

Pilgangoora: a world class lithium and tantalum production center

Diggers and Dealers Presentation

August 2019

ASX: PLS



**Pilbara
Minerals**

...Powering a Sustainable Energy Future



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Recipients of this presentation outside Australia should note that it is a requirement of the Australian Securities Exchange listing rules that the reporting of ore reserves and mineral resources in Australia comply with the Australasian Joint Ore Reserves Committee Code for Reporting of Mineral Resources and Ore Reserves (“JORC Code”), whereas mining companies in other countries may be required to report their ore reserves and/or mineral resources in accordance with other guidelines (for example, SEC Industry Guide 7 in the United States). Recipients should note that while Pilbara’s mineral resource and ore reserve estimates comply with the JORC Code, they may not comply with the relevant guidelines in other countries, and do not comply with SEC Industry Guide 7. In particular, SEC Industry Guide 7 does not recognise classifications other than proven and probable reserves and, as a result, the SEC generally does not permit mining companies to disclose their mineral resources, including indicated and inferred resources, in SEC filings. Accordingly, if Pilbara were reporting in accordance with SEC Industry Guide 7, it would not be permitted to report any mineral resources, including indicated and inferred resources, and the amount of reserves reported by Pilbara may be lower than its estimates. You should not assume that quantities reported as “resources” will be converted to reserves under the JORC Code or any other reporting regime or that Pilbara will be able to legally and economically extract them. In addition, investors should note that under SEC Industry Guide 7, mine life may only be reported based on ore reserves. Mine life estimates in this presentation assume that a portion of non-reserve resources will be converted to ore reserves, which would not be permitted under SEC Industry Guide 7.

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By attending a presentation or briefing, or accepting, accessing or reviewing this document you acknowledge, accept and agree to the matters set out above.

No New Information – Resource and Reserves

The Company confirms it is not aware of any new information or data that materially affects the information included in the 17 September 2018 Pilgangoora Mineral Resource estimate and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 17 September 2018.

The Company confirms it is not aware of any new information or data that materially affects the information included in the 17 September 2018 Pilgangoora Ore Reserve estimate and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 17 September 2018.

The Company confirms it is not aware of any new information or data that materially affects the information included in Pilgangoora Exploration Target in its ASX released dated 16 October 2018 or the exploration results in its ASX release June 2019 Quarter Activities Report dated 25 July 2019 and that all material assumptions and technical parameters underpinning the targets and estimates in those announcements continue to apply and have not materially changed.

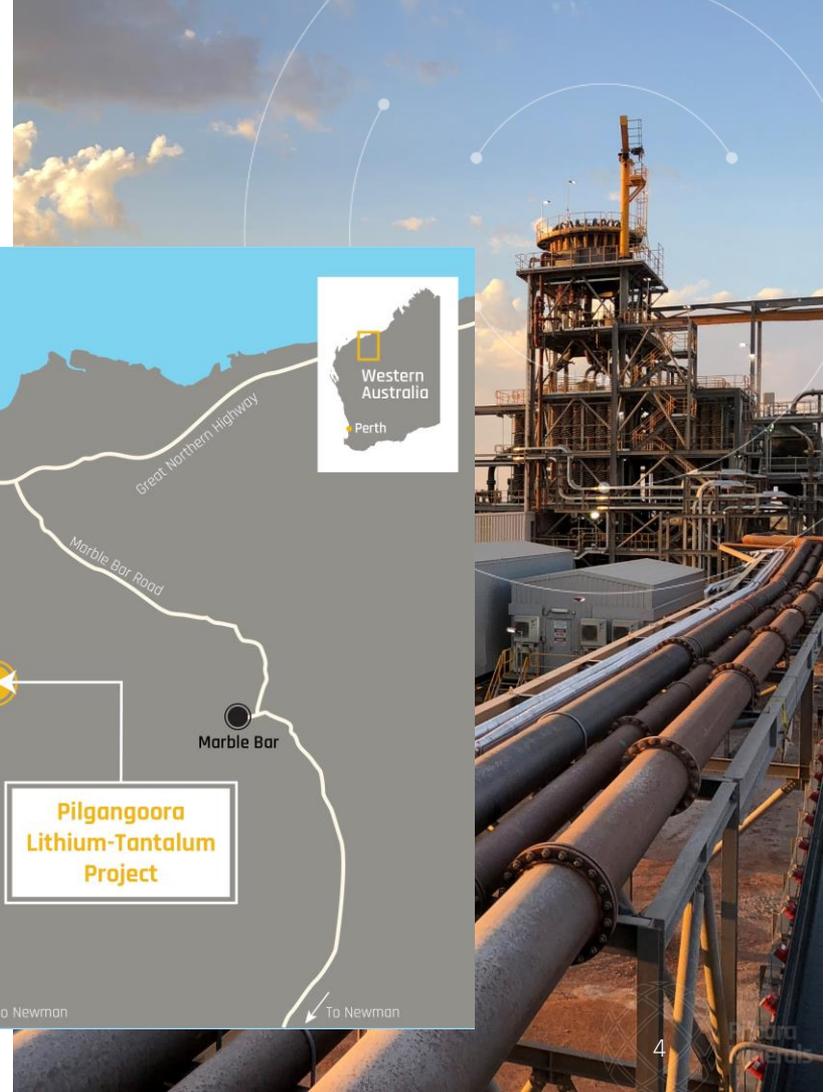
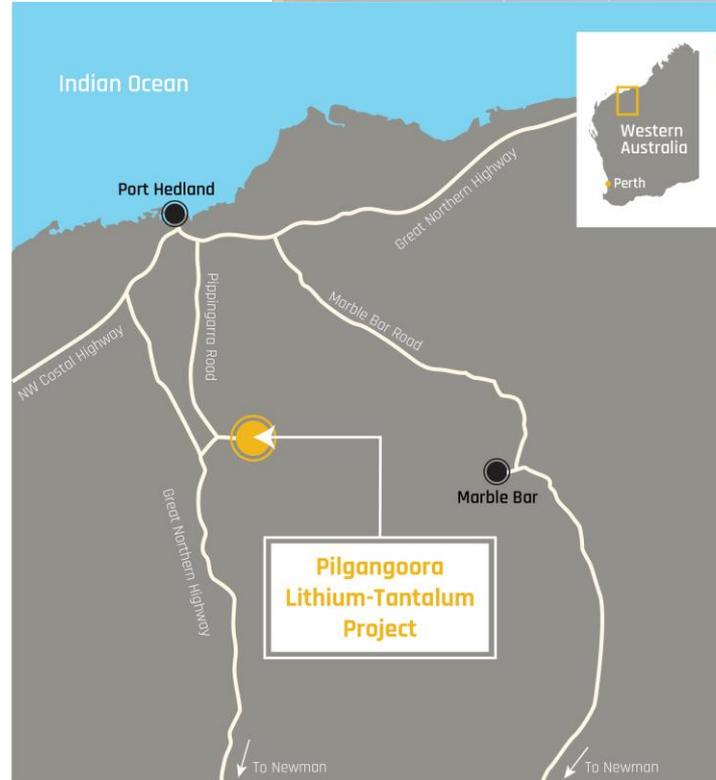
No New Information – Production Targets and Forecast Financial Information

The Company confirms that it is not aware of any new information or data that materially affects the information included in the announcement dated 26 March 2019 “Stage 3 Scoping Study Outcomes” and 17 September 2018 “Pilgangoora Resource and Reserve Upgrade”, and that all material assumptions and technical parameters underpinning the production targets, forecast financial information and estimates in those announcements continue to apply and have not materially changed.

Pilgangoora Lithium-Tantalum Project

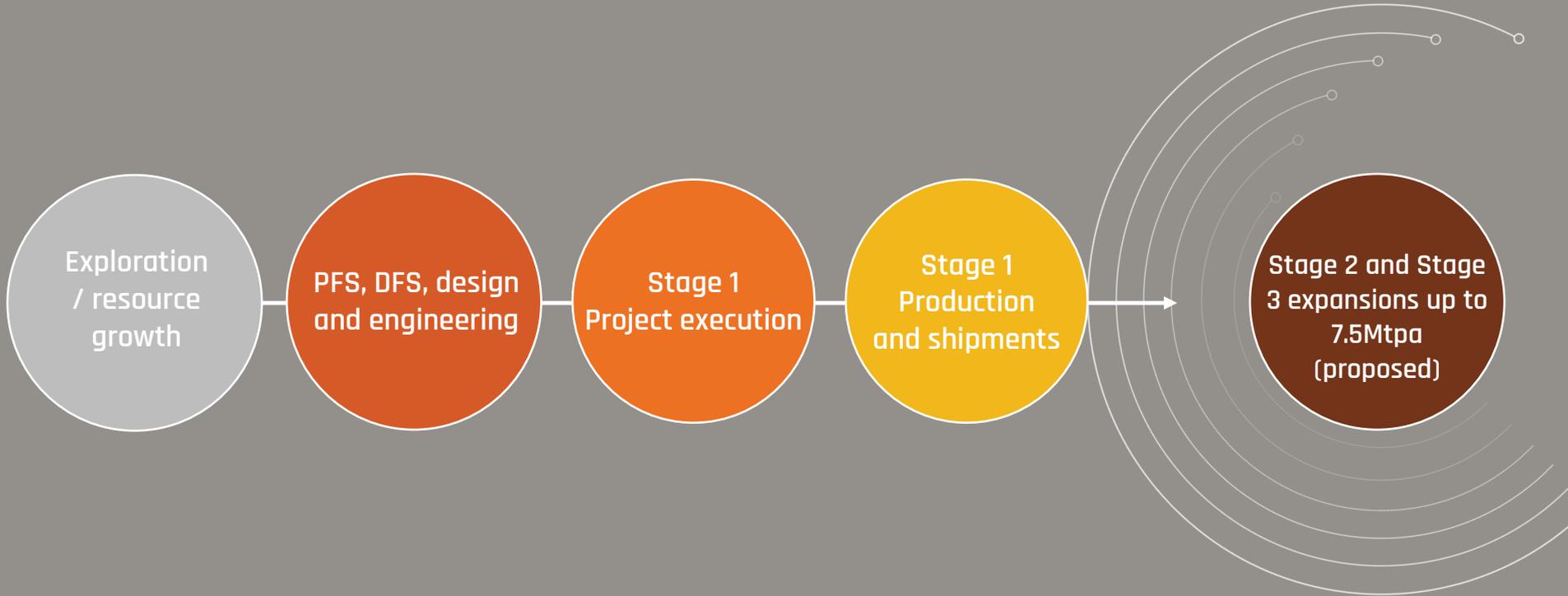
One of the largest spodumene-tantalite resources in the world

- 100% owned by Pilbara Minerals (ASX200, market cap ~\$850M)
- 23-year mine life to date (based on Stage 2)
- Established transport and port infrastructure
- Stage 1 (2Mtpa) production of 330,000tpa spodumene and 321,000lbspa of tantalite concentrate
- Production ramp up well advanced
- Products shipped
 - ~6% spodumene concentrate
 - +5% tantalite concentrate
- +25% tantalite concentrate production under development
- Downstream 'value adding' strategy via participation in future chemical conversion capacity



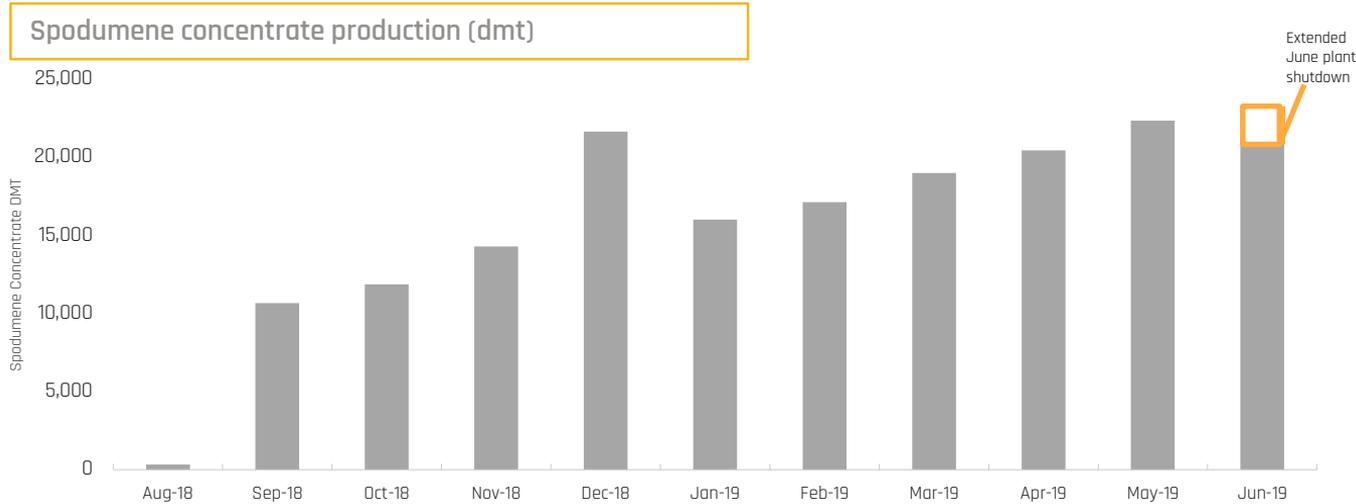
Pilbara Minerals: delivering on project execution

Pilgangoora Lithium-Tantalum Project: from first drill hole to product shipment in under four years



Stage 1 - production growth

Plant throughput, utilisation and product grade have continued to meet expectations, supporting consistent production growth over the financial year

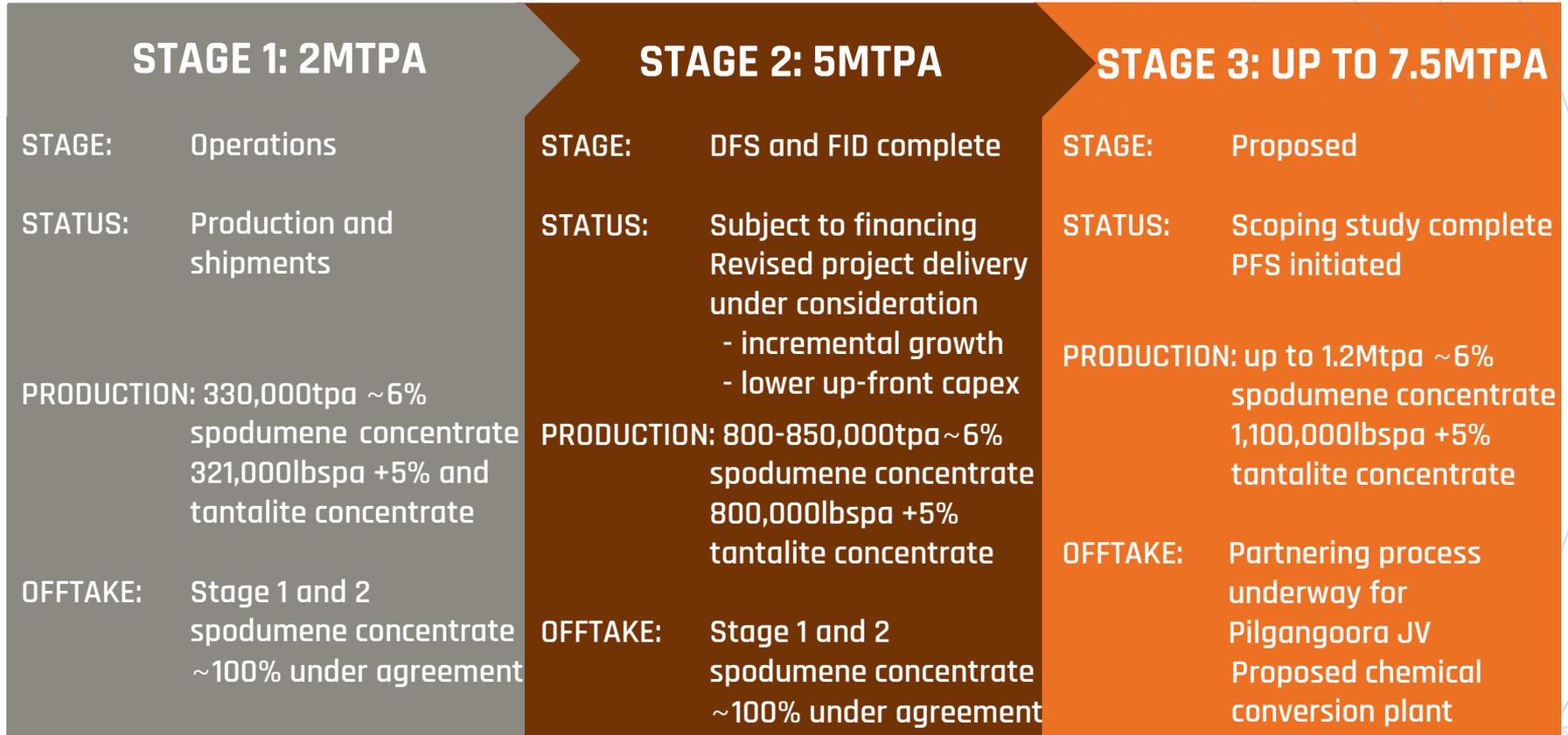


- Nominal 5 day planned shut-down of the concentrator executed in mid June to rectify prior works performed by the EPC contractor and progress improvements works
- Recovery improvements over the Quarter achieved highest recovery rate since commencement of operations at 55%, representing 73% of targeted design recovery (75%)
- Further improvements works planned over H2 CY2019 targeting to improve lithia recovery and achieve design recovery of 75%

- A total of 63,782 dmt (dry metric tonnes) spodumene concentrate produced during the June Quarter
- Outside the June extended shutdown, May-June operations represented $\approx 85\%$ of the Stage 1 design concentrate production capacity

Exceptional growth opportunity

A clear expansion pathway to meet customer growth requirements over time

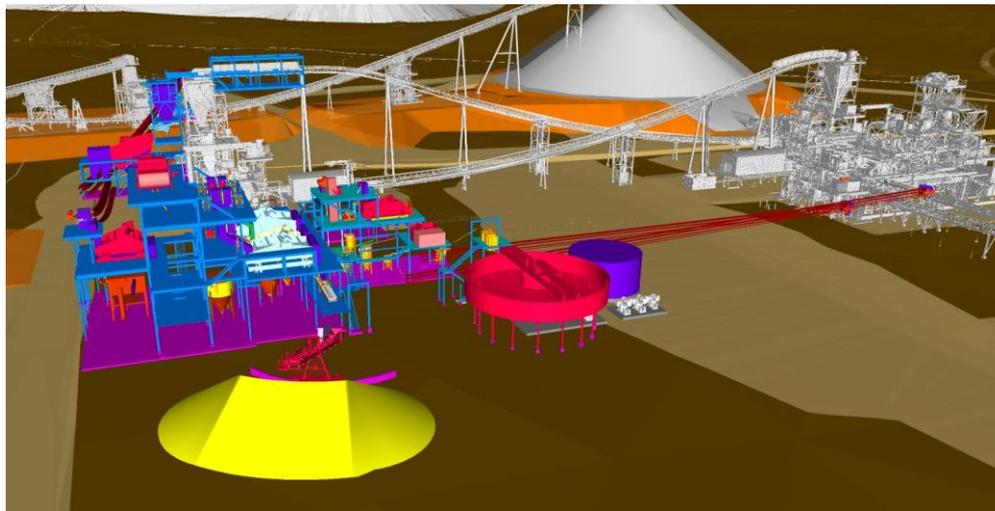


Pilgangoora Stage 2, 5Mtpa expansion

Revised implementation strategies for Stage 2 under consideration

- Engineering studies underway
- Focusing on the potential latent equipment capacity that is evident from the Stage 1 ramp-up
 - HPGR capacity
 - Improved HMS concentrate product flow
- 'Staged' development sequence to be considered to smooth the expansion capacity coming from the mine
- Better match to the development of new chemical conversion capacity coming on-line, including Pilbara Minerals' co-investment with POSCO
- Material reduction in up-front capital investment expected from a staged development

Aerial photograph w/- Stage 2 3D model overlay



Pilbara Minerals - connected to the entire supply chain



Pilbara Minerals

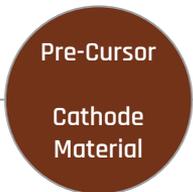


Li Resource

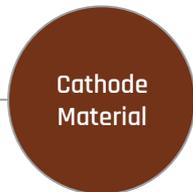


Chemical Converters

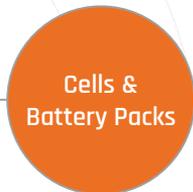
Battery Grade LiOH / LC



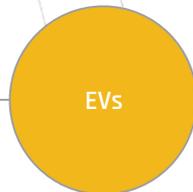
Pre-Cursor Cathode Material



Cathode Material



Cells & Battery Packs

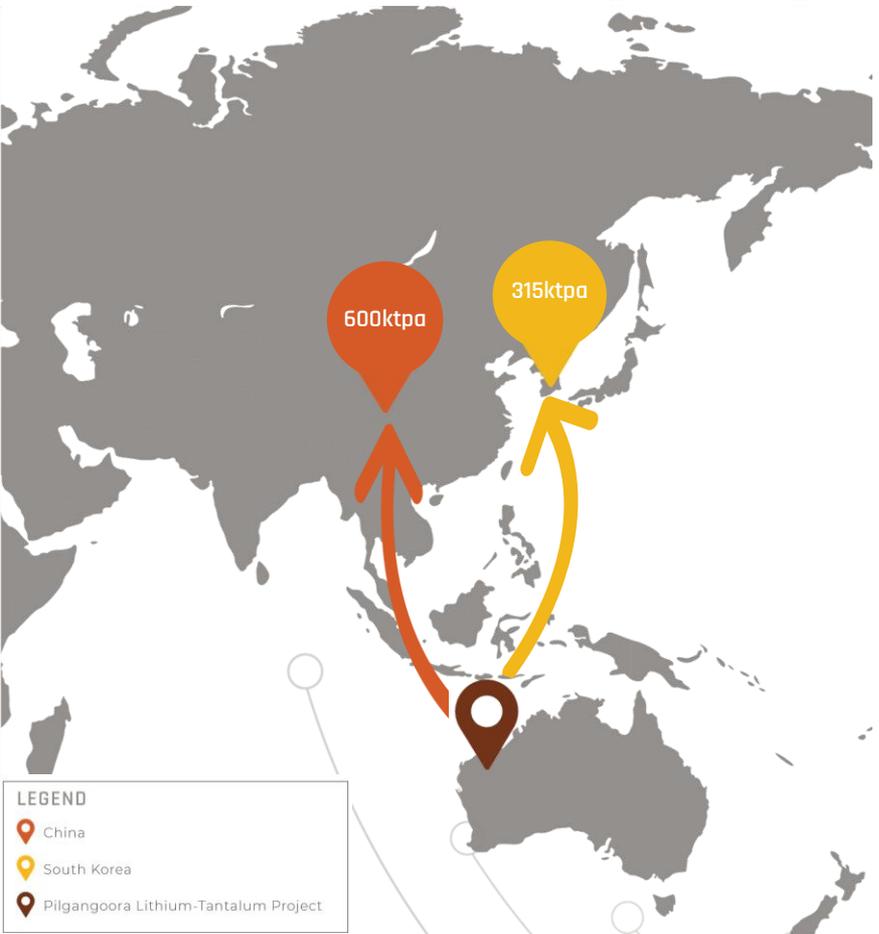


EVs



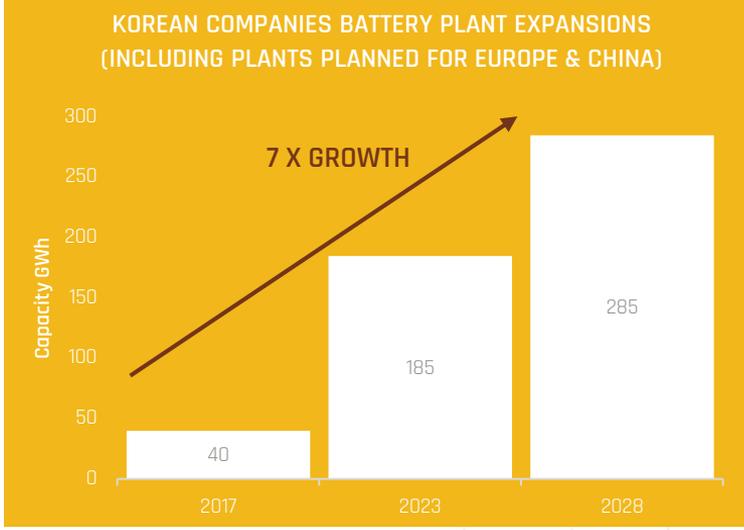
*Potential PLS JV partners

Pilgangoora and POSCO - interconnected hard rock supply and hydroxide to feed the growing South Korean market



LEGEND

- China
- South Korea
- Pilgangoora Lithium-Tantalum Project



Source: Benchmark Minerals Intelligence (October 2018)

- South Korea to be a significant player in the global battery supply chain ~25 % of worldwide capacity by 2028
- Pilbara Minerals' first position in the downstream supply chain through hydroxide production
- Up to 30% JV in chemical conversion facility in South Korea with the capacity of 40ktpa (LCE basis)

Stage 3 partnering process

JV partners to be considered, supporting project expansion and potential links to further chemical capacity

**Potential sale of
minority project
level interest
20 - 49%**

**Support funding
package Stage 2
and 3 expansion**

**Stage 3 offtake
and further
diversification
downstream**

**Fully integrated
lithium raw
materials and
chemicals supplier**

Where is all the lithium (at the right quality) going to come from?



LONG TERM CONTRACTS

10+ year battery supply agreement LG Chem and CATL (**VW**)

10-year lithium supply agreement with Ganfeng Lithium (**Volvo**)

\$4.7B battery supply contract with CATL (**BMW**)



MAJOR COMMITMENTS

“Over the next 10 years **VW** will be launching 70+ new pure EVs...”

“The future of **Volvo** is electric and we are firmly committed to moving beyond the internal combustion engine”

“By 2023, **BMW** will offer 25 electrified models”

MASSIVE PLANS

SK Innovation plans to ramp up annual output from 5GWh to **100 GWh** by 2025
The Korea Herald, 27 May 2019

Asia-based battery companies and global carmakers are planning to spend **\$300B** on EV technology over the decade
Reuters, 15 May 2019

POSCO to expand global market share of battery material supply by 20% or **\$15.22B** of sales by 2030
POSCO, 6 March 2019



BIG TARGETS

Fully electric cars to make up 50% of **VW** global sales volume by 2025 (VW)

All new cars launched by **Volvo** from 2019 onwards will be partially or completely battery-powered

By 2025, electrified vehicles expected to account for between 15-25% of **BMW** sales



Pilgangoora is set for a bright future

Securing Pilbara Minerals' position as one of the largest, lowest cost lithium-tantalum producers in the world is the focus of 2019

OPTIMISATION



Continue Stage 1 optimisation works including achieving design lithia recovery rate contributing to lower production costs.

MEASURED EXPANSION



Incremental Stage 2 development and production expansion to match customer requirements, and Stage 3 development to up to 7.5Mtpa subject to partnering process in progress.

DIVERSIFICATION



Secure Pilbara Minerals' position in the downstream lithium raw materials supply chain through partnership with POSCO and further vertical integration.



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Additional Information



Corporate overview

CAPITAL STRUCTURE	ASX: PLS
Current share price ¹	A\$0.47
Shares on issue	1,851 million
Options on issue ²	21.7 million
Market capitalisation ¹	A\$870 million
Cash at bank ³	A\$63.6 million
Top 20 shareholders (as at 30 June 2019)	39%
3-month average daily volume ¹	~14.5M shares

¹ As at 5 August 2019

² Weighted average exercise price is 69c and the weighted average time to expiry is 361 days

³ As at 30 June 2019

Share price - last 12 months



Experienced Board and proven leadership team

Experienced board of directors



Tony Kiernan AO
Non-Executive Chairman

Highly experienced company director and former solicitor with over 35 years' in the management and operation of listed public companies. Currently Chairman and a non-executive director of several ASX-listed resource companies.



Ken Brinsden
Managing Director & CEO

Mining engineer with over 25 years' experience including mine management, production, and brown-fields and green-fields project development. Previously MD of ASX listed Atlas Iron Ltd contributing to its growth from junior explorer to significant Pilbara iron ore producer.



Nick Cernotta
Non-Executive Director

Highly experienced mining executive with over 30 years' mining experience across a range of commodities. Recently the Director of Operations with Fortescue Metals Group (FMG) and previously the Chief Operating Officer for Macmahon Holdings Limited.



Sally-Anne Layman
Non-Executive Director

Mining engineer, corporate financier and advisor. Ms Layman has 23 years' experience in exploration, mining and finance and over 16 years of successfully identifying and closing over \$1.8 billion in financial deals and equity investments across six continents and more than 20 countries.



Steve Scudamore
Non-Executive Director

Highly experienced public company director. His career includes more than three decades with KPMG incl. senior roles in Australia, London and Papua New Guinea. Currently holding several other board roles incl. Chairman of MDA National Insurance.

Stage 1 - production summary

Growth in mine production and product shipped during FY19

Production

	Units	Q4 FY18	Q1 FY19	Q2 FY19	Q3 FY19	Q4 FY19	FY19 Total
Direct shipping ore (DSO) sold	<i>wmt</i>	145,974	205,766	0 ¹	0 ¹	0 ¹	205,766
Spodumene concentrate produced	<i>dmt</i>	-	11,015	47,859	52,196	63,782	174,852
Spodumene concentrate shipped	<i>dmt</i>	-	0	46,598	38,562	43,214	128,373
Tantalite concentrate produced	<i>lb</i>	-	22,151	56,663	33,374	67,075	180,077
Tantalite concentrate sold	<i>lb</i>	-	7,378	27,821	30,356	38,538 ²	104,062 ²

¹ The DSO program was suspended in Q2 FY19.

² Sales estimates pending final assays results.

Stocks

	Units	Q1 FY19	Q2 FY19	Q3 FY19	Q4 FY19
ROM stockpile	<i>wmt</i>	N/A ¹	487,292	520,606	685,912
Coarse ore stockpile	<i>wmt</i>	N/A ¹	82,430	96,139	83,620
Spodumene concentrate stocks	<i>dmt</i>	17,677 ²	17,266 ²	30,900 ²	51,468 ²
Tantalite concentrate product stocks	<i>lb</i>	14,774	43,616	46,634	75,171

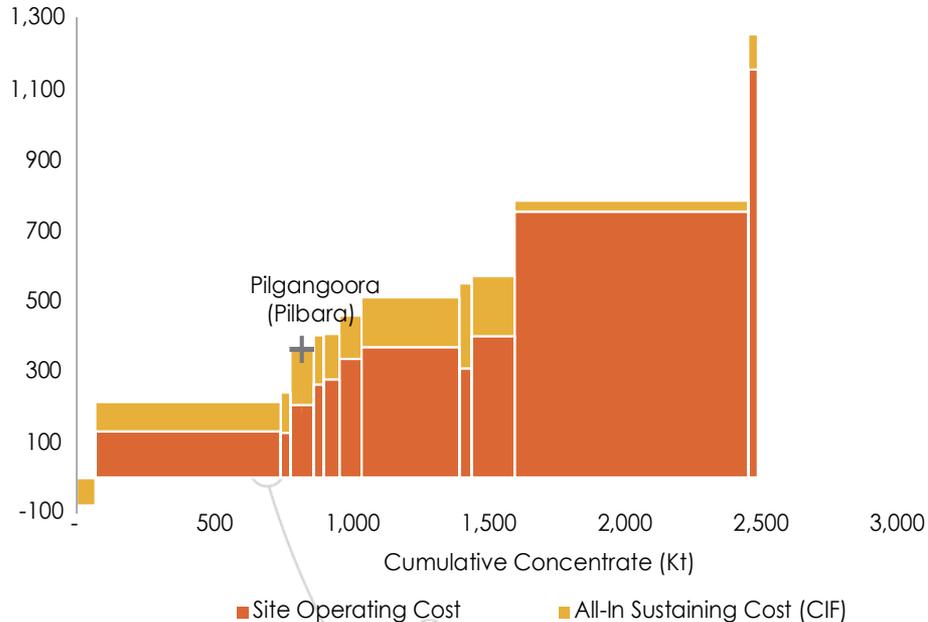
¹ No previous reporting for period due to completion of build and commissioning phase.

² Includes lower-specification stocks produced (incl. tonnes produced during initial commissioning phase), which are expected to be sold or blended to SC6.0 product over time.

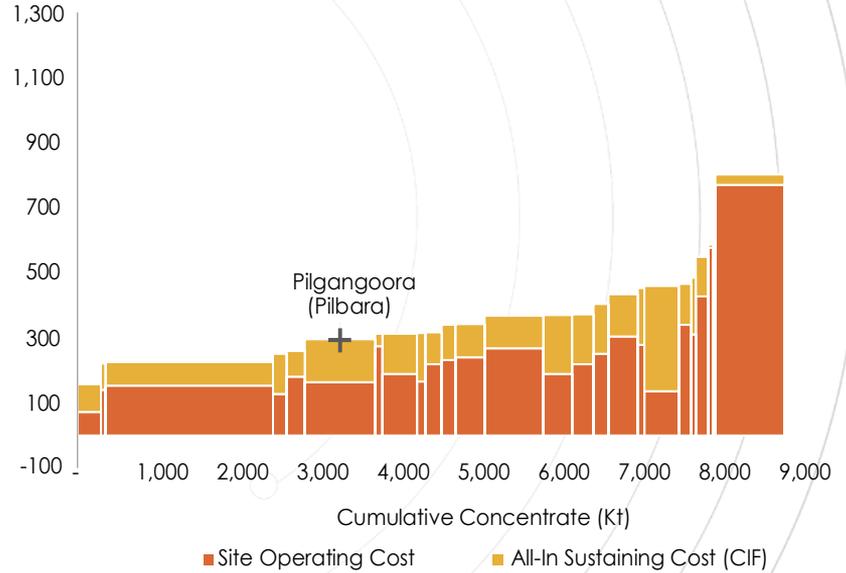
A low-cost hard rock lithium operation

Based upon Roskill's most recent lithium cost model, Pilgangoora is expected to be positioned favourably on the global spodumene cost curve

2018 spodumene concentrate cost curve
US\$/t spodumene 6%, CIF real 2019



2023 spodumene concentrate cost curve
US\$/t spodumene 6%, CIF real 2019



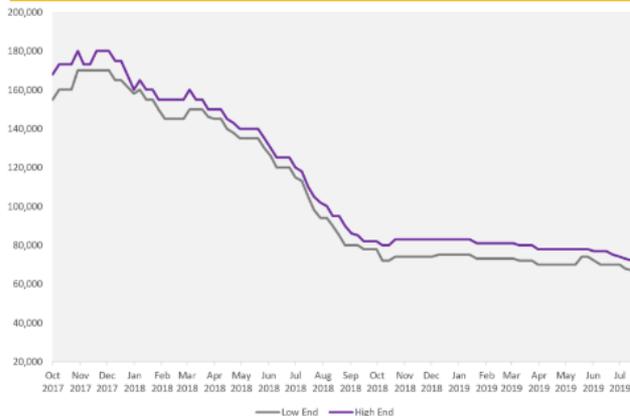
Source: Roskill Lithium Cost Model. Note: Cost curves have been provided by Roskill – Roskill's costing methodology differs from Pilbara Minerals' internal estimates.

Global lithium chemicals pricing

Source: FastMarkets, Friday Jul 12 2019

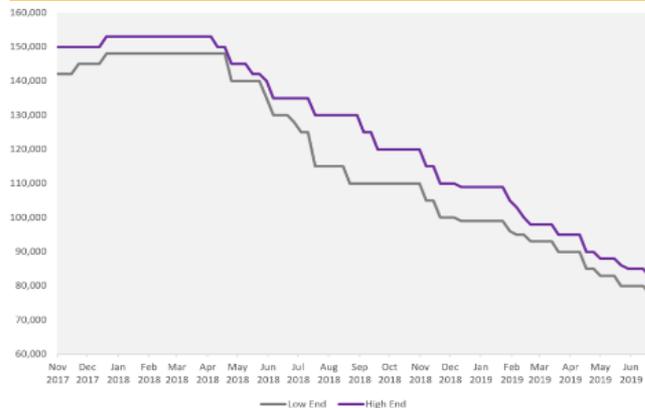
Lithium carbonate ex-works domestic China

Lithium carbonate min 99.5% Li_2CO_3 battery grade, ex-works domestic China, yuan per tonne



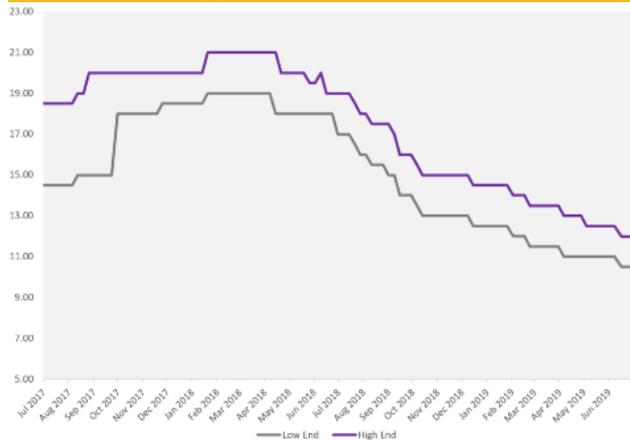
Lithium hydroxide ex-works China

Lithium hydroxide monohydrate min 56.5% $\text{LiOH}\cdot\text{H}_2\text{O}$ battery grade, ex-works domestic China, yuan per tonne



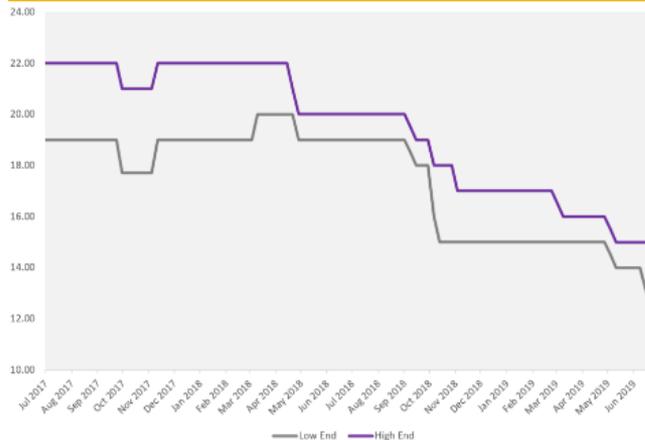
Lithium carbonate cif China, Japan and Korea

Lithium carbonate min 99.5% Li_2CO_3 battery grade, CIF China, Japan & Korea, \$ per kg



Lithium hydroxide cif China, Japan and Korea

Lithium hydroxide monohydrate min 56.5% $\text{LiOH}\cdot\text{H}_2\text{O}$ battery grade, CIF China, Japan & Korea, \$ per kg



China domestic pricing under pressure for the last 18 months as a function of central govt subsidy changes

Ex-China pricing weakening (even in the face of increasing demand), as export capacity comes out of China to Japan and Korea

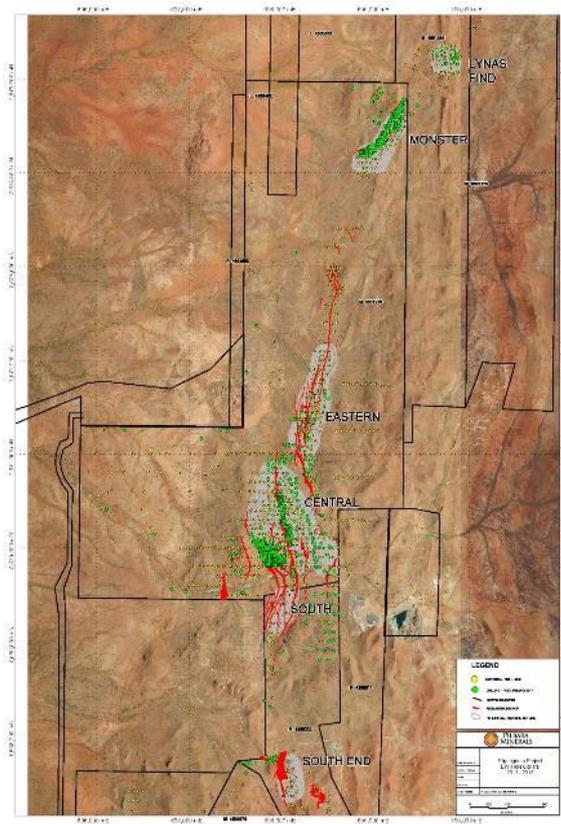
Resources and reserves

JORC Mineral Resource Estimate - September 2018 (using 0.2% Li₂O cut off grade)

CATEGORY	TONNAGE (MT)	Li ₂ O (%)	TA ₂ O ₅ (PPM)	Li ₂ O (T)	TA ₂ O ₅ (MLBS)	FACTORED FE ₂ O ₃ (%)
Measured	22.8	1.38	145	314,000	7.3	0.44
Indicated	112.8	1.29	119	1,456,000	29.5	0.57
Sub-total M&I	135.6	1.31	123	1,770,000	36.8	0.55
Inferred	90.4	1.21	105	1,094,000	20.8	0.67
TOTAL	226.0	1.27	116	2,864,000	57.7	0.60

JORC Ore Reserve Estimate - September 2018

CATEGORY	TONNAGE (MT)	Li ₂ O (%)	TA ₂ O ₅ (PPM)	FE ₂ O ₃ (%)	Li ₂ O (MT)	TA ₂ O ₅ (MLBS)
PROVED	22.1	1.30	135	1.11	0.29	6.6
PROBABLE	86.1	1.24	116	1.19	1.07	21.9
TOTAL	108.2	1.25	120	1.17	1.36	28.5



Resource drilling locations 2018

Exploration target: demonstrates incredible project mineral endowment

Many areas at Pilgangoora remain under-explored and as such are important targets to support future resource growth.

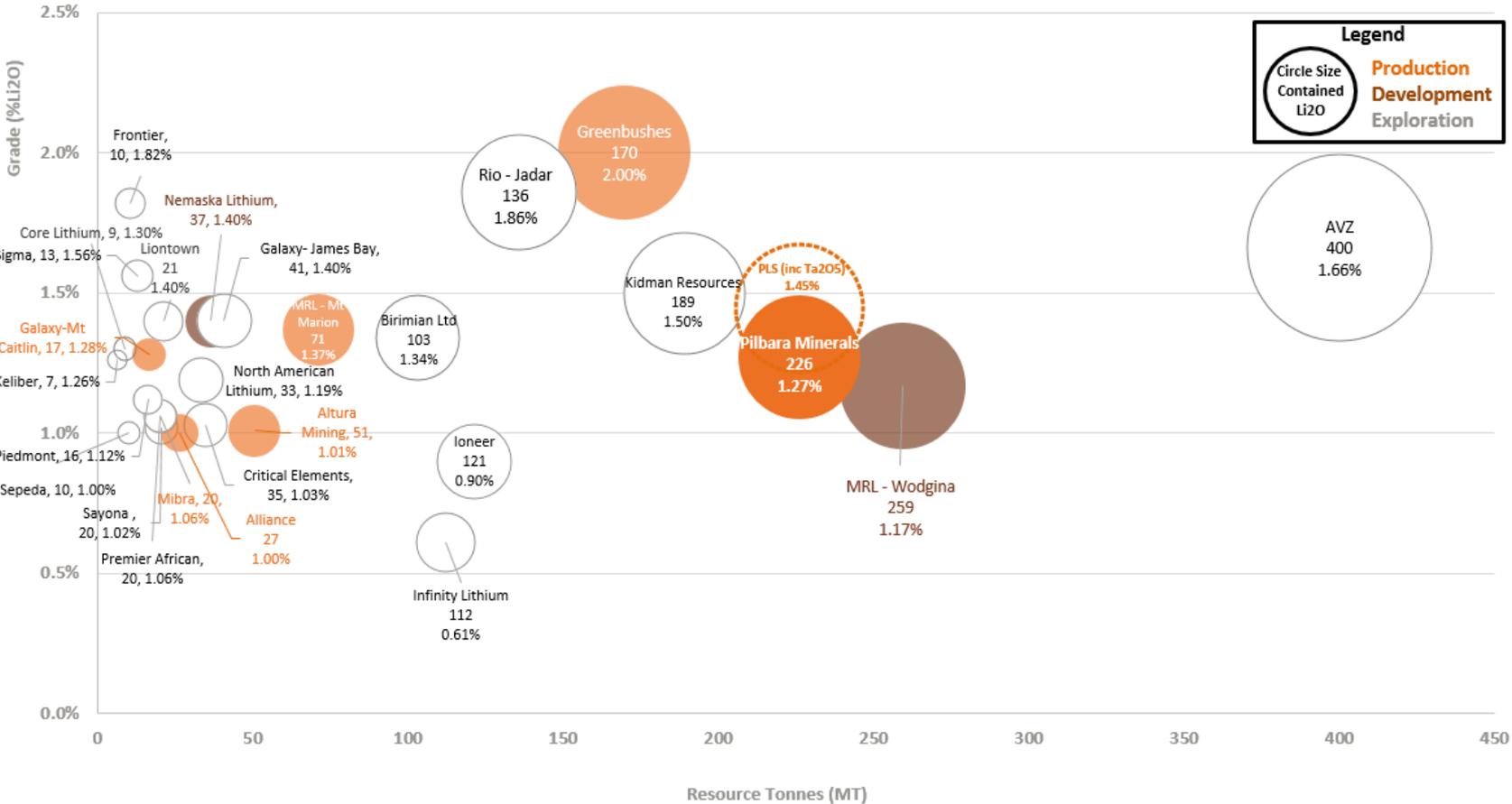
TARGET AREA	MILLION TONNES	GRADE Li ₂ O %	GRADE Ta ₂ O ₅ PPM
Monster-Houston Creek	5-10	1.2 - 1.5	100 - 150
Eastern Prospects	10-15	1.2 - 1.5	200 - 250
Heartbreak Hill	10-15	1.0 - 1.2	200 - 250
Central West	5-10	1.2 - 1.5	100 - 150
Far East	5-10	1.2 - 1.5	100 - 150
Southern Prospects	5-10	1.0 - 1.2	50 - 100
Extensional margins of existing resource	10-20	1.0 - 1.5	50 - 150
Exploration Target*	50 - 90	1.0 - 1.5	50 - 250

The Exploration Target*, which is in addition to the current JORC total Measured, Indicated and Inferred Resource of 226 million tonnes grading 1.27% Li₂O and 116ppm Ta₂O₅ and 0.60% Fe₂O₃, has been determined from interpretation of numerous datasets, detailed geological mapping and interpolations from existing pegmatite domains in the Pilgangoora 3D geological model. The majority of target areas are further qualified by the occurrence of outcropping spodumene bearing pegmatites.

***Note to Exploration Target: The potential quantities and grades of the Exploration Target are conceptual in nature and there has been insufficient exploration to date to define a Mineral Resource. It is not certain that further exploration will result in the estimation of a Mineral Resource.**



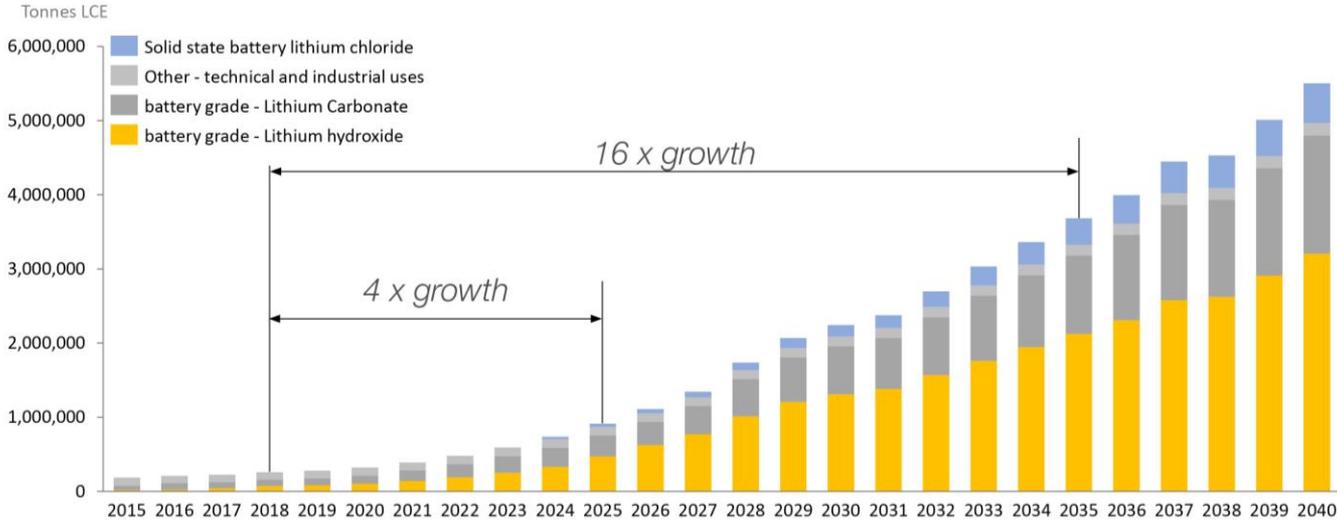
Pilgangoora - a globally significant hard rock lithium resource



Future lithium raw material supply

Lithium hydroxide will become the sought after product for battery manufacturers presenting a significant opportunity for hard rock lithium projects

Forecast for lithium demand by lithium chemical production across all sectors



BENCHMARK MINERAL INTELLIGENCE – MINERAL RESOURCES LIMITED – JULY 2018

A stable supply of hard rock lithium for the manufacturer of high quality batteries to feed the growing EV and energy storage sectors.

Strong offtake partners committed to Stage 1 and 2 production



General Lithium Corporation

Major producer of lithium chemicals in China

- Highly experienced with more than 15 years of operational and technical know how
- Customers include top cathode producers in China
- Patented process from direct conversion of spodumene into LiOH
- Producing 25ktpa LCEs with plans to add 60ktpa



Biggest steel producer in South Korea

- Listed on KSX, market cap US\$29.5B
- Largest producer of automotive grade steel
- PosLX Technology to produce very high battery grade LiOH
- Produces high Ni NCM cathode and anode materials
- Strategic partnership with a major Chinese co. and Ni producer
- Established the first Korean LC and LiOH plant



China's largest fully integrated lithium company

- Listed Shanghai Stock Exchange
- Market cap RMB39.2B ~US\$5.8B
- Commissioning another 40ktpa LCEs with plans for another 25ktpa to reach 100ktpa LCEs
- Customers include major cathode producers in China, Japan and South Korea



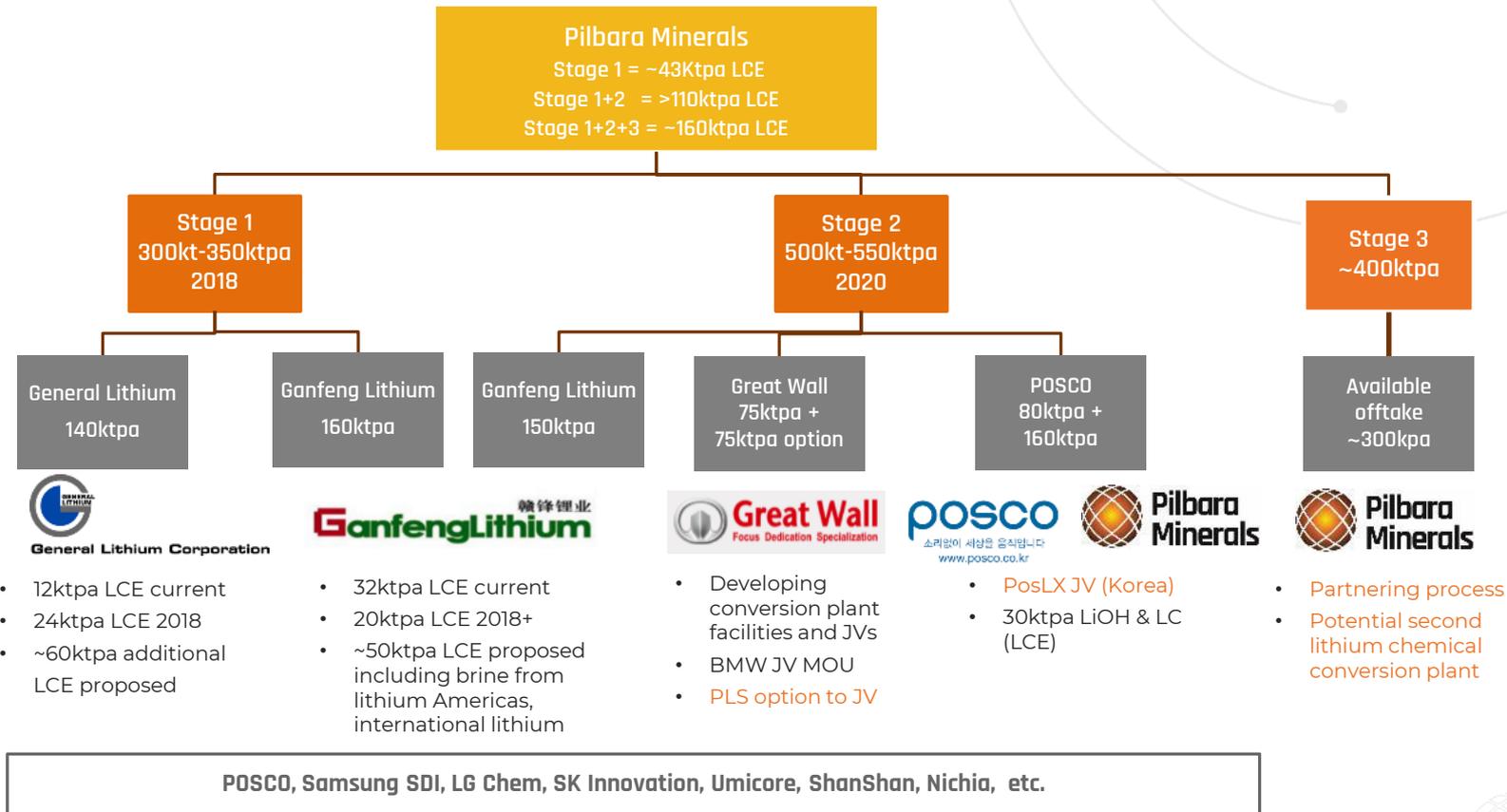
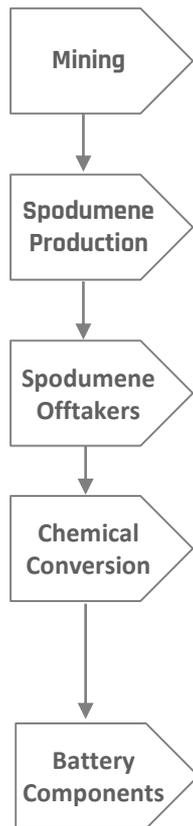
Pilbara Minerals



China's largest SUV and pickup manufacturer

- Listed Hong Kong and Shanghai Stock Exchange
- Market cap RMB120B ~US\$19B
- Producing ~1M vehicles per annum
- Aiming to produce 500,000 electric and hybrid cars a year by early 2020
- JV with BMW to supply mini-EV's
- Establishing a fully integrated mine to EV supply chain

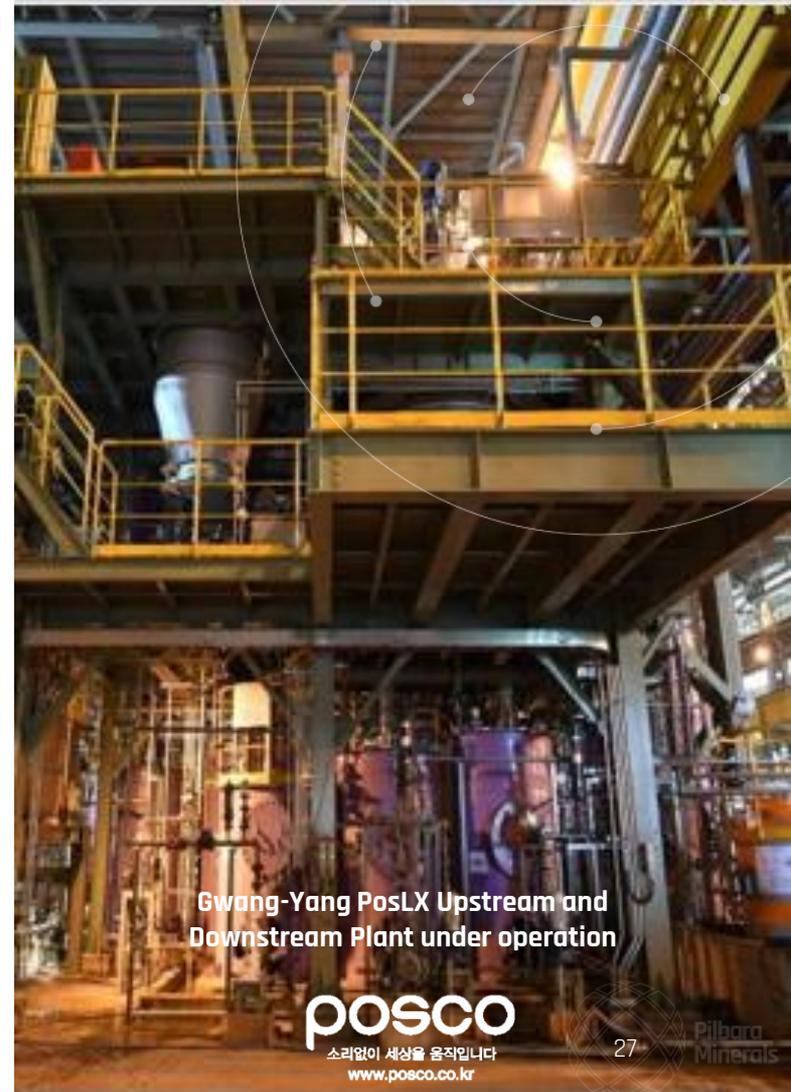
Offtake for 100% of stage 1 and 2 of Pilgangoora



Proposed Pilbara Minerals - POSCO JV

Future participation in the rapidly developing Korean lithium ion battery market through a jointly owned lithium chemicals plant

- Up to 30% JV in chemical conversion facility in South Korea with the capacity of 40ktpa (LCE basis)
- Facility to apply Posco's PosLX technology for lithium chemicals purification
 - Outstanding technology creating very high purity products and enabling reagent recycling
 - Hydroxide / carbonate production underway at the Gwang-Yang demo plant
- Synergy maximisation through development within a larger battery raw materials industrial park
- 'In-principle' agreement on Joint Venture terms and detailed JV documents well advanced
- FID of both Boards expected in the coming months.

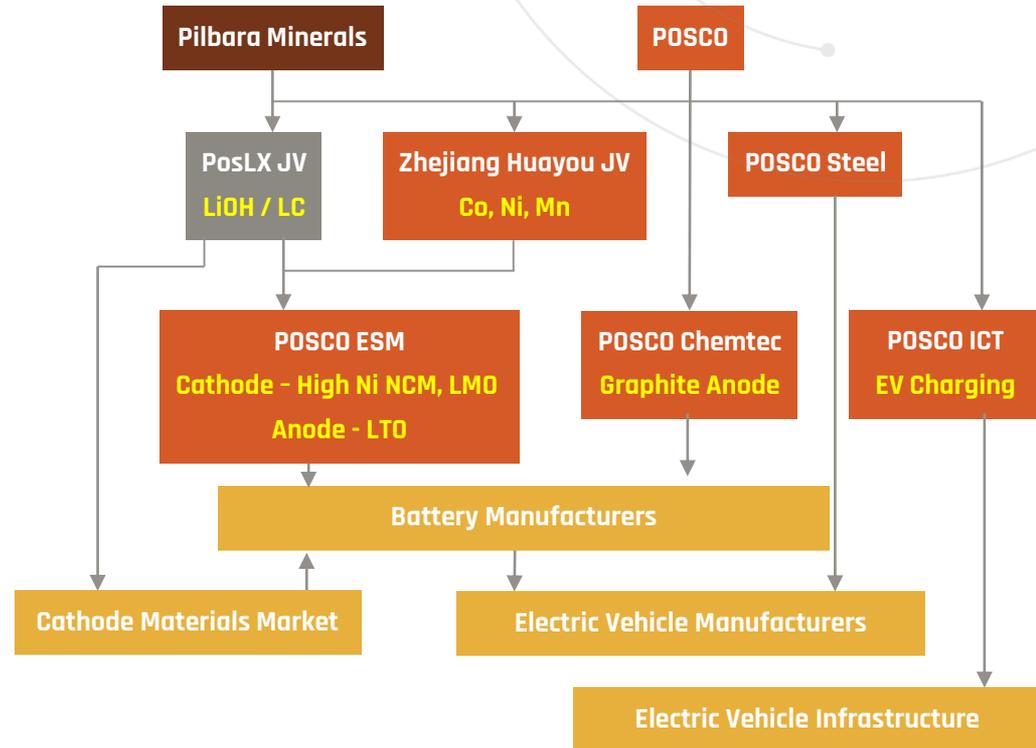


Gwang-Yang PosLX Upstream and Downstream Plant under operation

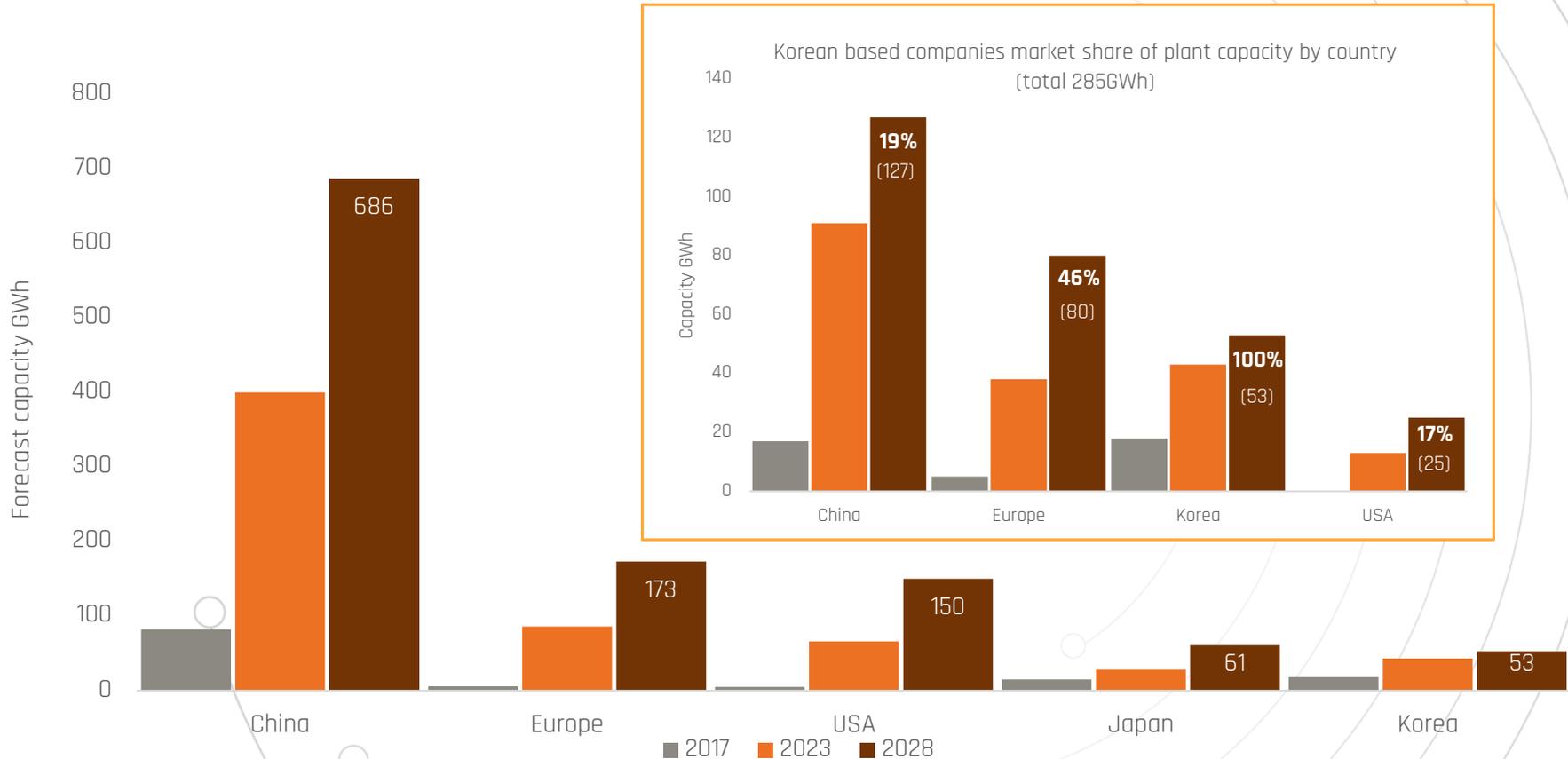
Joint venture with POSCO

Positioning Pilbara Minerals at the forefront of the rapidly growing South Korea battery market

- Provides a strategic link to lithium battery and EV manufacturers
- Expands access to the battery industry and allows Pilbara Minerals to expand its knowledge of the lithium supply chain
- Broadens customer base, providing geographic diversification and greater access to global cathode makers
- Enables further value to be created downstream through chemical conversion to produce a lithium hydroxide



Global battery plant pipeline by plant location



Battery plant total and forecast capacity by country

Source: Benchmark Minerals Intelligence (October 2018)

LITHIUM EXTRACTED FROM ORE THE FUTURE PROOF SOLUTION FOR VOLKSWAGEN

Lithium ore to lithium hydroxide

- Commercially more attractive
- More stable to extract and easier to scale
- Better suited to next generation of batteries

Australia the world market leader for ore-based production

- Stable political system
- High degree of transparency
- Ambitious environmental standards

Volkswagen focused on lithium supply from mining industry

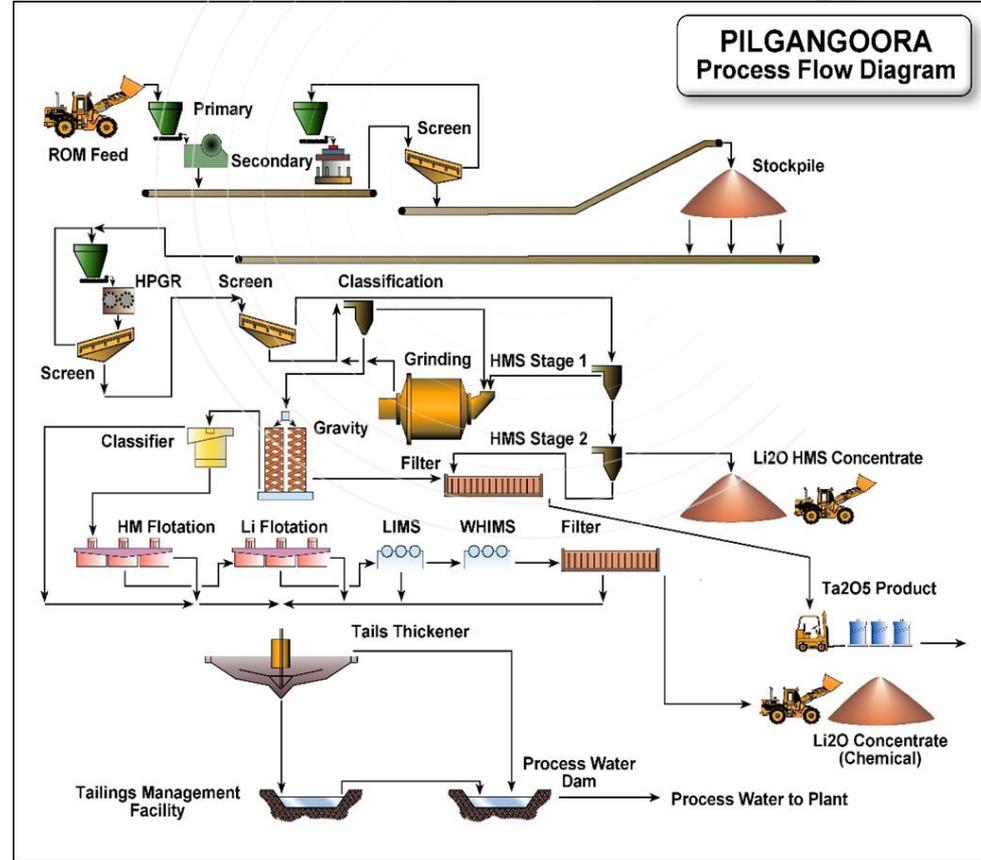
- Stable prices
- Guaranteed capacity
- Transparent sustainability



Pilgangoora processing

Spodumene and tantalite concentrate recovery

- **Spodumene concentrate** contains lithium in the form of lithia (Li_2O), recovered at the mine via the concentrator:
 - 2-stage heavy media separation for coarse spodumene concentrate
 - oxide flotation for fine spodumene concentrate
 - high-grade 6% Li_2O (SC6.0 specification) produced
- **Tantalite concentrate** (Ta_2O_5) contains tantalum:
 - Recovered in the concentrator's 'gravity' circuit
 - Tantalum used primarily in the electronics industry in the form of capacitors
 - Also used in the medical and aerospace industries



Stage 2 processing plant upgrades to 5Mtpa

Upgrades to the concentrator will be conducted across two stages (Stage 2 and 3) in order to reach 7.5Mtpa processing capacity

- 1 Stage 2 tailings**
 - Increase thickener size to cater for 5Mtpa throughput
- 2 Stage 2 spodumene dressing**
 - Increased concentrate thickener sized for 5Mtpa throughput
 - Space provision to extend storage shed & add additional filter press
- 3 Stage 2 flotation**
 - Larger rougher cells
 - Space provision for additional cyclone, rougher & cleaner column
- 4 Stage 2 grinding**
 - Separate 3Mtpa tertiary crushing circuit (instead of expanding existing circuit)
 - Separate comminution circuit, including new HGR
 - Space provision for 2nd high pressure grinding roll & screen (increases circuit throughput to 5Mtpa)



- 5 Stage 2 HMS**
 - Sized for 3Mtpa throughput
 - Proportional bypass functionality (to facilitate higher throughput)
- 6 Stage 2 milling and classification**
 - Larger 10MW ball mill
 - Increased design throughput
 - Space provision in spirals
- 7 Tantalite dressing shed**
 - Upgrade to 30% tantalite concentrate

Stage 3 processing plant upgrades (to 7.5Mtpa)

Stage 3 will utilise an additional high pressure grinding roll instead of expanding the existing circuit

1 Stage 3 spodumene dressing

- Additional concentrate filter
- Increased storage capacity (not shown)

2 Stage 3 crushing circuit

- Comminution circuit expanded with new HGR
- Expansion of crushing circuit, or
- Construction of new crushing circuit
- Increased throughput

3 Stage 1 plant

- General de-bottlenecking

4 Stage 3 flotation

- Additional cyclone, rougher flotation cell
- New cleaner column

5 Stage 3 tertiary crushing

- Additional high pressure grinding roll (instead of expanding existing circuit)

6 Stage 3 HMS

- Proportional bypass or
- New HMS circuit

7 Stage 3 milling and classification

- Additional spirals & cyclones in gravity circuit
- Secondary sizing screen capacity increase
- Pumping and throughput increase



What sets us apart?

1



World class lithium resource

The Pilgangoora Project is one of the premier hard-rock lithium-tantalum resources globally (by size and grade) where there is both spodumene concentrate offtake and a joint venture position available, with Tantalite by-product credits.

2



Low cost operation

Forecast LOM cash cost of US\$291/t¹ (net of tantalum by-products) with the Pilgangoora Project's cost position benefiting from high grade, scalable mining operations, low strip ratio and tantalum by-products.

3



Quality product and customers

Pilbara Minerals has secured long-term offtake arrangements with world-class customers to support Stage 1 and Stage 2 production and has consistently delivered high quality products to market that meet customer requirements.

4



Clear expansion pathway

A three-phased growth strategy that includes expansion to 7.5Mtpa processing capacity (1.2Mtpa spodumene concentrate), development of a lithium hydroxide conversion facility and exploration target set to drive mine life extension.

5



Proven operator

Pilbara Minerals has a highly experienced management team who have led the Pilgangoora Project from first drill hole to production in under 4 years and successfully met high quality 6% battery grade product requirements.

6



Exploration upside

Pilbara Minerals plans to extend the mine life of the Pilgangoora Project through Resource conversion and further discoveries from its 50 - 90Mt of exploration targets which include potential near-surface tonnes.

7



Diversification into downstream processing

Through its joint venture with POSCO and the evaluation of a proposed secondary lithium chemical conversion facility in either Australia or overseas, Pilbara Minerals is positioned to expand its operations into the high-value lithium chemical market.

1. Metrics based upon Pilbara Minerals' Stage 3 Scoping Study, constrained by JORC Reserves of 108Mt