



Our Vision: Leading the world in the sustainable supply of superior quality industrial minerals and advancement of nanotechnologies.

## Company Overview and Update Presentation

30 June 2022

ASX:ADN

[www.andromet.com.au](http://www.andromet.com.au)



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## Mineral Resources and Ore Reserves Estimates

As an Australian company with securities listed on the Australian Securities Exchange (ASX), Andromeda is subject to Australian disclosure requirements and standards, including the requirements of the Corporations Act and the ASX. Investors should note that it is a requirement of the ASX listing rules that the reporting of ore reserves and mineral resources in Australia comply with the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the **JORC Code**) and that the Ore Reserve and Mineral Resource estimates underpinning the production targets in this presentation have been prepared by a Competent Person in accordance with the JORC Code.

Information that relates to Mineral Resources estimates has been previously announced to ASX on 23 December 2019, "Significant increase in Mineral Resource for the Poochera Kaolin Project", 29 September 2020, "New mineral resource estimate for Hammerhead Halloysite-Kaolin Deposit" and 11 August 2020, "New Mineral Resource for the Mount Hope Kaolin project", all available at <https://www2.asx.com.au/markets/company/adn>. Andromeda confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. Andromeda confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

## Competent Person's Statements

Information in this announcement has been compiled by Mr. James Marsh a member of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr. Marsh is an employee of Andromeda Metals Limited who holds shares and options in the company and has sufficient experience, which is relevant to the style of mineralisation, type of deposits and their ore recovery under consideration and to the activity being undertaking to qualify as Competent Persons under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code). This includes Mr. Marsh attaining over 30 years of experience in kaolin processing and applications. Mr. Marsh consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

# Company Overview and Update

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- Leadership and Strategy
  - Kaolin Resources and Exploration
  - The Great White Kaolin Project
  - Business Development Activities – High Purity Alumina (HPA) and Nanotechnologies
  - Metals Assets – Copper and Gold Tenements
- 





# Our Independent Non-Executive Board Members



**Mick Wilkes**

*Independent Non-Executive Chair*

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An experienced mining executive and company director with more than 35 years of broad international mining experience coupled with a successful track record of leading the development and operation of greenfield mines.



**Melissa Holzberger**

*Non-Executive Director  
Chair, Audit & Risk Committee  
Chair, Sustainability & Governance Committee*

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Director and mining lawyer with over 20 years' experience in the international energy and resources sector. Spanning legal, risk and compliance oversight, and environment, social and governance (ESG).



**Austen Perrin**

*Non-Executive Director*

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Considerable experience in mining, infrastructure, and oil and gas. In depth experience across accounting and finance, including acting as Chief Financial Officer for Whitehaven Coal Ltd, Asciano Limited, AJ Lucas Group and Toll NZ.



**Andrew Shearer**

*Non-Executive Director  
Chair, Remuneration & Nomination Committee*

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Involved in the mining and finance industries for 20 years. Coupled with geoscience and finance qualifications he has experience from exploration through to production.

# Our Executive Team



**James Marsh**

*Managing Director*

Highly qualified kaolin specialist with more than 30 years' industrial minerals experience, including notable, senior technical and marketing roles with two global market leaders.



**Joe Ranford**

*Operations Director*

Mining engineer with 25 years' senior management experience across both domestic and international mining companies, bringing mining operations into production within sensitive communities.



**Tim Anderson**

*Chief Commercial Officer*

An experienced executive with over 35 years of commercial experience through leadership, business development and commercialisation roles in energy, resources, water, technology and engineering.



**Michael Zannes**

*Chief Financial Officer*

A finance and commercial professional with over 25 years of experience managing operational and corporate finance functions.



**Andrea Betti**

*Company Secretary*

A corporate governance professional with over 20 years' experience in accounting, corporate governance, finance and corporate banking.



# Corporate Snapshot – ASX Code: ADN

**AU\$224m**

**Market Capitalisation**  
(20 June 2022)

**3,107,735,099**

Ordinary Shares

**70,300,000**

Unlisted Options

**24,333,325**

Performance Rights

**Issued Capital**

**14,671**

**Number of Shareholders**  
(21 June 2022)

**AU\$35.5m**

**Cash on Hand**  
(31 March 2022)

**AU\$0.0m**

**Debt**

Drummond  
Gold Project

Great White  
Kaolin Project

Mount Hope  
Kaolin Project

Montana Copper

## Our purpose

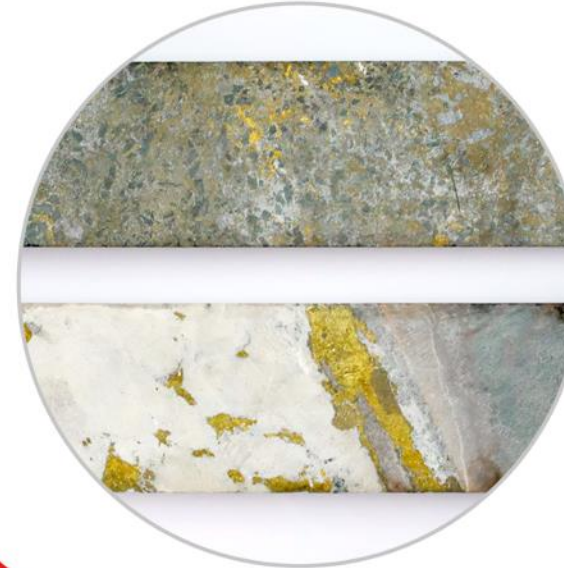
Through the use of our industrial minerals and nanotechnologies we strive to enrich the lives of people by improving the environment, creating prosperity for our shareholders and delivering value for our stakeholders.

## Our vision

Lead the world in the sustainable supply of superior quality industrial minerals and advancement of nanotechnologies.



## METALS



## GROW



## Our mission

To mine and process industrial minerals for supply, together with advancing nanotechnologies, to our global customer base by leveraging our unique natural resources and intellectual capital.

## Our values



Innovation



Teamwork



Integrity



Quality

The safety and wellbeing of our employees and our communities is our first priority.



# Andromeda Group Strategic Objectives

Realise Great White Kaolin Project (GWKP) opportunity and create further stakeholder value through Nanotechnologies and other Industrial Minerals projects

## Where are we now

- GWKP Total Ore Reserves 15.1 Mt<sup>1</sup>
- Long life assets
- Natural Nanotech now 100% owned; multiple nanotechnology research projects
- A range of other mining tenement opportunities

Executed Offtake  
Agreements

Plant Commissioned and  
Operational

Funding in Place

## Where do we want to be

- GWKP operational
- Industrial minerals tenements realising further supply opportunities
- Diversified profitable income streams taking advantage of new industrial minerals products
- Nanotechnology commercialisation projects enhancing offtake price
- Value realised on currently held copper and gold tenements

**GWKP Opportunity**

**Mining Lease approved  
DFS complete**

**GWKP Realised**

**Mine in full  
production with  
profitable offtake  
agreements**



# Why Andromeda?



## Tier 1 Mining Jurisdiction

South Australia



## Exploration Endowment

Large portfolio of exploration tenements, totalling 8,313.7km<sup>2</sup> including earn-ins



## Mineral Resources

Kaolin Mineral Resource: >110Mt of JORC Resources<sup>1,2,3,4,5</sup>



## Ore Reserves

Kaolin Ore Reserve (GWKP): 15.1Mt of JORC Reserves<sup>6</sup>



## Experienced Team

Experienced and industry focused Board and Executive team



## Mining Lease

Great White Kaolin Project Mining Lease granted



## DFS Completed

Great White completion of DFS, de-risked project, progressing to production



## Binding Offtakes

Binding offtakes under negotiation



## New High Value Products

Developing new high value products including High Purity Alumina (HPA) for existing markets



## Nanotechnologies

Strategic research relationship with University of Newcastle

1. ASX 23 December 2019, "Significant increase in Mineral Resource for the Poochera Kaolin Project".
2. ASX 29 September 2020, "New mineral resource estimate for Hammerhead Halloysite-Kaolin Deposit".
3. ASX 11 August 2020, "New Mineral Resource for the Mount Hope Kaolin project"
4. "The Company is not aware of any new information or data that materially affects the information in the relevant market announcements. All material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed."
5. ASX 23 March 2022, Maiden Tiger Kaolin Resource and Regional Rare Earth Element Potential. Halloysite reported with kaolinite.
6. ASX 6 April 2022 Great White Kaolin Project - Definitive Feasibility Study

# The Kaolin Market Industrial Demand



Estimated Size of Global Kaolin Market

**US\$9.0B<sup>1</sup>**

in 2023 (41Mt)

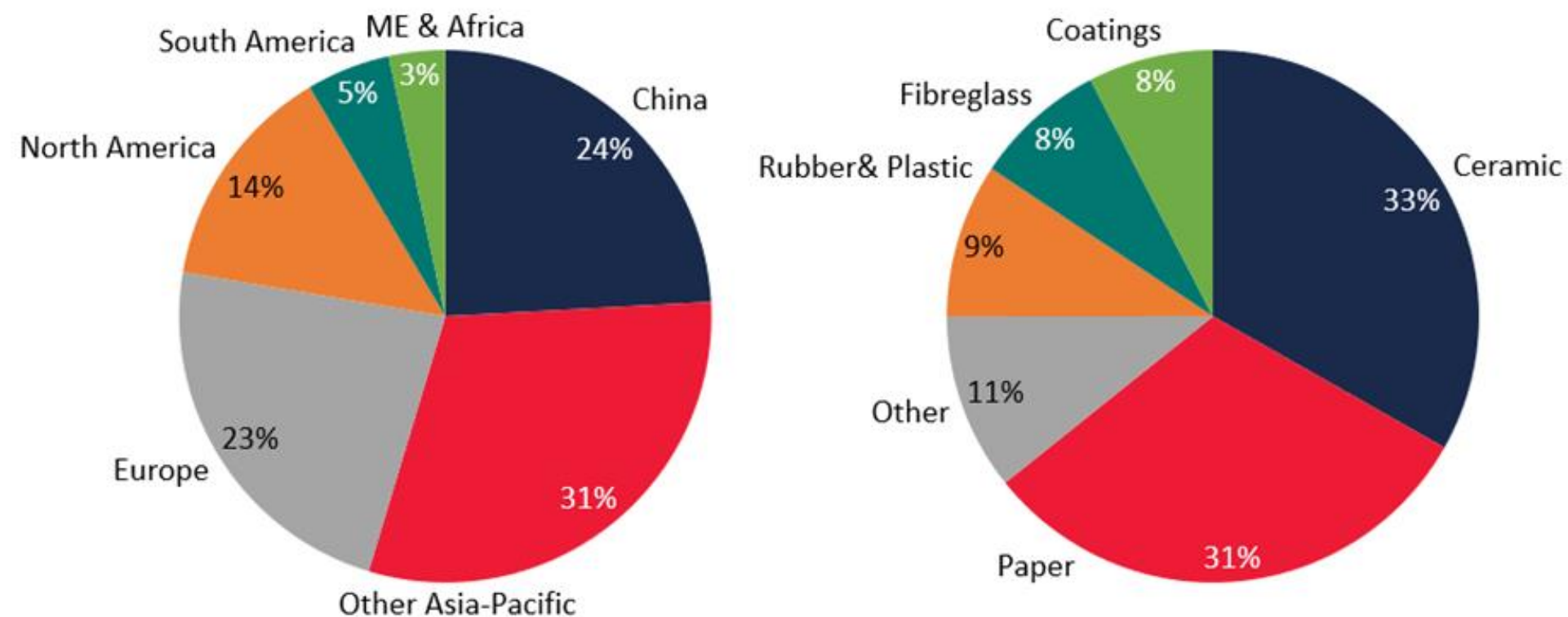


Estimated Growth of Global Kaolin Market

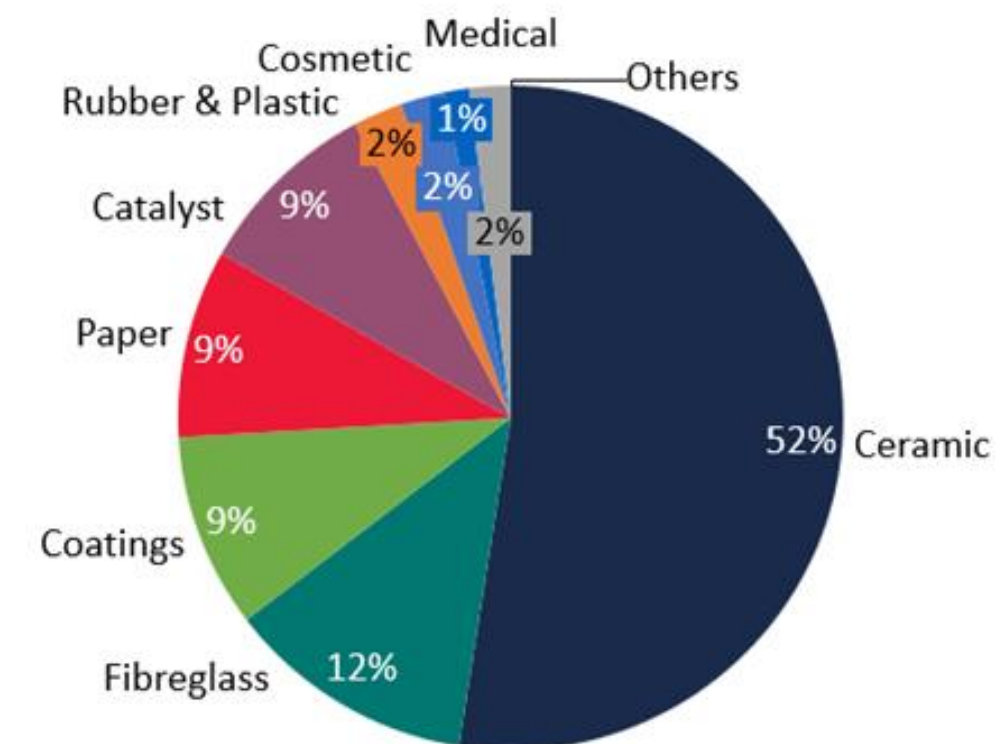
**11.1% p/a<sup>1</sup>**

2020-2027 CAGR (Asia Pacific)

Global kaolin demand by end use and region in 2021



Chinese kaolin demand by end use in 2021



<sup>1</sup>Grand View Research Kaolin Market Estimates and Trend Analysis to 2025



# Kaolin Resources & Exploration

Exploration efforts by our experienced Geological Team to grow the market base for value products



## Great White Kaolin Project

- Great White
- Hammerhead
- Tiger
- Bronze Whaler



## JORC Resources

- >110Mt<sup>1,2,3,4,5</sup>



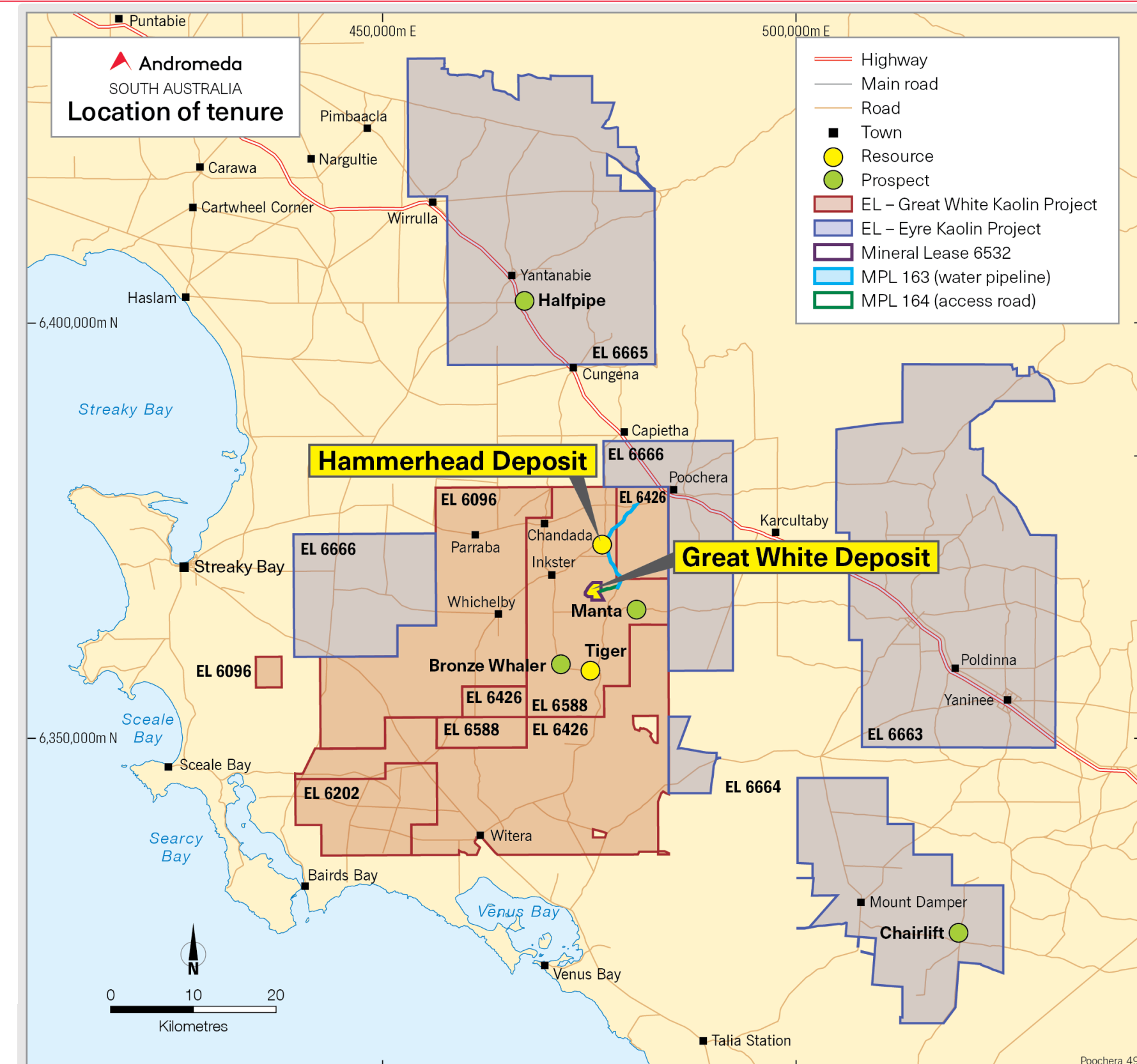
## Eyre Kaolin Joint Venture<sup>6</sup>

- Halfpipe - 24 holes/1174m
- Chairlift - 28 holes/895.5m
- 199 composite samples submitted for analysis



## Land Access

- 29 years of successful regional exploration activities



**4,896.8km<sup>2</sup>**

Regional potential kaolin of exploration tenements, including earn-ins

1. ASX 23 December 2019, "Significant increase in Mineral Resource for the Poochera Kaolin Project".  
 2. ASX 29 September 2020, "New mineral resource estimate for Hammerhead Halloysite-Kaolin Deposit".  
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 5. ASX 23 March 2022, Maiden Tiger Kaolin Resource and Regional Rare Earth Element Potential. Halloysite reported with kaolinite.  
 6. ASX 12 August 2021, "Andromeda enters new kaolin Joint Venture on the Eyre Peninsula, SA".

# Great White Kaolin Products & Marketing

## Concentrate Product Great White KCM™90

*A semi-refined high-quality kaolin for direct use, further refinement or upgrade of resources*



## Great White KCM™90

*Binding Offtakes being negotiated in several countries*

## Concrete Product Great White HRM™

*A refined kaolin for sale for use as a concrete and building product additive*



## Great White HRM™

*LOI Signed with IMCD the World's largest additives distributor and conversion to a Binding Offtake in progress*

## Ceramic product Great White CRM™

*A fully refined product for the high-end ceramics market*



## Great White CRM™

*Binding Offtake for 5,000t/pa*

## Coatings product Great White PRM™

*A fully refined product for the coatings and polymers markets*



## Great White PRM™

*Binding Offtake for 70,000t/pa*



# Great White Kaolin Project – Technical, Environmental & Community



## Stakeholder Engagement

- Continuing in community
- Landholders
- Jobs/opportunities



## Environmental Impact Studies

- No impact issues
- Minimal groundwater (no regional impact)
- Modelling completed



## PEPR<sup>1</sup> Approval

- Focussed DFS stages 1 & 2
- Mine closure landforms designed
- Finalisation of submission for August 2022
- Approval ~ end of 2022



## Land Access Agreement

- For exploration activities over last 5 years
- Building on established relationships



## Upgraded Pilot Plant

- AKW Apparate Verfahren GmbH Hydro-cyclones
- Upgraded screening
- Filter press – increased dewatering
- Cone bottom thickener
- Awaiting drum washer (Delayed in China)
- Produced samples for customer testing
- Centrifuge upgrade in progress



<sup>1</sup> The Program for Environment Protection and Rehabilitation (PEPR) is the operational approval in South Australia.

# Great White Kaolin Project– Post DFS Works

- DFS design advanced – continuing to optimise design post-DFS
- Operational readiness - establishment, construction and starter pit detailed planning
- Scale-up sample products to support marketing for Ceramics, Paints and Coatings, Natural Nanotech and HPA

## Great White Stage 4 Processing Plant Design:

DFS design concept was to minimise capital with a staged approach to production capacity and product quality to self fund capital upgrades.



3D elevation of Great White Kaolin Project – Stage 4 capacity plant

### DFS Highlights<sup>1</sup>

**NPV<sub>8</sub>  
A\$613M**

- IRR = 36%
- Upfront capital A\$93.8M

**LOM  
28yrs**

- Pay back 5.9 yrs with self-funded upgrades

**15.1Mt  
Total Ore  
Reserves**

- GWKP Reserve
- Open to the South East

1. ASX 6 April 2022 Great White Kaolin Project - Definitive Feasibility Study



# Great White Kaolin Project – Operational Readiness



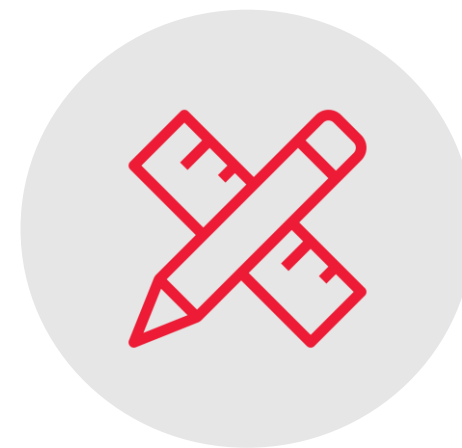
## Land Access

In principle  
agreement reached



## Suppliers

Continuing to build  
relationships with  
local contractors  
and suppliers



## Site Establishment

Works scoped  
and designed



## Agreements

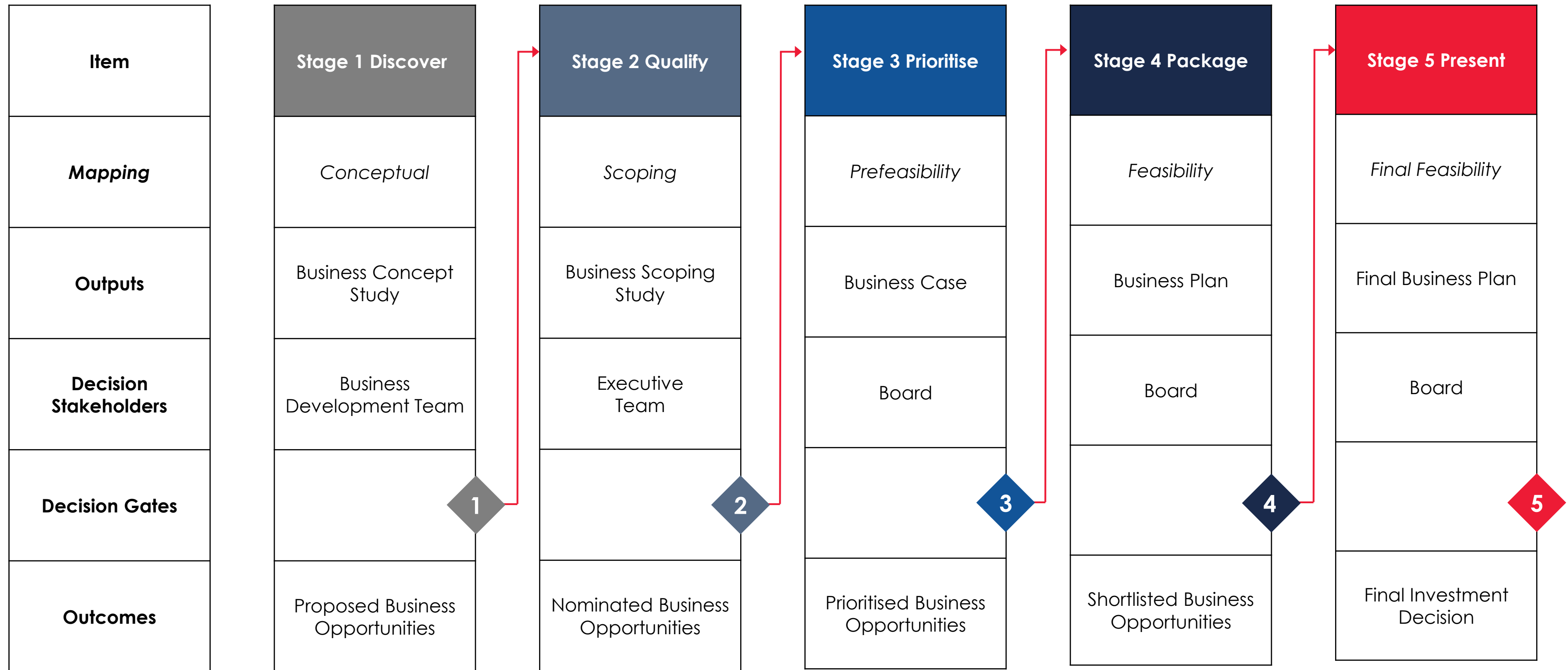
Preparation of  
agreements  
to establish site  
infrastructure and  
operations



## Logistics

Multiple port  
facility options with  
individual attributes  
remain open

# Business Development Framework





# High Purity Alumina (HPA) - Adding value to the GWKP

## Estimated size & growth of global synthetic sapphire market

**US\$6.0B<sup>1</sup>**

In 2020

**7.0% p/a<sup>1</sup>**

2020-2027 CAGR

## Estimated size & growth of global lithium-ion battery market

**US\$41.1B<sup>2</sup>**

In 2021

**12.3% p/a<sup>2</sup>**

2021-2030 CAGR

## Subject Matter Experts Directly Engaged

- Research and Development
- Market Analysis
- Scaling
- Commercialisation

## Intellectual Property

Provisional Patent Application in progress

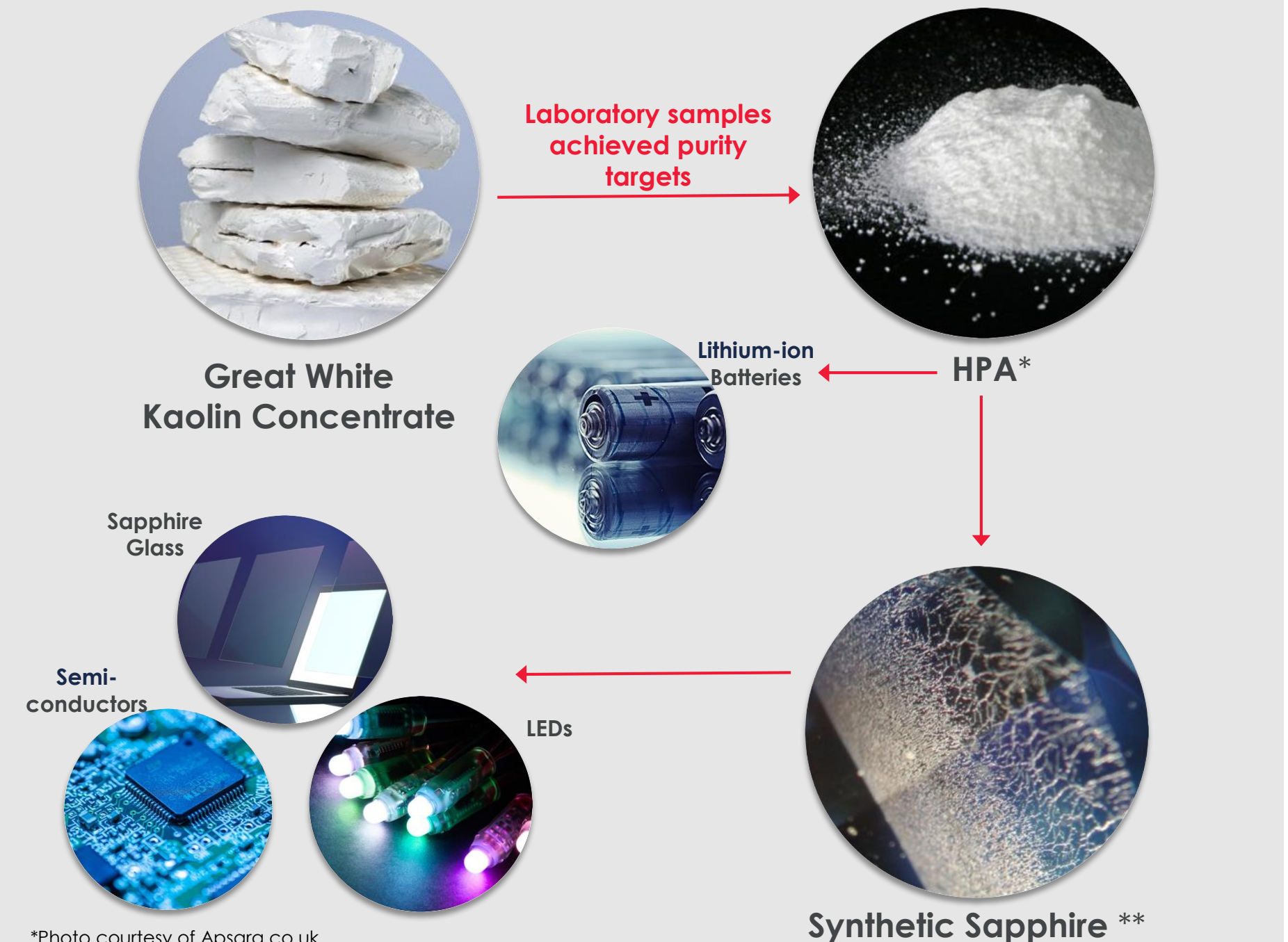
<sup>1</sup>Research and Markets: Synthetic Sapphire – Global Market Trajectory & Analytics, April 2021

<sup>2</sup>Markets and Markets: Lithium-ion Battery Market, June 2021

<sup>3</sup>Australian Federal Government "2022 Critical Minerals Strategy", March 2022

## STAGE 1 DISCOVER

Andromeda has funded research into the recovery of the Critical Mineral<sup>3</sup>, HPA, from Great White Kaolin Concentrate feedstock



\*Photo courtesy of Apsara.co.uk

\*\*Photo courtesy of Emerging Markets Research Trends

# Nanotechnologies - Adding value to the GWKP

## STAGE 1 DISCOVER

### Estimated size of global nanomaterials market

**US\$8.0B<sup>1</sup>**

In 2020

### Estimated growth of global nanomaterials market

**14.1% p/a<sup>1</sup>**

2020-2027 CAGR

### Research & Development

- Strategic partnership with Global Innovative Centre for Advanced Nanomaterials (GICAN)

### Intellectual Property

- Provisional Patent Application filed (Priority Date 2 July 2021)



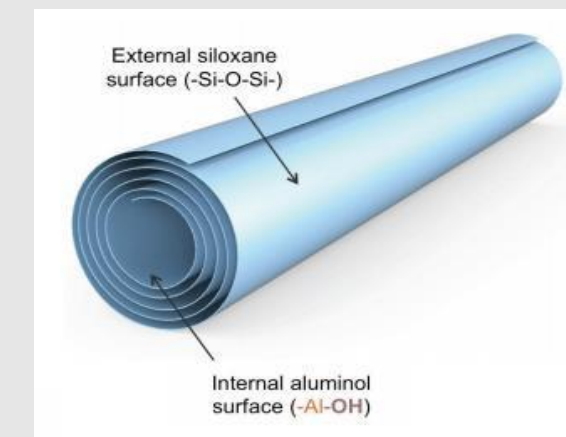
**Carbon Capture Pilot Plant designed and manufactured (Height 5.0m)**

Andromeda has funded research into the production of nanomaterials from Great White Halloysite Kaolin feedstock



**Great White Halloysite Kaolin**

**Nanomaterials produced at laboratory scale**



**Halloysite Nanomaterials**



**Energy**



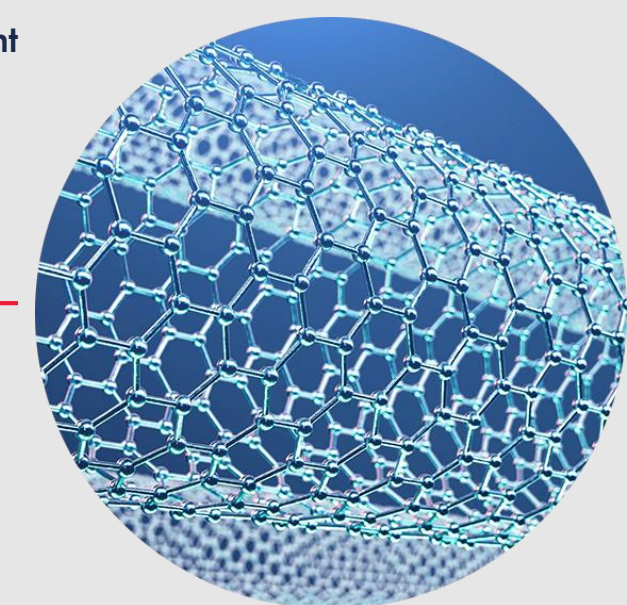
**Environment**



**Health**



**Agriculture**



**Industry Applications**

**Nanotechnologies**



# Metals

Optimise shareholder return on currently held copper and gold tenements

## Moonta Copper

- Historical data
- ~4,500 holes dating from 1905
- Collating and reviewing potential

## Wudinna Gold

- Current drilling programs to advance gold, IOCG and rare earth targets

## Drummond Gold

- Negotiating with interested parties

## Moonta Copper Project (Alford Copper Project)

- Alford West **ISR** Resource of **66.1Mt @ 0.17% copper for 114kt** contained metal<sup>1</sup> (Enviro Copper Recovery Pty Ltd JV Stage 1 - earning 51%)
- Reassessment of 100% ADN held Moonta tenements for ISR potential

## Wudinna Gold Project (Eyre Peninsula Gold Project)

- Barns, Baggy Green and White Tank combined resources of 4.43Mt @ 1.5g/t gold for 211,000 oz gold<sup>4</sup> (Cobra Resources PLC JV Stage 3<sup>5</sup> – earning 75%)

1- THR ASX release dated 15 August 2019 "Substantial initial copper resource – Moonta Project, inferred ISR copper resource of 114,000 tonnes contained copper".

2 - ADN ASX announcement dated 12 April 2012 "Significant copper-gold discovery confirmed at Paskeville, SA"

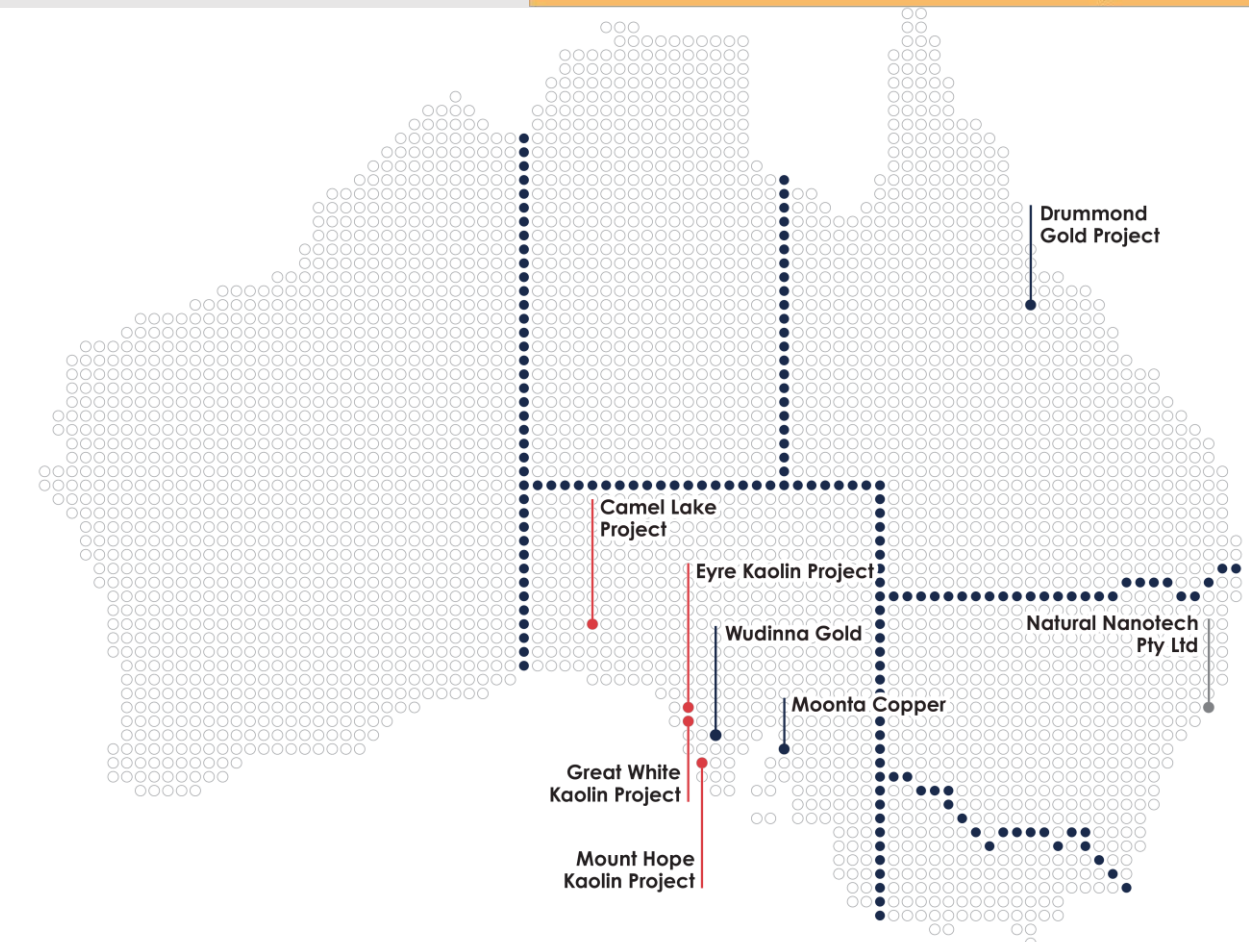
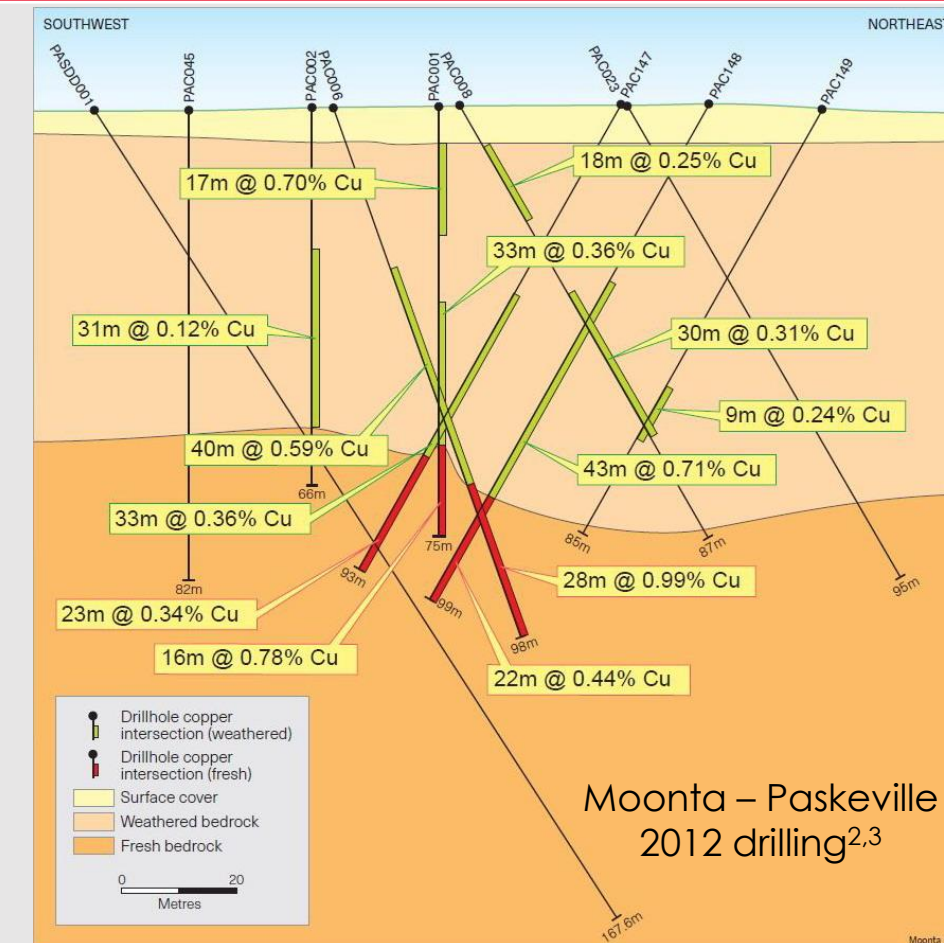
3 - ADN ASX announcement dated 5 June 2012 "Paskeville prospect delivers further copper hits, SA"

4 - ADN ASX announcement dated 8 May 2019 "Increased ounces in updated Wudinna Gold Project Mineral Resource"

5 - ADN ASX announcement dated 31 Oct 2017 "Eyre Peninsula Gold project 100% Owned South Australia".

## In-Situ Recovery (ISR) economics

- Supports projects at significantly lower grades than traditional mining methods.
- Limited to weathered bedrock (copper carbonates, oxides and secondary sulphides)
- Low environmental impact, extraction has minimal long-term impact on agricultural land



# Corporate Readiness

Aligning the company, people, processes and systems for the next phase



## Organisational Structure

Review of organisational structures to be ready for construction and operations



## Enterprise Resource Planning

New system operational ready for construction and operations



## Risk Registers

Updated Group Strategy and strategic risk registers to move into construction and operations



## Logistics

Multiple port facility options with individual attributes remain open



## Sustainability Committee

Preparing our ESG systems for the move into construction and operations



## Policies & Procedures

Reviewing and changing ready for construction and operations



## Management Operating Systems

Consolidating in preparation for construction and operations



## Carried Forward Tax Losses

Reviewing the availability and useability of our carried forward tax losses



## Group Legal Structures

Reviewing and implementing to create flexibility in funding



# Achievements Past 12 Months & Moving Forward



## Completed

<b>Mining Approval</b>	Granted
<b>Minotaur Acquisition</b>	Completed
<b>Natural Nanotech</b>	100% Owned
<b>Funding</b>	\$45 Million Raised
<b>DFS</b>	Released
<b>Site Establishment</b>	Works scoped and designed
<b>Team</b>	Expert and dedicated team built
<b>Land Access</b>	In principle agreement reached



## In Progress

<b>Agreements</b>	Drafting to establish site infrastructure and operations
<b>Pilot Plant</b>	Upgrade in progress
<b>Binding Offtakes</b>	Partly secured and remainder of planned production under negotiation
<b>PEPR</b>	Application in progress
<b>Logistics</b>	Multiple port facility options with individual attributes remain open
<b>Suppliers</b>	Continuing to build relationships with local contractors and suppliers



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