Andromeda Metals Limited
ABN: 75 061 503 375

Corporate details:
ASX Code: ADN
Cash: $1.698 million
Issued Capital:
1,079,361,560 ordinary shares
486,280,451 ADNOB options
2,476,507 unlisted options

Directors:
Rhod Grivas
Non-Executive Chairman
James Marsh
Managing Director
Nick Harding
Executive Director and Company Secretary
Andrew Shearer
Non-Executive Director

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Andromeda METALS

ASX announcement

29 August 2018

High Purity Alumina (HPA) Testing Proves 99.99% (4N) Premium Grade Potential at Poochera

Highlights

- **A second round of HPA testing on Poochera halloysite kaolin gave a purity of 99.9946% Al_2O_3 after only a single purification stage.**
- **This confirms the resource as a truly world class feed material for HPA manufacture with the potential to cut production time and costs significantly.**
- **Additional testing is now planned to determine if a 5N (99.999%) HPA purity can be achieved by using the standard multiple purification stages.**
- **In addition to the HPA testing ADN continues to advance the Poochera Halloysite-Kaolin Project with preparations for bulk sampling ongoing.**

Summary

Andromeda Metals (ASX: ADN) is pleased to announce the results of the second round of HPA metallurgical testwork on a sample of Carey's Well halloysite-kaolin from the Poochera Project.

The additional testing was undertaken by Perth based BHM Process Consultants to repeat the testing on a more optimised sample using refinements of the extraction and process flow sheets that were possible due to the high purity of the feed material. This additional testing gave an Al_2O_3 purity of 99.9946%, which is an outstanding result from a one-off, single stage purification.

This testing was to follow-up on preliminary metallurgical testwork that achieved a purity of 99.9855% from a non-optimised sample, using an industry standard HCL (Hydrochloric Acid) two-stage dissolution/precipitation purification process (refer ADN ASX Release 30th May 2018).

The metallurgical process has as yet not been fully optimised and further testing will be done to determine the best possible outcome.

Next steps

The next steps will involve further refinement of the extraction process and process flow sheet development for HPA production. Also planned is more extensive testing to characterise the halloysite fully in order to determine the optimum processing required for semi and fully refined products. This will also allow halloysite development opportunities to be better assessed.

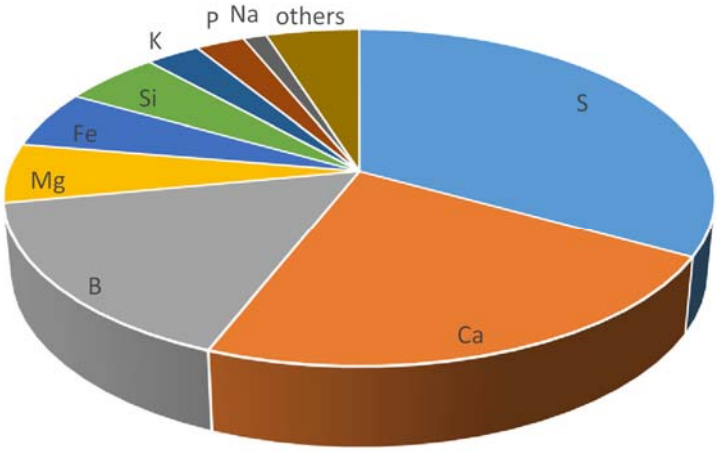
Previous HPA Testwork Results by BHM Process Consultants

Preliminary testwork on alumina content and the ability to produce HPA previously carried out with Bureau Veritas, UniSA and the University of Newcastle showed that the Carey's Well product would be suitable for HPA generation with the added bonus that it gives a significantly higher alumina mass yield than comparable Australian kaolins. Initial testwork conducted by BHM indicated that an HPA product with 99.99% purity is readily available from Carey's Well kaolin/halloysite feedstock using an industry standard HCL two-stage dissolution precipitation process, with the initial testwork achieving 99.9855% alumina. This sample had not been optimised for HPA and key impurities in the first testwork included; Silicon (66.84ppm), Sodium (30.16ppm) and Iron (28.28ppm). All of these were expected to be further reduced by processing improvements moving forward and so a second round of testing was undertaken.

Second Stage HPA Product Analysis

Total impurities from this further testing were found to be 19,350ppb (i.e. 19.4ppm). The latter is equivalent to a purity of 99.998%, which is an outstanding result for a single stage of purification. The distribution of impurities in the purified ACH (Aluminium Chlorohydrate) is shown in the pie chart below. The major impurities are S, Ca and B which together account for ~72% of total impurities. The ACH gets converted to final HPA by a roasting process.

Figure 1 Distribution of Impurities from Second Round Testing (Optimised Sample)



Further testing is now planned to confirm the result and to check for possible contamination that could be eliminated and improve purity further.

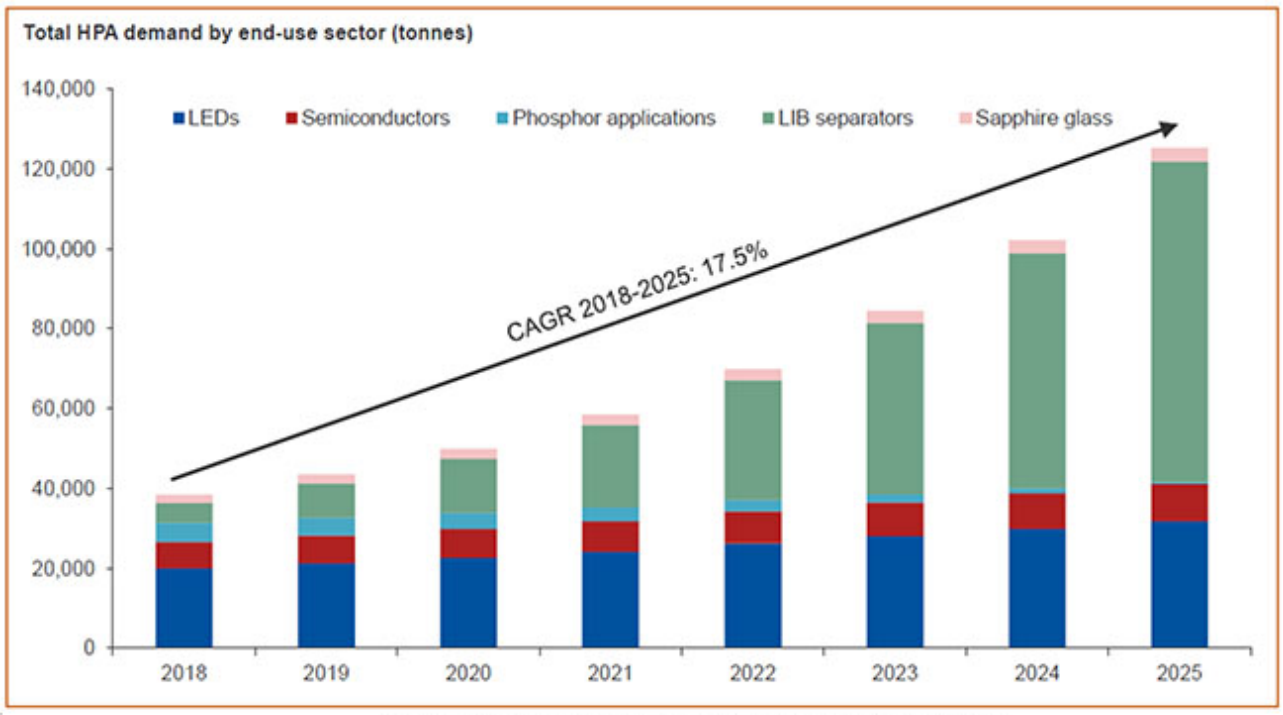
HPA Market Expected to Grow

HPA is a high-value, high margin and highly demanded product as it is the critical ingredient required for the production of synthetic sapphire. Synthetic sapphire is used in the manufacture of substrates for LED lights, semiconductor wafers used in the electronics industry, and scratch-resistant sapphire glass used for wristwatch faces, optical windows and smartphone components. There is no substitute for HPA in the manufacture of synthetic sapphire.

Global HPA demand is over 25,000tpa (2016) and demand is growing at a compound annual growth rate (CAGR) of 16.7% (2016-2024), primarily driven by the growth in worldwide adoption of LEDs. As an energy efficient, longer lasting and lower operating cost form of lighting, LED lighting is replacing the traditional incandescent bulbs.

The value of 99.99% (4N) purity HPA is between US$20,000-$30,000 per tonne, and 99.999% (5N) purity over US$50,000 per tonne with upwards pressure from increasing demand and an evolving market.

Figure 2



Source: CRU, Perth Tech Metals Briefing June 2018

Forecast surge in HPA demand from lithium-ion battery sector (Figure 2)*

- HPA joins lithium, cobalt, nickel and copper as a recognised key input to lithium-ion batteries
- Higher battery energy density is driving migration to HPA coated battery separators
- Adoption of nickel-based battery cathodes underpinning transition to HPA coated separators
- Significant increase in forecast HPA powder demand to 2025

The Poochera Project

The Poochera Halloysite-Kaolin Project covers two main geographic areas of interest, both situated in the western province of South Australia (Figure 3). The main area of focus, the Poochera Halloysite-Kaolin Project on the Eyre Peninsula comprises three tenements and is located approximately 635kms west by road from Adelaide and 130 kms east from Ceduna (Figure 4). The port of Thevenard at Ceduna offers export facilities appropriate for likely future production.

Figure 3 Project Location Plan

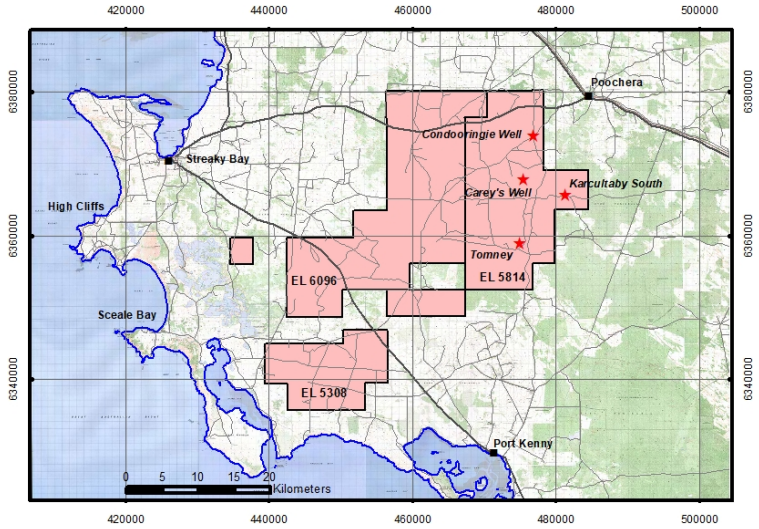


Figure 4 Poochera Tenements and Key Halloysite-Kaolin Deposits

High quality halloysite-kaolin deposits occur extensively across the Poochera Project area (Figure 3) 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 economically viable. Halloysite is a rare derivative of kaolin where the mineral occurs as nanotubes. Halloysite has a wide variety of industrial uses beyond simple kaolin and commands a significant premium above the average kaolin price. The Poochera kaolin deposits contains a variable natural halloysite-kaolin blend that is in demand for the ceramic and petrochemical refining markets, as well as developments new high-tech and nanotechnology applications.

The northern project area includes the near pure halloysite Camel Lake deposit on EL6128 (Figure 3) that could potentially be processed to provide a very high value pure product for the development of halloysite nanotubes technology in the areas of energy storage and carbon-hydrogen capture and storage.

Extensive test work has been completed by Minotaur on the Carey's Well deposit, including resource drilling, bulk sampling, pilot test trials and marketing, and Andromeda is currently working towards a Mining Lease application as part of feasibility evaluations.

With the execution of the option to enter into the Joint Venture over the Poochera Project, ADN can acquire up to 75% of the project by either sole funding $6.0M over 5 years or alternatively a decision to mine is made by the Joint Venture partners, with an initial 51% interest earned by the Company through the expenditure of $3.0M on advancing the project within the first 2 years.

James Marsh
Managing Director

Competent Persons Statement

Information in this announcement relating to the Process Development Test Work is based on test work results completed by BHM Process Independent Consultants and compiled by Mr James Marsh, a member of The Australasian Institute of Mining and Metallurgy (AusIMM). 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 29 years of experience in kaolin processing and applications. Mr Marsh consents to the inclusion of the technical data in the form and context in which it appears.

** ADN has received consent from CRU International Limited to include figure 2 in this announcement*