

ASX: FYI

QUARTERLY REPORT FOR THE PERIOD ENDING 31 December 2017

HIGHLIGHTS

- ✓ **Continued metallurgical testwork supports 99.99% (Al₂O₃) recoveries**
- ✓ **Pre-Feasibility Study commenced**
- ✓ **Key Study experts appointed to PFS review**
- ✓ **HPA flowsheet being refined, confirming simple and conventional process design**
- ✓ **Test work confirming superior quality high grade HPA material**

REVIEW OF OPERATIONS

Summary

FYI Resources Limited (FYI or the Company) continued with its high purity alumina (HPA) development strategy with a very active December quarter focusing on the finalisation of initial metallurgical test work and commencement of the Pre-Feasibility Studies (PFS) on the Cadoux kaolin deposit with the appointment of metallurgical and engineering study managers.

Following the achievement of 99.99% Al₂O₃ (HPA) recoveries from metallurgical test work on samples from the Company's 100% owned aluminous clay deposit at Cadoux in Western Australia (refer announcements 5 September and 23 October 2017), Independent Metallurgical Operations (IMO) was engaged to undertake further detailed metallurgical test work and studies for a project PFS.

This study will dovetail with the engineering study and PFS to be undertaken by GR Engineering Services (GRES) (*announced 8 January 2018*) on behalf of the Company. The decision to proceed with the PFS is part of FYI's long-term strategy to develop, construct and operate a high purity alumina processing facility in Australia that will deliver a high quality 99.99% (or higher) HPA product consistently and reliably at lowest quintile cost.

The Directors are also pleased to advise that FYI successfully raised \$1,050,000 in two placements during the quarter in order to progress its HPA strategy.

High Purity Alumina

HPA Pre-feasibility study

In assessing the commercial potential of the HPA strategy and the suitability of the Cadoux kaolin deposit, FYI has completed successful due diligence and commenced a detailed prefeasibility study (PFS) during the quarter. The PFS review will be conducted in several components and is expected to be completed by early 2018.

Each component will detail specific commercial aspects to the strategy. FYI has assembled an excellent team to deliver a world class study, each being highly qualified and experienced in their selected field of expertise.

Metallurgy

The metallurgical testwork program is generally the most important critical path item for the completion towards a bankable feasibility study and hence is a critical parameter for the success of the overall project. The metallurgical results obtained from testing of the Cadoux mineral samples are crucial inputs to the Company's proprietary flowsheet development. The result of the metallurgical testwork has a defining influence on all the process units of a mineral processing plan. The feedstock testwork is necessary from the plant development phase through to the end of life of the mine.

FYI, through its metallurgical study manager, IMO, have outlined a rigorous metallurgical testing program of the Cadoux feedstock. Progressive testwork indicates excellent processing parameters for both the kaolin beneficiation and the HPA process. The initial and continued excellent response from the feedstock indicated reduced capital and operating costs and sizing of the processing infrastructure are expected to be favourable.



FYI's HPA (99.99%) final product at metallurgical laboratory

Initial calcination and leach testing has showed that the kaolin is very amenable to a conventional acid leach process to remove impurities. The tests have indicated that a very quick leaching at atmospheric pressure and moderate temperature results in rapid precipitation of the intermediate aluminium chloride product is possible with exclusion of the minor contaminants.

The second stage testwork of the precipitation and calcination phases of the refining (which successfully achieved the targeted **99.99%** grade alumina) continues to achieve outstanding results throughout the variability composites that were developed to assess the range of metallurgical performance that might be expected throughout the orebody.

The metallurgical test work will continue throughout the PFS stages with the results dovetailing into the Engineering and process design component.

Engineering / Process design

FYI's pre-feasibility-level study is an intermediate step in the evaluation of the technical and economic viability of the Cadoux project. It is a critical step as it represents the minimum prerequisite for conversion of a geologic resource into a reportable reserve. The engineering component is typically conducted to +/- 25% level of accuracy, and is sufficient for preliminary flowsheet development and equipment selection, material balances, process design criteria, equipment sizing and specification.

Not only is the outcome extremely encouraging in terms of technical achievement, the result also supports the Company's strategy to commercially produce HPA from feedstock sourced from the Cadoux resource.

Feasibility studies

During the quarter, FYI appointed one of Australia's most qualified and respected engineering and process design service providers, GR Engineering Services (GRES), to manage the engineering component of the PFS. GRES have extensive experience in this style of processing and will contribute to the low risk approach to a standard processing route – albeit, proprietary to the Cadoux feedstock characteristics.

On the strength of outstanding metallurgical results and excellent progress to date, FYI will progress to scoping and feasibility studies with GRES and with metallurgical inputs from IMO.

The key Engineering and process design study parameters will include:

- Mining method and production rates
- Dilution and extraction estimates
- Processing method, processing rates and recovery estimate
- Tailing and waste containment
- Hydrology studies
- Environmental and permitting requirements
- Social License
- Governmental requirements
- Legal concerns
- Detailed financial analysis and project economics with sensitivities
- Capital cost estimates ($\pm 25\%$)
- Operating cost estimates ($\pm 25\%$)
- Generate preliminary Process Flow Diagrams (PFDs)
- Provide mechanical and equipment list with electrical load base
- Produce basic site lay out drawings
- Electrical single line diagram for the project installations

Capital Raising / Institutional Support

FYI has continued to gather domestic and international support for its HPA strategy with institutional and retail support demonstrated via two successful separate capital raisings during the quarter.

The first share placement was completed on the 20 November 2017 to domestic and international sophisticated investors raising \$600,000 before fees (see ASX releases 7 and 20 November 2017) with the issue of 13.3 million shares at 4.5 cents each and a 1 for 2 attaching option.

The second raising was made to institutional investor, Regal Funds Management, for A\$500,000 (see ASX release 8 December 2017). An initial tranche of 6.4 million shares was issued at 7 cents per share raising \$450,000 with the remaining 0.7 million shares for \$50,000 to be issued with shareholder approval. Regal is now a substantial shareholder of the Company through this placement as well as from subsequent on-market share purchases.

HPA Markets

HPA (Al_2O_3) is a high purity non-metallurgical alumina product with a higher finished aluminium grade greater than 99.9% (3N). HPA has particular beneficial characteristics especially suited to rapidly developing high tech consumer and scientific markets. This specialised form of alumina is sought after for its superior hardness, low density, inertness (non-conductive), superior corrosion resistance and its ability to withstand high temperatures.

HPA serves as a base material in the manufacture of sapphire substrates which are in turn critical in the production of various product applications such as LED lighting, scratch-resistant artificial sapphire glass, and single crystal materials for the use in electronic screens such as those found in smart phones, televisions and watches. In addition, important growing markets are to be found in battery technologies, and as anode/cathode separators for the Hybrid and electric-powered vehicle (EV) and battery / power storage markets. These sectors are all high-end markets that demonstrate strong year on year growth in the mid to long term.

The HPA demand is forecast to increase at a compound annual growth rate of 20% out to 2024*. The product pricing is commensurate to its commercial application and its escalation of purity level i.e. 99.99% (4N – US\$23,000t), 99.999% (5N – US\$35,000).

**Allied Market Research - High Purity Alumina Report (May 2016)*

The global high purity alumina (HPA) market is projected to reach USD 5.09 Billion by 2020, at a CAGR of 20.1% from 2015 to 2020. The increasing applicability of high purity alumina among varied end-user applications, such as LEDs, semiconductors, phosphor, and sapphire substrates, among others is expected to drive the market **

*** Markets and Markets Research - "High Purity Alumina Market by Purity Level (4N, 5N, 6N), by Application (Light Emitting Diode, Semiconductor, Phosphor, Sapphire, Others), by Region (Asia Pacific, North America, Europe, Rest of the World) - Global Forecast to 2020".*

HPA Strategy Outlook

With a global market for HPA now well established and a forecast steady annual growth from increasing demand in a growing range of high specification applications, the commercial viability of processing kaolin to produce HPA presents a robust and attractive business case and supports the Company's belief that an excellent opportunity is emerging.

The universal trend towards LED lighting, Hybrid and Electric Vehicles (EV's) and the rapidly emerging battery and power storage solution markets underpins the HPA market along with demand from broader applications such as smartscreens in mobile phones, ipads, and computers, as well as televisions, watch faces and various high tech electronic components.

Potash

Project development

FYI continued with its Southeast Asia potash strategy focusing on Laos and the ongoing review of targeted potash projects. Following the study of the logistics and energy options in Laos, the in-country team is continuing to progress development options for a number of potash projects under review. Management also met with Laos government ministers during the quarter to discuss the opportunities to develop the potash industry in Laos.

Further Information:

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Competent person statement - Metallurgy

The information in this announcement that relates to metallurgy and metallurgical test work is based on information reviewed and compiled by Mr Daryl Evans, a Competent Person who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM). Mr Evans is an employee of Independent Metallurgical Operations Pty Ltd, and is a contractor to FYI. Mr Evans has sufficient experience that is relevant to this style of processing and type of deposit under consideration, and to the activity that he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code). The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original announcements. Mr Evans consents to the inclusion of the information in the form and context in which it appears.

Interest in Mineral Tenements at 31 December 2017

Tenement	Location	Interest at the beginning of the quarter	Interest at the end of the quarter
WMM SPLs (6)	Thailand	100% (under application)	100% (under application)
ESM SPLs (6)	Thailand	100% (under application)	100% (under application)
E70/4673	Western Australia	Agreement to acquire 100%	100%