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#### Mineral Resources and Ore Reserves

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 Australian 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 Minerals 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 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 Minerals 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 Minerals 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 Minerals 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.

#### No new information regarding the Pilgangoora Project

Information relating to the current Mineral Resource and Ore Reserve estimates, production targets and forecast information derived from the production targets (including information relating to the proposed expansions of the Pilgangoora Project), each in respect of the Pilgangoora Project, is extracted from the ASX announcement dated 3 August 2018 entitled "Outstanding DFS Results Support Pilgangoora Expansion", the ASX announcement dated 17 September 2018 entitled "Pilgangoora Reserve and Resource Upgrade", the ASX announcement dated 27 August 2019 entitled "Update on Partnering Process and Revised Stage 2" and as updated in the 30 June 2019 Annual Report.

Pilbara Minerals confirms that it is not aware of any new information or data that materially affects the information included in these announcements and that all material assumptions and technical parameters underpinning the resource and reserve estimates, production targets and forecast financial information derived from the production targets in the announcements continue to apply and have not materially changed. Pilbara Minerals confirms that the form and context in which the competent persons' findings are presented in this report have not been materially modified from the original market announcements.

The technical studies referred to in this report in respect of the Revised Stage 2 expansion have been undertaken to determine the potential technical viability of a revised and incremental the Stage 2 expansion over 3 separate phases to achieve a 5mtpa operation and to reach a decision to proceed with more definitive studies. Each technical study at this stage is based on low-level technical and economic assessments and, while utilising information and assessments derived from the original Stage 2, 5mtpa DFS published on 3 August 2018, they are insufficient to provide assurance of an economic development case at this stage or provide certainty that the conclusions of the studies (including capital costs) will be realised. The results of the studies should not be considered at scoping or definitive feasibility level nor a profit forecast.

#### Past performance

Statements about past performance are not necessarily indicative of future performance.

#### Acceptance

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

#### Authorisation of release

Release of this market announcement is authorised by Ken Brinsden, Pilbara Minerals Limited's Managing Director.





### **Pilbara Minerals**

- \$590M¹ market cap
- ~AUD\$108M cash and equivalents<sup>2</sup>
- 100% owned Pilgangoora Lithium-Tantalum Project
- 23-year mine life, at 5Mtpa processing capacity
- · Products:
  - ~6% Li<sub>2</sub>O spodumene concentrate
  - +5% primary tantalite concentrate
- Multi-stage mine expansion and targeted downstream participation:
  - Stage 1, in production (~330ktpa nameplate capacity, production currently moderated)
  - Stage 2, phased expansion study nearing completion (~800-850ktpa nameplate capacity)
  - Downstream partnership development with POSCO
- Leading partners: General Lithium, Ganfeng Lithium, Great Wall Motors (SVOLT), POSCO, CATL and Yibin Tianyi

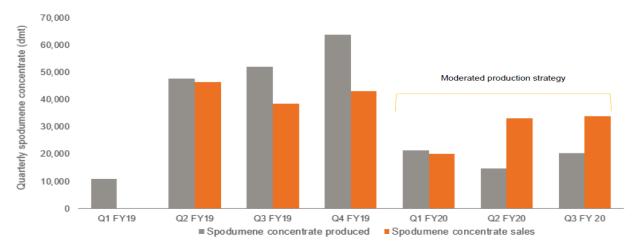
### **Investment highlights**

Stage 1 currently producing a high quality ~ 6% Li<sub>2</sub>O spodumene concentrate for key participants delivering **HIGH QUALITY** to Tier 1 lithium ion cell manufacturers SPODUMENE PRODUCT Tantalite concentrate by-product One of the largest operating hard rock lithium assets globally, supporting a JORC ore reserve life of >50 and >20 years (Stage 1 and 2, respectively) LOW COST, LONG LIFE Targeting cash operating costs of US\$320 - \$350/dmt CFR China which are expected to be achieved once **PRODUCER** the market supports Stage 1 nameplate operations of ~330ktpa of product on a continuous and steady state basis. Long term offtake agreements in place with key industry customers for existing Stage 1 and future Stage 2 production Offtake pricing is market based and linked to Chinese domestic and/or seaborne lithium carbonate and **DIVERSIFIED, BLUE CHIP** lithium hydroxide price to ensure ongoing business alignment between Pilbara Minerals and each offtake **OFFTAKE PARTNERS** customer ~ 8.2% equity investment by Contemporary Amperex Technology (CATL), together with strategic equity investments from POSCO, Great Wall Motor Company and Ganfeng Lithium, provides industry validation of the project's quality and scale Located in the Pilbara region of Western Australia, a tier 1 mining jurisdiction **TIER 1 MINING** Responsible and ethical mining jurisdiction focused on ESG practices Close proximity to established infrastructure, including port, roads, water supply and airport **JURISDICTION** Access to skilled and mining focused employees and contractors Strong economics for original Stage 2, 5mtpa future expansion, with underlying offtake agreements in place **OPPORTUNITY TO** subject to final investment decision. **DEVELOP STAGE 2 AND** Stage 2 offtake agreement with POSCO linked to participation in a downstream JV chemical facility in South Korea POSCO DOWNSTREAM JV

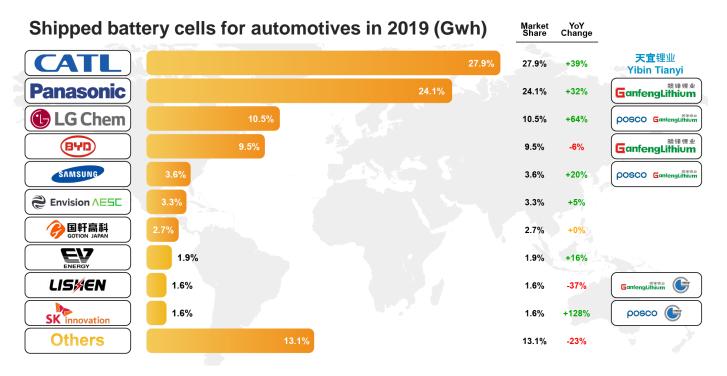
Final investment decisions will be market and customer demand dependent

### Pilgangoora Stage 1 status

- Moderated production strategy commenced in June 2019 in response to softer market conditions, which has preserved cash flow and working capital
- · Prudent cash flow management strategy in place
- Recent plant modifications have materially improved product recovery performance to near design recovery rates through free-iron removal, grind size optimisation and plant stabilisation works. Further plant optimisation and improvement expected commensurate with more plant operating time
- Production campaign in April 2020 produced average lithia recovery of ~ 70%, with campaign periods (over many days) achieving plant design of 72%-78% (subject to ore type), reinforcing previously announced improved recovery performance trends.
- Recovery levels currently being achieved during the June production campaign further support the plant's performance improvement.
- Targeting cash operating costs of US\$320 \$350/dmt CFR China (SC6.0 basis) once steady state full production capacity has been achieved



# Our customers and partners supply the biggest and highest quality battery manufacturers in the world

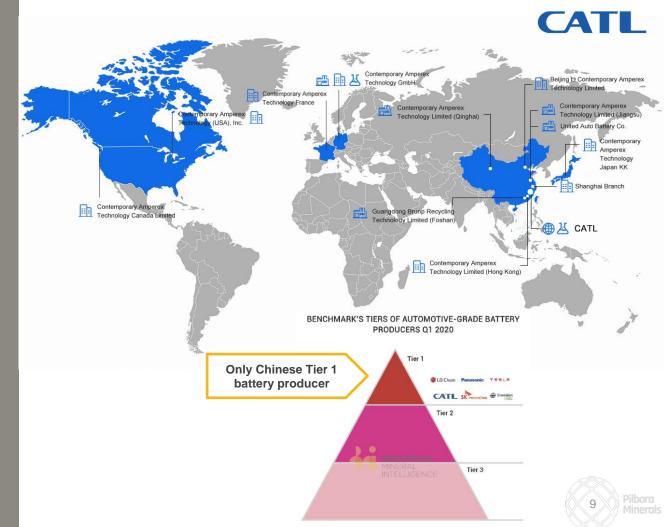


Source: 'Shipped Battery Cells for Automotive in 2019' Roland Zenn compiled from SNE Research 02/2020 Note: Customer relationships based on Pilbara Minerals' information

### Who is CATL?

### China's largest battery manufacturer for EVs

- Listed on the Shenzhen stock exchange with market cap ~US\$46bn¹ and available cash of US\$3.3bn²
- Three battery manufacturing facilities in China, two main R&D centres in China and Germany, 24,000 staff globally
- Annual battery cell production capacity reached 23.4GWh in 2018 accounting for 41% of China's total<sup>3</sup>
- Strategic agreements with Toyota, BMW, Volkswagen, and Honda, among others





<sup>2.</sup> As at 31 December 2019;

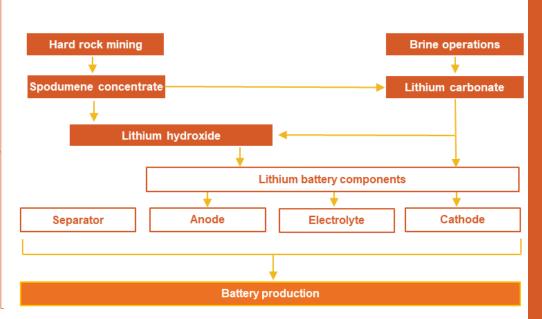
<sup>3.</sup> China Automotive Technology and Research Center

### Proposed POSCO downstream JV

- JV term sheet signed with POSCO in Aug 2019 to jointly develop a 40ktpa (LCE) LiOH downstream processing facility in South Korea
- Pilbara Minerals to initially hold a 21% interest in the incorporated JV, with an option to increase to 30%
- A key strategic relationship which enables participation in the rapidly developing South Korean lithium ion battery market and achieves Pilbara Minerals' objective of becoming integrated downstream
- Includes POSCO's PosLX purification technology which produces LiOH and lithium carbonate
- 315ktpa SC offtake to be sourced from Pilgangoora Stage 2 expansion to support the JV's downstream processing facility
- Subject to final investment decision on Stage 2 expansion, as well as respective parties board approvals and execution of formal JV documentation
- Should the JV partners decide to proceed, Pilbara Minerals expects to fund its initial 21% investment into the JV through an unsecured A\$79.6M convertible bond to be provided by POSCO







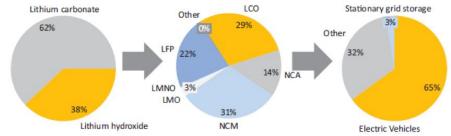
# Hard rock lithium

Direct chemical conversion of spodumene concentrate into lithium hydroxide makes hard rock more cost competitive and the preferred feedstock for the emerging high nickel cathode chemistries, which support energy dense batteries enabling high power, extended driving range and rapid charging

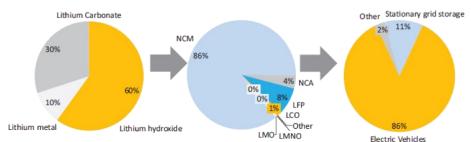


# Lithium hydroxide to be the key ingredient for the future of lithium ion battery technology

#### Global lithium supply and breakdown of demand by end use 2018



#### Global lithium supply and breakdown of demand by end use 2035



Note: LTO - Lithium—thanate, LFP - Lithium iron phosphate, LMNO—Lithium Manganese Nickel Oxide, LMO - Lithium Manganese Oxide , NMC - Lithium Nickel Manganese Cobalt Oxide, NCA - Lithium Nickel Cobalt Aluminium Oxide, LCO - Lithium Obalt Oxide

Source: Benchmark Mineral Intelligence (2019)

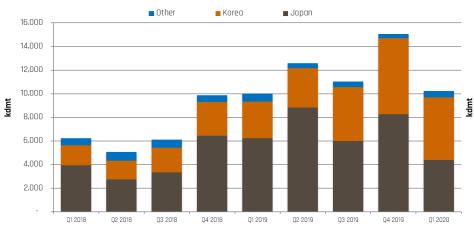


### Spodumene concentrate

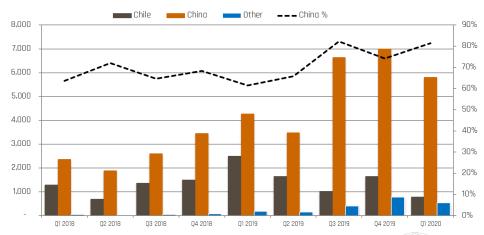
- consolidating its competitive advantage in hydroxide

China, and the low-cost spodumene they rely on, is now firmly embedded in the global lithium hydroxide supply chain and growing strongly

#### China, lithium hydroxide exports



#### Korea, lithium hydroxide imports



Data Source: Bloomberg Battery Metals Monthly, April 2020

### Bold moves being made to create a clean transport future in Europe through EV subsidies

### **France**

- Plans to offer subsidies of up to €12,000
- Reducing EV prices by 40% in cases.



- Proposing a €20B purchasing facility for EVs
- Potential future exemption from VAT for EVs



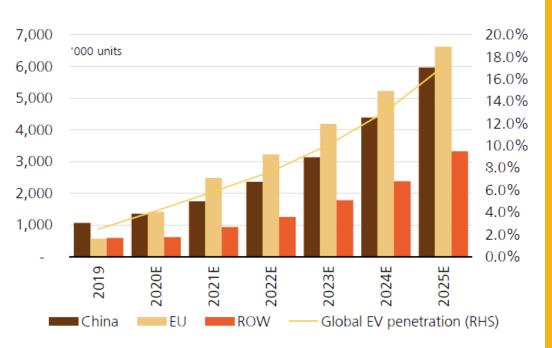


- £3,000 pure EVs, considering increase to £6.000
- £1B investment in new charging points

## Germany

- Subsidies of up to €9.000
- Pure EV vehicle tax exemption extended to





Source: UBSe

### **EV Adoption**

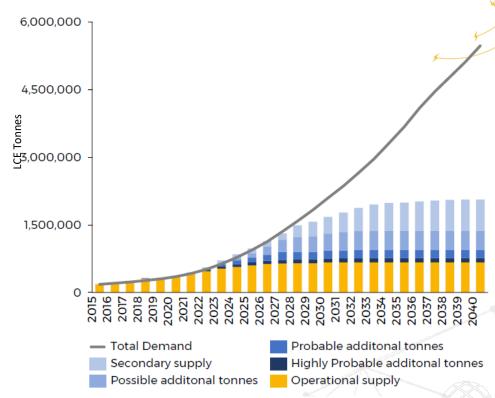
Europe set to become the world's largest EV market during 2020, overtaking China

Europe a market that will be dominated by high-nickel cathode battery application, initially sourced via North Asia given the limited European supply chain available today



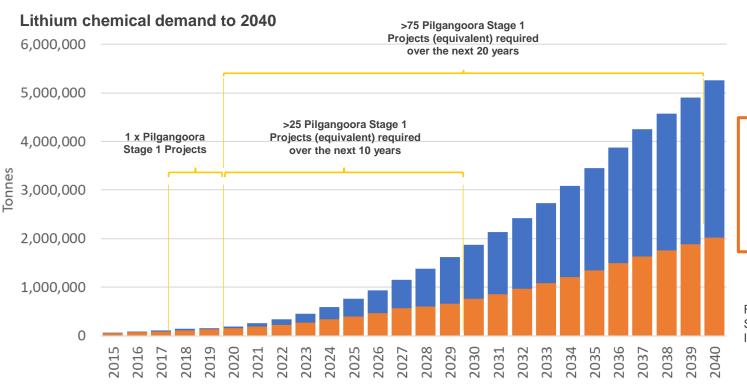
# Lithium raw material demand forecast expected to remain robust

- Both mine and chemical plant expansions have stalled at a critical stage to meet demand growth from 2022 onwards
- Majors have pulled back on capital commitments awaiting improved market conditions
- Consolidation expected at a converter (and possibly raw material) level
- Market set to move into a structural deficit from 2025 onwards
- Current demand of 300k LCE tonnes, growing to 930k LCE tonnes in 2025 and 2.1m LCE tonnes in 2030



### Forecast lithium chemical demand

- hydroxide / spodumene concentrate implications



LiOH assumed use by cathode chemistry:

- NCA (100%)
- NCM 811 (100%)
- NCM 622 (45%)
- NCM 523 (10%)
- LFP (2%)

Forecast Chemical Demand Source: Benchmark Mineral Intelligence (Q1 2020)

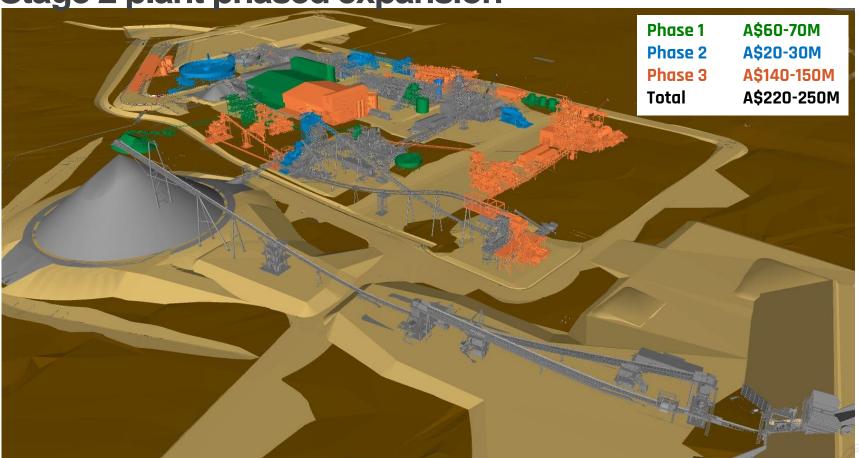


### Pilgangoora project pathway

The scale of the resource and reserve at Pilgangoora support continued expansion of the mines capacity, as and when Pilbara's key partners further develop their chemical conversion capacity

	Upst	Downstream	
	Stage 1: 2Mtpa	Stage 2: 5Mtpa	POSCO JV
Stage	In operations	Original DFS for Stage 2 expansion completed in August 2018	Detailed binding term sheet, but subject to conditions precedent
Status	Currently moderated production strategy to align with current market conditions     Ability to ramp up to nameplate capacity at short notice when market conditions and customer demand improves	<ul> <li>Revised and phased Stage 2 expansion to deliver production in an incremental manner under consideration</li> <li>Further technical studies underway to deliver an incremental and optimised expansion in three separate phases</li> <li>Any final investment decision for each phase will be conditional on supporting customer demand and market conditions</li> </ul>	Conditions precedent include technical due diligence, FID for Stage 2 expansion, formal JV agreements, FID and Board approvals for JV (market dependent)     Final investment decision to be made subject to market conditions
Production	Proven stage 1 production capacity available     At full capacity, 330,000tpa of ~6% spodumene concentrate and 321,000lbs pa of >5% tantalite concentrate	<ul> <li>Incremental build out of additional 500ktpa of ~6% spodumene concentrate, will be phased to match customer demand and offtake requirements</li> <li>Resulting in total of 800-850,000t pa ~6% spodumene concentrate</li> <li>~800,000lbs pa &gt;5% tantalite concentrate</li> </ul>	<ul> <li>40ktpa LCE chemical facility in South Korea</li> <li>Initial 21% ownership interest, with PLS option to increase to 30%</li> </ul>
Offtake	Stage 1 spodumene concentrate under offtake agreements	Offtake agreements secured for Stage 2 spodumene concentrate production – conditional on FID and funding for Stage 2 expansions	POSCO developing the customer pipeline for LCE product following final product qualification

Stage 2 plant phased expansion<sup>1</sup>



<sup>&</sup>lt;sup>1</sup> Based on technical studies and estimated capital costs as per ASX release 27 August 2019. Feasibility studies have not been completed.

### Positioning to capitalise on the future



#### **PRODUCE**

- Achieve annual nameplate production capacity 330,000dmt of high-quality ~ 6% spodumene concentrate and 300,000lbs of tantalite concentrate
- Optimise plant to continue to improve recovery and lower operating costs

#### **GROW**

- Complete studies and secure funding for incremental Stage 2 expansion
- Commence incremental project expansion in-line with customer demand
- Increase mine life through exploration

#### **DIVERSIFY**

- Finalise JV with POSCO to develop and operate a 40,000tpa downstream chemical conversion facility in South Korea
- Continue to expand and diversify our customer base







**ASX: PLS** pilbaraminerals.com.au

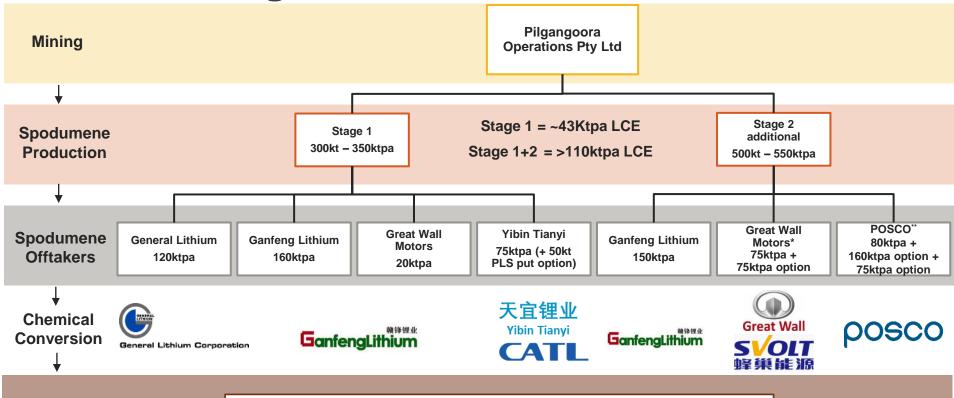
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### Offtake for Stage 1 and 2 secured



**Battery Components** 

CATL, POSCO, Samsung SDI, LG Chem, SK Innovation, Umicore, ShanShan, Nichia etc.

<sup>\* 75</sup>ktpa Stage 2 offtake conditional on final investment decision for development of Stage 2. Additional 75ktpa conditional on a US\$25M prepayment

<sup>\*\* 80</sup>ktpa conditional on Stage 2. Balance of 160ktpa conditional on final investment decision for Stage 2 and a South Korean LiOH Plant JV being entered into and an additional 75ktpa conditional on a U\$\$25M prepayment

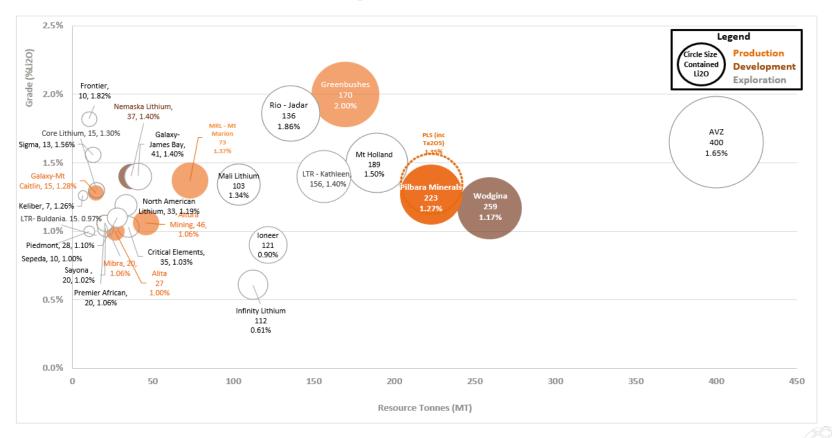
### Strong relationships with leading, global partners

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STRATEGIC PARTNER		PLS OFFTAKE / EQUITY	PARTNERSHIPS	CAPACITY (CURRENT AND FUTURE)
GENERAL LITHIUM	China's third largest lithium producer	120ktpa 6 year offtake**	Strategic partnership with major Chinese battery industry participants, deep relationships in Korea	<ul> <li>22kt LCE - Jiangxi and Jiangsu</li> <li>Future: 82kt LCE on construction of Hubei plant (60Kt LCE)</li> </ul>
<b>GanfengLithium</b>	World's third largest and China's largest lithium compounds producer	160ktpa 10year offtake** 150ktpa 10 year offtake** (Stage 2) 6.86% shareholder	Strategic partnerships throughout the supply chain, including LG Chem, BMW, VW and Panasonic Tesla	<ul> <li>67.5kt LCE - Jiangxi (two plants)</li> <li>Future: Aiming for 200kt LCE by 2025</li> </ul>
posco	World's fifth largest steel producer	Up to 315ktpa LOM offtake*  3.69% shareholder	<ul> <li>Existing battery raw materials production and diversification into lithium chemical conversion</li> <li>Major partnerships with LG Chem, Samsung SDI and SK Innovation</li> </ul>	<ul> <li>Currently 2.5kt LCE via demo plant (primary hydroxide capacity). Other battery raw materials production including cathodes, anodes, nickel and cobalt sulphate</li> <li>Future: 40kt LCE Hydroxide in Gwangyang, South Korea in JV with Pilbara Minerals</li> </ul>
<b>长城汽车</b> Great Wall SVOLT 蜂巣能源	China's largest SUV and pickup truck manufacturer World's first high speed stacking prismatic battery producer	20ktpa Offtake (Stage 1) 75ktpa to 150ktpa 10 year Offtake** (Stage 2) 2.52% shareholder	<ul> <li>Establishment of battery R&amp;D and manufacturing plant in Jiangsu by SVOLT Energy Technology, Great Wall Holding wholly-owned subsidiary</li> <li>50% - 50% JV with BMW</li> </ul>	<ul> <li>GWM globally 7 R&amp;D centres, 11 + 5 vehicle plants</li> <li>SVOLT 4Gwh built of total 18Gwh in Jiangsu, 76Gwh by 2025 in China and 100Gwh in the world out of 5 battery plants</li> <li>25ktpa LiOH JV in Guangxi</li> </ul>
CATL	World's leading battery manufacturer	8.24% shareholder	Strategic partnerships throughout the supply chain, including Tesla, Toyota, VW, BMW, Honda, Hyundai, Volvo and Daimler	<ul><li>53Gwh in production</li><li>22Gwh under construction</li></ul>
天 <b>宜</b> 锂业 Yibin Tianyi	Associate company of CATL	75ktpa (+50ktps PLS put option), 5 year offtake	<ul><li>Key participant in the supply chain of CATL</li><li>CATL 15% direct ownership</li></ul>	Targeting 100ktpa LCE plant capacity by 2023     First 25,000tpa LCE plant currently under construction

<sup>\*80</sup>ktpa conditional on Stage 2. Balance of 160ktpa conditional on final investment decision for Stage 2 and a South Korean LiOH Plant JV being entered into and an additional 75ktpa conditional on a US\$25M prepayment.

Options to extend. All Stage 2 offtakes are conditional on final investment decisions and Stage 2 proceeding. Great Wall offtake is for 75ktpa conditional on final investment decision for Stage 2 with additional 75ktpa conditional on US\$25M prepayment.

### Globally one of the largest spodumene resources



Note: Tantalum adjusted resource size includes consideration of the revenue of Tantalum by-product.

Source: Company Data