

July 16, 2021

DEVELOPING A WORLD-CLASS  
HALLOYSITE-KAOLIN PROJECT

 **Andromeda**

METALS

AN EMERGING INDUSTRIAL MINERALS  
PRODUCER WITH NUMEROUS VALUE CHAINS

ASX:ADN

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



**\$413M**

MARKET  
CAPITALISATION

**\$32M**

CASH

**\$0M**

DEBT

**2,361M**

FULLY PAID  
ORDINARY SHARES

**\$0.175**

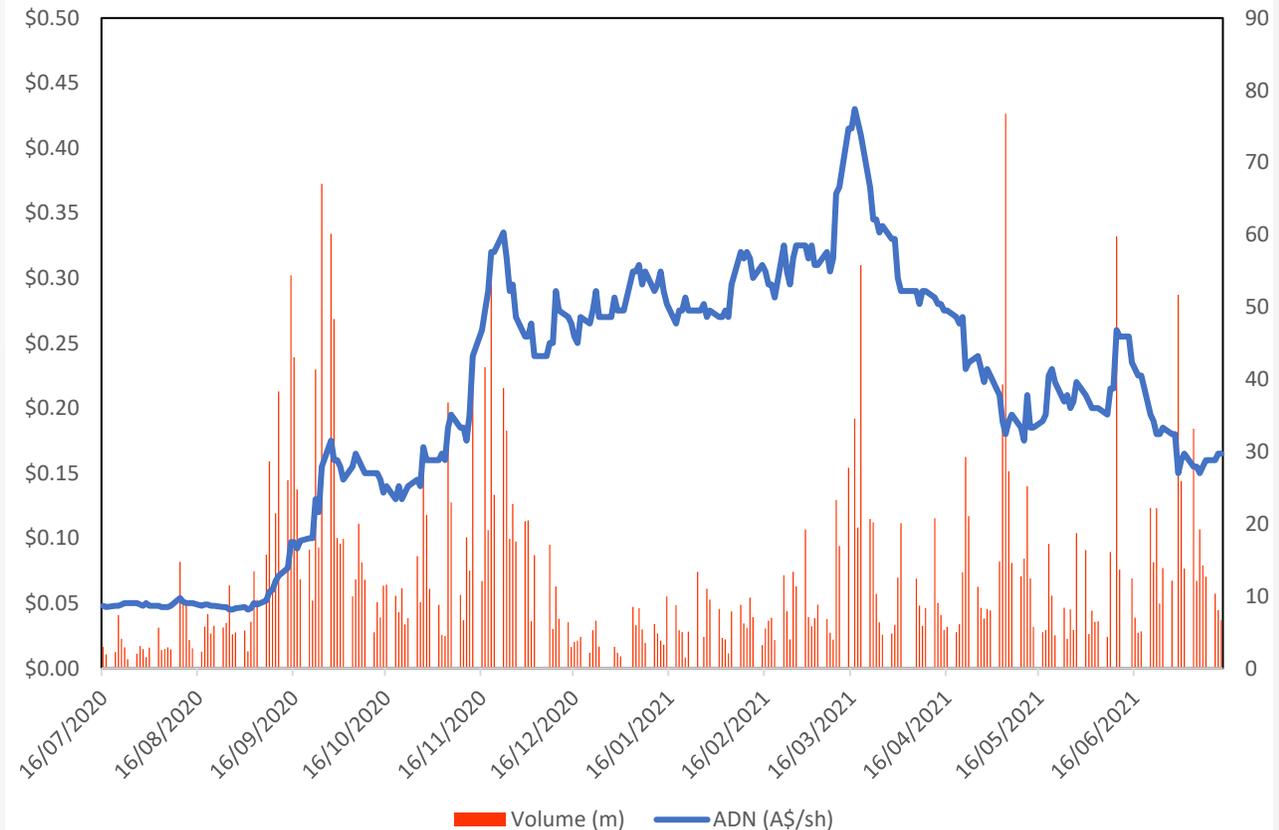
CURRENT SHARE  
PRICE

## BOARD MEMBERS

- Rhod Grivas – Non Executive Chairman
- James Marsh – Managing Director
- Joe Ranford – Operations Director
- Nick Harding – Finance Director
- Andrew Shearer – Non Executive Director

## Current Share Placement Plan

- Total raise of \$15.0 million
- Issue price of \$0.15
- Closes 5pm Tue July 20<sup>th</sup> 2021



<b>PRIMARY FOCUS</b>	<b>HALLOYSITE-KAOLIN</b>
	<p><b>Great White Kaolin (ADN 75% JV with MEP 25%) and Mount Hope (100%)</b> <b>Both Projects in South Australia</b></p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%; text-align: center;"> <p><b>Natural Nanotech (ADN 50% JV with MEP 50%)</b></p> </div>

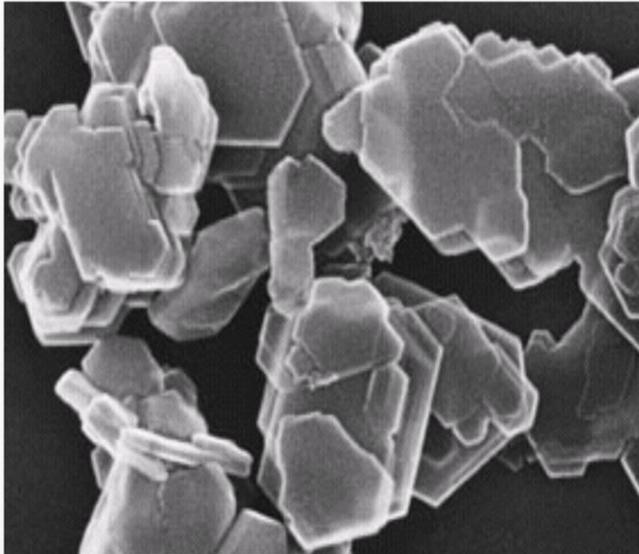
<b>ADDITIONAL ASSETS &amp; JV'S</b>	<b>GOLD</b>		<b>COPPER</b>
	<p><b>Drummond Project</b> Gold in Qld</p>	<p><b>Cobra Resources JV</b> Gold in SA</p>	<p><b>Environmental</b> <b>Copper Recovery JV</b> Copper in SA</p>



## Primary Project Focus – Halloysite-Kaolin

- Great White – considered the world’s largest known high-purity halloysite-kaolin resource
- Current total resources exceeding 100Mt
- Located close to essential infrastructure
- Legally Binding Offtakes underpinning the business
- LOI’s for an additional approx. 1Mt/pa of mixed grades
- New high-value concrete industry opportunity
- De-risked High Purity Alumina (HPA) project
- Multiple Nanotechnology opportunities

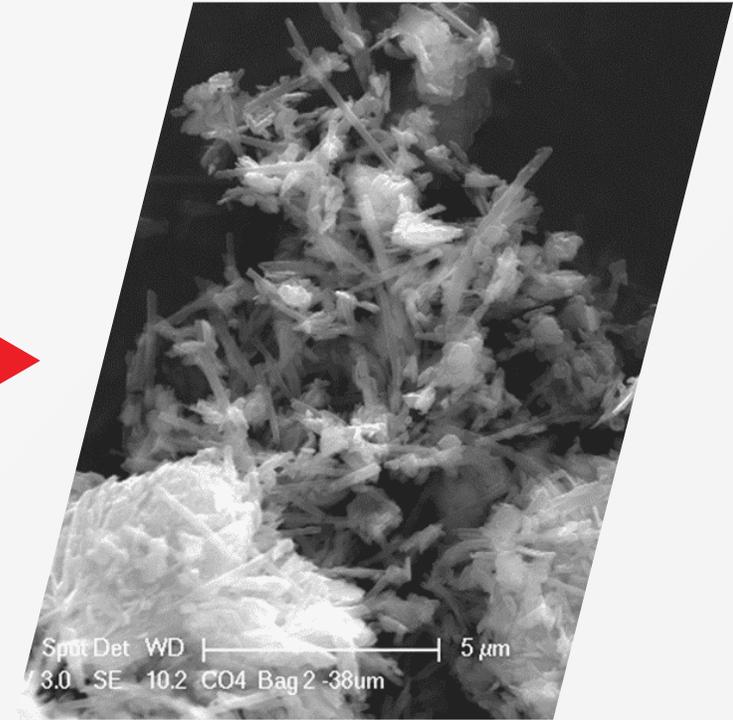
Standard Kaolin Product



Kaolinite Plates



Halloysite Tubes



The Great White Resource is a naturally occurring blend of tubes and plates

You already use kaolin in a vast number of applications, everyday



Ceramics



Medical



Paint & Coatings



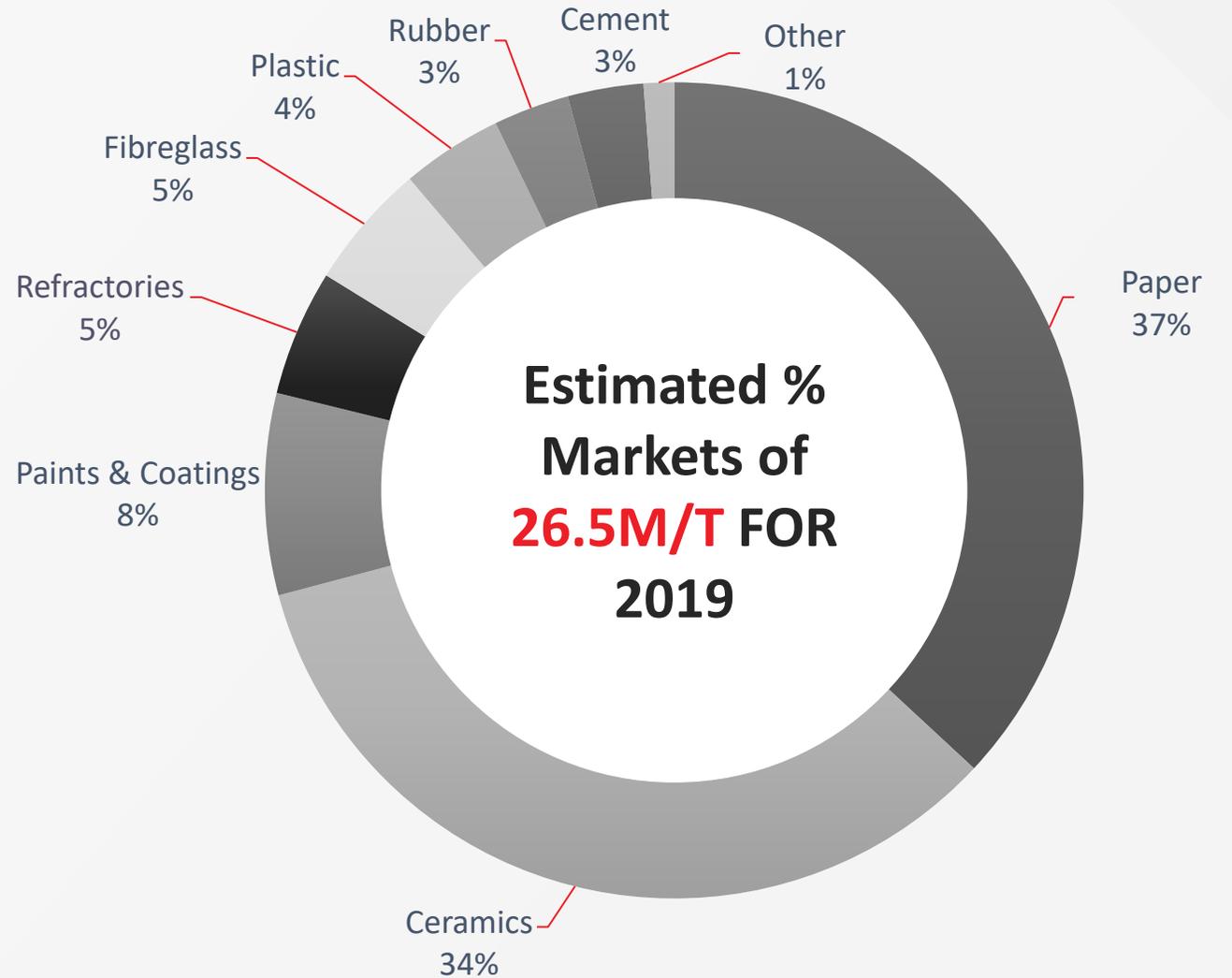
Transport



Plastic



Product



# BINDING OFF-TAKES IN PLACE

## Initial Business Already Underwritten



### Paint Product - Out-Performs the World's Best Kaolin Products

- Binding Offtake signed for 70,000t/pa of premium paint grade into China
- Price fixed for three years and higher than the PFS price (A\$700/t)
- Significant global opportunities for this product

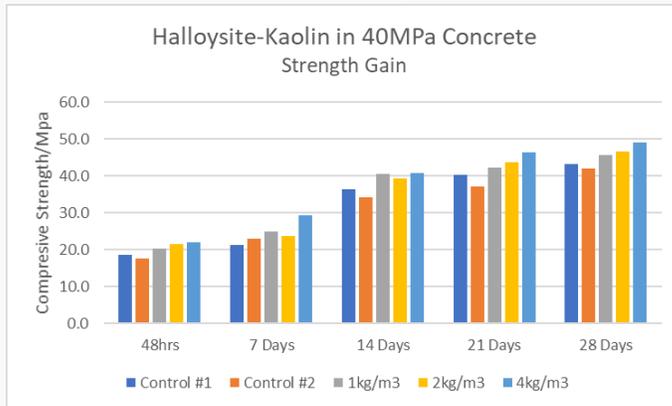
### Ceramic Product - Fired Brightness off the Scale

- Binding Offtake signed for 5,000t/pa with Japanese customer @ A\$700/t
- Total Japanese market estimated at 45,000t/pa
- Total Chinese market estimated at ~ 700kt/pa – Offtake discussions ongoing
- Approval testing in progress throughout Europe, Middle East and Asia
- Global supply shortage is growing



# NEW HALLOYSITE-KAOLIN PRODUCT For Concrete

## Great White HRM™ In Construction Products



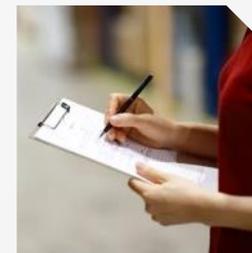
Commercial testing in progress



Only **1kg in 3 tonnes** of concrete required

## Potential Benefits

- Carbon footprint reduction
- Cost reduction
- Performance improvements
- Handling improvements
- Safety improvements



Australian Concrete Industry  
Standards passed



Huge potential high-value market  
with true global reach

**Most researched clay mineral in the world**

**Use only constrained by supply shortage**

- Great White Project halloysite-kaolin is already working at 40% purity
- This is only going to get better as purity increases

Link for NNT presentation being given to the Australian Shareholders Association on Wed 21<sup>st</sup> July in Adelaide

[https://www.australianshareholders.com.au/Public/Education\\_events/Event\\_Display\\_Public.aspx?EventKey=1f733a74-1202-4887-994c-bdd148ca1b6e&iSearchResult=true&WebsiteKey=ebdf9726-e4a7-4e5e-b606-e5d138134537](https://www.australianshareholders.com.au/Public/Education_events/Event_Display_Public.aspx?EventKey=1f733a74-1202-4887-994c-bdd148ca1b6e&iSearchResult=true&WebsiteKey=ebdf9726-e4a7-4e5e-b606-e5d138134537)



Carbon Dioxide Capture/Storage and Conversion to Fuels



Batteries and Super-Capacitors



Water Purification



Patent Filed & Pilot Plant under Construction



Patent Filed



Patent Filed

## Natural Nanotech (NNT) R&D in Progress



Agriculture \$2.4M Gov Funding



Medical Delivery of Drugs



Hydrogen Storage and Transport



Remediation of Contaminated Soils

# HIGH PURITY ALUMINA PROJECT

- High Purity Alumina (HPA) is recognised as a key component in the Lithium-Ion Battery supply chain
  - Annual demand is set to quadruple between 2020 and 2028 causing a significant shortfall in supply
  - Current 4N (99.99%) HPA pricing is approx. US\$24,000/t and 5N (99.999%) up to US\$50,000/t
  - HPA is also used extensively in LED lights and Smartphone Glass
- 
- Andromeda has proven premium quality kaolin feed for HPA production
  - Very high end 4N purity was repeatedly achieved with only one stage of purification
  - MoU signed with Advanced Energy Minerals for exclusivity to their technology in Australia and New Zealand
  - AEM has the only globally operating commercial facility capable of producing HPA from kaolin
  - Their Canadian plant has a state of the art R&D centre and holds a portfolio of related IP
  - AEM is currently designing a UK plant with support from the UK government and this improved modular design would be duplicated in Australia by Andromeda
  - Feasibility studies likely to commence following successful D/D
  - Operational start of approx. 2000t/pa of 5N product under consideration for 2023



## Great White Project PFS

- **NPV of A\$736m (pre tax / 8% discount rate)**
- **EBITA (LOM) A\$2.06B**
- **26 year mine life (@500ktpa)**
- **15 month payback**
- **IRR of 175%**
- **Based on DSO and offshore refining**
- **Mining and processing 500kt/pa of ore**
- **Based only on ceramic market product**

## DFS

- **On-site wet processing from start of production**
- **Likely to incorporate a phased construction:**
  - **250ktpa of ore processed year one**
  - **Doubling of capacity end of year two**
- **Based on coatings and ceramic market products**
- **Phase 2 product mix and capacity optionality**
- **Mine life 30 years+**
- **Concrete product opportunity**
- **High Purity Alumina opportunity**

- Additional Binding Offtake Agreements – 100% sold out
- Definitive/Bankable Feasibility Studies – debt funding
- Mining Approvals
- High Purity Halloysite – resource and/or purification
- Concrete Application Testing – commercial agreement
- Additional Resources
- Nanotechnology Commercialisation
- High Purity Alumina – feasibility studies
- DSO opportunity
- Sand sales opportunity

## 2022

- **First Commercial Products to Market by late 2022**



Andromeda has one of the world's largest resources of high purity halloysite-kaolin



This is a high value industrial mineral selling into a low-volatility market



Global demand is increasing, and supply is decreasing



Simple business model with low impact mining



Huge potential in new applications including concrete, nanotube technologies and HPA



Low capex project with a short timeline to operation

# THANK YOU

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**James Marsh**

Managing Director

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**Cautionary Statements**

The preliminary feasibility study (Pre-Feasibility Study, PFS) referred to in this announcement has been undertaken to study a range of options to produce high-quality halloysite-kaolin product from the Kaolin Resource at Poochera in South Australia in order to provide Andromeda Metals with a basis for more detailed Definitive Feasibilities Studies for the Project. It is a technical and economic study to identify preferred mining, processing and infrastructure requirements but it has not finalised these. The PFS work has advanced assessments of environmental and socio-economic impacts and requirements but these are also not finalised. The estimation of ore reserves is yet to be done.

The Production Target referred to in this announcement is based on this PFS and supported mainly by Measured and Indicated Resources and only minor Inferred Resources. Andromeda Metals has concluded that it has reasonable grounds for disclosing a Production Target, however there is no certainty that the Production Target or the economic assessment will be realised.

The PFS is based on the material assumptions outlined elsewhere in this announcement. These include assumptions about the availability of funding. While Andromeda Metals considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the PFS will be achieved.

To achieve the range of outcomes indicated in the PFS, funding in the order of A\$28M, inclusive of working capital, is likely to be required. Investors should note that there is no certainty that Andromeda Metals will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Andromeda Metals' existing shares. It is also possible that Andromeda Metals could pursue other 'value realisation' strategies to provide alternative funding options.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the PFS.

This announcement includes forward looking statements. For further information on forward looking statements please refer to the end of this release.

**Forward Looking Statements**

Some of the statements contained in this report are forward looking statements. Forward looking statements, include, but are not limited to, statements concerning estimates of tonnages, expected costs, statements relating to the continued advancement of Andromeda's projects and other statements that are not historical facts. When used in this report, and on other published information of Andromeda, the words such as 'aim', 'could', 'estimate', 'expect', 'intend', 'may', 'potential', 'should' and similar expressions are forward looking statements. Although Andromeda believes that its expectations reflected in the forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements. Various factors could cause actual results to differ from these forward looking statements include the potential that Andromeda's project may experience technical, geological, metallurgical and mechanical problems, changes in market prices and other risks not anticipated by Andromeda. Andromeda is pleased to report this summary of the Study in a fair and balanced way and believes that it has a reasonable basis for making the forward-looking statements in this announcement, including with respect to any mining of mineralised material, modifying factors, production targets and operating cost estimates.

This announcement has been compiled by Andromeda from the information provided by the various contributors. All financial assumptions and estimates are quoted in Australian Dollars ('A\$' or 'AUD') only, unless indicated otherwise.

**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 undertaken 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.