



# Revitalizing the Supply of Heavy Rare Earths

Aclara  
Resources



in



X

Aclara  
Chile



Instagram

Aclara  
Brazil



Instagram



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## Scientific and Technical Information

This presentation also contains references to estimates of Mineral Resources. The estimation of mineral resources is inherently uncertain and involves subjective judgments about many relevant factors. Mineral resources that are not mineral reserves do not have demonstrated economic viability. The accuracy of any such estimates is a function of the quantity and quality of available data, and of the assumptions made and judgments used in engineering and geological interpretation (including estimated future production from the Company’s projects, the anticipated tonnages and grades that will be mined and the estimated level of recovery that will be realized), which may prove to be unreliable and depend, to a certain extent, upon the analysis of drilling results and statistical inferences that ultimately may prove to be inaccurate. Mineral resource estimates may have to be re estimated based on: (i) fluctuations in prices of rare earth elements; (ii) results of drilling; (iii) metallurgical testing and other studies; (iv) proposed mining operations; (v) evaluation of mine plans subsequent to the date of any estimates and (vi) the possible failure to receive required permits, approvals and licenses.

Scientific and technical information (including financial forecasts and valuation calculations) relating to the Penco Module contained in this presentation has been derived from, and in some instances extracted from a technical report prepared in accordance with National Instrument “43-101 Standards” of Disclosure for Mineral Projects (“NI 43-101”) entitled “Preliminary Economic Assessment – Carina Rare Earth Element Project – Nova Roma, Goiás, Brazil” with an effective date of November 3, 2023 (“Technical Report” or Aclara PEA”) prepared by GE21 Consultoria Mineral and authored by Stuart J. Saich, Branca Horta de Almeida Abrantes, Porfirio Cabaleiro Rodriguez and Rooniel Hirose, each of whom and is a “qualified person” and “ within the meanings of NI 43-101.

Portions of the scientific and technical information relating to the Carina Module contained in this presentation are based on assumptions, qualifications, procedures and other information which are not fully described herein but are set out in the Technical Report. Reference should be made to the full text of the Technical Report which has been filed with the Canadian securities’ regulatory authorities in each of the provinces and territories of Canada (other than Québec) pursuant to NI 43-101 and is available for review on the Company’s SEDAR+ profile at [www.sedarplus.ca](http://www.sedarplus.ca). The mineral resource estimates referred to in this presentation have been calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) “Standards on Mineral Resources and Reserves, Definitions and Guidelines” dated May 10, 2014 prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM.

Barry Murphy, the Chief Operating Officer of the Company, is a “qualified person” within the meaning of NI 43-101 and has reviewed and approved of the scientific and technical disclosure in this presentation. Mr. Murphy is not independent of the Company within the meaning of NI 43-101.

## Aclara Resources (TSX: ARA)

A technology company with its own mines for procurement of sustainable rare earths

### Two world-class ionic clay deposits in Brazil (Carina) and Chile (Penco)

Ability to produce significant volumes of **HEAVY rare earths** (241 tonnes DyTb annually)

Low-cost, environmentally-friendly extraction via our patented **Circular Mineral Harvesting** process

### A vertically integrated mine-to-magnet strategy in place

**Separation, Metallization and Alloying** technologies under development

Strategic alliance with **key magnet manufacturer in EU/U.S.**

### Backed by strong and experienced long-term shareholders

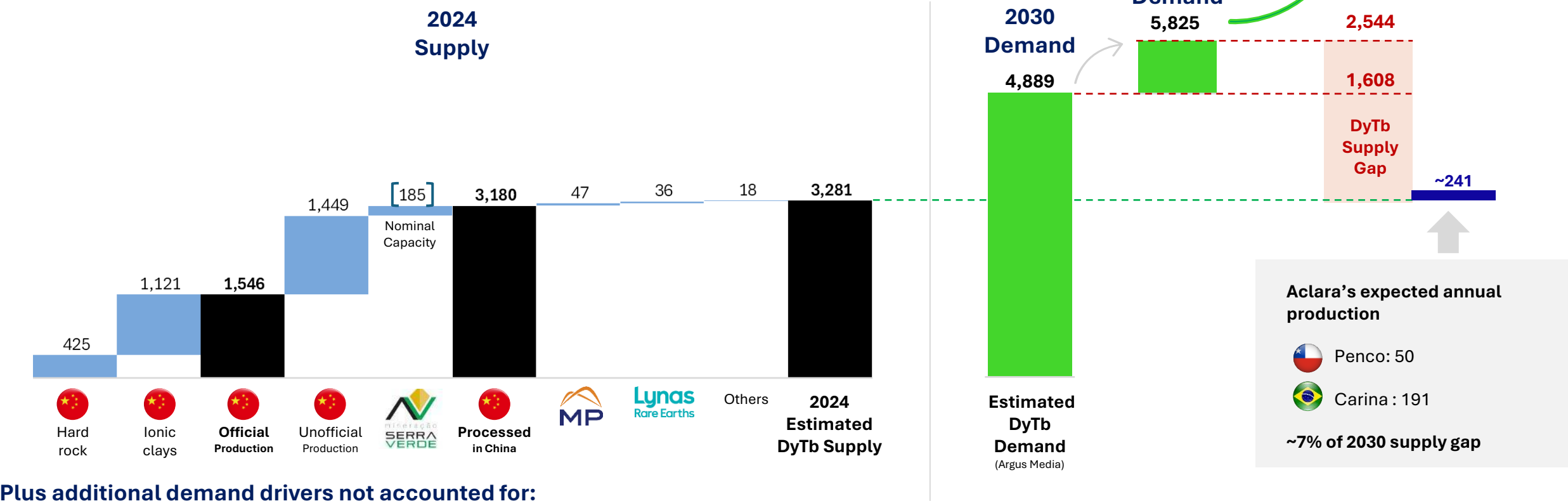
**Hochschild Group (57%):** 100+ years of history developing and operating mining projects in the Americas

**CAP S.A. (10%):** Chilean industrial conglomerate and large high-grade iron ore producer with 70+ years of experience

# DyTb - Estimated 2023 Supply vs. 2030 Demand (in tonnes)



## DyTb - Estimated 2024 Supply vs. 2030 Demand (in tonnes)



Plus additional demand drivers not accounted for:



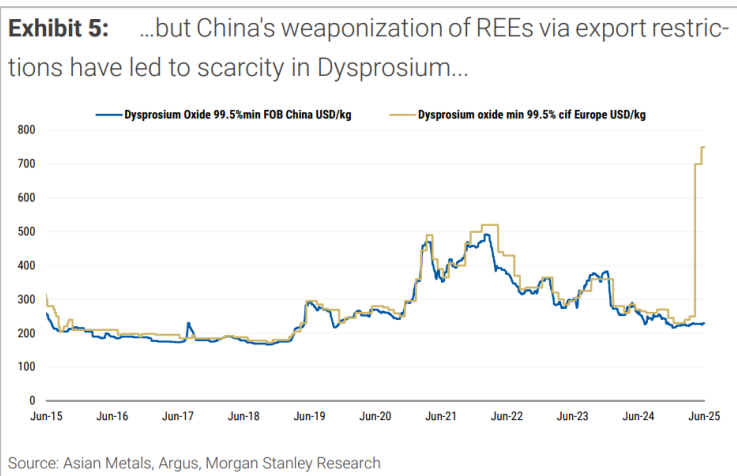
There won't be enough supply of heavy rare earths for all applications

\*Source: The Chinese Ministry of Industry and Information Technology. Elements approximation based on mines grades  
\*\* Source: Argus Media based on customs reports as of July 2025. (REO content of ionic clays carbonates of 40%). Others from USGS 2023 Rare Earths report (customs reports)  
\*\*\* Source: Company presentation (08.2021): Serra Verde Geology, expected production slide. Press release (January 11, 2023) Serra Verde, a Denham Capital portfolio company, announces investment by Vision Blue Resources and The Energy & Minerals Group as well as appointment of new leadership team .

# Ex. China Demand-Supply Dynamics



Chinese prices aren't reliable, and since the U.S.-China trade war, the west has decoupled from them

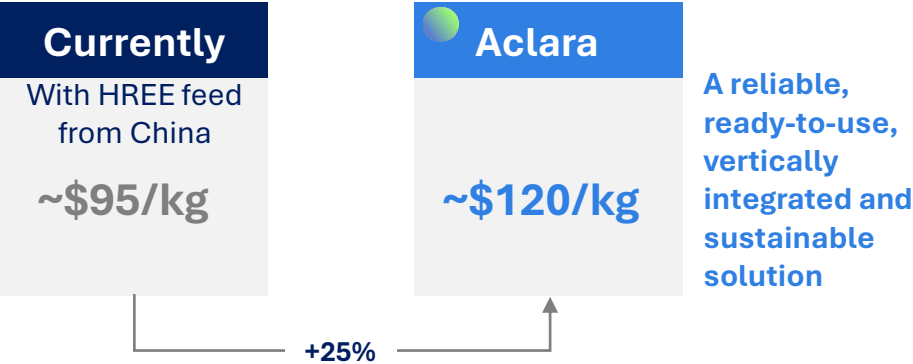


**MP MATERIALS**

U.S. Department of Defense

DoD has entered into a 10-year agreement establishing a price floor commitment of **\$110 per kilogram** for MP Materials' NdPr products.

## NdFeB permanent magnets cost<sup>1</sup> in an EV:

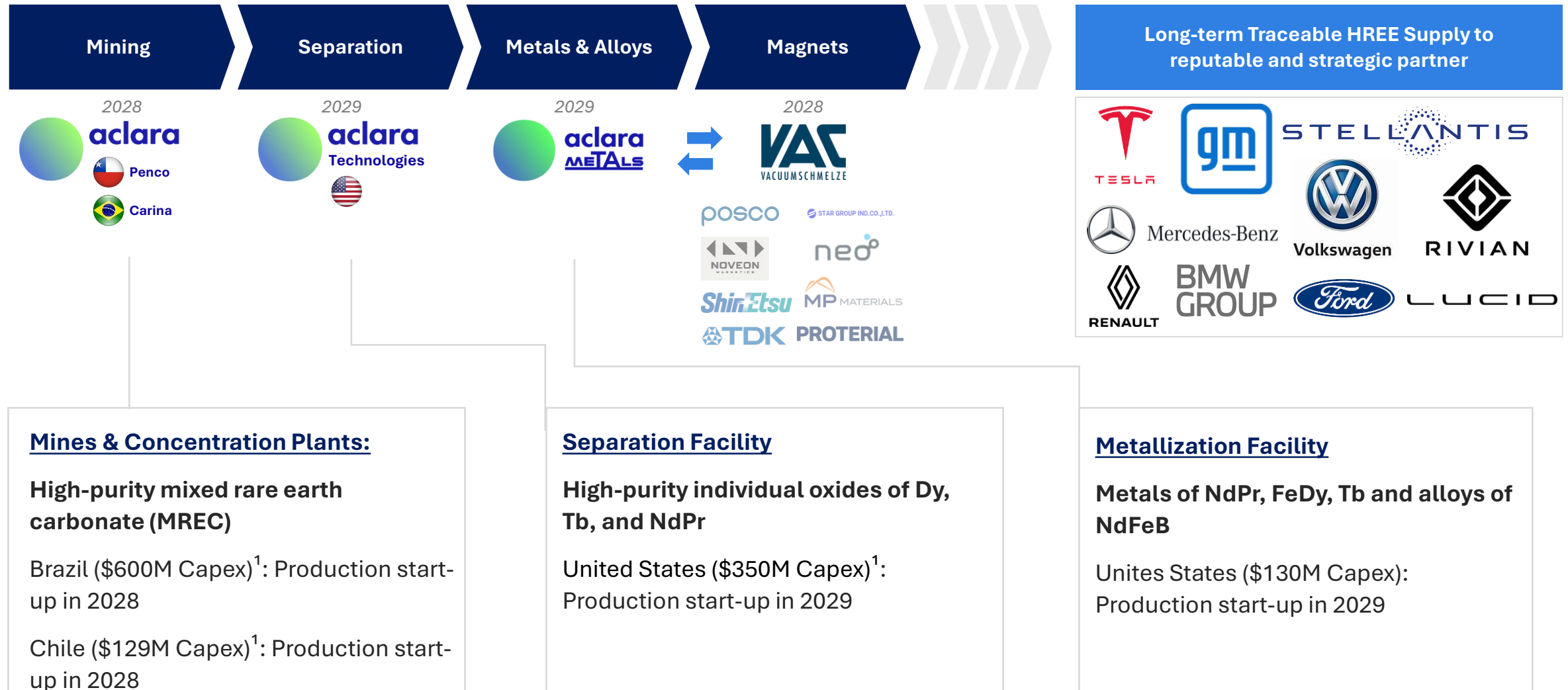


## HREE Market

	Current HREE Supplier	Aclara
Volume Available	✗	✓
Long-term contracts available	✗	✓
Observable transactions	✗	✓
Traceable lots	✗	✓
International environmental standards	✗	✓
Geopolitically independent	✗	✓

<sup>1</sup> Estimation run based on NdFeB permanent magnets type N40UH N38UH N35UH, and considering Aclara's cost of capital of 15%

# Aclara's vertical integration strategy




**A vertically integrated rare earth technology company, with world-class HREE deposits**

\*Source: Brazil – Carina Project: NI 43-101 Preliminary Economic Assessment (submission date September 5, 2024) / Chile – Penco Module: NI 43-101 Preliminary Economic Assessment (submission date December 2, 2021) / U.S. Separation: Class 5-AACE CAPEX estimate report (submission date October 15, 2024)

# World class Heavy Rare Earths deposits

Live pipeline of new targets




	Carina Project 
Life of Mine	22 years
DyTb production (in tonnes) <sup>1</sup>	~191
Development Status	PFS (Sep 2025) FS (Q1 2026)
Investment Decision	Q1-Q2 2026
Start of Operation	2028

<sup>1</sup> Average annual production



## Proven metallurgy with three pilot operations

- Twice in Chile – 2023 & 2024
- Once in Brazil – 2025

	Penco Module 
Life of Mine	14 years
DyTb production (in tonnes) <sup>1</sup>	~50
Development Status	FS (Q1 2026)
Investment Decision	Q2 2026
Start of Operation	2028

<sup>1</sup> Average annual production



## Unique advantages of Ionic Clay deposits

- ✓ They're the world's main source of HREEs
- ✓ Simple metallurgy (cost efficient and an environmentally friendly)
- ✓ Low levels of deleterious elements compared with monazite-rich hard rock



< 6 km from the Port



< 8 km from the Airport



Next to 1st class motorways



< 15 km from Concepción City



< 1 km from energy infrastructure



Top professional workforce

\*Source: Brazil – Carina Project: NI 43-101 Preliminary Economic Assessment (submission date September 5, 2024) / Chile – Penco Module: NI 43-101 Preliminary Economic Assessment (submission date December 2, 2021)



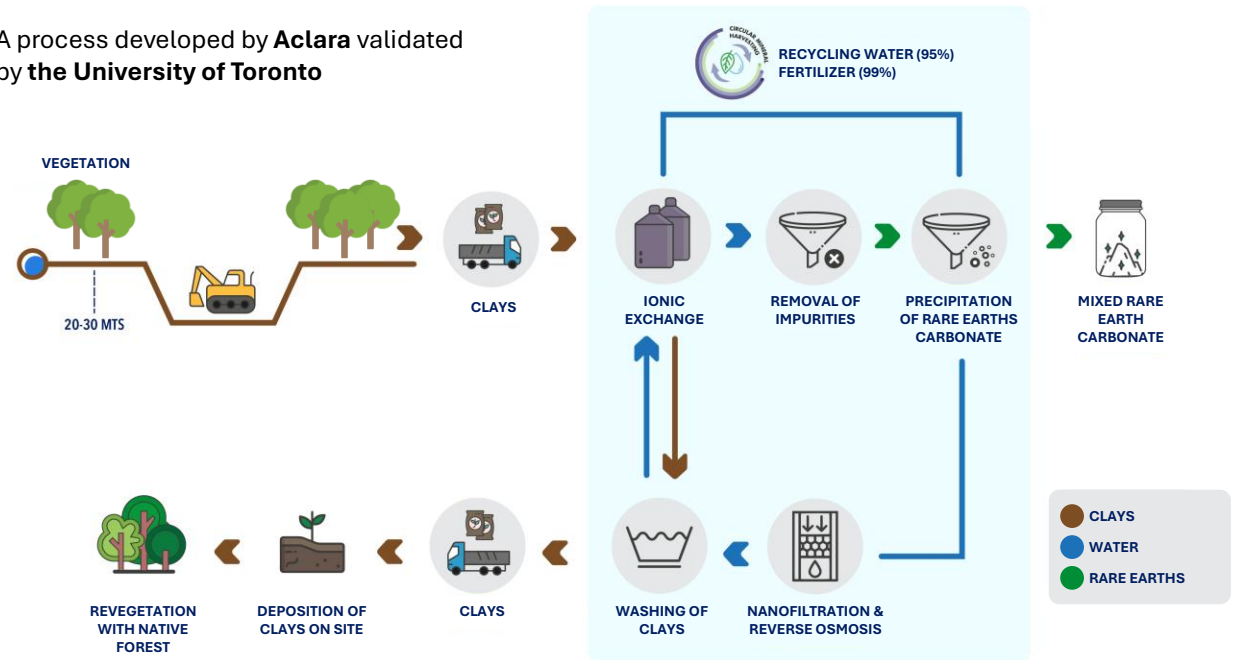
## Patented Sustainable Extraction Process



- Simple ionic clay mining with minimal environmental footprint
- >95% water and 99% reagent recirculation, low carbon footprint, no tailings dam, full reforestation of extraction zones
- High efficiency and low cost
- Fully demonstrated:
  - Pilot operation in Chile – 2023 & 2024
  - Pilot operation in Brazil – 2025



A process developed by **Aclara** validated by **the University of Toronto**





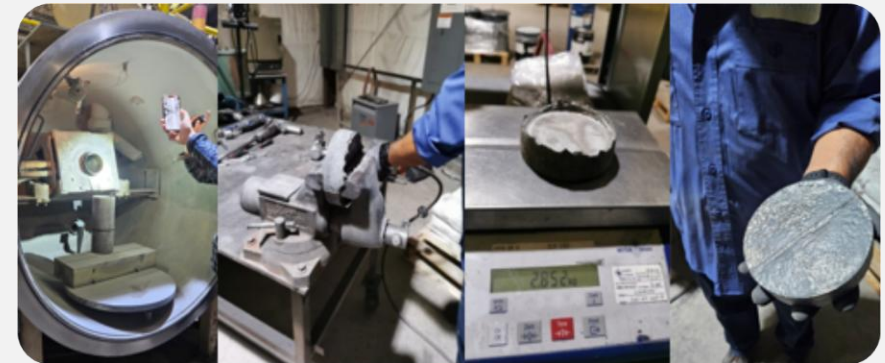
## Separation

- ✓ Initial process by SRC in Canada & conceptual engineering by Hatch
- ✓ Flowsheet optimized by L3 Process Development
- ✓ MOU and lease signed with Virginia Tech for piloting collaboration
- ☐ Industrial plant location between Louisiana and Alabama
- ☐ Pilot plant at **Virginia Tech**: construction & startup by October 2025
- ☐ Basic Engineering complete by mid-2026
- ☐ Investment decision: mid-2026
- ☐ Start of Operation: Q1 2029



## Metals and Alloys

- ✓ Joint Venture (50% Aclara / 50% CAP)
- ✓ Team in place supported by metallurgists from CAP S.A.
- ✓ Developing all necessary technologies to source rare earths metals and alloys
- ✓ Rare earth magnet specifications received from VAC
- ✓ Pilot test to produce pure dysprosium in the U.S. completed
- ☐ Pilot construction expected by the end of 2025
- ☐ Scoping study by Q3 2025
- ☐ Prefeasibility study (PFS) by Q4 2025





- Accelerated development toward Vertical Integration, reinforcing the Company's strategy
- Support for future U.S.-based facility and market access
- Engagement with U.S. Innovation ecosystem and collaboration with top-tier university/institution

- Develop an AI model for mining exploration leveraging geological and remote sensing data
- Optimize the Corfo-funded AI exploration model using satellite imagery and vegetation analysis
- Launch new Data Science initiatives in collaboration with additional Stanford departments to expand AI applications across Aclara



## Strong Partnerships & Financial Strength



### Backed by Strong Shareholders



- **Eduardo Hochschild (37%)**: Major shareholder of Cementos Pacasmayo (NYSE – EV ~\$1.0B), Hochschild Mining and UTEC
- **Hochschild Mining (20%)**: LSE listed precious metals company with 100+ years of history and an Enterprise Value of ~\$1.5B
- **CAP S.A. (10%)**: Chilean listed iron ore producer with 70+ years of history and an Enterprise Value of ~\$2.3B

### Strategic Alliance



- **Vaccumschmelze (VAC)**: Strategic alliance to provide a “mine-to-magnets” solution for ESG permanent magnets

### Financial Strength, Market Valuation & Upside:

- Market cap as of August-20: **\$230M** (Enterprise Value: \$190M)
- Strong Financial Position as of June 30 : **~\$ 40M** in cash and receivables
- Projected NPV of Carina: **\$ 2.2B** (IRR: 33%)<sup>1</sup>
- Projected NPV of Penco: **\$ 128M** (IRR: 23%)<sup>1</sup>
- ~\$ 220 million invested in Aclara to date

1. Source: Brazil – Carina Project NI 43-101 Preliminary Economic Assessment (submission date September 5, 2024)  
Chile – Penco Module: NI 43-101 Preliminary Economic Assessment (submission date December 2, 2021)



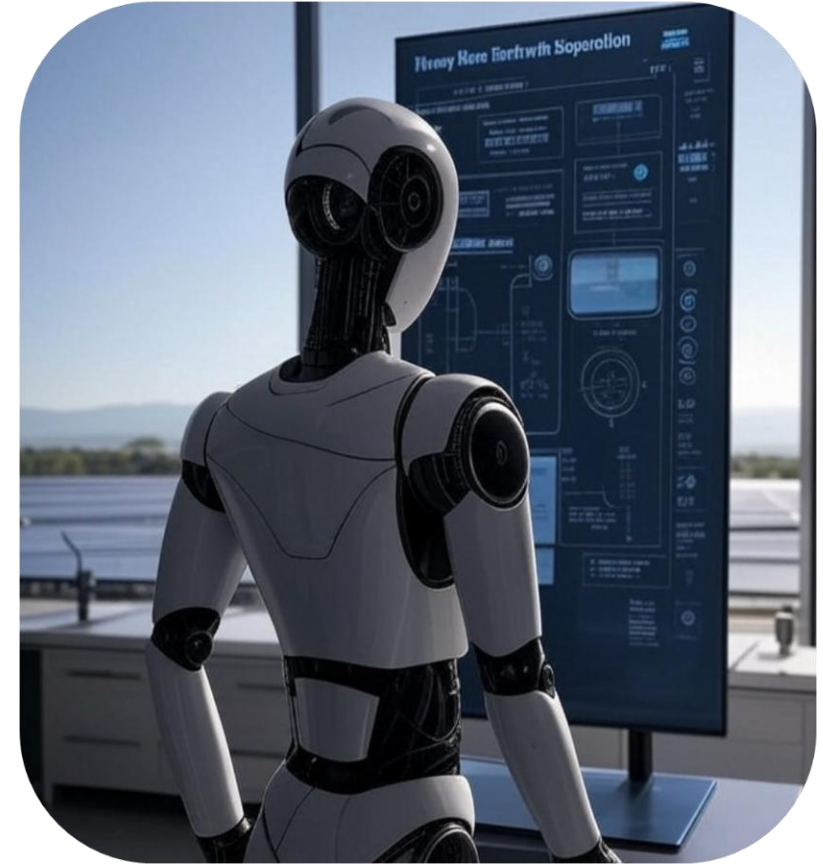
Aclara is evolving into a “boutique” version of China: a fully integrated solution

It stands as one of the very few western sources of HEAVY rare earths

New market fundamentals, especially higher non-Chinese prices, strongly support the business case

Aclara’s stock price has recovered to its IPO level

The company’s strategy is centered on developing U.S. based technology and processing, fed by two Latam operations: shifting from a “junior miner” to a U.S.- anchored integrated business



*Pictured generated using AI*

**ACLARA IS POSITIONED TO BECOME THE MARKET LEADER IN SUSTAINABLE HEAVY RARE EARTHS**





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# APPENDIX



# Market Fundamentals: Why Rare Earths?

## Surging Demand:

- EVs, wind turbines, and defense applications require rare earths
- Humanoids and industrial robots emerging as new demand
- Dysprosium and terbium (HEAVY rare earths) are the most supply-constrained

## Global Supply Chain Issues:

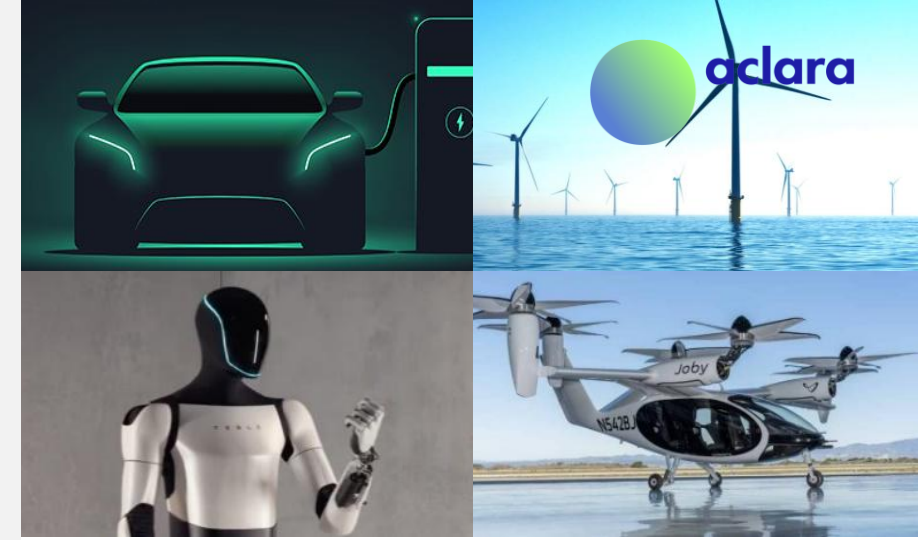
- China controls ~99% of HEAVY rare earth production
- No advanced projects offering significant amounts of HEAVY rare earths
- Western governments actively seeking non-Chinese supply (U.S., EU, Japan)

## U.S. Support:

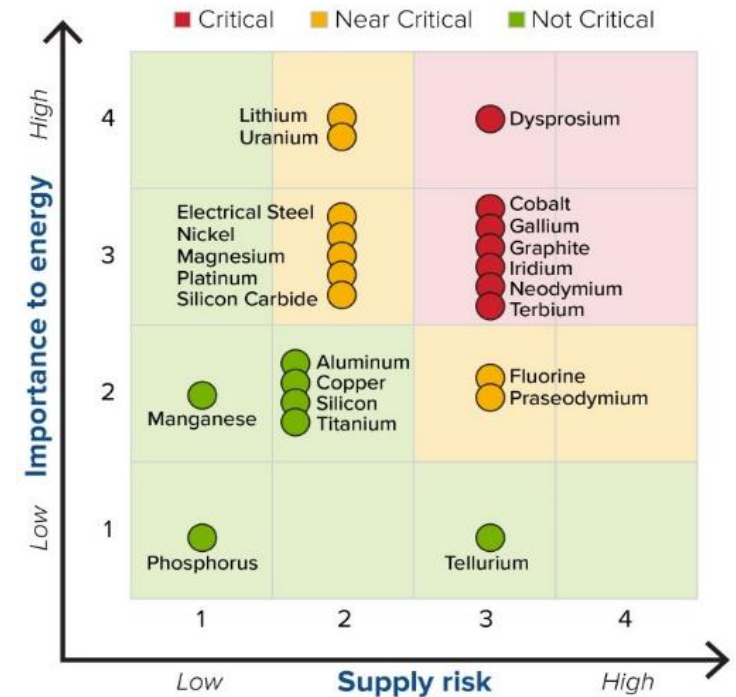
- Stated bipartisan policy to achieve rare earth independence
- Aclara fits in mandate of Executive Order 2025: Unleashing American Energy

## European Policy Support (Critical Raw Materials Act):

- At least 40% of rare earths annual consumption needs to be processed in Europe
- No more than 65% of the annual consumption sourced from a single third country



### SHORT TERM 2020-2025



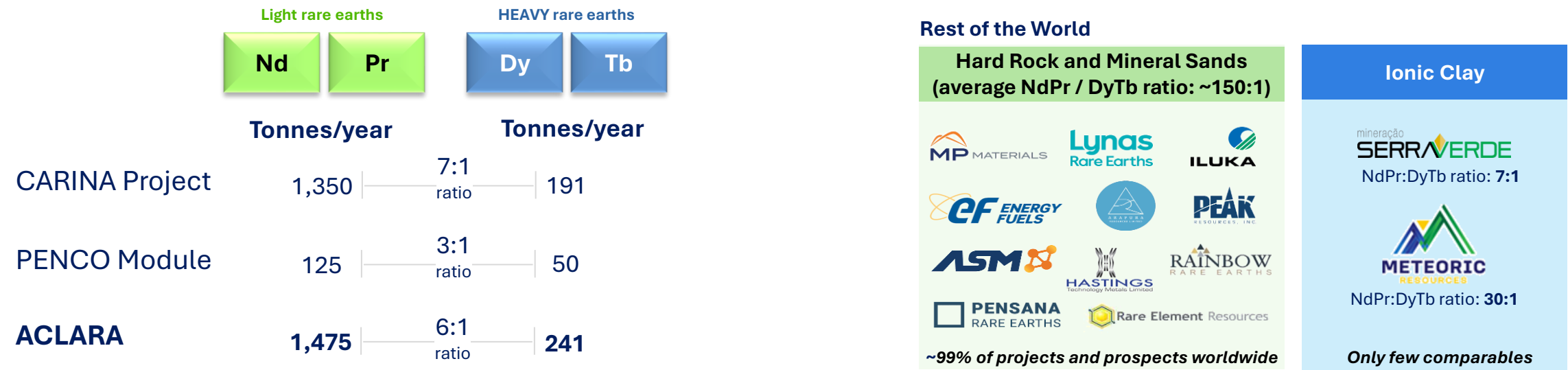
Source: U.S. Department of Energy (May 2023)

Aclara's Competitive Advantage

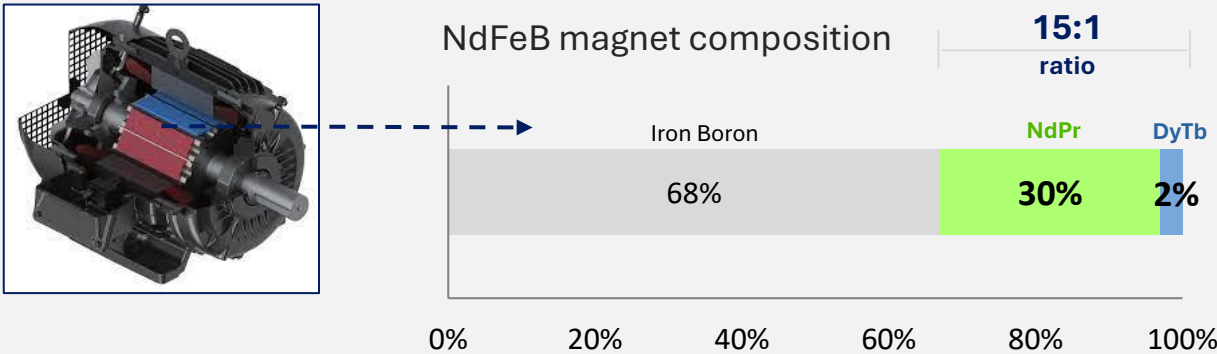
# High-Quality HEAVY Rare Earth Deposits



Aclara targets to supply ~16% of China's official DyTb production and ~70% EU/~50% U.S. projected DyTb demand for EVs by 2030

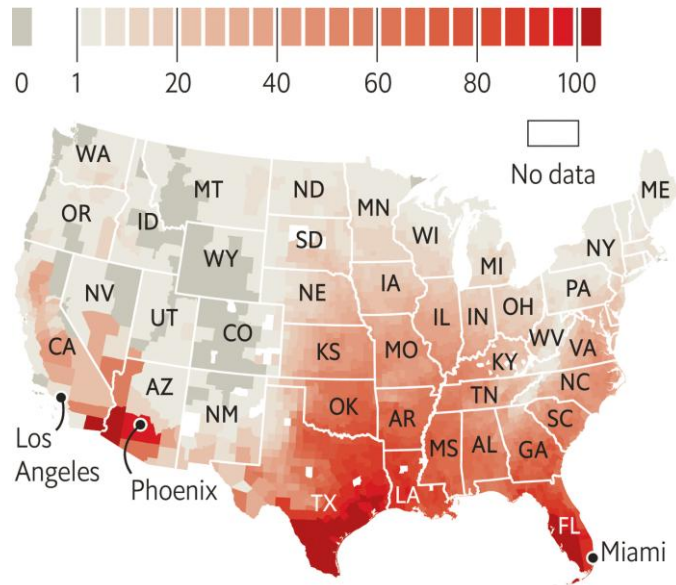


## Rare Earth Permanent Magnet Motor for EVs



## Burning up

Forecast number of days exceeding a heat-index temperature\* of 100°F (38°C) in 2053

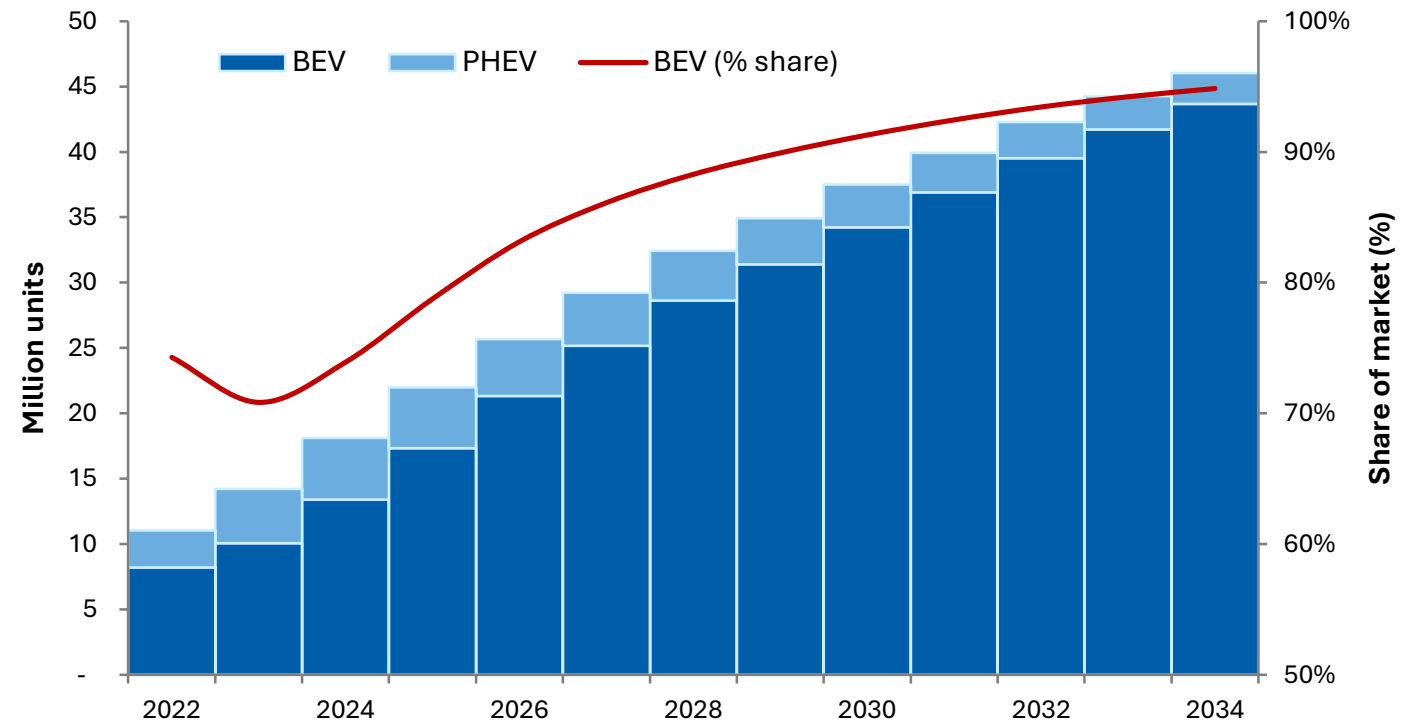


\*Humidity combined with air temperature

Source: First Street Foundation

The Economist

### Global hibrid vehicle end BEV sales projection

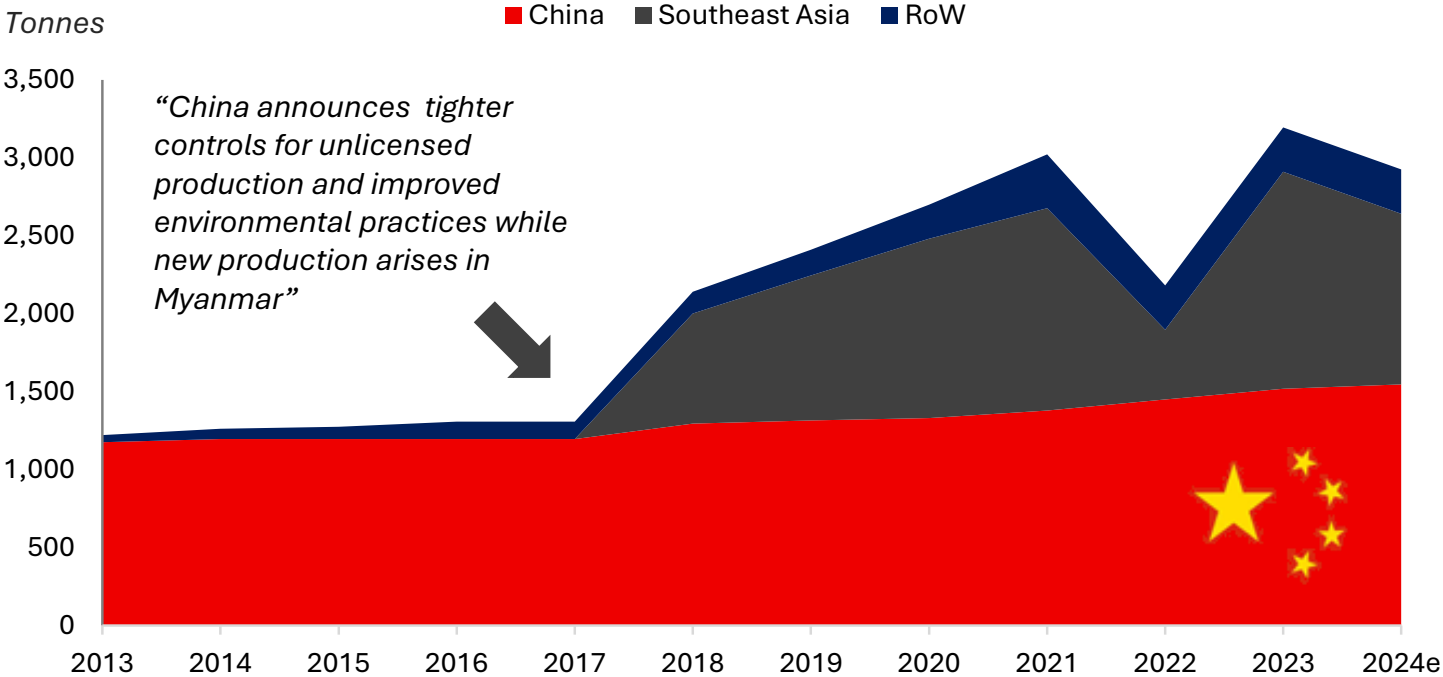


Source: Argus Media

## THE WORLD NEEDS A QUICK ENERGY TRANSITION TO MEET WORLD CLIMATE GOALS



Global DyTb Supply

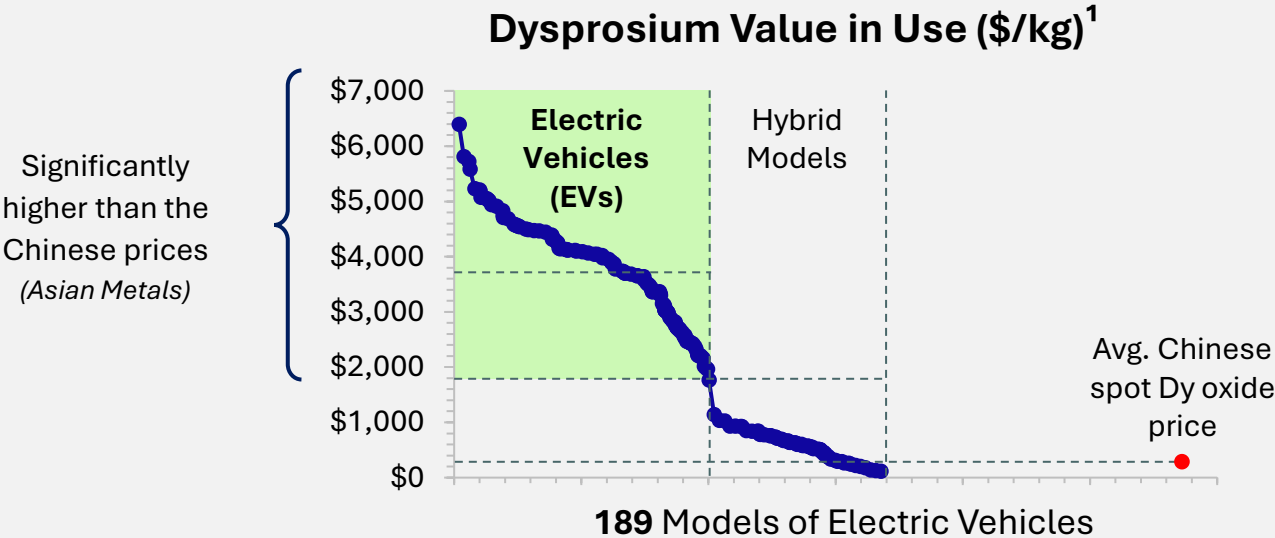


China Official REE Production

Production Quotas <sup>1</sup>	LREE (Tonnes)	HREE (Tonnes)	Total (Tonnes)
2024	250,850	19,150	270,000
2023	235,857	19,143	255,000
2022	190,850	19,150	210,000
2021	148,850	19,150	168,000
2020	120,850	19,150	140,000
2019	112,850	19,150	132,000
2018	100,850	19,150	120,000
2014 – 17	87,150	17,850	105,000
CAGR	11.2%	0.7%	9.9%

CHINA DyTb MONOPOLY STRENGTHENED THROUGH  
SOUTHEAST ASIA (MYANMAR, LAOS, THAILAND, etc.) SUPPLY CONTROL

Sources: REO production based on USGS and DyTb distribution based on papers and press releases: DyTb Production is estimated and does not correspond to official numbers,  
(1) Ministry of Land and Resources and Ministry of Industry and Information Technology



The **Value in Use** is calculated by the **efficiency added to the EVs**

A compact, efficient, and agile engine with the highest torque density **reduces battery costs by 3–10%** through lower energy use and material content

**Value in use IN BEV**  
**(US\$/kg 2,000 – 6,500)**

Dy content in an EV is approximately 1 to 3% (20-60 grams)



Considering the current<sup>2</sup> Dy price (\$/kg) of ~\$250, and the usage of Dy per EV of 20-60 grams, the estimated **cost of Dy per EV** would be



**\$5.00**  
to  
**\$15.00**

<sup>1</sup> Objective: understand the value in US\$ resulting from the efficiencies gained by the EVs permanent magnet motor in comparison to the induction motor. Value in use: supported by the efficiencies gained in the battery  
<sup>2</sup> Price as of September 25, 2024 (source: Asian Metal)