

# Pilbara Minerals and the Pilgangoora Project – Ready for the global energy transformation

### INVESTOR STRATEGY AND OUTLOOK FORUM Tuesday 11 May 2021

ASX: PLS





# Ken Brinsden

Managing Director and CEO

INTRODUCTION





### **Important Notices**

#### Not an Offer of Securities

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This document contains a summary of information about Pilbara Minerals and its activities that is current as at the date of this document unless otherwise stated. The information in this document is general in nature and does not contain all the information which a prospective investor may require in evaluating a possible investment in Pilbara Minerals or that would be required in a prospectus or a product disclosure statement prepared in accordance with the Corporations Act 2001 (Cth) ("Corporations Act") or the securities laws of any other jurisdiction. The information in this document should be read in conjunction with Pilbara Minerals' other periodic and continuous disclosure announcements lodged with the ASX.

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Statements contained in this document, including but not limited to those regarding the possible or assumed future costs, projected timeframes, performance, dividends, returns, revenue, exchange rates, potential growth of Pilbara Minerals, the timing and amount of synergies, the future strategies, results and outlook of the combined Pilgangoora Project, industry growth, commodity or price forecasts, or other projections and any estimated company earnings are or may be forward looking statements. Forward-looking statements can generally be identified by the use of words such as 'project', 'foresee', 'plan', 'expect', 'amin', 'intend', 'anticipate', 'believe', 'estimate', 'may', 'should', 'will' or similar expressions. Forward-looking statements including all statements in this presentation regarding the outcomes of preliminary and definitive feasibility studies, projections, guidance on future earnings and estimates are provided as a general guide only and should not be relied upon as an indication or guarantee of future performance. These statements relate to future events and expectations and as such involve known and unknown risks and significant uncertainties, many of which are outside the control of Pilbara Minerals. Actual results, performance, actions and developments of Pilbara Minerals may differ materially from those expressed or implied by the forward-looking statements. To the maximum extent permitted by law, Pilbara Minerals and any of its affiliates and their directors, officers, employees, agents, associates and advisers: disclaim any obligations or undertaking to release any updates or revisions to the information in this document, or likelihood of fulfilment of any forward-looking statement; and disclaim all responsibility and liability for these forward-looking statements (including, without limitation, liability for any completeness of the information in this document.

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## **Important Notices**

#### **U.S. Securities Laws**

Any securities issued by Pilbara Minerals have not been and will not be registered by Pilbara Minerals under the United States Securities Act of 1933 ("U.S. Securities Act"). Accordingly, such securities may not be offered or sold in the United States except in transactions that are exempt from, or not subject to, the registration requirements of the U.S. Securities Act.

#### **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). Such estimates of reserves are largely dependent on the interpretation of data and may prove to be incorrect over time. No assurance can be given that the reserves and contingent resources presented in the document will be recovered at the levels presented. Recipients should note that while Pilbara Minerals' mineral resources 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 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. Mine life estimates in this presented in the aportion of non-reserve resources will be converted to ore reserves, which would not be permitted under SEC Industry Guide 7.

#### Information regarding expansions in production capacity (Pilgan Plant and the Ngungaju Plant)

Information in this presentation regarding expansions in nameplate capacity of the Pilgan Plant and the Ngungaju Plant are underpinned by the Company's existing Ore Reserves that have been prepared by a Competent Person in accordance with the JORC Code (2012 Edition) and were released by the Company to ASX on 17 September 2018 (Pilgangoora Reserve and Resource Upgrade) and as updated in the Company's 30 June 2020 Annual Report. The relevant proportions of proven Ore Reserves and probable Ore Reserves are 17% proven Ore Reserves and 83% probable Ore Reserves. The Company confirms it is not aware of any new information or data that materially affects the information included in that release or report and that all material assumptions and technical parameters underpinning the Ore Reserves estimates continue to apply and have not materially changed.

#### Information regarding the Ngungaju Project

The information regarding the Altura Project and the Ngungaju Plant in this presentation including information relating to the Ngungaju Plant's individual (ie. not combined with the Pilgan Plant) production, recoveries, mineral resources and reserves estimates, life of mine plans has been sourced using publicly available information and has not been independently verified by the Company. At the time of the acquisition of the project (20 January 2021), the Company had undertaken only limited due diligence in relation to the project and may not have been aware of all the material information, assumptions, facts and circumstances. Since the acquisition, the Company has continued to evaluate the project, however, this evaluation remains ongoing and is incomplete. Accordingly, the Company does not, subject to the Corporations Act, make any representation or warranty, express or implied, as to the accuracy or completeness of this information relating to the Altura Project or the Ngungaju Plant in this presentation.

While the Company has conducted due diligence on the Altura project acquisition (completed 20 January 2021), Pilbara Minerals has not yet completed its verification in relation to the accuracy or completeness of the information provided, and there is no assurance that all material issues and risks in relation to the Altura transaction and the Ngungaju Project have been identified. Receipt of new, additional or updated information, assumptions or modifying factors may change production targets, recoveries, mineral resource and reserves estimates, life of mine plans and other forward-looking statements concerning the Altura Project and the Ngungaju Plant in this presentation. To the extent that this information is incomplete, incorrect, inaccurate or misleading, there is a risk that the production, profitability and future results of the operations of Pilbara Minerals may differ (including in a materially adverse way) from Pilbara Minerals' expectations as reflected in this presentation, or that additional liabilities may emerge.

In this respect, and in particular, the JORC Resource and Reserves estimates previously stated in the ASX announcement by Altura Mining Limited dated 9 October 2019 are currently under review by the Company and the Company will use it own economic assumptions and modifying factors. These and other factors may result in changes (including the possibility of reductions) in the Mineral Resources and Ore Reserves estimates previously stated by Altura Mining Limited by Altura Mining Limited.



### **Important Notices**

#### No new information – Pilgangoora Operation (Pilgan Plant operations)

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 (Pilgan Plant operations), 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 26 March 2019 "Stage 3 Scoping Study Outcomes"; the ASX announcement dated 27 August 2019 entitled "Update on Partnering Process and Revised Stage 2", and as updated in the 30 June 2020 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 have not been materially modified from the original market announcements.

The scoping and other technical studies referred to in this report in respect of the revised Stage 2 expansion and/or the Stage 3 expansion have been undertaken to determine the potential viability of those expansions and to reach a decision to proceed with more definitive studies. Each scoping study has been prepared to an accuracy level of ±30%. Each scoping and technical study is based on low-level technical and economic assessments and is insufficient to provide assurance of an economic development case at this stage or provide certainty that the conclusions of the studies will be realised. The results of the studies should not be considered a profit forecast or production forecast.

#### No new information – exploration targets and results

Information relating to exploration targets and exploration results is extracted from the ASX Announcement dated 10 May 2021 entitled "Exceptional Initial Drilling Results Adjacent to Former Altura Tenement Boundary". Pilbara Minerals confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the exploration targets and results in the announcement continue to apply and have not materially changed. Pilbara Minerals confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcement.

#### Past performance

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

#### **References to Australian dollars**

All references to dollars (\$) and cents in this report are to Australian currency, unless otherwise stated.

#### 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.



# **Company Overview**

The leading, ASX-listed pure-play lithium company, owning 100% of the largest, independent hard-rock lithium operation in the world

#### • \$112.1M<sup>1</sup> cash balance

• 100% owned Pilgangoora Project and Operations

#### Products:

- ~6% Li<sub>2</sub>O spodumene concentrate
- +5% primary tantalite concentrate

#### Two processing plants:

- Plant 1 (Pilgan Plant) in production, nameplate capacity ~330ktpa
- Plant 2 (**Ngungaju Plant** pronounced Nuh-ga-ju) care and maintenance, designed nameplate capacity ~206ktpa<sup>2</sup>

#### Production flexibility and multi-stage operational expansion

- o Pilgan Plant (Plant 1)
  - improvement projects underway +30-50ktpa (10-15% increase)
  - phased expansion (increasing nameplate capacity to ~800-850ktpa)
- Ngungaju Plant (Plant 2)
  - on care and maintenance
  - studies underway to improve performance and integrate operation
- Future expansion opportunities aimed at achieving a combined nameplate processing capacity from both plants supporting +1Mtpa spodumene concentrate
- Mid-stream scoping study underway
  - $\circ~$  Downstream chemical plant joint venture opportunity with POSCO in South Korea
- Leading industry partners: General Lithium, Ganfeng Lithium, Great Wall Motors (SVOLT), POSCO, CATL and Yibin Tianyi
- Additional sales channel under development through the Battery Material Exchange

<sup>1</sup> As at 31 March 2021; inclusive of \$8.3M irrevocable bank letters of credit for shipments completed in late March 2021 <sup>2</sup> Stated on a dry basis and based on Altura's Stage 1 annual production capacity of 219kwmt 6.0% spodumene concentrate, as per Altura's ASX announcement on 26 September 2016, adjusted for assumed moisture content of 6% for dry capacity of 206ktpa.

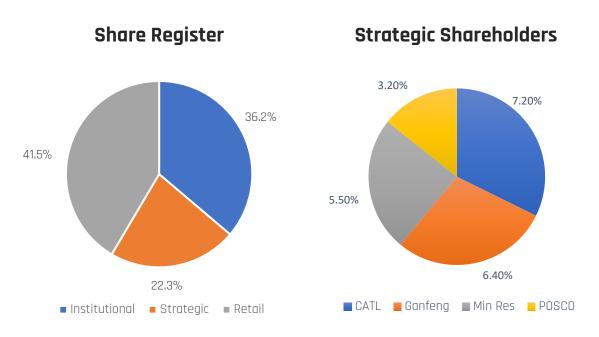


### **Corporate Snapshot**

Ticker	ASX:PLS
Issued Shares	2,896,895,632
Share Price (at 10 May 2021)	\$ 1.305
Market Capitalisation	\$ 3,780,448,800
Cash Balance <sup>1</sup>	\$ 112,100,000
Debt <sup>2</sup> (AUD)	\$ 142,173,969
Enterprise Value	\$ 3,810,522,769
Index Inclusion	ASX200
April Average Daily Turnover \$M	\$ 20.6
Significant Shareholders (at 31 March 2021)	Australian Super 8.30%, CATL 7.2%, Ganfeng 6.4%, Mineral Resources 5.5%, POSCO 3.20%
Total Shareholders	41,836

<sup>1</sup>As at March 31st: Inclusive of \$8.3M irrevocable bank letters of credit for shipments completed in late March 2021 <sup>2</sup>Assuming an AUD:USD exchange rate of 0.7737









# **Board and Executives**





Sally-Anne Layman



Alex Eastwood COMPANY SECRETARY & GENERAL COUNSEL



**Steve Scudamore** NON-EXECUTIVE DIRECTOR



Brian Lynn CHIEF FINANCIAL OFFICER



Nick Cernotta

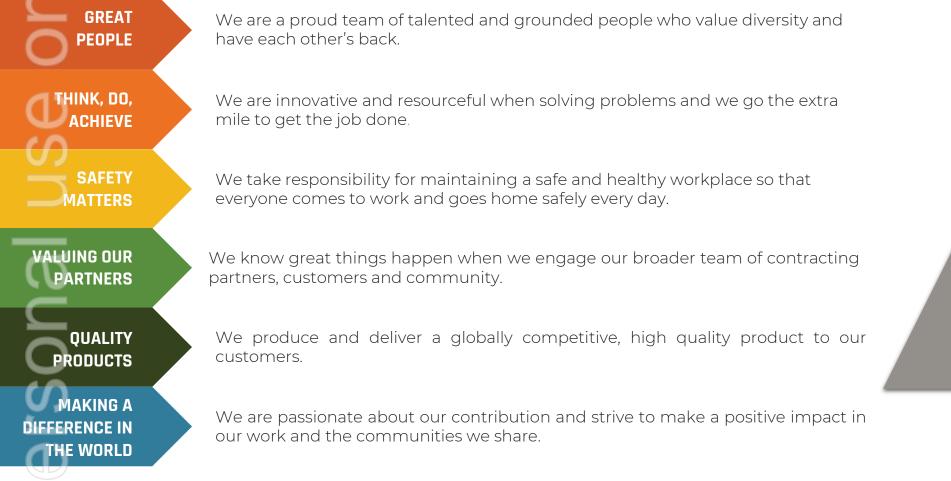


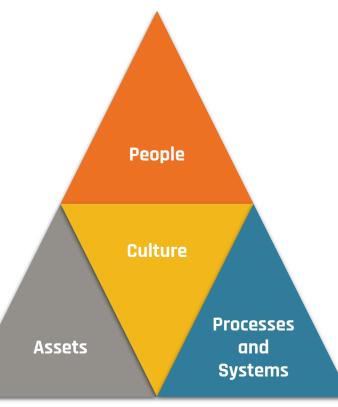
Dale Henderson Chief Operating Officer



### **Our Purpose**

**Making the world a better place by enabling the global energy transformation** Our culture is built upon 'What We Stand For', six commitments that motivate our behaviours and guide us in our work to achieve our Purpose







# Pilgangoora Project - Naming our Facilities

We acknowledge and respect Aboriginal people, their culture, language, traditions and connection to country

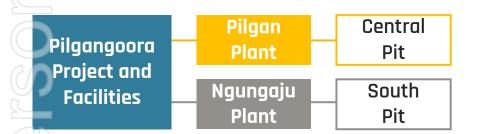
From early on, we have worked closely with the Traditional Owners of the land, the Nyamal People on the Pilgangoora Project's development, operational activities and opportunities.

Out of respect and recognising the Nyamal People's connection to country (which our Pilgangoora Project is located on) we asked Nyamal to name each processing plant.

Plant One (our original Pilgangoora plant) is now known as **Pilgan** and Plant Two (Altura plant) as **Ngungaju** (pronounced - Nuh-ga-ju).

Ngungaju means 'place of water' – as the area is highly prospective for water with the landscape containing many creeks and spring beds.

Pilgan pays homage to our original Pilgangoora Plant, with 'Pilgangoora' being the Nyamal name for the entire area.







# From First Drillhole to Production in Under Four Years

News flow and share price performance



News #		ASX Release Per PLS Website
la	17-Jun-14	Maiden Tantalum - Lithium Resource at Pilgangoora (historical drilling)
1b	06-11-2014	Major Drilling Program Commences at Pilgangoora
2	24-Sep-15	Major Resource Upgrade (52.2Mt @ 1.28% Li <sub>2</sub> O Spodumene)
3	10-Mar-16	Pilgangoora Lithium - Tantalite PFS
4	07-Apr-16	PLS raises A\$100m to accelerate development of Pilgangoora
5	04-Jul-16	Pilbara signs Binding Off-take with major Chinese Lithium Chemicals Company [40% of 330ktpa].
6	20-Sep-16	Pilgangoora DFS Confirms World Class Lithium Project
7	24-Nov-16	First Ground Broken at Pilganfoora for Site Works
8	02-May-17	PLS signs binding long-term off-take and financing support with Gangfeng Lithium
9	13-Jun-17	Fully subscribed Senior Secured Bond raises US\$100M
10	19-Jun-17	Pilbara raises \$80M to fund Pilgangoora
11	23-Jun-17	Pilbara's Pilgangoora Development Approved
12	28-Feb-18	POSCO backs Pilgangoora Stage 2 Expansion and Downstream JV
13	24-Jul-18	First Coarse Concentrates Produced.
14	01-Oct-18	First Shipment of Spodumene Concentrate
15	28-Mar-19	PLS declares Commercial Production at Pilgangoora
16	04-Sep-19	PLS introduces CATL as strategic investor to underpin a \$91.5M equity raising
17	25-Mar-20	Yibin Tianyi signs 5yr offtake for 75,000tpa
18	30-Jul-20	PLS secures new USD\$110M Finance Facility
29	28-Oct-20	Conditional Agreement to Acquire Altura Lithium Operations
20	20-Jan-21	Acquisition of Altura Lithium Project complete
21	12-Mar-21	S&P ASX200 Inclusion



# **Strategic Acquisition**

Well-timed and cost effective strategic acquisition of neighbouring lithium operation

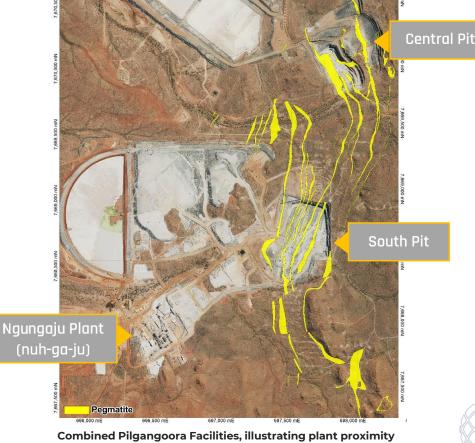
Enhances scale of operations<sup>1,2</sup> – increased processing capacity, significant mineral endowment and further exploration potential

**Operational synergies** – integrated mine operations, economies of scale, removal of duplicated services and unlocking sterilised ore at the tenement boundary

Flexibility – assets acquired as a 'clean slate', providing maximum flexibility to optimise operations and provide offtake capacity

**Speed to market** – able to rapidly increase production<sup>3</sup> to satisfy rising lithium market demand from existing and new customers, with added flexibility from two processing plants

Market appeal - Pilbara Minerals is the leading, ASX-listed pure-play lithium company, owning 100% of the largest, independent hard-rock lithium operation in the world



896 000 mF

NORTH

696 500 mF

697 000 mF

697.500 mE

Pilgan Plant

<sup>1</sup> Refer Investment Risks, including Acquisition Risks on page 41 to 43 of Investor Presentation released to the ASX on 14 December 2020, specifically including the risks entitled 'Reliance on Information Provided', 'Integration Risk' and 'Analysis of Acquisition Opportunity' concerning the Altura Lithium Operation.

<sup>2</sup> The JORC Resource and Reserves estimates previously stated in the ASX announcement by Altura Mining Limited dated 9 October 2019 are currently under review by the Company and the Company will use it own economic assumptions and modifying factors. These and other factors may result in changes (including the possibility of reductions) in the Mineral Resources and Ore Reserves estimates previously stated by Altura Mining Limited.

Pilbara Minerals will assess prevailing market conditions for spodumene concentrate (including the effect of both demand and pricing outcomes) prior to any decision to recommence operations at Ngungaju.

and integrated Mineral Resource (yellow)





# **Dale Henderson**

Chief Operating Officer

PRODUCTION, PROJECTS AND DOWNSTREAM INITIATIVES





### <u>Pilgangoora Project and Operation Fly Through - click to view</u>

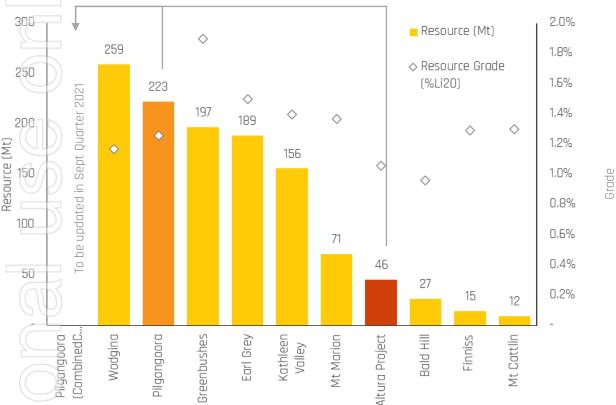




### **Mineral Resource and Reserve**

The Resource and Reserve makes Pilgangoora one of the leading Australian lithium assets, wholly owned

### Mineral Resource & Resource grade<sup>1,2</sup>



Source: Rublic company announcements. Refer to slide 55.

Altura Project's JORC Mineral Resource metrics as announced by Altura to the ASX on 9 October 2019. See also Investment Risks on pages 41 to 43 of Investor Presentation released to the ASX on 14 December 2020, including the risks entitled. Reliance on Information Provided', 'Integration Risk' and 'Analysis of Acquisition Opportunity' for further information on the Altura Mineral Resources and risks associated with information relied upon from Altura.

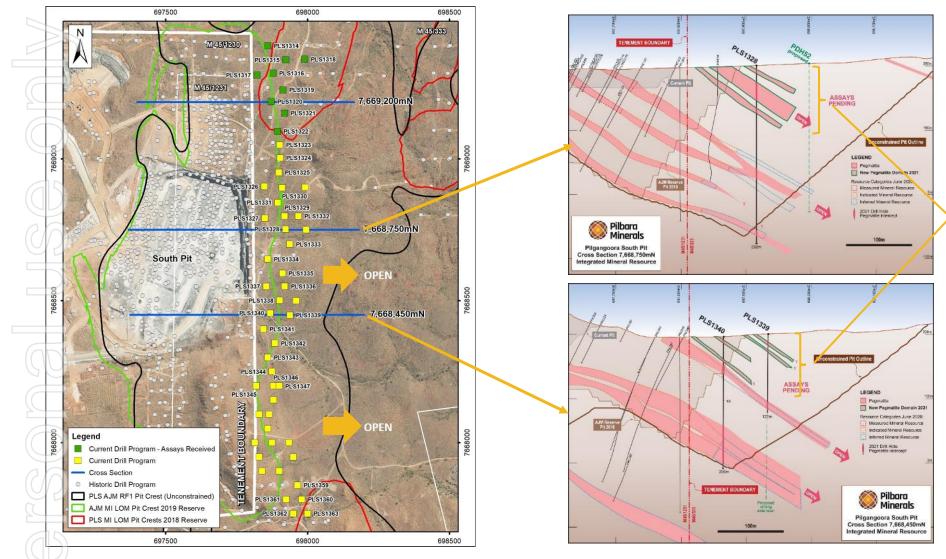
<sup>2</sup>Metrics presented on a Mineral Resource only basis. The JORC Resource and Reserves estimates previously stated in the ASX announcement by Altura Mining Limited dated 9 October 2019 are currently under review by the Company, with a market update expected in the September Quarter 2021, using its own economic assumptions and modifying factors. These and other factors may result in changes (including the possibility of reductions) in the Mineral Resources and Ore Reserves estimates previously stated by Altura Mining Limited.





## **Resource Potential and Targeting Pit Inventory Extension<sup>1</sup>**

Recent drilling of near surface ore at Ngungaju operation tenement boundary



- Extensional drilling adjacent to the historical Altura tenement boundary further defines zones of high-grade pegmatite mineralisation
- 7,009 drill metres completed to date of a proposed 9,500 metre program
- Interpreted pegmatite intercepts (assays pending) also point to additional near-surface mineralisation adjacent to the old Altura tenement boundary and South Pit areas
- Drilling continues, which will inform a proposed combined Pilgangoora Project resource update anticipated during the September Quarter 2021

<sup>1</sup>. Full details of initial drilling results are detailed in the ASX announcement released on 10 May 2021



# **Strategy to Expand Operations and Diversification Pathway**

	<b>UPSTREAM</b> (spodumene concentrate)					<b>MIDSTREAM</b> (lithium salts)	<b>DOWNSTREAM</b> (lithium chemicals)
Cumulative nameplate capacity (ktpa) <sup>3</sup> :	~330 <sup>1</sup>	~360-380 <sup>1</sup>	~580 <sup>1</sup>	~680 <sup>1</sup>	>1,000 <sup>1</sup>	TBD	43k LCE
Status:	Operating	Construction	C&M / Under Evaluation	Feasibility Study	Feasibility Study	R&D/Scoping Study	Participation subject to completion of due diligence, formal agreements and Pilbara Minerals' Board FID
Operation:	Pilgan Plant – Stage 1	Pilgan Plant – Stage 1 Improvement Projects	Ngungaju Plant	Pilgan Plant – Stage 2 Expansion (Phase 1)	Pilgan Plant – Stage 2 Expansion (Phase 2 and 3)	Pilgangoora	Gwanyang, South Korea
Outcome:	Base operation with nameplate capacity of 330ktpa	Increase nameplate capacity by 10- 15% (~30-50ktpa spodumene concentrate)	Restart expected to provide nameplate capacity of up to 206ktpa (to be evaluated following completion of studies) <sup>2</sup>	Increase production capacity of ~100ktpa through expansion to Pilgan plant	Increase production to >1.0Mtpa ~6% spodumene concentrate and ~800,000lbspa +5% tantalite concentrate	<ul> <li>Value-added product</li> <li>Reduced waste (left at mine site).</li> <li>Reduced carbon through electrification</li> </ul>	Ownership up to 30% in downstream joint venture for lithium chemical conversion facility in South Korea . Offtake up to 315ktpa spodumene concentrate to be supplied to downstream joint venture subject to Pilbara Minerals' participation.
	Core business ay vary as a function of lithia ore head grade variations					Value-added prod	uct / Diversification

<sup>2</sup> Based on Altura's Stage 1 annual nameplate capacity of 219kwmt 6.0% spodumene concentrate as per Altura's ASX announcement on 26 September 2016, adjusted to dry metric tonnes for assumed moisture content of 6% for dry capacity of 206ktpa <sup>3</sup> Company to ASX on 17 September 2018 (Pilgangoora Reserve and Resource Upgrade) and as updated in the Company's 30 June 2020 Annual Report. The relevant proportions of proven Ore Reserves and probable Ore Reserves that underpin the production targets are 17% proven Ore Reserves and 83% probable Ore Reserves. The Company confirms it is not aware of any new information or data that materially affects the information included in that release or report and that all material assumptions and technical parameters underpinning the Ore Reserves estimates continue to apply and have not materially changed.

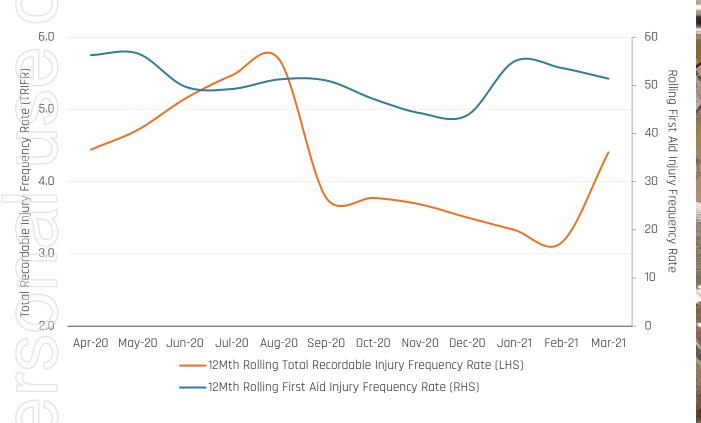


# **PILGAN PROCESSING PLANT LAYOUT CENTRAL PIT MONSTER PIT (3.5KM) CRUSHING CIRCUIT** CRUSHED ORE STOCKPIL MILLING AND GRAVITY CIRCUIT THE OWNER **HMS CIRCUIT** CONCENTRATE STORAGE AREA **FLOTATION CIRCUIT** TANKA AND TAILINGS THICKENER



# Safety performance

- Steady track record for safety performance
- 12-month total recordable injury frequency rate (TRIFR) of 4.40
- 653 days lost time injury free



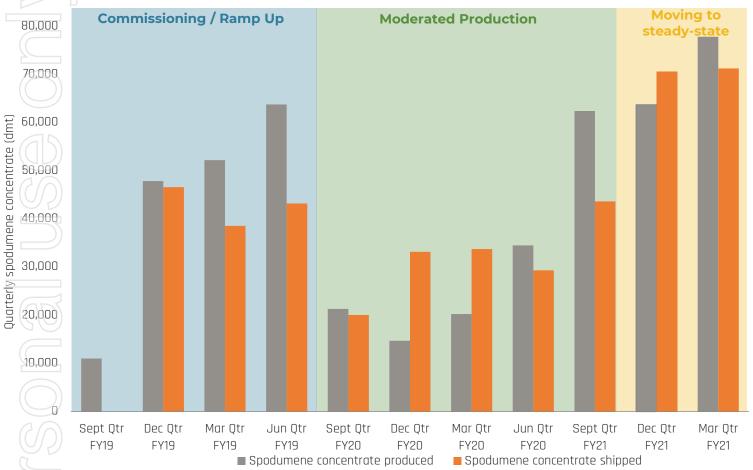




# **Pilgan Plant Production**

Quarterly

Production increasing to support growth in customer sales as lithium raw material pricing improves and record production is achieved in Q3 2021

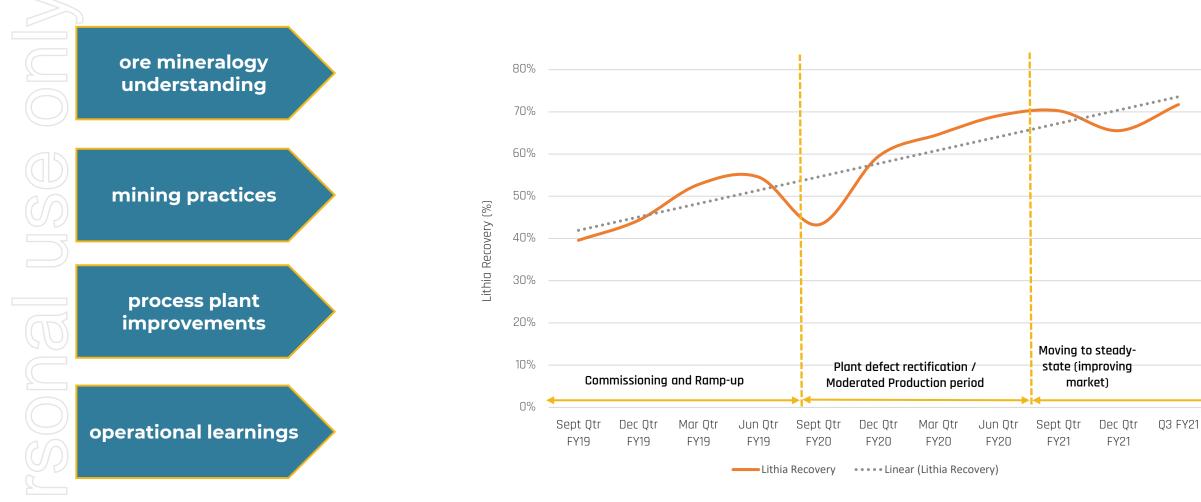






### **Pilgan Plant - Processing Performance**

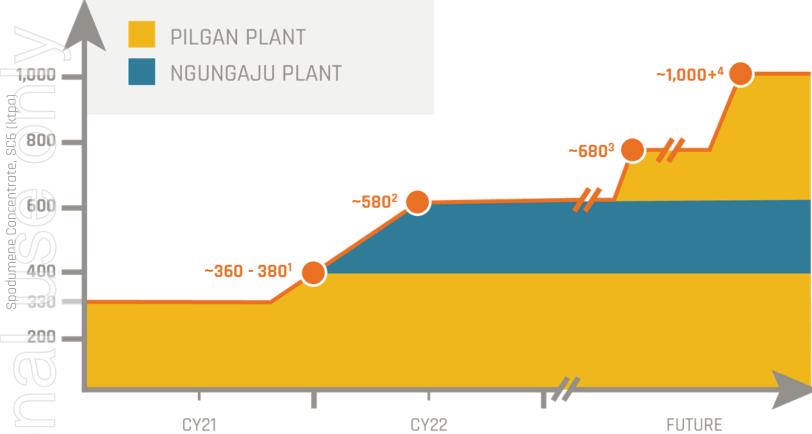
Steady improvement in lithia recovery since project commencement attributable to:



21



## Upstream Expansion Strategy - Flexible Growth Pathway



#### Pilgangoora resource and asset supports:

- Phased expansion up to and beyond ~1Mtpa
- Potential for other lithia based product streams

#### Expansion timing to be guided by:

- Market conditions (including overall demand and price outcomes)
- Strategic customer requirements

<sup>1</sup> Production uplift subject to successful construction and commissioning completion of the Pilgan Plant improvement project.

<sup>2</sup> Production uplift subject to completion of evaluation studies and financial investment decision (FID) for the Ngungaju processing plant recommencement.

<sup>3</sup> Production uplift subject to completion of studies and FID for the first expansion of the Pilgan processing plant (previously termed Stage 2 – Phase 1).

<sup>4</sup> Production uplift subject to completion of studies and FID for the first expansion of the Pilgan processing plant (previously termed Stage 2 – Phase 2 and 3).

Note A/ The abovementioned expansions in nameplate capacity of the Pilgan Plant and Ngungaju Plant are underpinned by the Company's existing Ore Reserves that have been prepared by a Competent Person in accordance with the JORC Code (2012 Edition) and were released by the Company to ASX on 17 September 2018 (Pilgangoora Reserve and Resource Upgrade) and as updated in the Company's 30 June 2020 Annual Report. The relevant proportions of proven Ore Reserves and probable Ore Reserves that underpin the production targets are 17% proven Ore Reserves and 83% probable Ore Reserves. The Company confirms it is not aware of any new information or data that materially affects the information included in that release or report and that all material assumptions and technical parameters underpinning the Ore Reserves estimates continue to apply and have not materially changed.

Note B. The JORC Resource and Reserves estimates previously stated in the ASX announcement by Altura Mining Limited dated 9 October 2019 are currently under review by the Company and the Company will use it own economic assumptions and modifying factors. These and other factors may result in changes (including the possibility of reductions) in the Mineral Resources and Ore Reserves estimates previously stated by Altura Mining Limited.

### NGUNGAJU PROCESSING PLANT LAYOUT







# Upstream Expansion - Ngungaju Operation to Lift Total Pilgangoora Production

Early works commenced with restart under evaluation

### **Progress of review**

- Project transferred successfully on 20 January 2021, currently on care and maintenance
- Successful trial processing of Ngungaju South Pit ore through Pilgan Plant supporting contemplated processing adjustments to the Ngungaju Plant.
- Removal of water purification system confirmed to provide operating cost savings
- Evaluation activities underway:
  - )- update to Mineral Resource and Ore Reserve estimates
  - engineering
  - maintenance scoping
    - contract amalgamation and/or retenders
    - operational performance expectations including production and lithia recovery. Production estimate utilised to date is 206ktpa<sup>1</sup>
- Construction of interconnecting haul road completed
- Current exploration RC drilling program (9,500m) returns exceptional initial drilling results



Stated on a dry basis and based on Altura's Stage 1 annual production capacity of 219kwmt 6.0% spodumene concentrate as per Altura's ASX announcement on 26 September 2016, adjusted for assumed moisture content of 6% for dry capacity of 206ktpa



# Upstream Expansion - Ngungaju Operation Moving Towards Restart

#### Next steps (pre-FID):

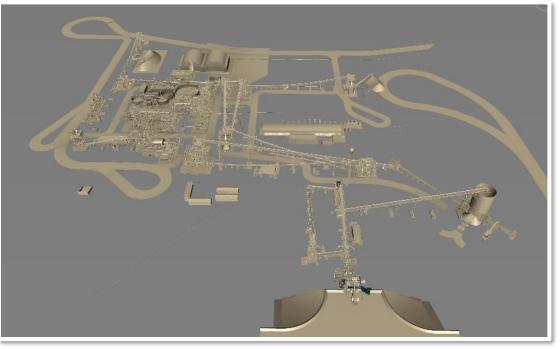
- Commitment to long-lead equipment and other enabling works (subject to board approvals)
- Completion of evaluation works

#### Final investment decision (FID):

- Expected June Quarter 2021
- Subject to market conditions and Board approvals

#### **Operations:**

- Recommencement expected in December Quarter 2021, subject to FID
- Stockpiled transitional ore to be utilised to provide 'rolling re-start' at lower throughput
- Full operations currently estimated to ramp-up to nameplate production from January 2022 onwards



Schematic of Ngungaju Processing Plant





# **Emissions Reduction and Displacement Initiatives**

Several initiatives being progressed to transition to renewable energy and reduce operational carbon footprint

#### Initiatives include:

- 6MW solar PV power solution. Award anticipated in the second half of calendar year 2021
- Integrated Pilgangoora Operation power system, greater generation and asset efficiency
- Development of net-zero emissions (Scope 1 and 2) pathway underway
- Exploring carbon reduction initiatives in the form of mid-stream product development
- Wind power survey commenced
- Ore sorting testwork delivering encouraging results



Pilgan and Ngungaju facilities interconnection and solar PV array



## Midstream - Exploring Value-Added Products (lithium salts)

#### Hardrock lithium industry is evolving:

Need to transition to low-carbon processing methods

- Deployment of superior technologies for:
  - increased spodumene recovery and lithia extraction
  - reducing processing costs to maximise margin
  - attainment of higher levels of consistent product quality

• Improved methods to handle waste products (e.g. aluminosilicates)



Above: Traditional spodumene gas fired rotary calciner

#### Research and development exploring:

- Alternate processing pathways to deliver lower carbon and higher concentration lithia products
- Focus on unit processes that enable renewable energy



Left: Calix BATMn electric vertical reactor kiln enabling renewable energy powered calcination





# Midstream - Exploring Value-Added Products (lithium salts)

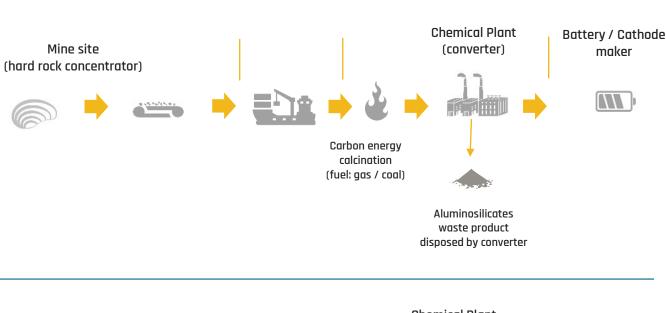
### Conventional spodumene supply chain:

- Carbon intensive
- Aluminosilicates shipped to customer (>90% of export mass)
- Spodumene concentrate SC6.0
  - 6.0% Li<sub>2</sub>O (2.80% lithium metal by mass)



Left: Spodumene coarse concentrate



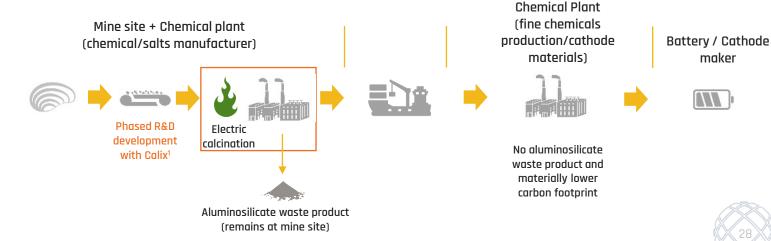


#### Alternate spodumene supply chain:

- Reduced carbon intensity
- Aluminosilicate waste remains at mine site
- Lithium salts shipped
  - >35% Li<sub>2</sub>O (>15% lithium metal by mass)

Left: Lithium salts





Lithium chemical development proposed Joint Venture with Calix Limited is detailed in the ASX announcement "Pilbara Minerals targets "Midstream Lithium Chemicals Opportunity with Calix" released on 11 May 2021



# Midstream - R&D Chemical salts development with Calix

#### **Research development objective:**

- Production of a superior lithium carrier product from a fine spodumene concentrate feedstock
- Sub-objectives: reduction of carbon, improvement in quality and reduced lithia production cost

#### Areas of testwork undertaken:

- Electric calcination (Calix vertical BATMn reactor)
- Chemical concentration into lithia salts

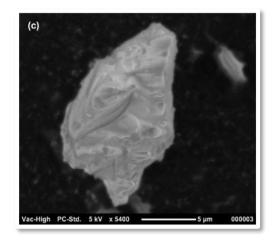
#### **Progress to date:**

- Strong results for Calix BATMn electric calcination (achieved >95% conversion from  $\alpha$  to  $\beta$  for fine spodumene at 6.1% Li<sub>2</sub>O)
- Total of five incremental laboratory campaigns completed. Early results indicate high purity salts attainment ~98% pure

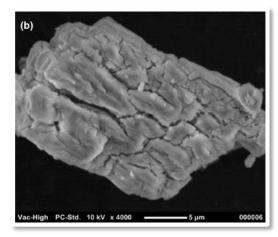
#### Next steps:

- Studies are underway exploring both the technical development path and business case for the midstream product. Business case considerations include market understanding such as product demand and pricing
- Studies to progress towards the joint development of a demonstration chemicals facility at
   Pilgangoora in partnership with Calix Limited<sup>1</sup>
- Completion of technical scoping study expected late in the 2021 calendar year
- Following maturity of the midstream concept, opportunity exists to work with existing downstream offtake customers to receive the product and to also integrate this new technology into downstream opportunities

Lithium chemical development proposed Joint Venture with Calix Limited is detailed in the ASX announcement "Pilbara Minerals targets "Midstream Lithium Chemicals Opportunity with Calix" released on 11 May 2021



SEM Imagery of spodumene particle in α state prior to calcination through Calix BATMn vertical reactor



SEM imagery of spodumene particle after calcination through Calix BATMn vertical reactor demonstrating phase change to β phase.





## **Downstream Initiatives**

Pursuing increased lithium margins and diversification

### POSCO JV

Technical and commercial due diligence progressing

• Participation subject to completion of due diligence, formal agreements and Pilbara Minerals' Board financial investment decision

#### Other opportunities

- Uncommitted spodumene concentrate offtake provides further downstream partnership opportunities
- Prospective projects arising in Europe and North Americas
- Prospective partners to handle Pilgangoora mid-stream products and fine chemicals production (i.e. lithium hydroxide)



Preliminary layout of POSCO's proposed downstream lithium chemicals processing facility at Gwanyang, South Korea







# **Brian Lynn** Chief Financial Officer

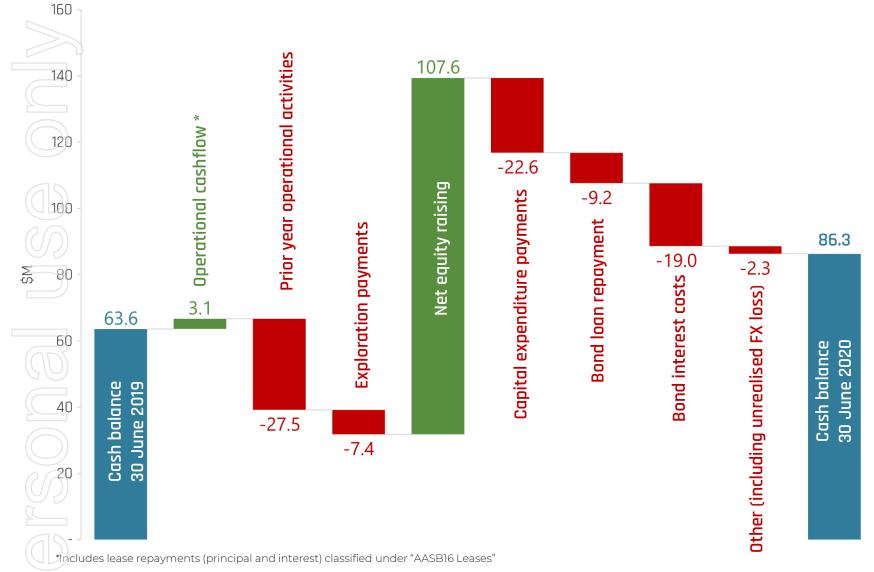
### FINANCIAL DISCIPLINE, BALANCE SHEET AND FUNDING





## Financial Performance - FY20

Financial performance impacted by soft lithium market conditions



### **Highlights:**

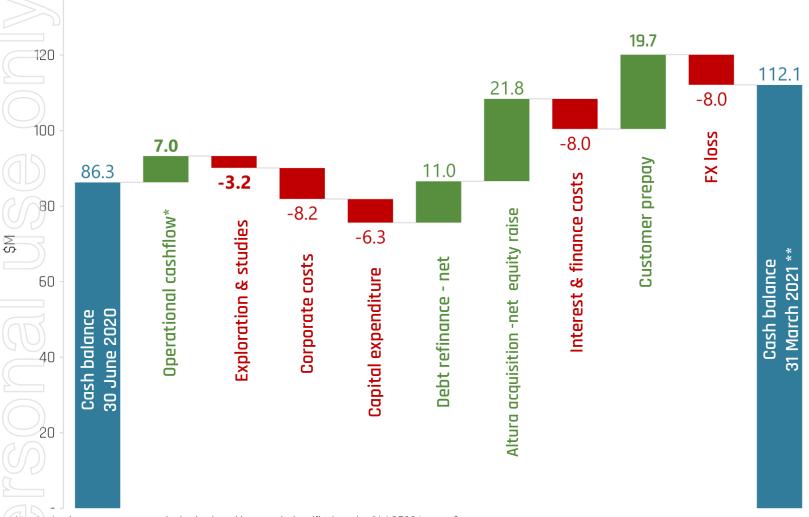
- Market deterioration dominated FY20 (both volume and selling price)
- Rapid response by Company including:
  - moderated production to match demand
  - cash preservation by drawing down stockpiles and selective mining
- Result: positive operating cashflow (albeit small)
- Pilbara Minerals anticipated longer market downturn. Undertook preemptive equity raising to protect balance sheet



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# Financial Performance - 9 Months to March 2021

Financial consolidation for growth



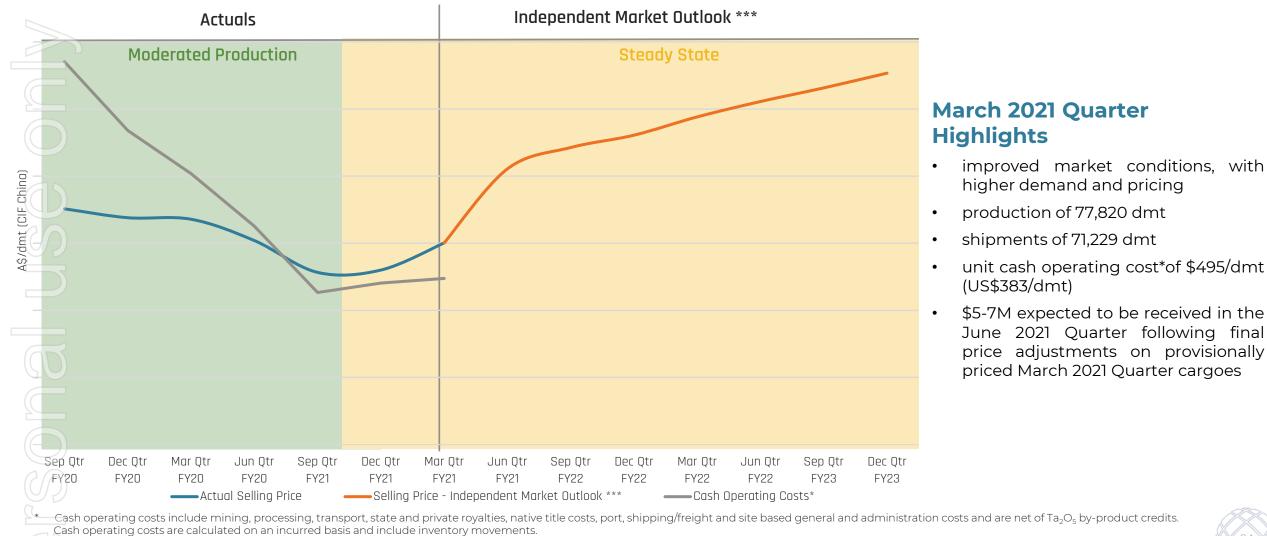
### **Highlights:**

- Moderated production achieves positive operational cashflow in soft market conditions (incl. weak pricing)
- \$5-7M provisional pricing adjustment related to March 2021 Quarter cargoes expected to be received during June Quarter 2021
- Balance sheet protection provided by refinance of US\$100M Nordic Bond with BNP/CEFC US\$110M facility, including deferment of principal repayments and significant interest savings
- Successful acquisition of Altura assets, wholly funded via \$240M equity raise. Stamp duty (~\$13.5M) remains outstanding
- Customer prepayment received from Yibin Tianyi (US\$15M) in support of Pilgan Plant improvement works to expand production capacity to ~380ktpa
- FX loss impacted by a stronger AUD rate, reducing the value of USD cash reserves established for Altura acquisition

\* Includes lease repayments (principal and interest) classified under "AASB16 Leases" \*\* Inclusive of \$8.3M irrevocable bank letters of credit for shipments completed in late March 2021



# Pilgan Operation\*\* - Quarterly Margin Analysis



Existing operations only - excludes Ngungaju operations, Stage 1 improvements and any Stage 2 expansions.

🌁 Eorecast selling prices are determined by applying independent forecast chemical reference prices to existing customer offtake pricing formulas.



# **Refinance of US\$100M Nordic Bond**

New debt facility underpins financial strength and provides significant improvement in short term cash flows by deferring debt repayments until September 2022 (from June 2020) and reducing funding costs from 12% to ~5%.

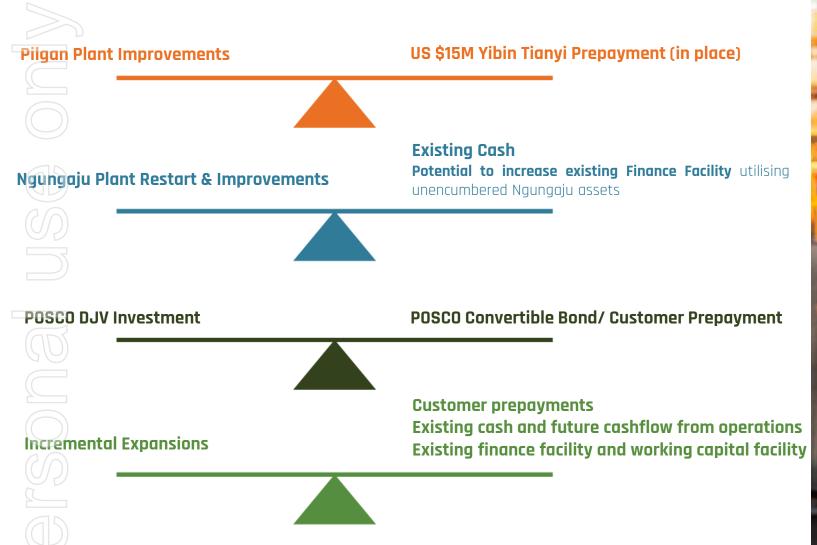
#### Key terms

BNP Paribas and Clean Energy Finance Corporation	Conventional finance facility				
ility Amount US\$110M					
Tenor 5 Years					
Senior Secured	Corporation				
Average all-in interest rate across the facility currently ~5.00%, applying agreed market reference rate.					
Quarterly interest only payments for the first two years until September 2022, with quarterly amortisation over years 3, 4 and 5 of the facility and a bullet repayment of US\$36M on maturity. Customary "Cash Sweep" mechanism included for a facility of this nature.	~ <b>5% interest rate</b> average all-in interest rate				
Maintain a minimum liquidity position of \$20M at all times. Comply with the following financial covenants each quarter from and after the September 2022 quarter:					
<ul> <li>debt service cover ratio (DSCR) not less than 1.15:1;</li> <li>loan life cover ratio (LLCR) not less than 1.25:1; and</li> <li>reserve tail ratio not less than 25%.</li> <li>Equity cure rights are available for any default, which can be applied a maximum 3 times over the loan but not in consecutive guarters.</li> </ul>	Principal repayments delayed until September 2022				
	US\$110M 5 Years Senior Secured Average all-in interest rate across the facility currently ~5.00%, applying agreed market reference rate. Quarterly interest only payments for the first two years until September 2022, with quarterly amortisation over years 3, 4 and 5 of the facility and a bullet repayment of US\$36M on maturity. Customary "Cash Sweep" mechanism included for a facility of this nature. Maintain a minimum liquidity position of \$20M at all times. Comply with the following financial covenants each quarter from and after the September 2022 quarter: • debt service cover ratio (DSCR) not less than 1.15:1; • loan life cover ratio (LLCR) not less than 1.25:1; and • reserve tail ratio not less than 25%.				



# Strong Balance Sheet to Support Growth Opportunities

Available funding options to underwrite growth, subject to positive market conditions









## Ken Brinsden

Managing Director & CEO

SUSTAINABILITY, MARKETS / DRIVERS, SALES TRADING PLATFORM, OFFTAKE AND STRATEGIC PLAN-ON-A-PAGE





#### Sustainability

SG

To contribute to a sustainable future through responsible operations and ethical business practices that deliver economic returns to our shareholders and create shared value in our communities

RESPONSIBLE AND ETHICAL ACTIONS

A responsible and ethical operation underpinning long term success VALUE OUR PEOPLE

Great people that go home safe and well each day proud of their contribution SUSTAINABLE OPERATIONS

Make a positive contribution, minimise our impacts and leverage opportunities



# FY21 sustainability initiatives

 Alignment to Sustainability Accounting Standards Board

- Mental health awareness campaign across business and within community
- Books in Homes program support for Yandeyarra Community School
- First modern slavery statement published (voluntarily)
- Modern slavery policy adopted
- Development of decarbonisation pathway commenced

• Frontline leadership program delivered

\$15M contract awarded to Simpec and IronMerge (a Nyamal family business) to complete Pilgan Plant improvements



Modern Slavery Statement published and Policy adopted



Pilbara Minerals and Simpec IronMerge JV improvement projects contract signing





Mental health awareness campaign across business and within community



### Climate Change strategy

Series of actions underway to support the objectives under the Paris Agreement and our commitment to making the world a better place



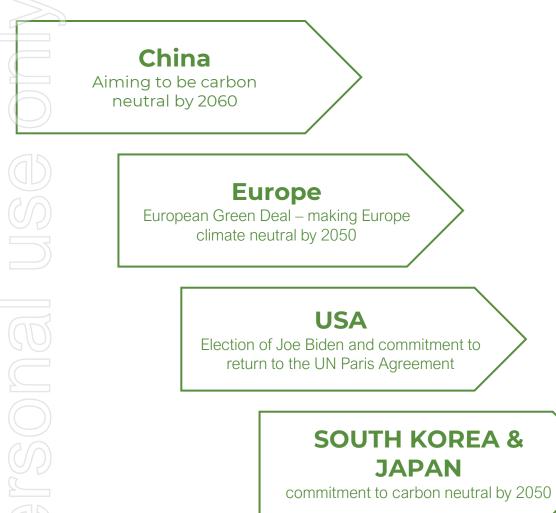
- Development of decarbonisation pathway commenced targeting net zero emissions (Scope 1 and 2) during the decade commencing 2040
- Assessment of climate risks under TCFD framework commenced, scenario planning to get under FY22
- Scope 3 emission assessment to commence FY22
- Contract to be awarded in FY22 to build 6MW solar power station at the Pilgangoora Project – reducing reliance on diesel





### **Big on the Agenda**

2020 was a big year for major global economies as they tackled climate change and stimulated domestic recoveries from COVID-19





#### CATL investing US\$3B into three new battery facilities

- Expected to add 120–150 GWh of battery production capacity in the next 2–4 years
- Spent 73 billion yuan on capacity expansion in 2020
- Largest EV battery manufacturer in the world with 24.2% of market share, looking to grow to 40%

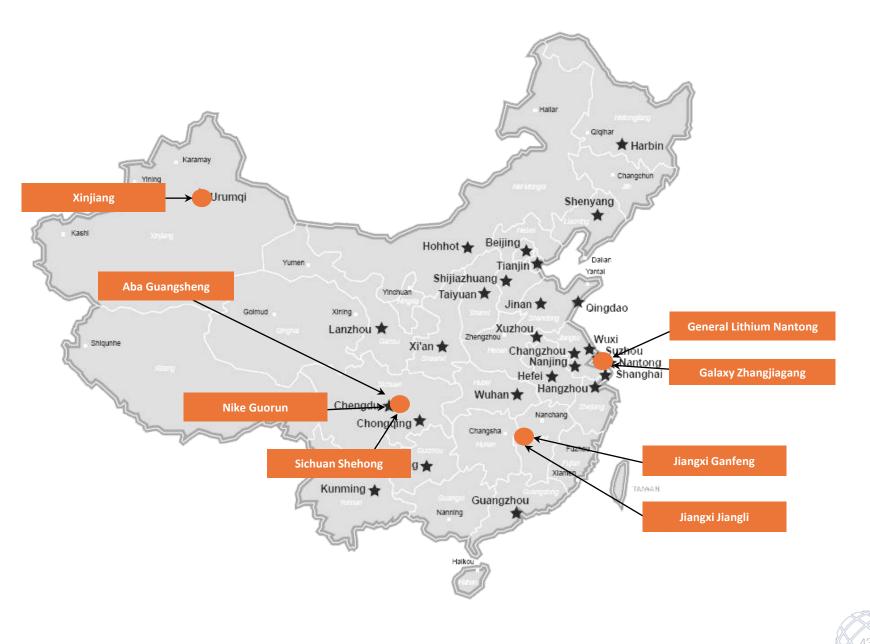
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#### Chinese Spodumene Convertors - 2012

Eight facilities in operation • Limited export capacity





#### Chinese Spodumene Convertors - 2020

• Approximately 20 facilities already in operation

Export capacity growing
Approximately 15 facilities in varying stages of construction and/or commissioning, including many new operators without existing offtake in place

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### **Market Growth**

#### **UK and Europe**

• World's largest EV market in 2020

• A market that will be dominated by high-nickel cathode batteries driving lithium hydroxide demand

#### China

- EV sales strong
- Addressable market growth, domestic China;
  - LFP 'pack' technology
  - Stationary storage
  - Lead acid battery replacement

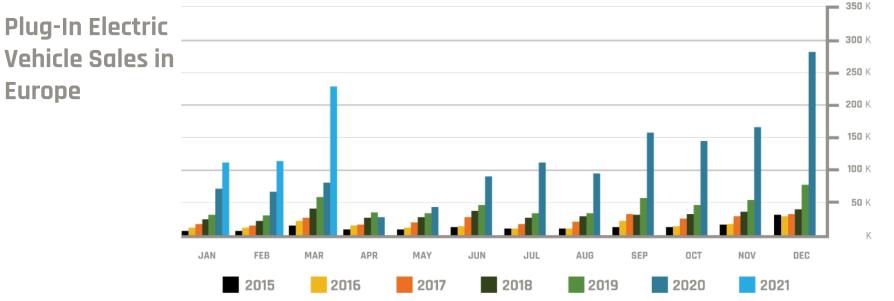
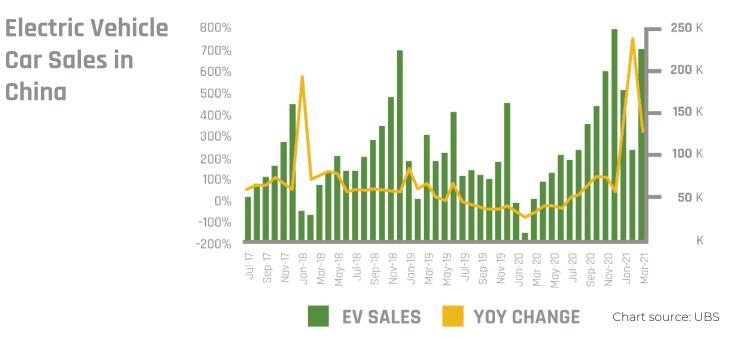


Chart source: Inside Evs 'EV sales blog dat





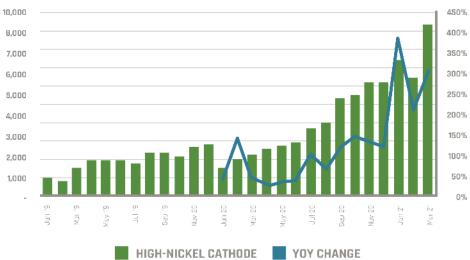
### **Market Growth**

#### **Industry Trends**

- Spodumene chemical conversion direct to lithium hydroxide
- Growth in high-nickel (energy dense) cell capacity
- LFP as a low-cost cell application
- Industry bifurcation
  - Technology
  - Feedstock

Product carbon footprint

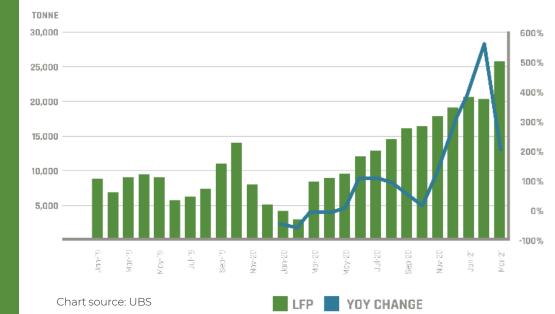
High-nickel cathode materials monthly production (tonne)





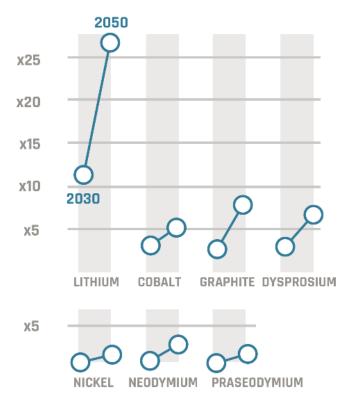
TONNE

LFP cathode materials monthly production (tonne)



Rising demand for materials needed for renewable energy and e-mobility

Future demand (2020 and 2050) as a multiple of current demand\*



\* Under a mid demand scenario Source: European Commission





### **Improvement in Pricing**

As global economies adopt clean energy COVID-19 recovery stimulus packages – bringing forward a recovery in lithium market

Lithium chemical pricing 25,000 1200 Asian Metals -----Argus 1000 100.0 China Spodumene Li20 5%min CIF 800 Price (US\$/dmt) 90.0 15,000 US\$/Ib CIF 10,000 5.000 200 40.0 /2018 /2018 /2018 /2018 /2018 /2018 8/01/2018 8/11/2018 8/09/2018 3/05/2018 3/07/2018 8/11/2018 8/01/2019 8/05/2019 8/05/2019 8/05/2015 8/09/2015 8/09/2015 1/05/2020 8/11/2020 8/01/2021 3/03/2021 /03/2018

Tantalite concentrate pricing

#### Source: Asian Metals

#### **Current Spodumene Price Assessments**

US\$700/dmt (FOB Aus) Platts – Asian Metals – US\$630/dmt (CIF China) FastMarkets - US\$640-720/dmt (CIF China)





STRATEGIC OFFTAKE PARTNER		PLS OFFTAKE / EQUITY PARTNERSHIPS		CAPACITY (CURRENT AND FUTURE)	
	China's third largest lithium producer	6 year offtake (Pilgan Operation - Stage 1)	<ul> <li>Strategic partnership with major Chinese battery industry participants, deep relationships in Korea</li> </ul>	<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	10 + 10 year offtake (Pilgan Operation - Stage 1) 10 + 10 year offtake** (Pilgan Operation -Stage 2) 6.4% shareholder	<ul> <li>Strategic partnerships throughout the supply chain, including LG Chem, BMW, VW, Panasonic and Tesla</li> </ul>	<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	LOM offtake* 3.2% 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: 43kt LCE Hydroxide in Gwangyang, South Korea in JV with Pilbara Minerals</li> </ul>	
Great Wall SVOLT	China's largest SUV and pickup truck manufacturer World's first high speed stacking prismatic	6 year offtake (Pilgan Operation - Stage 1) 5 + 5 + 5 year offtake** (Pilgan Operation - Stage 2)	<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 DMW</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 elsewhere in the world out of 5 battery plants</li> </ul>	
蜂巢能源 CATL	World's leading battery manufacturer	Minority shareholder 7.2% shareholder	<ul> <li>50% - 50% JV with BMW</li> <li>Strategic partnerships throughout the supply chain, including Tesla, Toyota, VW, BMW, Honda, Hyundai, Volvo and Daimler</li> </ul>	<ul> <li>25ktpa LiOH JV in Guangxi</li> <li>53Gwh in production</li> <li>Expected to add 120–150 GWh of battery production capacity in the next 2–4 years</li> </ul>	
天宜锂业 Yibin Tianyi	Associate company of CATL	5 year offtake (Pilgan Operation – Stage 1)	<ul> <li>Key participant in the supply chain of CATL</li> <li>CATL 15% direct ownership</li> </ul>	<ul> <li>Targeting 100ktpa LCE plant capacity by 2023</li> <li>First 25,000tpa LCE plant currently in production</li> </ul>	

\* Subject to the Company's participation in a downstream joint venture (DSJV) for a chemical conversion facility in South Korea \* All Stage 2 offtakes are conditional on final investment decisions for Stage 2 and the expansion proceeding



### **Uncommitted Production and Offtake**

Combined Pilgangoora Project plant capacity will provide additional, uncommitted tonnes to market

#### 2022-2024

200-230,000 tpa (dry)

- Derived principally from Ngungaju Plant capacity addition

### End of 2024

400,000 tpa + (dry) (pending Stage 2 offtake uptake)

Derived principally from Ngungaju plant capacity addition and additional tonnes becoming available from expiry of certain original Stage 1 offtake contracts

Significant available product maximising opportunities for further market and/or downstream participation

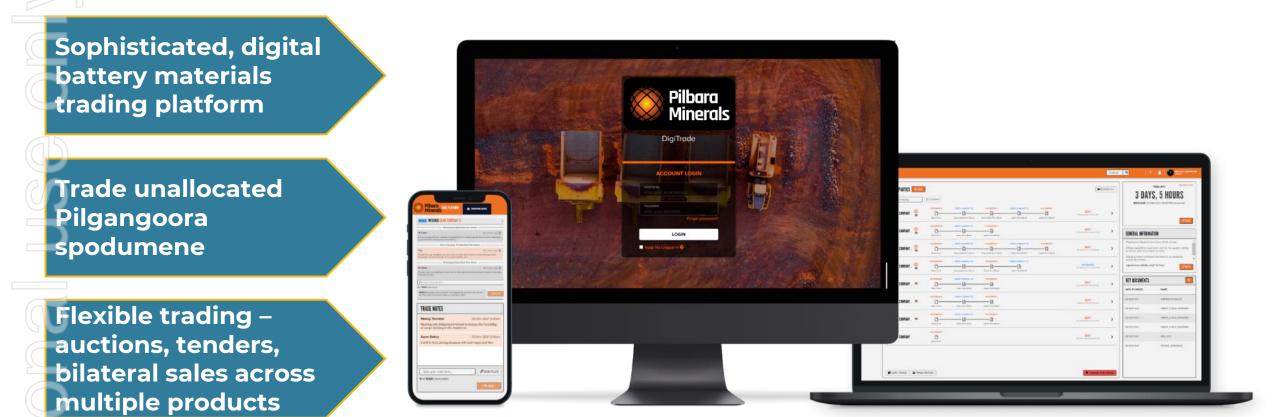
Pilgan Plant expansion offtake (formally Stage 2 Project)





#### **Battery Material Exchange**

Partnership with GLX Digital creates a digital trading platform for battery raw materials

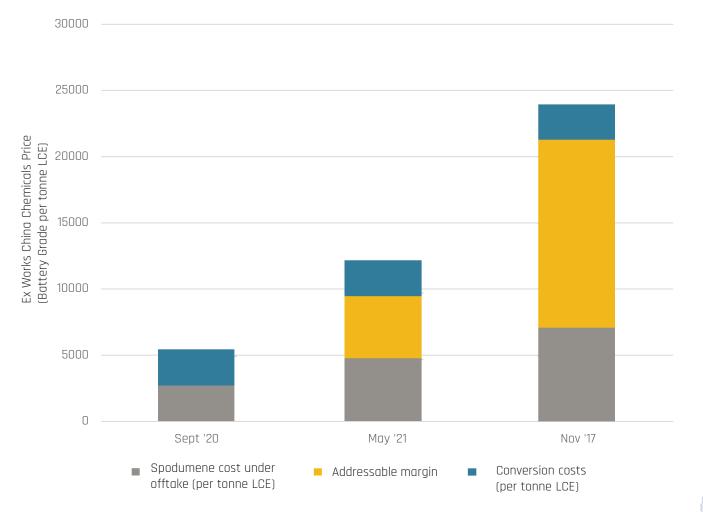






#### GLX platform designed to efficiently support the 'spot sales' market opportunity

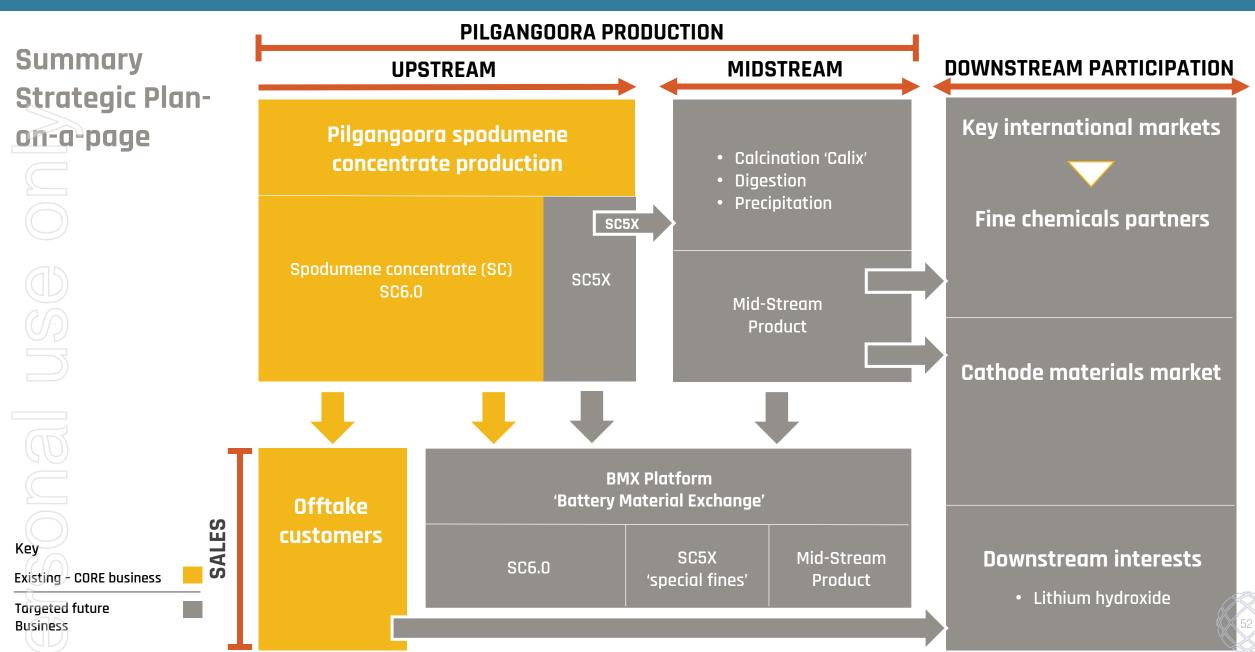
Where excess demand/tight supply exists, there is an opportunity to win further margin in spodumene sales



Battery Grade Chemicals Price (Ex-Works China + Contributing Cost)

Pilbara Minerals estimates, based on independent pricing evaluation (Platts/FastMarkets) as at dates noted above







ASX: PLS pilbaraminerals.com.au

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#### **Pilgan Operations - Mineral Resource and Ore Reserve**

Mineral Resource Statement (30 June 2020) including stockpiled material

CATEGORY	TONNES M.dmt	Li <sub>2</sub> 0 (%)	Ta <sub>2</sub> 0 <sub>5</sub> (ppm)	Fe <sub>2</sub> 0 <sub>3</sub> (%)
Measured	18.3	1.38	151	0.45
Indicated	113.8	1.29	119	0.58
Inferred	90.4	1.21	105	0.67
Total	222.5	1.26	116	0.61

Note: Totals may not add up due to rounding

#### Pilgangoora Project Ore Reserve Statement (30 June 2020)

CATEGORY	TONNES M.dmt	Li <sub>2</sub> 0 (%)	Ta <sub>2</sub> 0 <sub>5</sub> (ppm)	Fe <sub>2</sub> 0 <sub>3</sub> (%)
Proved	18.1	1.31	140	1.15
Probable	86.5	1.24	116	1.18
Total	104.6	1.26	120	1.17

Note: The above mentioned information relating to the current Mineral Resource and Ore Reserve estimates of the Pilgan Operations is extracted from the ASX announcement dated 17 September 2018 entitled "Pilgangora Reserve and Resource Upgrade", as updated in the 30 June 2020 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 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 have not been materially modified from the original market announcements.





#### Mineral Resource and Reserve - Company References

COMPANY	COMPANY CODE	PROJECT NAME	ANNOUCEMENT TITLE	ANNOUNCEMENT DATE
Mineral Resources	MRL	Wodgina	Wodgina Mineral Resource and Ore Reserve Update	23 October 2018
Pilbara Minerals	PLS	Pilgangoora Lithium-Tantalum	2020 Annual Report	16 October 2020
IGO	IGO	Greenbushes	IGO invests in Global Lithium JV with Tianqi	9 December 2020
Wesfarmers	WES	Mt Holland	KDR: Registration of Scheme Booklet	1 August 2019
Liontown	LTR	Kathleen Valley	Kathleen Valley Lithium Project - DFS Update 2	8 April 2021
Mineral Resources	MRL	Mt Marion	Mt Marion Mineral Resource Update	31 October 2018
Altura Mining	АЈМ	Pilgangoora Lithium	Corporate Presentation	9 March 2020
Alita Resources	Private	Bald Hill	121 Mining Conference Presentation	20 March 2019
Core Lithium	СХО	Finniss	Core Lithium 2020 Annual Report to Shareholders	15 September 2020
Galaxy Resources	GXY	Mt Cattlin	Mt Cattlin Resource & Reserve Update	17 March 2021



