



# Andromeda

## The Great White Mineral Company

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### Investor Update

16 November 2023

**ASX:ADN**

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Authorised for release by the Board of Andromeda Metals Ltd





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### Currency

Unless otherwise stated, all cashflows in this presentation are in Australian dollars, are undiscounted and are in real terms (not subject to inflation/escalation factors).

### Assumptions and Notes for Financial Information on 2023 DFS this presentation:

Further details on the 2023 DFS and the assumptions and notes for the 2023 DFS can be found in the Company's ASX Announcement '2023 *Definitive Feasibility Study Results*' released on 24 August 2023.

### Third party data from consultants and government agencies

Andromeda has relied on information provided by specialist consultants and government agencies in preparing this presentation. Andromeda has reviewed all information to the best of its ability but does not take responsibility for its accuracy or completeness, or reliability of such information.

### Competent Person's Statements

The data in this presentation that relates to Mineral Resource estimates for The Great White Deposit and the Chairlift Deposit is based on information evaluated by Mr Eric Whittaker who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Whittaker is the Chief Geologist of Andromeda Metals Limited and 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 a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the "JORC Code"). Mr Whittaker has over 30 years of experience in the mining industry. Mr Whittaker consents to the information in the form and context in which it appears. Mr Whittaker is entitled to participate in Andromeda's employee incentive plan.

The data in this presentation that relates to Mineral Reserve estimates for The Great White Deposit is based on information evaluated by Mr John Millbank who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Millbank is the Director of Proactive Mining Solutions Pty Ltd, an independent mining consultancy, and 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 a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the "JORC Code"). Mr Millbank consents to the information contained in this presentation being used in the form and context in which it appears. Mr Millbank, or any of the entities he directly controls, has no financial interests in Andromeda Metals Ltd or any of its subsidiaries.

### Photographs, images, diagrams, charts and maps

Photographs, images, diagrams, charts and maps used in this presentation are illustrative only and may not be drawn to scale.

Unless otherwise stated, all data contained in the charts, graphs and tables is based on information available at the date of this presentation.



# Acknowledgement of Country

Andromeda recognises the Traditional Custodians whose land we are gathered here today, the Gadigal people of the Eora Nation, and on the lands on which Andromeda operates, being the Kaurna people of the Adelaide Plains and the Wirangu people of South Australia's Eyre Peninsula.

We pay our respects to their Elders past and present and extend that respect to other Aboriginal and Torres Strait Islander people who are present today.

# Agenda



1. **2023 DFS – Compelling Project economics**
2. **Outcomes from September meetings in Europe**
3. **Indian market and the Heads of Agreement signed with Opaque Ceramics**
4. **Technical Marketing of Great White CRM™**
5. **Commercialisation of Great White HRM™**
6. **Chairlift – Inaugural Mineral Resource Estimate**
7. **Stage 1A Processing Plant**
8. **Update on other projects**
9. **Next Steps**

# 2023 DFS – Compelling Project Economics

## Resetting the Enterprise Value of The Great White Project



**Enhanced product portfolio** and pricing environment has resulted in **revenue increase of 32% to \$6.2 billion**

**Product pricing** determined based on existing **offtake agreements, market and technical product validation** by independent consultants, **customer product validation, market research** and **market forecast data** from TZ Minerals International Pty Ltd

Resultant **payback period improved to 5.1 years** from 5.9 years

Reported on a pre-tax basis, given Andromeda has **\$191 million in available tax losses** to June 2022, **reducing taxes payable on any future profits**, subject to the normal tax rules to carry forward losses

2022 DFS		2023 DFS
\$613 million	<b>NPV<sub>8</sub></b> +65%	<b>\$1,010 million</b>
\$4,706	<b>Revenue</b> +32%	<b>\$6,207 million</b>
300,000 tpa	<b>Kaolin Production Target<sup>1</sup></b> 0%	<b>300,000 tpa</b>
15.1Mt	<b>Ore Reserve<sup>2</sup></b> 0%	<b>15.1 Mt</b>
28 years	<b>LOM</b> 0%	<b>28 years</b>
\$337 / tonne	<b>Weighted Average Product Margin<sup>3</sup></b> +34%	<b>\$450 / tonne</b>
\$82 million	<b>Average Annual EBITDA</b> +59%	<b>\$130 million</b>
\$207 million	<b>Capital Costs<sup>4</sup></b> -9%	<b>\$188 million</b>
\$26 million	<b>Sustaining Capital</b> +36%	<b>\$35 million</b>
36%	<b>IRR</b> +9%	<b>45%</b>
5.9 years	<b>Payback Period<sup>5</sup></b> -14%	<b>5.1 years</b>

The 2023 DFS financial model methodology has been verified by an independent financial consultant.

All dollar values are undiscounted other than NPV<sub>8</sub>

<sup>1</sup> Kaolin final production volume as measured in tonnes per annum (tpa) and excludes sales of industrial sand.

<sup>2</sup> JORC compliant Ore Reserve remains as lodged in ADN ASX announcement dated 6 April 2022 titled *Great White Kaolin Project - Definitive Feasibility study and Updated Ore Reserve*.

<sup>3</sup> Includes incremental revenue from sales of Industrial Sand co-product in the calculation.

<sup>4</sup> Capital costs of \$3.1 million have been incurred since the 2022 DFS for capital items (long lead items) and land related payments. In addition, capital costs in 2023 DFS have been impacted by favourable product mix.

<sup>5</sup> Payback period includes capital costs of Stages 1A, 1B and 2. Capital costs of Stage 3 intended to be funded by cash flows from The Project.

# Outcomes from September meetings in Europe

Discussions centred on CERSAIE Ceramics Conference in Bologna, Italy



Discussions progressed based on **LOI received from Iberoclays** – discussions targeting 15,000-20,000 tpa during the first 3 years of production.

Qualifications with **Italian super-white porcelain tile manufacturers**

Qualified as a supplier to **Tier 1 technology supplier** for manufacture of **porcelain tiles and slabs**

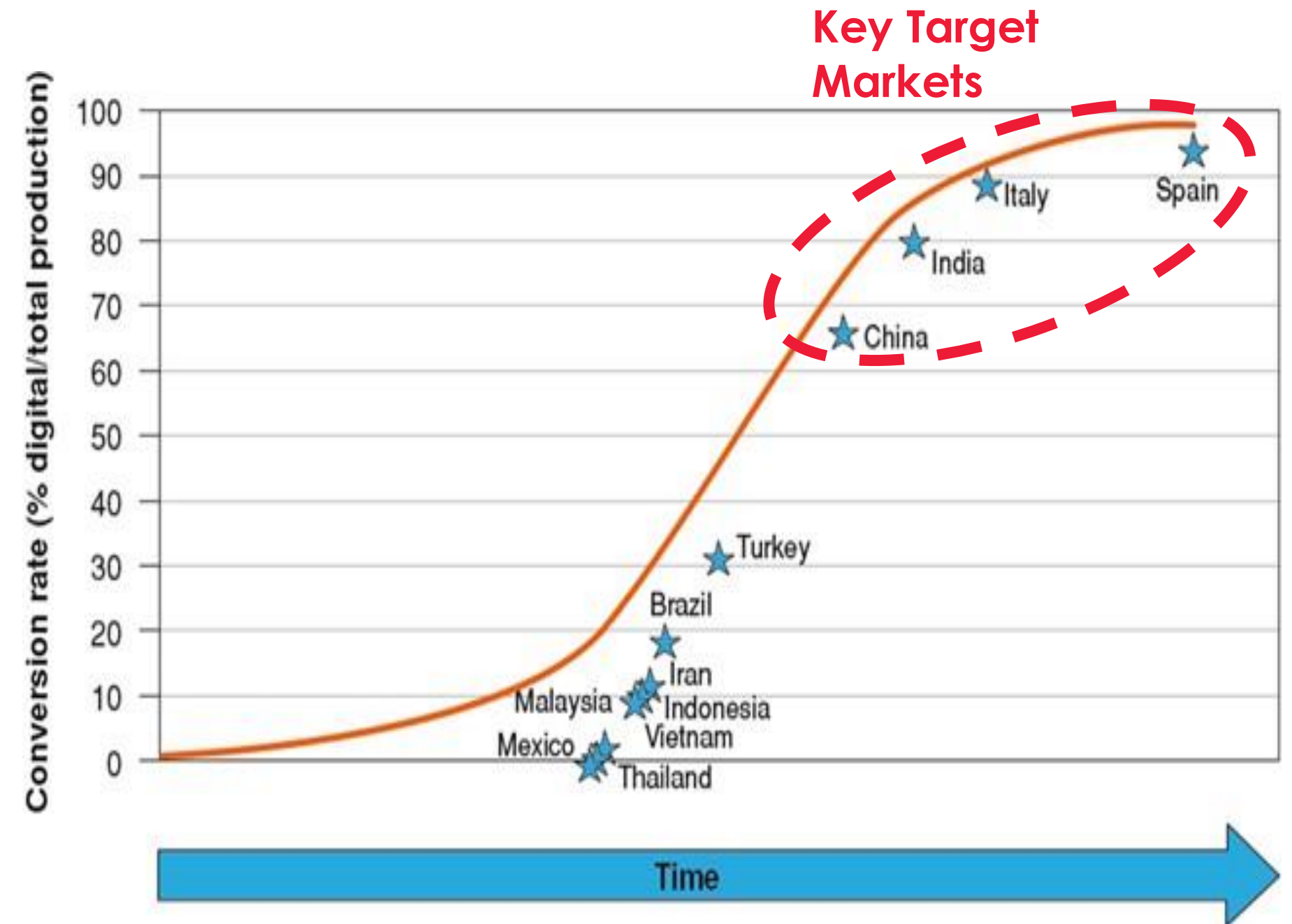
**HoA signed with Opaque Ceramics** for discussions on sale and distribution of Great White CRM™ and new zircon-kaolin product development

**South-East Asia** – qualifications with multinationals that have operations in the region

# Global Markets - India

Favourable freight rates and free trade<sup>1</sup> agreement make India an attractive market

- Second largest ceramics market in the world<sup>2</sup>
- Ceramic tile production in 2024 forecast to be 3.3 billion square metres, with CAGR of 9-10%
- India's growth is supported by it being the world's most populous country, having recently surpassed China
- Average economic growth rate of 5.5% p.a. over the past decade
- India has overtaken the United Kingdom to become the world's fifth largest economy



Source: Ferrari (2016).

<sup>1</sup> Australia-India Economic Cooperation and Trade Agreement (ECTA): <https://www.dfat.gov.au/trade/agreements/in-force/australia-india-ecta>

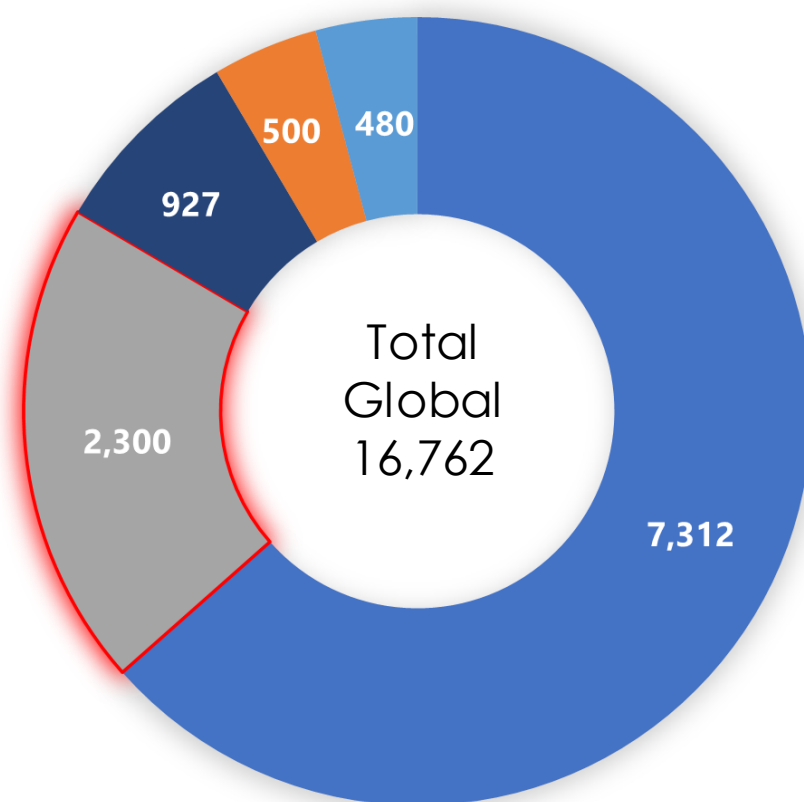
<sup>2</sup> India, Ceramics Tile Market, MECS, Edition Year 2022-23



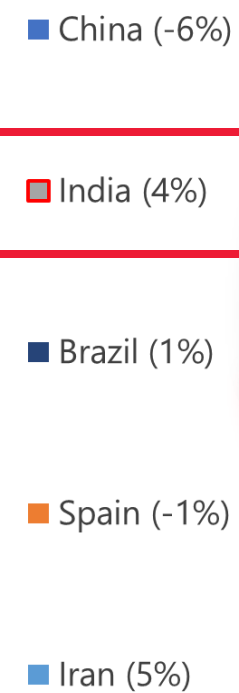
# Global Markets - India

Ceramic tiles: India in the Top 3, with impressive export<sup>1</sup> growth

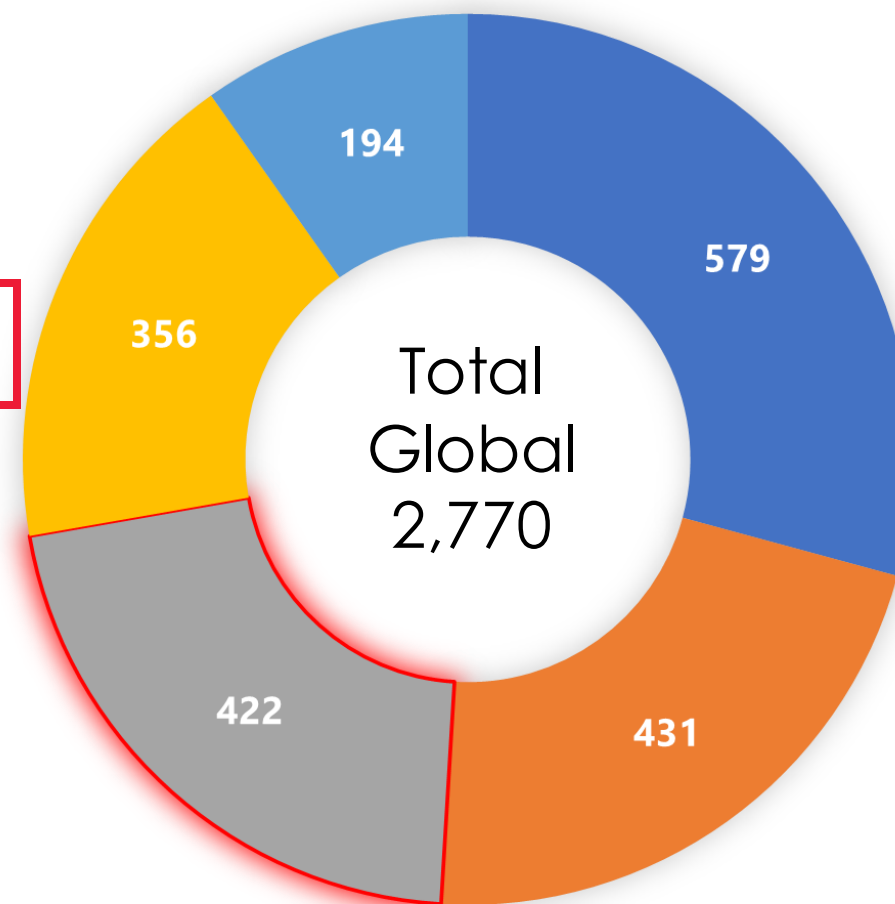
2022 Top 5 Ceramic Tile Producers



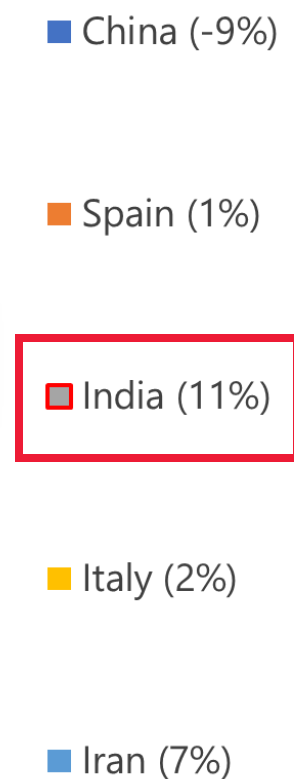
Country  
(CAGR 2017-22)



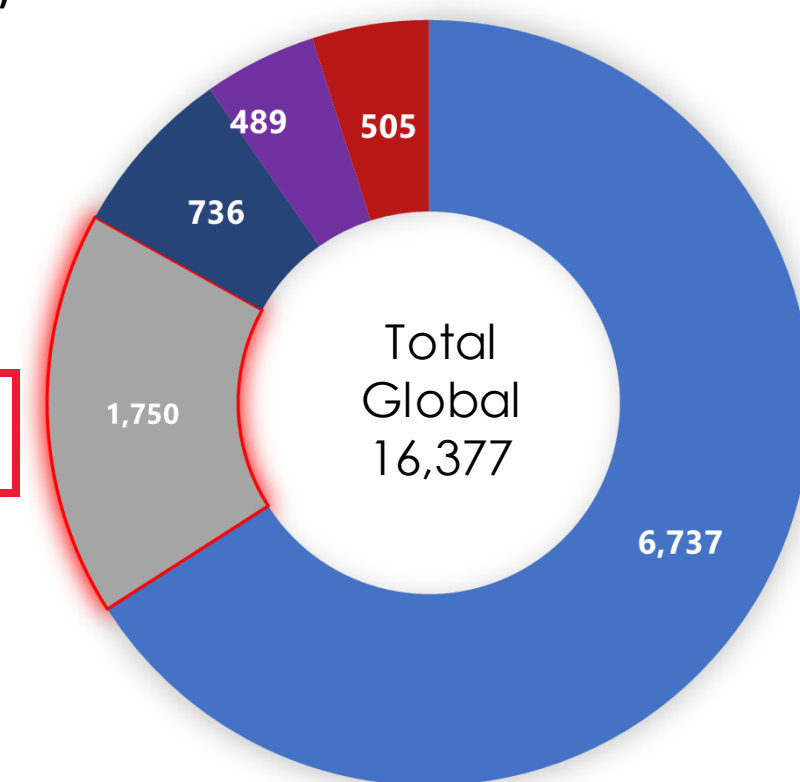
2022 Top 5 Ceramic Tile Exporting Countries



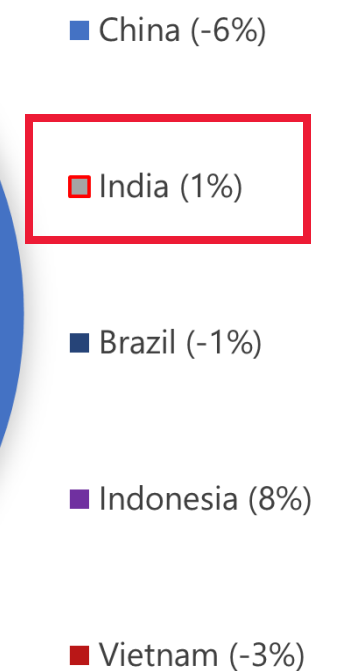
Country  
(CAGR 2018-22)



2022 Top 5 Ceramic Tile Consumers



Country  
(CAGR 2017-22)



Measured in million square metres

<sup>1</sup> Data from "World production and consumption of ceramic tiles", MECS/ACIMAC report, 11<sup>th</sup> edition 2023



# India – Heads of Agreement signed with Opaque Ceramics

## Non-binding agreement for discussions on distribution and new product development

### Sale and Distribution of Great White CRM™

- 5,000-10,000 wmt p.a. of Great White CRM™
- For direct sales and distribution into the ceramic tile, ceramic glaze, porcelain tableware and sanitaryware markets in India
- Potential to target other markets, including Bangladesh, Sri Lanka and Middle East, including Saudi Arabia and Oman

### New Product Development

- New product development, utilising an additional 5,000-10,000 wmt p.a. of Great White kaolin
- Focus on expanding or enhancing Opaque's existing range of Opaque zircon-based products
- Leveraging unique qualities of Great White kaolin, including high-brightness and its zircon replacement potential.

Opaque's existing range of zircon-based products used to opacify (whiten) ceramics:



# Global Markets - Europe

Italian and Spanish markets remain key to acceptance in premium segments

## ITALY

- Qualifications with all the Tier 1 super white porcelain tile producers
- Approved for formulations with Tier 1 technology supplier

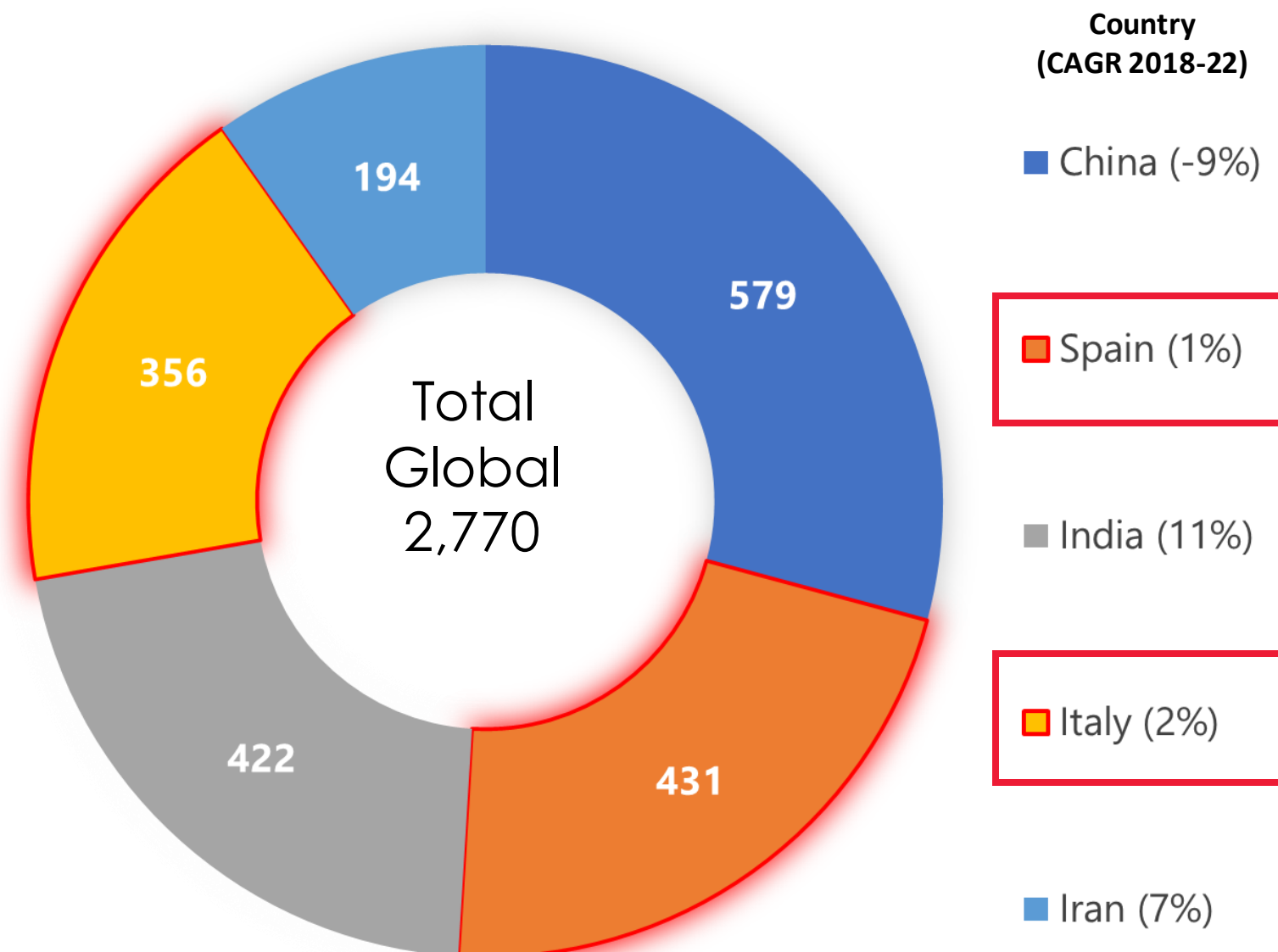
## SPAIN

- Finalising binding agreement with Ibero Clays.
- Progressing qualifications with three multinationals for offtakes in Europe and South East Asia (SEA)

## Distribution via European based distributors:

- Thailand
- Vietnam
- Mexico
- other Latin America (LATAM)

2022 Top 5 Ceramic Tile Exporting Countries



Measured in million square metres

# Technical Marketing of Great White CRM™

Previously identified opportunity for zircon-replacement





# Technical Marketing of Great White CRM™

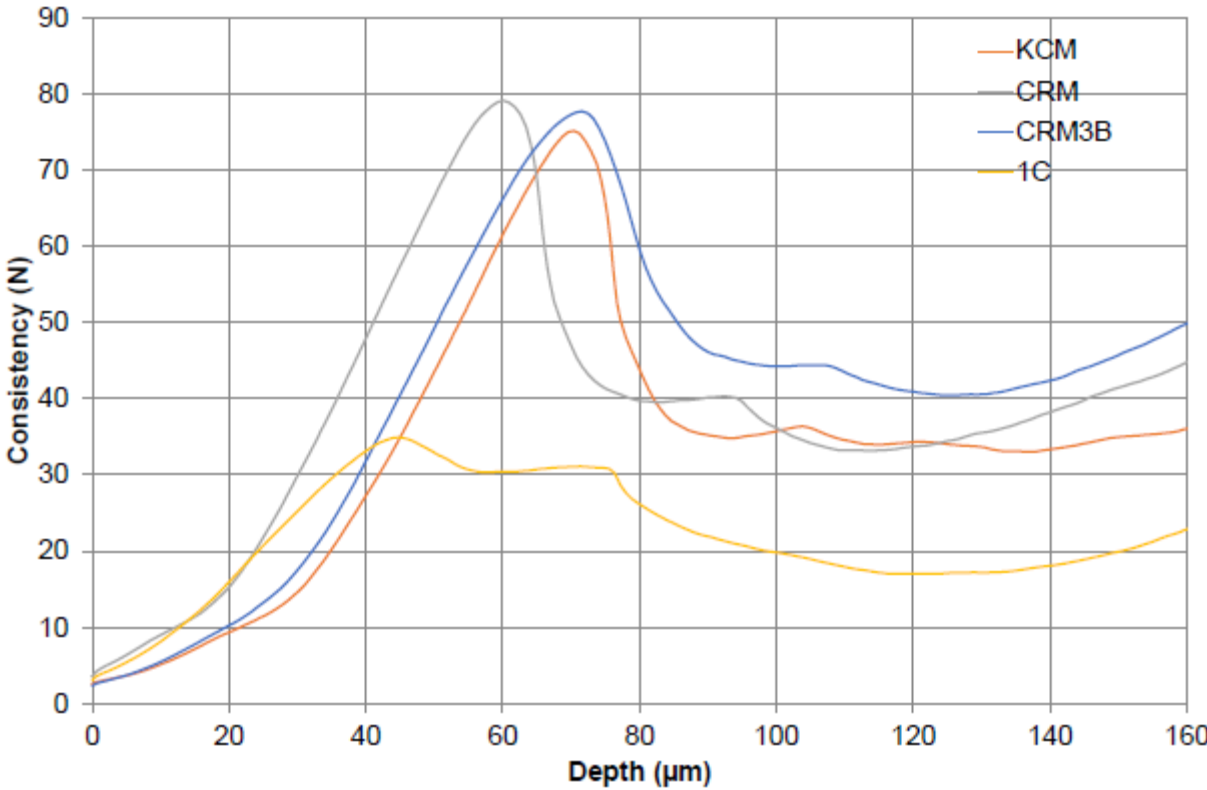
Test results confirm superior performance in key market segments

## CERAMIC TILE BODY

Kaolin	CRM (1097)	Interval
Reject at 40 µm (%)	0.4	0-2
Dry bulk density (g/cm³)	1.32	1.55-1.67
Linear shrinkage at 1180°C (%)	6.5	3.0-6.6
Linear shrinkage at 1280°C (%)	12.5	6.0-12.4
Water absorption at 1180°C (%)	28.7	19.3-25.4
Water absorption at 1280°C (%)	15.7	6.4-20.3
L* at 1280°C	96.8	91.5-97.4
a* at 1280°C	0.0	-0.2 – 0.6
b* at 1280°C	3.2	2.2-7.3

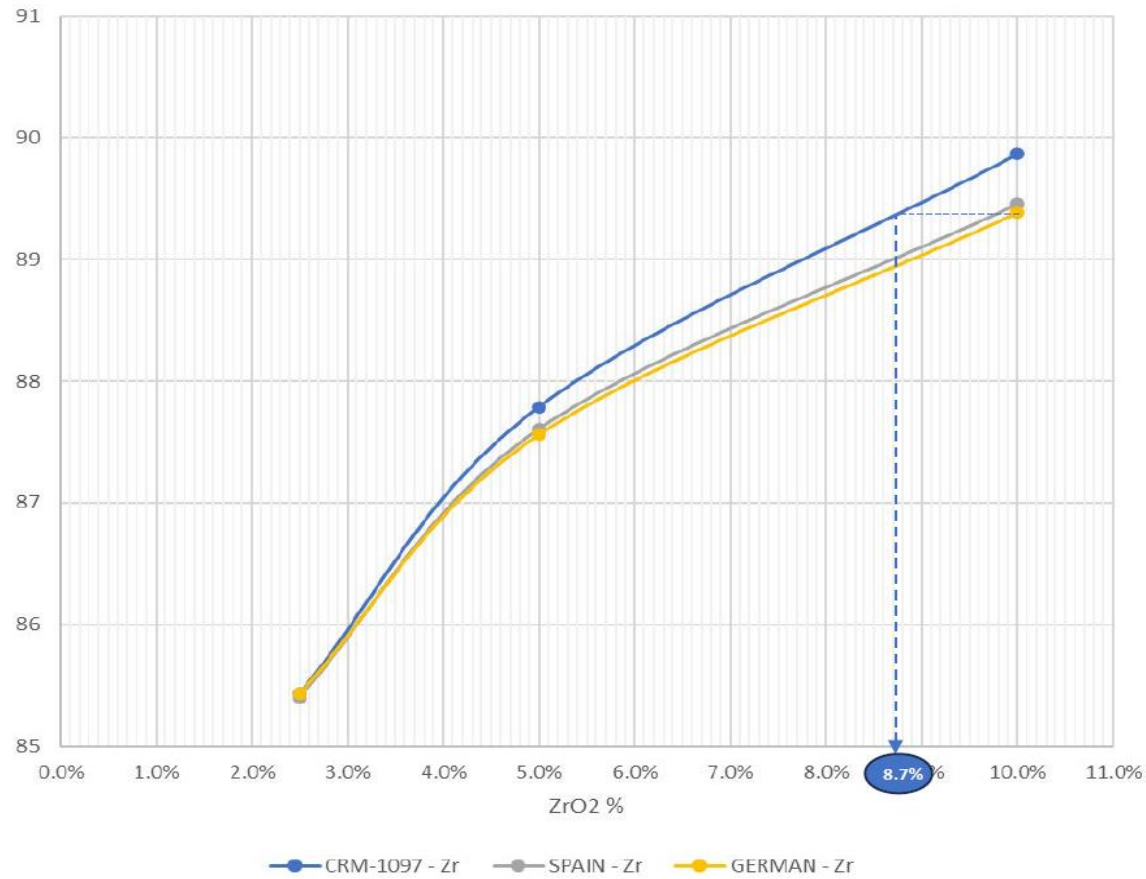
- Validated for use in blends where **Great White CRM™ lends superior chromatic coordinate properties** compared to the interval values of standard kaolins in the market

## CERAMIC GLAZE



- Great White CRM™ (and Great White KCM™ 90) tested in glaze applications as showing **considerably higher mechanical strength** compared to standard
- High mechanical strength can **reduce glaze defects** during the manufacturing process

## ZIRCON-REPLACEMENT POTENTIAL



- Premium slabs and porcelain tiles in super and ultra-white use micronized zircon
- Value in use** work supports a **10-15% reduction in zircon by using Great White CRM™**

# Technical Marketing of Great White CRM™

## Next Steps

- Additional Institute of Ceramic Technology (ITC) study commissioned to independently validate zircon replacement potential. Results expected by end of December 2023
- Further leveraging ITC partner and sponsor relationships through their pioneering university –business cooperation system:
  - Final validation with industrial scale tile production, conducted in cooperation with an ITC sponsor and Tier 1 multinational
  - Facilitating and fast tracking additional future sales through leading ceramics businesses in Europe



# Positioned to be the industrial mineral of choice in the global ceramics market

## Great White CRM™ properties and applications<sup>1</sup>



**Top 3 Iron/Alumina ratio**  
(Fe<sub>2</sub>O<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub>) of global kaolin samples



**High brightness is retained in high temperatures**, with very good colour evolution, which is valued in **high quality porcelainware and ceramic tiles**



**High dry mechanical strength** is highly valued in **large format porcelain tiles**



**Zircon-replacement** potential in **super and ultra-white** premium slabs and porcelain tiles

Strongly positioned to offer exceptional value in use in:

**Porcelain tableware; large format porcelain ceramic tiles and glazes;  
and super and ultra-white premium porcelain tiles and slabs**

<sup>1</sup> As determined by testing conducted on Great White CRM™ by Instituto de Tecnología Cerámica (ITC), located at the University of Castellón in Spain, and IberoClays.



# Great White HRM™ commercialisation

## Strategic Alliance Agreement signed with Hallett Group

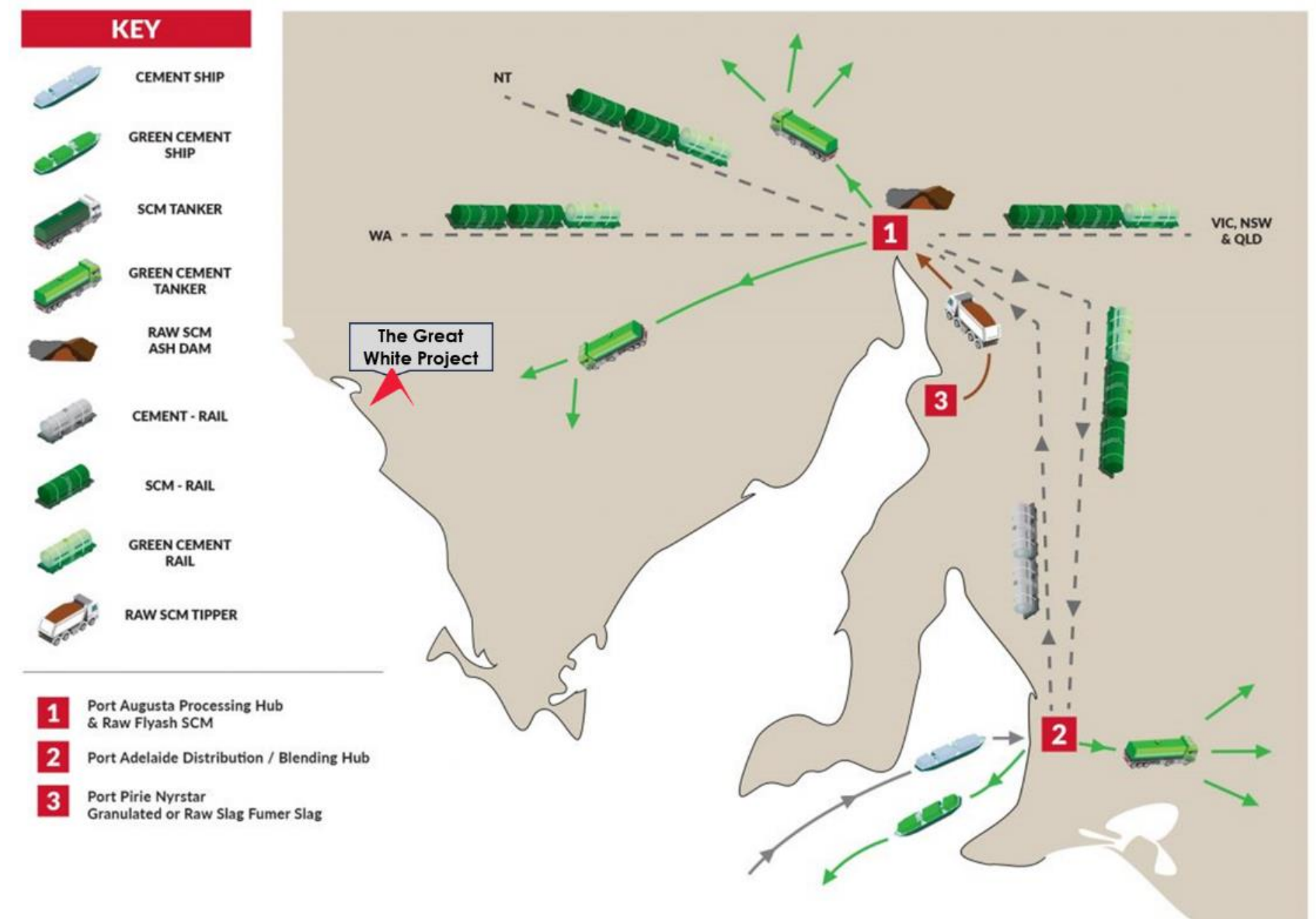
### STRATEGIC ALLIANCE – Intent to commercialise Great White HRM™

- Develop the market in Australia for Great White HRM™
- Commercialise use of Great White HRM™ in various applications, including reduced cement concrete, reduced fines concrete, improved performance shotcrete, backfill and other building products

### HALLET GROUP

- Established in 1978, it has grown to become the largest integrated supplier of building and construction materials in South Australia
- A supplementary cementitious materials (SCM) company with a range of products focused on lowering the carbon footprint of concrete
- Potential to assist Hallett Group in:
  - Expanding market share in the markets for low carbon concrete, shotcrete and fines reduction concrete
  - Replacing some of the 300,000 tonnes of cement Hallett Group currently imports each year
  - Hallett Group's \$125 million Green Cement Transformation Project centred in Port Augusta
  - Formulations for the concrete supply industry, such as for the upcoming \$15 billion River Torrens to Darlington Project (T2D) major roadworks project undertaken by the South Australian Government

### Hallett Group's Green Cement Transformation Project – with location of The Great White Project



# Chairlift – Inaugural Mineral Resource Estimate

Expanding high-quality opportunities through regional exploration

## CHAIRLIFT<sup>1</sup>

- Combined **Inferred Resource of 53.5 million tonnes (Mt)**:
  - 27.0 Mt of Bright White, low titanium kaolinised granite (Chairlift CRM)
  - 26.5 Mt of rheology modifier kaolin (Chairlift HRM)
- Low titanium content of Chairlift CRM, with average  $\text{TiO}_2$  of 0.18%
  - Chemistry could be ideal for advanced performance coatings and medical applications, supporting entry into new high value segments
- Chairlift HRM has the same rheological properties as Great White HRM<sup>TM</sup>, expanding the market opportunity for the HRM product range
- Exploration upside potential, with mineralisation open in multiple directions



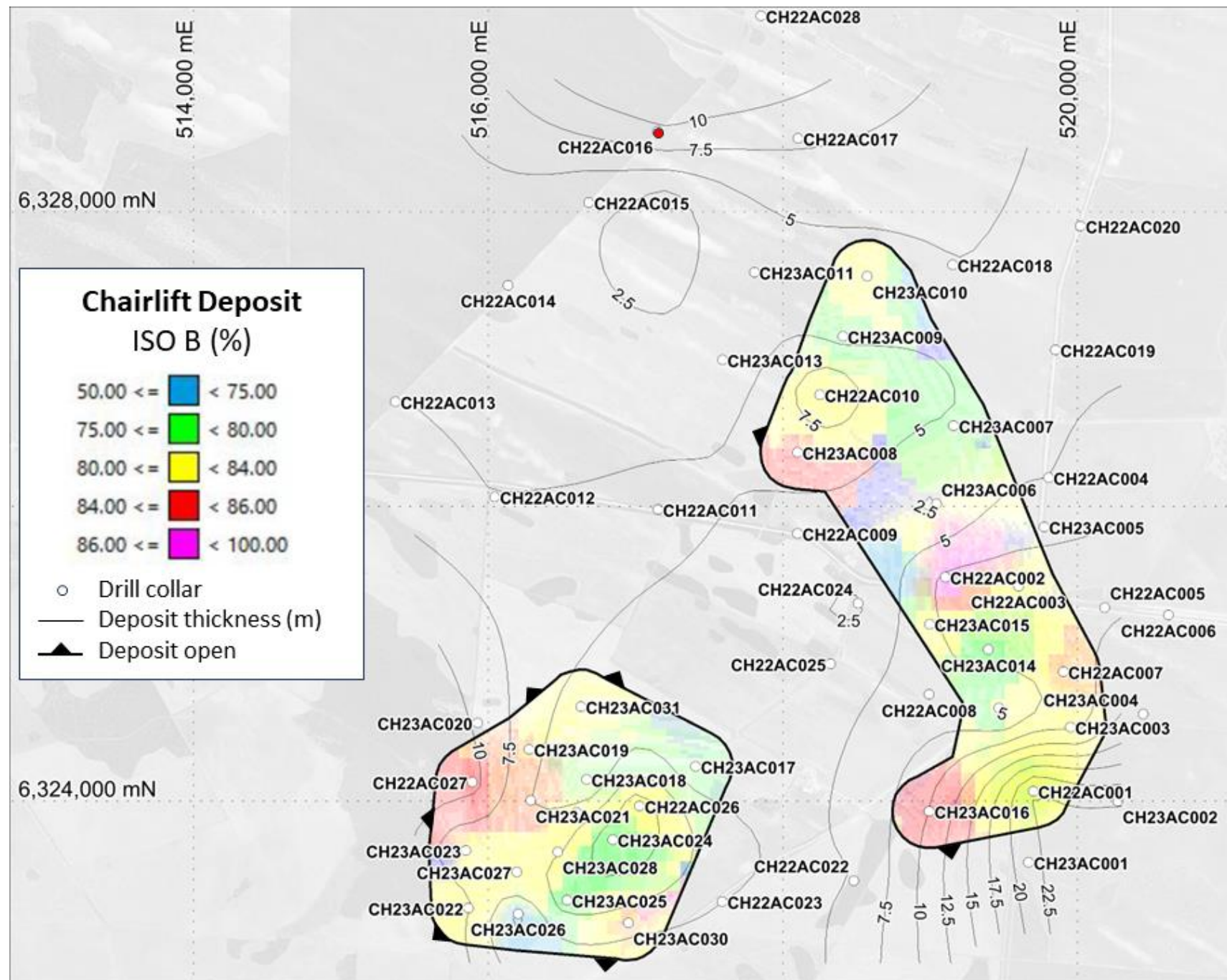
<sup>1</sup> Chairlift is located on exploration license EL 6664 and is part of the Eyre Kaolin Project. Andromeda is currently sole funding expenditure on the Eyre Kaolin Project to earn up to an 80% interest from Peninsula Exploration Pty Ltd. Refer ADN ASX announcement dated 12 August 2021 titled Andromeda enters New Kaolin Joint Venture on the Eyre Peninsula, SA. Refer to ASX Announcement 16 November 2023 'Chairlift Kaolin Deposit Mineral Resource Estimate'.



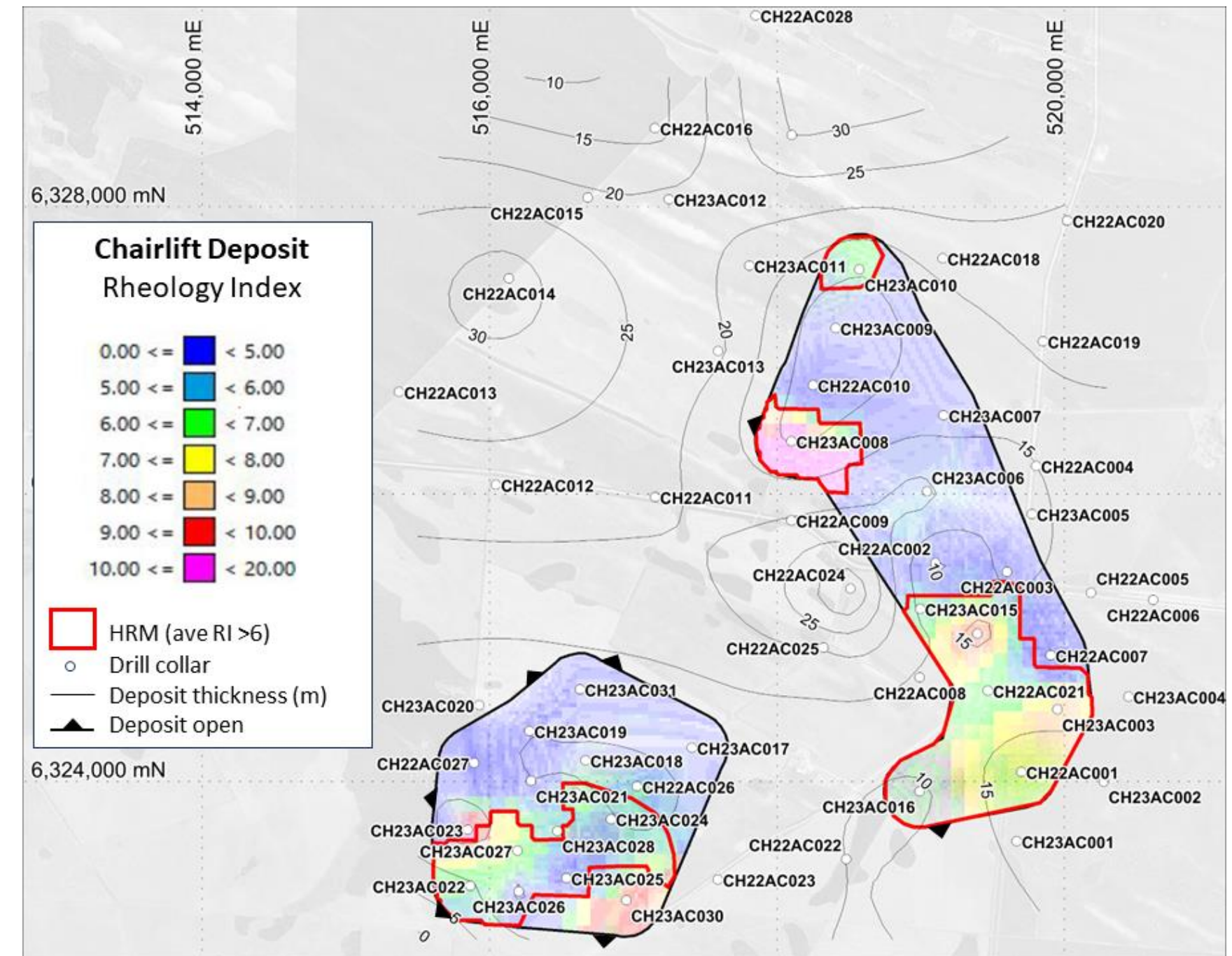
# Chairlift – Inaugural Mineral Resource Estimate

Demonstrated high-brightness and suitability as a rheology modifier

Chairlift CRM – coloured by ISO Brightness (ISO B)



Chairlift HRM – coloured by Rheology Index





# Stage 1A Processing Plant

Design and procurement readiness ahead of planned construction

## Long lead items

- Dryer ✓ Ordered
- Thickener ✓ Ordered
- Drum washer ✓ Ordered
- Filter press ✓ Ordered
- Filter cake feeder ✓ Ordered

All items scheduled to arrive according to revised anticipated schedule for **first product shipment** in **Q4 2024**

Photos of Fluidised Bed Dryer, taken recently in Europe during factory acceptance testing:





# Update on other projects

## Divestment of non-core assets and tenements

### **Drummond Epithermal Gold Project**

- Sale to Trigg Minerals Limited – **COMPLETED**
- 29.5 million shares (valued at \$295,000) allotted, as consideration and reimbursement of expenses
- Upfront payment of \$27,000 in cash and a cash refund of \$7,500 in respect of the environmental bonds, received

### **Wudinna Gold Project**

- Agreement executed for sale of remaining 25% interest in relevant tenements to Cobra Resources Limited
- Consideration of \$500,000 in cash and \$1,000,000 in shares of Cobra

### **Carbon Capture & Conversion Project**

- Andromeda retains ownership of Project intellectual property (IP) and business opportunity
- Strategic Review, conducted as part of revised Commercial Strategy, determined it as an Adjacent opportunity
- Carbon Capture Pilot Plant components – remain uncertified, a decision has been made to recycle the contained steel
- Progressing discussions with potential suitable industry partners to determine most appropriate path forward

### **Camel Lake Project**

- Remote location and access issues has led to a decision being made to allow the exploration rights of tenement to expire

# Next Steps

- **HRM commercialisation** aligned with market opportunities in South Australia and Hallett Group portfolio of projects
- **Cost/benefit analysis** of potential expansion from 50ktpa to 100ktpa (Stage 1A+), based on market demand, including the inclusion of India market
- Working towards **binding offtakes agreements** to lock in revenue that optimises the **debt and equity funding mix**
- Publication of **2023 DFS** has raised interest in offtake and funding opportunities by **potential Strategic Partners**





# Andromeda

## The Great White Mineral Company

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For more information about the Company, please visit our website, [www.andromet.com.au](http://www.andromet.com.au) or contact:

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