

29 January 2021

## **Precursor cathode active material production from a single source continues to be demonstrated at Sconi Project, North Queensland**

Advanced battery materials developer, Australian Mines Limited (“Australian Mines” or “the Company”) (Australia ASX: AUZ; USA OTCQB: AMSLF; Frankfurt Stock Exchange: MJH) is pleased to advise it has recently accelerated research and development into the production of high value-add precursor cathode active material (P-CAM) for Nickel-Cobalt-Manganese (NCM) batteries at its flagship Sconi Project. This follows the Company’s ongoing success in producing P-CAM products (for NCM523, NCM622 and now NCM811 batteries)<sup>1</sup> whose specifications mirror those of major electric vehicle battery manufacturers.

Importantly, the nickel, cobalt and manganese used in the production of all three P-CAM products were sourced exclusively from the Company’s Sconi Project, confirming that the Sconi ore body is capable of supporting production of NCM P-CAM from a single source.

Australian Mines has identified an opportunity to potentially access significantly more attractive margins and prices compared to selling nickel and cobalt sulphates or the early-stage intermediate mixed sulphate/hydroxide precipitate (MSP/MHP) by the supply of P-CAM for NCM batteries.

The significant price enhancements of producing a P-CAM over nickel sulphate, for example, are clearly outlined in Table 1 below.

The Company will commence a scoping study into the economics of incorporating a P-CAM production facility as part of the Sconi Project in the coming quarter<sup>2</sup>.

It should be noted that any P-CAM production facility would replace the nickel and cobalt sulphate circuit (rather than being in addition to) given that Australian Mines has been

---

<sup>1</sup> Australian Mines Limited, Australian Mines demonstrates ability to produce NCM battery materials, released 13 August 2020

<sup>2</sup> The Company does not anticipate the commencement of a scoping study into the economics of incorporating a P-CAM production facility as part of the Sconi operation will result in a delay, or adversely effect, the timing of Australian Mines’ ongoing offtake negotiations.

For personal use only

successfully producing its NCM523, NCM622 and NCM811 P-CAM material directly from its intermediary MSP product without needing to go through the sulphate phase.

Australian Mines is at the forefront of research in this area in Australia, as evidenced by this latest trial that successfully created P-CAM for next generation NCM811 batteries, (8 parts nickel, 1 part cobalt & 1 part manganese) which are emerging as a preferred NCM battery chemistry amongst the electric vehicle battery industry.

There are a limited number of industry participants with the technical sophistication to supply P-CAM for the 811 battery chemistry and the recent success by Australian Mines moves the Company one step closer to joining these industry leaders.

Australian Mines is continuing to advance offtake negotiations with a number of potential partners with these discussions covering the full range of battery precursor chemicals that have successfully been produced at Sconi to ensure the Company realises maximum value of the project for shareholders.

Material	Price (\$AUD)	Units
NCM 523 CAM	27.26	Per kg
NCM 622 CAM	32.48	Per kg
NCM 811 CAM	43.50	Per kg
NCM 523 P-CAM	17.75	Per kg
NCM 622 P-CAM	19.26	Per kg
NCM 811 P-CAM	19.84	Per kg
Nickel sulphate	5.34	Per kg
Manganese sulphate	1.45	Per kg
Lithium hydroxide	49.30	Per kg

**Table 1:** Current market prices for P-CAM, CAM and precursor materials (from Li-ion battery cathode manufacture in Australia – a report released by the Future Battery Industries CRC in 2020)

**Australian Mines Managing Director, Benjamin Bell, commented,** “We have already successfully (and repeatedly) produced independently certified battery-grade cobalt sulphate and nickel sulphate crystals for supply to potential offtake partners and high purity scandium oxide for supply to our R&D partners.

“It was recognised, though, that the Sconi Project’s specific composition of nickel, cobalt and manganese could support the production of higher value precursor cathode active material (P-CAM) from a single source.

“Preliminary work by Australian Mines suggest that the process of producing high value P-CAM can be easily integrated in the proposed processing flowsheet for the Sconi production plant. As such, further production runs of P-CAM are planned for 2021 as interest in this product from industry participants and potential offtake partners intensifies”.

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

This ASX announcement has been approved and authorised for release by Benjamin Bell, Managing Director of Australian Mines Limited.

Benjamin Bell  
Managing Director  
Australian Mines Limited  
info@australianmines.com.au  
www.australianmines.com.au



Australian Mines is a member of IRMA, the Initiative for Responsible Mining Assurance. This means we are participating in, and supporting, credible independent third-party verification and certification against a comprehensive best-practice standard that addresses the range of environmental and social issues related to industrial-scale mines.

Additionally, Australian Mines supports the vision of a world where the mining industry respects the human rights and aspirations of affected communities, provides safe, healthy and supportive workplaces, minimizes harm to the environment, and leaves positive legacies.



For personal use only

## Forward Looking Statements

This announcement contains forward looking statements. Forward looking statements can generally be identified by the use of forward looking words such as, 'expect', 'anticipate', 'likely', 'intend', 'should', 'could', 'may', 'predict', 'plan', 'propose', 'will', 'believe', 'forecast', 'estimate', 'target', 'outlook', 'guidance', 'potential' and other similar expressions within the meaning of securities laws of applicable jurisdictions.

Any forward-looking statement is included as a general guide only and speak only as of the date of this document. No reliance can be placed for any purpose whatsoever on the information contained in this document or its completeness. No representation or warranty, express or implied, is made as to the accuracy, likelihood or achievement or reasonableness of any forecasts, prospects, returns or statements in relation to future matters contained in this document. Australian Mines does not undertake to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this announcement, except where required by applicable law and stock exchange listing requirements. To the maximum extent permitted by law, Australian Mines and its Associates disclaim all responsibility and liability for the forward-looking statements, including, without limitation, any liability arising from negligence. Recipients of this document must make their own investigations and inquiries regarding all assumptions, risks, uncertainties and contingencies which may affect the future operations of Australian Mines or Australian Mines' securities.

For personal use only

