

The logo for fyi Resources Limited features the lowercase letters 'fyi' in a bold, white, sans-serif font. The 'y' has a distinctive shape with a curved bottom. To the right of 'fyi', the words 'Resources Limited' are written in a smaller, white, italicized serif font. The entire logo is centered on a semi-transparent orange rectangular background.

**fyi**  
*Resources Limited*

**DEVELOPING STRATEGIC HIGH PURITY ALUMINA (HPA)  
CADOUX KAOLIN PROJECT IN WESTERN AUSTRALIA**

**NWR Virtual Resources Conference - May 2020**

# DISCLAIMER

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The DFS referred to in this presentation is a study of the potential viability of the Cadoux Project. It has been undertaken to understand the technical and economic viability of the Project. The DFS assumes as a 25-year Project life based only on Proved and Probable Ore Reserves (100%). The DFS is based on the material assumptions and modifying factors set out in the DFS announcement and the appended summary of the DFS released to ASX on 11 March 2020. These include assumptions about the availability of funding. While the Company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by this DFS will be achieved. To achieve the range of outcomes indicated in the DFS funding in the order of US\$189 million will likely be required. Investors should note that there is no certainty that the Company will be able to raise the amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other "value realisation" strategies such as a sale, partial sale or joint venture of the Project. If it does, this could materially reduce the Company's proportionate ownership of the Project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the DFS. The contents of this presentation reflect various technical and economic conditions, assumptions and contingencies which are based on interpretations of current market conditions at the time of writing. Given the nature of the resources industry, these conditions can change significantly and without notice over relatively short periods of time. Consequently, actual results may vary from those detailed in this presentation. Some statements in this presentation regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance.

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## COMPETENT PERSONS' STATEMENTS

### Ore Reserves

The information in this report that relates to Ore Reserves is based on information compiled by Mr. Steve Craig, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Steve Craig is a full-time employee of Orelogy Consulting Pty Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". The information is extracted from the Ore Reserve announcement released within the DFS announcement 11 March 2020 and is available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au)

### Mineral Resources

The information in this report that relates to Mineral Resources is based on information compiled by Mr Grant Louw, under the direction and supervision of Dr Andrew Scogings, who are both full-time employees of CSA Global. Dr Scogings is a Member of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. He is a Registered Professional Geologist in Industrial Minerals. Dr Scogings has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves". The information is extracted from the PFS announcement dated 25 September 2018 and is available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au)

### Metallurgy

The information in this report 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". Announcements in respect to metallurgical results are available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au).

### General

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the findings in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original announcements.



## Introduction

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High Purity Alumina

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Key Achievements

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HPA Growth and Key Markets

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Cadoux Highlights

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Production and Flowsheet Innovation

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Customer Engagement

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Kwinana – Battery Alley

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Project Delivery Timeline

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DFS Summary Metrics

**AGENDA**

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# INTRODUCING FYI RESOURCES

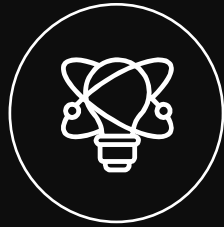
FYI is on-track in delivering on its stated HPA development objectives

## Strategy



Developing an integrated HPA project with the goal of becoming a leading producer of quality Al<sub>2</sub>O<sub>3</sub>

## Quality



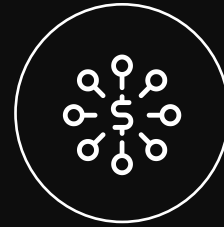
Innovative and efficient flowsheet. HPA from kaolin validated through rigorous R&D and Pilot Plant testwork

## Advantage



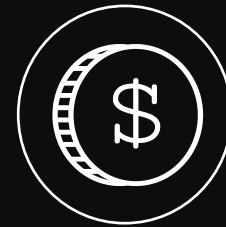
Tier 1 jurisdiction  
Infrastructure  
Integrated  
Ethical source  
Low carbon print  
Single source  
provenance

## Growth



Multiple growth markets: LEDs and EVs are driving a significant rise in demand for HPA

## Economics



DFS confirms long-life operation with industry-low opex and capex, Compelling NPV & IRR

## Validation



Robust HPA strategy  
Culminates in excellent DFS and strong financing support

FYI IS AIMING TO BECOME A DOMINANT PARTICIPANT IN THE GLOBAL HPA MARKET

# KEY ACHIEVEMENTS

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DFS confirms Cadoux as a world-class HPA project



Process flowsheet optimised to increase efficiencies + reduce Capex & Opex



Metallurgical results exceeded 99.99% target HPA\*



Mining Lease granted and permitting completed



Initiated HPA offtake negotiations with potential customers



Pilot plant success validates and derisks the project



Project Reserves\*\* providing > 50 years mine-life



Kwinana "Battery Alley" refinery site approved



Focused on fast-tracking development and construction

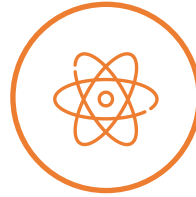


Major strategic financing arranged. Negotiations for balance of project funding is underway



# HIGH PURITY ALUMINA (HPA)

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HPA is a processed, premium, non-metallurgical alumina product characterised by its purity level – i.e. 99.99% (4N), 99.999% (5N).



HPA is mainly used for its superior properties, such as corrosion and scratch resistance, high brightness, and its ability to withstand extreme temperatures.



Currently HPA is sourced from expensive feedstock, such as refined aluminium metal sourced from bauxite using antiquated processing. FYI plans to produce low-cost HPA from kaolin using innovative processing methods.



Applications include: LEDs; in the manufacture of artificial sapphire glass; in certain battery and static power storage components; aeronautical and medical applications.

# HPA MARKET OVERVIEW

## HPA FORMS A SIGNIFICANT PART IN HIGH-PERFORMANCE ELECTRONICS



Historically a small market – no justification for product innovation



New applications and technologies have created demand and market opportunities

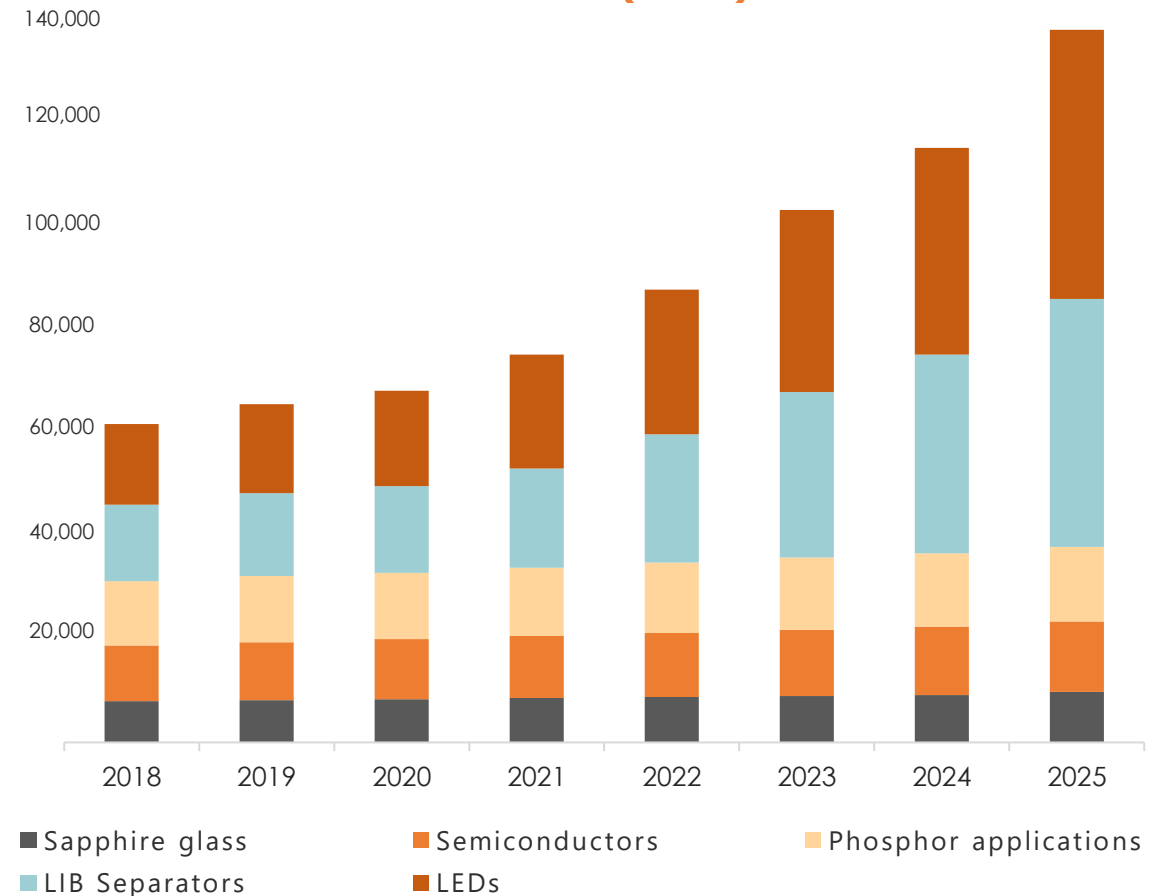


The current global 4N HPA market demand is ~60ktpa; this is expected to increase to **~90ktpa by 2022 and >130ktpa by 2025\***



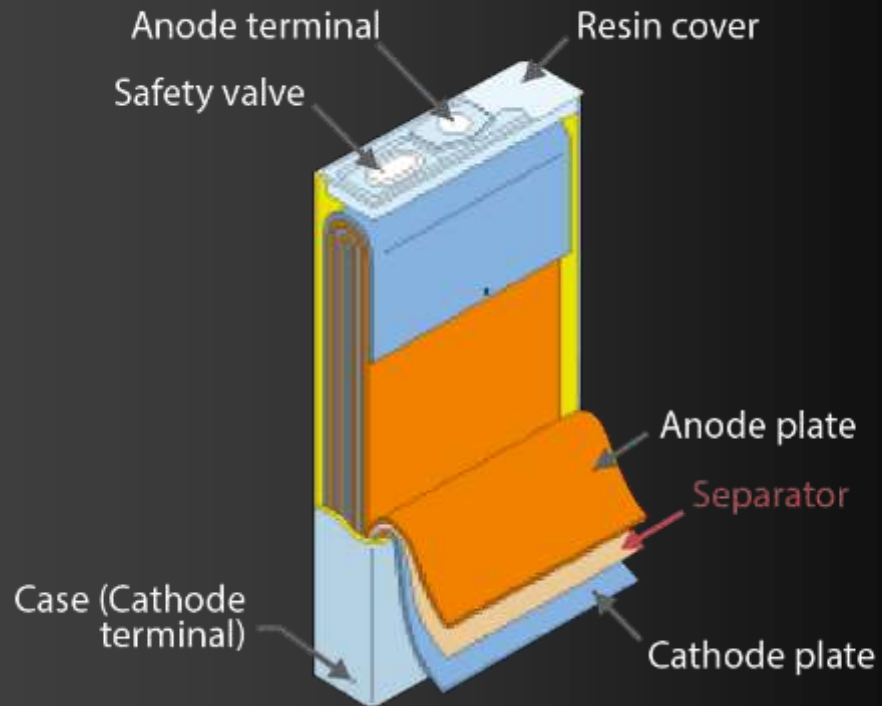
The market for HPA is witnessing dramatic consumer driven growth, with the **HPA market forecasted to be US\$4.49Bn by 2022\*\***

## HPA FORECASTED DEMAND GROWTH (KTPA)





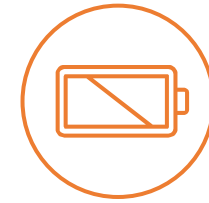
## CROSS-SECTIONAL VIEW OF LITHIUM-ION BATTERY



# HPA MARKET OVERVIEW



LEDs (Sapphire substrates) for household lighting



Lithium-ion battery separator coating



Scratch-proof glass for tablets and smartphones



Phosphor coating for fluorescent lighting

# GROWTH MARKETS - LED

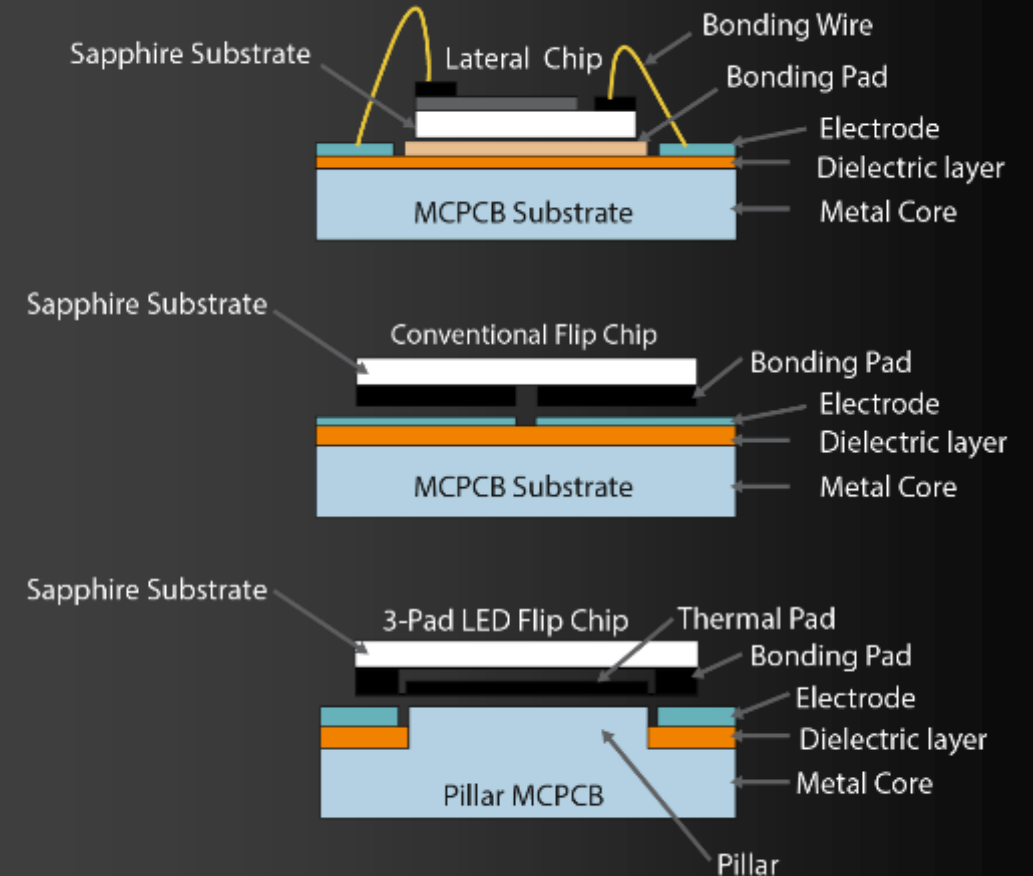
**HPA demand is growing dramatically, underpinned by two key markets:**

Traditional (LEDs, e-screens, electronics, etc)  
Batteries and static power storage (EV's, power walls)

**Growth is driven in combination by:**

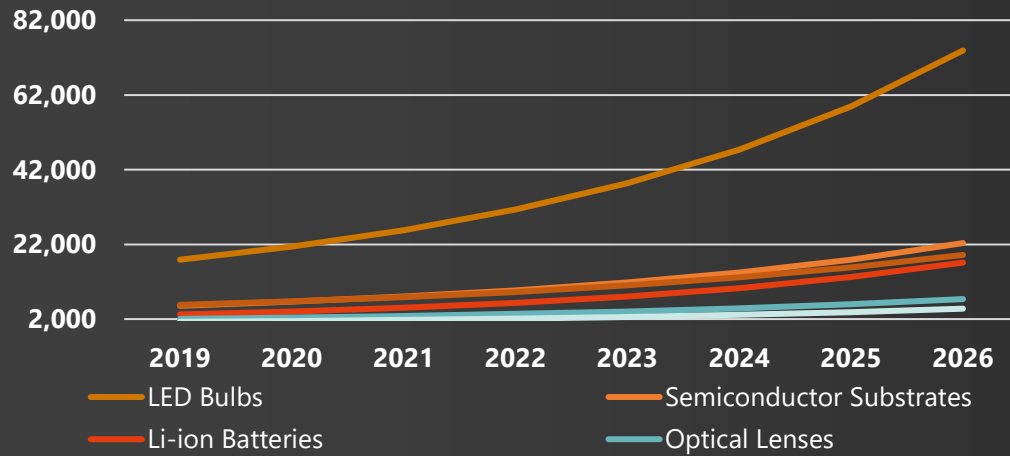
Government greenhouse emissions and energy targets  
Consumer led demand

## Cross-Sectional view of various LED designs

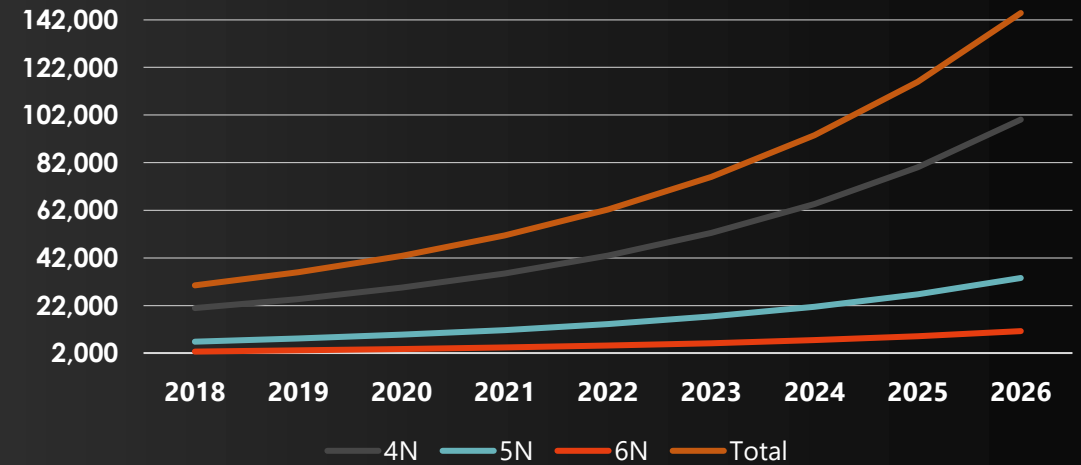


# ELECTRIC VEHICLE ADOPTION EXPANDING

## HPA by Application (tonnes) 2018 - 2026



## HPA by purity (tonnes) 2018-2026



Electric Vehicle sales continue to grow worldwide, increasing by ~59% per annum since 2014 to over 2 million units sold globally in 2018\*

China currently leads the way with EV adoption through positive government incentives. Europe and the US are beginning to implement similar policies

EV capabilities are expected to expand to larger vehicles including SUVs as international automakers shift their strategy towards electric vehicles

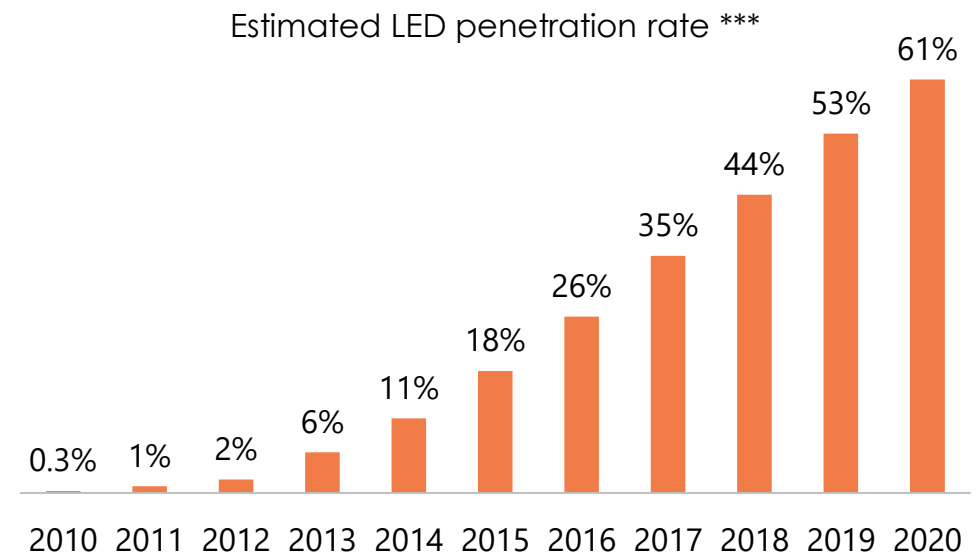
High purity alumina demand will continue grow as it remains a key part of a functional lithium-ion battery

There is still significant growth to come, with EVs representing only 2.2% of global vehicle sales worldwide\*

# LIGHTING MARKET SHIFTING TO LEDS

- Increasing environmental awareness and strict Government emissions targets and policies driving a shift towards LEDs in the lighting market
- Old, expensive and inefficient lighting applications are being legislated out
- LED market is forecast to grow to US\$54bn by 2022 and take the major share of the US\$110b global market\*
- High purity alumina is a core part of LEDs and cannot be replaced, the lighting market is expected to provide long-term upticks in demand for HPA as it continues to shift towards LEDs
- LED majors are located in several of FYI's key customer engagement locations, including China, Korea and Japan

**Demand for HPA for use in LEDs is expected to reach 85,000 tonnes p.a by 2028 \*\***  
(total HPA demand in 2018 was 19kt)



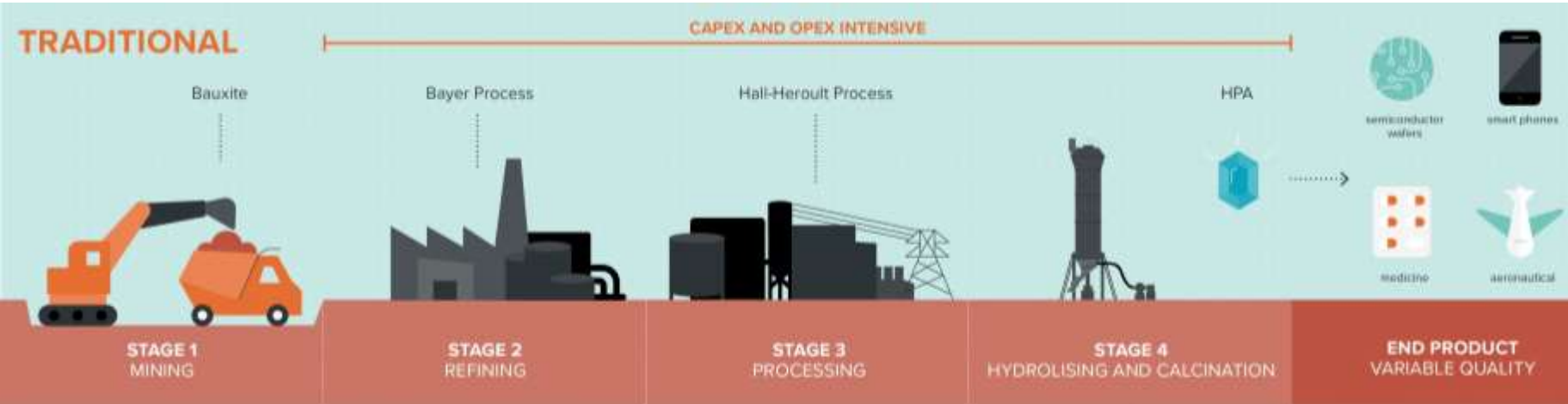
# LONG PROJECT LIFE

- ⇒ The Cadoux Kaolin Project area boasts **excellent infrastructure**
- ⇒ **Deposit geology is ideal** – shallow, flat lying, low strip, free digging, homogenous excellent quality & easily accessible
- ⇒ Extensive drilling, **well understood geology** - detailed mine study completed, reserves calculated, first 3 years of grade control completed
- ⇒ Ideal characteristics quality, grade and low deleterious elements – extremely amenable to HPA processing
- ⇒ 100% owned project area private land, no native title. **Permitting completed.**
- ⇒ Resource supports > 100 years production / Reserve of 3.2 million tonnes grading 24.8% Al<sub>2</sub>O<sub>3</sub> **supports DFS mine life of 25+ years**



# INNOVATING HPA PRODUCTION

## CONVENTIONAL METHOD



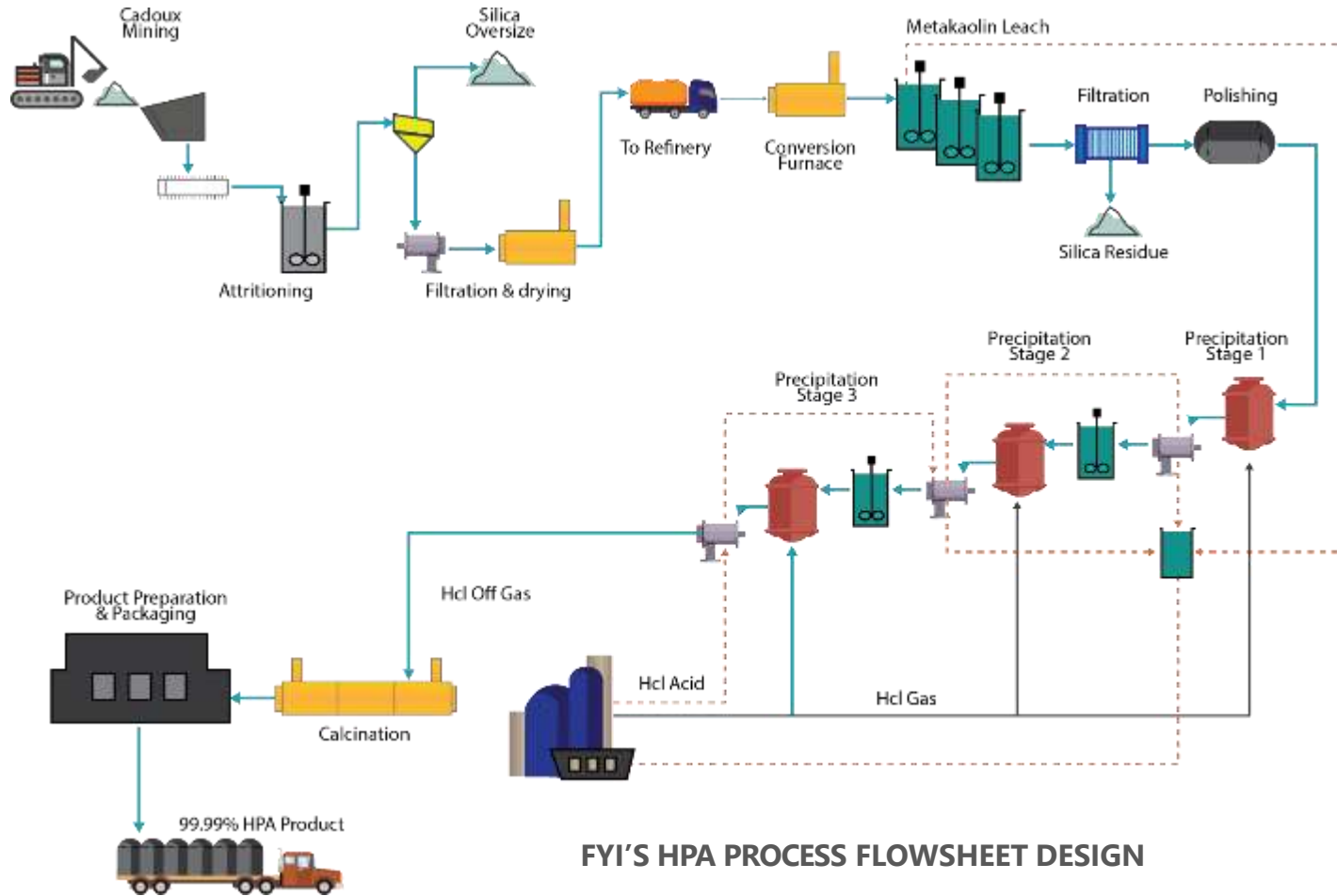
- HPA derived from aluminium via bauxite is extremely capex and opex intensive
- Inefficient 1880's process design
- Inconsistent end-product quality
- High level of unwanted impurities
- High carbon footprint, Low ethical sourcing
- No product provenance

- HPA derived from kaolin
- Simplified flowsheet, significantly reduced capex and opex
- "Open file" processing flowsheet and basic chemistry refined to suit Cadoux ore characteristics
- Consistent ethically sourced and reliable quality in end-product
- Dependable supply for long term contracts



## FYI'S INNOVATIVE METHOD

# FYI'S SIMPLE & INNOVATIVE FLOWSHEET DESIGN



FYI'S HPA PROCESS FLOWSHEET DESIGN



Developed for Cadoux's specific chemistry, quality and characteristics



Innovative design - for efficiency and low opex (heavy duty, low maintenance and long life)



Successfully demonstrated high target grade purity and excellent process recoveries



Low environmental footprint, low carbon footprint, ethically sourced – key customer requirements



Processing plant planned for in Tier one location - Kwinana's 'Battery Alley'

# DEVELOPMENT WORK & TECHNOLOGY DE-RISKING

**FYI has been undertaking detailed development works to further refine and de-risk the HPA process and design flowsheet:**

- FYI's pilot plant has played a critical role in the validation and de-risking of our innovative HPA flowsheet
- Feedstock variability test work conducted in the pilot plant circuit produced assays from 99.997% - 99.998% HPA, highlighting the efficiency and efficacy of the process flowsheet
- Locked Cycle test work achieved 99.999% alumina (5N)



FYI's own purpose built pilot plant facility in Welshpool WA





# STRONG FOCUS ON MARKET ENGAGEMENT

## PROJECT FUNDING STRATEGY

FYI is examining a number of funding options to finance its future activities and development costs. These include:

- Off-take
- Joint venture
- Cornerstone investor
- Project debt
- Equity
- Strategic investor



## FYI IS HEAVILY ENGAGED IN PRODUCT MARKETING AND OFF-TAKE

Strong focus on market engagement



Structured approach to achieving off-take and financing



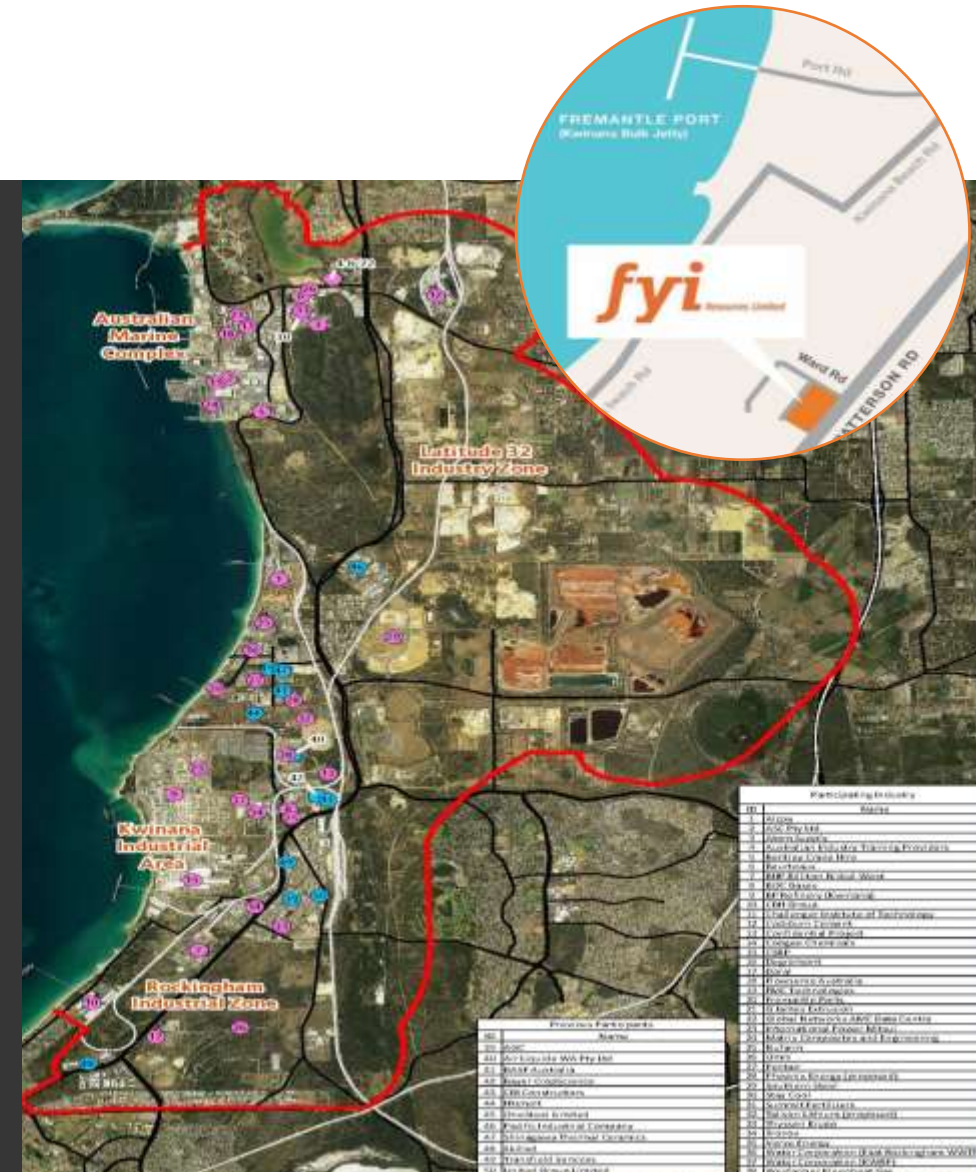
Multiple rounds of meetings conducted (China/South Korea/Japan, Europe)



HPA trial product being sent by request to market participants (HPA customers, traders)

# KWINANA – BATTERY ALLEY

- FYI has secured a premium location in the highly sought-after Kwinana Industrial Area (KIA)
- The KIA is a strategic zone and a key contributor to the WA economy. The KIA is widely recognised as a first class manufacturing, engineering, chemical and resource processing and refining hub
- The KIA provides FYI with a world class processing and refining site where kaolin feedstock from Cadoux will be refined into HPA
- FYI may become an integrated proponent within the Kwinana Area and can contribute to, and leverage off, the leading technologies and services providers
- Integrated proponent companies located at the KIA include:
  - BHP
  - Wesfarmers
  - Coogee Chemicals
  - Bayer Corp
  - BP
  - Alcoa



# DFS OUTSTANDING ECONOMICS METRIC SUMMARY

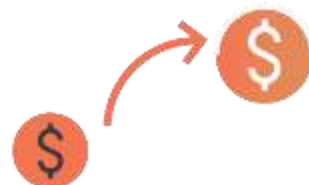
**US\$6,217**

HPA CASH COST



PER TONNE

**46%**



IRR

**25 YEAR**



MINE LIFE

**US\$189m**



CAPEX

**US\$133m**



AVE ANNUAL EBITDA

**3.6 YEAR**



PAYBACK

**US\$543m**



AFTER-TAX NPV AT 10%

**US\$88m**



PER ANNUM

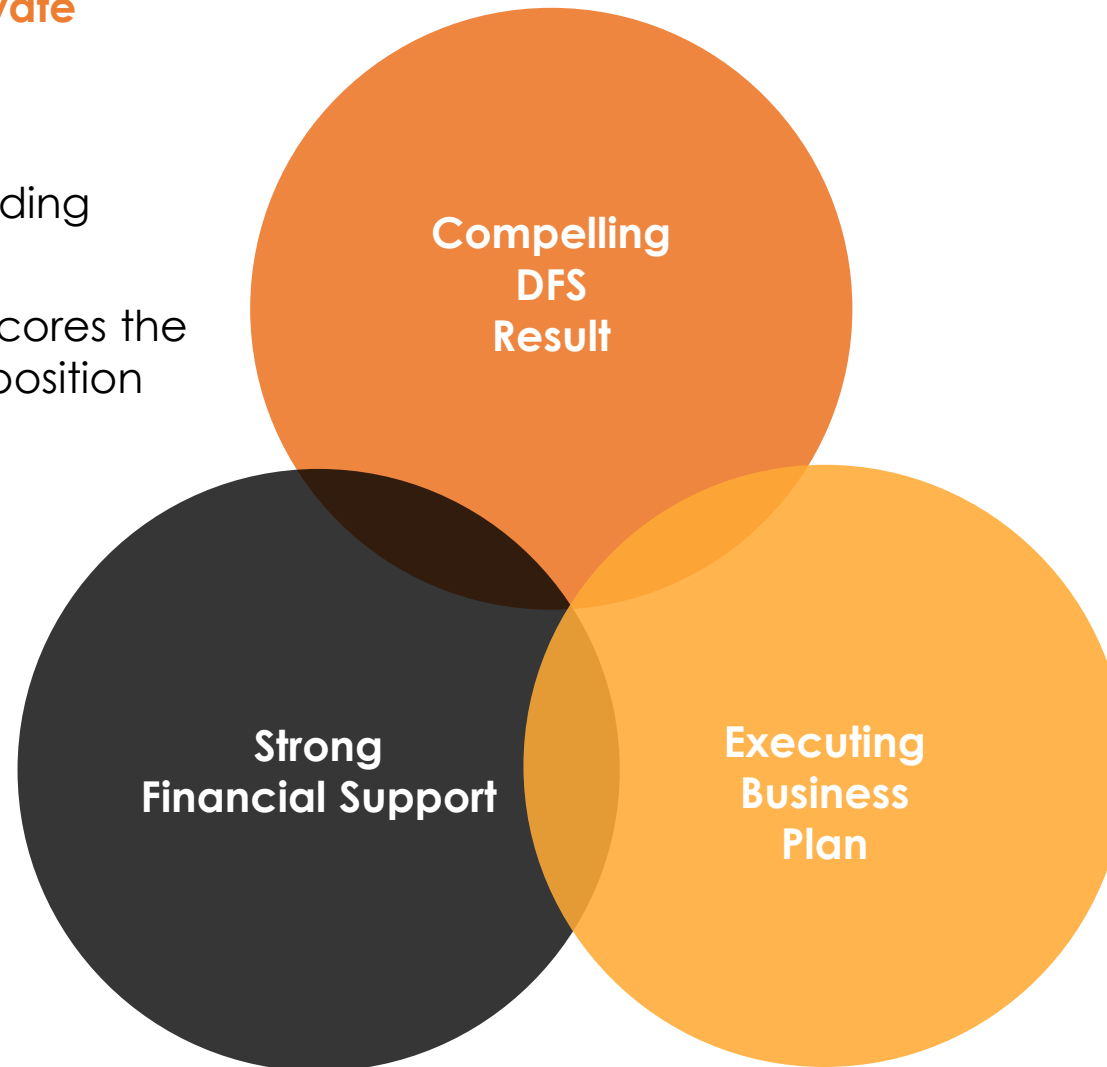
# MILESTONE STRATEGIC \$80m EQUITY FINANCING

## Arranged through European private equities group

- Long only fund
- GEM recognises FYI's outstanding DFS results
- GEM investment view underscores the projects long term value proposition

## GEM financing:

- Addresses long term capital requirements
- Provides financial capacity for project development
- Adds leverage with other project funding negotiations
- Assists with working capital



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FYI has secured a strategic equity financing for \$80m

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Provides Balance Sheet strength and flexibility

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Assist with HPA project development

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Equity draw down will be staged and priced at key development stages

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# CUSTOMER ADVANTAGES

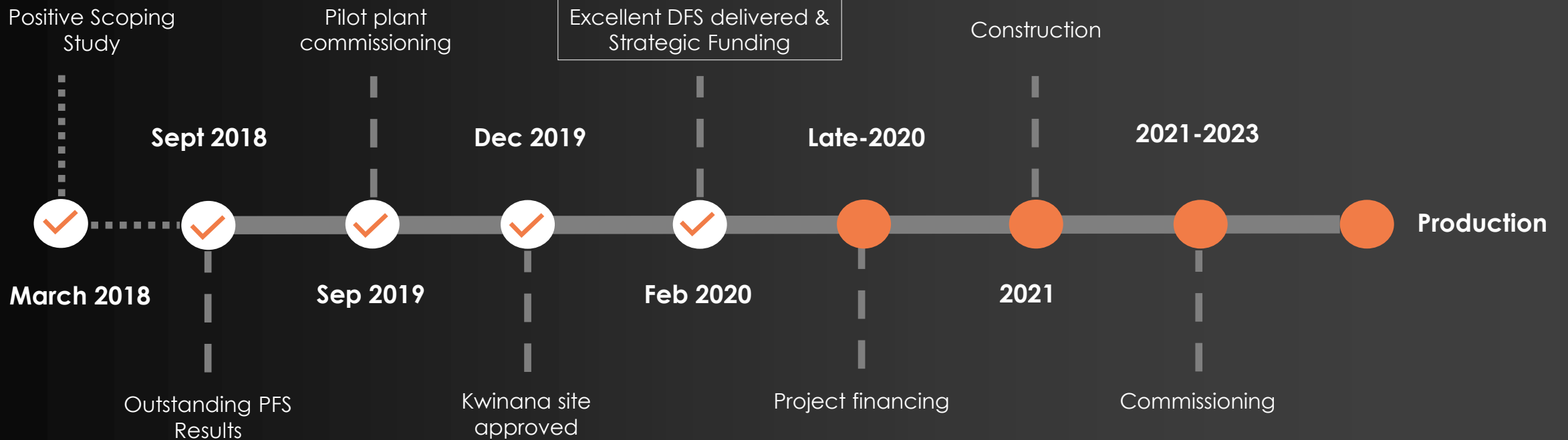
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- FYI embraces best practice approach to HPA project development
- FYI HPA has total provenance authentication and traceability of their 100% integrated process
- High environmental and social standards and governance
- HPA project developed to maximise green and sustainable practices
- Distinct environmental advantages over current traditional supply (Alkoxide - bauxite / Aluminium)
  - Low environmental footprint
  - Reduction in raw material waste
  - Low toxic waste
  - Extensive recycling (inputs and outputs)
  - Approximately 50% reduction in greenhouse gas production / ton HPA
  - Approximately 40% reduction in processing energy consumption / ton HPA
- Contribute to clean and renewable industries (directly and indirectly)
  - Reduction in fossil fuel dependency
  - Reduction of carbon gas emissions
  - Supplier to other sustainable and environmentally conscious industries ( EV, LED)



# PROPOSED PROJECT DELIVERY TIMELINE

DFS to play a critical role in securing project finance



# FYI SUMMARY

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Strategically funded and leveraged for growth



Robust integrated strategy founded on sound technical principles and project de-risking



Best-in-class project economics with lowest quartile capex and opex



Innovative processing route delivering superior quality product



Compelling integrated technical and geographical business model advantages



Environmentally responsible, low carbon footprint, high product control and provenance



Positive long-term market fundamentals



Expert study manager team and capabilities for successful project delivery



Ideal project delivery timing coinciding with forecast market growth



Ground floor entry to an emerging growth sector with significant upside

# FYI HPA – KEY DFS PROJECT ECONOMICS

ITEM	UNIT	AMOUNT
HPA production	Tpa	8,000
Production grade	Al <sub>2</sub> O <sub>3</sub>	> 99.99%
Capital cost (capex)	US\$m	189
Operating cost (opex)	US\$/t	6,217
Project NPV (@10%)	US\$m	543
Project IRR	%	46
Assumed HPA selling price / t	US\$/t	24,000
Annual revenue	US\$m	192
Operating margin	US\$/t	17,783
Annual EBITDA (avg)	US\$m pa	133
Total project revenue - life of project ( ~25 years)	US\$bn	4.7
Capital intensity	US\$/t	23,575
Project payback	years	3.6
Exchange rate	A\$:US\$	0.70





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