



FYI Enters Rare Earths Sector

May 9th 2023

Resources technology company
& critical minerals developer

ASX: **FYI**
FSE: **SDL**
OTC: **FYIRF**



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Such forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. When used in this presentation, words such as, but are not limited to, "could", "planned", "estimated", "expect", "intend", "may", "potential", "should", "projected", "scheduled", "anticipates", "believes", "predict", "foresee", "proposed", "aim", "target", "opportunity", "nominal", "conceptual" and similar expressions are forward-looking statements. Although the Company believes that the expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward-looking statements. The contents of this release are also subject to significant risks and uncertainties that include but are not limited to those inherent in mine development and production, geological, mining, metallurgical and processing technical problems, the inability to obtain and maintain mine licences, permits and other regulatory approvals required in connection with mining and processing operations, competition for among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel, incorrect assessments of the value of projects and acquisitions, changes in commodity prices and exchange rates, currency and interest rate fluctuations and other adverse economic conditions, the potential inability to market and sell products, various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions, the demand for and availability of transportation services, environmental, native title, heritage, taxation and other legal problems, the potential inability to secure adequate financing and management's potential inability to anticipate and manage the foregoing factors and risks. All persons should consider seeking appropriate professional legal, financial and taxation advice in reviewing this announcement and all other information with respect to the Company and evaluating the business, financial performance and operations of the Company. Neither the provision of this presentation nor any information contained in this release or subsequently communicated to any person in connection with this presentation is, or should be taken as, constituting the giving of investment or financial advice to any person. This presentation does not take into account the individual investment objective, financial or tax situation or particular needs of any person.

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Competent Person's Statement

Ore Reserves

The information in this report that relates to Ore Reserves is based on information compiled by Mr. Steve Craig, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Steve Craig is a full-time employee of Orelogy Consulting Pty Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are 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 information is extracted from the Ore Reserve announcement released within the DFS announcement 8 April 2021 and is available to view on the Company's website at www.fyiresources.com.au

Mineral Resources

The information in this report that relates to Mineral Resources is based on information compiled by Mr Grant Louw, under the direction and supervision of Dr Andrew Scogings, who are both full-time employees of CSA Global. Dr Scogings is a Member of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. He is a Registered Professional Geologist in Industrial Minerals. Dr Scogings has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves". The information is extracted from the PFS announcement dated 25 September 2018 and is available to view on the Company's website at www.fyiresources.com.au

Metallurgy

The information in this report that relates to metallurgy and metallurgical test work is based on information reviewed and compiled by Mr Alex Borger, a Competent Person who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM). Mr Borger is an employee of Independent Metallurgical Operations Pty Ltd, and is a contractor to FYI. Mr Borgers has sufficient experience that is relevant to this style of processing and type of deposit under consideration, and to the activity that he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves". Announcements in respect to metallurgical results are available to view on the Company's website at www.fyiresources.com.au.

General

The Company 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 findings in the relevant market announcements continue to apply and have not materially changed and that all material assumptions and technical parameters underpinning the estimate in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original announcement.

ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Traditional Owners and Custodians of the lands from which the minerals we process are recovered and from the lands where the processing takes place.

We pay respects to their elders, past present and emerging.

HPA PROJECT REMAINS FYI'S FOCUS

The rare earths strategy is a great adjunct to the HPA project

FYI's focus is on our core HPA project

The HPA project metrics and market outlook remains compelling

The project team is being expanded and a re-engineered development plan and revised schedule has been established

Technical learnings and process optimisations will be incorporated into the new project development

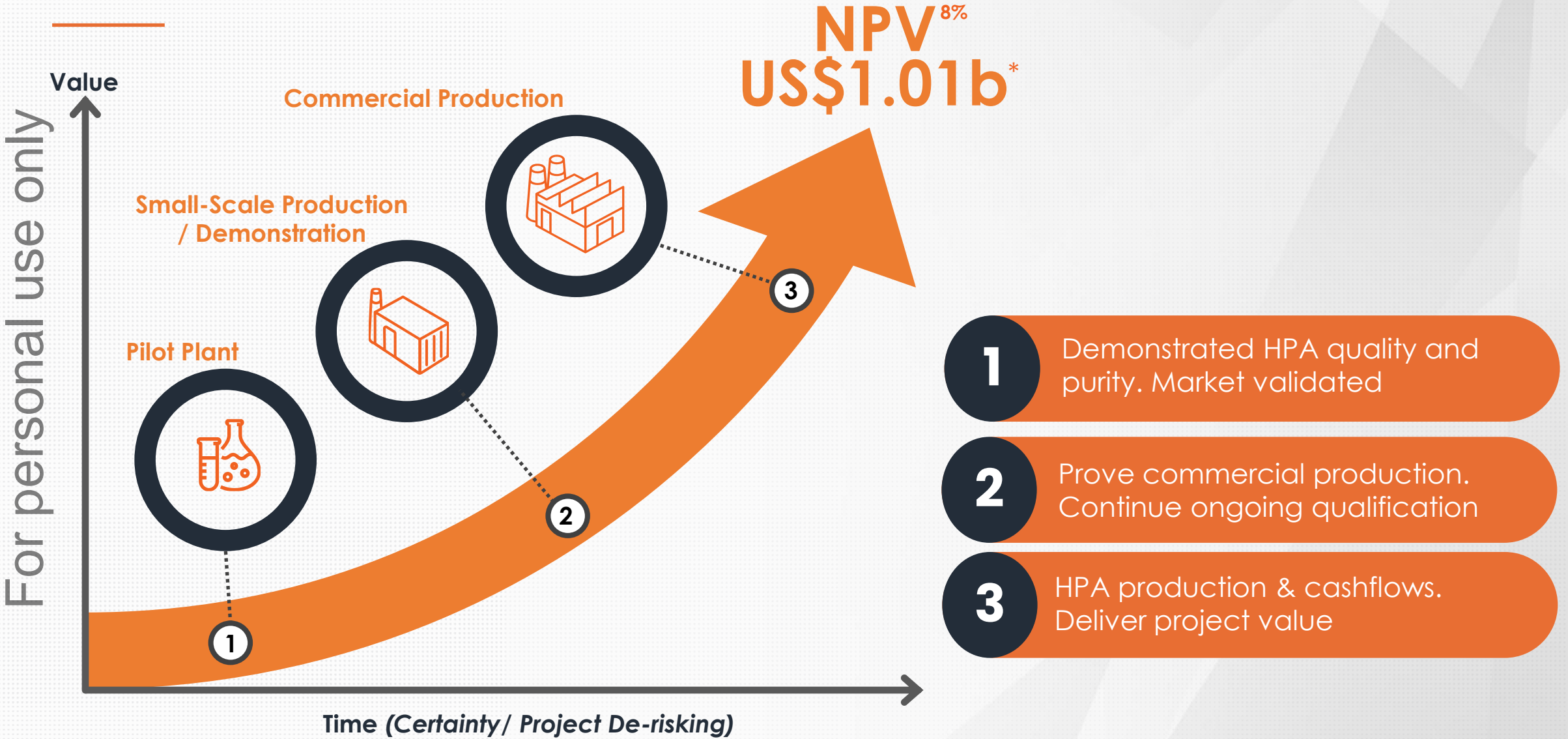
Project development to the HPA investment decision is funded

Both HPA and rare earths projects demonstrate tremendous market opportunities via their development strategies

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DELIVERY PATHWAY



DFS - OUTSTANDING PROJECT ECONOMICS SUMMARY

NPV SUMMARY (POST TAX)

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US\$6,661
HPA CASH COST



PER TONNE PRODUCTION

55%



IRR

25 YEARS



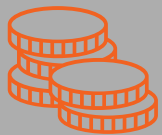
DCF PROJECT FORECAST

US\$202m



CAPEX ESTIMATE

US\$186m



25 YEAR AVG ANNUAL EBITDA

3.2 YEAR



PROJECT CAPITAL PAYBACK

US\$1,014m



AFTER-TAX NPV (@ 8%)

US\$131m



NET CASH FLOW PER ANNUM

10,000 tpa HPA production

US\$26,400/t HPA sales price

15% of sales is 99.999% (5N)

OUR PRODUCTS ROLE IN DECARBONISATION

HPA and Rare Earths are enablers of many green technologies

RARE EARTHS

WIND TURBINES

High Performance offshore wind turbines use approximately 200Kg NdPr/MW installed power



COMPONENTS

catalytic converters, sensors, actuators, pumps and A/C compressor

LCD SCREEN

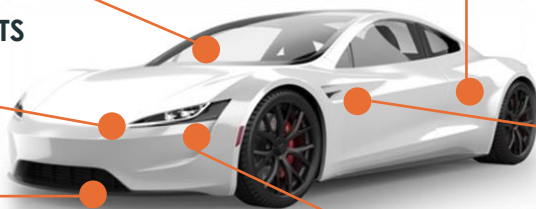
RARE EARTH MAGNETS

Electric motors
Drive Trains

COMPONENT SENSORS

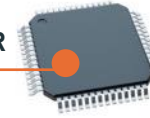
GLASS & MIRRORS POLISHING POWDER

HEADLIGHT GLASS



HPA

SEMI CONDUCTOR WAFER



SMART PHONE



AERONAUTICS



MEDICINE

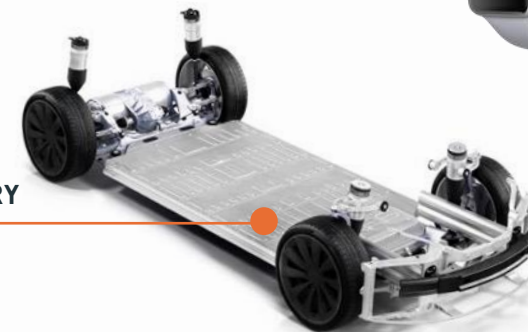


LED LIGHTS

WATCH FACES

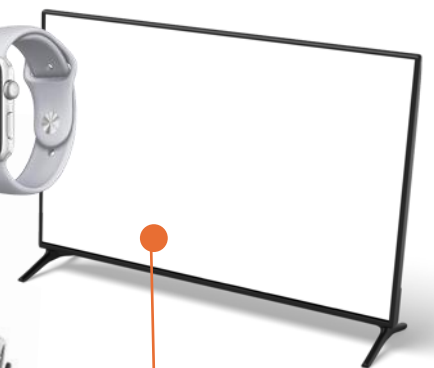


LI-ION BATTERY



LED SCREENS

- TV
- TABLETS



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MINHUB TRANSACTION MOTIVATION

HPA remains our core focus

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An opportunity to participate in the development of a potentially world class operation. Straightforward project delivery, low development cost, well resourced team, industry and Government support



Minhub rare earth strategy is complementary to our core HPA project. Combined capacity, project experience and technologies



Ideally positioned with credible industry partners. Collaborating with strategic parties. Government and industry support.



Modelled economics with multiple feedstocks indicate a robust project with opportunities for organic growth



Perfect timing with Industry tail wind and sector growth. Contribute to Australia's sovereign supply chain capabilities



Complementary to FYI's high quality production, critical minerals and ESG objectives



WHY ARE RARE EARTHS IMPORTANT?

The **rare earth elements** are a set of 17 metallic elements. These include the 15 lanthanides on the periodic table plus scandium and yttrium, currently the economics are driven by the demand for 'magnet feed' rare earths.

- Permanent rare earth magnets are used in direct drive electric motors and generators in electric vehicles (EV's), wind turbines, and numerous other applications essential for global decarbonisation.
- Unlike hard rock and ionic clay deposits, rare earths are recovered from mineral sands deposits as a by-product to zircon and titanium minerals and are consequently at the bottom of the cost curve.
- Monazite concentrate recovered from mineral sands is high-grade, typically (~60% TREO) and is rich in Light Rare Earths including neodymium & praseodymium (NdPr).
- Xenotime recovered from mineral sands is also high grade (~50% TREO) and is rich in heavy rare earths including magnet feed rare earths dysprosium (Dy) & terbium (Tb)

Australia's Critical Minerals Strategy aims to grow the rare earths sector, expand downstream processing and meet future global demand

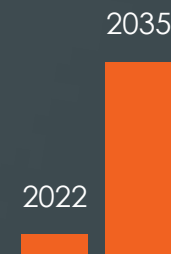


Neodymium, Praseodymium make up approximately 30% of Nd-Fe-B permanent magnets



Dysprosium & Terbium are used in small quantities (up to 5%) in specific high temperature applications such as EV drive chains

1000% demand growth by 2035



Adamas Intelligence forecasted NdPr consumption to increase 11-fold by 2035 and DyTb by >7-fold with growth restricted by supply

WHAT IS THE MINHUB PROJECT?

- The Minhub Project is proposed as a mineral separation plant to be located in the Darwin Port Precinct, Northern Territory
- The Minhub Project will be co-owned by FYI & Arafura and managed by MOPL
- FYI and Arafura will co-fund the development of Minhub on a 50:50 basis to feasibility study – due early 2024
- Further funding to production will be on a 50:50 basis between FYI and Arafura or as agreed
- Minhub will sell traditional mineral sands products zircon, ilmenite, & rutile
- Monazite & xenotime will be either sold to targeted markets by Minhub or transported to Arafura's Nolans Project for further processing into rare earth oxides
- Good shared rail logistics with Nolans

WHY THE MINHUB PROJECT?

- Minhub Operations Pty Ltd (**MOPL**) is developing an independent collaborative mineral processing option for the mineral sands industry
- The Minhub project reduces the significant barriers to entry that emerging rare earth rich mineral sands projects face
- Rare earth minerals are co-products with zircon and titanium minerals which are highly concentrated markets
- The mineral sands industry has developed a structural reliance on the Chinese concentrate market to achieve value for contained rare earths which faces geopolitical headwinds
- For a decade junior companies have relied on the concentrate market enabling lower capex and lower permitting hurdles

COMMERCIAL FRAMEWORK

1. Collaboration

Minhub collaborates with Mineral Sands Developers across Australia to deliver mineral sands concentrates to Minhub

Particular focus on the heavy rare earth rich Gippsland & Murray Basin

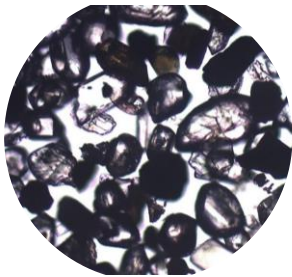
Minhub supplies technical, marketing & commercial assistance

2. Mineral Separation

- Minhub Project jointly funded by FYI and Arafura
- High value mineral products for export from Darwin include monazite & xenotime, zircon, rutile, ilmenite
- Commercial terms offered to feedstock suppliers include concentrate purchase, toll or profit share

3. Rare earths Downstream

- Arafura has first right to offtake monazite & xenotime
- Arafura sells NdPr
- Minhub Pty Ltd and Arafura will collaborate to investigate further processing of heavy rare earths



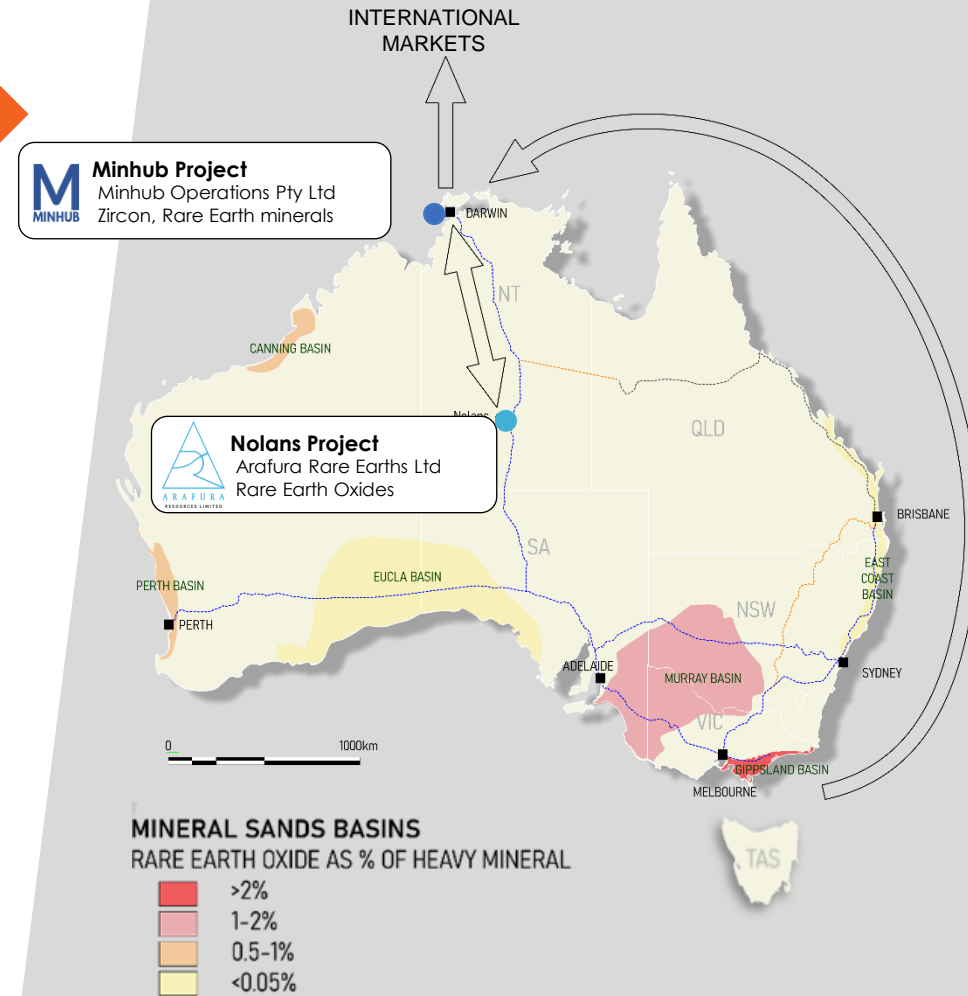
Minerals Sands



Monazite & Zircon



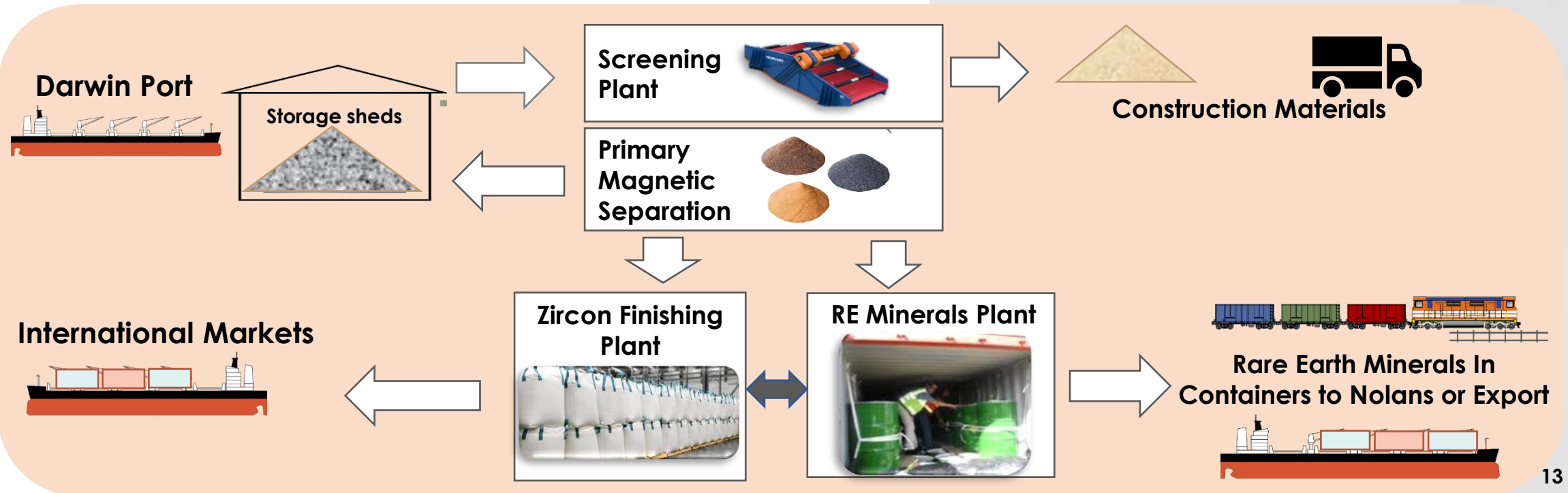
Nolans Project
Neodymium (Nd) & Praseodymium (Pr)



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SIMPLIFIED FLOWSHEET FOR MINERAL SANDS PRODUCERS

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THE MINHUB PROJECT
3RD PARTY
FEEDSTOCK



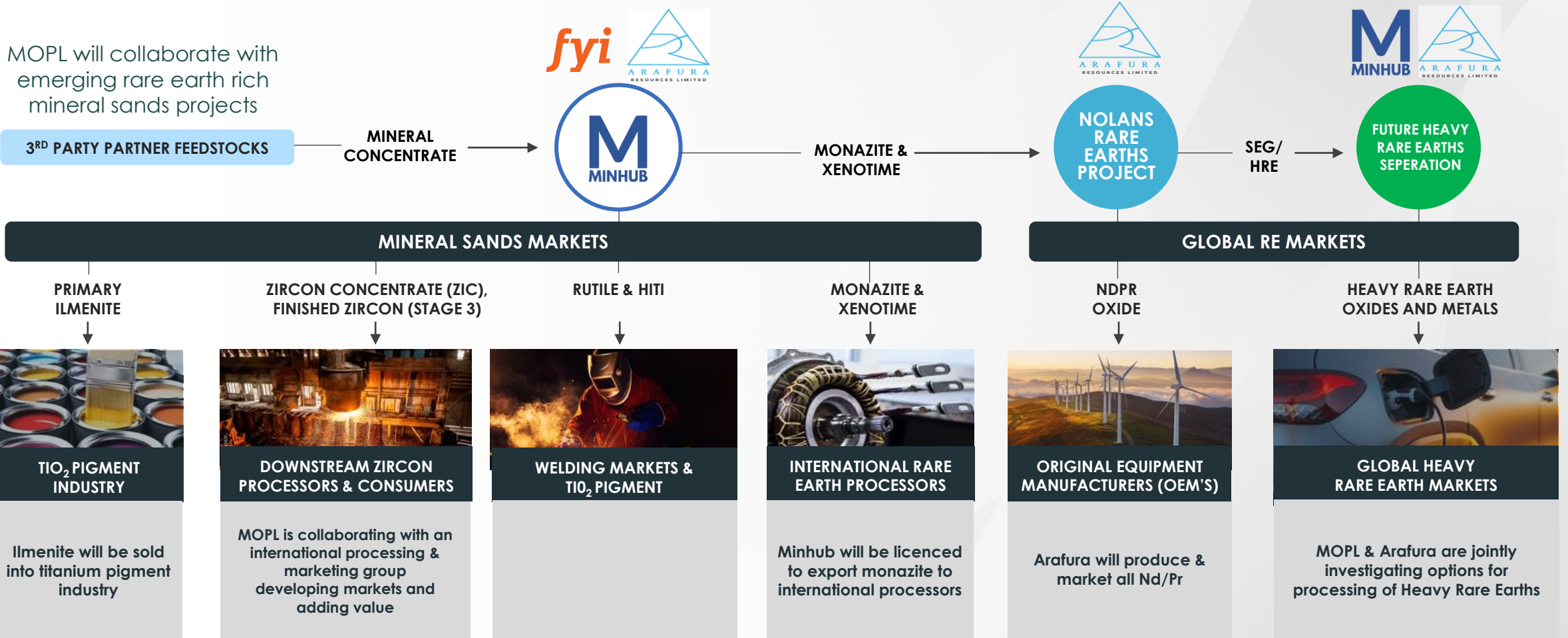
RARE EARTH SUPPLY CHAIN THROUGH THE MINHUB PROJECT

The Minhub Project will be co-owned by FYI & Arafura and managed by MOPL

Arafura will own and operate the Nolans Rare Earths Project

Arafura & Minhub jointly investigating HRE downstream

MOPL will collaborate with emerging rare earth rich mineral sands projects



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ALIGNMENT WITH AUSTRALIA'S CRITICAL MINERALS STRATEGY



Aligns partners from Australian mineral sands mining with rare earth projects and markets. Providing transparent and sustainable sourcing of rare earth products



Captures significant value for NT and Australia by upgrading unfinished mineral sands concentrates and value adding exports streams



Aligns with NT and Federal Govt policy, in relation to security of strategic minerals and downstream value capture



Adds to Arafura's capacity to deliver into the increasing demand for NdPr, the key rare magnet metals for global electrification



Creates opportunity for value capture and downstream processing in Australia of globally strategic heavy rare earths (HRE)

Minhub aims to secure zircon and rare earth concentrates containing 30,000t of monazite & xenotime from the Gippsland & Murray Basin by 2030 which would enable downstream partners to produce;



NdPr production of >3,000tpa (over 10%¹ of global market)



Dy + Tb production of >350tpa (20%¹ of global production)

¹production forecasts are projected by Minhub based on 2020 global production

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ALIGNMENT WITH GLOBAL ESG BEST PRACTICES

Developing an ethical alternative heavy rare earths supply

98% of heavy rare earths come China & Myanmar

- Chinese heavy rare earths entirely from ionic clay (40% now from Myanmar's ionic clay production)
- Legacy of environmental destruction over large areas
- In situ leaching (direct application of chemicals, solar evaporation of chemicals)
- Ethical dilemma for EV manufacturers, customers and governments. Pressure on electric vehicle manufacturers to limit use of Dysprosium and Terbium essential for the transition to net zero.



An ionic clay deposit in Jiangxi, China (Reuters)

Victorian Mineral Sands offer an ethical alternative

- Xenotime rich deposits in the Gippsland and Murray Basins.
- Almost 100 years of mining history on Australia's east coast beaches, south Western Australia and Murray Basin
- Rehabilitation of productive farmland with high agricultural productivity
- Restoration of native landscapes from marginal grazing and old plantations



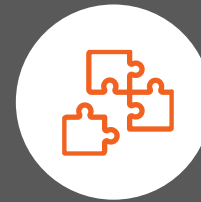
Rehabilitated mineral sands mine southwest Australia

FYI'S RARE EARTHS STRATEGY

Minhub is collaborating with mineral sands developers with significant rare earth resources

The Minhub Project will value-add mineral sands concentrates and produce finished mineral sand products including monazite & xenotime

The Minhub Project aims to be a key part of a sovereign supply chain solution for rare earths



Minhub is securing feedstock supply and collaborating with Arafura in the development of the Minhub Project

MOPL and Arafura will cooperate in the downstream development of heavy rare earth separation



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Thank You

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