



**PILBARA MINERALS**  
LIMITED

ASX: PLS

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## Pilgangoora Lithium-Tantalite Project

The world's leading lithium development project

*Investor Presentation, April 2016*

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# Pilbara Minerals – Overview



- ▶ 100% ownership of the world-class Pilgangoora Lithium-Tantalite Project in WA's Pilbara region
- ▶ World-class lithium-tantalum reserve with significant upside
- ▶ Second largest spodumene-tantalite resource in the world
- ▶ Recently completed PFS confirms technical and financial viability of 2Mtpa Pilgangoora development
- ▶ Eight product off-take MOU's signed with leading chemical and technical grade customers for 100% of forecast production
- ▶ Advancing rapidly to production to take advantage of robust market opportunity:
  - ▶ *Targeting construction from December 2016*
  - ▶ *Targeting commissioning December 2017*
- ▶ Tabba Tabba to be indefinitely suspended

**An emerging, low-cost producer of lithium and tantalum at Pilgangoora**





## Pilbara Minerals Shareprice – as at 4 April 2016



### Capital Structure

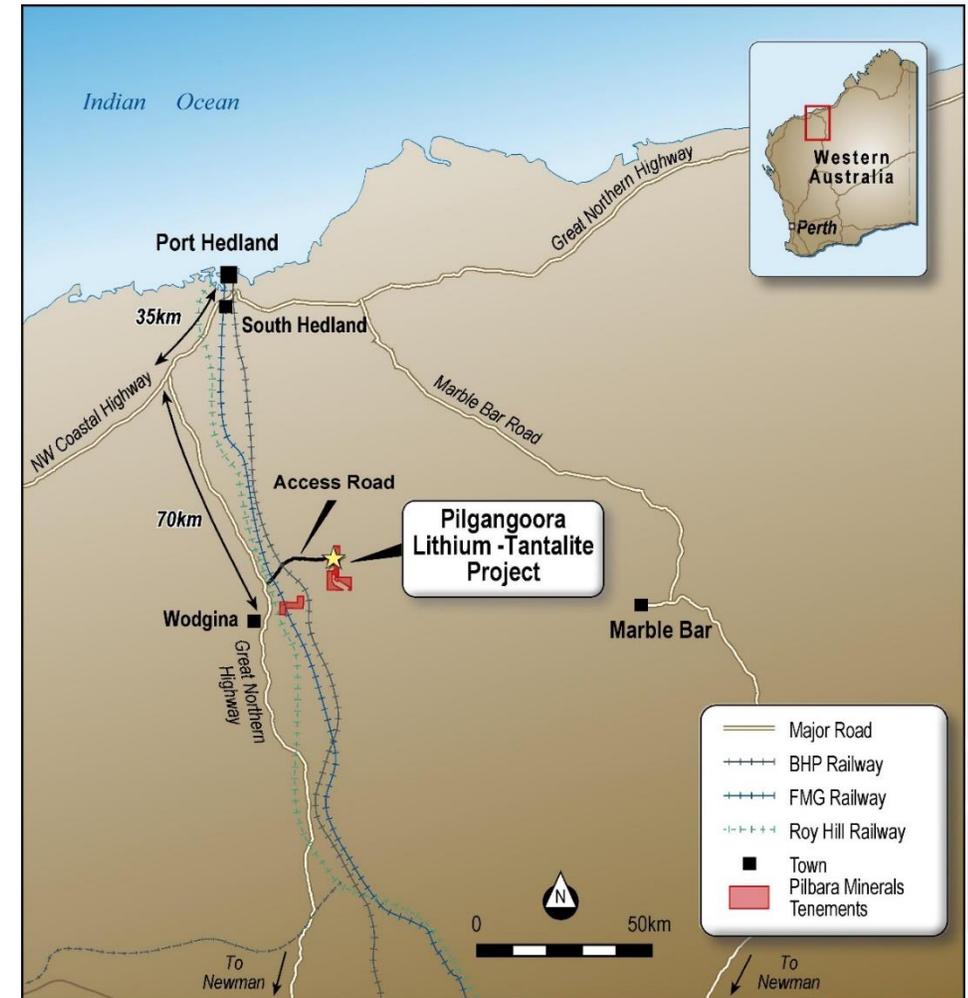
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Shares on issue	856.3 million	Top 20 shareholders	29%
Convertible notes (proforma)	2.25 million @ \$1.00 each	Board & Management	10%
Unlisted Options	48.8 million	Cash at 01/04/2016	\$11.8 million
Market capitalisation	\$385 million @ 45c	3 month average daily volume	5.8m

# Developing a World-Class Lithium Mining Centre



- ▶ Pilgangoora Project located 120km south of Port Hedland in WA's Pilbara region
- ▶ Reserve location offers strategic advantages for infrastructure access, mining approvals and lower cost of operations
- ▶ High quality PFS demonstrates economic potential of one of the world's best hard rock lithium development projects:
  - ▶ *Strong technical fundamentals and very low forecast cash operating costs*
  - ▶ *High margin project set to deliver outstanding cash-flows and returns*
  - ▶ *Initial mine life of 15 years based on current reserve with significant growth potential*
- ▶ DFS underway completion Q3 2016, supported by a further substantial drill program in progress



**A robust, long-life project in a Tier-1 mining jurisdiction**

# Pilgangoora – A globally significant Lithium Reserve



## Capital Raising – Ensuring Project Delivery and Market Presence

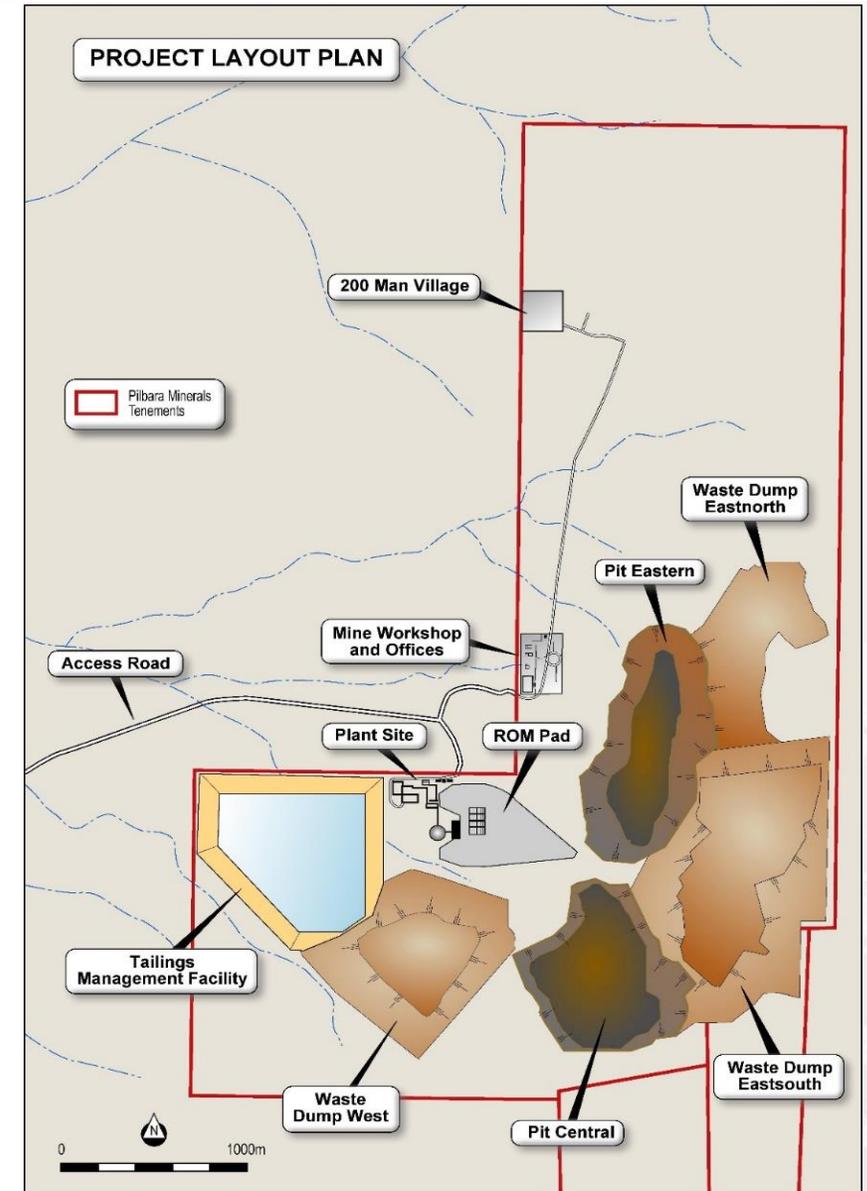
- ▶ Timeline to delivery of the Pilgangoora project:
  - ▶ *Secure long-lead items*
  - ▶ *Taking advantage of current resources downturn and timely completion of the Pilgangoora Definitive Feasibility Study*
  - ▶ *Early works on ground*
- ▶ Adding value to resource / reserve
  - ▶ *Accelerate resource infill and reserve growth*
  - ▶ *Additional resource growth*
- ▶ Balance sheet strength
  - ▶ *Progress Offtake / marketing*
  - ▶ *Project funding*





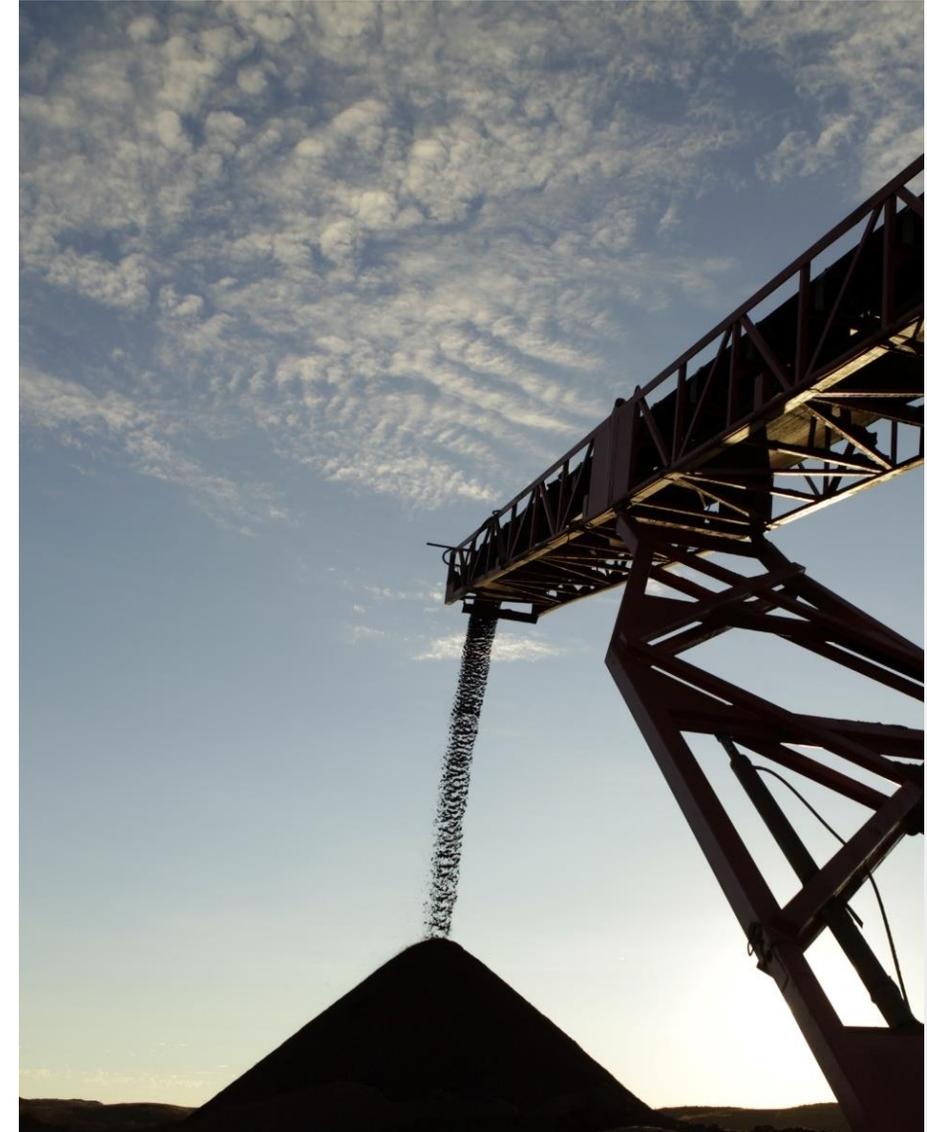
- ▶ 2Mtpa mining and on-site processing
- ▶ Forecast annual production of approximately 330ktpa of 6% spodumene concentrates (48ktpa of Lithium Carbonate Equivalent or LCE) and 274,000lbs pa of tantalite
- ▶ Maiden Ore Reserve of 29.5Mt @ 1.31%  $\text{Li}_2\text{O}$  and 134ppm  $\text{Ta}_2\text{O}_5$
- ▶ Initial 15-year mine life, with further growth expected from the 15,000m drilling campaign currently underway

Plant commissioning from 4<sup>th</sup> quarter, 2017





- ▶ Life-of-mine operating cash costs<sup>1</sup> of only USD\$205/tonne of spodumene concentrate FOB (including by-product credits for Ta<sub>2</sub>O<sub>5</sub> production)
- ▶ EBITDA over first 5 years of operations of approximately A\$120M per annum
- ▶ PFS based on assumed life-of-mine average spodumene price of US\$456/t FOB – current spot price +US\$600/tonne CFR
- ▶ Project payback in ~2 years
- ▶ Project NPV of A\$407M (10% discount rate, post-tax) and IRR of 44% (PFS Reserve basis)
- ▶ Project capital estimate of A\$184M (± 25%)



1. Cash costs include all production costs, corporate and admin

# PFS underscores robust base case *however further growth to come*

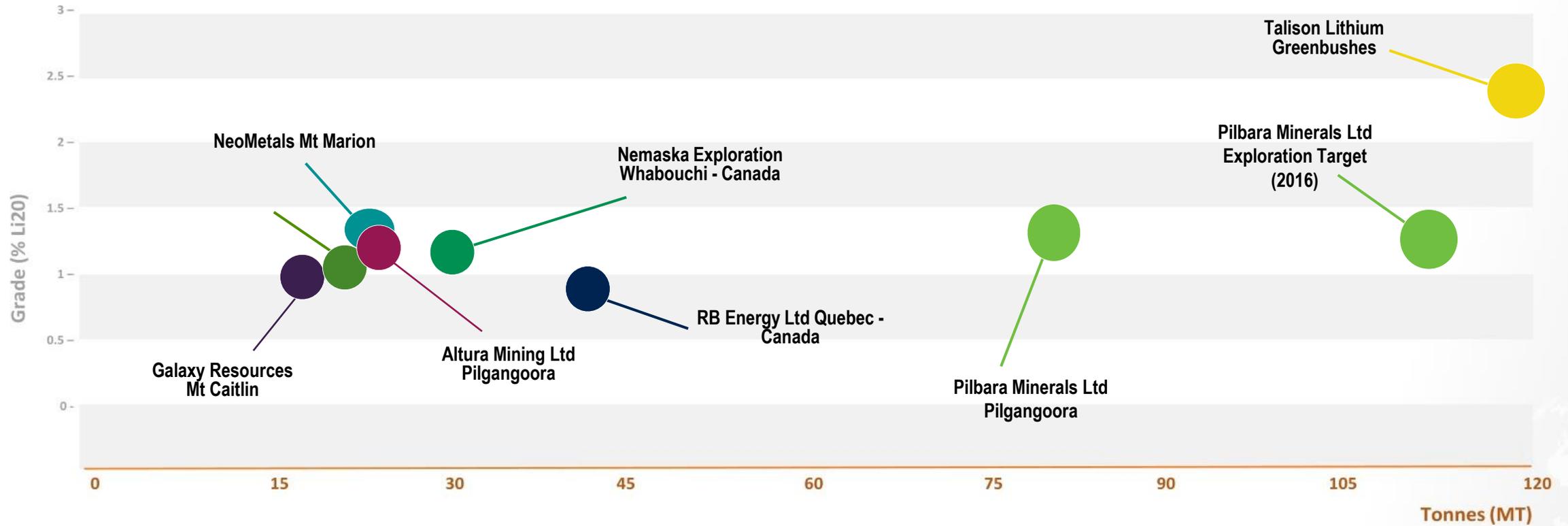


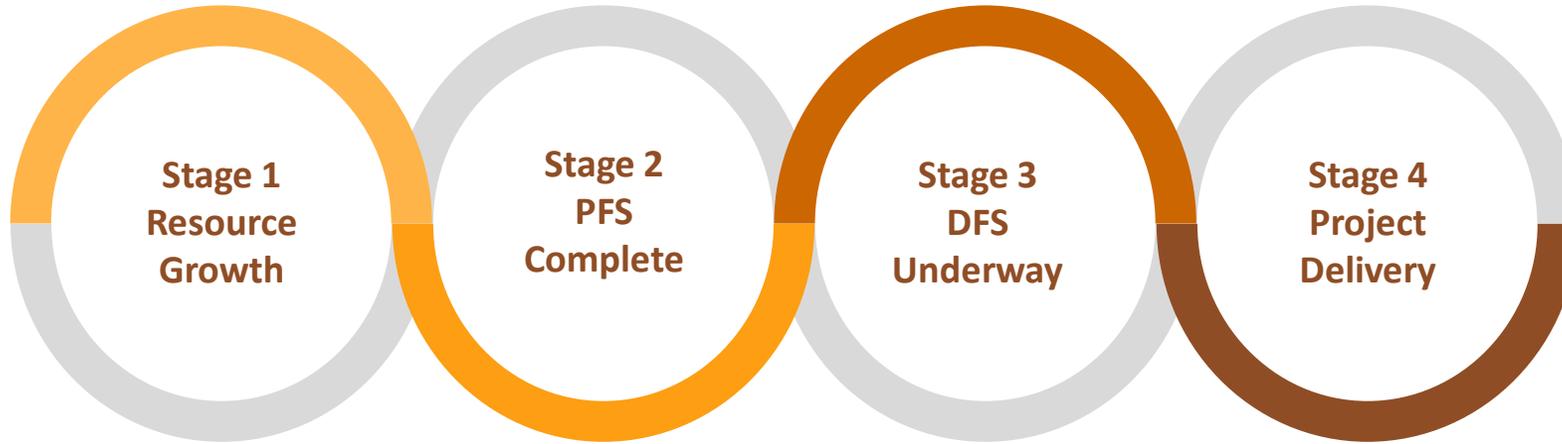
- ▶ Robust PFS: >50% EBITDA margins & 44% IRR based on:
  - ▶ *average spodumene price of US\$456/t FOB*
  - ▶ *29.5mt reserve for mine life of 15 years (at 2mtpa)*
- ▶ We see significant upside potential in several areas:
  - ▶ *Current spodumene price is US\$600/t (margins would be >60%)*
  - ▶ *DFS targeting mining inventory of 53.9mt (of 80mt resource<sup>1</sup>)*
    - ▶ *Which could increase the mine life to circa 30 years*
    - ▶ *Suggests potential to assess expansion to 3mtpa*
  - ▶ *Potential to produce high-value low-iron spodumene*



1. Exploration Target is 100-110mt @ 1.2-1.5% LiO<sub>2</sub> with a 15,000m drill programme underway

# Peer Comparison – Resource Tonnage and Grade





**Stage 1  
Resource  
Growth**

**Stage 2  
PFS  
Complete**

**Stage 3  
DFS  
Underway**

**Stage 4  
Project  
Delivery**

## Resource Estimation

- ▶ JORC Inferred /Indicated completed
- ▶ 80Mt Resource
- ▶ Further resource growth expected

## Project Definition

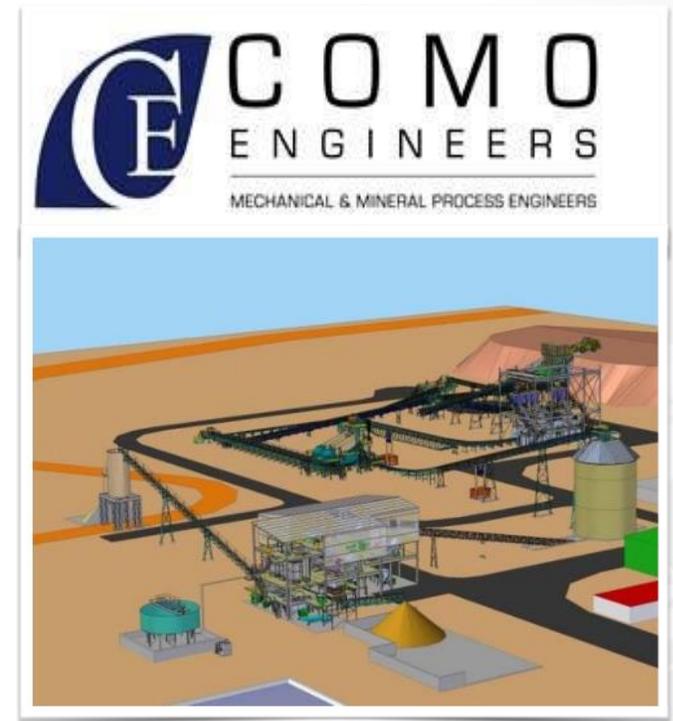
- ▶ Maiden reserve, 29.5Mt @ 1.35% Li<sub>2</sub>O, 134ppm Ta<sub>2</sub>O<sub>5</sub> tantalite
- ▶ Outstanding project economics
- ▶ Very low cost hard-rock Spodumene production
- ▶ Further reserve growth expected, growing mine-life

## Detailed Design and Project Planning

- ▶ Targeting >25yr mine life
- ▶ Plant process and design optimisation
- ▶ Product specification and bulk samples to customers
- ▶ Tailings design
- ▶ OPEX
- ▶ CAPEX
- ▶ Updated financial models

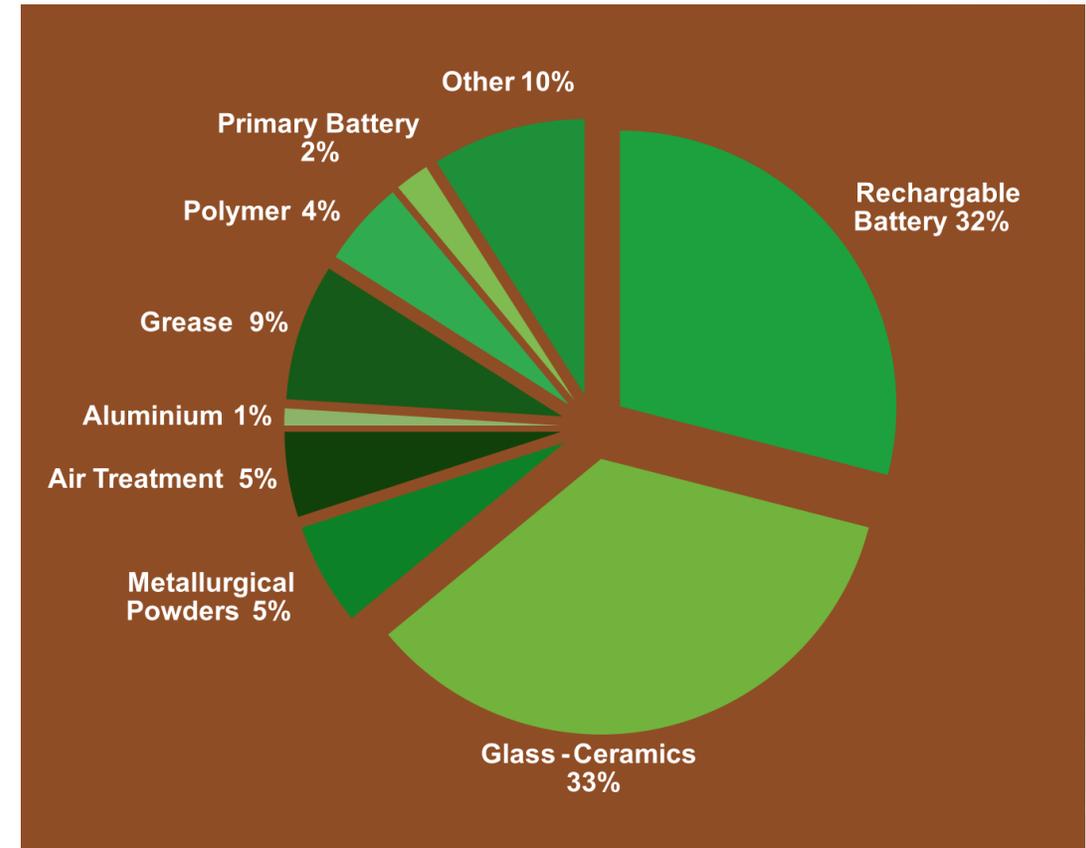
## Finance / Permitting – December 2016

- ▶ Decision to mine





- ▶ Pilgangoora spodumene concentrates meet the metallurgical specifications of the entire range of lithium products
- ▶ Over 100% of projected lithium oxide production subject to MOU's with major off-take partners in China, Japan, Americas and Europe
- ▶ All off-take partners have substantial expansion plans to meet anticipated demand for EV's
- ▶ Increased production of chemical lithium products restrained by lack of mine supply



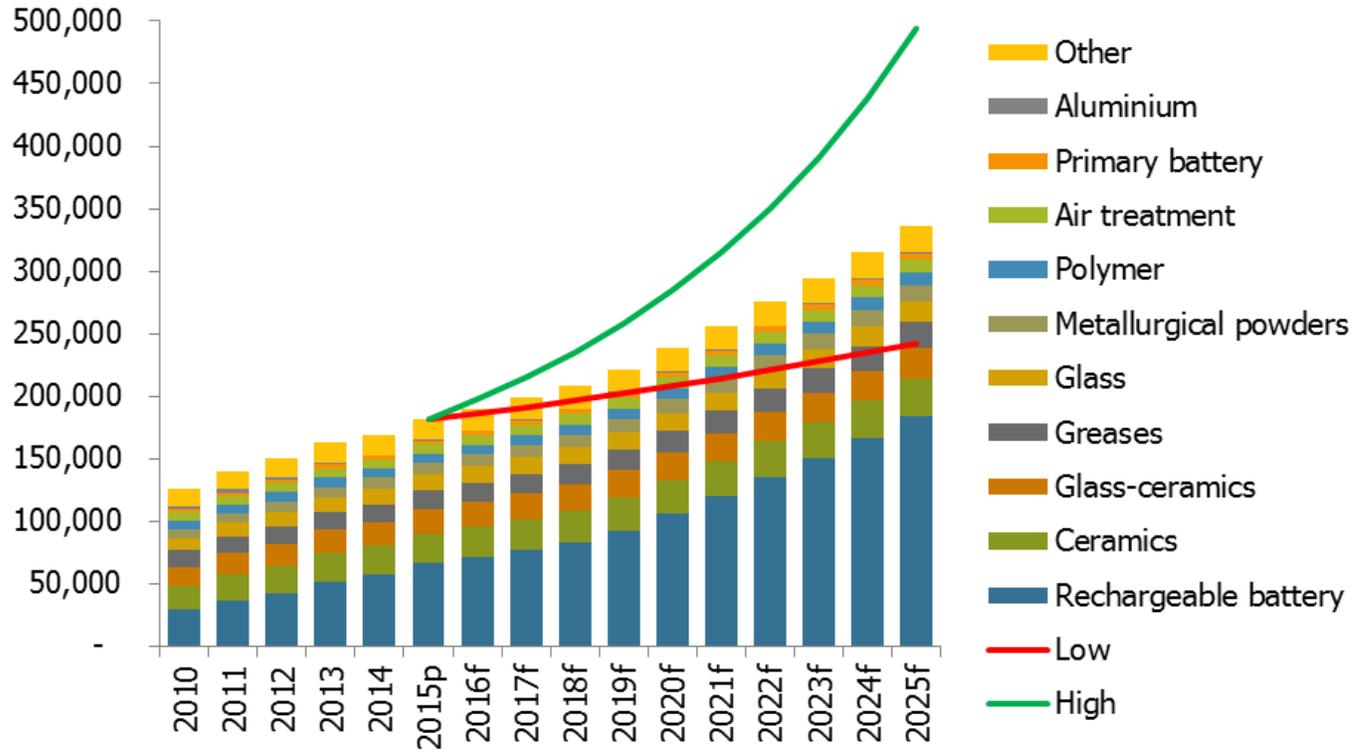
SOURCE: ROSKILL 2015 Demand Data

**Pilgangoora spodumene concentrate meets the specifications of the entire lithium market**





## World forecast demand for Lithium by first use (t LCE)



SOURCE: ROSKILL, Jan16

- ▶ Lithium-ion batteries driving demand
  - ▶ 20%+ annual growth since 2000
  - ▶ Currently 30% of global market
- ▶ Electric Vehicles and E-Bikes
  - ▶ Currently 3% of global lithium market
  - ▶ Accelerated growth expected from 2015
- ▶ Conventional applications
  - ▶ Currently 70% of global market
  - ▶ Glass & ceramics typically use technical-grade concentrate

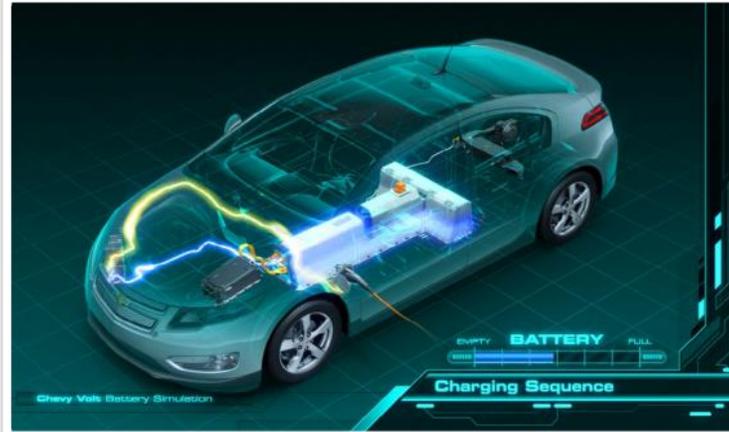
**Large format batteries for electricity grid stabilization and home power storage.....**  
**Potentially significant future demand growth**



# Motor Vehicle Lithium Demand



- Tesla Series 3 to be released in 2017, retail price of US\$36,000
- Chinese car manufacturers targeting sub \$20K EV's by 2017
- Mercedes Benz releasing 12 new models of EV's in 2017
- BMW i3 Series due for release 2017 in direct competition with Tesla Series 3.
- Audi and Volkswagen also entering the EV market in 2017-2018
- 30 Million E Bikes produced annually in China, gradually converting to Li ion batteries.



- ▶ China, Japan and Korean Government policy strongly supports EV's with large rebates, zero sales tax and free licensing.
- ▶ Lead-acid batteries now subject to export tax out of China.
- ▶ Toyota will cease using lead acid batteries from 2017 with 100% adoption of Li ion batteries in all models.
- ▶ Japanese and Korean car makers anticipated to announce major adoption of EV's by 2020
- ▶ announce major adoption of EV's by 2020
- ▶ adoption of EV's by 2020



Emerging low-cost Australian strategic metals producer

Largest lithium resource and highest grade relative to ASX-listed peers

Outstanding project economics demonstrated by PFS

Rapid pathway to financing and production

Ideally placed to capitalize on robust market outlook and demand





## Developing a globally significant new Australian lithium project

March 2016 – PFS Release



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## **Tony Leibowitz** Chairman

Fellow of The Institute of Chartered Accountants in Australia, over 30 years professional experience and previously a senior partner with Pricewaterhouse Coopers in corporate finance and investment banking

## **Neil Biddle** Executive Director

Geologist and Corporate Member of the AusIMM with over 30 years professional and management experience in the global exploration and mining industry. Since 1987, Mr. Biddle has served as Managing Director and Exploration Manager of several ASX-listed companies

## **John Young** Technical Director

Geologist and Corporate Member of the AusIMM with over 25 years experience in the global exploration and mining industry. Ten years direct experience managing tantalite, tungsten and molybdenite projects

## **Robert G Adamson** Non-Executive Director

Geologist with over 40 years experience, served in technical, managerial and board positions with several publicly-listed exploration and mining companies in Australia, South Africa, New Zealand, South Korea, Canada and the Philippines

**Highly experienced Board and management team with strong experience in exploration, mining and corporate management**





## **Ken Brinsden** CEO

Mining Engineer with over 20 years experience including mine management, production and green-fields project development. Previously MD at Atlas Iron Ltd contributing to its growth from junior explorer to significant Pilbara iron ore producer

## **John Holmes** Exploration Manager

Geologist with over 25 years experience in mineral exploration ranging from early stage exploration through to resource definition and project acquisition. Experience in precious and base metals, coal and industrial minerals projects

## **Alan Boys** Company Secretary / CFO

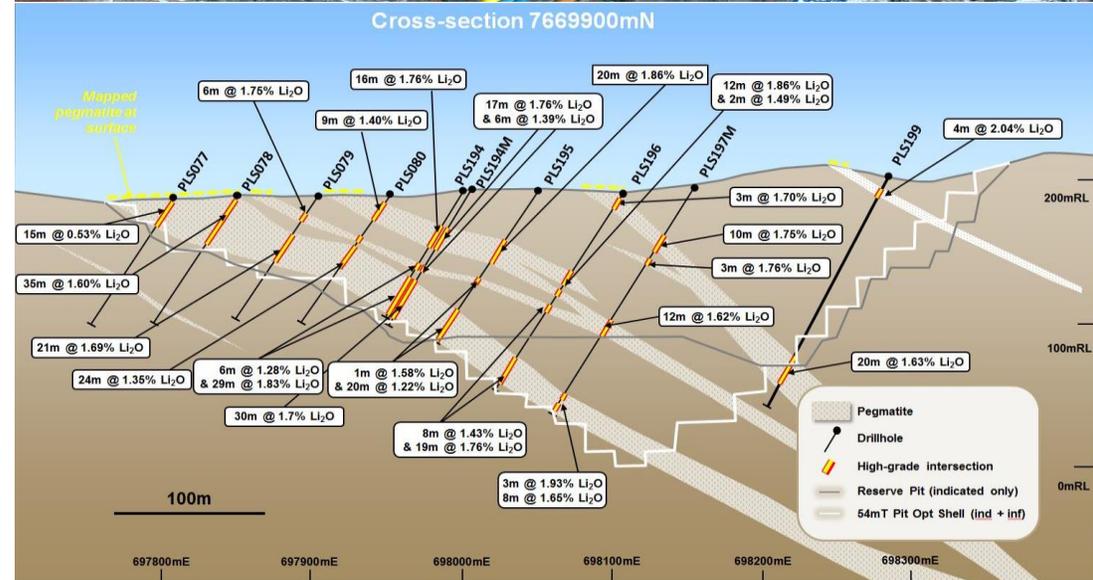
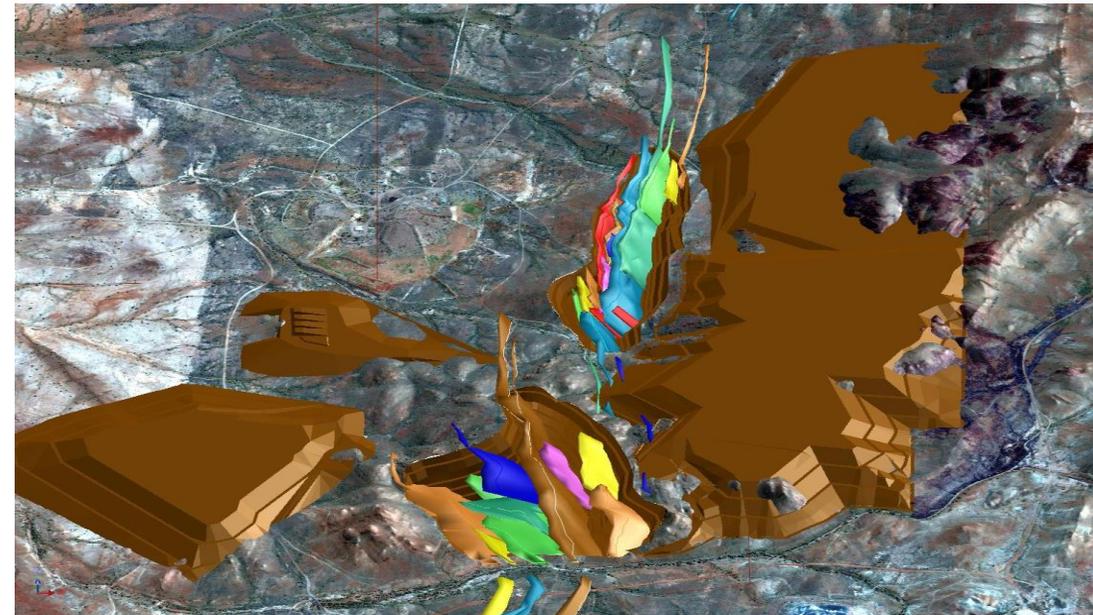
Chartered Accountant with over 30 years experience and previously a partner with Pricewaterhouse Coopers. More recently engaged as Company Secretary and CFO for a number of ASX listed companies

**Highly experienced Board and management team with strong experience in exploration, mining and corporate management**

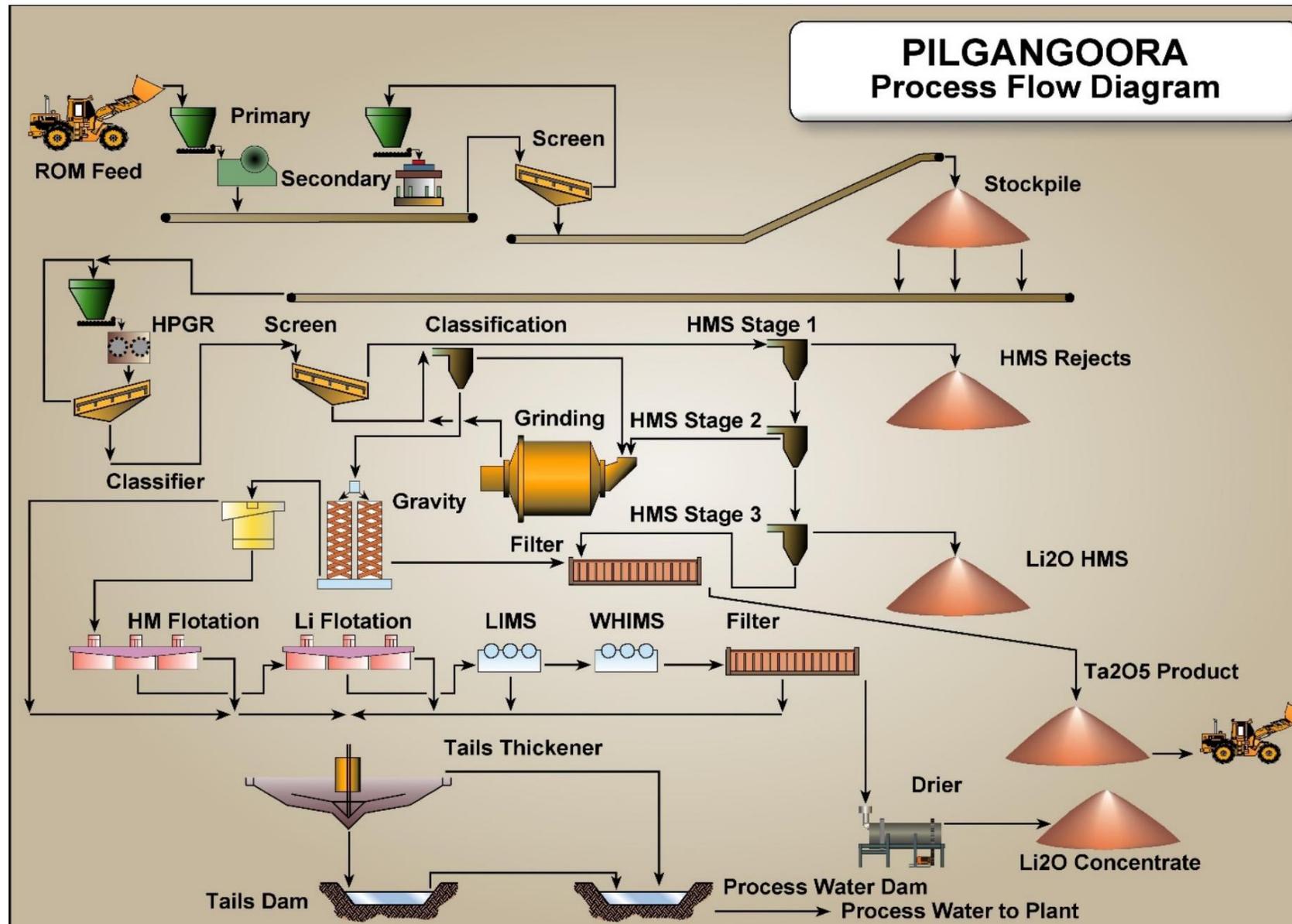




- ▶ Conventional open pit mining proposed, 100-tonne mining fleet
- ▶ 2Mt ore feed per annum
- ▶ LOM strip ratio of 3.5:1, waste: ore tonnes
- ▶ Strip ratio over first 5 years 2.87: 1
- ▶ Both owner-mining and contractor mining scenarios to be considered in DFS
- ▶ Attractive contractor mining rates available in the current market
- ▶ Mining targeted to commence, Q3 2017



# Pilgangoora – Processing 2Mtpa ore feed with flowsheet to produce 3 product streams

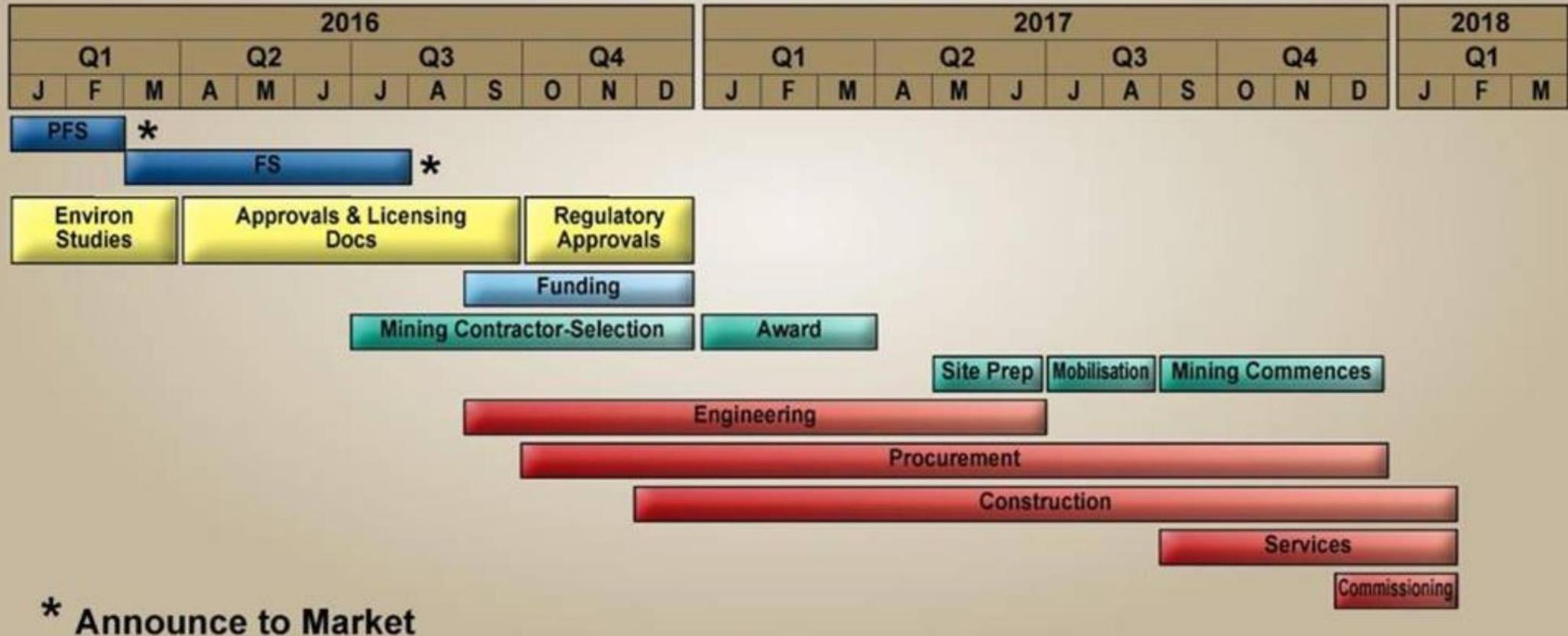


# A Rapid Pathway to Financing and Development



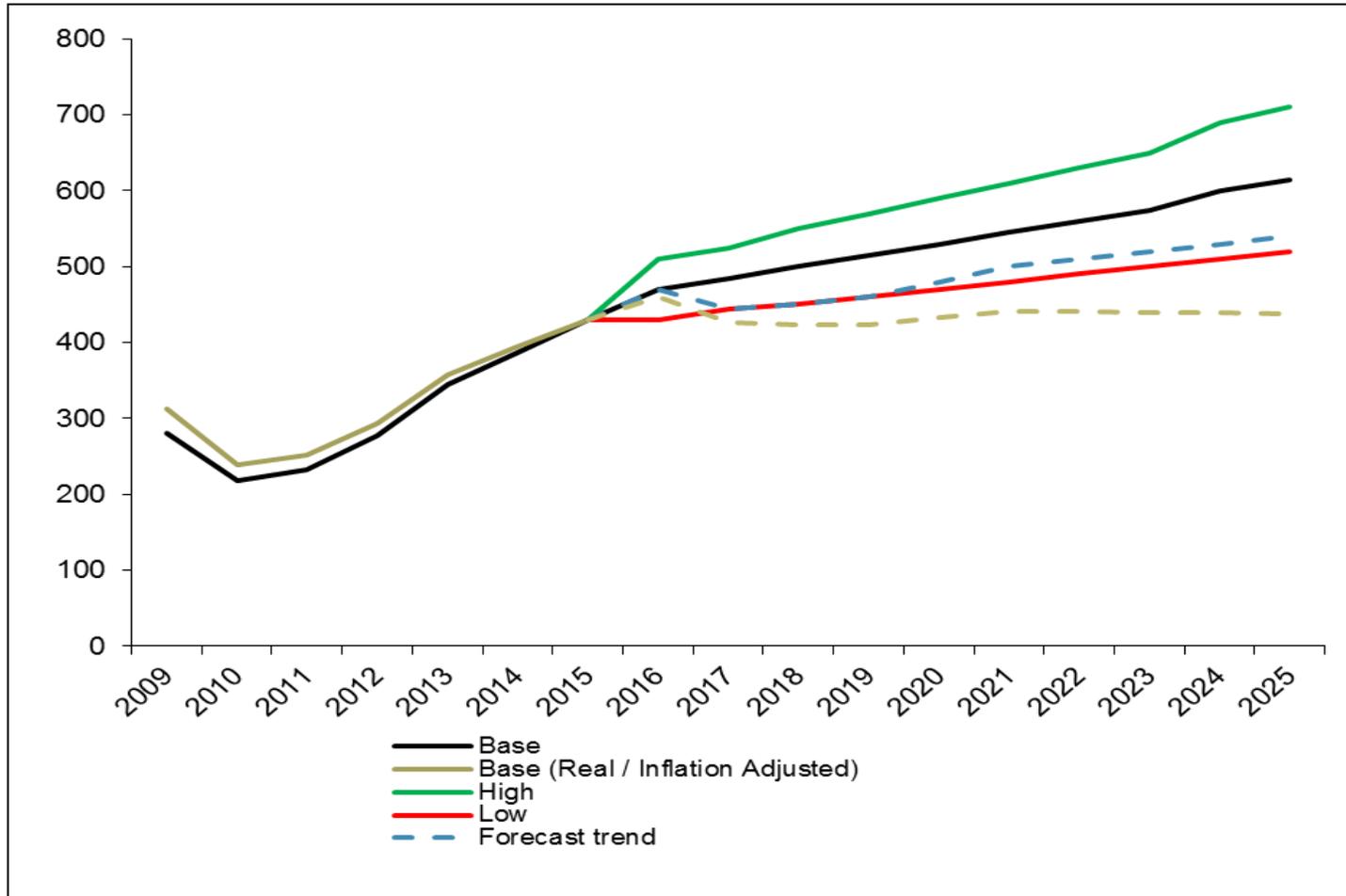
## PILGANGOORA PROJECT SCHEDULE

Financial model is based upon the following assumptions with regards to schedule:





## Price forecasts – Chemical-grade spodumene



(US\$/t CIF, Roskill Jan16)

- ▶ Conservative pricing based on Roskill forecast data
  - ▶ *Latest public contract price +USD\$600/t CFR*
  - ▶ *Indicative of very tight supply*
- ▶ Very strong leverage within the project to improved pricing outcomes. USD\$600/t (FOB) delivers;
  - ▶ *First 5 years EBITDA average grows to over \$200Mpa*
  - ▶ *NPV<sub>10</sub> A\$710M*
  - ▶ *IRR 68%*
- ▶ Pricing to further improve with the introduction of Technical Grade product to the DFS analysis

# Pilgangoora Project *Resource and Reserve Tables*



Pilgangoora Resource Table

Category		Tonnage (Mt)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	Li <sub>2</sub> O (%)	Ta <sub>2</sub> O <sub>5</sub> (T)	Ta <sub>2</sub> O <sub>5</sub> (Mlbs)	Li <sub>2</sub> O (T)
Indicated	Ta <sub>2</sub> O <sub>5</sub>	17.9	182		3,255	7.2	
	Li <sub>2</sub> O	35.7		1.31			469,400
Inferred	Ta <sub>2</sub> O <sub>5</sub>	24.3	205		4,995	11.02	
	Li <sub>2</sub> O	44.5		1.21			538,600
TOTAL	Ta <sub>2</sub> O <sub>5</sub>	42.39	195		8,250	18.27	
	Li <sub>2</sub> O	80.2		1.268			1,008,000

Pilgangoora Reserve Table

Category	Tonnage (Mt)	Li <sub>2</sub> O (%)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	Fe <sub>2</sub> O <sub>3</sub> (%)	Li <sub>2</sub> O (T)	Ta <sub>2</sub> O <sub>5</sub> (T)	Ta <sub>2</sub> O <sub>5</sub> (Mlbs)
Proven		-	-	-	-	-	-
Probable	29.5	1.31	134	1.18	298,000	1,856	4.09
TOTAL	29.5	1.31	134	1.18	298,000	1,856	4.09

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- ▶ The information in this report that relates to Mineral Resources is based on information compiled by Mr Lauritz Barnes, (Consultant with Mitchell River Group Pty Ltd) and Mr John Young (Executive and Chief Geologist of Pilbara Minerals Limited). Mr Young is a shareholder of Pilbara Minerals. Mr Barnes and Mr Young are members of the Australasian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Young is the Competent Person for the database, geological model and completed the site inspection. Mr Barnes is the Competent Person for the database and the resource estimation. Mr Barnes and Mr Young consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.
- ▶ The information in this report that relates to Ore Reserves is based on information compiled by David Billington is employed by Mining Plus, is a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy included in a list that is posted on the ASX website from time to time. David Billington has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Ore Reserves'. David Billington consents to the inclusion in the report of the matters based on his (or her) information in the form and context in which it appears.



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*March 2016*