



PILBARA MINERALS
LIMITED

ASX: PLS

Pilgangoora Lithium-Tantalite Project

The world's leading lithium development project

Diggers and Dealers - August 2016

Disclaimer and Competent Person's Statement



Disclaimer

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Competent Person Statements

- ▶ 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 (Technical Director). 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.

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
- ▶ PFS confirms technical and financial viability of 2Mtpa Pilgangoora development
- ▶ Upcoming DFS to demonstrate significant project upside from expanded resource
- ▶ Cornerstone offtake partner announced, General Lithium Corporation
- ▶ 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*



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



Tony Kiernan
Non-Executive
Chairman

Highly experienced public company director and former solicitor with over 30 years professional experience. Currently Chairman and a non-executive director of several ASX-listed resource companies

Steve Scudamore
Non-Executive
Director

Highly experienced public company director. His career includes more than three decades with senior roles in Australia, London and PNG.

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

Ken Brinsden
MD and 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

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

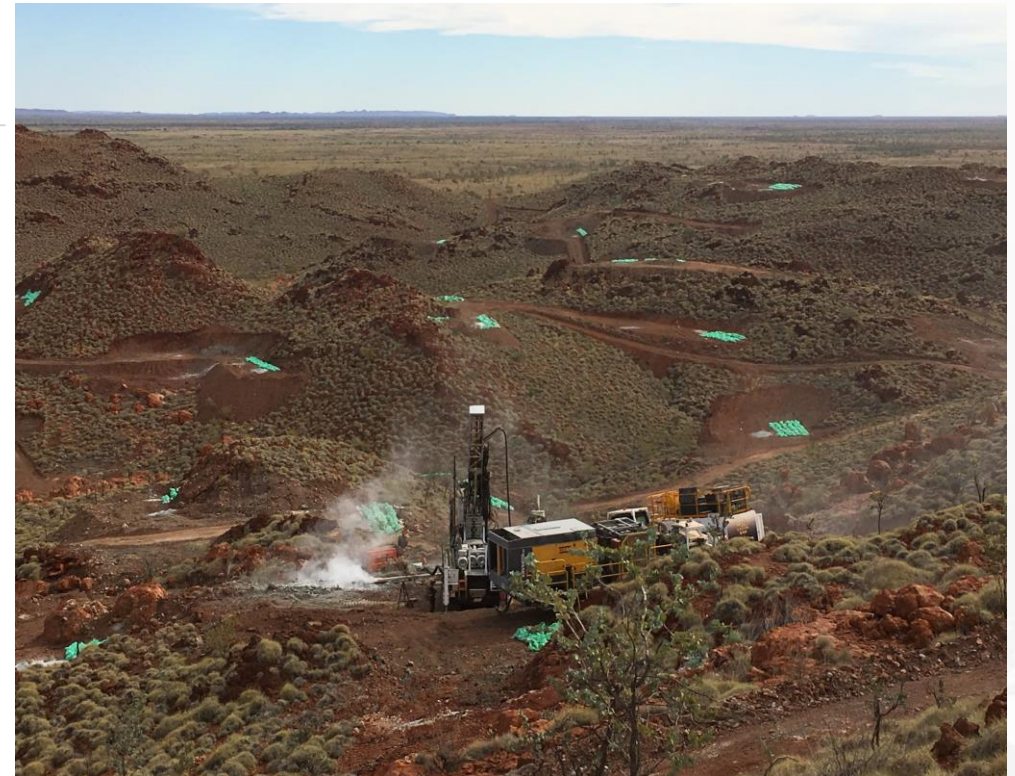
John Young
Technical Director

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

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



Pilbara Minerals Share price – as at 29 July 2016



Capital Structure

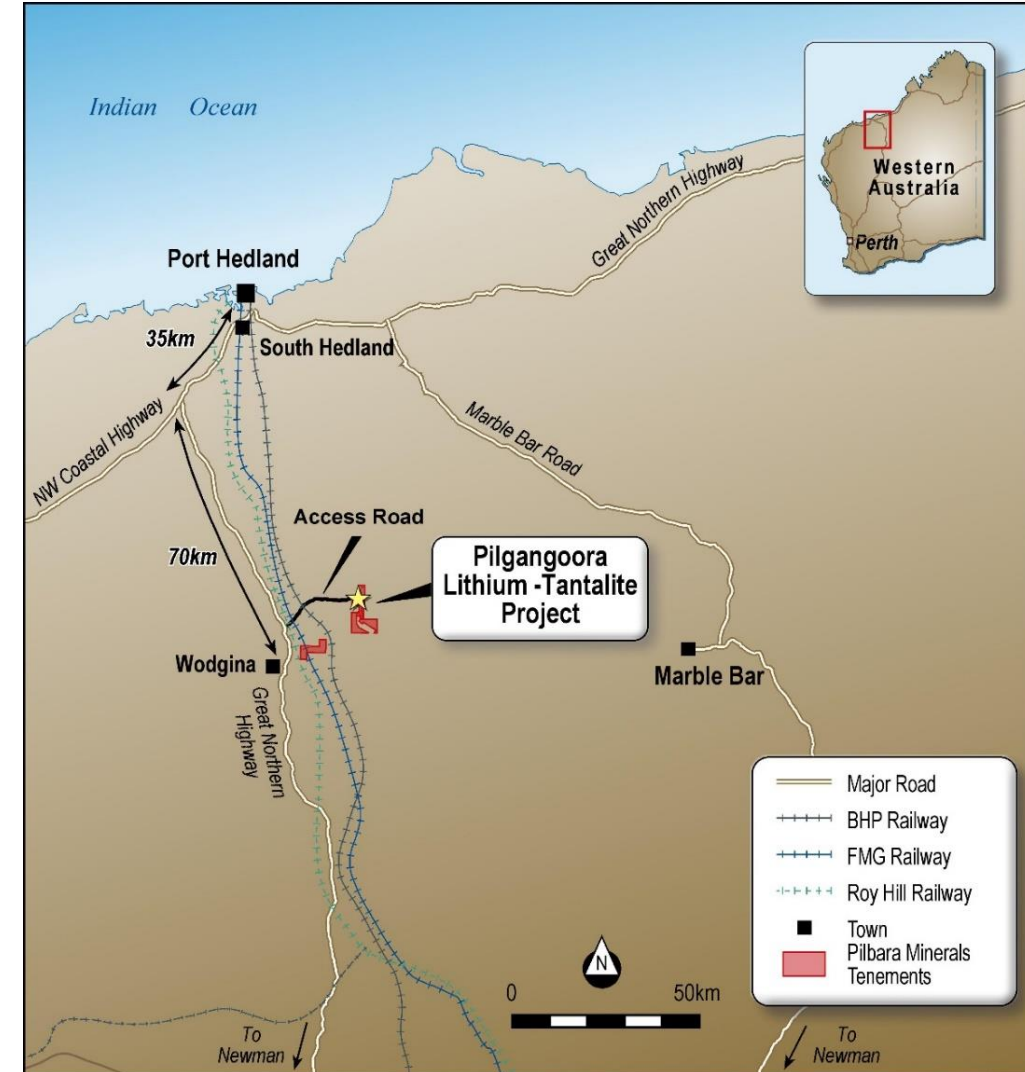
ASX: PLS

Shares on issue	1149 million	Top 20 shareholders	Approximately 37%
Unlisted Options	103 million	Cash at 30/06/2016	\$100 million
Market capitalisation	\$618 million @ 54c	Debt	\$0
Enterprise Value	\$518 million	3 month average daily volume	14.4 m

Developing a World-Class Lithium Mining Centre

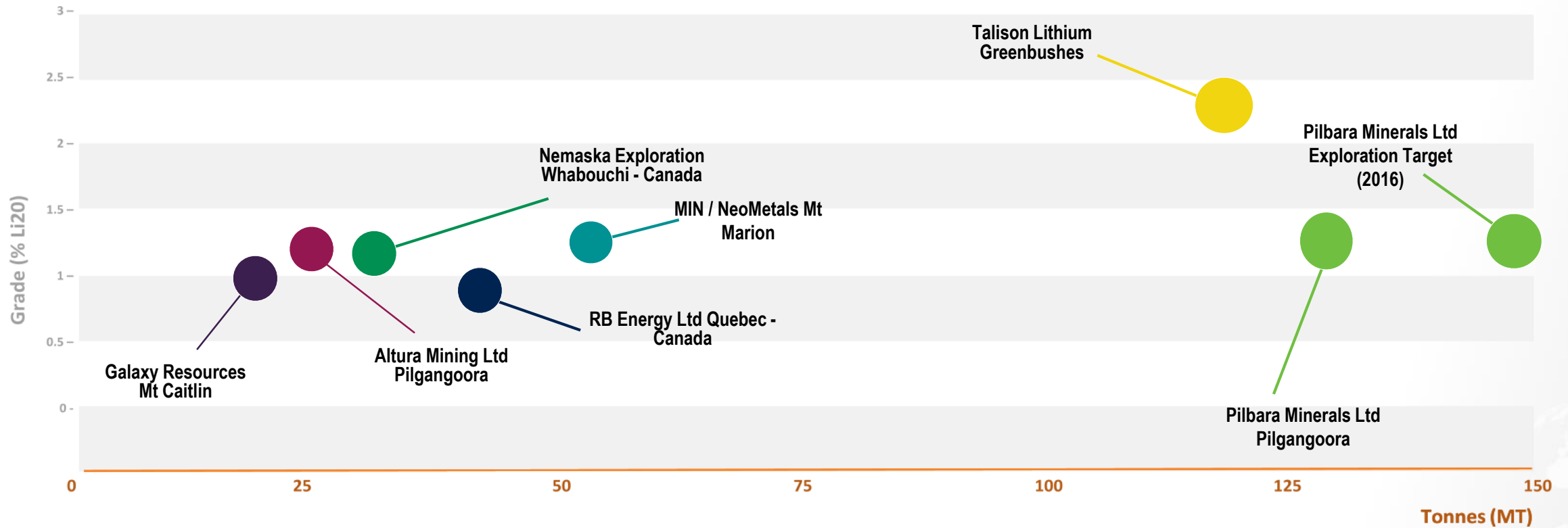


- ▶ Pilgangoora Project located 120km south of Port Hedland in WA's Pilbara region
- ▶ Reserve location offers strategic advantages for infrastructure access, mining approvals and lower cost of operations
- ▶ High quality PFS demonstrates economic potential of one of the world's leading lithium development 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 August 2016



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

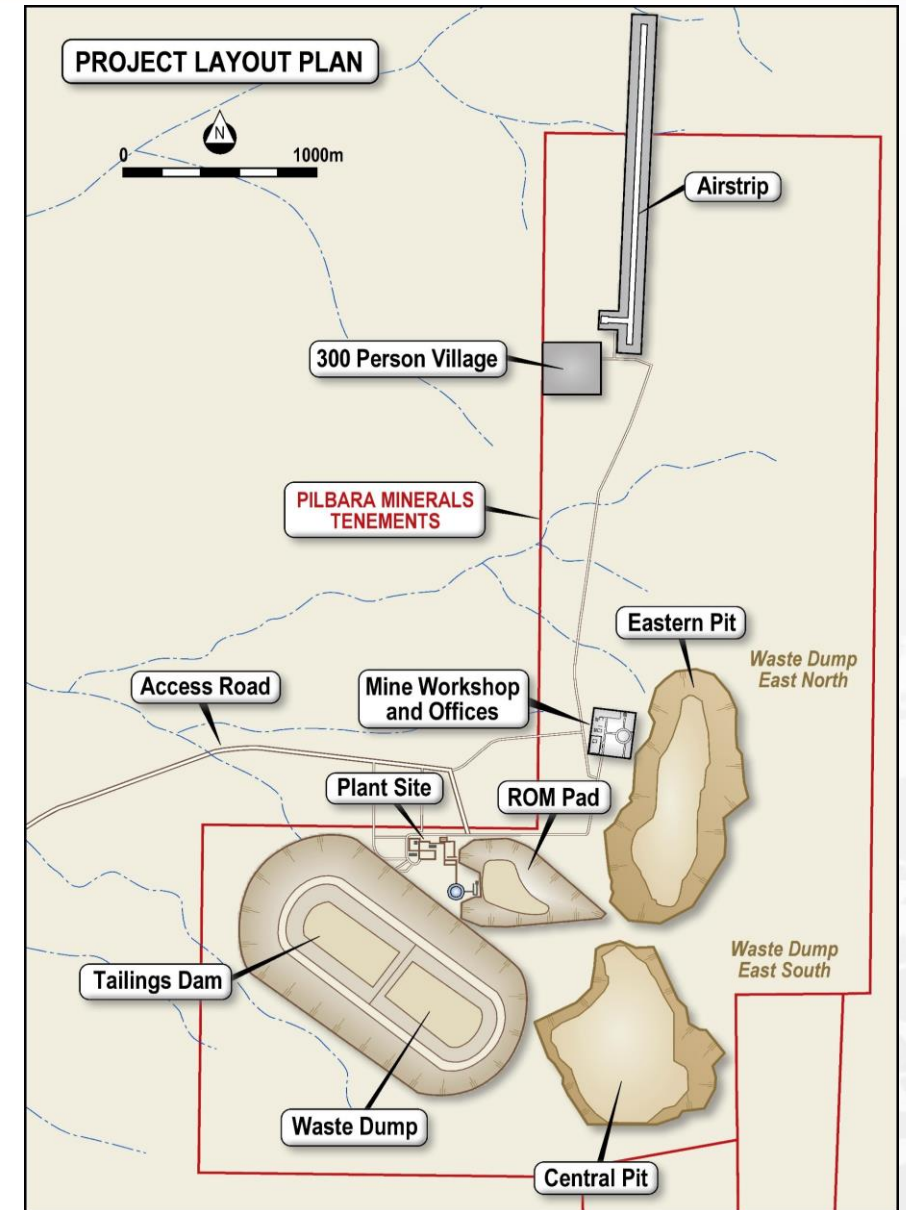
Pilgangoora – A Globally Significant Lithium Resource





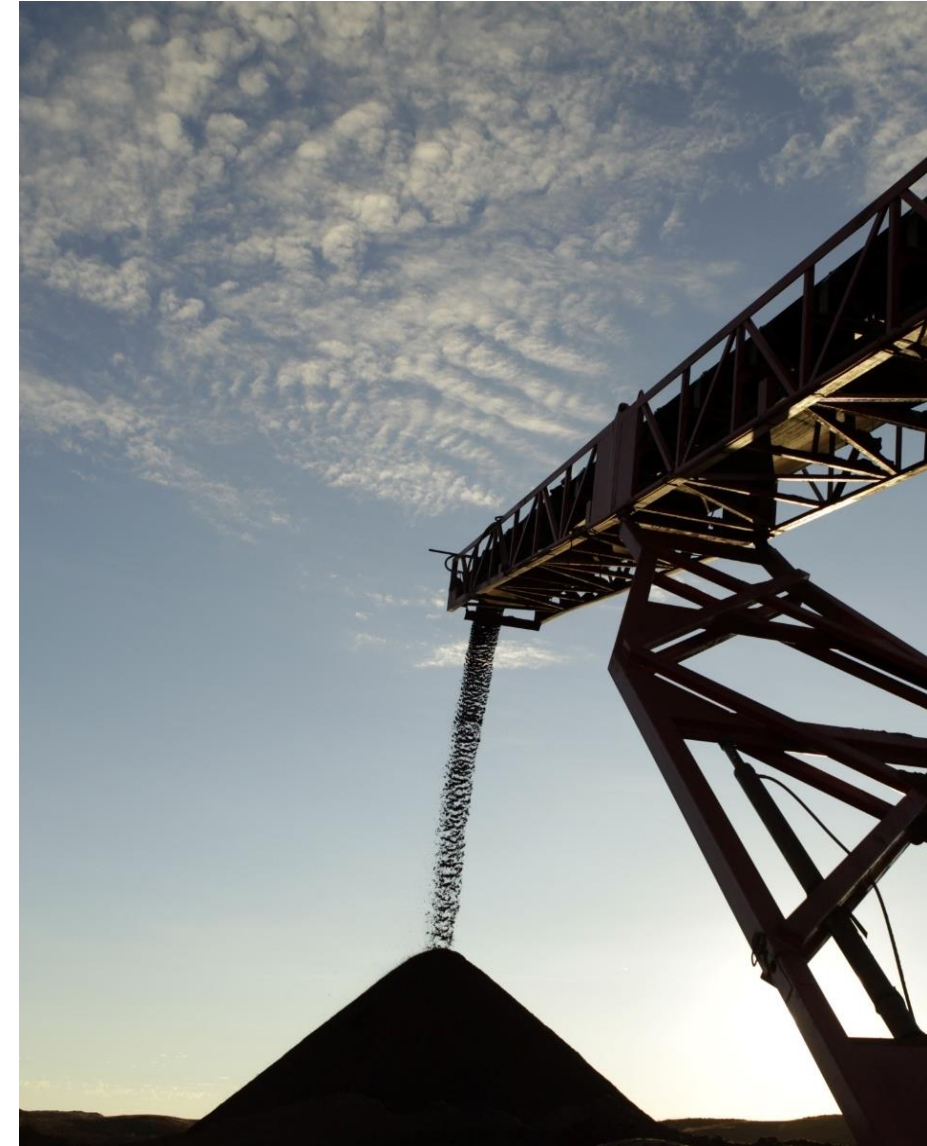
- ▶ Indicated and Inferred Resource of 128.6Mt @ 1.22% Li₂O and 138ppm Ta₂O₅ containing 1,570,000 tonnes Li₂O, and including 39 M lbs Ta₂O₅
- ▶ 2Mtpa mining in Phase 1 and on-site processing. DFS to further describe optional expansion capacity
- ▶ Forecast initial annual production of approximately 330ktpa of 6% spodumene concentrates (48ktpa of Lithium Carbonate Equivalent or LCE) and 274,000lbs pa of tantalite
- ▶ Maiden PFS Ore Reserve of 29.5Mt @ 1.31% Li₂O and 134ppm Ta₂O₅
- ▶ PFS Initial 15 year mine life, with further substantial growth expected arising from expanded resource (July 2016) and DFS reserve

Plant commissioning from 4th quarter, 2017





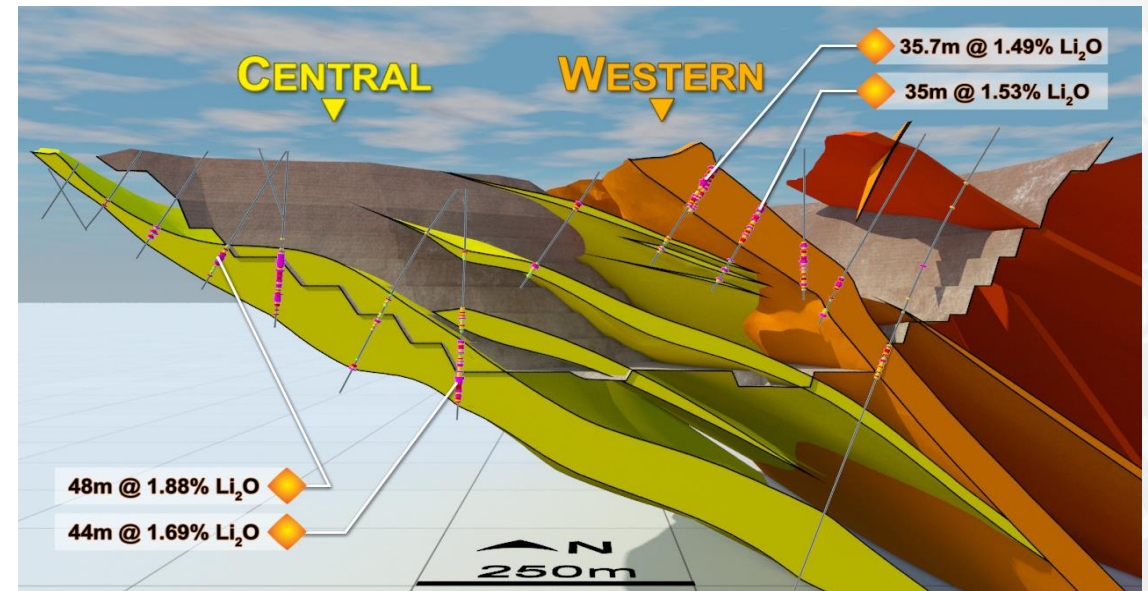
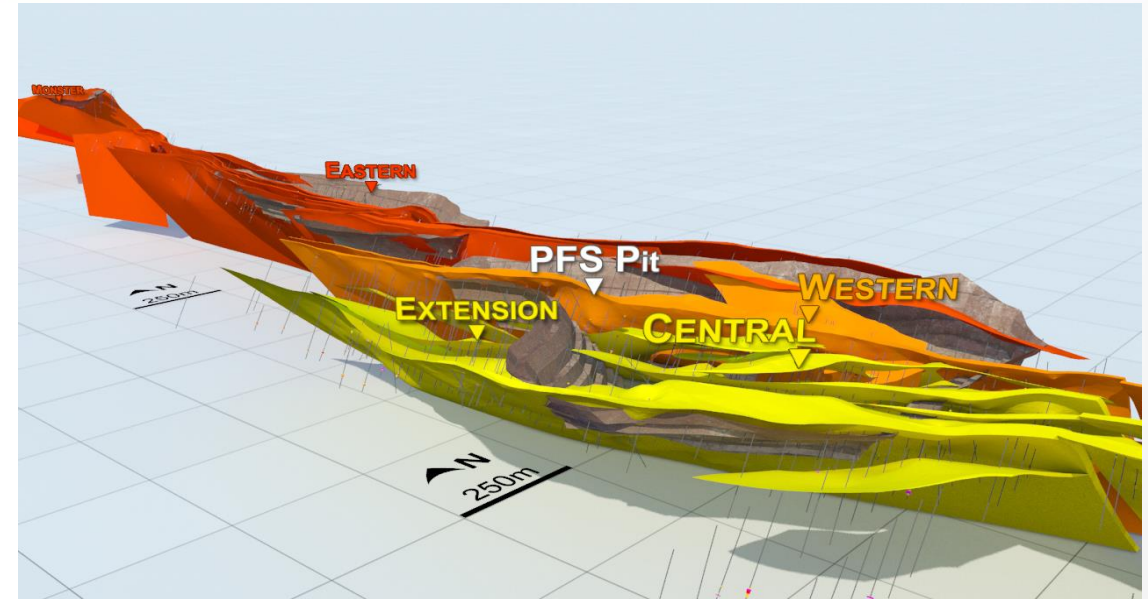
- ▶ Life-of-mine operating cash costs¹ of only USD\$205/tonne of spodumene concentrate FOB (including by-product credits for Ta₂O₅ production)
- ▶ EBITDA over first 5 years of operations of approximately A\$120M per annum
- ▶ PFS based on assumed life-of-mine average spodumene price of US\$456/t FOB – 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



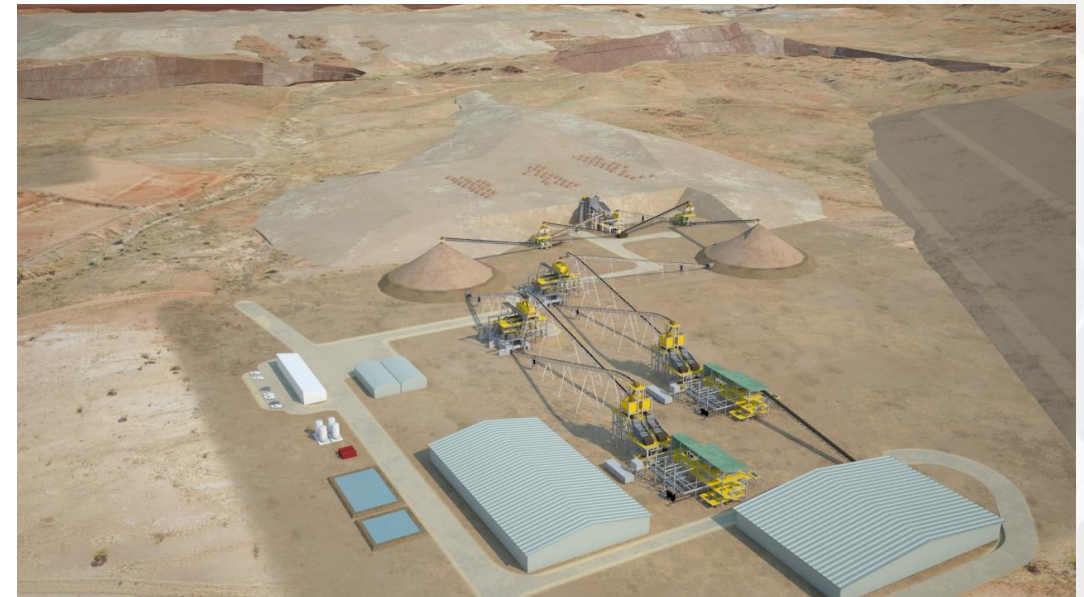
- ▶ Conventional open pit mining proposed, 100-tonne mining fleet
- ▶ 2Mt ore feed per annum, Phase 1
- ▶ PFS Reserve, LOM strip ratio of 3.5:1, waste: ore tonnes.
- ▶ PFS Strip ratio over first 5 years 2.87: 1
- ▶ Both owner-mining and contractor mining scenarios to be considered in DFS
- ▶ Attractive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



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

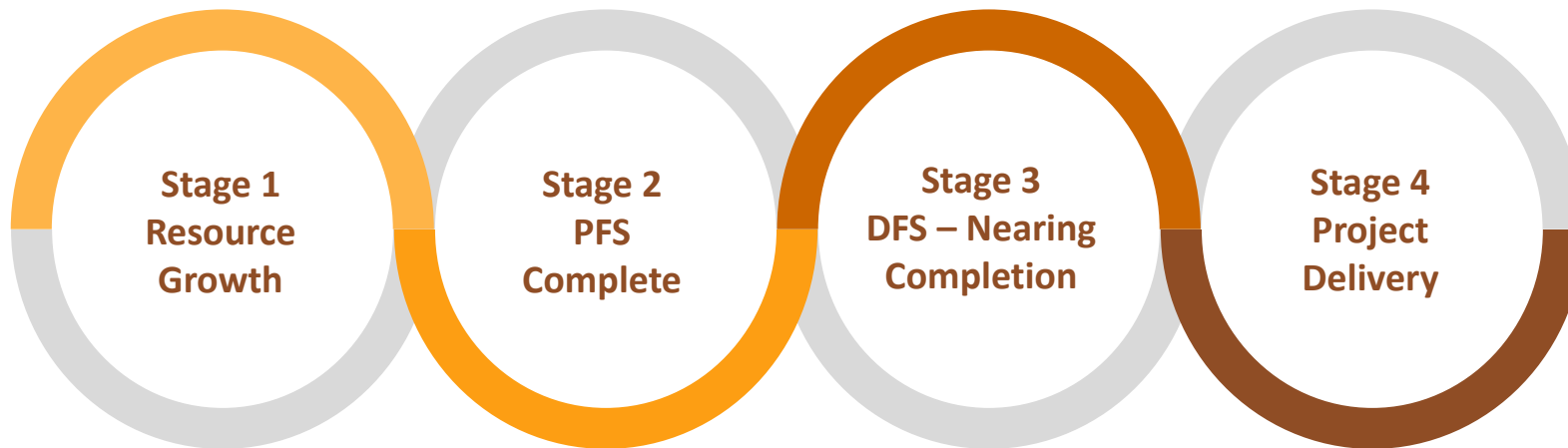


- ▶ Robust PFS: >50% EBITDA margins & 44% IRR based on:
 - ▶ *average spodumene price of US\$456/t FOB*
 - ▶ *29.5mt reserve for mine life of 15 years (at 2mtpa)*
- ▶ We see significant upside potential in several areas:
 - ▶ *Current spodumene price is US\$600/t (margin +60%)*
 - ▶ *DFS targeting mining inventory¹ in excess of 65mt (of current 128mt resource²)*
 - ▶ *Which could increase the mine life to circa +30 years*
 - ▶ *Suggests potential to assess expansion to 4mtpa*
 - ▶ *Potential to produce high-grade, low-iron spodumene attracting a premium price*



1. Mining inventory is not a JORC term, but rather describes tonnes assessed for future mining scenarios
2. See JORC resource announcement of 11th July, 2016. Exploration Target is 130-150mt @ 1.2-1.5% LiO₂

Pilgangoora DFS Underway



Stage 1 Resource Growth

Resource Estimation

- ▶ JORC Inferred /Indicated completed
- ▶ 130Mt Resource
- ▶ Further resource growth expected
- ▶ Massive pegmatite system on Pilbara's tenure presents outstanding opportunities for further resource and reserve growth
- ▶ Key global strategic resource

Stage 2 PFS Complete

Project Definition

- ▶ Maiden reserve, 29.5Mt @ 1.35% Li₂O, 134ppm Ta₂O₅ tantalite
- ▶ Outstanding project economics
- ▶ Very low cost hard-rock Spodumene production
- ▶ Further reserve growth expected, growing mine-life

Stage 3 DFS – Nearing Completion

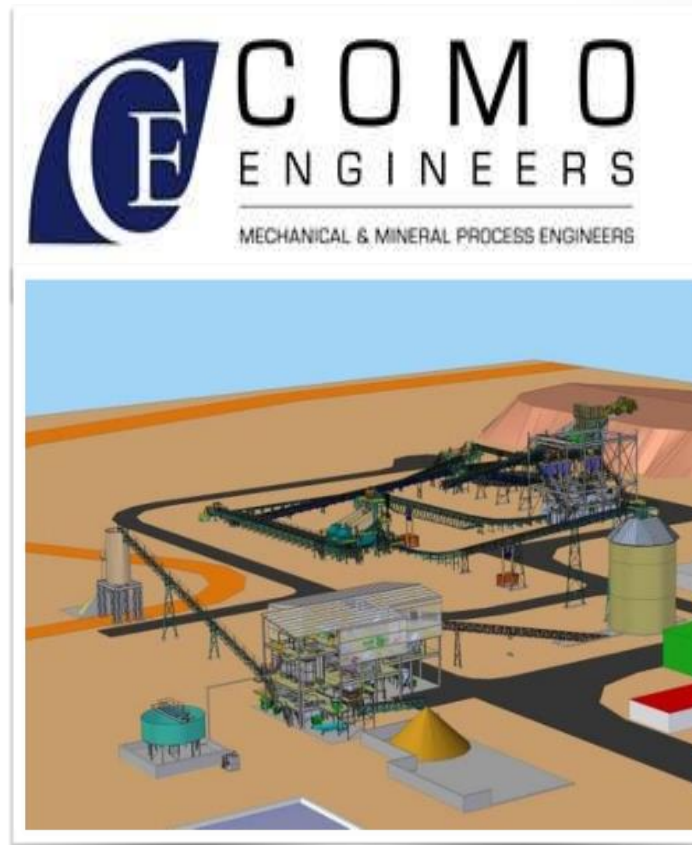
Detailed Design and Project Planning

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

Stage 4 Project Delivery

Finance / Permitting – December 2016

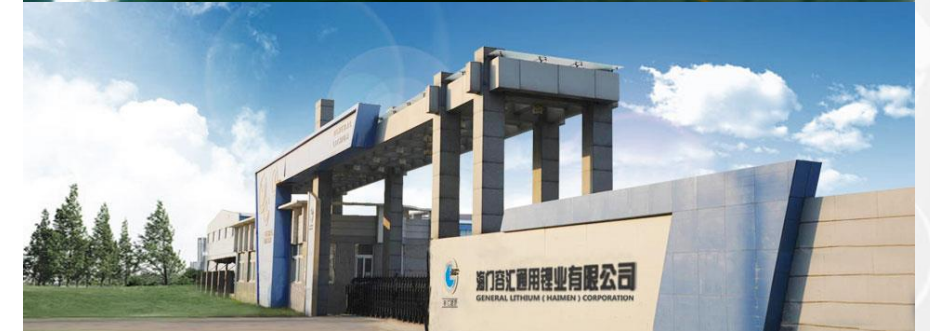
- ▶ Native Title Agreement
- ▶ Statutory mine approvals
- ▶ Major construction and operating contracts
- ▶ Financing
- ▶ Decision to mine
- ▶ Construction
- ▶ Commissioning
- ▶ Production ramp-up



General Lithium – a major producer of lithium chemicals in China



- ▶ Listed on NEEQ, Beijing, Code No: 837358
- ▶ Currently produces 8,000tpa of Lithium Carbonate (LC) & 2,000tpa of High Purity LC 4N (99.99%)
- ▶ Soon to commission 5,000tpa of Lithium Iron Phosphate (LFP), Li battery cathode powder material in Qinghai Province
- ▶ Expansions on going to add another 16,000tpa of Lithium Hydroxide (LiOH) & LC in Jiangxi Province
- ▶ Owns the patent on direct production of LiOH from lithium sulphate
- ▶ One of the top quality producers of Battery Grade LC in China, with established sales to a broad list of major Chinese Li battery cathode powder manufacturers
- ▶ General Lithium to provide the designs, technical expertise and operate proposed JV chemical plant



General Lithium Corporation



Lithium Raw Materials – Battery Supply Chain



*Future Value Added Products
Pilbara and General Lithium*



Spodumene
Mine

Lithium
Carbonate/Hydroxide
Producer



Upgraders
& Component
Mixers



Cathode &
Electrolyte
Producers



Battery
Producer



E Transport
Grid Storage
Grid Stabilisation



Downstream value-added products provides an opportunity to leverage the quality of the Pilgangoora resource

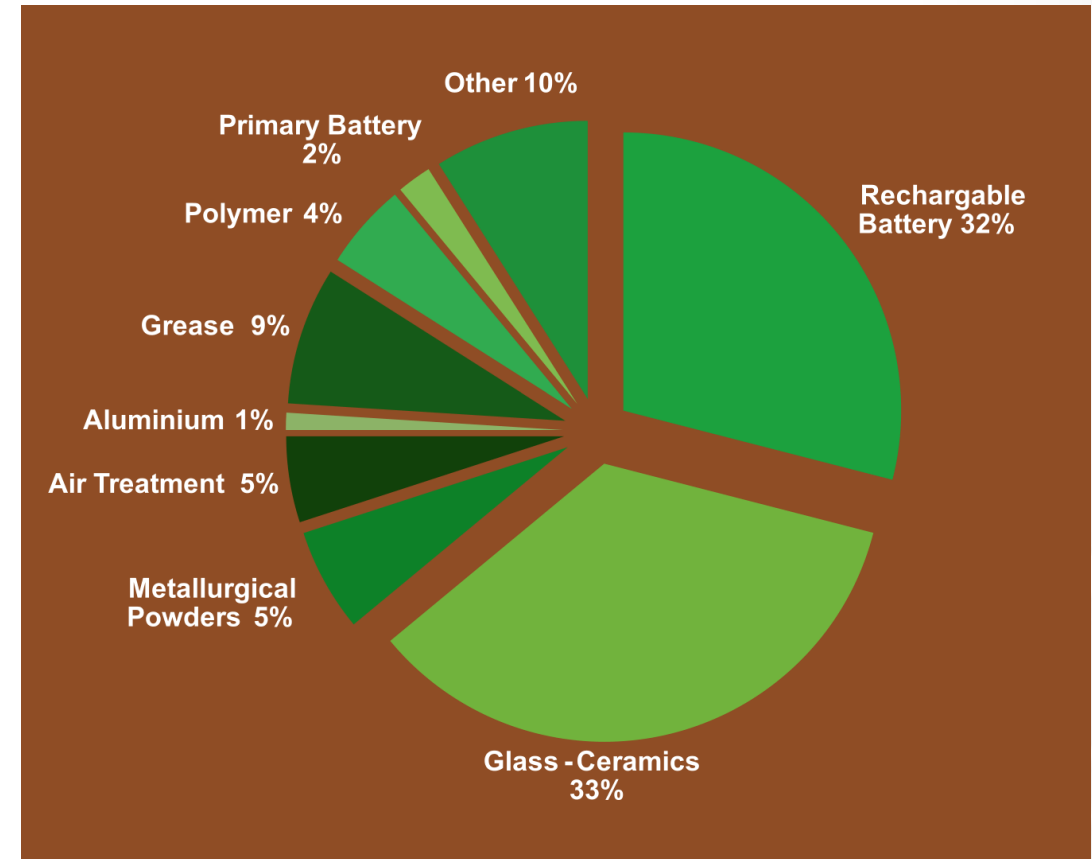


- ▶ Develop partnerships with key lithium chemicals industry participants
- ▶ Access to technology, operating expertise and intellectual property
- ▶ Shortcut to Pilbara's participation in downstream lithium chemicals market, supporting the Company's future growth
- ▶ Diversifies Pilgangoora product export destinations beyond China
- ▶ Potential to become a key quality carbonate and/or hydroxide supplier to markets ex-China
- ▶ Pilgangoora's significant resource scale, grade and preeminent location could support multiple chemical facilities
- ▶ Lithium Australia deal to facilitate continued SiLeach testwork on Pilgangoora samples, potential for future Port Hedland facility





- ▶ Pilgangoora spodumene concentrates meet the metallurgical specifications of the entire range of lithium products
- ▶ Cornerstone offtake agreement with General Lithium
- ▶ 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 transport electrification
- ▶ Increased production of chemical lithium products restrained by lack of mine supply



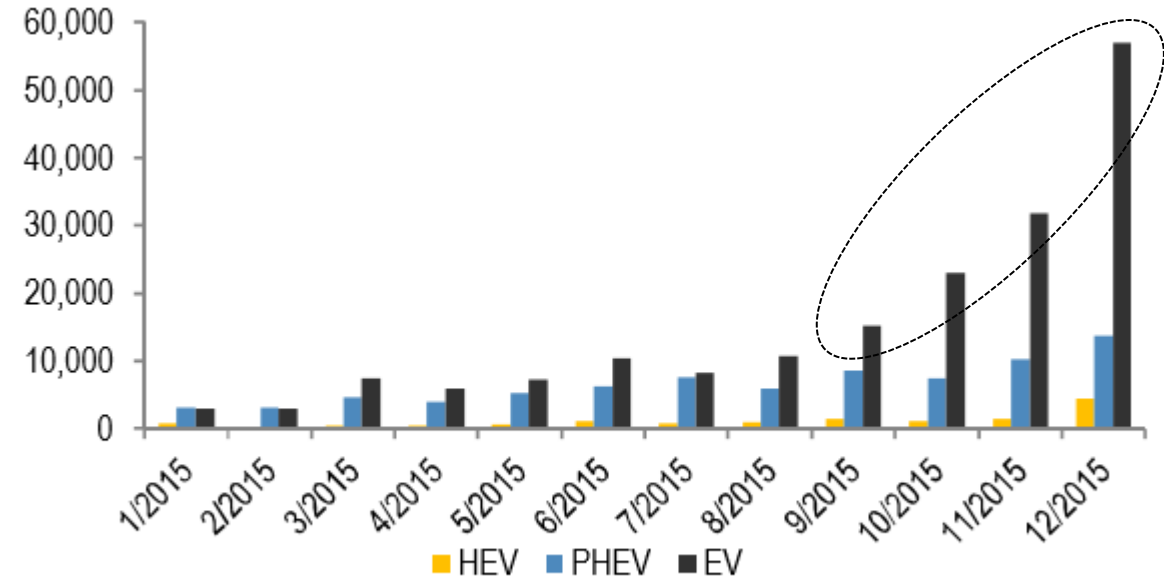
SOURCE: ROSKILL 2015 Demand Data

Pilgangoora spodumene concentrate meets the specifications of the entire lithium market

China – A Lithium Consumption Powerhouse



- ▶ Broad Central Government policy position towards ‘New Energy’
 - ▶ *Domestic carbonate pricing took-off coincident with acceleration in EV sales*
- ▶ Significant expansion through entire lithium-ion supply chain, including major chemical conversion capacity expansion (spodumene to Li₂CO₃ & LiOH)
- ▶ E-Bike phenomenon
 - ▶ *30 Million E Bikes produced annually in China, converting to Li ion batteries.*
- ▶ Broad transport electrification
 - ▶ *5M new energy vehicles by 2020*
- ▶ Many Brands, unheard of in the western world



Source: CAAM

Rank	OEM	Model	Sales volume	2015 market shr
1	BAIC	D20 (E150)	16,598	14%
2	Jiangnan	Zotye Cloud 100	15,467	13%
3	Chery	QQ3/ New QQ	12,494	11%
4	Geely-Kandi	Panda	8,756	6%
5	BYD	e6	8,125	7%
6	Geely-Kandi	K10	7,966	8%
7	Jiangnan	Zotye E20	6,385	7%
8	JMC	D100	5,268	5%
9	Lifan	320	4,345	3%
10	Geely-Xin Dayang	ZD D2	3,777	2%
	Others		26,620	26%
China total EV sales			115,801	100%

Source: CAAM

Global Motor Vehicle Lithium Demand



- ▶ Tesla Series 3 to be released in 2017, retail price of US\$36,000, 400,000 orders already and growing
- ▶ 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, Volkswagen major EV model expansion in 2017-2018

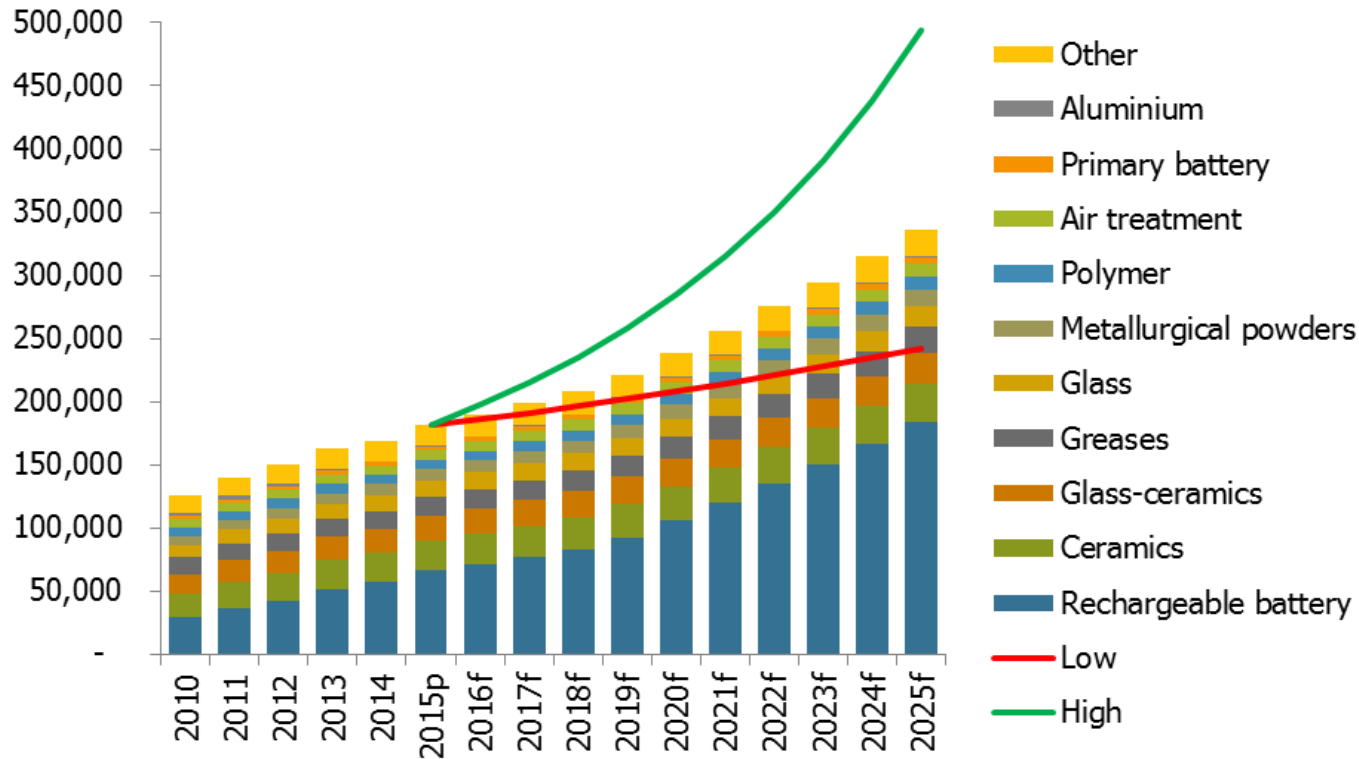


- ▶ China, Japan and Korean Government policy strongly supports EV's with large rebates, zero sales tax and free licensing.
- ▶ Toyota will cease using lead acid batteries from 2017 with 100% adoption of Li ion batteries in all models.
- ▶ Japanese and Korean car makers anticipated to announce major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





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



SOURCE: ROSKILL, Jan16

- ▶ Lithium-ion batteries driving demand
 - ▶ 20%+ annual growth since 2000
 - ▶ Currently ≈35% 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



Emerging low-cost Australian strategic metals producer

Largest lithium resource and high 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

Downstream processing initiatives/partnerships to leverage quality of Pilgangoora resource





Developing a globally significant new Australian lithium business

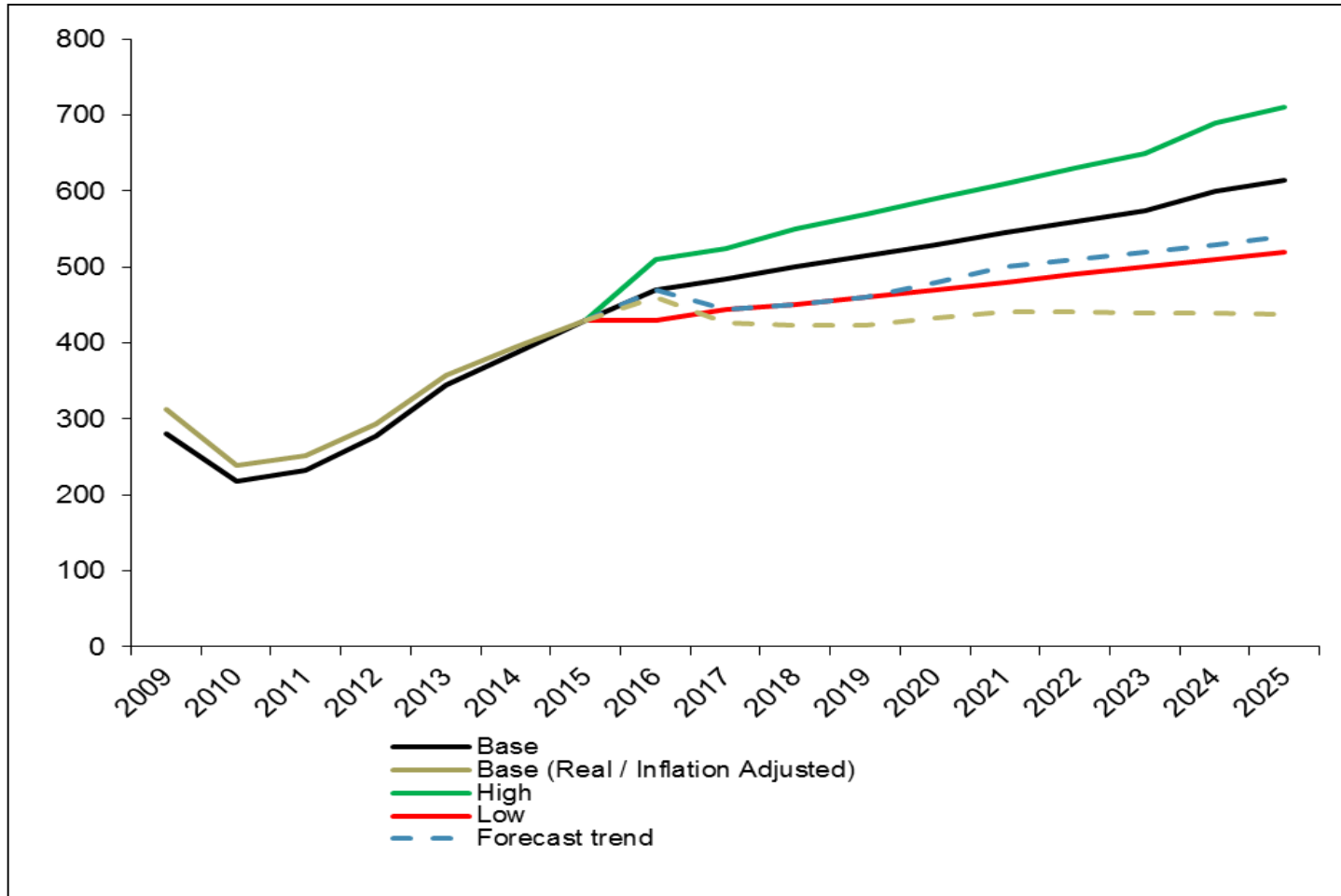


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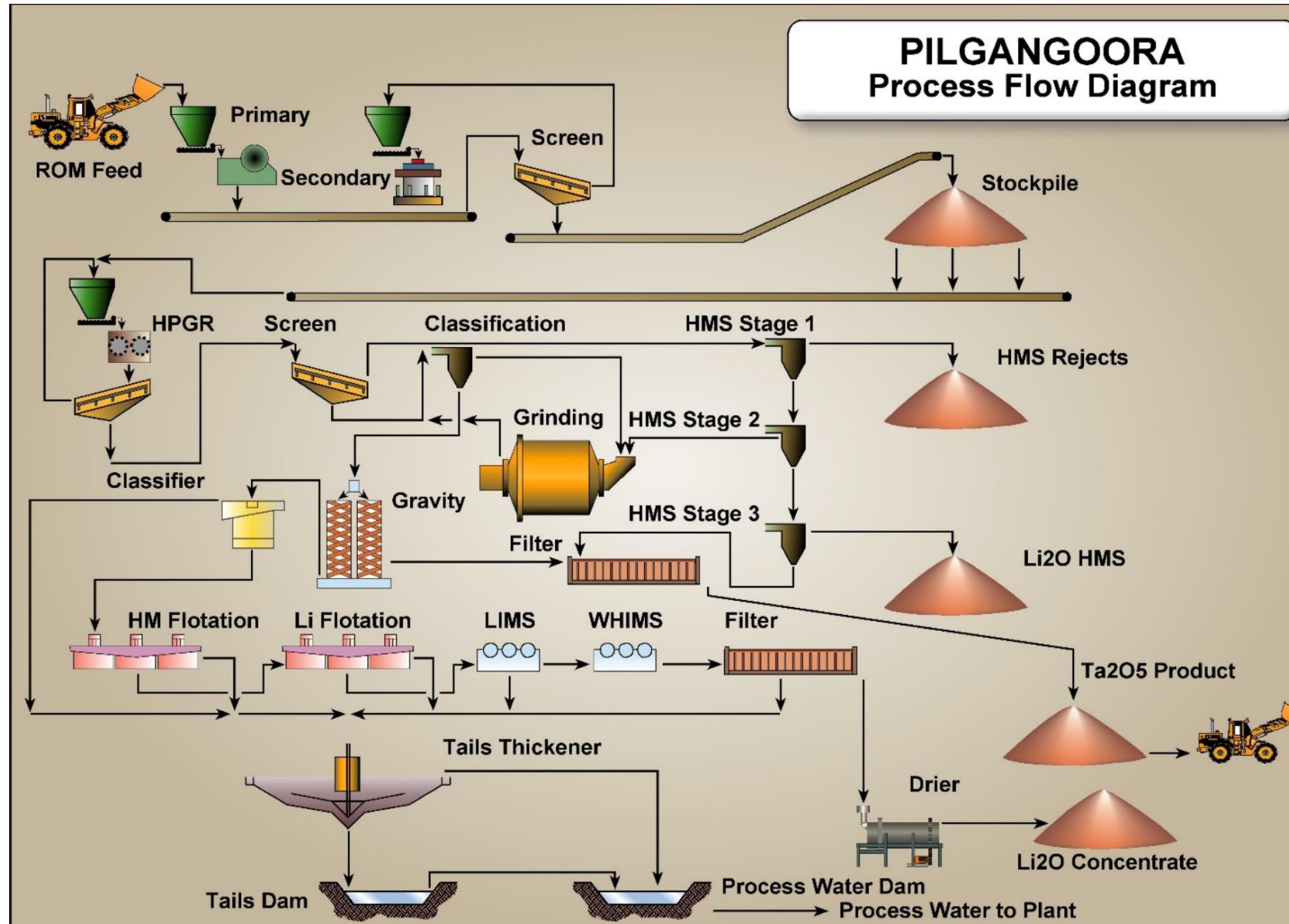
Price forecasts – Chemical-grade spodumene



(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*
 - ▶ *NPV₁₀ A\$710M*
 - ▶ *IRR 68%*
- ▶ Pricing to further improve with the introduction of Technical Grade product to the DFS analysis

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

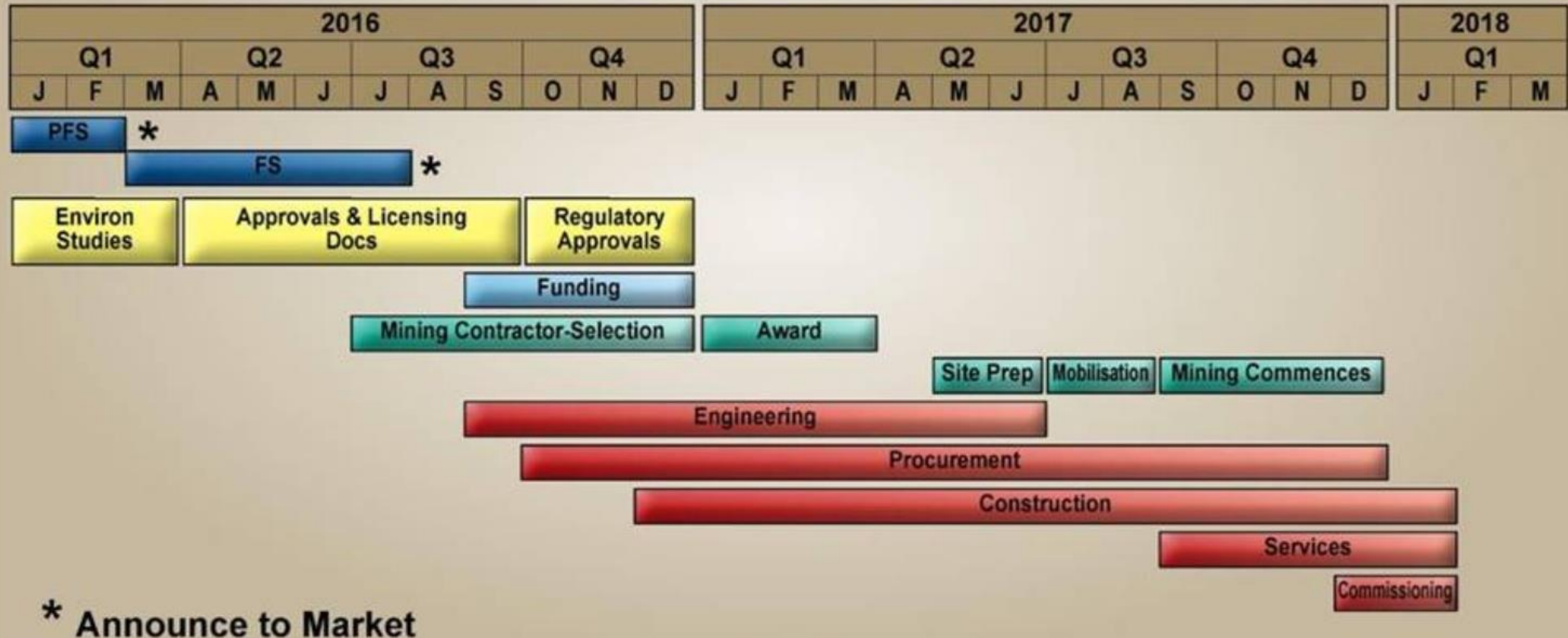


A Rapid Pathway to Financing and Development



PILGANGOORA PROJECT SCHEDULE

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



Pilgangoora Project *Resource and Reserve Tables*



Pilgangoora Resource Table (July 2016)

Category	Mt	Li ₂ O (%)	Ta ₂ O ₅ (ppm)	Fe ₂ O ₃ (%)	Li ₂ O (T)	Ta ₂ O ₅ (M lb)
Measured	18.0	1.36	150	0.45	245,000	5.9
Indicated	65.6	1.24	131	0.61	812,000	19.0
Inferred	45.0	1.15	144	0.73	515,000	14.2
TOTAL	128.6	1.22	138	0.63	1,572,000	39.2

Pilgangoora Reserve Table (March 2016)

Category	Tonnage (Mt)	Li ₂ O (%)	Ta ₂ O ₅ (ppm)	Fe ₂ O ₃ (%)	Li ₂ O (T)	Ta ₂ O ₅ (T)	Ta ₂ O ₅ (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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Pilgangoora Lithium-Tantalite Project

Developing a globally significant new Australian lithium project