

# PILBARA MINERALS LIMITED



Pilgangoora – the world's leading  
lithium development project

Corporate Presentation – 15 May 2017

# Disclaimer and Competent Person's Statement



## Forward Looking Statement Disclaimer

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## Competent Person Statements

Information relating to the mineral resource estimate at the Pilgangoora Project is extracted from the ASX announcement dated 25 January 2017 entitled "*Pilgangoora Resource Update*", information relating to the current ore reserve estimate at the Pilgangoora Project is extracted from the ASX announcement dated 22 August 2016 entitled "*Pilbara More Than Doubles Pilgangoora Ore Reserves*", information relating to the maiden ore reserve estimate at the Pilgangoora Project is extracted from the ASX announcement dated 10 March 2016 entitled "*Pilgangoora Lithium-Tantalite Pre-Feasibility Study*" and information relating to the production target and forecast financial information derived from the production target is extracted from the ASX announcement dated 20 September 2016 entitled "*Pilgangoora DFS Confirms World Class Lithium Project*" (each of which is available at [www.pilbaraminerals.com.au](http://www.pilbaraminerals.com.au)). The Company confirms that it is not aware of any new information or data that materially affects the information included in these ASX announcements and that all material assumptions and technical parameters underpinning the estimates, the production target and forecast financial information derived from the production target in the announcements continue to apply and have not materially changed.



# Pilbara Minerals Investment Highlights



Emerging low-cost Australian strategic metals producer

Largest spodumene lithium resource and high grade relative to ASX-listed peers

Outstanding project economics demonstrated by DFS

Rapid pathway to financing and concentrate production from 1<sup>st</sup> Qtr 2018

Ideally placed to capitalize on robust market outlook and demand

Project location, low-cost, scale and product quality ensure Pilgangoora is a key supply solution to the burgeoning lithium raw material market





# About Pilbara Minerals

Lithium Market

Pilgangoora Project

Summary

Supplementary Information

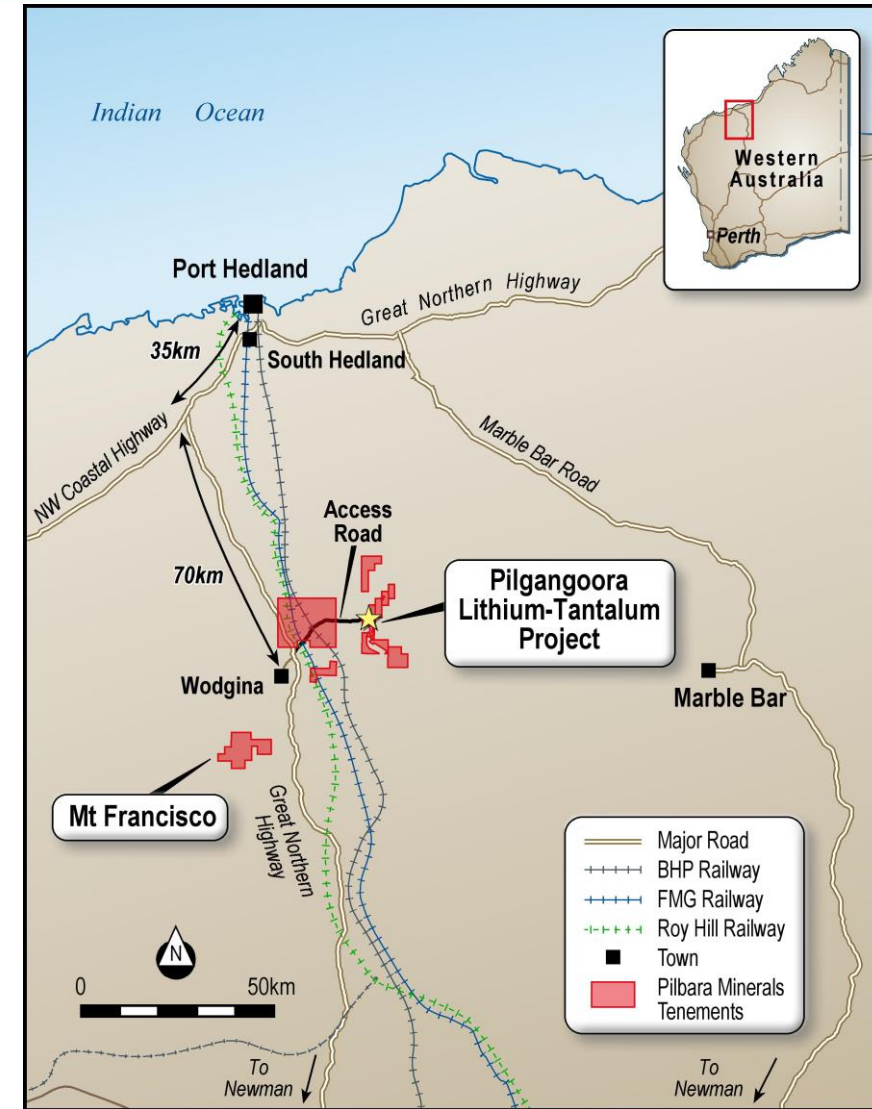
# Pilbara Minerals – overview



- ▶ Pilbara Minerals is an Australian ASX listed company with a market capitalisation of AUD 543m (12 May 17) and has a 100% ownership interest in the world-class Pilgangoora Lithium -Tantalum Project (“Project”)
- ▶ The Project is located in the Pilbara region of Western Australia, a proven mining jurisdiction 120km south of the port of Port Hedland with established transport and port infrastructure
- ▶ Second largest spodumene-tantalum resource in the world
- ▶ Definitive Feasibility Study (“DFS”) confirmed technical and financial viability of 2Mtpa Pilgangoora development
  - ▶ *Lower cash operating costs<sup>1)</sup> over first 15 years: USD 196/t CFR real (SC6.0 concentrate); LOM cash operating costs<sup>1)</sup> of USD 207/t CFR real*
  - ▶ *36-yr mine life, NPV<sup>2)</sup><sub>10%</sub> AUD 709m after AUD 224m capex (inclusive of AUD 10 million pre-production operating costs); rapid payback (~2.7 years)*
- ▶ Updated capex to AUD 234 million to reflect revised scope post the DFS
- ▶ Pre-Feasibility Study (“PFS”) demonstrated scale and compelling economics for a potential 4Mtpa expansion case
- ▶ Cornerstone offtake partners, Ganfeng Lithium and General Lithium
- ▶ Advancing rapidly to production to take advantage of robust market opportunity:
  - ▶ *Early construction works commenced December 2016*
  - ▶ *Targeting commissioning from March 2018*
- ▶ New exploration and development opportunity on the horizon with Mt Francisco

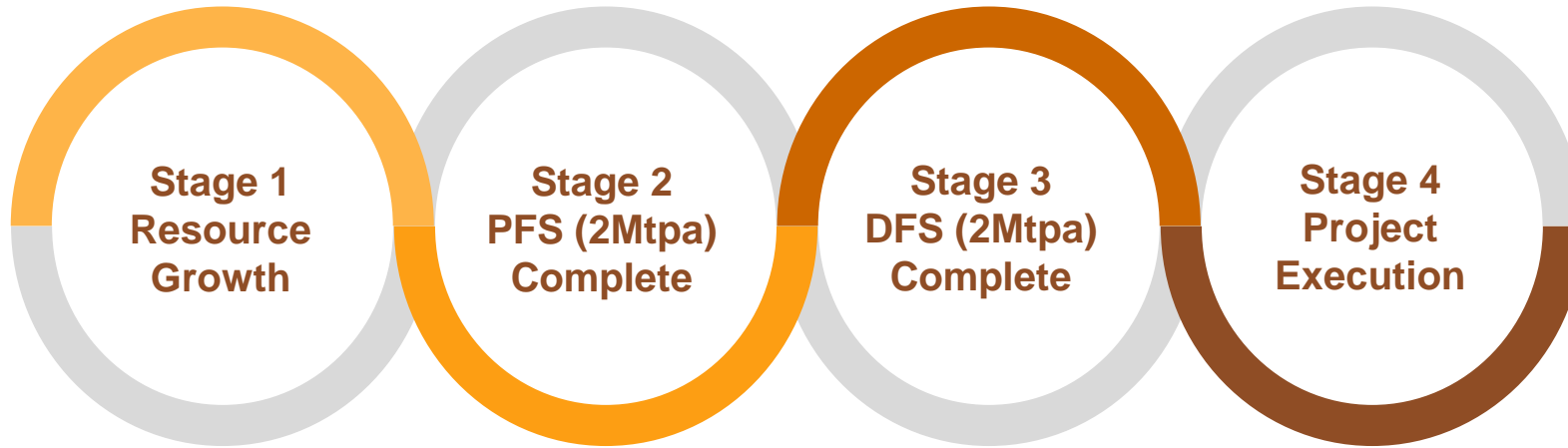
1. Cash operating costs include all mining, processing, transport, port, shipping/freight, site based general and administration costs, and corporate administration/overhead costs allocation, are net of Ta2O5 by-product credits, but excludes state and private royalties and native title costs

2. Net Present Values (NPV) are presented on a nominal after tax basis



**An emerging, low-cost producer of lithium and tantalum in the Pilbara region of Western Australia, a Tier-1 mining jurisdiction**

# Pilgangoora 2Mtpa – project execution underway



Resource Estimation	Project Definition	Detailed Design and Project Planning	Project Execution – from December 2016
<ul style="list-style-type: none"> <li>▶ JORC Inferred /Indicated 130Mt Resource completed</li> <li>▶ Further resource growth expected</li> <li>▶ Massive pegmatite system on Pilbara's tenure presents outstanding opportunities for further resource and reserve growth</li> <li>▶ Key global strategic resource</li> </ul>	<ul style="list-style-type: none"> <li>▶ Maiden ore reserve, 29.5Mt @ 1.31% Li<sub>2</sub>O, 134ppm Ta<sub>2</sub>O<sub>5</sub> tantalite</li> <li>▶ Outstanding project economics</li> <li>▶ Low cost hard-rock Spodumene production</li> <li>▶ Further ore reserve growth expected, growing mine-life</li> </ul>	<ul style="list-style-type: none"> <li>▶ Updated ore reserve of 69.8Mt @ 1.26% Li<sub>2</sub>O, 132ppm Ta<sub>2</sub>O<sub>5</sub>; long mine-life,</li> <li>▶ Plant process and design optimisation</li> <li>▶ Product specification and bulk samples to customers</li> <li>▶ Tailings design</li> <li>▶ Opex &amp; Capex updates</li> <li>▶ Updated financial models</li> </ul>	<ul style="list-style-type: none"> <li>▶ Updated resource of 156Mt @1.25% Li<sub>2</sub>O</li> <li>▶ Native Title Agreement</li> <li>▶ Mining Leases granted</li> <li>▶ Plant EPC Contract Tender/Award</li> <li>▶ Native Vegetation Clearing Permit</li> <li>▶ Mining Proposal Approval</li> <li>▶ Financing / FID</li> <li>▶ Other construction and operating contracts</li> <li>▶ Major Works Construction</li> <li>▶ Commissioning</li> </ul>



PRIMERO





# Experienced board of directors and management team



## **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



## **Ken Brinsden** – Chief Executive Officer and Managing Director

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

## Key management

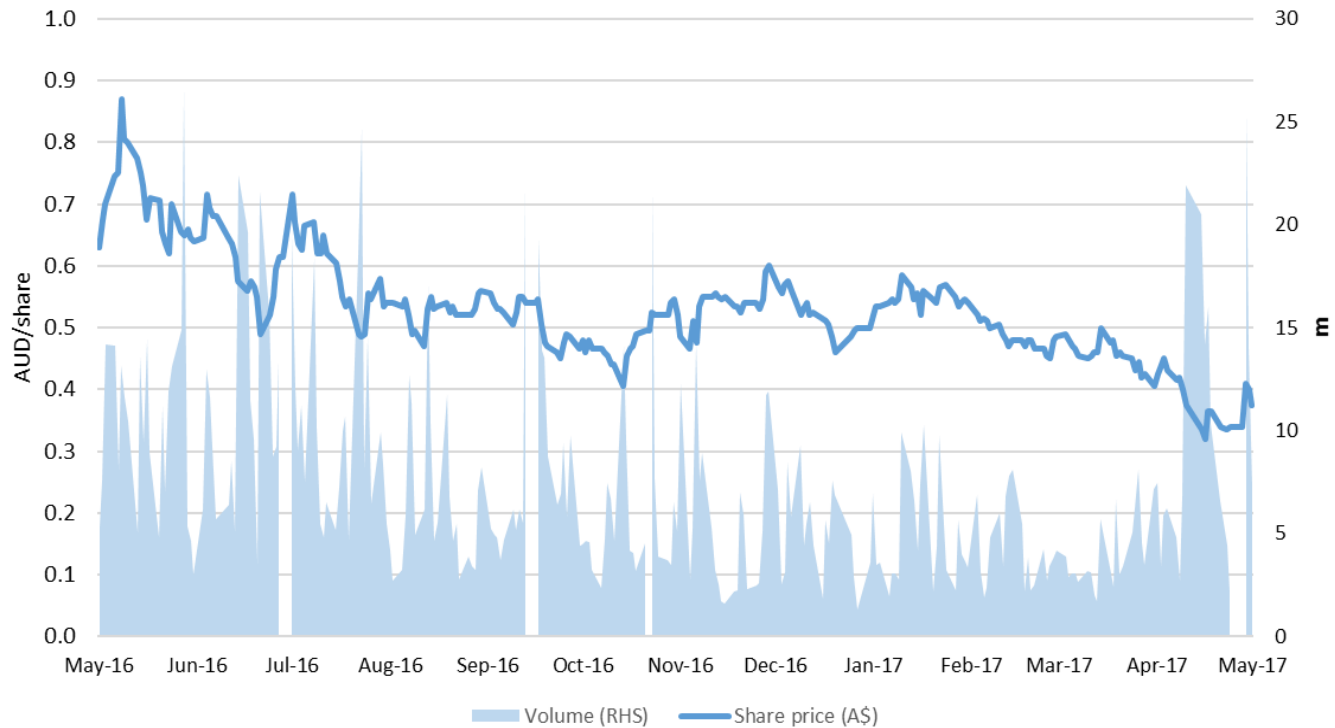
<b>Brian Lynn</b>	Chief Financial Officer
<b>Alex Eastwood</b>	Company Secretary and General Counsel
<b>Jason Cross</b>	Manager – Projects
<b>Greg Durack</b>	Operations Manager
<b>Anand Sheth</b>	Sales and Marketing Executive
<b>Garry Plowright</b>	Land Access & Approvals Manager
<b>John Holmes</b>	Exploration Manager

## Board of directors

<b>Tony Kiernan</b>	Non-Executive Chairman
<b>Ken Brinsden</b>	Managing Director
<b>Steve Scudamore</b>	Non-Executive Director
<b>Neil Biddle</b>	Non-Executive Director
<b>John Young</b>	Technical Director
<b>Nick Cernotta</b>	Non-Executive Director



## Pilbara Minerals Share price



### Capital Structure (12 May 17)

Shares on issue	1,277 million
Unlisted Options	103 million
Market capitalisation	AUD 543 million @ 42.5¢
Enterprise Value	AUD 478 million

### ASX: PLS

Top 20 shareholders	Approximately 42%
Cash at 31 March 2017	65.5 million
Debt	Nil
3 month average daily volume	14.4 million







**About Pilbara Minerals**

**Lithium Market**

**Pilgangoora Project**

**Summary**

**Supplementary Information**



*The way we Generate, Use, Distribute and **Store** energy is changing.*

***Electric Vehicle** uptake driving the growth in demand, followed by energy storage.*

## The Lithium-ion Battery is the storage of choice



Super Energy Density



Lighter, more compact & portable



Longer Life-cycle and more efficient



More environmentally friendly

## Batteries are the fastest growing segment of Lithium Demand



**Transportation**

Cars, buses, bikes.



**Renewable  
Grid Storage**

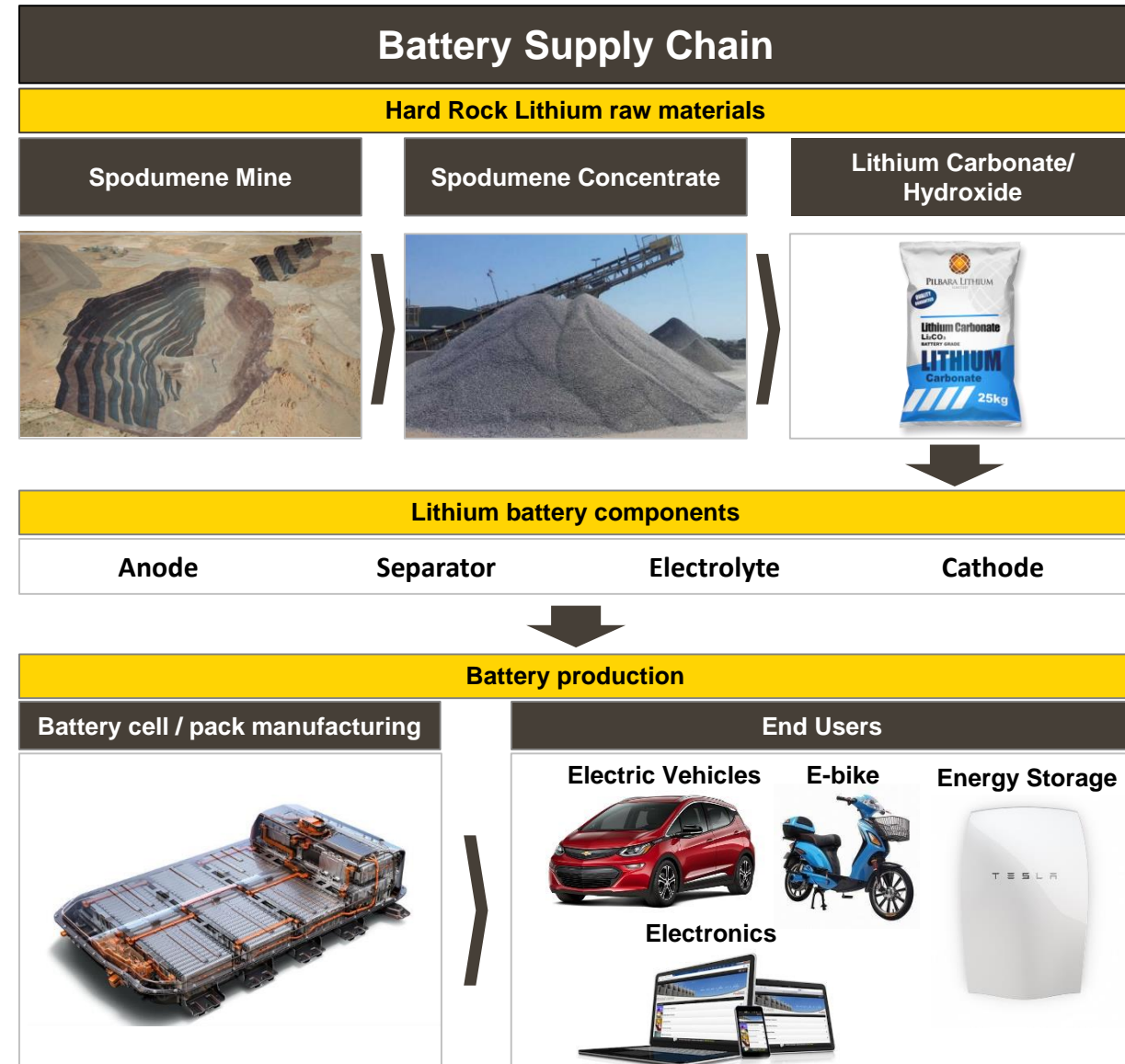


**Consumer Electronics  
+ power tools**

# Lithium raw materials The key ingredient of the battery supply chain

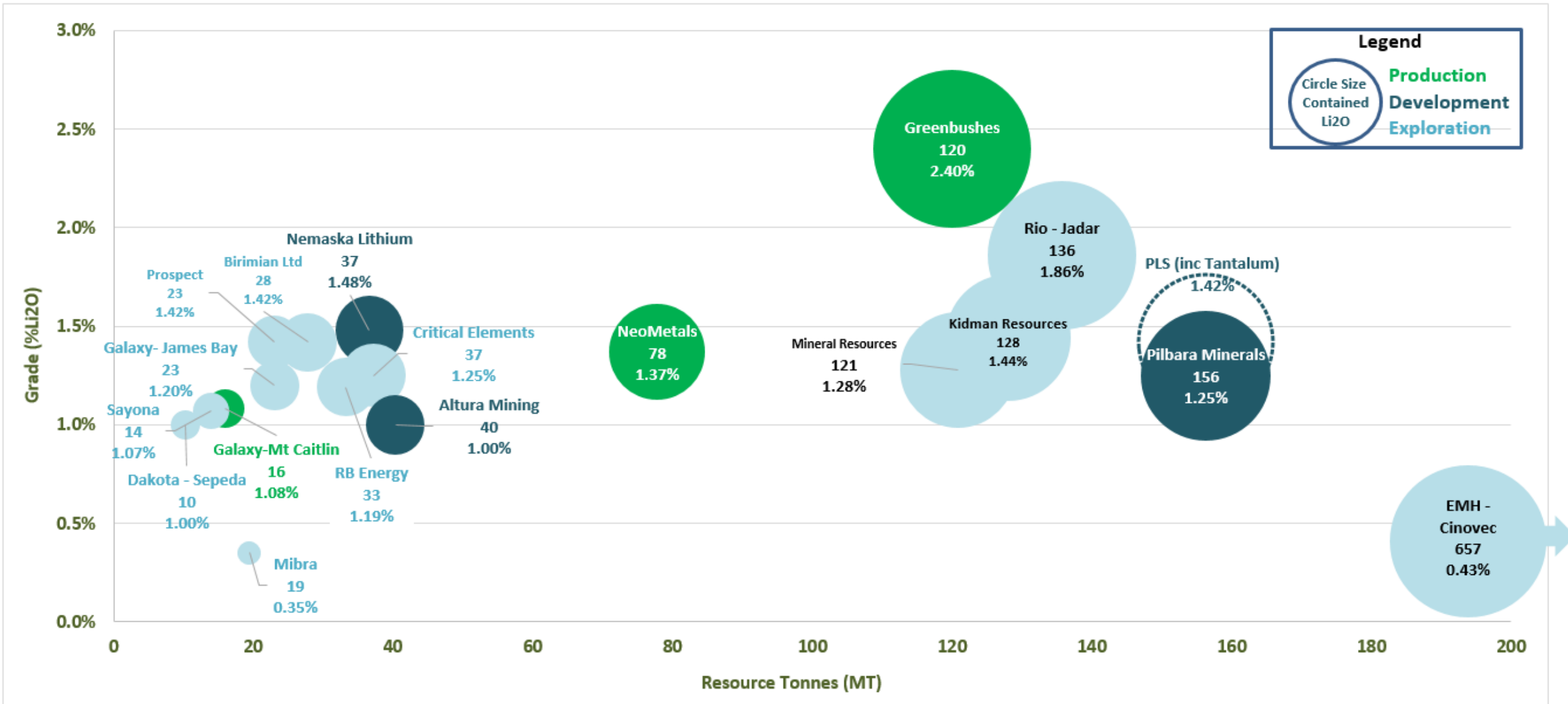


- ▶ Lithium raw materials are the vital ingredient for lithium battery technology
- ▶ Lithium is sourced predominantly from:
  - ▶ *hard-rock mining of spodumene deposits;*
  - ▶ *extracting lithium from brine deposits*
- ▶ Australia is the world's largest producer of spodumene concentrate with three mines in production
- ▶ The Pilgangoora deposit is one of the world's largest lithium-tantalum resource with Measured, Indicated and Inferred Resources of 156.3Mt @ 1.25% Li<sub>2</sub>O (lithia) and 128ppm Ta<sub>2</sub>O<sub>5</sub>
- ▶ Spodumene ore is processed into a spodumene concentrate (6% Li<sub>2</sub>O) and then converted into a lithium carbonate or lithium hydroxide to be utilized in lithium battery components
- ▶ Approximately 7.5t of 6% Li<sub>2</sub>O spodumene concentrate is required to produce 1t of lithium carbonate (at 90% recovery to lithium carbonate)



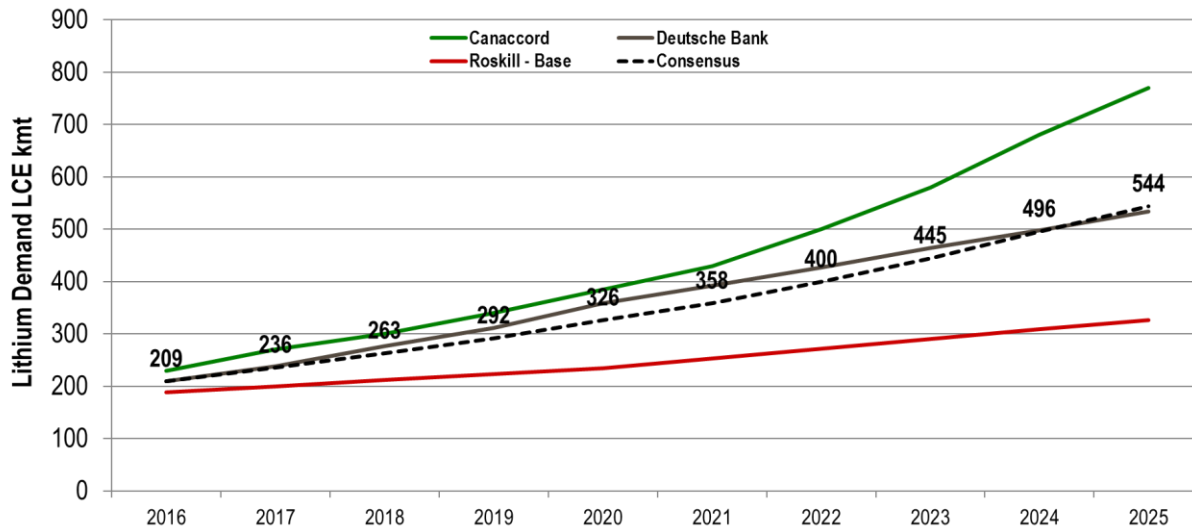


# Pilgangoora – a globally significant hard rock lithium resource





## Global lithium demand forecast

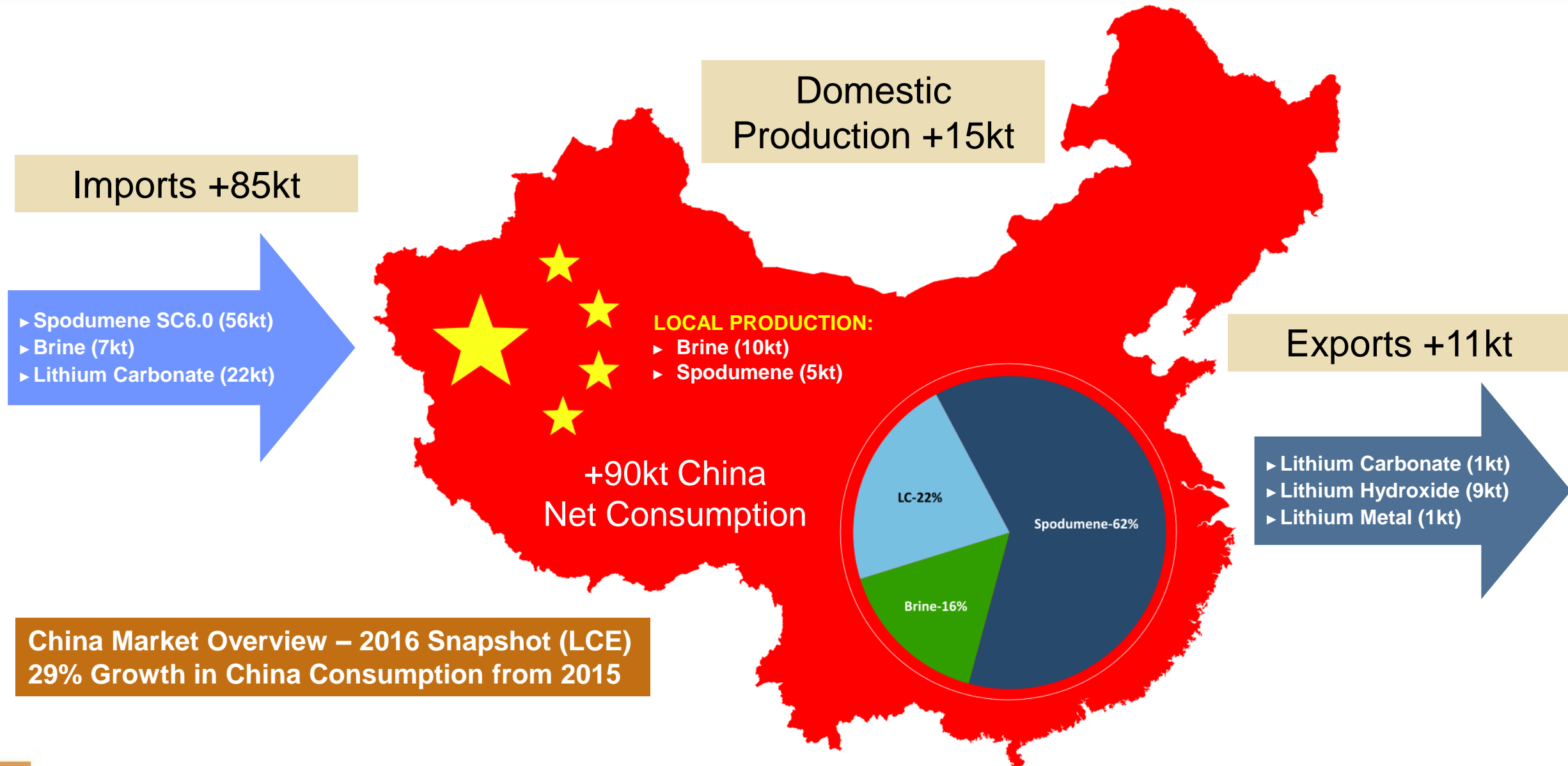


- ▶ Lithium has a variety of applications with traditional uses including ceramics, glass and greases
- ▶ Developments in the application of lithium in rechargeable batteries is the major growth factor in the future demand for lithium
- ▶ Technological advancements and increasing production capacity for EV's and E-Storage is accelerating lithium demand

## China – A Lithium Consumption Powerhouse

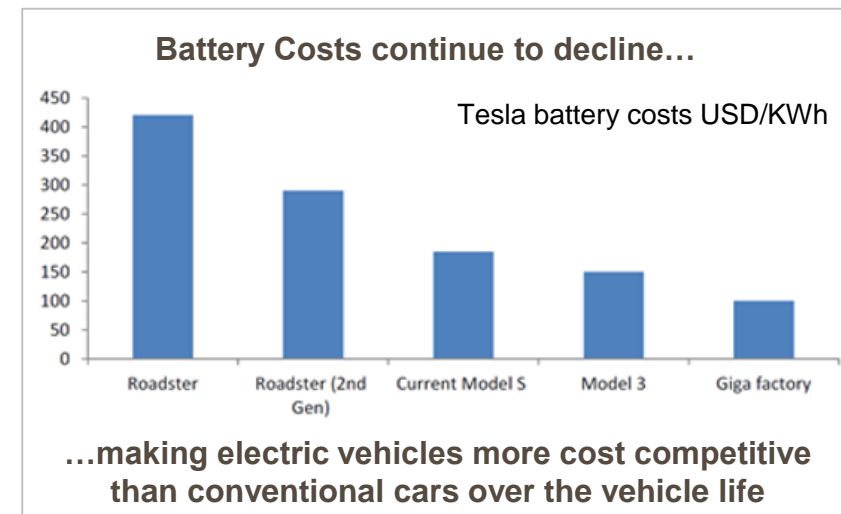
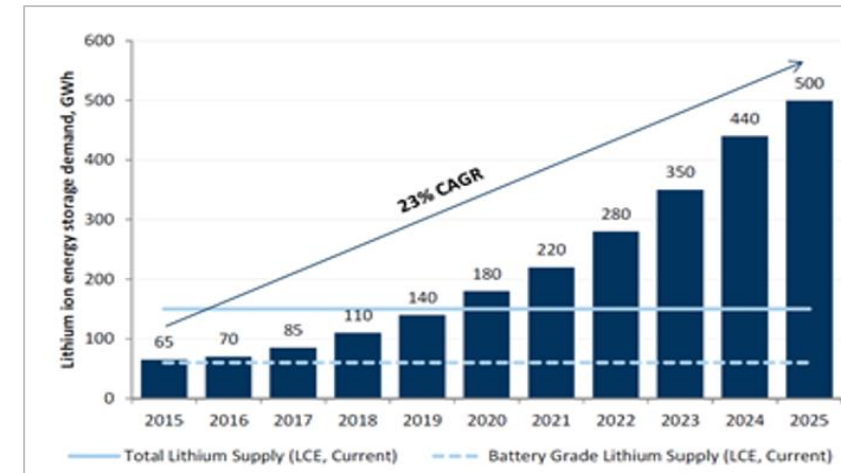
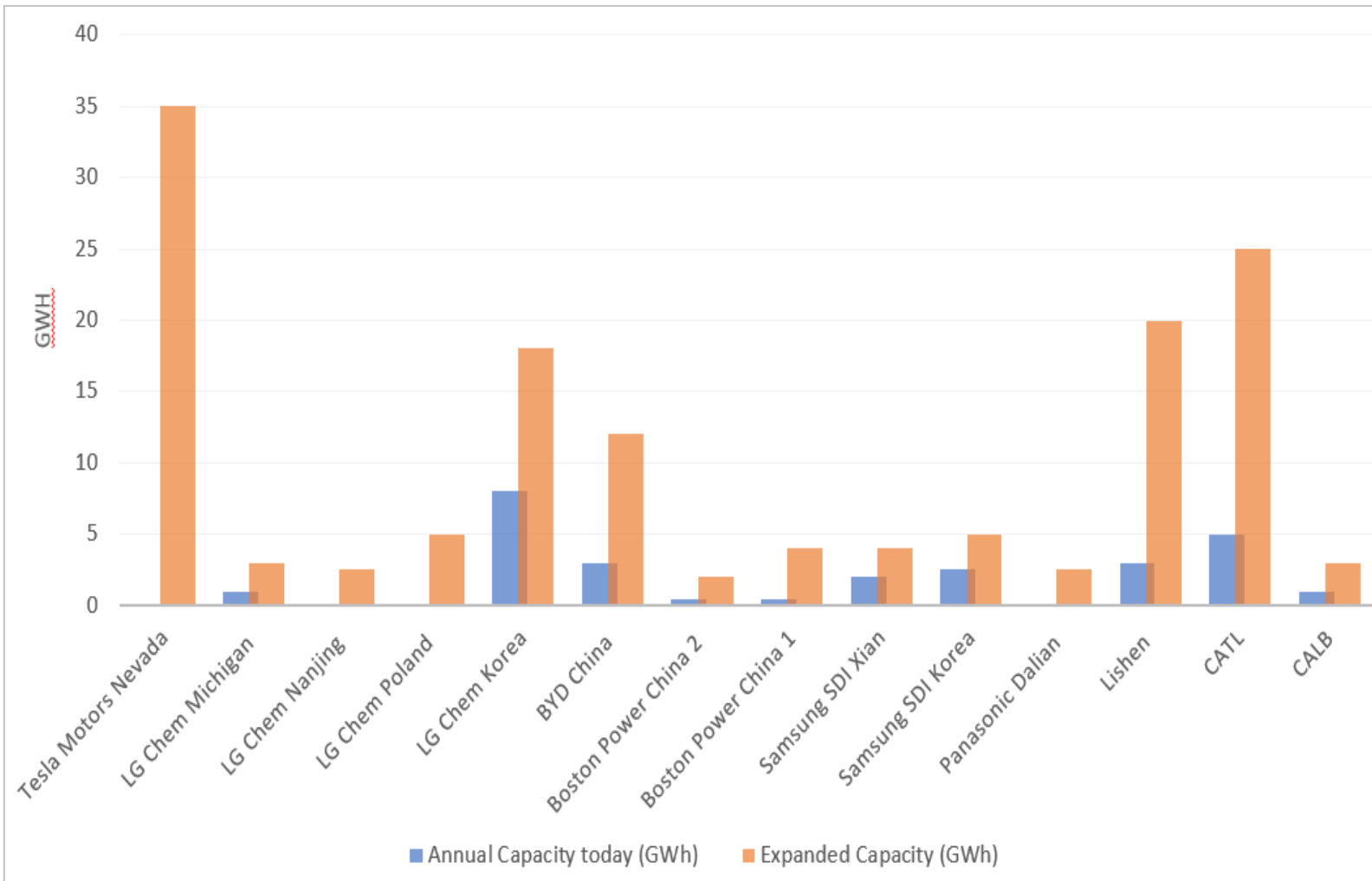
- ▶ Broad Central Government policy position towards 'New Energy'
  - ▶ *Domestic carbonate pricing took-off coincidentally with acceleration in EVs and Electric Bus sales*
- ▶ Significant expansion through entire lithium-ion supply chain, including major chemical conversion capacity expansion (spodumene to  $\text{Li}_2\text{CO}_3$  &  $\text{LiOH}$ ) over coming five years
- ▶ E-Bike phenomenon
  - ▶ *30 million E Bikes produced annually in China, converting to Li ion batteries*
- ▶ Broad transport electrification
  - ▶ *Targeting five million new energy vehicles by 2020*

# China market overview – 2016 snapshot (Lithium Carbonate Equivalent)





# Lithium ion battery making capacity



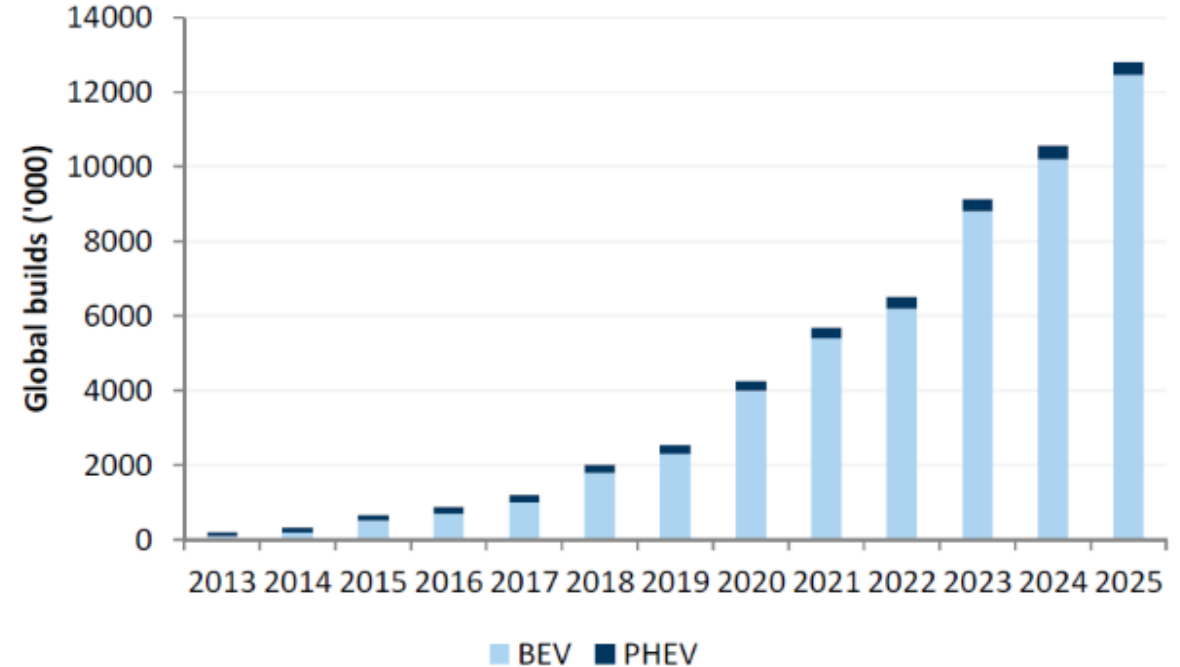
**More than USD 20bn of committed investment expected to result in new battery manufacturing expansions that will increase global production capacity significantly**

# Global motor vehicle lithium demand



- ▶ Tesla Model 3 to be released in 2017, retail price of USD 36,000, 400,000 orders already and growing
- ▶ Mercedes Benz releasing twelve new models of EVs in 2017
- ▶ BMW i3 Series due for release 2017 in direct competition with Tesla Series 3
- ▶ Audi and Volkswagen propose major EV model expansion in 2017 and 2018
- ▶ China, Japan and Korean Government policy strongly supports EVs with large rebates, zero sales tax and free licensing
- ▶ Japanese and Korean car makers anticipated to announce major adoption of EVs by 2020
- ▶ One million EVs expected in Korea by 2020

## Global EV Builds

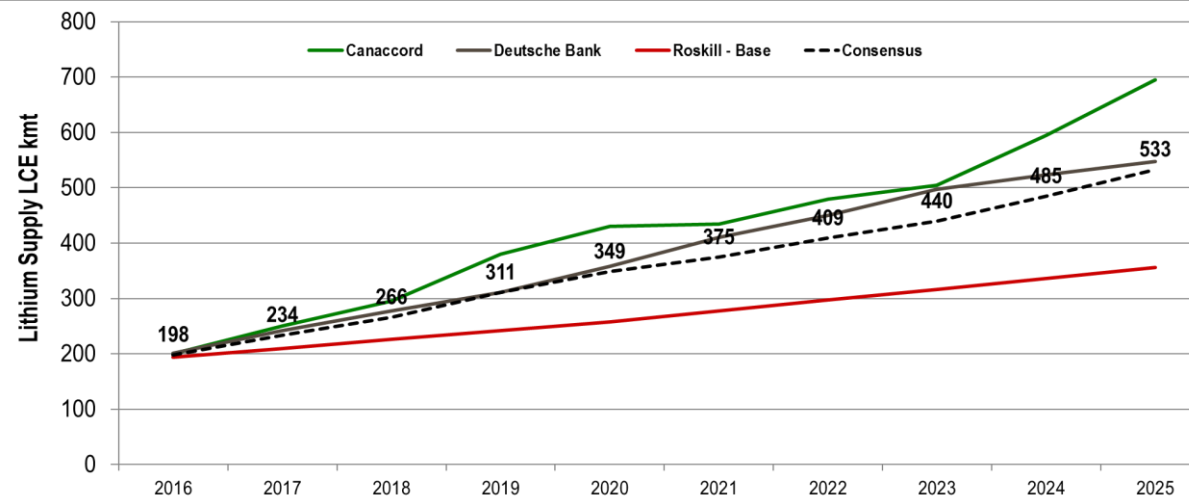


# Global supply of lithium



- ▶ The top four producers of global lithium supply accounted for ~88% of global production in 2015
- ▶ Lithium sourced from hard-rock operations represented 49% of global supply with 51% from brine operations
- ▶ The global top four producers are:
  - ▶ *Albemarle Corp, Tianqi Lithium Industries Inc, SQM and FMC Corporation*
- ▶ In 2016 two new hard-rock operations in Australia entered commissioning:
  - ▶ *Mt Marion (Ganfeng Lithium, Mineral Resources, Neometals);*
  - ▶ *Mt Cattlin (Galaxy Resources)*
- ▶ History of delay in brine operations being able to reach name-plate capacity

## Global Lithium Supply Forecast (LCE)



## Significant Potential Global lithium projects

Mine	Company	Country	Type	Development Stage	Target Start Date	Production (kt LCE)
Mibra	AMG	Brazil	Hard-rock	Development	2018	12
La Negra 2	Albemarle	Chile	Brine	Development	2018	20
Pilgangoora	Pilbara Minerals	Australia	Hard-rock	Development	2018	44
Pilgangoora	Altura Mining	Australia	Hard-rock	Development	2018	27
Olaroz Stage 2	Orocobre	Argentina	Brine	DFS	2019	15
Sal de Vida	Galaxy Resources	Argentina	Brine	DFS	2019	25
Whabouchi	Nemaska Lithium	Canada	Hard-rock	Development	2019	29
Greenbushes	Albemarle/Tianqi	Australia	Hard-rock	DFS	2019	80
Cauchari-Olaroz	Lithium Americas	Argentina	Brine	DFS	2021	25



# Ganfeng Lithium – China's largest fully integrated lithium company

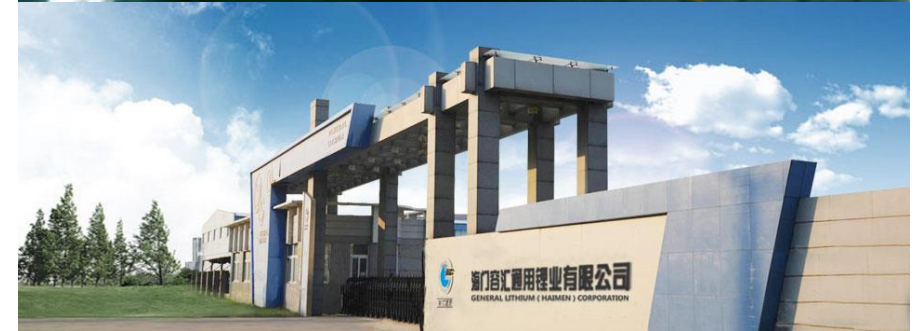
- ▶ Established in 2000 in Jiangxi Province, China, Ganfeng Lithium has a capacity of around 35,000tpa of LCE and produces lithium carbonate, lithium hydroxide, lithium metals, butyl lithium, and a number of other lithium compounds
- ▶ Ganfeng Lithium is currently commissioning an additional 20,000tpa LCE and is proposing further developments of another 45,000tpa LCE
- ▶ Ganfeng Lithium is listed on the Shenzhen Stock Exchange (SHZ:002460) with a market capitalization of USD ~4.4bn
- ▶ Ganfeng Lithium has interests in the Mt Marion spodumene project in Australia (43.1%), Lithium America's Caucharí- Olaroz brine project in Argentina (USD 165m in debt and equity) and International Lithium Corporation's Mariana brine project in Argentina (17.6%) & Blackstairs Project in Ireland (51%)



# General Lithium – a major producer of lithium chemicals in China



- ▶ Listed on NEEQ, Beijing, Code No: 837358 with a market capitalisation of USD ~325m
- ▶ Completed a RMB 268m (USD 38m) capital raise in December 2016
- ▶ Currently produces 8,000tpa of Lithium Carbonate (LC) & 2,000tpa of High Purity LC 4N (99.99%)
- ▶ Recently commissioned 5,000tpa of Lithium Iron Phosphate (LFP), Li battery cathode powder material in Qinghai Province
- ▶ Expansions continuing to add another 16,000tpa of Lithium Hydroxide (LiOH) & LC conversion capacity in Jiangxi Province to be commissioned at the end of 2017, with further expansions being planned
- ▶ 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

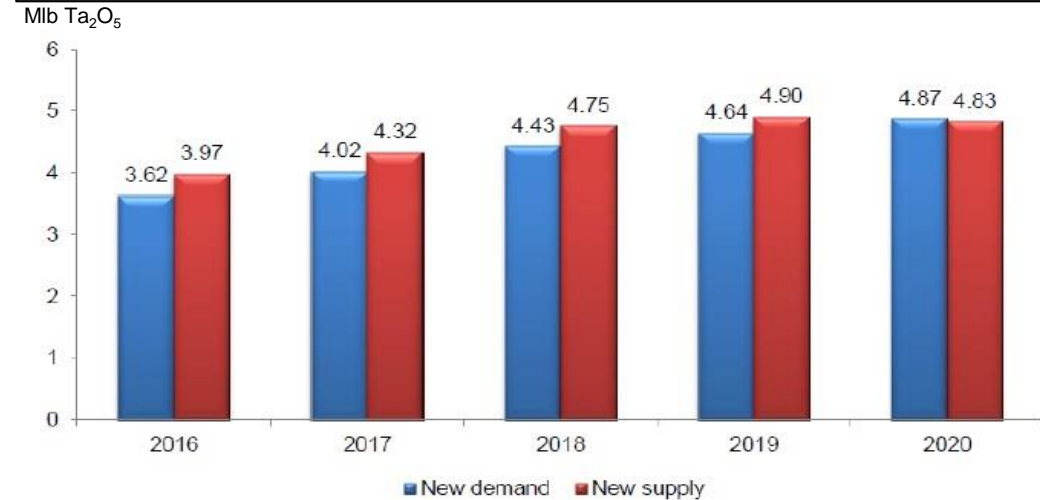


**General Lithium Corporation**

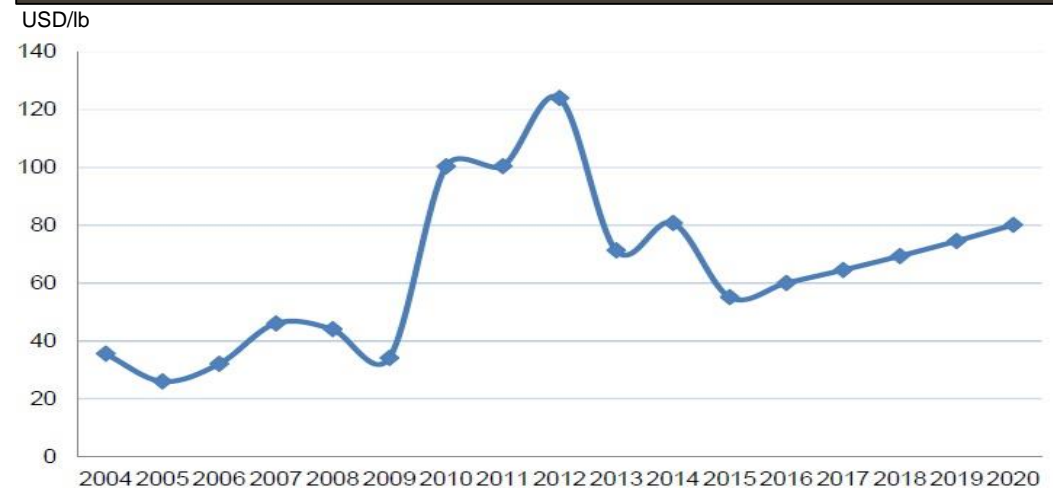


- ▶ The primary application of tantalum is its use in capacitors which are common to all electronic devices such as laptops, computers, mobile phones, digital cameras, TV's, medical appliances and automotive components
- ▶ Tantalum is also used in superalloys for the use in aircraft engines and land-based gas turbines
- ▶ Mining and extraction of tantalum is through alluvial, open-pit and underground mining
- ▶ Australia was previously the dominant supplier of tantalum representing 45% of global production in 2000 and will potentially regain this market share with several new lithium operations producing tantalum as a by-product
- ▶ Today production is dominated by countries in the Great Lakes Region of Africa mainly Rwanda and Democratic Republic of Congo
- ▶ Proceeds from sales of tantalum production from the Great Lakes Region are said to be used to finance rebel groups who are violating human rights
- ▶ USA has imposed legislation curbing the procurement of “conflict minerals” from this region

## Forecast tantalum supply and demand



## Historic and Forecast tantalum price







# About Pilbara Minerals Lithium Market

## Pilgangoora Project

### Summary

### Supplementary Information



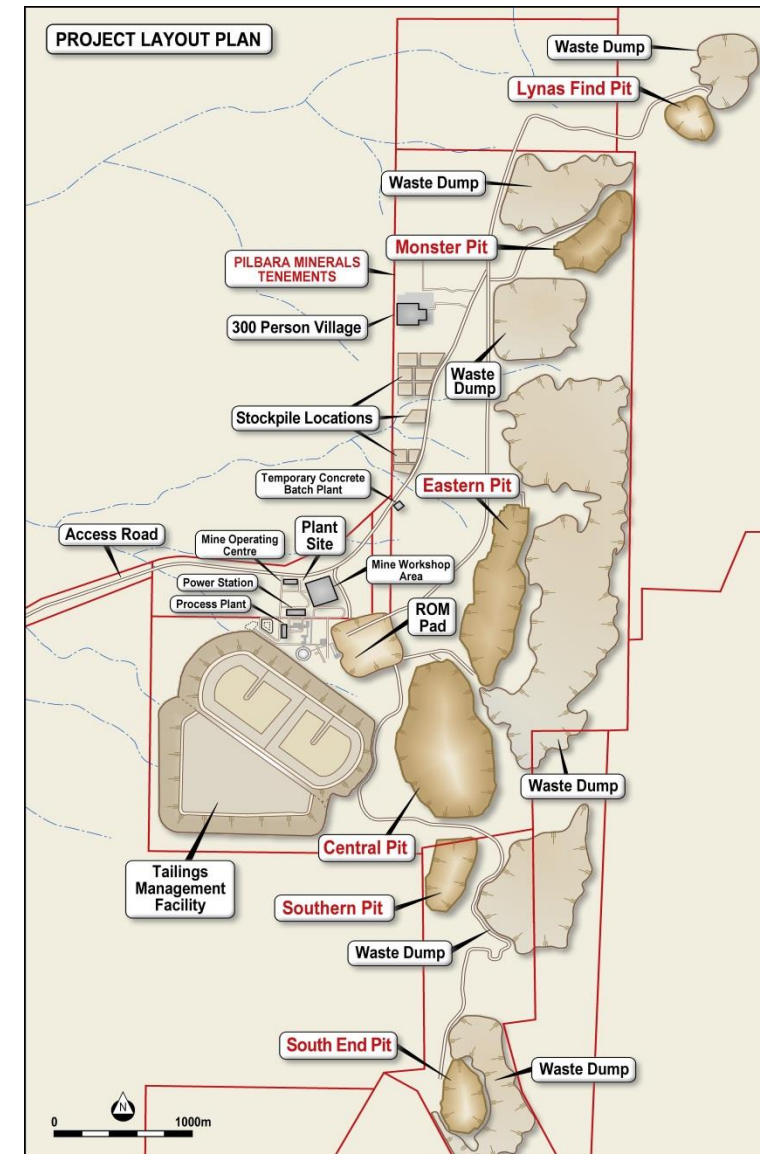


## DFS OUTCOMES, 2Mtpa Process Capacity Base Case

- ▶ Average annual production of approximately 314ktpa of 6% spodumene concentrate (44ktpa of Lithium Carbonate Equivalent or LCE) and 321,000lbs pa of tantalum
- ▶ LOM revenues of AUD 9.2bn (real) generating LOM after tax cash flows of AUD 2.6bn
- ▶ EBITDA over first 5 years of operations of approximately AUD 136m per annum (real); LOM EBITDA average of AUD 121m per annum
- ▶ DFS based on assumed LOM average spodumene price of USD 537/t CFR derived from basket of independent forecasters/brokers/banks. Current market prices USD 750-USD 900/tonne CFR (SC6.0)
- ▶ Operating cash costs<sup>1)</sup> per tonne of spodumene concentrate (SC6.0)
  - ▶ *First 15 years, USD 196/t CFR*
  - ▶ *Life-of-Mine, USD 207/t CFR; generating healthy margins at assumed prices*
- ▶ Project payback in ~2.7 years
- ▶ Project NPV<sup>2)</sup> 10% of AUD 709m and IRR of 38% (DFS Ore Reserve basis)
- ▶ Project capital estimate of AUD 224m (inclusive of AUD 10m of pre-production costs) (accuracy of ±15%)
- ▶ Updated capex to AUD 234 million to reflect more detailed front end engineering on process plant.

1. Cash operating costs include all mining, processing, transport, port, shipping/freight and site based general and administration costs, allocation of corporate administration/overhead costs, net of Ta<sub>2</sub>O<sub>5</sub> by-product credits, but excludes state and private royalties and native title costs  
 2. Net Present Values ("NPV") are presented on a nominal basis

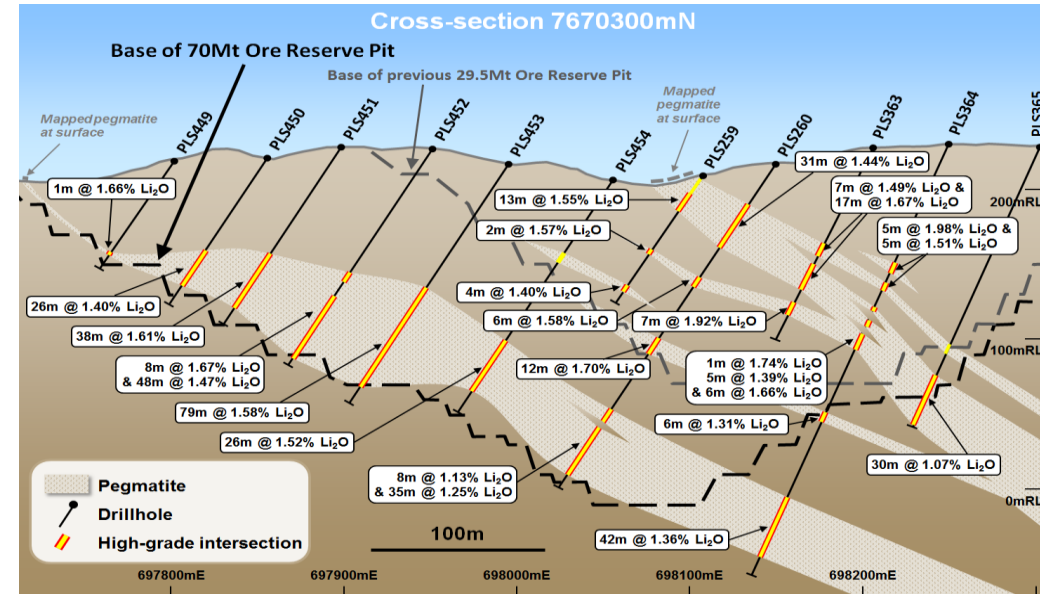
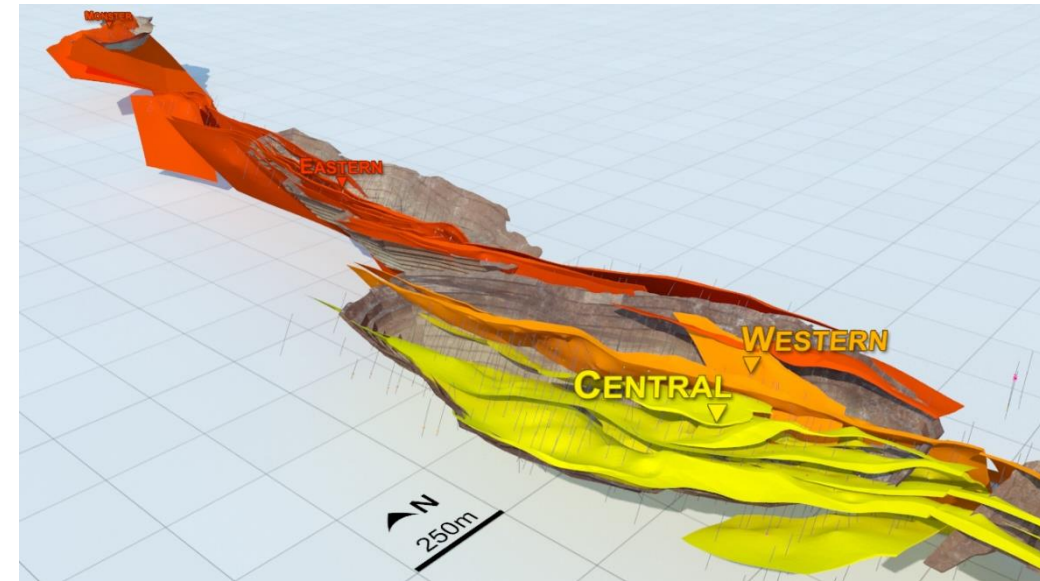
Involved parties in the DFS: Como Engineers, Trepanier Pty Ltd, MiningPlus, ATC Williams, Significant Environmental Services, Groundwater Resource Management and MJA Consulting



# Pilgangoora – mining A straightforward open pit mining development



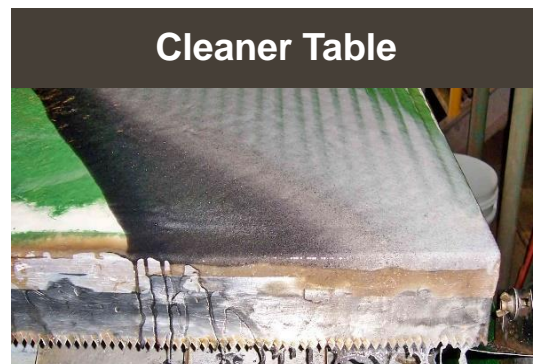
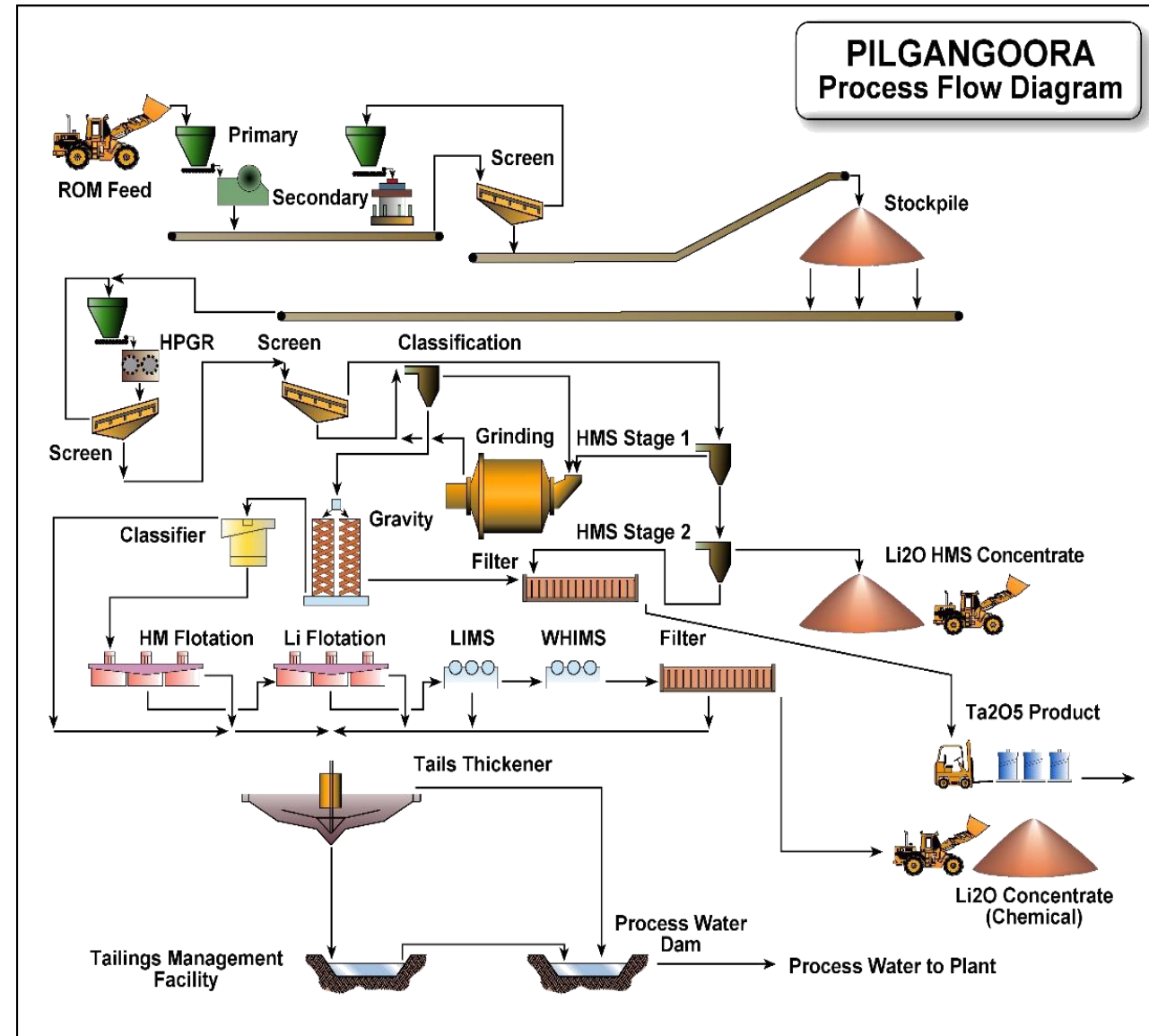
- ▶ Measured, Indicated and Inferred Resource of 156.3Mt @ 1.25% Li<sub>2</sub>O and 128ppm Ta<sub>2</sub>O<sub>5</sub> containing 1,952,000 tonnes Li<sub>2</sub>O, and including 44Mlbs Ta<sub>2</sub>O<sub>5</sub> (*Mineral Resource Update ASX released dated 25 January 2017*)
- ▶ Ore Reserve of 69.8Mt @ 1.26% Li<sub>2</sub>O and 132ppm Ta<sub>2</sub>O<sub>5</sub> (*Ore Reserve ASX released dated 22 August 2016*)
- ▶ Conventional drill and blast and open pit mining proposed, 100 ton mining fleet
- ▶ 2Mtpa ore feed, 36 year mine life (base case)
- ▶ LOM strip ratio of 4.1:1 (waste: ore tonnes)
- ▶ Attractive contractor mining rates available in the current market
- ▶ Mining targeted to commence Q3 2017



# Pilgangoora – processing **Improved Lithia and Tantalite Recovery**



- ▶ Industry standard processing flowsheet
  - ▶ *Spodumene concentrate produced at three mines in Western Australia*
- ▶ 2-stage heavy media separation
- ▶ Gravity separation, tantalite recovery
- ▶ Grinding leading to oxide flotation
- ▶ Low/High intensity magnetic separation
  - ▶ *High grade chemical spodumene concentrate (SC6.0 specification)*
  - ▶ *High grade tantalum concentrate (up to 30% Ta<sub>2</sub>O<sub>5</sub>)*
- ▶ Processing targeted to commence Q1 2018





# Pilgangoora – mine to ship **Contracted logistics chain proposed**



- ▶ Road Transport from mine site to Wedgefield Storage Facility
  - ▶ *127km via Great Northern Highway utilising double road trains*
- ▶ Product storage at Wedgefield and loaded into shipping containers
- ▶ Transport from Wedgefield (~16km) to Port Hedland berth 2
- ▶ Ship Loading with mobile harbour crane via Rotabox
- ▶ Shipment via handysize vessels (30kt)
  - ▶ *~11 shipments pa in full production*
- ▶ Approvals and access arrangements well progressed





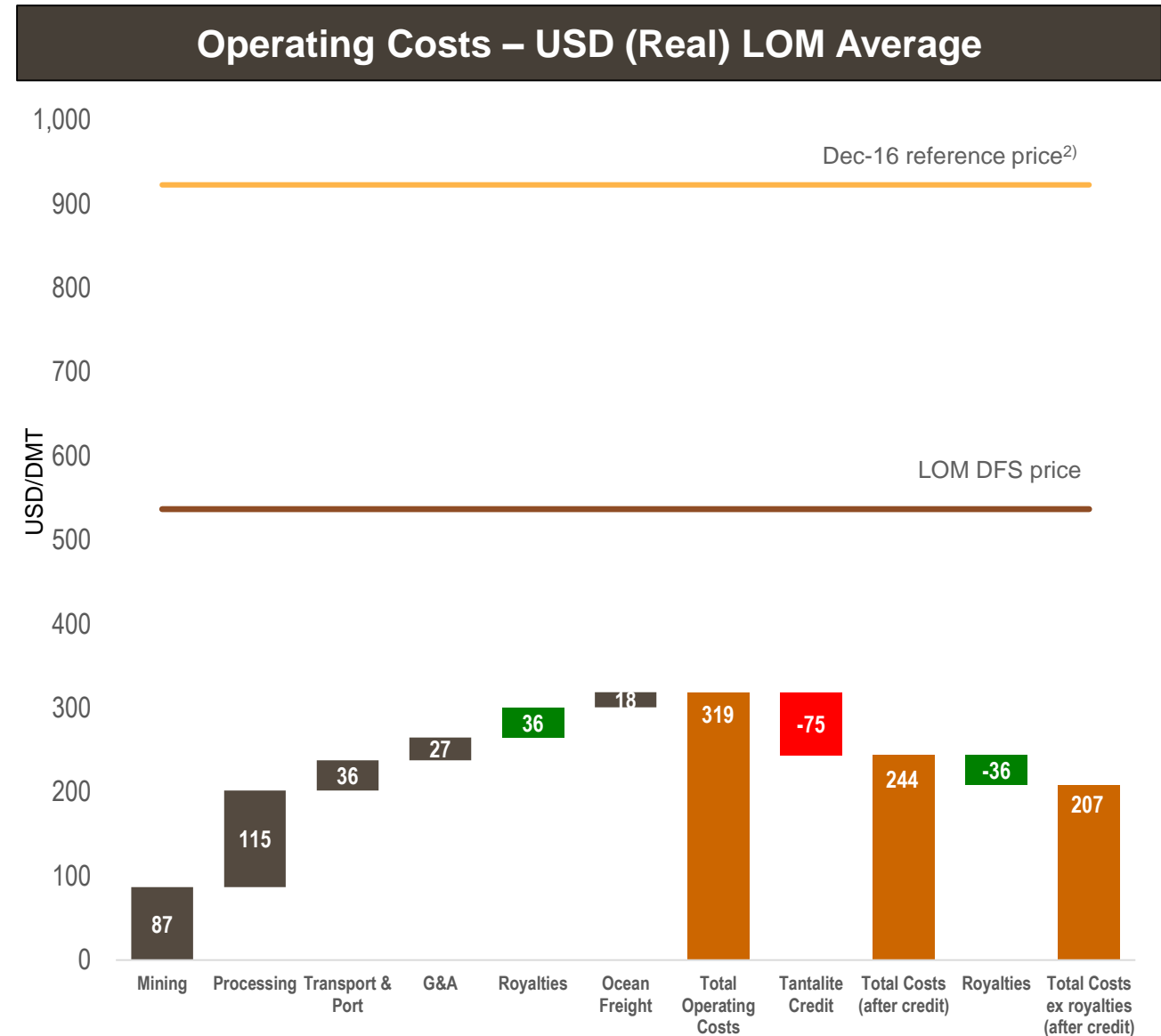
# Operating costs Set to become one of the lowest cost spodumene producers



- ▶ DFS LOM average cash operating cost<sup>1)</sup> of USD 207/t concentrate CFR
- ▶ Contributing factors to the low forecast cash operating cost:
  - ▶ *Significant scale of the project*
  - ▶ *Adjacent to existing infrastructure*
  - ▶ *Relatively low strip ratio*
  - ▶ *Tantalum by-product credit*
- ▶ Processing costs are the major cost element with reagents, operating consumables and power the larger contributors to operating costs
- ▶ Strong operating margins based on current pricing and assumed DFS lithium concentrate price forecasts

1. Cash operating costs include all mining, processing, transport, port, shipping/freight, site based general and administration costs, and corporate administration/overhead costs allocation, are net of Ta2O5 by-product credits, but excludes state and private royalties and native title costs

2. Dec-16 reference price refers to Galaxy Resources Ltd confirmed pricing for 2017 delivery of 6% Li2O spodumene concentrate adjusted for freight



# Offtake secured **Strong industrial relationships with offtake partners**



- ▶ 10-year 160,000tpa 6% chemical-grade spodumene concentrate offtake signed with Ganfeng Lithium
  - ▶ *Includes a binding equity subscription agreement of USD 20m*
  - ▶ *Pricing based on a 6-month pricing mechanism that takes into account the Chinese import and domestic prices of Lithium carbonate plus a floor price mechanism*
  - ▶ *Option for Ganfeng Lithium extend another 5 + 5 years*
- ▶ Stage 2 offtake of 75,000tpa to 150,000tpa, plus AUD 65m cash pre-payment or debt finance facility to fund ~50% of the 4Mtpa Stage 2 project, subject to further agreement



- ▶ 6-year 140,000tpa 6% chemical-grade spodumene concentrate offtake signed with General Lithium
  - ▶ *Includes a binding equity subscription agreement of AUD 17.75m @ 50 cents per share, subject to receipt of regulatory approvals in China*
  - ▶ *Pricing based on a 6-month pricing mechanism, set quarterly, that takes into account the Chinese import and domestic prices of Lithium carbonate plus a floor price mechanism*
  - ▶ *Option for General Lithium to extend another 4 years*



**General Lithium Corporation**

- ▶ Potential 1.9Mt DSO opportunity with Shandong Ruifu
  - ▶ *1.9Mt DSO standalone project for crushed unprocessed ore – Pilgangoora Project and DFS not dependent on DSO opportunity*
  - ▶ *Offtake agreement remains subject to PRC approvals and receipt of US\$10m prepayment which remains uncertain – and in any event will impact timing for potential delivery*
  - ▶ *Other potential offtakers have approached Pilbara for DSO shipments which are being considered*



# Pilgangoora Project – current work streams



## Site Establishment

- ▶ Installation of temporary construction offices and communications
- ▶ Road access and rail crossing upgrades

## Processing Plant

- ▶ Process Plant EPC Contract (Stage 1 FEED AUD 29.3m) awarded to RCR Tomlinson. Target contract value AUD 138m with lump sum of AUD 148m
- ▶ Long lead items: filter press, HPGR and ball mill ordered with AUD 11.2m incurred on processing plant

## Accommodation Camp

- ▶ Purchased Roy Hill Camp 3 (AUD 2.5m - 300 person accommodation and facilities). Phase 1 contract for mine camp relocation and re-establishment works awarded to OTOC Australia for a lump-sum commitment of approx. AUD 4.8m
- ▶ Bulk earthworks completed for Phase 1 of the Camp (initial 60 Rooms). Initial 60 room camp commissioned with remaining camp due to be completed August 2017

## Water Supply

- ▶ Process water supply locations and corridors secured. Pump testing and aquifer analysis confirms sufficient water capacity for Stage 1 (2Mtpa) of the project. Bore licensing is underway
- ▶ In addition, secured exclusive water rights from third party with access arrangements for bore infrastructure being finalised

## Operating contracts

- ▶ Tender process underway for the mining contract, together with site earthworks, camp services, power station, intersection upgrade and communications infrastructure



CONCRETE BATCHING FACILITY

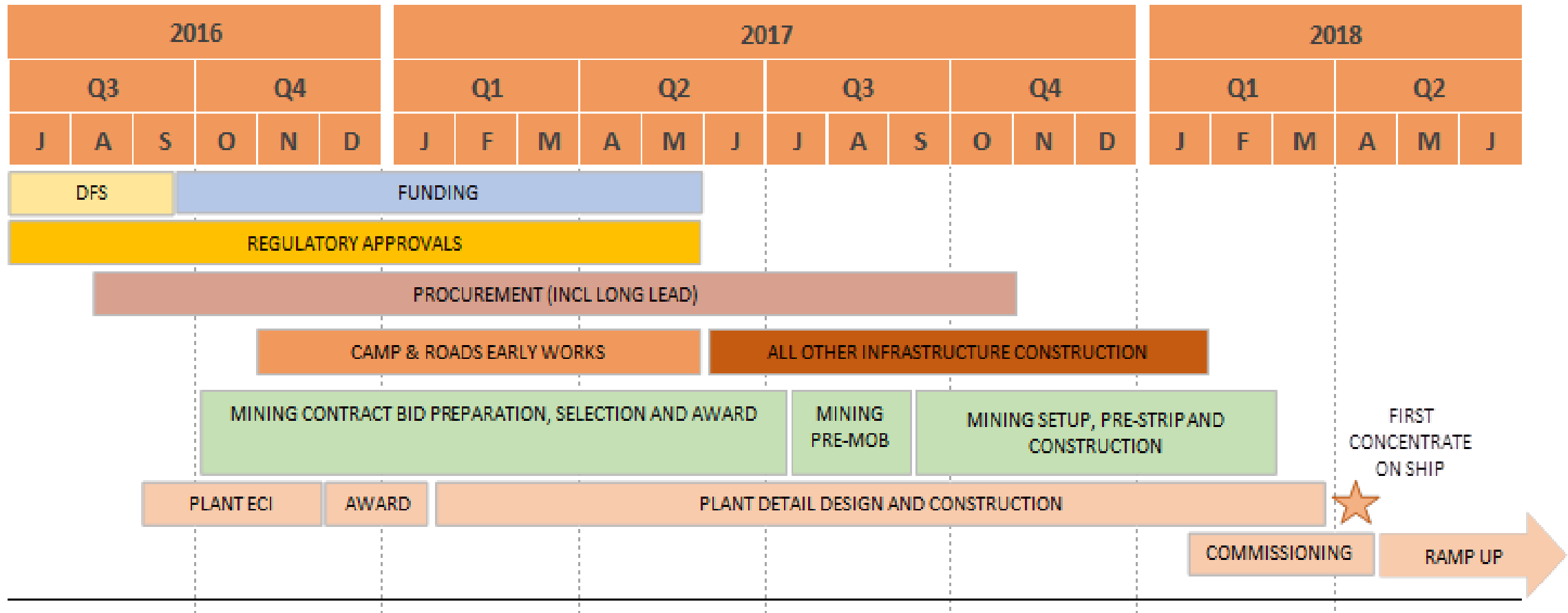


CAMP BUILDING INSTALLATION

# A rapid pathway to financing, development and production



## PILGANGOORA PROJECT DELIVERY SCHEDULE





# Pilbara Minerals Investment Highlights



## Globally significant Lithium Projects

- ▶ Outstanding Lithium / Tantalum development project in the Pilbara region at Pilgangoora with scale, low-cost, adjacent to existing infrastructure and proven high quality products
- ▶ During 2016 the exploration program delivered a significant resource expansion. The JORC Mineral Resource is currently 156 Mt @ 1.25 Li<sub>2</sub>O and JORC the Ore Reserve is 69.8 Mt @ 1.26 Li<sub>2</sub>O
- ▶ Mt Francisco, the next best Pilbara lithium project. Massive outcropping pegmatites with exploration expected to commence in the December Qtr

## Strong market outlook for lithium with increasing demand in battery and storage applications

- ▶ Demand for lithium is predicted to grow at an annualized rate of more than 12%<sup>1)</sup> and electric vehicle demand will be the key driver
- ▶ Pilgangoora spodumene concentrates meet the metallurgical specifications of the entire range of lithium products and Pilbara is thus well positioned to support the fast growing global lithium market
- ▶ Pilbara has already established strong partnerships with two key Chinese industry groups, enabling the Company to develop long term strategic relationships
- ▶ Pilbara has offtake agreements for 300ktpa of 6% chemical grade spodumene over the next 6-10 years representing 95% of the LOM average production, with floor price mechanisms.

## Experienced Board and Proven Executive Team

- ▶ Experienced Board of Directors with extensive experience in the mining sector and several other ASX listed resource companies
- ▶ Strong management team with a proven operational track record in the exploration, development and delivery of mines in the Pilbara region



**About Pilbara Minerals**  
**Lithium Market**  
**Pilgangoora Project**  
**Summary**

**Supplementary Information**

# Board of Directors



<b>Tony Kiernan</b>	<b>Non-Executive Chairman</b>	Highly experienced company director and former solicitor with over 30 years professional experience. Currently Chairman and a non-executive director of several ASX-listed resource companies
<b>Ken Brinsden</b>	<b>Managing Director</b>	Mining Engineer with over 22 years experience including mine management, production and green-fields project development. Previously MD at ASX listed Atlas Iron Ltd contributing to its growth from junior explorer to significant Pilbara iron ore producer
<b>Steve Scudamore</b>	<b>Non-Executive Director</b>	Highly experienced public company director. His career includes more than three decades with senior roles in Australia, London and Papua New Guinea
<b>Neil Biddle</b>	<b>Non-Executive Director</b>	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
<b>John Young</b>	<b>Technical Director</b>	Geologist and Corporate Member of the AusIMM with over 25 years experience in the global exploration and mining industry. Ten years direct experience managing tantalum, tungsten and molybdenite projects
<b>Nick Cernotta</b>	<b>Non-Executive Director</b>	Highly experienced mining executive with over 30 years' experience. Recently the Director of Operations with Fortescue Metals Group (FMG) and previously the Chief Operating Officer for Macmahon Holdings Limited

# Management Team



<b>Brian Lynn</b>	<b>Chief Financial Officer</b>	Chartered Accountant with more than 25 years' experience in the Australian resources sector. Prior to joining Pilbara Minerals, Mr Lynn served as the Chief Financial Officer at Atlas Iron Limited and spent 12 years as the Chief Financial Officer and Company Secretary at ASX Listed Mincor Resources NL
<b>Alex Eastwood</b>	<b>Company Secretary and General Counsel</b>	Lawyer with over 22 years' experience as a commercial lawyer, company secretary and corporate finance executive. Previously held partnerships with two international law firms
<b>Anand Sheth</b>	<b>Sales and Marketing Executive</b>	A technical and marketing professional with more than 17 years' experience in the international marketing and global sales of lithium, tantalum minerals and lithium chemicals. Mr Sheth was Marketing Manager of Talison Minerals for 10 years and 4 years as Sales and Marketing Director at Galaxy Resources. Mr Sheth received his Bachelor of Technology in Ceramic Engineering from Institute of Technology, Banaras Hindu University in India in 1985
<b>John Holmes</b>	<b>Exploration Manager</b>	Accomplished geologist with over 25 years' experience in the mineral exploration industry and has a wealth of experience in precious metal, base metal, coal and industrial minerals projects throughout Australasia, Canada, and South America. He is a Member of the Australian Institute of Geoscientists and a Competent Person under the JORC code
<b>Jason Cross</b>	<b>Manager Projects</b>	Management professional with over 20 years consolidated experience working across a variety of projects including mining, ports, infrastructure, mineral processing, business improvement and IT. Prior to joining Pilbara Minerals, held the role of Manager – Projects at Atlas Iron which involved the establishment and delivery of various mines and the development of the in-house project delivery capability. Jason holds a Master of Science in Project Management, and is PMP and Prince2 accredited
<b>Greg Durack</b>	<b>Operations Manager</b>	A metallurgist with over 30 years' experience in the resources sector both domestically and international primarily in operations management and project development roles within gold and base metals
<b>Garry Plowright</b>	<b>Land Access &amp; Approvals Manager</b>	Mr Plowright's career includes over 20 years' experience in commercial and technical development within the mining and exploration industry, working for some of Australia's leading resource companies. He has been involved in gold, base metals, Lithium and iron ore exploration and mining development projects, predominantly in Western Australia. He has considerable experience and knowledge associated with the supply and logistics of services to the mining industry, tenure management and issues relating to environmental impact assessment and regulation, land access, native title, and community consultation

**Highly experienced management team with strong experience in exploration, mining and corporate management.  
Key metallurgical staff with significant experience in Lithium HMS, flotation and tantalum gravity recovery (Wenbo Wang & Hugo Hordyk)**



# Resources & Reserves

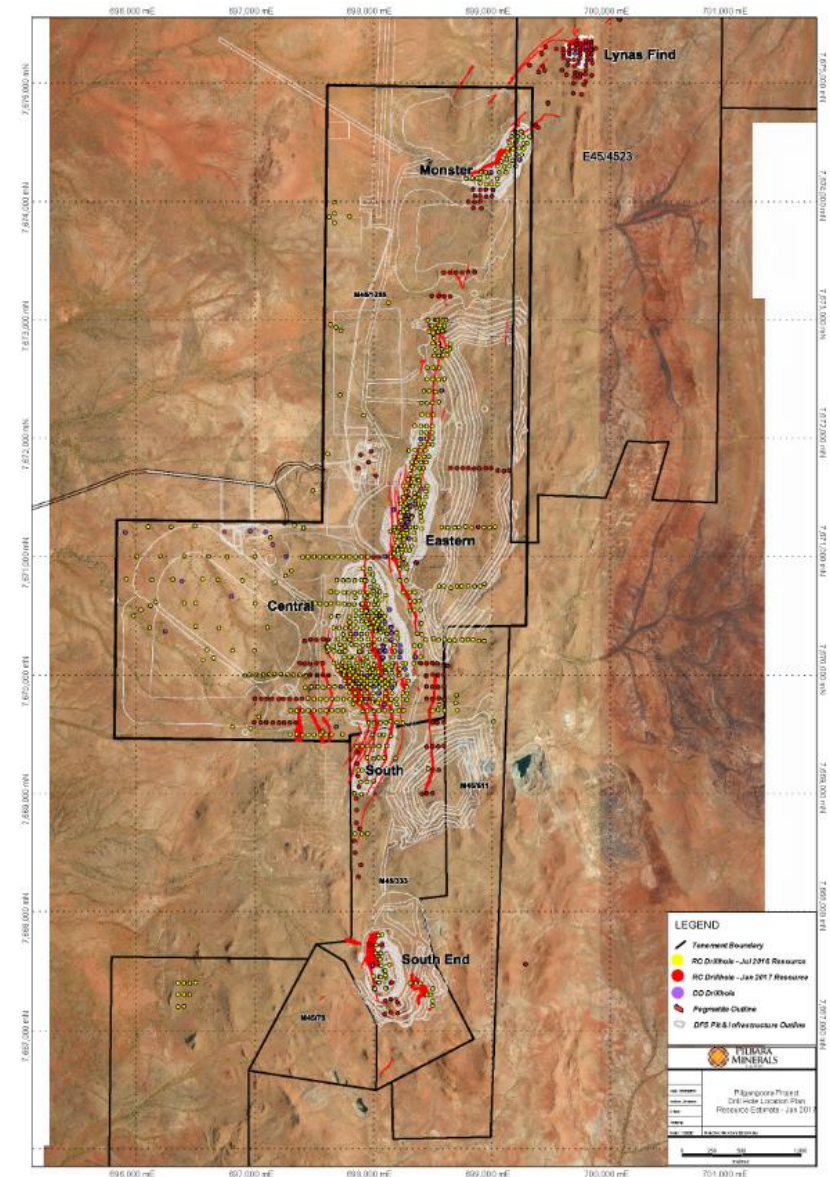


## JORC Mineral Resources: 25th January 2017

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> (Mlbs)
Measured	17.6	1.39	151	0.44	244,000	5.9
Indicated	77.7	1.31	125	0.58	1,017,000	21.5
Inferred	61.1	1.13	125	0.71	691,000	16.8
<b>Total</b>	<b>156.3</b>	<b>1.25</b>	<b>128</b>	<b>0.61</b>	<b>1,952,000</b>	<b>44.2</b>

## JORC Ore Reserves: 22nd August 2016

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> (Mlbs)
Proved	17.5	1.31	143	0.94	230,000	5.5
Probable	52.6	1.25	128	1.07	653,000	14.8
<b>Total</b>	<b>69.8</b>	<b>1.26</b>	<b>132</b>	<b>1.04</b>	<b>883,000</b>	<b>20.3</b>

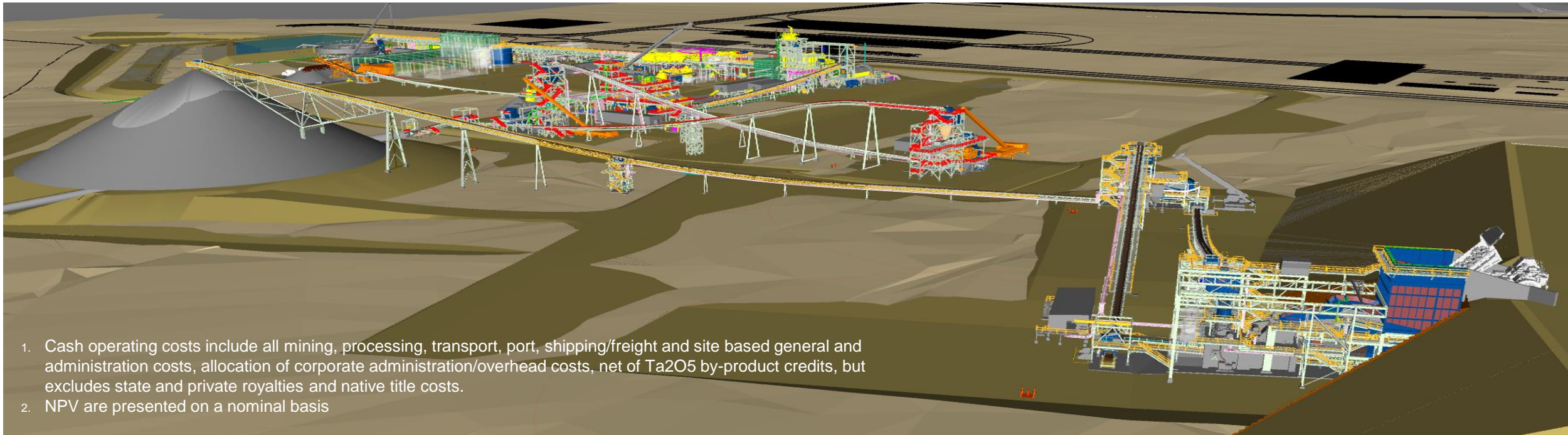


# 4Mtpa Expansion Option – Pre-Feasibility Study (“PFS”) Complete



## *Outstanding economic returns*

- ▶ Modest incremental capital to expand to 4Mtpa, AUD 128m
- ▶ LOM average annual production of approximately 564ktpa of 6% spodumene concentrates inclusive of technical grade product (75ktpa LCE); 579,000lbs of tantalum
- ▶ LOM cash operating costs<sup>1)</sup> further reduced to USD 180/t CFR demonstrating economies of scale
- ▶ Projected annual average EBITDA increases to AUD 245m from AUD 121m
- ▶ Forecast Net Present Value (NPV<sup>2)</sup>10%, post-tax) of AUD 1,165m; Project payback of 3.1 years (on cumulative capital)
- ▶ Expansion project subject to further feasibility work, market analysis and Pilbara Board approval
- ▶ Highlights the scale and cost-competitiveness of Pilgangoora’s future production



1. Cash operating costs include all mining, processing, transport, port, shipping/freight and site based general and administration costs, allocation of corporate administration/overhead costs, net of Ta<sub>2</sub>O<sub>5</sub> by-product credits, but excludes state and private royalties and native title costs.

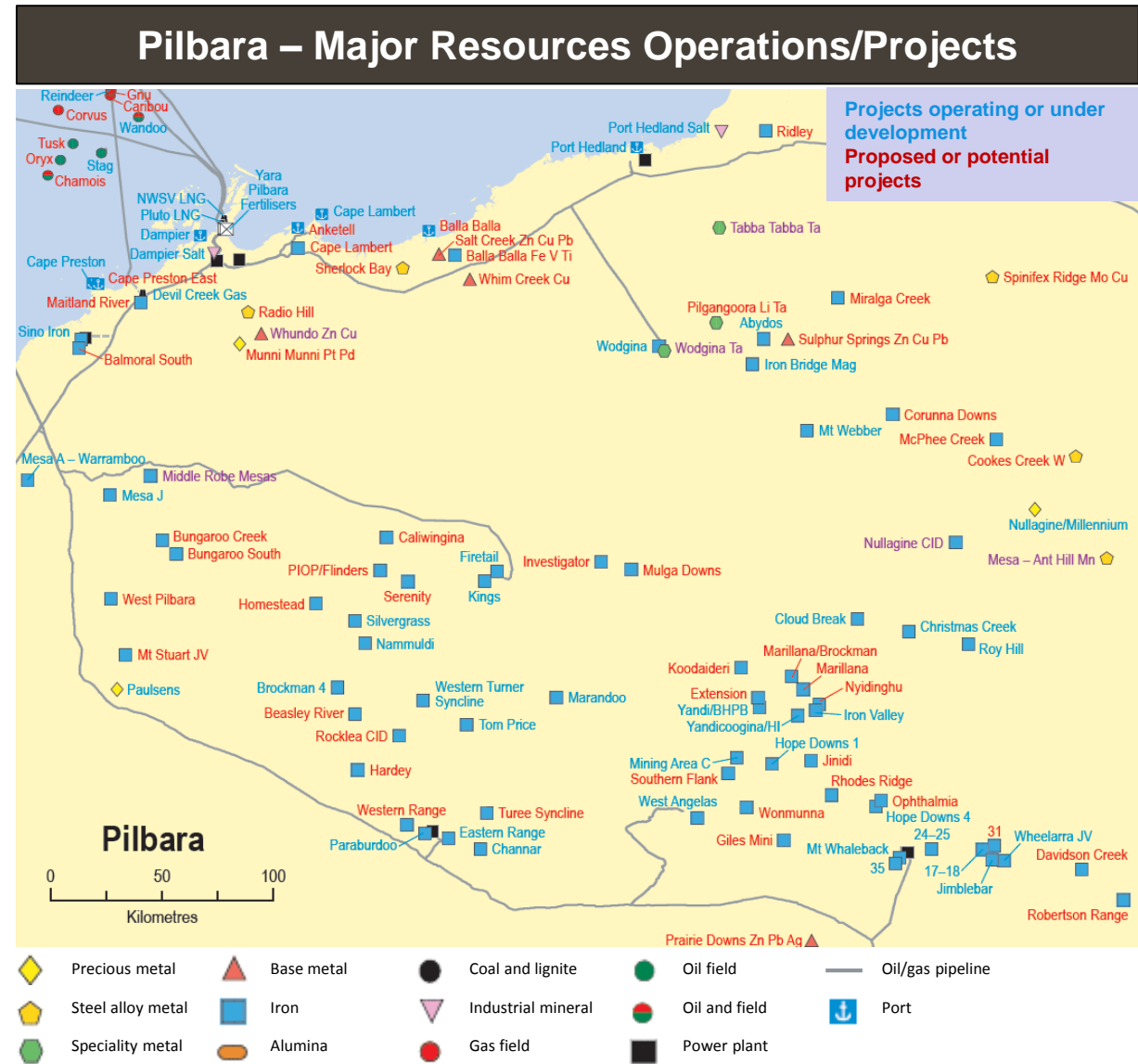
2. NPV are presented on a nominal basis



# The Pilbara region of Western Australia **A Tier-1 mining jurisdiction**



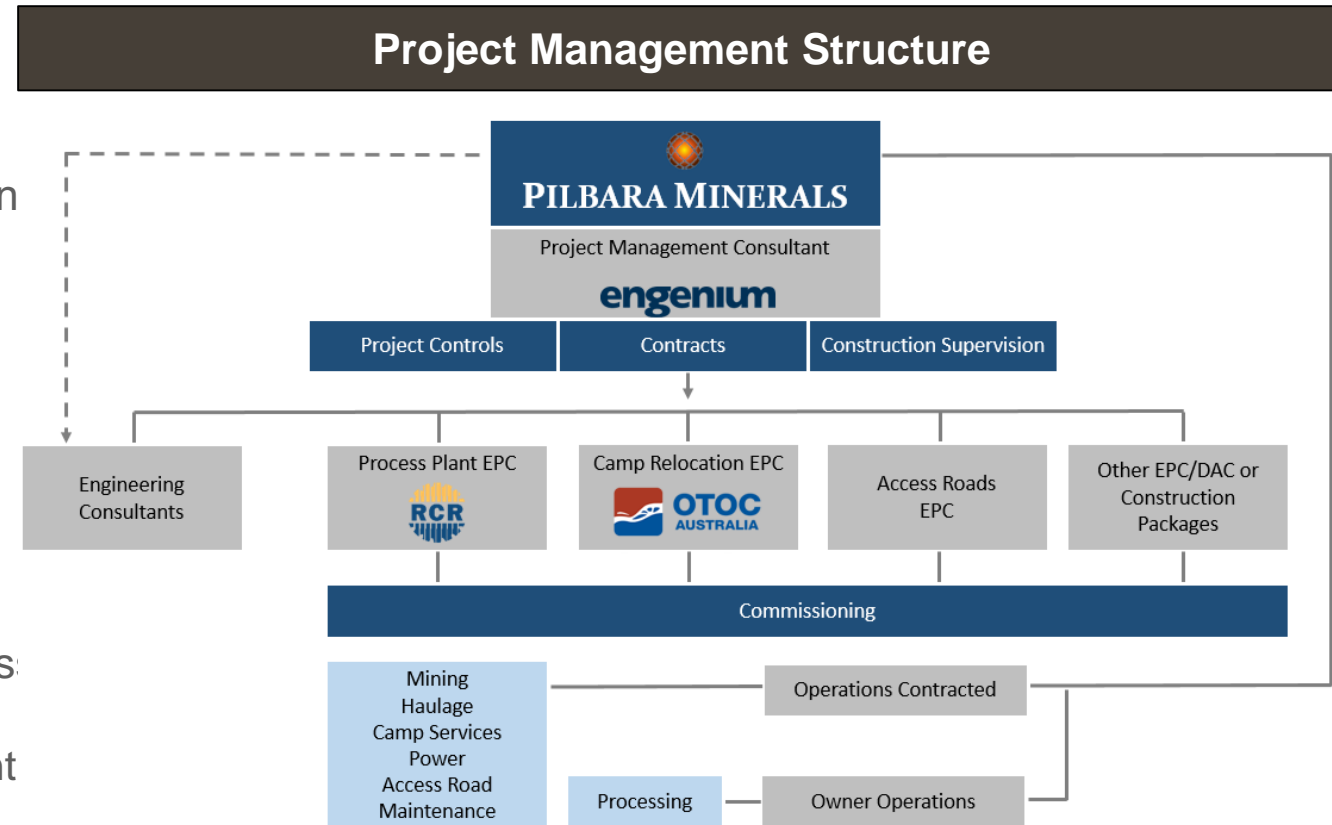
- ▶ The Pilbara region of Western Australia is a globally significant mining and energy region and has been the powerhouse of economic growth for Australia and Western Australia
- ▶ Large volume of exports (iron ore, LNG, manganese, copper concentrate, salt, and other commodities) through the Pilbara ports
  - ▶ *Port of Dampier – 172Mt of exports in FY16*
  - ▶ *Port of Port Hedland – 459Mt of exports in FY16*
- ▶ Extensive infrastructure and support services available for mining projects
- ▶ Major companies operating in the region include:
  - ▶ *BHP Billiton*
  - ▶ *Rio Tinto*
  - ▶ *Fortescue Metals Group*



# Project management overview



- ▶ Pilbara Minerals has appointed the engineering and consulting firm Engenium as their project management consultant (“PMC”) and has integrated their team into the Company’s organization for the duration of the construction and development phase for the mine
- ▶ The key EPC Package is the Process Plant
  - ▶ *Pilbara has undertaken a competitive Early Contractor Involvement (“ECI”) process to optimise the technical and commercial aspects of the process plant EPC Package*
  - ▶ *Based on this process, RCR Tomlinson was awarded the Process Plant EPC Package in January 2017*
- ▶ The operation of the majority of the supply chain (mining, transport, camp services, power, maintenance of the access roads) will be contracted with the exception of the processing plant. Once commissioned the processing plant will be operated by Pilbara Minerals





# Offtake with Ganfeng Lithium – summary of terms



Provision:	Comment
<b>Term</b>	The initial supply term is 10 years and Ganfeng Lithium may elect to extend the term for 5 years and a further 5 years
<b>Product</b>	160ktpa of 6% chemical-grade spodumene concentrate
<b>Conditions Precedent</b>	<ul style="list-style-type: none"> <li>• Completion of the USD 20 million equity placement by Ganfeng Lithium</li> <li>• Pilbara Board making a final and unconditional investment decision for the Pilgangoora Project including that all the necessary funding for the Project is in place and available for drawdown</li> <li>• All authorisations and rights for the shipment and export of product from Port Hedland</li> <li>• All authorisations for the construction and operation of the mine, road and other services infrastructure</li> </ul>
<b>Price</b>	<ul style="list-style-type: none"> <li>• Pricing is on a CIF basis (cost plus insurance and freight) and is reset every 6 months by a pricing formula based on the price of lithium carbonate. The price of lithium carbonate is defined by 6 months historical data for import and domestic pricing in China as determined by major cathode makers and for battery grade lithium carbonate</li> <li>• Downside floor price protection mechanisms included in offtake contract</li> </ul>
<b>Seller Obligations</b>	<p>Delivery obligations commence when Pilbara completes construction, commissioning and substantially commences operation of the Project. To be achieved by 30 June 2018 (unless extended by Pilbara for a further 6 months acting reasonably)</p> <p>Pilbara will sell and deliver 160ktpa of product for each contract year in accordance with the production specification</p>
<b>Buyer Obligations</b>	<p>Ganfeng Lithium shall pay for and take delivery of 160ktpa of product for each contract year in the term</p> <p>At least 30 days prior to the commencement of loading of a shipment, Ganfeng Lithium must issue an irrevocable Letter of Credit (LC)</p>
<b>Termination</b>	Delivery obligations will suspend for customary events of force majeure. Agreement may be terminated by either party for material breach, including by Pilbara where Ganfeng Lithium fails to issue an LC on 3 occasions over a 12 month period, or where an event of insolvency occurs. Dispute resolution by arbitration

# Offtake with General Lithium – summary of terms



Provision:	Comment
<b>Term</b>	The initial supply term is 6 years and General Lithium may elect to extend the term for a further 4 years
<b>Product</b>	140ktpa of 6% chemical-grade spodumene concentrate
<b>Conditions</b>	<ul style="list-style-type: none"> <li>• General Lithium equity subscription of AUD 17.8 million (subject to receipt of PRC government approvals which are currently being sought but remain outstanding)</li> <li>• Pilbara Board making a final and unconditional investment decision for the Pilgangoora Project including that all the necessary funding for the Project is in place and available for drawdown</li> <li>• All authorisations for the construction and operation of the mine, road and other services infrastructure</li> <li>• Commencement of construction of the Project</li> </ul>
<b>Price</b>	<ul style="list-style-type: none"> <li>• Pricing is on a CIF basis (cost plus insurance and freight) and is reset every calendar quarter by a pricing formula based on the price of lithium carbonate. The price of lithium carbonate is defined by 6 months historical data for import and domestic pricing in China as determined by major cathode makers and for battery grade lithium carbonate</li> <li>• Downside floor price protection mechanisms included in offtake contract</li> </ul>
<b>Seller Obligations</b>	<p>Pilbara will use all reasonable efforts to make the first shipment of product within 18 months of commencement of construction (within 1 year of PRC government approvals) with a 6 month extension permitted</p> <p>Pilbara will sell and deliver 140ktpa of product for each contract year in accordance with the production specification</p>
<b>Buyer Obligations</b>	<p>General Lithium shall pay for and take delivery of 140ktpa of product for each contract year</p> <p>General Lithium shall solely use product sold and cannot sell or transfer product to any third party in its unprocessed as delivered state</p> <p>At least 30 days prior to the commencement of loading of a shipment, General Lithium must issue an irrevocable Letter of Credit (LC)</p>
<b>Termination</b>	Delivery obligations will suspend for customary events of force majeure. The agreement may be terminated by either party for material breach, including by Pilbara where General Lithium failure to issue an LC on 3 occasions over a 12 month period. Dispute resolution by arbitration



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