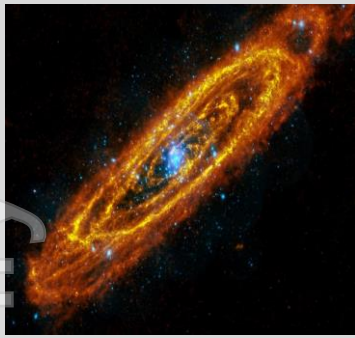


# ASX Announcement

21 June 2021



**Andromeda Metals Limited**  
ABN: 75 061 503 375

## Corporate details:

ASX Code: ADN

Cash (31 Mar 2021): \$6.70 million

Issued Capital:

2,160,727,827 ordinary shares

86,320,000 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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## Diversified Product Strategy for Great White Kaolin Project

### Highlights

- Strong progress made on the Definitive Feasibility Study.
- Significant binding offtake agreements executed for both CRM and PRM products.
- Multi product strategy now being pursued with ceramics and coatings and polymers underpinning the DFS, whilst concrete, HPA and other applications provide attractive upside over the Project life.
- Expansion in high class quality product suite confirms the world-class quality of the Great White Kaolin Project.
- Lower risk due to diversified and larger global customer markets.
- Phased onsite processing from commencement of operations with optionality for future toll refining of ore.
- Mining lease application progressing with summary of submissions received from the SA Department for Energy and Mining.
- HPA and concrete applications continue to be progressed in parallel but separately to the DFS.
- DFS now forecast for release early Q4 2021 to allow incorporation of dual product CRM and PRM strategy.
- Construction on track to commence mid-year 2022 allowing for DFS completion and mining lease approval.

### Discussion

Andromeda Metals Limited (ASX Code: ADN, Andromeda, the Company) is the manager of the Great White Kaolin Project, (ADN 75% and Minotaur Exploration Limited 25%). The Company wishes to provide an update of progress made in relation to the Great White Kaolin Project as it advances towards commencement of operations.

### Offtake Agreements

Earlier this month, Andromeda advised that it has signed on behalf of the joint venture partners a substantial legally binding offtake agreement with Jiangsu Mineral Sources International Trading Co. Ltd (MSI) for sales of 70,000tpa +/- 10% of refined ultra-bright high-purity kaolin product for an initial term of 5 years at a price fixed for the first 3 years that is at a premium to what was

used in the Pre-Feasibility Study (PFS), which was A\$700/tonne for ceramic grade material (*refer ADN ASX announcement dated 10 June 2021 titled "Significant Binding Offtake Agreement Signed for Great White Kaolin Project"*). This ultra-bright, high-purity kaolin product is to be manufactured for the coatings and polymers markets and will be known as 'Great White PRM', and is distinct from 'Great White CRM' halloysite-kaolin produced to meet the requirements of high-end ceramic manufacturers.

The joint venture partners consider the securing of this substantial binding offtake agreement to be a significantly positive development for the Project as it introduces a second product stream to be manufactured on site which has the benefit of providing product diversification and therefore assisting to manage offtake market risk. In addition, the size of the offtake agreement with MSI represents up to two-thirds of stage 1 production for the initial plant capacity being evaluated under the DFS, thereby underpinning the early years of operation for the Great White Project.

MSI have indicated that they have longer-term demand for additional quantities of both Great White PRM and CRM, providing added confidence to the joint venture partners that demand for Great White refined halloysite-kaolin material to be produced from a planned full capacity 500,000tpa feed rate processing plant on site currently exists at an attractive selling price.

MSI is an active trading company, with a well-established network of suppliers and customers across industrial minerals, sulphur, bauxite, kaolin and copper concentrates. They maintain and operate large warehousing operations in the port city of Zhenjiang, including bonded facilities. Conrad Partners (Conrad) have had a successful business relationship with MSI from early 2017, and MSI have been trading since 2013.

Adding to this confidence is the first legally binding offtake agreement announced by the Company on behalf of the joint venturers in March this year with highly respected Japanese porcelain manufacturer Plantan Yamada for 5,000tpa of Great White CRM at a price of A\$700/t (*refer ADN ASX announcement dated 17 March 2021 titled "First Customer Binding Offtake Signed for Great White Project"*).

Conrad, the Project's Asian focused marketing agent who were instrumental in delivering the offtake agreement with MSI, is continuing to engage with high end ceramic users in China with the objective to secure further binding offtake agreements for Great White refined product. Some of these potential customers have previously signed Letters of Intent (LOI's) for Great White product during earlier visits to China by Andromeda representatives and it is Conrad's objective to convert a number of these to binding offtake agreements.

The Company is also in advanced discussions with potential customers located in Europe, the Middle East and other parts of Asia for Great White refined halloysite-kaolin product, with samples provided to many of them for testing to ascertain product suitability for their individual requirements. A strategy which incorporates the development of global customer markets for dual product applications further de-risks the Project with respect to product and geographic risk.

### **Definitive Feasibility Study**

The DFS is well advanced but to date has solely focussed on the production of Great White CRM for the ceramics market. Securing the binding offtake agreement with MSI for the valuable coatings and polymer PRM product will however require further work to be incorporated into the DFS including:

- An updated mining schedule to include early mine extraction from the Dorsal Fin area of the Great White Deposit, from where the high-purity ultra bright material suitable for PRM will be sourced;
- Adjustments to be made to the existing plant design, which to date has been engineered to allow manufacture of a purely ceramic focused CRM product onsite only;
- Inclusion of a milling and bagging process facility to allow for the delivery of Great White PRM in 25kg bags, which will be in addition to Great White CRM product to be shipped as noodles in bulka bags; and

- Updated shipping and transportation logistics planning in order to take into account delivery of bagged Great White PRM in containers as separate to Great White CRM shipped as break bulk cargo.

As a result of this additional work that is required to be undertaken to incorporate the benefits of an additional product stream as discussed above, release of the DFS is now forecast to occur early Q4 2021, although an earlier release date will be pursued if possible. The joint venture partners consider that the MSI Great White PRM offtake agreement is a major positive step forward in de-risking the Great White Project and that incorporating the production of PRM into the DFS is an important development in determining the overall project economics.

In the March 2021 Quarterly Activities Report (*refer ADN March 2021 Quarterly Activities Report released on 30 April 2021*), it was flagged that the Company is evaluating the option under the DFS for the construction of an initial 250,000tpa feed rate wet-processing plant on site to be commissioned approximately six months following commencement of construction. Expansion to full capacity under this scenario is likely to occur at the start of Year 3. This expansion is likely to result in full capacity in the order of a 500,000tpa feed rate and in line with the PFS, but final decisions on size, incorporation of DSO/Toll Treating, and product makeup have not been finalised at this stage.

The expected benefit of the adjusted DFS approach is that high value product will be manufactured at site approximately six months following commencement of construction, providing anticipated improved financial outcomes predominantly through substantially lower shipping and transport costs compared to shipping less refined material, as modelled in the PFS, in addition to enabling Project management to directly control product manufacture to meet customer quality specifications.

The earlier construction of the wet-processing plant on site will require bringing forward capital expenditure for construction of the plant compared to the scenario considered by the PFS. Primero Engineering, who have been completing detailed design and costing for the initial 250,000tpa feed rate capacity wet-processing plant, have provided preliminary capital costings which the Company has been evaluating for consideration in the DFS. Additional capital will now be required to facilitate the manufacture of Great White PRM by the processing plant, which is currently being costed by Primero.

The option to undertake DSO in the initial phase of operations will not be considered by the DFS, but ongoing evaluation to consider the technical capabilities of identified refineries and the undertaking of further cost benefit analysis will continue to assess whether DSO presents an attractive option for the Project.

### **Mining Lease Application**

The mining lease application for the Great White Kaolin Project was lodged with the South Australian Department for Energy and Mining (DEM) on 25 February 2021 (*refer ADN ASX announcement dated 1 March 2021 titled "Mining Lease Application Submitted for Great White Kaolin Project"*). The application outlines the proposed development of a shallow open pit mine, wet-processing plant and supporting infrastructure at the Great White Deposit which was in line with the PFS completed in the first half of 2020 (*refer ADN ASX announcement dated 1 June 2020 titled "Pre-Feasibility Study Further Improves Poochera Halloysite-Kaolin Project Economics"*).

A summary of the submissions made during the public consultation process has now been received from DEM to which the Company is required to provide a formal response to each of the matters raised. Forecast timelines for the receipt of the mining lease approval are expected to allow commencement of construction on the Great White Project mid-year 2022 in line with DFS & BFS completion.

## Concrete Applications

Work is continuing on the potential use of halloysite-kaolin as a rheology modifier product for the concrete industry with a patent successfully lodged by Andromeda for this application. Current testing is delivering further improved results with strength testing and rheological benefits which outperform existing commercial solutions. Final results will be reported on completion of the test work. These benefits allow many potential options to reduce concrete costs, lower carbon footprint and improve performance. A large sample is now being tested by a major concrete supplier across a range of mix designs.

As testing on this potential concrete application is continuing and not as yet complete, and product marketing is still to be performed, concrete additive study timelines are unlikely to allow incorporation into the DFS. The Company will progress these studies in parallel and announce results separately to Great White DFS results.

## High Purity Alumina

In May, Andromeda advised that it had signed a Memorandum of Understanding (MoU) with AEM Technologies Inc, part of the Advanced Energy Minerals group (AEM), and has entered an initial 90-day exclusivity period to explore a HPA licencing transaction that includes testing ADN kaolin feed, process feasibility studies and potential licensing and marketing arrangements (*refer ADN ASX announcement dated 28 May 2021 titled "Andromeda Signs High Purity Alumina MoU with AEM Technologies Inc"*).

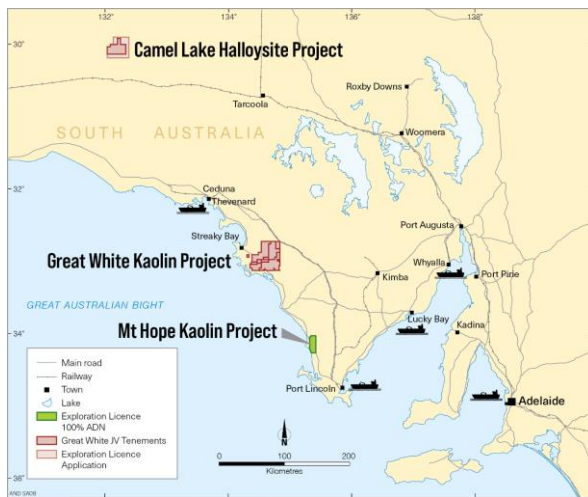
AEM's Cap Chat HPA Process Plant, located in Quebec Canada, uses its patented process to make 99.99% ("4N") and 99.999% ("5N") pure high purity alumina. With proven technology and extensive patents, Cap Chat is recognised as environmentally friendly with its focus on reducing reagent consumption and transitioning to a near "zero carbon emission" energy consumption plant. The facility is the only one globally that is capable of producing 4/5N HPA from a kaolin feed. Having commissioned the plant in 2020, AEM is now in offtake discussions with potential customers around the world.

The MoU signed with AEM will see kaolin samples evaluated using the AEM proven process to determine its suitability for HPA manufacture, and potentially lead to the construction by Andromeda of a HPA plant under a licencing agreement with AEM, which could also include the marketing of HPA manufactured product by ADN through AEM's global distribution network.

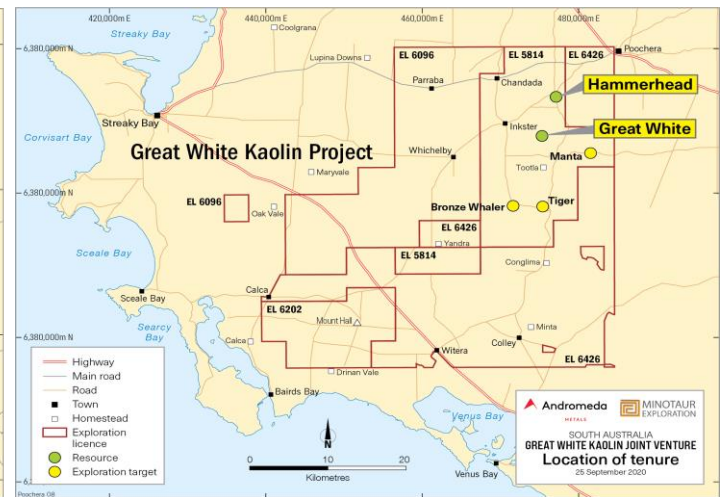
Due diligence work is currently underway and samples have been provided to AEM for testing. The Company is progressing its HPA studies, but as with the concrete application studies, the timelines for HPA applications are unlikely to allow incorporation into the DFS.

## Great White Kaolin Project

The Great White Kaolin Project covers two main geographic areas of interest, both situated in the western province of South Australia (Figure 1). The current main area of focus for the Project is on the Eyre Peninsula which comprises four tenements and is located approximately 635 kms west by road from Adelaide and 130 kms south-east from Ceduna (Figure 2). The Project is a joint venture between Andromeda Metals and Minotaur Exploration Limited (ASX: MEP) in which ADN holds a 75% equity interest.



**Figure 1 - Project Location Plan**



**Figure 2 - Great White Joint Venture tenements**

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.

Andromeda also holds a 100% interest in the Mount Hope Kaolin Project which is located approximately 160 kms southeast of the Great White Kaolin Project.

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Investor Relations

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#### **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.