

7 November 2018

# Australian Mines' scandium oxide verified by Metalysis for Phase II development of next-generation scandium alloy

## HIGHLIGHTS:

- Australian Mines' produced high purity (in excess of 99.9%, or 3N) scandium oxide qualified by international partner, Metalysis, using its process, as a feedstock for next-generation scandium alloy
- Company is progressing to Phase II R&D in partnership with Metalysis; the high value aluminium-scandium alloy feedstock continues to present excellent launch product potential for Metalysis' industrial plant

**Australian Mines Limited** ("Australian Mines" or "the Company") (Australia ASX: AUZ; USA OTCQB: AMSLF; Frankfurt Stock Exchange: MJH) is pleased to announce progress from its research and development (R&D) project with Metalysis, the U.K.-headquartered metals and alloys technology company<sup>1</sup>. Progress is in line with the Company's focus on commercialising scandium oxide, scheduled for production concurrent to cobalt sulphate and nickel sulphate from the Company's Sconi Project in Queensland, Australia.

Australian Mines provided scandium oxide for qualification by Metalysis using ore from Sconi with purity in excess of 99.9% (or 3N). The oxide has met all chemical and physical requirements to be ideal for use in an aluminium-scandium feedstock to support master alloy development.

The R&D work Australian Mines is conducting in partnership with Metalysis is now moving to Phase II.

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<sup>1</sup> Australian Mines Limited, Australian Mines enters international research partnership to develop next-generation scandium alloy, released 11 June 2018

Phase II requires additional quantities of scandium oxide from Sconi. The work program involves optimising product quality, scaling up test work, and further analyses to determine the alloy's compositional characteristics and performance. Phase II will also incorporate customer appraisal of the product and further investigate demand driven end-user opportunities in relation to 3D printing of magnets.

This high value aluminium-scandium alloy continues to pose excellent launch product potential for Metalysis' Generation 4 industrial plant.

**Ian Mellor, Managing Director of Metalysis' Materials Discovery Centre, commented:**

*"We are pleased by the rapid progress made during first phase R&D with Australian Mines. The provision of high quality scandium oxide from the Sconi project has enabled our teams to make a strong start and quickly complete proof-of-principle activities for the alloy feedstock addition using Metalysis' process.*

*"We look forward to reporting results to come as, together, we target the development of a high value AISc alloy in sync with Australian Mines' production plans for Sconi, and Metalysis' production plans for Generation 4."*

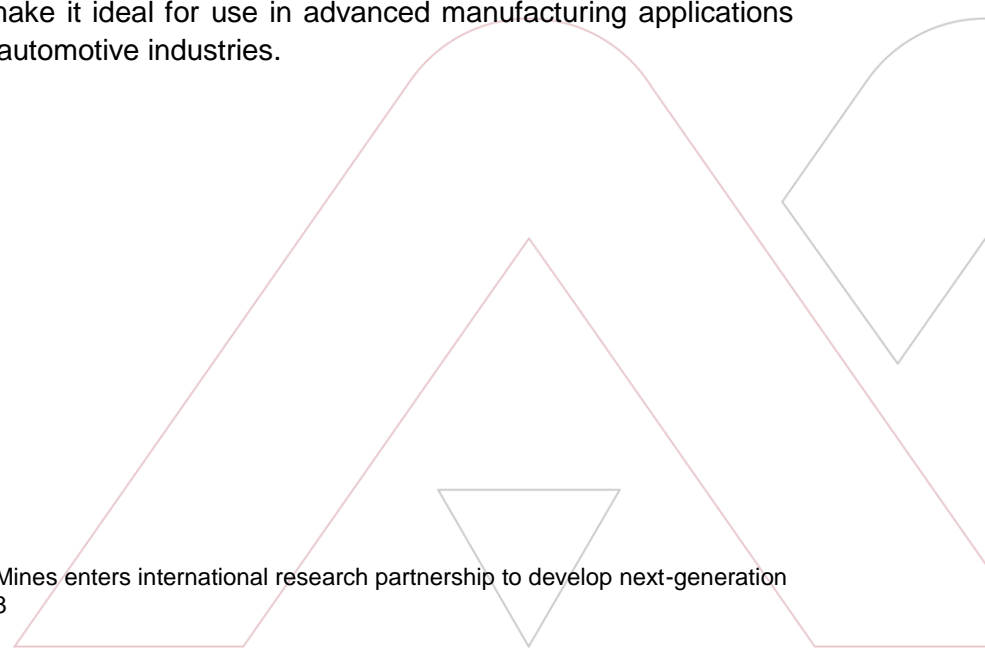
**Solid-State Process for Producing Next-Generation Scandium Alloy**

In June 2018<sup>2</sup>, Australian Mines announced that it had entered into a research partnership with Metalysis to support a continued research and development program using their solid-state process to generate valuable metal alloy powders with the potential to produce a cost competitive, high performance aluminium-scandium alloy.

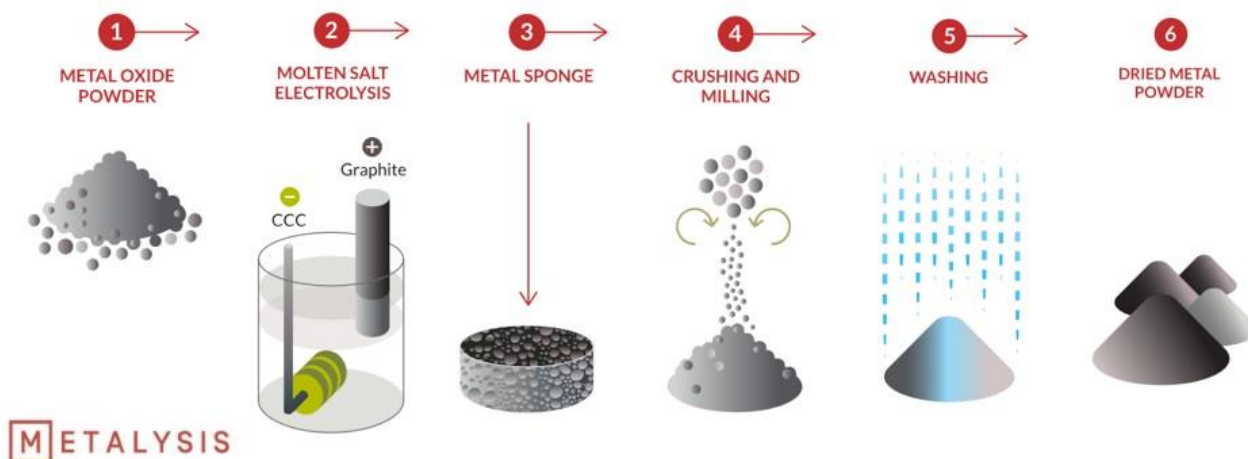
Metalysis owns an innovative solid-state process, originally invented by the University of Cambridge (UK) and commercialised by the company (see Figure 1). The R&D program to date has affirmed the view that Metalysis' process could address challenges that have historically restricted the industrial use of scandium despite the superior strength and light-weighting characteristics that make it ideal for use in advanced manufacturing applications including in the aerospace and automotive industries.

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<sup>2</sup> Australian Mines Limited, Australian Mines enters international research partnership to develop next-generation scandium alloy, released 11 June 2018



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**Figure 1:** Metalalysis' process flowsheet. Metalalysis' cutting edge electrolytic technology allows for lower operating costs, energy consumption and operating temperatures as the processing occurs with the metals in a solid state (as opposed to a melting process route).

Australian Mines continues to progress its work on commercialisation of scandium oxide in order to maximise revenue and shareholder value from the Sconi Project.

**Australian Mines Managing Director, Benjamin Bell, commented:**

*"I am delighted that we have continued to make progress in our work with Metalalysis and explore the potential to unlock additional economic value from scandium oxide to be produced at Sconi.*

*"By being involved in full end-to-end production this represents an appealing value proposition for our investors as opposed to the more typical mining and shipping ore approach. The fact that our scandium oxide product has been verified as meeting the specifications required to produce a master alloy puts us in an extremely strong position in our negotiations with potential scandium oxide off-take partners."*

**\*\*\*ENDS\*\*\***

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