

## March 2019 Quarterly Activities Report

**29 APRIL 2019**

### **HIGHLIGHTS**

- **Permitting programs underway at the Platina Scandium Project (PSP) following the successful completion of the positive Definitive Feasibility Study (DFS) in December 2018**
- **Master alloy development test work demonstrates a 2% scandium-aluminium alloy can be produced from high-purity, PSP scandium oxide**
- **Mining Scoping Study on Skaergaard project underway to assist in establishing the best future path forward for the project**
- **Number of potential new project opportunities under assessment**

**Platina Resources Limited (Platina or the Company)** is pleased to report the activities for the quarter, including:

- **PSP, Australia (100%)** – following completion of the DFS in December 2018, the Company is focused on completion of the permitting activities and market development required to secure offtake agreements, and facilitate project financing;
- **Munni Munni, Australia (30%)** – there were no exploration activities at Munni Munni during the quarter. The Company is currently finalising Joint Venture documentation with Artemis Resources; and
- **Skaergaard, Greenland (100%)** – the Company is undertaking a Scoping Study following a significant increase in the Palladium price since the 2013 JORC Mineral Resource Estimate. The Scoping Study will assist with establishing the optimal strategic direction for the project.

### **Platina Scandium Project, New South Wales**

The PSP is the Company's flagship project located in central New South Wales, one of the largest and highest-grade scandium deposits in the world, which has the potential to become Australia's first scandium producer with cobalt, platinum and nickel credits. A DFS was completed in late 2018 demonstrating the technical and economic viability of constructing the project. The positive DFS demonstrates the opportunity to create substantial long-term sustainable shareholder value at a manageable capital cost – see Table 1.

**Table 1 – Platina Scandium Project – Key Project Parameters**

	USD	AUD
<b>Stage 1 Annual Production</b>	20 tonnes	
<b>Stage 2 Annual Production (from Year 5)</b>	40 tonnes	
<b>Life-of-mine for financial model</b>	30 years	
<b>Net Present Value (8%), real, after-tax</b>	166 million	234 million
<b>Internal Rate of Return, post-tax</b>	29%	
<b>Payback Period (undiscounted)</b>	5.3 years	
<b>Stage 1 Capital Expenditure</b>	48.1 million	67.8 million
<b>Stage 2 Capital Expenditure</b>	11.1 million	15.6 million
<b>Total Life-of-Project Capital Expenditure*</b>	104.1 million	146.5 million
<b>Life-of-Mine Average Cash Operating Costs#</b>	525/kg	739/kg
<b>Life-of-Mine Scandium Oxide Price</b>	1,550/kg	2,183/kg
<b>USD to AUD Exchange Rate</b>	0.71	

\*Includes sustaining capital costs. # Mining, processing, general and administration costs. Excludes royalties

The Company is now focused on completing the Environmental Impact Assessment, Mining Licence Application, Development Applications (mine and process plant), securing offtake and project financing.

### **Scandium Marketing Update**

A prime objective of the Company is to secure production offtake agreements, which will enable project financing options to be pursued for construction funding. The Company is actively working on a scandium off-take marketing program, which is targeting potential customers in the USA, Europe, Asia and Australia. A number of companies have expressed interest in either securing the scandium offtake or acquiring an interest in the project and the discussions remain ongoing.

### **Permitting Activities**

The Company is progressing its permitting and land access arrangements required to secure a Mining Licence. The Company expects to submit a Mining Lease Application (MLA) during the June 2019 quarter. In addition, work has commenced on the preparation of Development Applications, which require land holder lease or land purchase agreements to be secured at the Red Heart Mine.

The Company will conserve cash resources and complete the Environmental Impact Assessment's at the Red Heart mine site and the Condobolin plant site once it is further advanced on offtake negotiations.

### **Master Alloy Development Program**

The Company recently completed the scandium master alloy production test work for the PSP. The aluminium industry prefers scandium supply via a master alloy "hardener". Test work has been under way since August 2018 to develop proprietary master alloy production procedures. Conversion of the scandium oxide produced from mining and processing operations into aluminium scandium master alloy is a critical, value-adding part of the supply chain in manufacturing aluminium scandium alloys for end-users.

The test work on master alloy production has been conducted at relatively small scale and has focused on producing master alloy from scandium oxide, but also from intermediate products from the PSP flowsheet developed for the recently completed DFS.

The small scale work demonstrated that the procedure developed as part of the test work program can reliably produce 2% scandium-aluminium master alloy from either scandium oxide or from intermediate products in the flowsheet developed in the DFS test work program. Further details are unable to be released at this time whilst Platina examines options for intellectual property protection for the processes developed.

Now that proprietary procedures have been developed, further work may-be undertaken to scale up the process, should potential offtake partners require larger samples.



**Figure 1** - Master alloys produced from 3 different scandium chemicals from intermediate stages within the PSP scandium recovery flowsheet.

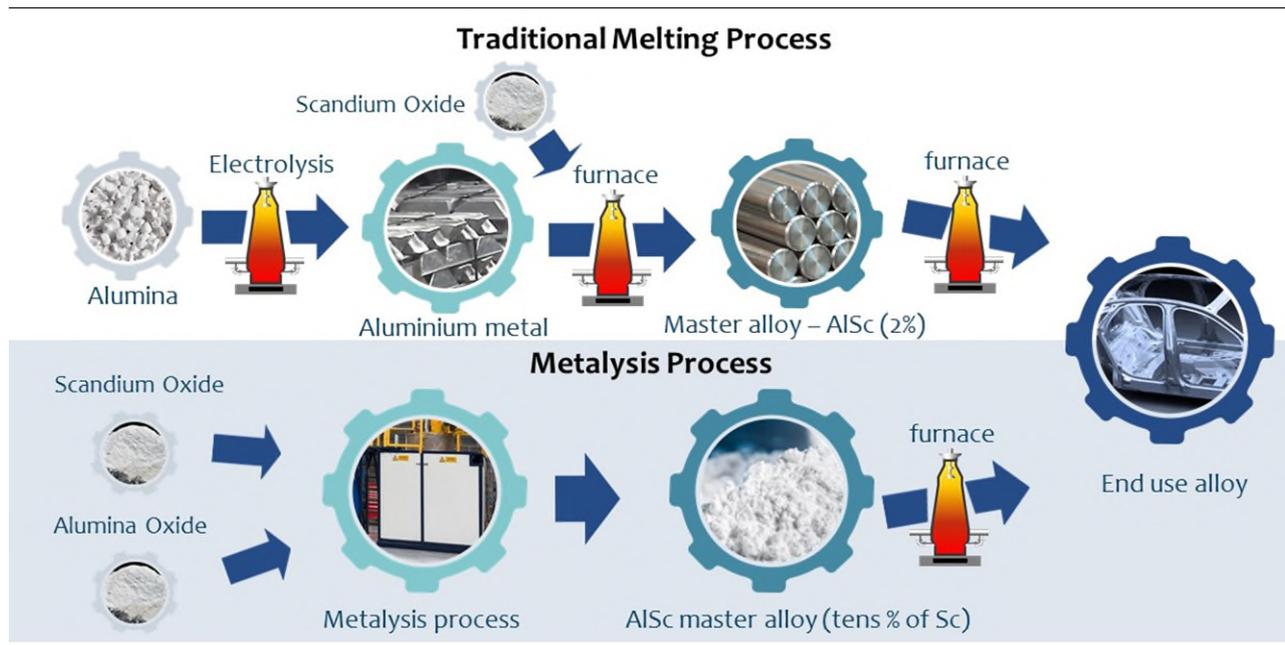
Developing procedures that enable Platina to produce scandium-containing master alloy is an important step in being able to provide potential aluminium industry offtake partners with their preferred product. Being able to produce the master alloy from an intermediate product may also provide the potential for capital and operating cost reductions in the final flowsheet design.

### ***Metalysis MOU***

The Company is now actively focused on market development and securing off-take, and assessing options to reduce the production costs of making value-added scandium products including master alloys. Metalysis Limited (Metalysis) has developed a modular, electrochemical technology, which can produce a scandium-rich master alloy feedstock, used to make aluminium-scandium alloys. Currently, the traditional industry process route involves producing a 2% aluminium-scandium master alloy by melting scandium oxide powder with aluminium metal (see Figure 2). The master alloy is further diluted with molten aluminium to less than 0.5% scandium metal for use in the end product. Metalysis' technology allows the production of a master alloy addition, which is 15X higher in scandium content using scandium oxide and alumina oxide. The process can produce a wide range of alloy powders at lower cost and environmental footprints than the traditional melting processes.

Scandium rich master alloys produced by Metalysis' process are in demand from industries including aerospace, automotive and additive manufacturing (3D printing). While the solid oxide fuel cell industry has been the dominant consumer of scandium in recent years, scandium's greatest value lies in the functional properties it imparts as an alloy in aluminium. When used in combination with other common aluminium alloys, scandium can produce stronger, heat tolerant, weldable aluminium products. These products are being increasingly incorporated into transportation applications for light-weighting (electric vehicles) and lowering fuel efficiency requirements.

The MOU contemplates using the PSP scandium oxide to produce a scandium-rich master alloy utilising Metalysis' process, and assessing the technical and economic feasibility of utilising the technology within potential development scenarios at the PSP. The program will also produce samples of the scandium rich alloy for testing by customers in the aluminium and alloy industries. The Company will provide Metalysis with refined scandium oxide produced from the PSP during the pilot program completed earlier in 2018. These work programs are still in progress.



**Figure 2:** Diagrammatic representation of the two processes for making master alloy

## Skaergaard, Greenland

The Company owns 100% of the Skaergaard project in Greenland, one of the world's largest undeveloped gold and palladium deposits outside of South Africa and Russia.

In July 2013, the Company reported a JORC compliant Mineral Resource estimate of based on metal price assumptions of US\$1,400/oz for gold and platinum, and US\$560/oz for palladium. In the last five years, the price of palladium has substantially increased from US\$736/oz to over US\$1,300/oz today, and follows a recent peak of over US\$1,600/oz.

To better define the potential development options available for the project, the Company has engaged an independent consultant to prepare an updated Mining Scoping Study for the project. Should the outcomes of this study be positive, the Company will complete the full Scoping Study.

The Company believes that a Scoping study will provide a basis for evaluating the potential development options for the project so it can make an informed judgement about the best future path forward for the project.

## Munni Munni, Western Australia

There were no exploration activities at Munni Munni during the quarter. The Company is currently finalising Joint Venture documentation with Artemis Resources Limited.

## Growth Opportunities

Whilst the Company is very actively focused on generating value for shareholders from its core assets, the Directors believe it would be beneficial for shareholders to acquire another asset. The Company plans to leverage its in-house expertise and experience in identifying, acquiring, exploring, developing early stage mineral projects whilst the PSP offtake and permitting activities are completed.

The Company's project targeting criteria include identifying undervalued or turnaround opportunities, including:

- Advanced exploration projects with drilling, resources and studies; and/or
- Corporate investment opportunities – unrecognised or undervalued assets

The Company is targeting commodities with strong demand with price outlooks with the ability to secure long-term supply contracts to underwrite project finance for future developments.

During the quarter, the Company completed technical due diligence on a number of potential new acquisition opportunities.

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### About Platina Resources Limited

Platina Resources Limited (ASX: PGM) is an Australian-based exploration and development company focused on precious and specialty metals, particularly platinum group metals ("PGM") and the strategic metal scandium.

The Platina Scandium Project is the Company's flagship project located in central New South Wales, one of the largest and highest-grade scandium deposits in the world, which has the potential to become Australia's first scandium producer with cobalt, platinum and nickel credits. A Definitive Feasibility Study was completed in late 2018 demonstrating the technical and economic viability of constructing the project. The Company is now focused on completing the permitting and securing offtake and financing.

The Company also has interests in two gold-platinum group metal projects, including:

- Skaergaard (100% interest) - One of the world's largest undeveloped gold deposits and one of the largest palladium resources outside of South Africa and Russia, located in Greenland; and
- Munni Munni (30% interest) - Situated in the Pilbara region of Western Australia, the Munni Munni Complex is one of Australia's most significant PGM occurrences. Munni Munni also has potential for conglomerate hosted gold and is a joint venture with Artemis Resources Limited.

For more information please see: [www.platinaresources.com.au](http://www.platinaresources.com.au)

Statements regarding Platina Resources' plans with respect to its mineral properties are forward-looking statements. There can be no assurance that Platina Resources' plans for development of its mineral properties will proceed as currently expected. There can also be no assurance that Platina Resources' will be able to confirm the presence of additional mineral deposits, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of Platina Resources' mineral properties.

### ***References to Previous ASX Releases***

The information in this Director's Report that relates to the Mineral Resources and Ore Reserves were last reported by the Company in compliance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves in market releases dated as follows:

- Platina Scandium Project - Positive Definitive Feasibility Study, 13 December 2018;
- Platina Scandium Project Ore Reserve, 13 December 2018.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the market announcements referred above and further confirms that all material assumptions underpinning the production targets and all material assumptions and technical parameters underpinning the Ore Reserve and Mineral Resource statements contained in those market releases continue to apply and have not materially changed.

### DISCLOSURES REQUIRED UNDER ASX LISTING RULE 5.3.3

#### 1. Mining tenements held at the end of the quarter and their location

Tenement ID	Area	Location	Ownership	% Ownership
M47/123	Munni Munni	WA, Australia	PGM	30*
M47/124	Munni Munni	WA, Australia	PGM	30*
M47/125	Munni Munni	WA, Australia	PGM	30*
M47/126	Munni Munni	WA, Australia	PGM	30*
E47/3322	Munni Munni	WA, Australia	PGM	30*
EL7644	Owendale	NSW, Australia	PGM	100
EL8672	Condobolin	NSW, Australia	PGM	100
EL2007/01	Skaergaard	Greenland	PGM	100
EL2012/25	Qialivarteerpik	Greenland	PGM	100

\*See note 3 below

#### 2. Mining tenements acquired and disposed of during the quarter and their location

Nil

#### 3. Beneficial percentage interests held in farm-in or farm-out agreements at end of the quarter and beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the quarter

In August 2015, Platina entered into an agreement with Artemis under which Artemis could earn a 70% interest in the Munni Munni Platinum Group Elements Project, comprising M47/123, 124, 125, 126 and E47/3322 (the "Munni Munni Project") by expending \$750,000 over a 3-year period. In August 2018, the Company announced that that Artemis satisfied the conditions required to acquire a 70% interest and formal documentation formalising the joint venture is currently being finalised.

The Company is not party to any other farm-in or farm-out agreements.

#### Abbreviations and Definitions:

EL	Exploration License	PGE	Platinum Group Elements
M	Mining Lease	PGM	Platina Resources Ltd
Co	Cobalt		
Sc	Scandium		