



ASX: ADC

# Powering the Future with Innovative Mine-to-Market Solutions

RIU Explorers Conference | February 2024



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**Building a mine-to-market critical metals company with heavy mineral sand (HMS) assets and proprietary rare earth element (REE) processing technology.**

**Secure supply of critical metals is essential for the energy transition. Through an innovative business model, ACDC can play a pivotal role.**

# Why ACDC Metals?



## Exposure to Energy transition and the demand for critical minerals

- ✓ Markets are demanding, and governments are supporting, rare earth supply chain development outside of China
- ✓ Rare earth market forecast for continual growth to 2030

## Hitting our milestones and objectives and delivering results

- ✓ **13000 metres** of air core drilling complete and assays received
- ✓ **Maiden JORC resource** complete for Goschen Central Project, rich in key minerals, resource remains open and opportunity for upgrade
- ✓ **Scoping Studies** in progress

## Well Financed

- ✓ Q4 2023 **\$4.9M cash**

## Our differentiator, Rare Earth Element Extraction

- ✓ **Rare Earth Processing plant (REPP) project**
- ✓ Targeting – **Rare Earth Element** carbonate & Phosphate production
- ✓ **ESG** - Waste management advantages over competing technologies



# Experienced Board & Management Team



**Tom Davidson**  
**Chief Executive Officer**  
Engineer & Development



**Andrew Shearer**  
**Non-Executive Director and Chair**  
Geologist & Corporate



**Mark Saxon**  
**Executive Director**  
Geologist & Corporate



**Ivan Fairhall**  
**Non-Executive Director**  
Engineer & Corporate



**Richard Boyce**  
**Non-Executive Director**  
Finance & Governance



**Kent Balas**  
**Exploration Manager**  
Geologist



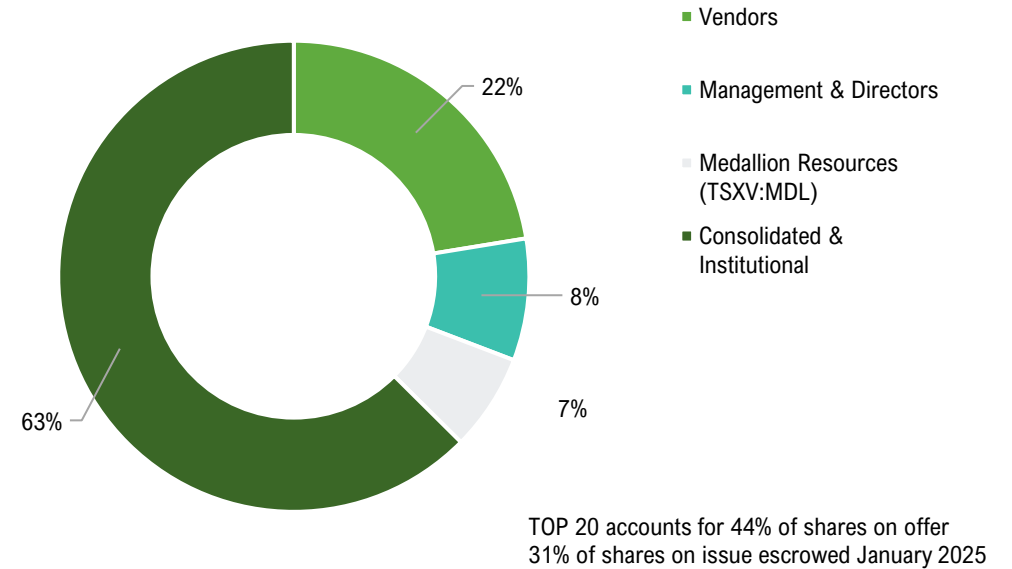
**Andrew Draffin**  
**Corporate Secretary**  
Governance

# Corporate Structure



Capital Structure	
Shares on issue	72,305,130
Share price (9 Feb 2024)	\$0.061
Market Capitalisation	\$4.56 M
Cash (Q4 2023)	\$4.9 M
Debt	Zero
EV	\$-0.34 M
Options	
Listed ADCO, \$0.30 expiring April 25	38,152,565
Other, \$0.30 expiring Jan 26	9,550,000

ACDC Share Register



Key Assets	ACDC Metals Ownership
Goschen Central Project	80%
Watchem Project	100%
North Watchem Project	80%
Douglas Project	80%





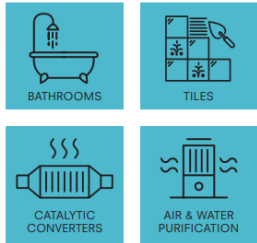
**Mineral Sands are naturally formed deposits, that are rich in heavy minerals and rare earth metals**

# What are Mineral Sands



Zircon (ZrSiO<sub>4</sub>)

## Zircon



Rutile (TiO<sub>2</sub>)



Ilmenite (FeTiO<sub>3</sub>)

## Titanium Minerals



Monazite  
(Ce, La)PO<sub>4</sub>

## Monazite



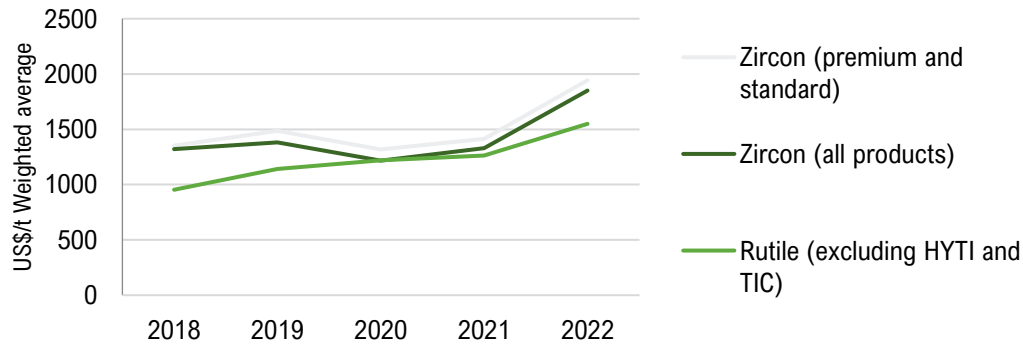
Xenotime  
(Y)PO<sub>4</sub>

## Xenotime

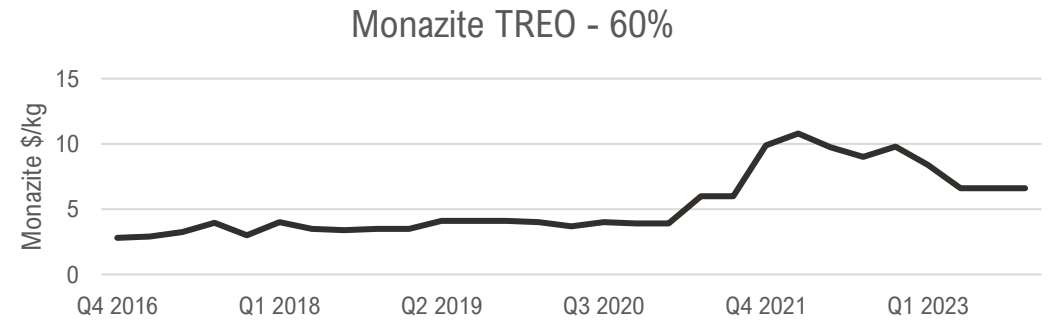
Rare earth elements Most of the 17 rare earth elements can be extracted from mineral sands.



One mine. Thousands of products  
Source: Minerals Council of Australia



Source: Iluka Resources FY22 Annual Report

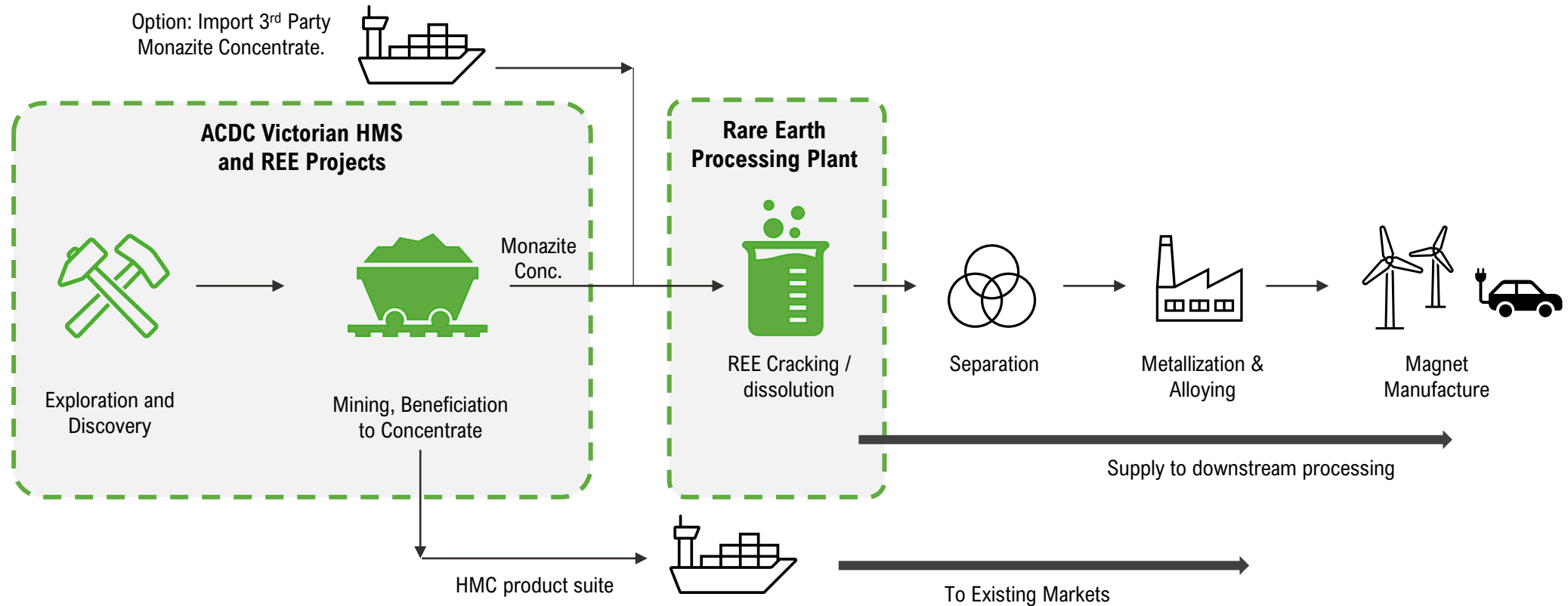


Source: <https://giti.sg/products/rare-earths/Mzn/>





# ACDC Metals Strategy: Mine to Magnet



- ACDC controls 3 prospective HMS and REE projects with extensive drilling in an established district
- Traditionally monazite concentrates are exported from the mining operation to Asia for extraction of rare earths.
- The REPP project enhances value capture and enables this to happen in Australia.
- The ACDC Metals business strategy will provide downstream opportunities for Australia

# Mineral Sands Projects



- Mineral sands assets all located in western Victoria on the edge of the Murray Basin mineral sands district
- Projects all close to current or historic mineral sands operations
- Clear access and wide roadside verges for low impact exploration
- **Over 15,500 metres drilled since ACDC inception**

Project	2023 Metres completed	2024 Metres completed
Goschen Central	6,965	2,922
Watchem	3,530	
North Watchem		Planned in February
Douglas	2,116	Planned in March
<b>TOTAL</b>	<b>12,611</b>	<b>2,922**</b>

\*2024 drill program in progress

\*\*Total program targeting 7,500 metres. Refer to ASX announcement, "ACDC Metals commences drilling at 3 projects", 17 January 2024.



# Goschen Central Project – Maiden Resource

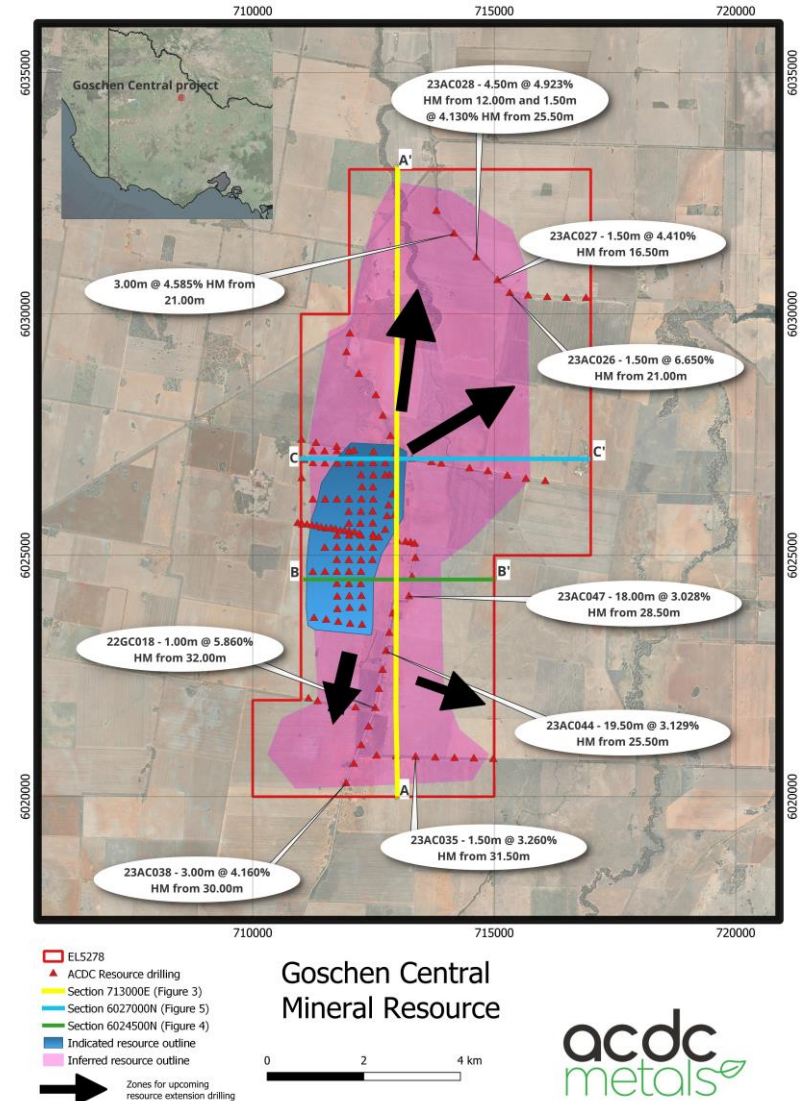


## Results

- 628Mt @ 1.9% THM (total heavy mineral)
  - ‘Indicated’ 130Mt @ 2.0% THM
  - ‘Inferred’ 498Mt @ 1.9% THM
- ~21% of Total rare earth oxide (TREO) is made up of valuable Magnet rare earth oxide (MREO)
- High mineral assemblage; key minerals **Zircon** 24% and **Monazite** 3.7%

## Upside

- Resource remain open on 3 sides, further extension drilling to extend ‘indicated’ zone and grade.
- Resource based on 38µm to 1mm HM particle
- Further opportunity for fine fraction capture 20µm - 38µm



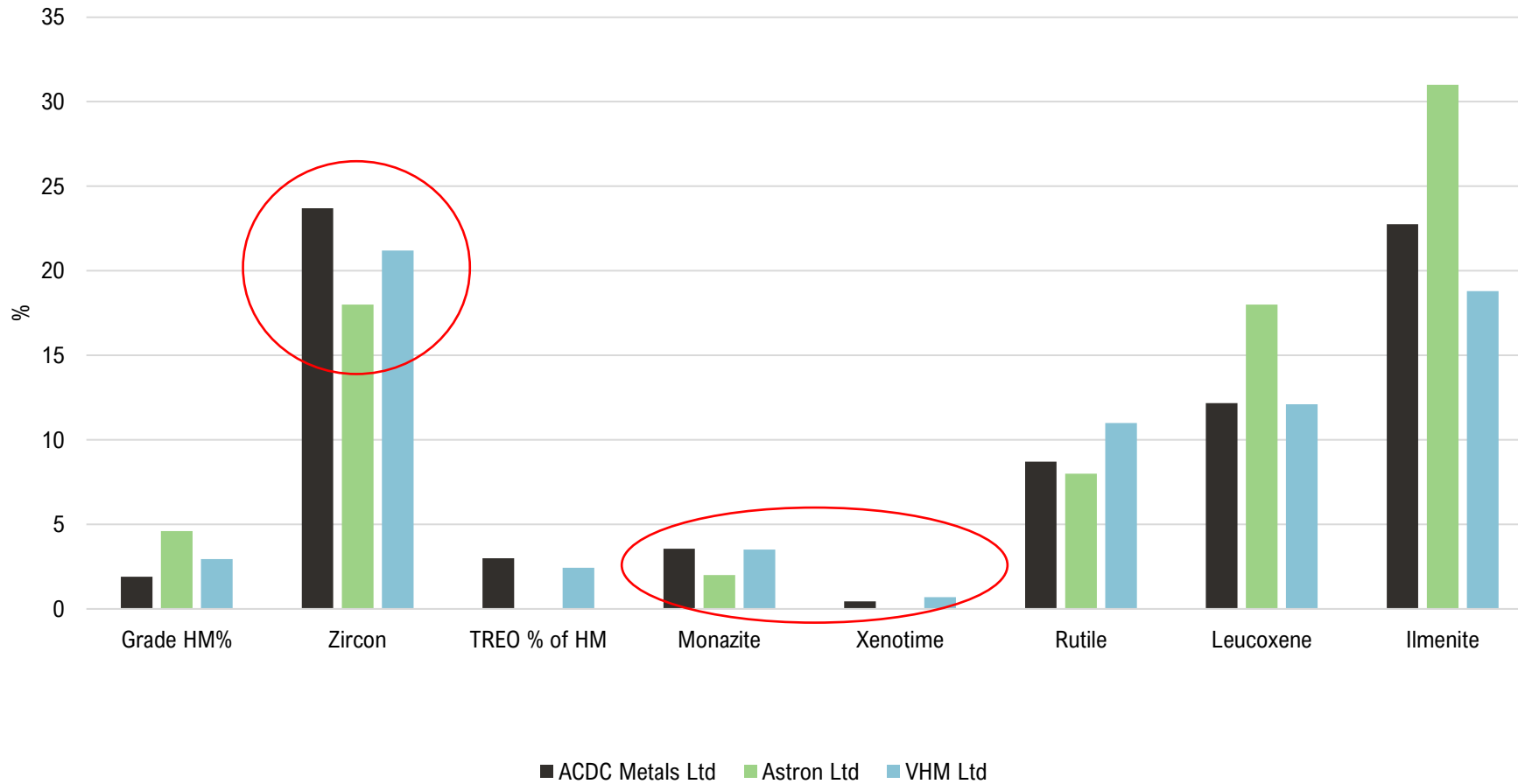
For Mineral Resource details refer to ASX announcement 8 November, 2023



# Goschen Central Project compares well against peers



Mineral Assemblage of Resources



## Results

- Key minerals of focus:
  - **Zircon**
  - **Monazite**
  - **Xenotime**
- High assemblage of magnet rare earth oxides
  - **Pr** 4.1%
  - **Nd** 14.6%
  - **Dy** 2.5%
  - **Tb** 0.4%

Refer to appendix A for full comparison tables



# Goschen Central Project



- ✓ Scoping Study underway – targeting Q1 2024
  - ✓ Multi-decade operation
  - ✓ Target high grade ore in early years of operation to maximise project economics.
  - ✓ Include all infrastructure needed to build and operate the project.
  - ✓ Producing separated heavy mineral and rare earth concentrates.
- ✓ Pilot plant in progress
  - ✓ 2.5t of metallurgical sample currently being processed at Mineral Technologies plant.
  - ✓ Metallurgical testwork to be conducted to prepare for next phase of engineering.
  - ✓ Products to be produced to enable quality testing with customers and supply monazite for REPP project.

## Contributing consultants

Testwork / Process & Infrastructure Engineering



Environmental



Mining



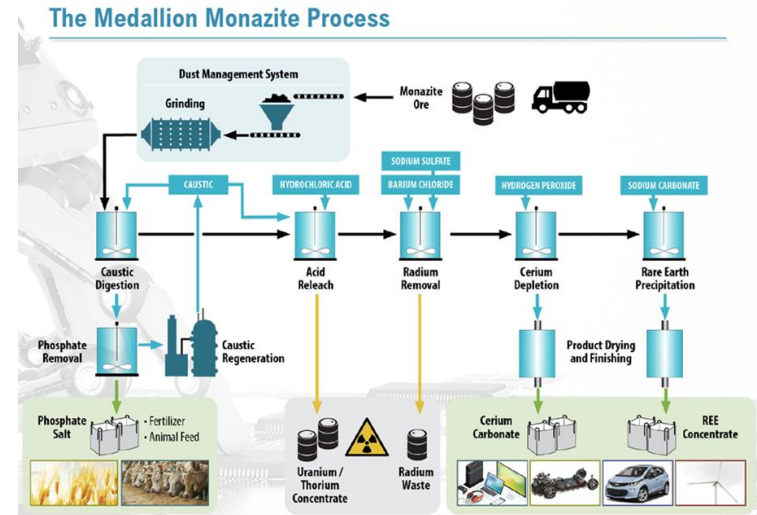
Geology & Resource



# Rare Earths Processing Plant Project



- ✓ Scoping Study underway – targeting Q1 2024
  - ✓ Benefit of past 6 years of testwork
  - ✓ Vertically integrated with Goschen Central project or merchant operation
  - ✓ Nameplate capacity over 3,500 tonnes of mixed rare earth oxide
  - ✓ Strong ESG advantages over competing technologies:
    - ✓ Waste generation minimised
    - ✓ Ability to separate future products from waste stream
  - ✓ Localisation study has been conducted, objective to identify pathway to permitting and availability of supporting infrastructure
- ✓ Pre-Validation testwork program
  - ✓ Testwork program to be completed at ANSTO
  - ✓ Monazite to be supplied from Goschen central along with other sources
  - ✓ Program will enable next phase of engineering to be completed



## Contributing Consultants

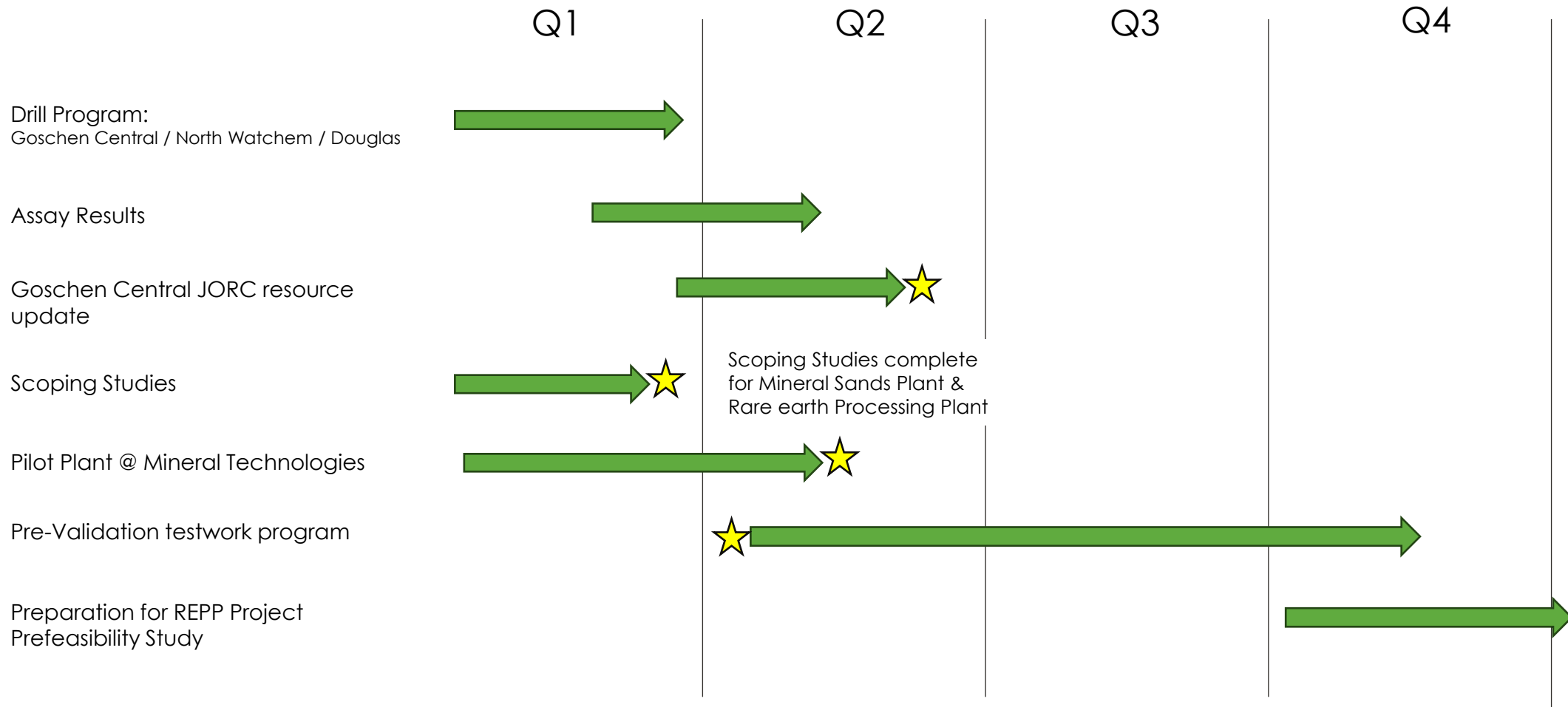
Hydrometallurgical



Environmental



# Work Plan for CY2024



# Investment Summary



## Corporate

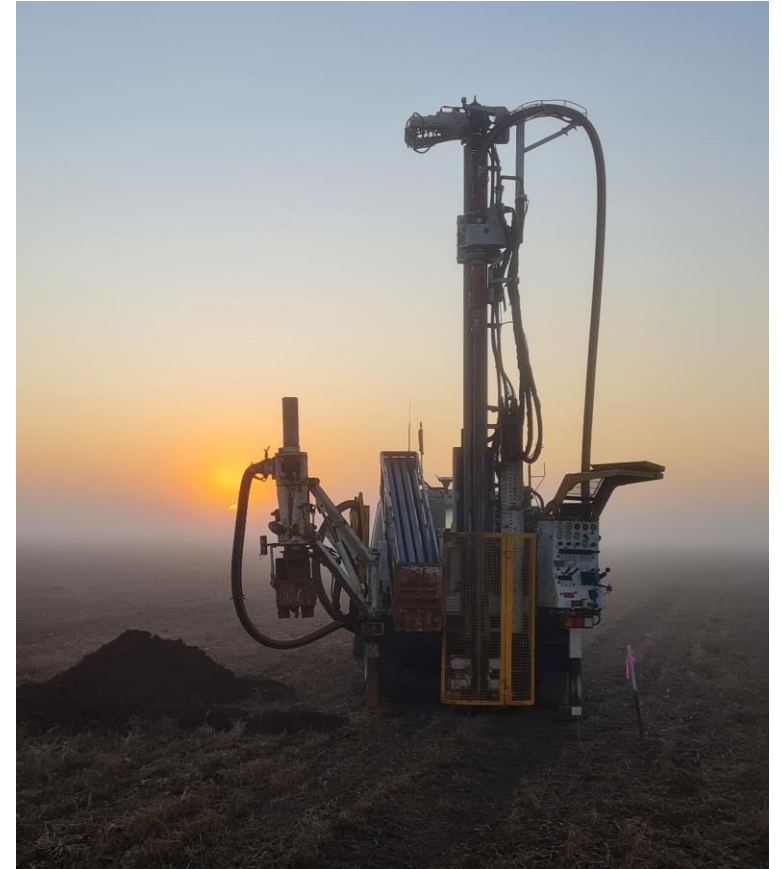
- ✓ **Strong team** with history of project development
- ✓ **Cash balance of \$4.9m** to execute plan

## Execution

- ✓ **Over 15,500 metres** of Air core drilling complete
- ✓ **Maiden JORC resource** complete at Goschen central
- ✓ **Concept studies** commenced and scheduled for completion Q1 2024

## Business Model

- ✓ Exposure to **Energy transition** and the demand for **critical minerals**
- ✓ **Mine to Magnet Strategy** enhances value capture
- ✓ **Downstream** opportunities and supply chain security for Australia







## Contact

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# Appendix A

## Peer Comparison data



# Peer comparison data



## Mineral Assemblage

		% of HM						
	Grade HM%	Rutile	Leucoxene	Ilmenite	Zircon	Monazite	Xenotime	TREO
ACDC Metals Ltd								
Inferred	1.9	8.6	13	23	24	3.5	0.42	3.0
Indicated	2.0	9.2	10	22	24	3.7	0.44	3.0
Astron Ltd								
Inferred	4.7	9	17	33	18	2.0	-	NA
Indicated	4.5	8	18	31	17	2.0	-	
Measured	4.6	8	22	25	18	1.9	-	
VHM Ltd								
Inferred	2.61	11.8	15.4	13.1	20.6	3.4	0.7	2.52
Indicated	3.19	10.1	8.6	24.9	20.5	3.4	0.7	2.27
Measured	5.72	10.8	9.0	24.7	29.9	4.3	0.8	2.72

1. Astron Ltd – ASX announcement <https://www.astronlimited.com.au/wp-content/uploads/2023/05/230516-ATR-Investment-Presentation.pdf>
2. VHM Ltd - ASX announcement – IMARC presentation - <https://wcsecure.weblink.com.au/pdf/VHM/02733487.pdf>

# Appendix B

## JORC Tables



# Company Mineral Resource



## 628Mt Goschen Central Project Mineral Resource Estimate

Classification	Tonnes (Mt)	Total HM %	Slimes %	Oversize %	% of total HM Mineral Assemblage					
					Rutile	Leucoxene	Ilmenite	Zircon	Monazite	Xenotime
					Indicated	130	2.0	19	4.1	9.2
Inferred	498	1.9	20	4.1	8.6	13	23	24	3.5	0.44
<b>Total</b>	<b>628</b>	<b>1.9</b>	<b>20</b>	<b>4.1</b>	<b>8.7</b>	<b>12</b>	<b>23</b>	<b>24</b>	<b>3.6</b>	<b>0.44</b>

Classification	% of total HM Rare Earth Oxides																
	Y2O3	La2O3	CeO2	Pr2O3	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb2O3	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	TREO	TREO - CeO2
Indicated	0.52	0.50	1.1	0.12	0.44	0.081	0.0043	0.081	0.011	0.076	0.016	0.052	0.008	0.054	0.009	3.0	2.0
Inferred	0.51	0.49	1.0	0.12	0.44	0.081	0.0041	0.080	0.011	0.075	0.016	0.050	0.008	0.053	0.008	3.0	1.9
<b>Total</b>	<b>0.51</b>	<b>0.49</b>	<b>1.0</b>	<b>0.12</b>	<b>0.44</b>	<b>0.081</b>	<b>0.0042</b>	<b>0.080</b>	<b>0.011</b>	<b>0.075</b>	<b>0.016</b>	<b>0.051</b>	<b>0.008</b>	<b>0.053</b>	<b>0.008</b>	<b>3.0</b>	<b>1.9</b>

### Notes

1. Mineralisation reported above a cut-off grade of 1.0% total heavy minerals (HM).
2. The Mineral Resource has been classified and reported in accordance with the guidelines of the JORC Code (2012).
3. Total HM is from within the +38 µm to 1 mm size fraction and is reported as a percentage of the total material. Slimes is the +38 µm fraction and oversize is the +1 mm fraction.
4. Estimates of the mineral assemblage (rutile, leucoxene, ilmenite, zircon, monazite and xenotime) and are presented as percentages of the total HM component, as determined from XRF and QEMScan analysis. QEMScan data used the following breakpoints are used for definition of the titania minerals: rutile >98% TiO2, leucoxene: 70 to 98% TiO2 and ilmenite: 45 to 70% TiO2.
5. Rare Earth Oxides are from XRF data and are presented as percentages of the total HM component.
6. All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus sum of columns may not equal.

\*The Mineral Resource estimate was prepared and first disclosed in the ASX release dated 8 November 2023



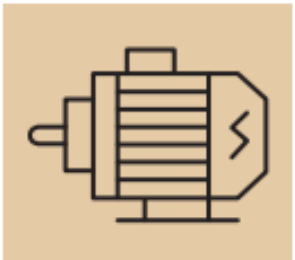
# Key Rare Earths

60	65	66	59
<b>Nd</b>	<b>Tb</b>	<b>Dy</b>	<b>Pr</b>
Neodymium	Terbium	Dysprosium	Praseodymium

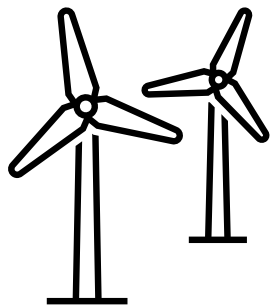
**magnetic rare earth elements**




**Hybrid and electric cars...** will increasingly drive demand for rare earths metals. Bloomberg New Energy Finance estimates EVs will account for 2 per cent of the market by 2020, 8 per cent by 2025 and 20 per cent by 2030.



**EV MOTOR**  
Neodymium  
Praseodymium  
Dysprosium



**Wind turbines ...** can use up to 2 tonnes of rare earth permanent magnets. Around 30 per cent of global growth in the use of rare earth magnets from 2015 to 2025 is expected to come from the wind energy industry.  
Source: Lynas Corporation

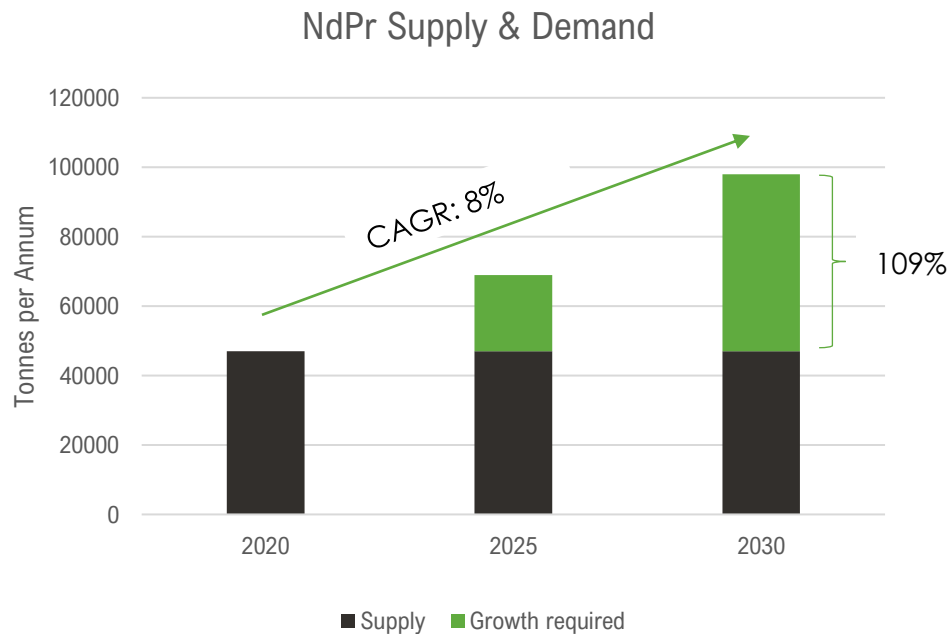


**WIND TURBINE GENERATOR**  
Neodymium  
Dysprosium  
Praseodymium

# The REE Opportunity



- REE supply and demand deficit emerging to support the energy transition



1. Source Arafura website <https://www.arultd.com/products/supply-and-demand/>

- China dominates the REE sector, over 80% of downstream processing<sup>1</sup>
- Desire by government & public to reduce the reliance on Chinese supply chain
  - Australia
    - \$1.25B loan to Iluka Resources (ASX:ILU)<sup>3</sup>
    - \$50M Critical minerals grant 2023
  - USA
    - Infrastructure and Jobs act: \$407M USD, Oct 2022
    - Inflation reduction act: \$500B USD, Aug 2022
- Downstream processing represents large value capture opportunities
- Over 85% of rare earth magnet value is post mining + beneficiation activities<sup>2</sup>

1. From rare earths mining to wind turbine manufacturing: estimated market shares in 2019. Sources: Team analysis and Roskill 2018; Adamas Intelligence 2019; Peteves 2017; Carrara et al. 2020; IEA 2021; USGS 2021

2. Source Medallion Resources (TSXV:MDL) research

3. <https://www.exportfinance.gov.au/newsroom/transforming-australia-s-critical-minerals-sector/>



# Murray Basin



- The Murray Basin formed by the inland sea 50 - 60 Million years ago
- Active area of operations and exploration and development
- Some selected projects shown