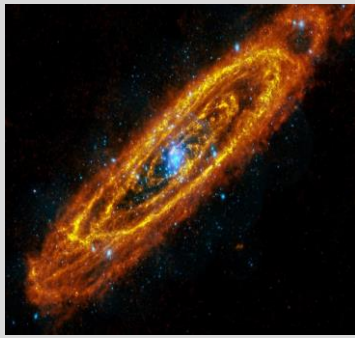


# ASX Announcement

17 March 2021



**Andromeda Metals Limited**

ABN: 75 061 503 375

## Corporate details:

ASX Code: ADN

Cash (31 Dec 2020): \$7.94 million

Issued Capital:

2,157,227,827 ordinary shares

89,820,000 unlisted options

19,750,000 performance rights

## Directors:

**Rhod Grivas**

Non-Executive Chairman

**James Marsh**

Managing Director

**Nick Harding**

Executive Director and  
Company Secretary

**Joe Ranford**

Operations Director

**Andrew Shearer**

Non-Executive Director

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## First Customer Binding Offtake Signed for Great White Project

### Summary

- **Legally binding offtake agreement signed with Japanese customer. The agreement is for 5,000tpa of a premium ceramic grade product priced at A\$700t.**
- **Conrad Partners are now directly engaging with high end ceramic users and distributors in China, to sign binding offtake agreements for Great White Kaolin material following COVID related disruptions.**
- **Additional samples have been evaluated in Europe, the Middle East and other parts of Asia with potential offtake partners to further de-risk the Project.**
- **Six tonnes of commercially representative product to be known as Great White CRM, has been provided to potential customers for testing.**
- **Steady progress is being made with the Definitive Feasibility Study (DFS) which is scheduled for completion during the second quarter of 2021. The DFS focus will be on production for the global ceramic market with a number of configuration options currently being evaluated.**
- **The Great White Project Mining Proposal was submitted on 25<sup>th</sup> February 2021 and the South Australian Government has confirmed that it satisfies the minimum requirements as set out in the Terms of Reference. A six week public consultation and assessment process will shortly commence.**
- **Origin Capital is providing advice in consideration of financing options for the joint venture partners in support of a Bankable Feasibility Study.**
- **Financing proposals will enable a Decision to Mine and Final Investment Decision by the joint venture partners, anticipated in the fourth quarter of 2021.**
- **Separately to the ceramics DFS, the Company is undertaking two feasibility studies into the addition of a concrete rheology product and a paint and coating product from material sourced from different parts of the Great White Mineral Resource.**

### Discussion

Andromeda Metals Limited (ASX: ADN, Andromeda, the Company) is pleased to provide an update of progress in relation to the Great White Kaolin Project which remains on track for the commencement of open pit mining in February 2022.

The Great White Kaolin Project is a joint venture with Minotaur Exploration Limited (ASX: MEP) in which ADN holds a 75% equity interest. At the end of last month ADN, on behalf of the joint venture partners, lodged applications for a Mining Lease and two Miscellaneous Purposes Licences with the South Australian Department for Energy and Mining (DEM) for the proposed development of the Great White Kaolin Project, representing a significant milestone in the Project's development.

## **Marketing**

Great White halloysite-kaolin offers both high quality and long life reliable strategic supply, drawing strong interest from potential customers in Japan, Europe and Asia despite COVID travel restrictions disrupting meetings with potential offtake customers. Andromeda is very pleased to report that it has secured its first legally binding offtake agreement with a highly respected Japanese porcelain manufacturer Plantan Yamada, which has factories located in both Japan and China. The agreement is for 5,000tpa of the Great White CRM high-quality halloysite-kaolin product designed for the porcelain manufacturing industry. The customer has also agreed to pay A\$700/t, equivalent to the price used in the Great White Project Pre-Feasibility Study (PFS) (*refer ADN ASX announcement dated 1 June 2020 titled "Pre-Feasibility Study Further Improves Poochera Halloysite-Kaolin Project Economics"*).

The Japanese customer analysed and tested a broad series of samples at laboratory and pilot scale over two years prior to running approximately 40 tonnes of material through its processing plant. This was used to manufacture a large batch of high-quality porcelain items to give it a sufficiently high level of confidence to sign a legally binding agreement. Gaining customer approvals and offtake agreements for industrial minerals products such as halloysite-kaolin is an extremely intensive and lengthy process. It also involves a significant investment of resources by the target customers, so they must be fully convinced of a project's viability and ability to supply very consistent product over a long period before they are willing to run sufficient tests for a binding agreement.

The Project's marketing and logistics consultants, Conrad Partners, are now actively engaging with high end ceramic end users and potential toll refining companies in China. A senior Conrad executive has been in China for over 2 months and, having served the required 28 days of quarantine, is now currently meeting with all ceramic customers who signed previous Letters of Intent (LOI's) in addition to other potential customers and distributors who have shown interest in acquiring Great White product for their ceramic manufacturing factories. Conrad's objective is to convert these to binding offtake agreements specifying quantities to be supplied and prices to be paid.

Previous visits to China undertaken by Andromeda representatives confirmed substantial product offtake volumes through the signing of LOI's for Direct Shipping Ore (DSO), dry-processed and wet-processed material sourced from the Great White Kaolin Project. Eight Chinese ceramic companies signed LOI's for 211,000tpa of the premium wet-refined grade of Great White halloysite-kaolin <sup>(1)</sup>. In addition, LOI's have also been provided for 405,000tpa of DSO <sup>(2)</sup> and 307,000tpa of dry-processed product <sup>(3)</sup>. ADN is considering the construction of an onsite wet processing facility instead of a dry processing facility (refer further discussion below).

Freight restrictions due to COVID slowed the delivery of processed Great White CRM product to other Asian and European ceramic end users who expressed interest in testing the Great White material. However, this is now resolved with quality control testing on a 6 tonne batch of Great White CRM produced in China now complete and product is being sampled for additional customer targets throughout Asia and in the Middle East where there is significant sales potential. Testing of product material sent to Germany has also delivered the same high quality results.

First Test Minerals in the UK have been engaged to update the Kaolin Market report that was prepared in June 2020 exclusively for the PFS to again include all known existing production and sales information. Their

report will focus on the high-end ceramic market and also the high value paint and coatings market, which are both target markets for the Great White Kaolin Project. This report will be referenced by the independent marketing consultant as part of their verification of the high-end ceramic market in addition to formalised binding offtake agreements, a number of which are envisaged to be in-place for consideration by project funding parties.

### **Definitive Feasibility Study**

The PFS was prepared based upon an initial period of mining kaolinized granite as DSO and toll wet-refining overseas to generate early cashflows and to then convert to onsite wet-processing in Year 2. This would produce concentrated kaolinitic product that is shipped in bulk as filter cake for final toll wet-refining overseas in order to produce a premium bright-white halloysite-kaolin product for high value ceramic applications. A pre-tax NPV of A\$736M and IRR of 175% was estimated by the PFS from annual sales of 233ktpa of refined kaolin produced (*refer ADN ASX announcement dated 1 June 2020 titled "Pre-Feasibility Study Further Improves Poochera Halloysite-Kaolin Project Economics"*).

In an attempt to de-risk the project the DFS will evaluate alternative scenarios of a start-up 500,000tpa plant or a two-staged 250,000tpa modular phased wet-processing plant to be constructed at site, in preference to an initial DSO phase moving to 500,000tpa from Year 2 as contemplated under the PFS. In addition, the product specifications under the DFS have been altered from those considered in the PFS to a product with approximately 70% passing 2 microns (PFS was 90%) to meet the requirements of high-end ceramic manufacturers. The processed kaolin product has the brand name 'Great White CRM'.

The expected benefit of the new DFS approach is that high value product will be manufactured at site from the commencement of operations, from either an immediate 500,000tpa or two-staged wet-processing plant, tasking Project management with direct control to meet product quality specifications.

The option to undertake DSO in the first 2 years of operations as proposed by the PFS will be further analysed under the DFS to consider the technical capabilities of identified refineries and perform more cost benefit analysis to ensure this to be the best option for the Project.

Either of the early start-up scenarios will require bringing forward capital expenditure for construction of the plant. Under the PFS processing plant, capital expenditure was initially deferred such that plant construction would be funded by DSO sale revenues generated in the first two years of operation. Funding options are being considered under the DFS and for the following Bankable Feasibility Study (BFS) with significant assistance being provided by highly experienced corporate advisors Origin Capital.

Project debt funding will be sourced to the benefit of both parties to the joint venture, with similar terms to apply to each. Importantly, for Minotaur as minority participant, this arrangement obviates the need for Minotaur to seek separate financing avenues and streamlines the joint venture manager's negotiations with bankers.

Primero Engineering Group was awarded the EPC contract (Engineering, Procurement and Construction) and is currently completing detailed design and costings for the wet-processing plant to be used in the DFS, which is scheduled for completion in the second quarter 2021.

### **Other Studies**

Alongside the DFS, which is purely focused on the ceramics market, separate Pre-feasibility Studies are being prepared for recently identified alternative market opportunities for Great White material, being the addition as a rheology modifier product for the concrete industry, and also separately as a product suited for the high-end paint and coatings industry. Both of these applications will be sourced from different parts of the Great White Mineral Resource and would complement the Great White CRM market application.

Work on these two new market applications is not as advanced as for ceramics in both testing and product marketing, and so have been separated from the DFS due to the required level of detailed analysis needed to support the studies.

### **Aircore Drilling**

A 2,900 metre aircore drilling program is scheduled to commence shortly at the Dorsal Fin area of the Great White Kaolin Deposit, an area of ultra-high brightness (ISO B >84%), low halloysite levels and extremely low Fe<sub>2</sub>O<sub>3</sub>%, characteristics ideally suited to high-value markets in specialist coatings and polymers.

Ceramic fired brightness testing returned all values over 100 (off-scale) which reflects the minimal impurities present. Positively, all processed samples were close to the theoretical maximum for alumina for kaolin and with virtually no colouring oxides or alkalis. This has been tested as a feed source material for the production of High Purity Alumina (HPA) with excellent results.

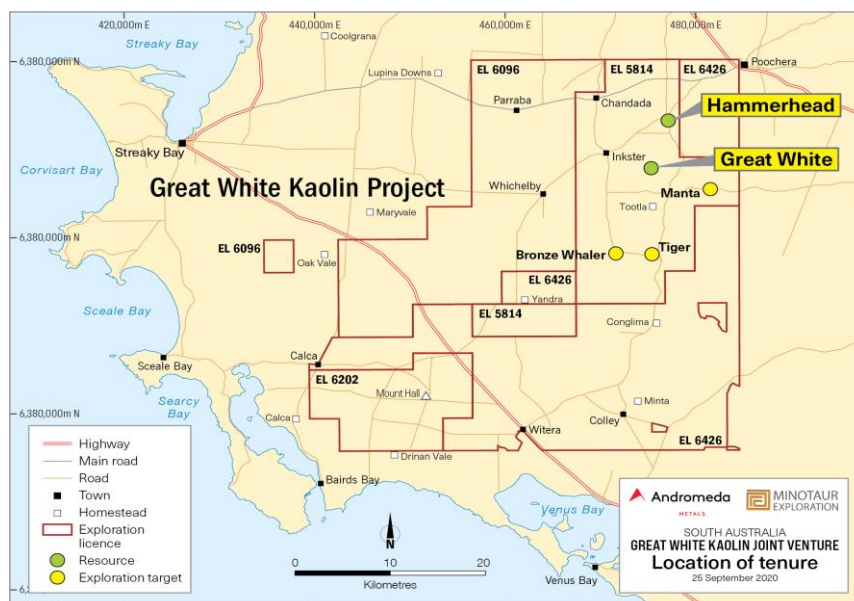
Drilling to be undertaken will also perform sterilisation for site infrastructure and also provide some further assessment of the planned first year of mining.

### **About Andromeda Metals**

Andromeda Metals is an emerging industrial minerals company based in Adelaide, South Australia with a vision of becoming the world’s leading supplier of high grade halloysite-kaolin. The Company’s primary focus is directed towards the final evaluation and development of the world class Great White Kaolin Project into production in early 2022, which is a joint venture between Andromeda Metals and Minotaur Exploration Limited (ASX: MEP) in which ADN has a 75% interest.

The Great White Kaolin Project covers two main geographic areas of interest, both situated in the western province of South Australia (Figure 1) and is located approximately 635 kms west by road from Adelaide and 130 kms south-east from Ceduna. High quality halloysite-kaolin occurrences exist extensively across the Great White Project area making this a region of global significance for the mineral and capable of supporting a considerable long-life mining operation, should final feasibility studies determine the project to be commercially positive.

The development of the Great White Kaolin Deposit remains the focus for ADN, with Mount Hope offering excellent potential for future growth opportunities for the Company.



**Figure 1 - Project Location Plan**

- (1) ADN ASX announcement dated 26 June 2018 titled "China Marketing confirms increasing demand for Carey's Well Halloysite-Kaolin".
- (2) ADN ASX announcement dated 19 August 2019 titled "Direct Shipping Ore Offtakes Secured for Halloysite-Kaolin Product".
- (3) ADN ASX announcement dated 29 July 2019 titled "Additional Offtake for Dry-Processed Halloysite-Kaolin Product".

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**Competent Person's Statements**

*Information in this announcement has been assessed and compiled by Mr James Marsh, a Member of The Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Marsh an employee of the Andromeda Metals Limited has sufficient experience, which is relevant to metal recovery from the style of mineralisation and type of deposits under consideration and to the activity being undertaking to qualify as a Competent Persons under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. This includes over 30 years of experience in kaolin processing and applications.*