

December 2018 Quarterly Activities Report

31 JANUARY 2019

HIGHLIGHTS

- **Platina Scandium Project (PSP) Definitive Feasibility Study (DFS) completed. Positive DFS demonstrates the opportunity to create substantial long-term sustainable shareholder value at a manageable capital cost**
- **Agreement with Metalysis Ltd signed to assess the technical and commercial viability of utilising their solid state technology to produce master alloy from PSP scandium oxide**
- **Master alloy development test work demonstrates a 2% scandium-aluminium alloy can be produced from high-purity, PSP scandium oxide**
- **Scoping Study to be completed on Skaergaard project to assist in establishing the best future path forward for the project**

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

- Platina Scandium Project, Australia (100%) – completion of the DFS, permitting activities and market development to secure offtake 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 discussing exploration plans for 2019; and
- Skaergaard, Greenland (100%) – announced plans to undertake a Scoping Study on the Skaergaard project following a significant increase in the Palladium price since the last JORC Mineral Resource was announced. The Scoping Study will assist with establishing the optimal strategic direction for the project.

Platina Scandium Project, New South Wales

Definitive Feasibility Study

During the quarter, the Company completed the DFS for the PSP located in central New South Wales, Australia. The DFS has confirmed the technical and financial viability of constructing a simple, low-strip ratio, open-cut mining operation and processing facility producing scandium oxide. The positive DFS demonstrates the opportunity to create substantial long-term sustainable shareholder value at a manageable capital cost. Key highlights of the DFS include:

- **Robust financials** - The DFS demonstrates a very robust financial case. Based on a mine life of 30- years, the project generates an after-tax net present value in real terms (8% discount rate) of USD 166 million (AUD 234 million), post-tax IRR of 29% and payback period of 5.3 years. The financial model incorporates an average scandium oxide price of USD 1550 /kg over the life of the project. Based on market research and discussions with end-users, the Company believes this is the price necessary to drive wider-scale adoption of scandium in alloys;
- **Low capital expenditure** - The DFS is based on a processing plant designed to initially produce 20 t/y of scandium oxide at a capital cost of USD 48.1 million (AUD 67.8 million), expandable to 40 t/y of scandium oxide for a very low incremental capital cost of USD 11.7 million (AUD 15.6 million), as market demand for lightweight aluminium-scandium grows;
- **High-grade, large resource base** - The strength of the PSP is the very large and high-grade scandium resources, which are amenable to simple, low-cost, open-cut mining techniques at a low waste to ore ratio (1.9:1). The DFS assumes that 33% of the available Ore Reserves are mined over 30 years, and additional Ore Reserves and Mineral Resources could provide for decades of additional production or further production expansion;
- **Conventional, well tested process route** - Ore mined at Red Heart will be processed through a conventional high pressure acid leach circuit (“HPAL”) to produce 99.99% high-purity scandium oxide. The process methodology has been extremely well tested through bench and pilot scale test work to confirm operating and capital estimates for the DFS;
- **Access to infrastructure** - The processing facility will utilise an existing industrial site in Condobolin. This unique site provides access to existing infrastructure – labour, water, power, rail, and sealed roads – which results in lower capital costs, and simplifies the permitting and approvals process;
- **Potential for other revenue streams** - Like other laterite projects using the HPAL process route, once all the minerals are in solution from the HPAL process, recovery is achievable at relatively low incremental cost, thus providing a potential future opportunity to generate cobalt, nickel, platinum and aluminium products (to make high purity alumina) and generate additional cash flow; and
- **Significant community benefits** - The Company is very committed to delivering the PSP in an environmentally and socially responsible manner. The significant investment will provide jobs, training and contracts for the local communities.

Table 1 – Platina Scandium Project – Key Project Parameters

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

PSP Ore Reserve Upgrade

Following the release of the PSP DFS, an updated Ore Reserve statement was prepared and is outlined in Table 2. Full details of the Ore Reserve upgrade are outlined in ASX release titled “Platina Scandium Project Ore Reserve Increase”, 13 December 2018. The DFS assumes that 33% of the available Ore Reserves are mined over 30 years, and additional Ore Reserves and Mineral Resources could provide for decades of additional production or further production expansion.

Table 2 – JORC Ore Reserve at a 450 ppm scandium cut-off grade (Dec 2018)

Ore Reserve Classification	Tonnage Dry Kt	Scandium ppm	Cobalt %	Nickel %	Sc ₂ O ₃ t	Cobalt t	Nickel t
High Grade (HG) Ore >550 ppm Sc cut-off							
Proven	1,576	650	0.13	0.16	1,565	2,079	2,516
Probable	438	610	0.07	0.08	408	326	368
Sub-Total	2,014	640	0.12	0.14	1,973	2,406	2,884
Medium Grade (MG) Ore 450 to 550 ppm Sc cut-off							
Proven	1,479	500	0.06	0.10	1,131	865	1,538
Probable	534	500	0.06	0.07	408	328	399
Sub-Total	2,013	500	0.06	0.10	1,539	1,193	1,937
Total HG and MG Ore >450 ppm Sc cut off							
Proven	3,054	575	0.10	0.13	2,696	2,945	4,054
Probable	972	550	0.07	0.08	816	654	767
Total	4,027	570	0.09	0.12	3,512	3,599	4,821

* Scandium Oxide (Sc₂O₃) product is calculated from scandium metal using a 1.53 factor

Master Alloy Development Program

During the quarter, the Company 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 focussed 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 has now concluded and it has been 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

During the quarter, the Company signed a Memorandum of Understanding (“MOU”) with Metalysis Limited (“Metalysis”), a UK technology company focused on the development of metal alloy powders, to assess the technical and economic feasibility of using its innovative solid-state process to produce a scandium rich master alloy.

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 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.

The Company will negotiate a technology licencing agreement with Metalysis once the initial test work programs have been successfully completed.

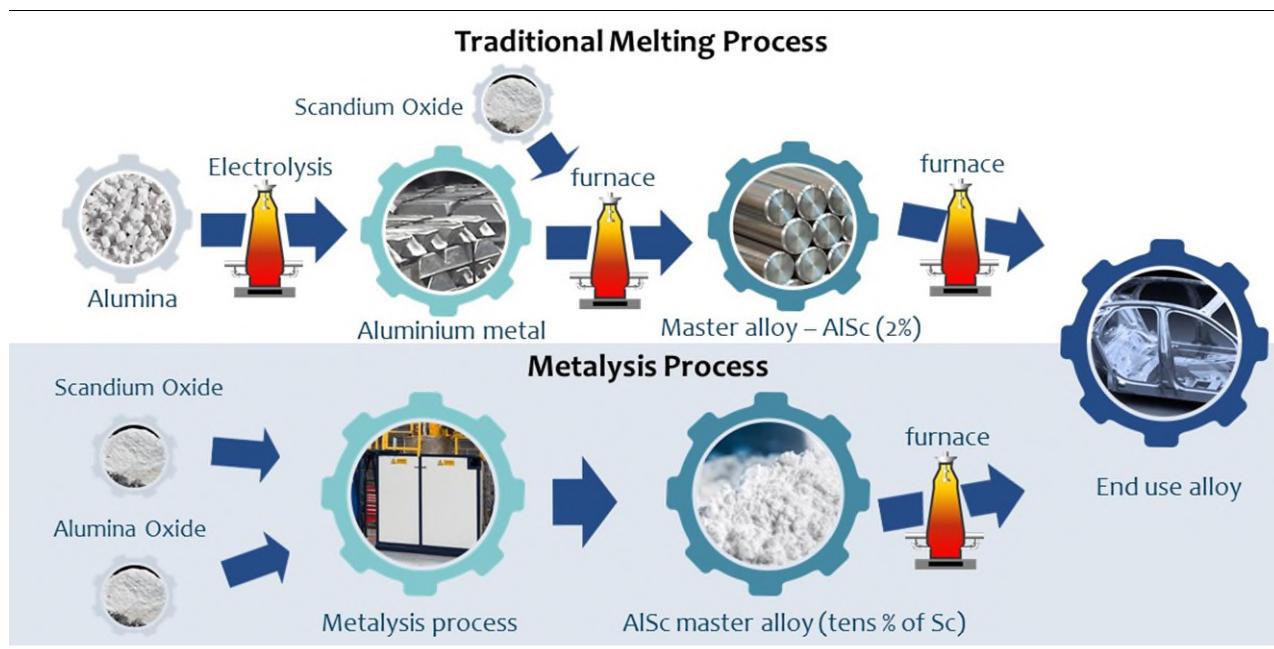


Figure 2: Diagrammatic representation of the two processes for making master alloy

Scandium Marketing Update

The current global supply of scandium oxide is approximately 15 to 20 tpa, with current prices ranging from US\$1,100-US\$3,000/kg depending on the quality of the material. The market for scandium oxide is very fragmented with poor availability of supply driving high volatility in pricing. The Company's strategy is to build the PSP in a number of stages in order to grow and develop a stable market for scandium. Primary target markets include solid oxide fuel cells and aluminium alloying.

A prime objective of the Company is to secure offtake agreements which will then enable project financing options to be pursued for construction funding. The Company has commenced a scandium off-take marketing program which is targeting potential customers in the USA, Europe, Asia and Australia. The marketing development program remains ongoing.

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.

Moreover, during the year, the Company also received a number of highly conditional, non-cash, offers for the project. To ensure the best outcome for shareholders, the Company engaged an experienced advisor to assist in a review of the offers received. In light of the advisors recommendations and the recent increase in the Palladium price, the Company is going to engage a suitably qualified technical advisor to prepare a Scoping Study for the project. The Scoping study will define the potential development options available for the project. Proposals for the Scoping Study have been received and the Company expects to commence the work during the March 2019 quarter.

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 and discussing planned exploration for 2019.

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.

Corporate Activities

During the quarter, the Company received a Research and Development refund claim totalling \$1.1 million before costs. The claim covers eligible test work for the 2017/2018 financial year under the Federal Government's R&D tax incentive scheme. The Company research activities have focused on the development of commercial extraction technologies for the simultaneous production of scandium oxide, nickel, and cobalt from lateritic ores at the PSP.

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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

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; and
- Skaergaard Indicated and Inferred Mineral Resource – 23 July 2013.

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.

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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		