

20 July 2017

The Manager  
Australian Stock Exchange Limited ("ASX")  
Company Announcements Office

### **Revised HPA Presentation**

FYI Resources Limited (FYI or the Company) released a corporate presentation, "HPA Strategy Overview" on 18 July 2017. FYI retracts that release as it contains a reference to a target for production capacity that is not in compliance with the ASX listing rules.

A revised presentation follows.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Phillip MacLeod'.

Phillip MacLeod  
Company Secretary



High Purity Alumina

## **Strategy Overview**

# What is HPA

- High purity alumina (**HPA**) is aluminum oxide ( $\text{Al}_2\text{O}_3$ ) powder with a purity equal to or greater than 99.99%
- HPA has uniform fine particle characteristics and is very low in impurities
- HPA's properties include low-friction and high wear-resistance, hardness, thermal and electrical insulating ability, non-corrosive and broad chemical compatibility
- HPA is utilised extensively in applications such as:
  - light emitting diodes (**LEDs**)
  - semiconductor wafers
  - sapphire glass for smart phone, television screens and watch faces
  - high-strength ceramic tools
  - space and aeronautics industries
  - high tensile light weight fabrication applications
  - artificial gemstones (sapphires)
  - abrasives
  - fire-retardant insulation for electrical circuitry
  - battery technologies and energy storage



**HPA is a versatile material  
allowing a multitude of  
uses in new age industries**

# FYI'S HPA Strategy

- FYI's objective is to become one of the worlds leading producers and suppliers of the high value >99.99% HPA  $\text{Al}_2\text{O}_3$
- To address the growing global demand for next generation high performance materials requirements
- FYI propose to own and control our entire HPA production chain from high quality feedstock through to owner operated processing, thus allowing FYI to meet the increasing quality and assurance demanded by market
- To meet the market's challenges through conventional chemistry but via a non-traditional IP processing route
- Our IP HPA process route will provide the following advantages over current conventional  $\text{Al}_2\text{O}_3$  production, including:
  - substantially lower capex & opex = improved economics
  - control of product quality
  - greatly improved refining abilities
  - lower pressure & temperature
  - lower energy requirement
  - less waste
  - lower environmental impact



**FYI's HPA strategy is to develop  
a quality integrated business to  
address the forecast long term  
HPA shortfall**

# HPA Market

- Historically a small market – no justification for innovation
- Consistent, low-growth demand previously; new applications have created demand and new market developments
- The current global 4N (99.99% Al) HPA market demand is ~26k tpa; this is expected to increase to ~48k tpa by 2025
- Anticipated CAGR for HPA market is ~10 -15%
- HPA is experiencing increasing demand due to its significance in today's high-performance electronic devices
- Major industry drivers include:
  - increasing environmental policies and awareness
  - phasing out of old and inefficient technologies (eg incandescent lighting)
  - burgeoning sustainable & clean technology industries (eg EPV batteries)
  - dramatic advances in technology and requirement for improved materials
  - requirements for reliable and consistent availability of HPA

**FYI's HPA strategy is based upon positive market fundamentals**

## Al purity pricing scale



Smelter Grade Alumina  
99.5% Al  
**US\$400/t** **SGA**



Smelter Grade Aluminum  
99.9% Al  
**US\$1600/t** **SA**



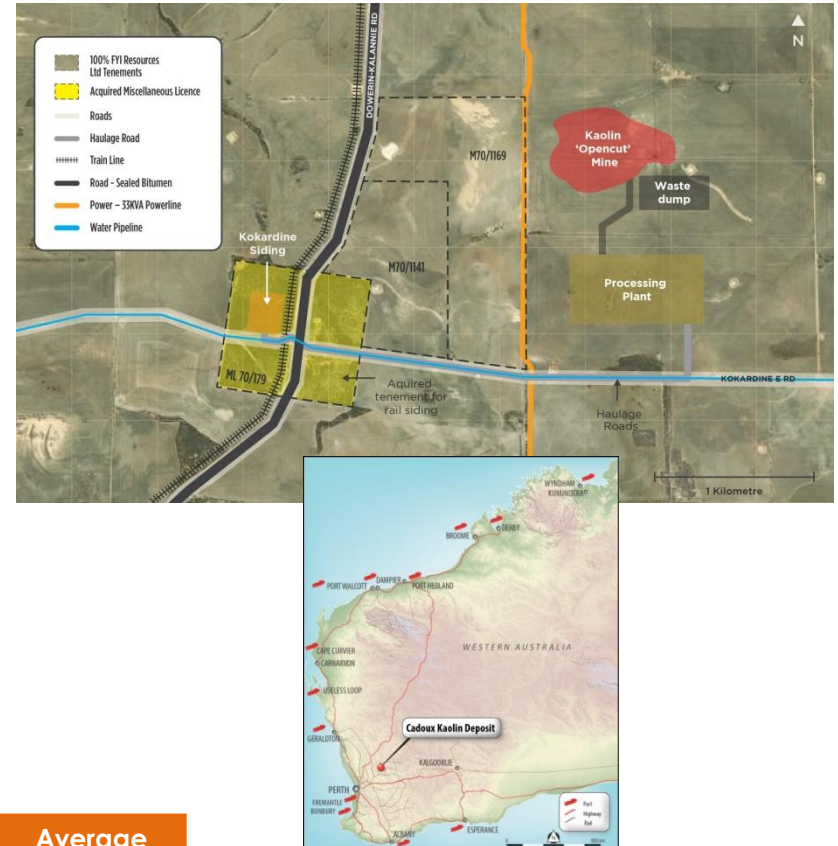
High Purity Alumina  
99.9% Al  
**US\$6000/t** **HPA**

99.99% Al  
**US\$23000/t** **HPA**

99.999% Al  
**US\$35000/t** **HPA**

# It All Starts With a Quality Resource

- Feedstock will be 100% sourced from the Cadoux Kaolin project (EL70/4673)
- Cadoux geology is ideal – shallow, flat lying, low strip, excellent quality, & easily accessible
- The project area boasts excellent infrastructure:
  - 220kms from Perth
  - Major arterial sealed roads
  - Rail siding < 1km from site
  - Water, power and telephone services all on tenement boundary
- Cadoux contains over 50 years of high quality HPA feedstock



## Current JORC Resource (2012)\*

| JORC (2012)           | Tonnage            | %-45 Microns | Average Al%  | Average Fe% | Average Ti% |
|-----------------------|--------------------|--------------|--------------|-------------|-------------|
| Inferred Resource     | 10,469,985         | 84.4         | 11.25        | 0.36        | 0.25        |
| <b>Total Resource</b> | <b>10, 469,985</b> | <b>84.4</b>  | <b>11.25</b> | <b>0.36</b> | <b>0.25</b> |

**The Cadoux project is ideal quality feedstock for HPA**

\* See ASX Company announcement – 8<sup>th</sup> May 2017

# HPA processing

- The kaolin HPA processing route has many advantages over the traditional bauxite derived HPA
- The traditional series of processing HPA is capex and opex intensive
- The FYI calcining / leaching process will simplify the flowsheet and reduce capex and opex in HPA production

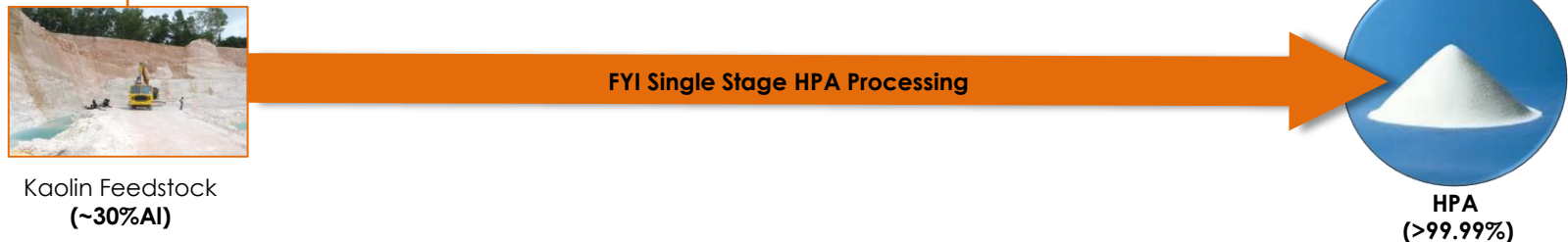
**The simplified HPA processing flow-sheet will provide immense commercial advantages**

## Simplified HPA Processing and Refining Pathways

### Traditional Route



### FYI Proposed Route





# FYI HPA Development

- FYI is developing its HPA project to meet future market demand
- The development schedule is designed to support an integrated plant study and commercial production of 99.99% HPA
- Our test work will result in the optimising of the processing chemistry and simplification of process engineering and plant design
- Second stage studies are yet to be completed, however considerations for final development include:
  - development justification (economics and value return)
  - access and pricing of inputs
  - scale of throughput in relation to capex:opex optimisation
  - allowance for changes in market conditions & demand
  - control of management and processing
  - project risk management & mitigation
  - project life cycle
  - project base lines: scope, schedules costs, revenues



**FYI's HPA strategy is to address the forecast shortfall with a quality development**

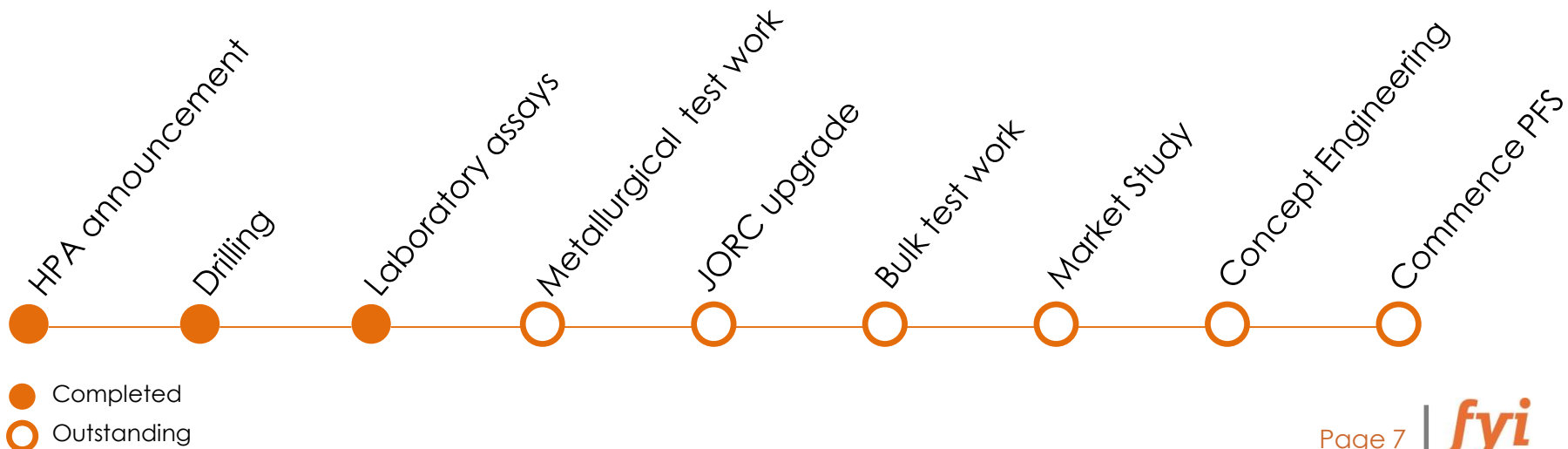


# HPA Development Timeline

- FYI has an intensive development schedule
- Targeting key project development objectives
- The first 6 months of KPI's are detailed
- Initial key objective results/outcomes look very encouraging
- All first phase KPI's lead to an accelerated pre-feasibility study

**FYI has a well defined development schedule leading to project delivery**

**FYI 's first six months development time line includes:**



# Preliminary Project Metrics

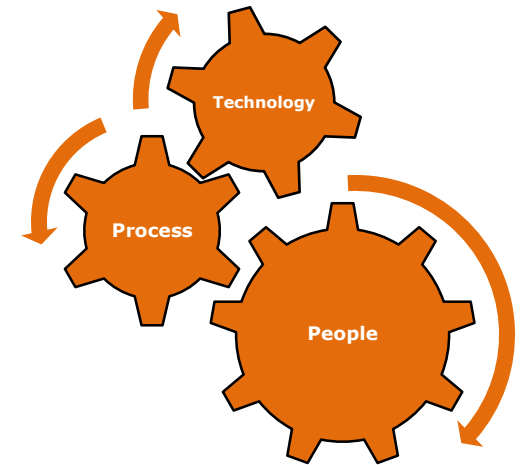
- Current schedule of works is progressing to a Pre-Feasibility study. This study will determine preliminary project metrics
- However, internal economic assessment has determined the following:
  - capex range – targeting lowest industry quartile
    - includes: mining, beneficiation and processing
  - sales range forecast – market
  - cost range expectation – targeting lowest quartile
  - accelerated project payback anticipated
  - above average rate of return calculated long term
  - HPA market to continue to grow
  - major production reactants and reagents are recycled
  - power requirement low in comparison to traditional HPA production
  - transport cost is minimal in comparison to product value
  - Low infrastructure spend expected (major items already established – ie road, rail, water, power etc)



**FYI's HPA strategy offers considerable strong long term investment returns**

# FYI Capabilities

- FYI :
  - includes first class management and technical team
  - is accredited with multiple discoveries and project developments
  - possesses a team with extensive operational experience
  - has high calibre technical expertise – geological, metallurgical, hydrological, engineering
  - has assembled an accredited marketing team
  - maintains a focused strategy and management
  - has supportive long term shareholders that support the strategy



**FYI has the technical and operational capabilities to successfully develop the HPA strategy**

# Summary

- FYI's goal is to be a major HPA industry participant
- Industry supply and demand metrics are positive (short and long term)
- New and evolving technologies continue to drive HPA demand
- Preliminary evaluation studies suggest above average returns
- FYI management have appropriate skill set and capabilities to commercialise HPA
- Top tier kaolin asset is the foundation of the strategy
- High volume production facility with latest technology
- Ensuring 100% control of production to market
- FYI is :
  - Progressing to feasibility studies
  - Targeting to be first quintile low cost producer
  - Capitalising on growth and demand in new and developing high tech industries



**2016 material consumption breakdown per application**  
(Excludes traditional watches, aerospace, defense, etc.)  
(Source: Sapphire Applications and Market 2016: LED and Consumer Electronics, September 2016, Yole Développement)



**FYI is extremely well positioned to successfully develop a world class HPA business**

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## COMPETENT PERSON'S STATEMENT – CADOUX KAOL IN DEPOSIT

The information in this report that relates to the Cadoux Mineral Resource is based upon information from the Company's announcement dated 8 May 2017 and is available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au). The information that relates to Mineral Resources is based on information compiled by Mr Andrew Kohler, a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy. Mr Kohler is an employee of Strategic Resource Management, and consultant to the Company. Mr Kohler has sufficient experience that is relevant to the style of mineralisation 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 Mineral Resource estimate comply with recommendations in the Australian Code for Reporting of Mineral Resources and Ore Reserves (2012) by the Joint Ore Reserves Committee (JORC). Mr Kohler consents to the inclusion of the report in the form and context in which it appears. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

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