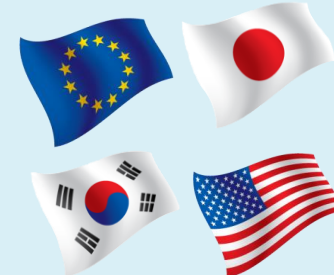
RE Concentrate



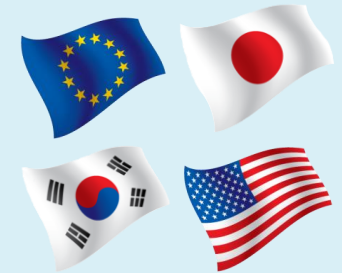
NdPr oxide



NdPr metal



Magnets



### China Value Chain

IMPORT

IMPORT & IMPORT  
TOLL PROCESS



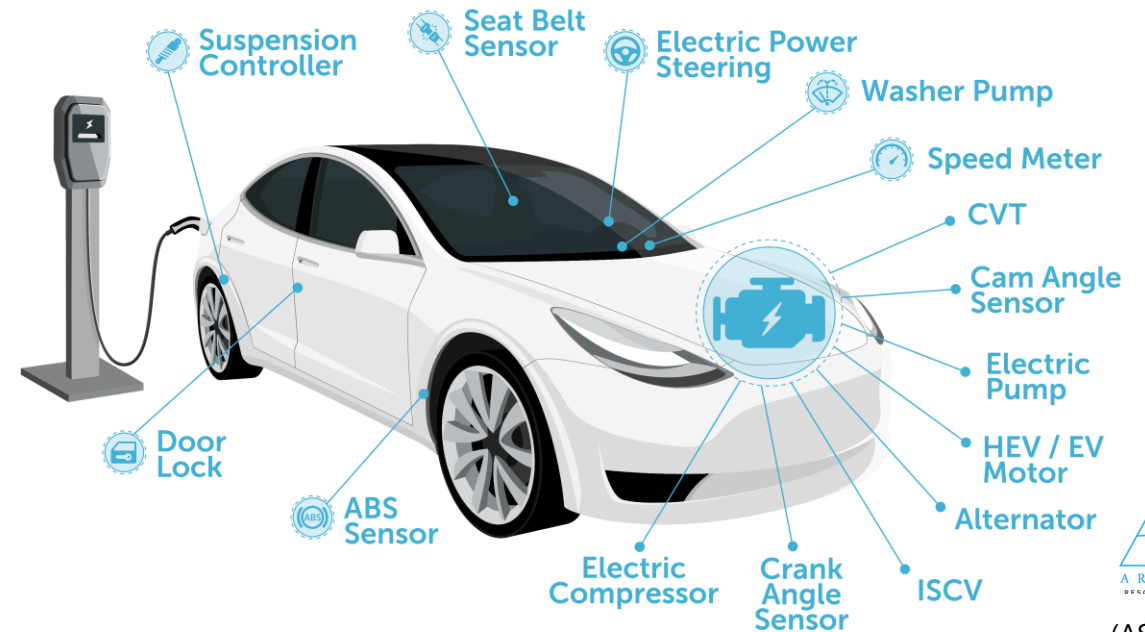


# Rare Earths – a Vital Cog in the Green Energy Revolution

- ✓ Rare earth magnets are critical to operation of key clean energy tech including Electric Vehicles
- ✓ A lesson learned through the semiconductor shortage is that tiny cogs can disrupt vast global markets
- ✓ The shortage has caused billions of dollars in lost revenue for the Auto industry

- ➔ Globally the rare earth supply chain is highly concentrated
- ➔ Creating diverse rare earth supply chains is vital to avoiding economic shocks

## NdFeB Magnet Components in HEVs/BEVs



# ESG Leadership

## Key Pillars

 Supply Chain Integrity

 Emissions

 Waste and Water

 First Nations



*"Arafura's ESG commitment is to be a trusted global leader and **supplier of choice** for **responsibly 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."*

## Key Initiatives



**Best Practice  
GHG Emissions &  
Water  
Management**

Net Zero Commitment  
Pursuing deep renewable energy and storage integration into plant design  
Water reduction strategy



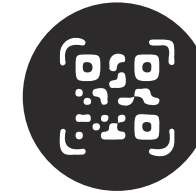
**Sustainability  
Reporting**

Phase 1: 2021 report meets global ESG ratings agencies and reporting standards  
Phase 2: accelerating to best practice for production phase through metric-based continuous assessment, disclosure and systems  
Aligning to TCFD, GRI etc.



**IRMA Pending  
Member**

Completed the IRMA Ready Pilot Program testing.  
On launch will complete the IRMA Ready Certification standard



**Traceability –  
Blockchain  
Technology**

Aligned with customers' best practice ESG expectations  
Allow tracing of Nolans sustainably produced products through entire supply chain to customers



**Innovation and  
Technology**

Downstream value add opportunities  
Commenced Study on low-carbon metallisation process  
Progressing study into Hydrogen integration into plant and operations



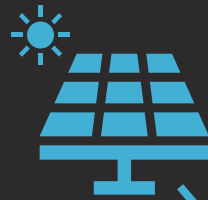
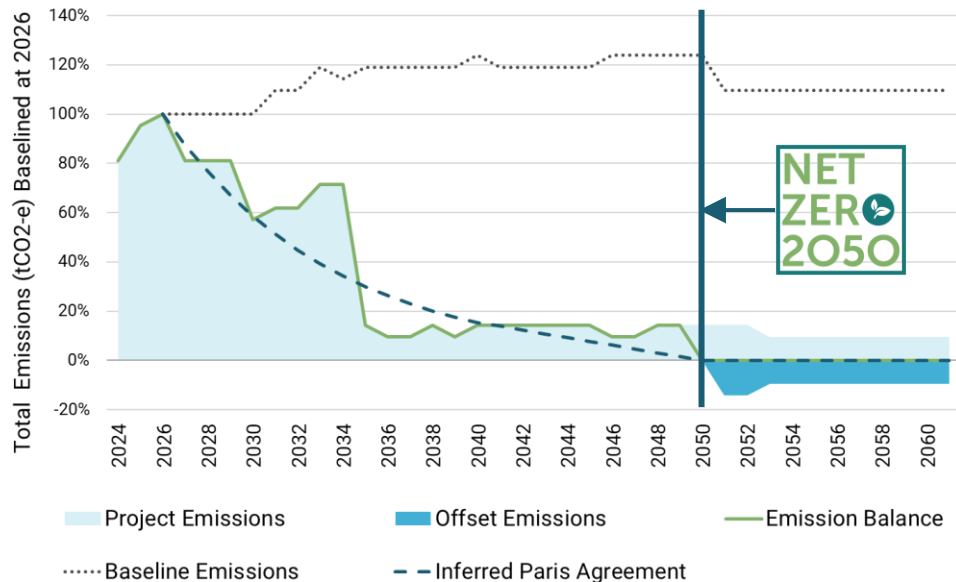
(ASX:ARU)

# Emissions

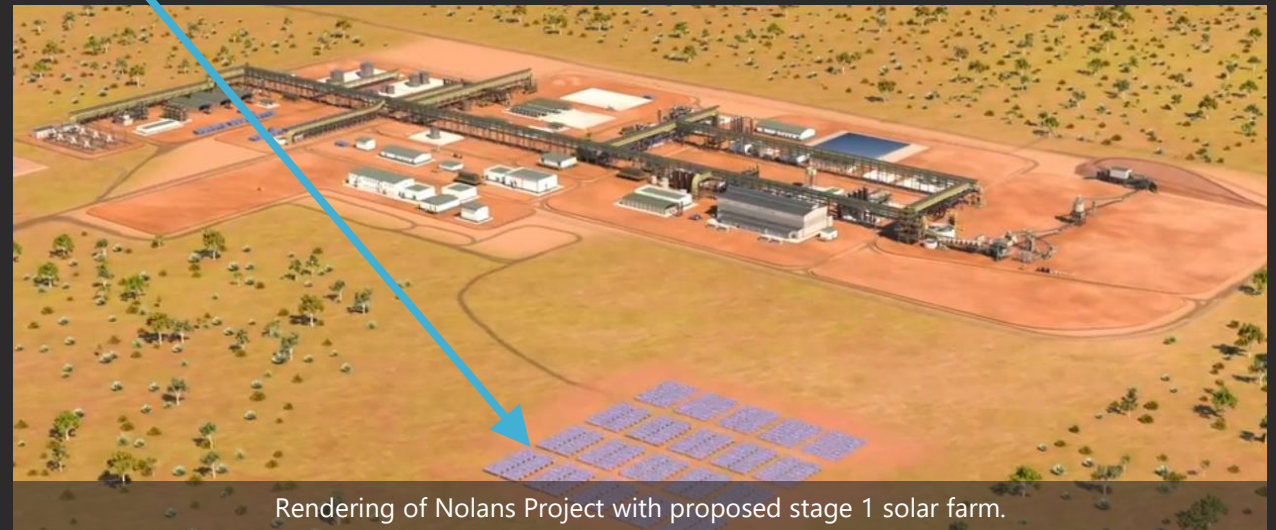
## Leading edge CO<sub>2</sub> Reduction Strategy

- Exploring multiple emission abatement models aligned with Science Based Targets initiative (SBTi)
- World Class solar resource and prospective wind resource on site
- Gas consumption substituted over project life with renewable energy, storage and renewable fuels

### Project Emission Abatement Timeline

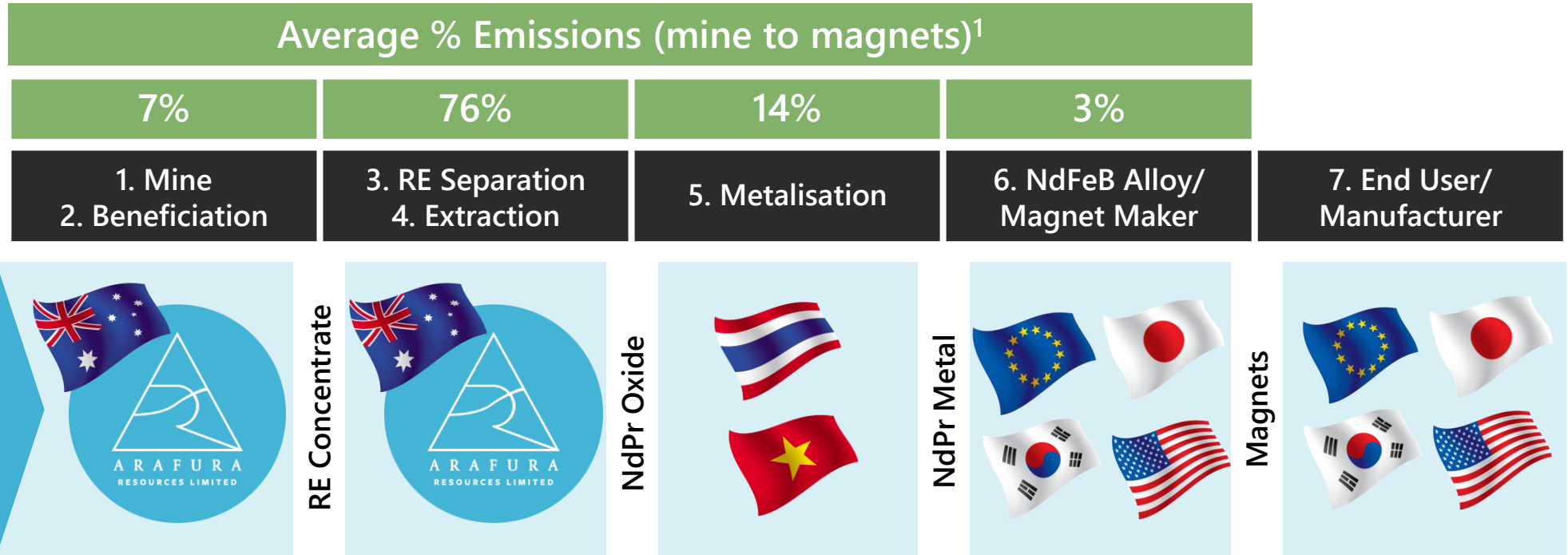


Stage 1 solar farm with potential to generate 1 megawatt (MW) of power per hectare.



- Proposed staged development to substitute 100% of electricity generation from natural gas to PV solar with the expectation of future deployment of stationary energy storage with developing technologies.
- 75% of GHG emissions from natural gas for electricity generation, 9% from natural gas for process use.
- Assessing technologies to substitute process gas for steam including solar steam, hydrogen

# Decarbonising the Supply Chain



## An Economic and Environmental Opportunity



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<sup>1</sup> Average values across 4 studied sites - Zapp et al (2022), Environmental impacts of Rare Earth Production, MRS Bulletin Vol 47 March 2022..