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# **Iluka Resources (ASX:ILU)**

**Macquarie Conference, 8-9 May 2024**

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# A global critical minerals company

Iluka is one of the world's largest producers of zircon; a major producer of high grade titanium feedstocks; and is set to become a significant global supplier of refined rare earths

Iluka's production is located exclusively in Australia

## Critical minerals for everyday life

Zircon, titanium and rare earths are used in an array of everyday applications and are critical for sustainable development, including global electrification

## Operational experience

Over 70 years of critical minerals exploration, mining, processing, marketing and rehabilitation, with a pipeline of quality projects to meet growing demand

## ASX listed

Listed on the Australian Securities Exchange (ASX:ILU), market capitalisation of A\$3.4bn<sup>1</sup>

20% holding in Deterra Royalties (ASX:DRR), cornerstone asset of BHP Mining Area C iron ore royalty, market capitalisation of A\$2.6bn<sup>1</sup>

## Sustainable supply chain

A safe, responsible and sustainable supplier of critical minerals, supporting the transition to a modern, lower carbon economy



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# Mineral sands: Iluka's core business



HEARING PROTECTION MUST BE WORN IN THIS AREA

RCR

*Ongoing tightness for premium zircon and Iluka’s disciplined approach supporting the price.*

**Q1 2024 result**

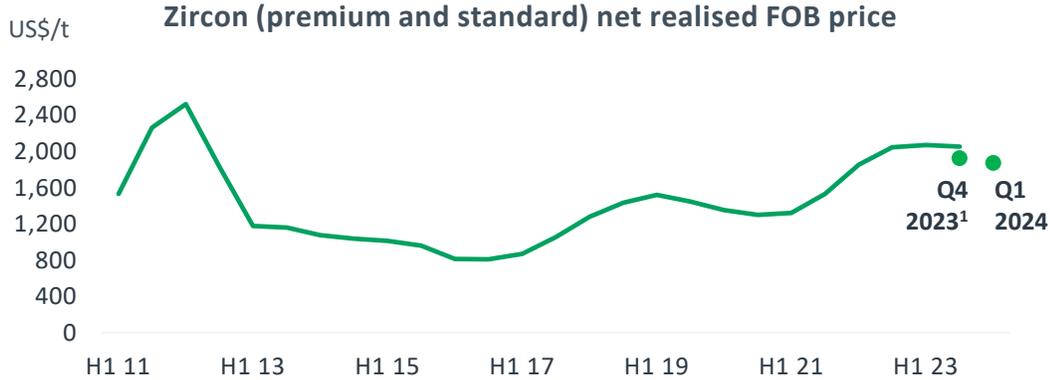
- Sand sales of 48kt plus 11kt of zircon-in-concentrate (ZIC)
- Zircon premium and standard price of US\$1,873/t

**Market commentary**

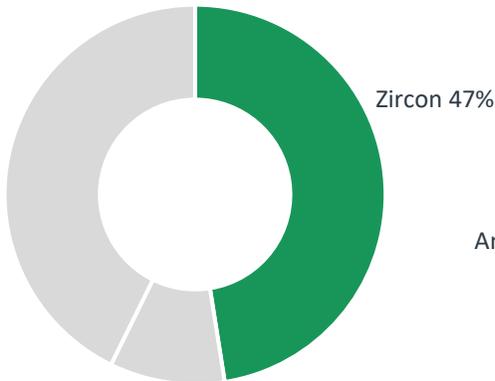
- Premium zircon market remains tight
- Demand reflects underlying consumption with customers reluctant to restock
- China ceramics remains subdued but other market segments stable
- Sentiment improving in Europe

**Outlook**

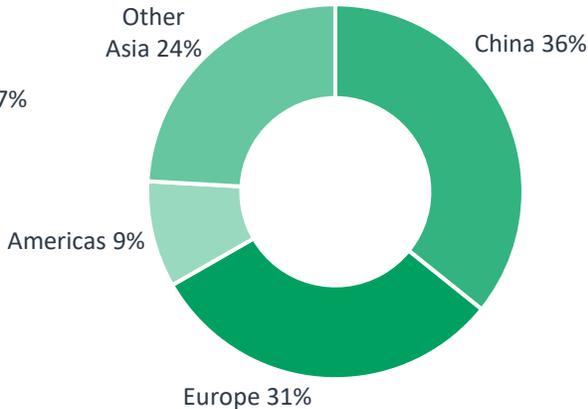
- Sand sales for Q2 exceeding Q1
- Prices for Q2 have increased modestly



**FY 2023 Z/R/SR Sales (kt)**



**FY 2023 zircon sales by region (kt), excl ZIC**



Note: 1. The weighted average realised price in Q4 2023 benefitted from a reversal of accruals of US\$120/t. Price shown is net of accruals at US\$1,925/t.

*Take-or-pay synthetic rutile contracts provide high degree of revenue certainty. Rutile sales achieve price premium in welding market.*

## Q1 2024 result

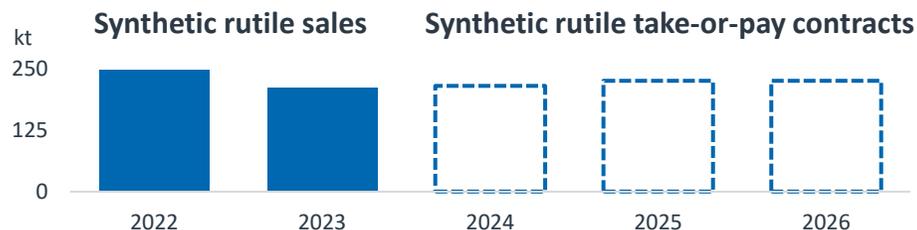
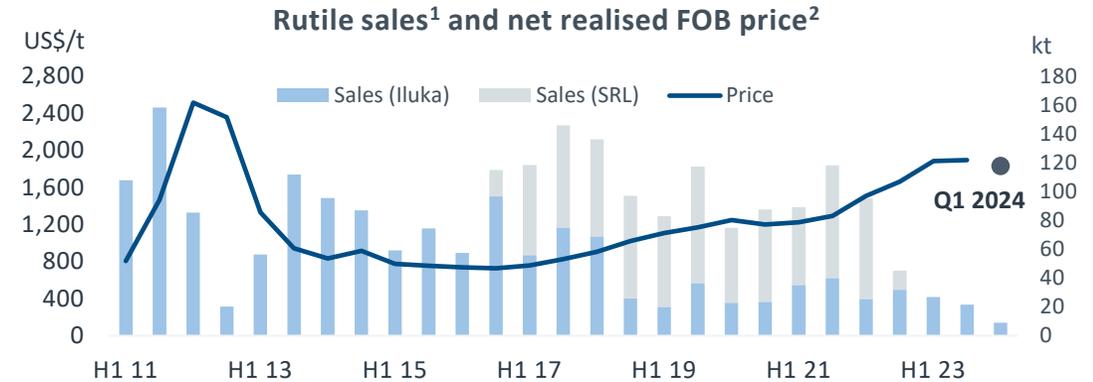
- Rutile sales<sup>1</sup> of 9kt, synthetic rutile sales of 37kt
- Rutile price US\$1,828/t, synthetic rutile US\$1,282/t

## Market commentary

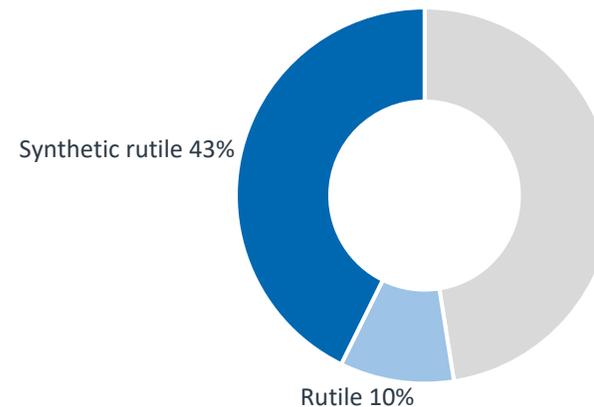
- Pigment customers report positive strong sales results and depleted inventory levels
- Pigment utilisation rates increasing ahead of northern hemisphere summer
- Several pigment price increases announced for Q2

## Outlook

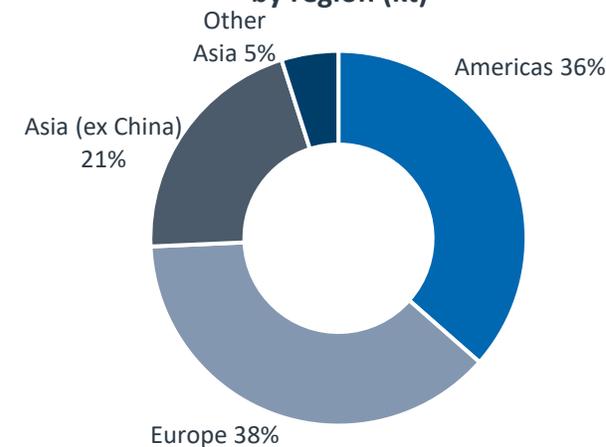
- 200ktpa take or pay contracts for synthetic rutile to 2026
- Restart of swing capacity SR1 (110ktpa synthetic rutile) remains available
- Welding market medium to longer term outlook strong on continued infrastructure development and ship building



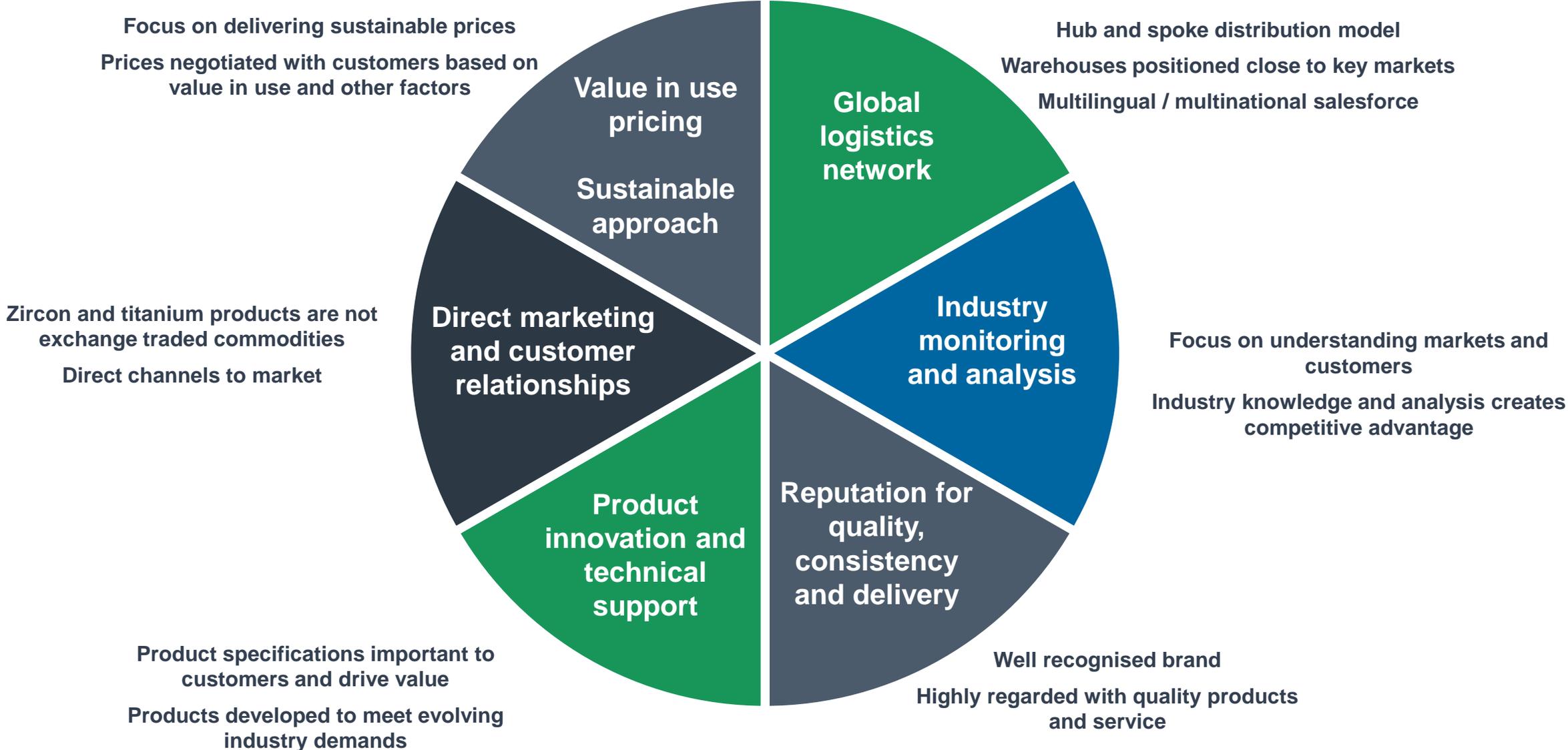
**FY 2023 Z/R/SR Sales (kt)**



**FY 2023 high grade titanium sales by region (kt)**



Note: 1. Rutile sales volumes includes HYTI, a lower value titanium dioxide product, HYTI, that typically has a titanium dioxide content of 70-90%. This product sells at a lower price than rutile, which typically has a titanium dioxide content of 95%. 2. Rutile sales price excludes HYTI.





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# Debunking rare earth industry myths





**“The Middle East has its oil,  
China has rare earths”  
Deng Xiaoping, 1987**

**China’s industrial policies have for over three decades targeted global supply chain domination in rare earths critical to many modern technologies.**

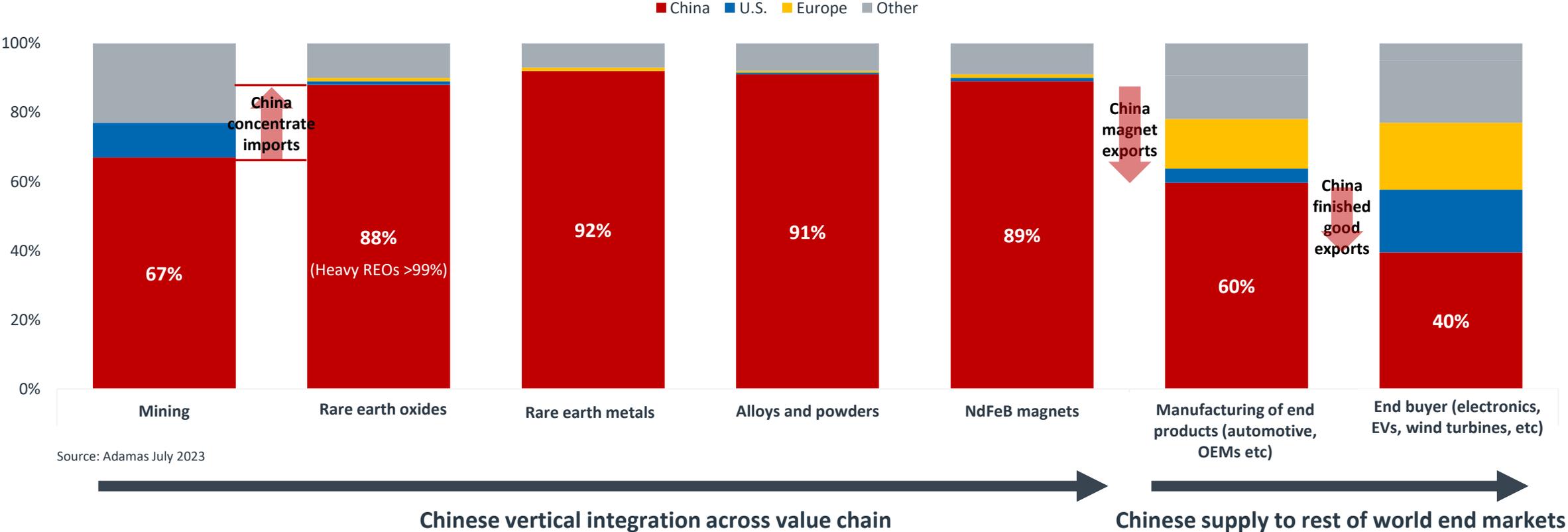
**The rest of the world is today reliant on Chinese supply of rare earth permanent magnets to meet electrification goals and industry supply requirements.**

# Rare earth supply chain dominated by China's vertical integration

China has vertically integrated its rare earth industry from oxides to metals, alloys, powders and magnets.

Pricing and other support mechanisms ensure market dominance across the value chain to ultimately support value add end use industries including electronics, electric vehicles and wind turbine manufacture.

Global market share of rare earth supply chain (2023 estimate)

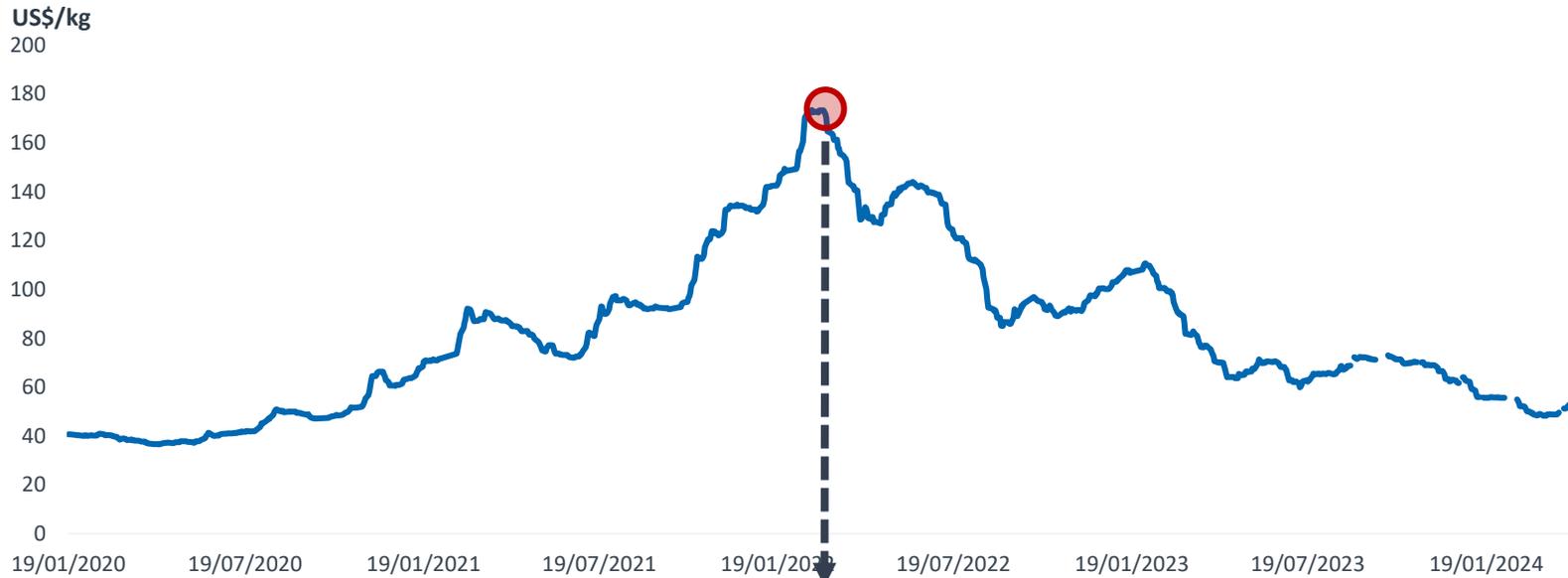


# Asian Metal Index price = effective Chinese policy

*The Asian Metal Index is the only publicly available price index for rare earth oxides. It is influenced by actions of the Chinese government and Chinese enterprises.*

*The Asian Metal Index is not a reflection of free market dynamics.*

Daily Asian Metal Index NdPr price (US\$/kg)



Source: Asian Metal, Federal Reserve

**3 March 2022**  
Chinese government interview (Yue Tan) with key enterprises

**4 March 2022**  
Ministry of Industry and Information Technology of the People's Republic of China, Department of Raw Materials Industry announcement

**8 March 2022**  
Prices start decline

Chinese Rare Earth Office “Yue Tan” the major rare earth producing companies, with intent to:

1. Promote and improve pricing mechanism for rare earth products
2. Jointly guide product prices to return to rationality
3. Promote the sustainable and healthy development of the rare earth industry

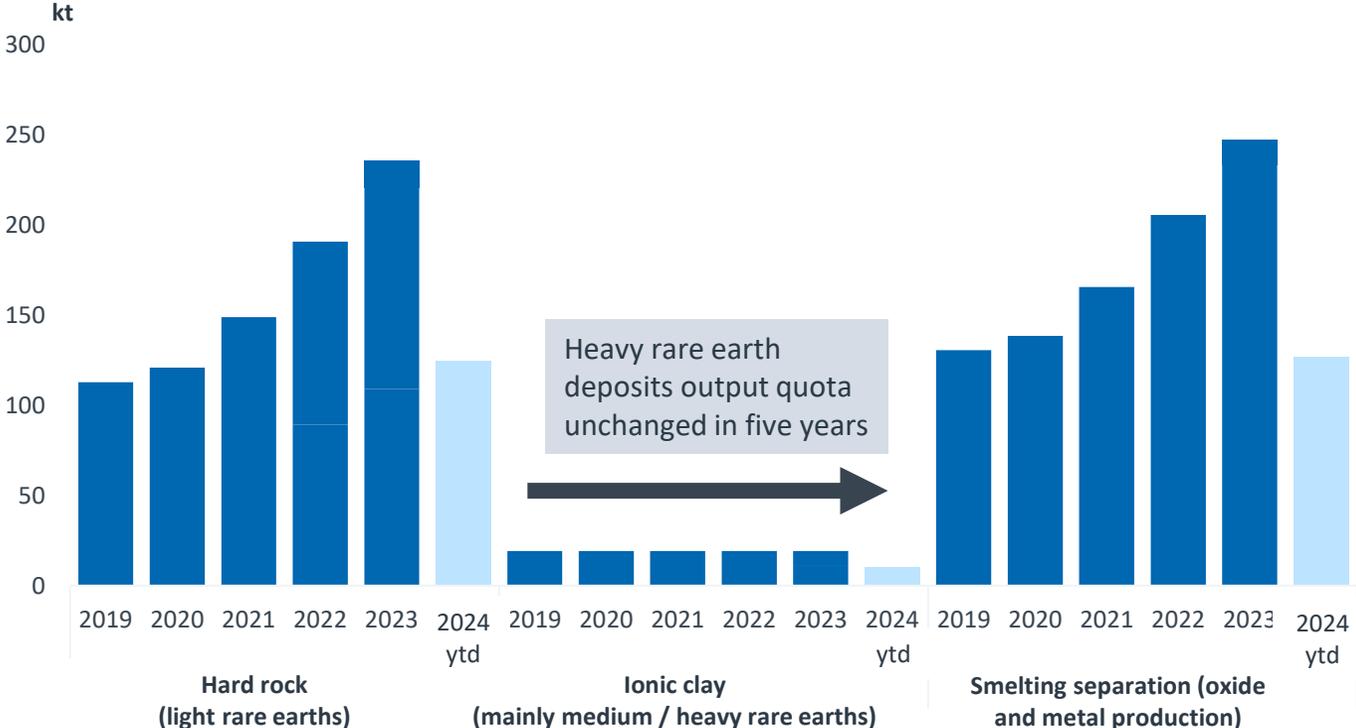
Full announcement in Appendix

*The Chinese Ministry of Industry and Information Technology set quotas (typically six monthly) for rare earth mining and smelting and separation.*

*The quotas act to preserve the longevity of Chinese rare earth deposits but do not purport to control total rare earth oxide production.*

*The quotas only apply to mining and separation of domestic feed. Processing of imported concentrate is not subject to quotas and only limited by Chinese capacity and access to imported feed sources.*

**China rare earth output quotas**



**Selected other industrial and trade policies**

- 13% VAT (value add tax) on rare earth oxides, metals and magnets (refundable for finished magnet exports)
- December 2021: Final consolidation of rare earth enterprises (China Rare Earth Group and China Northern)
- December 2023: Ban on heavy rare earth magnet technology export

Source: Ministry of Industry and Information Technology (miit.gov.cn)

# China rare earth concentrate imports

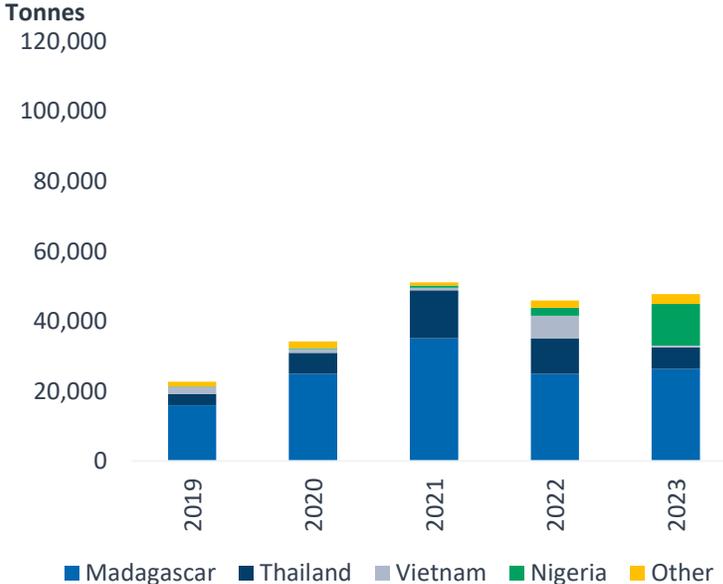
*China sources over 20% of rare earth oxide feedstock from imported concentrates (including from the US, Myanmar, Madagascar). Imports have been growing strongly as China secures feed for its downstream processing.*

## Bastnaesite imports



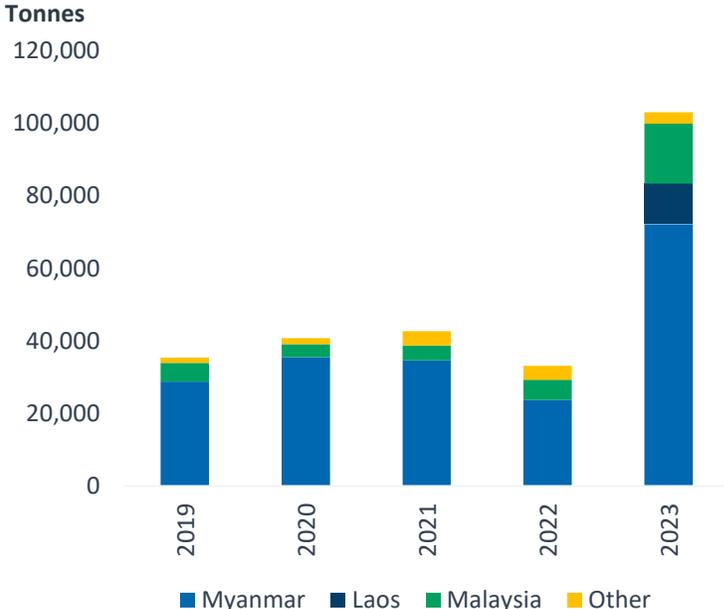
>95% from US-based MP Materials

## Monazite imports



Rare earths contained in mineral sands concentrates not accounted for and difficult to estimate

## Mixed rare earth carbonate, mixed rare earth concentrate and other rare earth compounds



Not shown is heavy mineral concentrates of mineral sands which also contain rare earths

Myanmar is main source of heavy rare earths. Conflict and closure of border in 2022 reduced imports

Source: Datamyne. Note rare earth content of imports vary.



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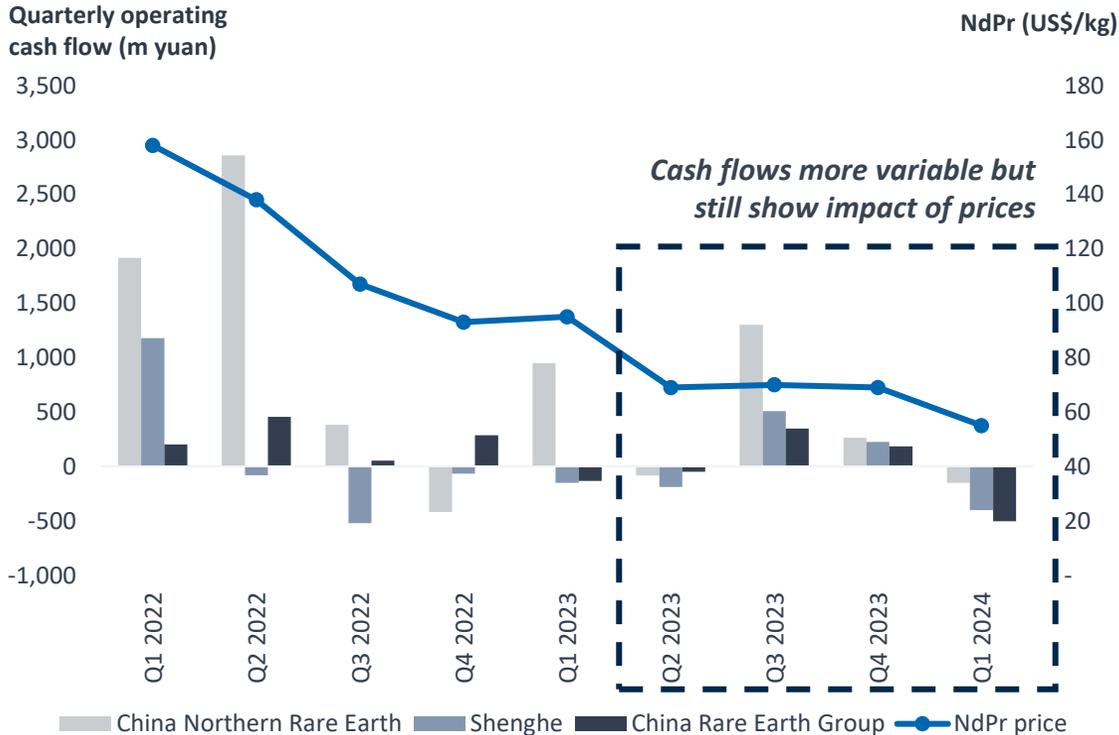
# Impact of rare earth price on producers

# Price impact on Chinese producers

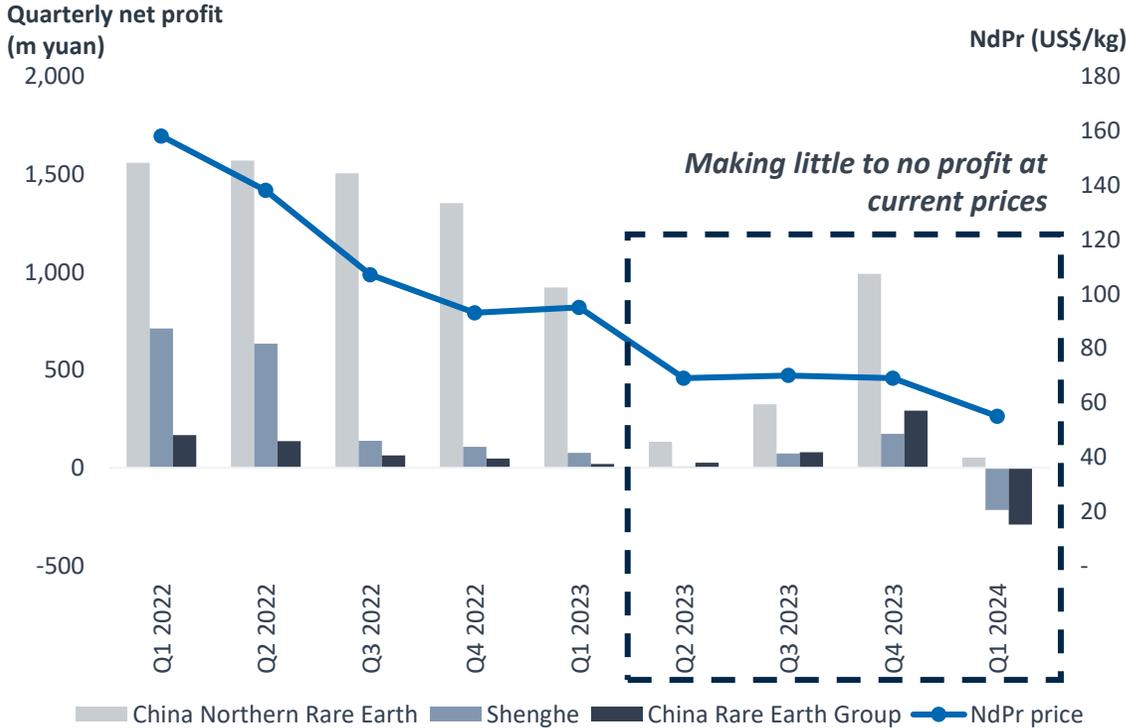
Current price levels are impacting profitability of Chinese producers.

The three major Chinese rare earth companies reported negative cash flows and little to no profit in Q1 2024.

Net operating cash flow vs REO prices



Quarterly net profit vs NdPr price

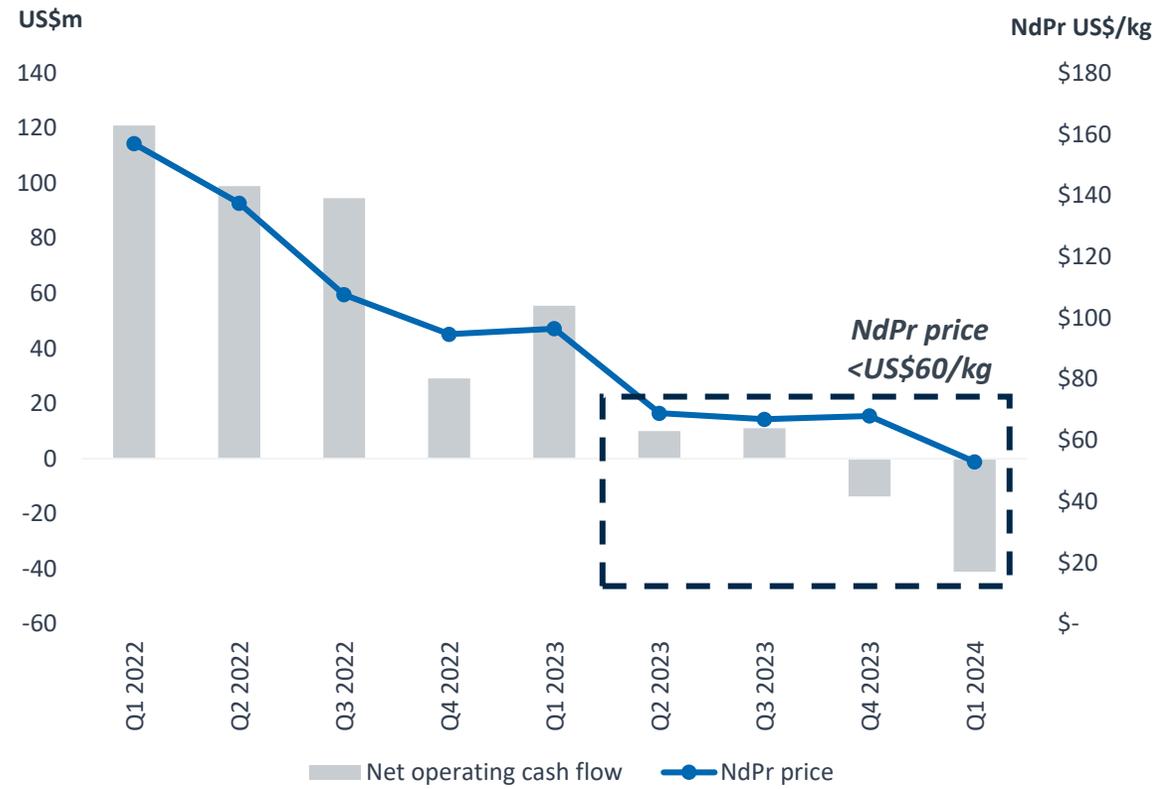


\*Net profit excluding non-recurring gains and losses  
Source: Company reports, Asian Metal

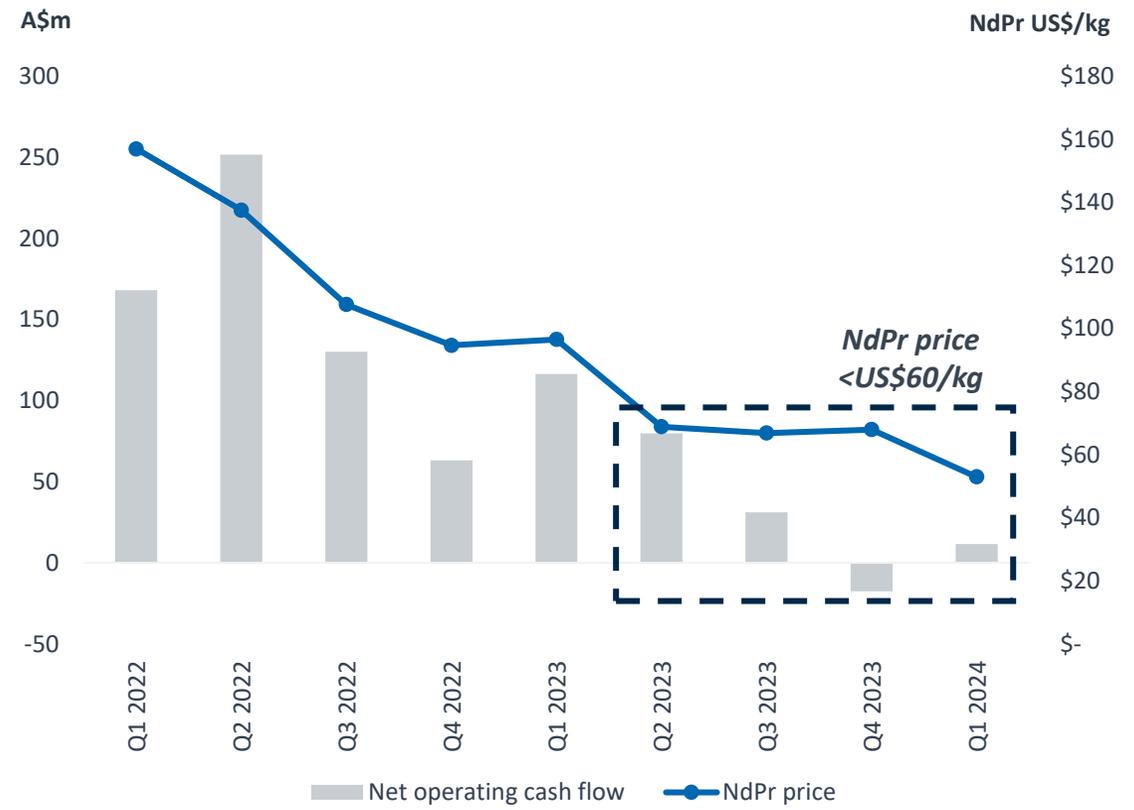
# Price impact on non-China producers

Quarterly operating cash flows of Lynas (ASX:LYC) and US-based MP Materials (NYSE:MP) show the impact of low NdPr prices and show the level is not sustainable for ongoing operations.

**MP Materials quarterly net operating cash flow vs NdPr price**



**Lynas quarterly net operating cash flow vs NdPr price**



Source: Company reports, Asian Metal, Bloomberg



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# Implications for the rare earth industry



## 1. China's business model is reliant on imported feed

China imports over 20% of feed for its rare earth refineries, more for heavy rare earths.

This allows it to expand downstream processing capacity and preserve the longevity of its domestic deposits.

## 2. Current price level is not sustainable

At current prices, companies supplying China are not economic.

China's own state supported enterprises are losing money.

## 3. New supply is needed for this growth industry with strong fundamentals

Global electrification is reliant on electric motors, which in turn run on rare earth permanent magnets.

Strong demand growth is forecast across key end applications including electric vehicles and wind turbines.

New supply of sustainable, independent rare earths will be critical.



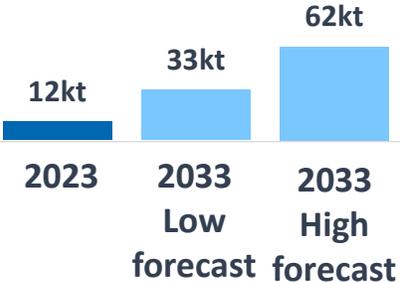
# Strong industry fundamentals

Global demand forecasts vary on market penetration of renewable energy technologies, substitution and magnet composition.

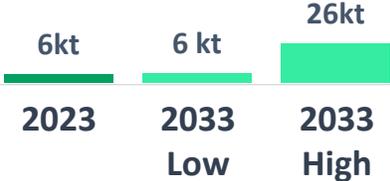
Additional NdPr oxide required over the next decade is 30 - 108 thousand tonnes. Materially higher amounts of DyTb also required in currently supply constrained market.

## Global demand for NdPr (kt)<sup>1</sup>

### Electric Vehicles



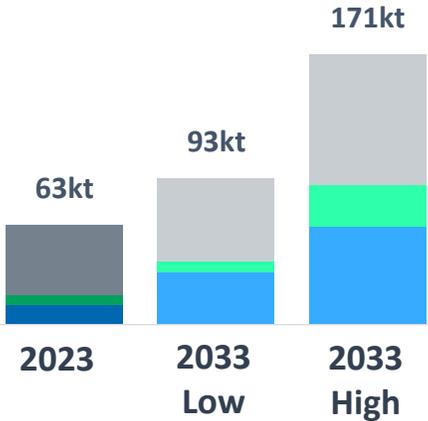
### Wind Power



### Other Sectors<sup>2</sup>



### Total



	2023	2033
Dy / Tb	0.5 kt	1.3 – 3.0 kt

	2023	2033
Dy / Tb	0.2 kt	0.3 – 1.6 kt

	2023	2033
Dy / Tb	0.3 kt	0.4 – 0.6 kt

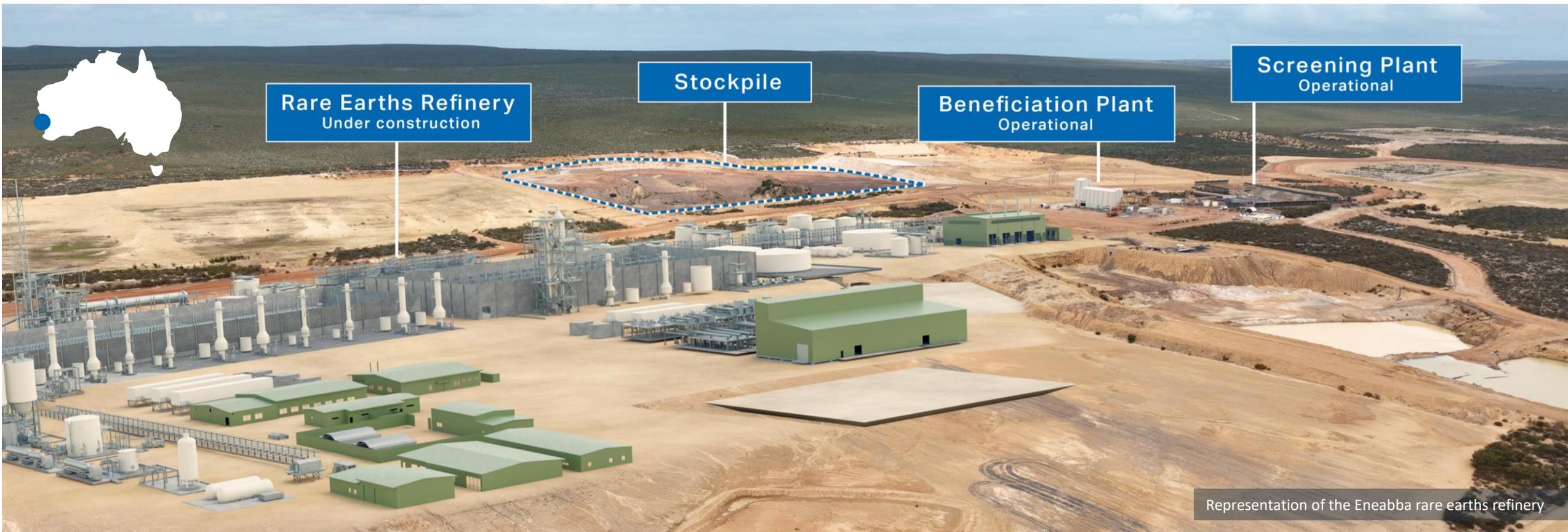
	2023	2033
Dy / Tb	1.1 kt	1.9 – 5.1 kt

1. Iluka’s estimate with inputs from Adamas, Project Blue, Argus and other data sources (e.g.: IEA, Wind Energy Council, McKinsey)  
 2. Other automotive uses, consumer electronics, speakers, cordless power tools, industrial applications, speakers, home appliances, etc.



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# Iluka's Eneabba refinery opportunity



### Brownfield site, access to major utilities



Site has all major utilities – power, water, gas, roads, rail  
Iluka has operated at Eneabba since the 1970s

### Producing separated light and heavy rare earths



~ 5.5 kpta NdPr capacity  
~0.75 kpta DyTb capacity  
Commissioning end 2026

### Major employer



Construction workforce ~300  
Operational workforce ~270  
Camp at Eneabba township, 250km from Perth

### Permanent waste disposal



Facilities constructed inside previous mining voids without rehandle

## 1. Downstream processing producing sustainable, secure rare earths

Eneabba will be a multi-decade piece of infrastructure complementing Iluka's mineral sands business and catalysing domestic industry through sovereign downstream processing

The refinery is being delivered through risk sharing arrangements with the Australian Government, underpinned by the unique Eneabba stockpile and Iluka's disciplined capital allocation approach and focus on sustainable value

## 2. Independent rare earth oxide supply

Diversifying the global rare earth supply chain with sustainable, secure supply

Iluka's customer offering will include full product provenance and strong ESG credentials

Product prices will reflect value of the product and be negotiated through bilateral agreements

## 3. Facilitating global electrification

Eneabba will produce separated light and heavy rare earths, both critical in the production of sustainable energy technologies and other applications, including defence technologies

**Building Australia's first fully integrated rare earths refinery**

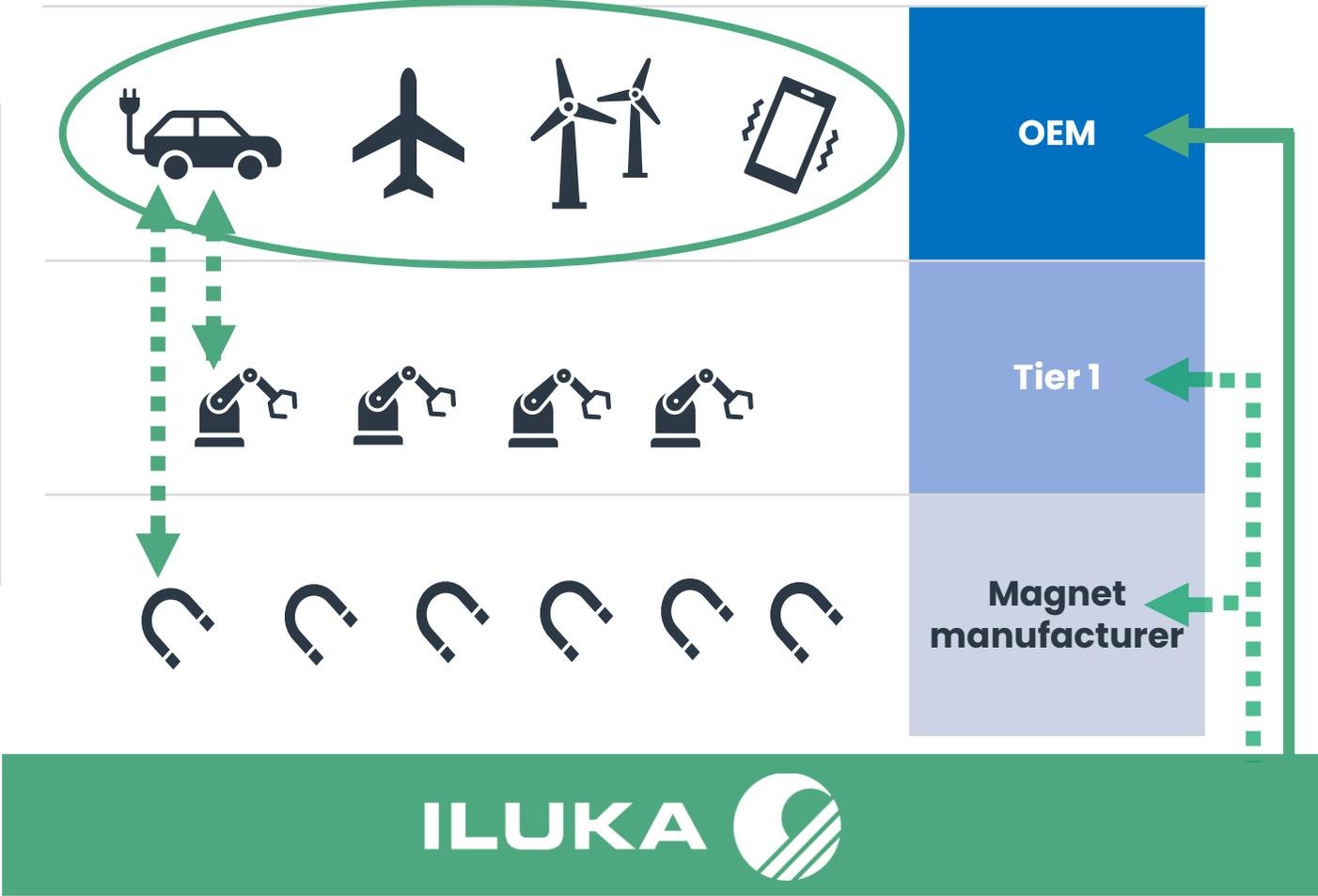
# Iluka's approach to rare earth marketing

*Iluka is experienced in selling specialty minerals through direct customer relationships and is targeting EV OEMs who can redirect material to their preferred suppliers.*

*Engagement also includes other market segments, such as consumer electronics and defense.*

*OEMs can secure their supply chain through direct offtake with Iluka and redistribute to their Tier 1 and 2 suppliers.*

*Iluka can also directly supply Tier 1s, 2s and magnet producers who service automotive and other industries.*



*Iluka's customer offering includes:*

- ✔ Guaranteed supply of light and heavy rare earth oxides
- ✔ Sustainably produced products
- ✔ An experienced and reputable partner

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POWERING THE ENERGY REVOLUTION

**Prices for rare earth oxides to reflect the true value of the product, including supply security and traceable product provenance attributes; and not to be inextricably linked to prices set by the Asian Metal Index**

**Financial risk mitigation through a strategic partnership with the Australian Government**

**Operational readiness and technical expertise supported by eminent industry experts Carester**

**Catalysing an independent rare earth industry**





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**4 March 2022: Ministry of Industry and Information Technology of the People's Republic of China, Department of Raw Materials Industry announcement**

***The Rare Earth Office interviewed key enterprises on the price of rare earth products***

*In view of the continuous rise and high market prices of rare earth products, on March 3, the rare earth office interviewed key rare earth enterprises such as China Rare Earth Group, North Rare Earth Group, and Shenghe Resources Company. The meeting demanded that the relevant enterprises should effectively enhance the awareness of the overall situation and responsibility, correctly grasp the relationship between the current and long-term, upstream and downstream, and ensure the safety and stability of the industrial chain and supply chain; it is necessary to strengthen industry self-discipline, further standardize the production and operation of enterprises, product trading and trade circulation, and not participate in market speculation and hoarding; it is necessary to give full play to the leading role of demonstration, promote and improve the pricing mechanism of rare earth products, jointly guide product prices to return to rationality, and promote the sustainable and healthy development of the rare earth industry.*

*(miit.gov.cn via Google translate)*