



**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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# ASX Announcement

28 May 2021

## Andromeda Signs High Purity Alumina MoU with AEM Technologies Inc

### Summary

- **Andromeda Metals has entered into an exclusivity MoU with AEM Technologies Inc, part of the Advanced Energy Minerals group (AEM), to explore a joint technical and commercial development under which ADN can access AEM's patented process to construct a facility to produce high purity alumina (HPA) using ADN kaolin.**
- **AEM is a global leader in HPA and operates a HPA plant in Canada capable of producing HPA at 4N (99.99%) and 5N (99.999%) purity.**
- **AEM has advanced plans for a HPA plant in the UK which will provide a template for a potential Andromeda HPA plant in Australia.**
- **The parties will consider a commercial arrangement to sell HPA manufactured by ADN through AEM's global distribution network.**
- **During the 90-day exclusivity period Andromeda will carry out further due diligence and testing on the AEM HPA process, with a large sample of ADN kaolin sent to AEM's commercial HPA plant in Canada.**
- **Several halloysite-kaolin samples from the Great White Project (75% owned) have shown exceptionally good performance in testing as a HPA feed material.**
- **Testing of Mount Hope samples will also be undertaken to determine suitability as HPA feed given the quality of the kaolin resource.**

### Discussion

Andromeda Metals Limited (ASX Code: ADN, Andromeda, the Company) is pleased to announce that it has signed a Memorandum of Understanding (MoU) with AEM Technologies Inc, part of the Advanced Energy Minerals group (AEM), and 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.

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.

AEM CEO Julian Ford stated *"Access to Andromeda Metals' high quality kaolin projects will help AEM in its goal to be the preferred supplier of HPA to the world's new Electric Vehicle's Lithium-Ion Battery ("EV-LIB") giga-factories and global LED manufacturers"*.

Andromeda's Managing Director James Marsh added *"We have known for some time that our kaolin feed was a premium material for HPA production, but we have taken our time in order to be extremely thorough in identifying the right partner to drive this opportunity forward. Andromeda considers that having access to proven commercial technology in this sector will allow us to fastrack this HPA opportunity towards commercialisation"*.

### **Andromeda's Kaolin: Proven Premium Feedstock for HPA**

In February 2019, Andromeda announced results from a third round of enhanced HPA metallurgical testwork of halloysite-kaolin from the Great White Project (75% owned) after testing had shown that 4N (99.99%) purity could be achieved with only one stage of purification (*refer ADN ASX announcement dated 4 February 2019 titled "High Purity Alumina (HPA) testing confirms premium grade feed potential at Poochera"*), thus confirming it to be a truly world class feed material for HPA production.

Round One preliminary testing carried out by Bureau Veritas, UniSA and the University of Newcastle had already achieved a purity of 99.9855% from an over-refined sample where impurities had been introduced (*refer ADN ASX announcement dated 30 May 2018 titled "Initial High Purity Alumina (HPA) results confirm 99.99% (4N) potential at Poochera"*).

A Second-Round of testing conducted by Perth based BHM Process Consultants used a more suitable halloysite-kaolin sample and gave an  $\text{Al}_2\text{O}_3$  purity of 99.9946% with only a single stage of purification (*refer ADN ASX announcement dated 29 August 2018 titled "High Purity Alumina (HPA) testing proves 99.99% (4N) premium grade potential at Poochera"*).

The Third Round of testing announced in February 2019 was undertaken to confirm that the single stage purification result was repeatable, and to also determine if even higher levels of purity were possible. Results from this additional testwork confirmed that producing 4N HPA from a single stage purification process is fully achievable and repeatable when using ADN's high-purity halloysite-kaolin as a feed.

### **About ADVANCED ENERGY MINERALS (AEM)**

AEM is a privately owned company focused on producing High Purity Alumina ("HPA") used by several high growth markets, including the global LED, semiconductor and lithium-ion battery sectors. The group's assets include a commissioned HPA plant in Quebec, Canada, along with a research centre and associated patented intellectual property, which it plans to use as a springboard for developing a global HPA business.

### **HPA Demand and Supply Outlook**

HPA is used primarily to make LED lighting, and increasingly ceramic coated separators ("CCS"), a key component of Electric Vehicle Lithium-Ion Battery ("EV-LIB") cells. The LED industry is the primary driving force behind 4N+ HPA demand – where demand is growing at a 19.8% CAGR (2020-28) from a high base –

with demand for CCS growing at a higher 24.5% CAGR, but from a much smaller base. In aggregate, 4N+ HPA annual demand is set to quadruple between 2020 and 2028 (CAGR 18.7%) to exceed 100,000 tpa in 2028 with current 4N HPA pricing of US\$24,000/t<sup>(1)</sup>.

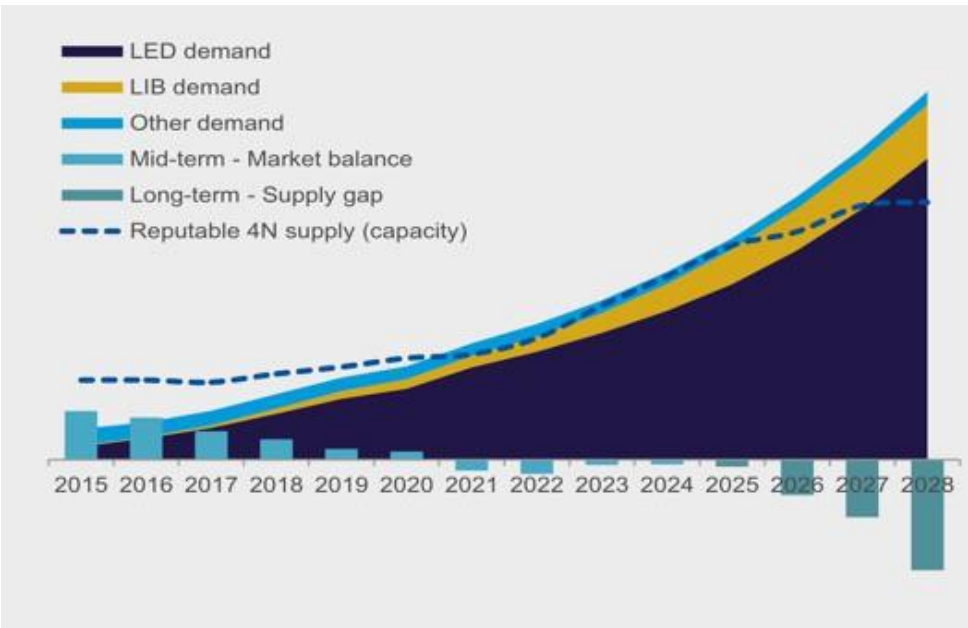


Figure 1 - 4N+ HPA production capacity is slipping behind demand  
Source: CRU<sup>(1)</sup>

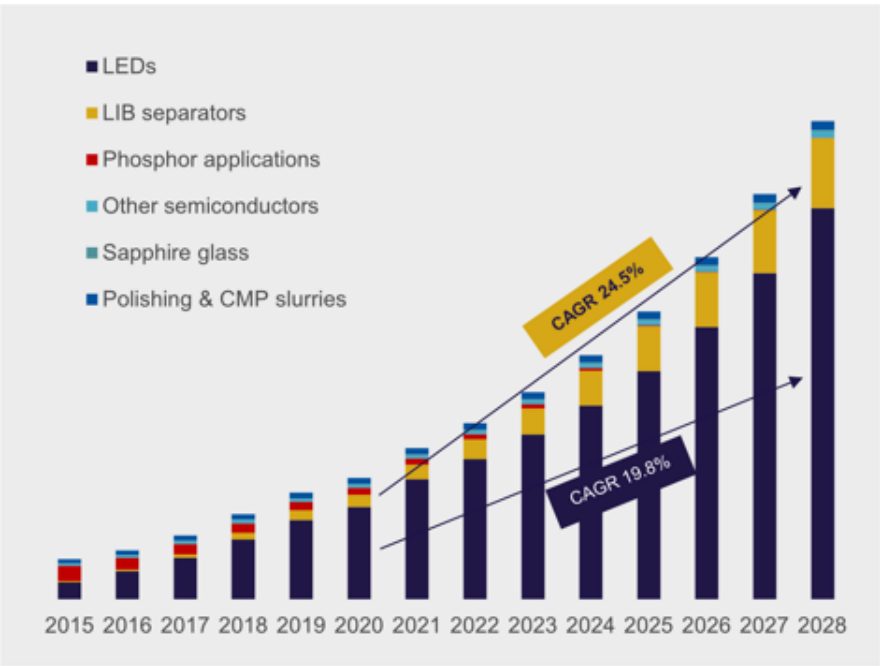
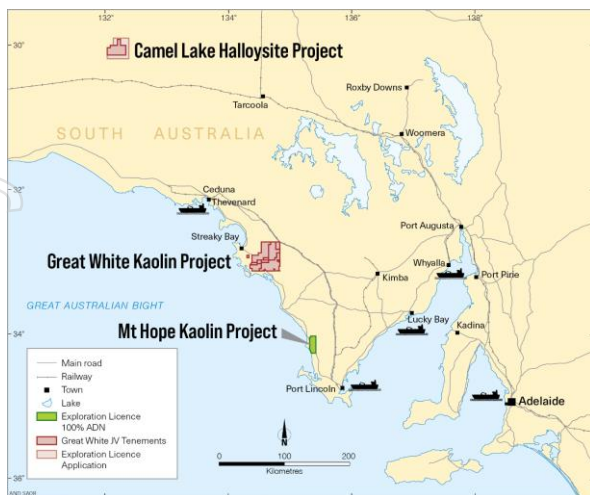


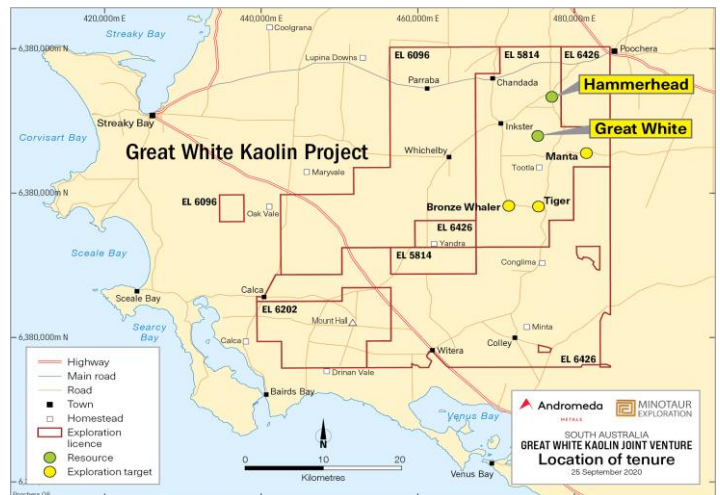
Figure 2 - Total 4N+ HPA demand by market segment (tonnes)  
Source: CRU<sup>(1)</sup>

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 3). 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 4). The Project is a joint venture between Andromeda Metals and Minotaur Exploration Limited (ASX: MEP) in which ADN holds a 75% equity interest.



**Figure 3 - Project Location Plan**



**Figure 4 - 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, should final feasibility studies determine the project to be commercially positive.

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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1. Report on HPA market, CRU, March 2021 [Commissioned by AEM]

#### **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.