

Pilbara Minerals to progress optimised Stage 2 expansion studies following conclusion of Pilgangoora partnering process

Incremental approach to Stage 2 offers potential for lower upfront CAPEX and better alignment with current market conditions and customer requirements over time

KEY POINTS

- Despite significant interest from potential partners and the receipt of proposals with implied valuations at a premium to its current market capitalisation¹, Pilbara Minerals has closed the formal process for its Pilgangoora partnering opportunity:
 - the Pilbara Minerals Board does not believe the proposals received to date represent an appropriate valuation for substantial ownership of one of Australia's premier, long-life lithium projects, particularly in light of current market conditions; and
 - the Company remains open to future discussions with interested parties.
- Pilbara Minerals has completed technical studies that support an optimised expansion of Stage 2 production capacity (for an ultimate total of 5Mtpa) over time ("Revised Stage 2"), with:
 - reduced initial upfront capital expenditure of A\$60-70 million (+/-30%) for the first phase of the development, which is expected to deliver an additional 100ktpa of spodumene concentrate capacity to meet customer requirements;
 - subsequent phases each to be aligned with a more conservative production ramp-up profile that matches customer timing requirements; and
 - total capital expenditure estimated to be in the range of A\$220-250 million (+/-30%).
- Feasibility Study for the Revised Stage 2 expansion targeted for completion December 2019, paving the way for a final decision in early 2020, subject to customer requirements.
- Following a marketing trip to China in mid-August 2019, Pilbara Minerals reconfirms sales guidance for the December 2019 Quarter of 65,000-80,000dmt spodumene concentrate, but has reduced guidance for the September 2019 Quarter to 20,000-35,000dmt spodumene concentrate in response to market conditions and customer demand requirements.
- The decision to close the formal partnering process and reduce the capital intensity and speed of Stage 2 are considered to be necessary measures to preserve shareholder value in response to current market conditions in the lithium sector, while ensuring Pilbara Minerals can take full advantage of the strong long-term outlook for the lithium demand.

Pilbara Minerals Limited (ASX: PLS, "Pilbara Minerals" or "the Company") today announced that it will consider an optimised and incremental pathway for the Stage 2 expansion of its 100%-owned **Pilgangoora Lithium-Tantalum Project** ("Pilgangoora Project") following the conclusion of its strategic partnering process.

Despite receiving strong interest from a number of credible parties, the Pilbara Minerals Board has elected not to pursue the minority sale process with any potential partner at this stage. Instead, the Company intends to pursue

¹ Based on an implied valuation for a 100% project acquisition interest measured against Pilbara's total market capitalisation as at the date of this release.

its Stage 2 expansion as a standalone development, including consideration of a revised development approach designed to optimise and incrementally develop Stage 2 to better match an expanded production base from Stage 2 with the timing and growth of key customers' chemical conversion requirements.

PARTNERING PROCESS

In March 2019, Pilbara Minerals appointed Macquarie Capital to assist in managing a partnering process for the Pilgangoora Project (*ASX announcement, 28 March 2019*). The Company has received a strong level of engagement from parties across the battery minerals supply chain who have expressed a genuine interest in partnering with Pilbara Minerals to further develop this world-class asset.

The Company evaluated formal proposals received, which included proposals consisting of one or more of the following: the acquisition of a 20-50% equity interest at the asset level, entry into long-term offtake, joint development of lithium hydroxide conversion facilities (either locally and/or abroad) and a product streaming financing proposal. The proposals received were from a range of domestic and global parties across the spectrum of the supply chain.

However, against the backdrop of a relatively weak short-term market for lithium raw materials, the Board determined that the proposals received did not represent an appropriate valuation for substantial ownership of one of Australia's premier long-life lithium projects.

While implied valuations were at a premium to the Company's current market capitalisation², they were not considered to be reflective of the true long-term value of the Pilgangoora Project as a world-class, long-life asset with the capacity to deliver low-cost, high-quality spodumene-tantalite concentrates for many decades. The proposals contemplated would have effectively given incoming parties the ability to purchase mine-level equity at a substantial discount in exchange for "life-of-mine" access to expected low-cost spodumene supply.

As a result, the Board has decided that it is in shareholders' best interests to close the formal partnering process.

While the Company remains open to future partnership discussions with interested parties (including participants in the recent process), the current focus is now firmly on enhancing the value of the Pilgangoora Project for shareholders on a standalone basis.

As discussed further below, Pilbara Minerals will now progress plans to advance its 5Mtpa, Stage 2 expansion, including a Feasibility Study to consider an alternative phased development approach aimed at optimising and incrementally bringing the 5Mtpa production capacity on-stream to better align with the timing and growth of key customer requirements. This will see a more conservative development with the deferment of capital expenditure, and a production ramp-up schedule aligned with Stage 2 customer chemical conversion capacity in both China and South Korea.

Commenting on today's announcement, Pilbara Minerals Managing Director and CEO, Ken Brinsden, said:

We were pleased both with the level of strategic interest and strength of the counterparties arising from the partnering process. However, the Board has decided not to pursue a transaction at this time because none of the proposals represented a compelling valuation for the world-class Pilgangoora asset. We do not believe it is in shareholders' best interests to sell part of the Project at this time, effectively giving an incoming party access to mine-level equity and long-term, low-cost spodumene-tantalite supply at a substantial discount.

Pilgangoora remains one of the premier hard rock lithium projects globally, as measured both by expected cost position, size of operation and exploration potential. While demand for spodumene concentrate is currently depressed as the Asian lithium chemicals plants work through their commissioning processes, we believe the long-term outlook and fundamentals for lithium remains very strong, underpinned by the global themes of electrification and energy storage. We look forward to working with shareholders to realise the long-term value

² Based on an implied valuation for a 100% project acquisition interest measured against Pilbara's total market capitalisation as at the date of this release.

of the Pilgangoora Project.

With the conclusion of the formal partnering process, our attention is focussed on optimising the current Stage 1 operation, advancing the Stage 2 expansion in a measured and sensible manner and delivering on the proposed 40ktpa lithium hydroxide conversion facility with POSCO, which will give us an important foothold in the high-value downstream processing market in the rapidly growing lithium raw materials markets in South Korea. ”

REVISED STAGE 2 EXPANSION PATHWAY

Pilbara Minerals continues to progress and finalise its funding initiatives and regulatory approvals for the development of the Stage 2 (5Mtpa) expansion.

In response to varying customer timelines for chemical conversion build-out, Pilbara Minerals has been progressing technical work to optimise the Stage 2, 5Mtpa expansion by sub-dividing its development into an incremental and phased build-out. This phased build-out substantially reduces the upfront capital expenditure for the initial phase of the development, reduces capital risk by facilitating a more flexible approach to the expansion over time and enables the Company to better align mine expansion capacity with customers’ chemical facilities.

The previous work undertaken when completing the original 5Mtpa Definitive Feasibility Study (DFS) in August 2018 (ASX released dated 3rd August 2018), means that a substantial engineering and cost database is available to support the technical studies required for the delivery of the Revised Stage 2 expansion and the supporting infrastructure.

Drawing on this previous work (including the substantial body of laboratory and pilot scale test work), Pilbara Minerals, through its consultant Primero Group, has completed a technical assessment to identify and define an incremental and phased build-out of the Stage 2 processing operation up to 5Mtpa. Additionally, a Scoping Study for the initial phase of this build-out for Stage 2 has been completed.

The technical assessment confirmed the build-out of Stage 2 can be sub-divided into incremental phases. Three phases have been identified, providing incremental capital and corresponding increased concentrate production capacity. The incremental development of Stage 2 by way of a three-phase build-out is represented in Table 1 below.

Table 1. Build-out phases for Revised Stage 2 expansion.

Phase	Timing for Construction Completion	SC6.0 Concentrate Production Capacity (kt)	CAPEX (+/- 30%) (A\$m)
1	Dec-2020 (FID - early CY20)*	100	60-70
2	15 months* (following first phase FID)	40-50	20-30
3	24 months* (following first phase FID)	330-370	140-150
TOTALS		470- 520	220-250

* timing ultimately subject to timing and growth of key customers’ chemical conversion requirements and separate FID for each stage.

The proposed phased build-out for the Revised Stage 2 expansion being considered requires changes to the process plant only. No changes are required for power, crushing or logistics facilities which remain as detailed in the existing Stage 2 DFS.

The existing design for the process plant for Stage 2 contemplates a parallel circuit post the comminution circuit. The phased strategy for the Revised Stage 2 development will utilise the inherent capacity within Stage 1 and more closely integrates with the existing Stage 1 processing facility.

The Revised Stage 2 expansion contemplates the following key modification plans to the existing Stage 2 DFS outcomes which were released to the ASX on 3 August 2018:

- **Latent Capacity (Stage 1 Plant)** – during the first year of Pilgangoora’s operations, some latent capacity has been identified within key areas of the existing Stage 1 processing plant. This latent capacity has been evaluated to enable its utilisation within the revised Stage 2 expansion, including subsequent phases of development.
- **Mass balance** – an alternative mass balance flow is being considered for the revised Stage 2 development to enable the production of more concentrate from the heavy media separation (HMS) circuit. Additionally, HMS gangue (waste) rejection will be utilised within the process plant design. Plant operations and modifications in the existing Stage 1 plant have supported the focus on HMS recovery as a value-adding production strategy and further test work will be conducted to optimise the final revised Stage 2 feasibility solution.
- **Tantalum Dressing Facilities** – removal from the existing scope for Stage 2 (which included a shed and equipment in support of tantalite concentrates upgrade), given the success of existing contractual terms for the upgrade of tantalite (both results and technical expertise) through the Nagrom facilities in Perth.
- **HMS Process Water Supply** – additional equipment will be included within the scope of the first phase of the Revised Stage 2 expansion to further improve the water quality supporting both the existing Stage 1 and proposed Stage 2 circuits. Water clarity aids in the operation and maintenance of the HMS circuit. A further benefit is to separate the overall process water supply to HMS from that supplied to the flotation circuit.

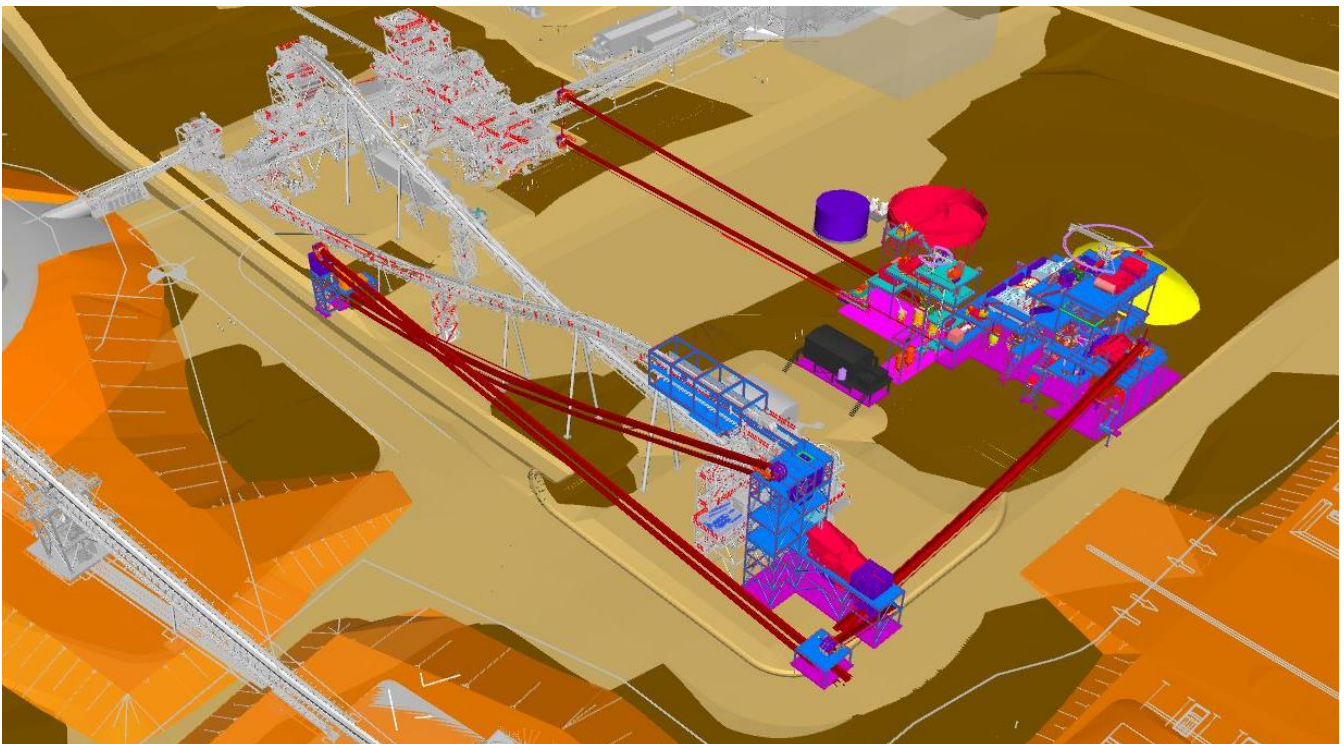


Figure 1: Pilgangoora Revised Stage 2 Phase 1 – Development Concept

Pilbara Minerals is conducting further technical studies for the Revised Stage 2 development in anticipation of completing a Feasibility Study by December 2019, positioning it to make a final decision in respect of the Stage 2 development strategy thereafter having regard customer and funding considerations (outlined further below).

With the added flexibility of the incremental development of Stage 2, the future Stage 2 offtake requirements of Great Wall Motor Company, the proposed POSCO JV and Ganfeng are expected to be met from latent capacity from Stage 1 and progressively through the continued development of the phased build-out of the Stage 2 expansions over time. To date, the Company's discussions with customers have been supportive of a delayed and incremental development for Stage 2 to ensure that its timing and deliveries are aligned with their respective construction and production profiles, as they bring their conversion capacity online.

The Company remains focussed on ensuring that its production capacity aligns with customer requirements, which may include concentrates being delivered across any one of the Company's development phases at Pilgangoora, depending on the timing and availability of their chemical conversion facilities.

As part of any final decision for the Revised Stage 2 expansion, the Company will re-evaluate its funding options to take account of the expected reduction in upfront capital expenditure for the first phase of the Revised Stage 2 development.

These plans may include funding the project through a combination of existing cash, future operating cash-flows, revised customer pre-payments being made available under the existing Stage 2 offtake agreements, and an appropriate mix of debt and equity. These funding plans will be reviewed during the December 2019 Quarter, including any necessary restructuring that may be required to the previously agreed Stage 2 offtake agreements and the US\$25 million prepayment facilities (each) to be provided by Great Wall Motor Company and POSCO to assist with funding the Revised Stage 2 expansion.

A final investment decision for the development of the Stage 2 project (including any incremental and phased build-out within Stage 2) will only be implemented if the expanded mine site production is ultimately supported by the customer group and their respective available chemical conversion capacity.

The proposed Stage 3 expansion capacity at Pilgangoora is on hold until such time that market demand and/or the participation of a partner at Pilgangoora is sufficient to justify its development.

MARKET, SALES AND PRODUCTION UPDATE

Current spodumene market conditions in China continue to be tempered by delays in the construction, commissioning and ramp-up of chemical conversion facilities that handle spodumene concentrate supply (being the raw material feedstock to those plants). The situation is further complicated by the difficult lithium chemicals trading conditions that have arisen (in particular during the June and September Quarters) as a result of modifications to the Chinese Government's subsidy regime for New Energy applications.

This industry-wide phenomenon is also true for Pilbara Minerals' Stage 1 offtake customer group, where both General Lithium and Ganfeng have been constructing, commissioning and ramping-up substantial new chemical conversion capacity in the last 6 to 9 months. In each case, this has taken longer than expected.

In response to these conditions, Pilbara Minerals has moderated its production at the Pilgangoora Project (through extended process plant shutdowns) during the September 2019 Quarter in order to accommodate customers' revised demand requirements under their Stage 1 offtake agreements. This has also provided the Company with the opportunity to undertake rectification of prior works by the EPC contractor and implement further plant improvement works, which are expected to improve the attainment of design recoveries over the coming quarters.

As part of its ongoing moderated production strategy, the Company will utilise its existing stockpiles (including in-pit ore, run-of-mine ore, crushed ore and final product stocks) established prior to the September Quarter to meet customer demand through the draw-down of these stocks at both the mine and port.

This will result in reduced mining and processing activity the December half, but with concentrate processing expected to resume at or near full-capacity around mid-October (following installation of the additional low-intensity magnetic separation units), at which time normal plant processing operations are expected to return to

support future sales.

In light of the reduced processing activity and available ore stocks (both in-pit, ROM and crushed ore stockpiles), mining activity will be reduced to the minimum required and Pilbara Minerals will work with its mining contractor, MACA, to optimise the required mining works (which will include periods of inactivity) over the remainder of the December half.

Given the softer market conditions and delays in conversion capacity coming online, Pilbara Minerals continues to engage with its key offtake customers to manage their compliance with their offtake commitments and the Company's expected sales schedule for the second half of CY2019.

Following recent customer engagement in China and the Company's assessment of their production requirements, Pilbara Minerals has revised its spodumene concentrate sales guidance for the second half of calendar year 2019.

The Company expects sales to be in the range of 20,000-35,000dmt spodumene concentrate during the September 2019 Quarter (compared with prior guidance of 35,000-48,000dmt spodumene concentrate provided on 9 July 2019). Pricing for the September quarter (SC6.0 basis) is expected to be in the range of approximately US\$560-600/dmt (CFR China).

Pilbara Minerals reaffirms the guidance provided to investors on 9 July 2019 that spodumene concentrate sales for the December 2019 Quarter are expected to be in the range of 65,000dmt–80,000dmt spodumene concentrate.

The Company is working with existing customers and considering the sale during the current half of some lower grade product stocks on hand (produced during the plant ramp-up process), to further reduce the overall final product stocks position. Lower grade sales are included within the guidance provided and may attract a lower price than the equivalent SC6.0 product.

Based on recent engagement with customers, the Company expects its offtake customers to be able to comply with revised delivery schedules in line with the Company's sales guidance for the remainder of CY2019, and to materially comply with their annual offtake commitments from CY2020.

Over the medium to long-term, Pilbara Minerals is firmly of the belief that fundamentals remain positive in the sector with lithium demand being driven by the growth in the application of lithium-ion battery technologies in the electrification of transport and energy storage applications.

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ABOUT PILBARA MINERALS

Pilbara Minerals Limited (Pilbara Minerals – ASX: PLS) is a mining company listed on the ASX, specialising in the exploration and development of the specialty metals lithium and tantalum. Pilbara Minerals owns 100% of the world class Pilgangoora Lithium-Tantalum project which is which is one of the world's premier lithium development projects. Pilgangoora is also one of the largest pegmatite hosted tantalite resources in the world and Pilbara Minerals produces a tantalite by-product of its spodumene production.

ABOUT LITHIUM

Lithium is a soft silvery white metal which is highly reactive and does not occur in nature in its elemental form. It has the highest electrochemical potential of all metals, a key property in its role in lithium-ion batteries. In nature it occurs as compounds within hard rock deposits and salt brines. Lithium and its chemical compounds have a wide range of industrial applications resulting in numerous chemical and technical uses. A key growth area is its use in lithium batteries as a power source for a wide range of applications including consumer

electronics, power station-domestic-industrial storage, electric vehicles, power tools and almost every application where electricity is currently supplied by fossil fuels.

ABOUT TANTALUM

The tantalum market is boutique in size with total global demand of approximately 1,700 tonnes of tantalum metal per year. Tantalum is primarily used in the electronics industry in the manufacture of capacitors for high-end applications like telecommunications and data storage. It is also used in semiconductors, engine turbine blades and medical implants. As well as providing ductility, toughness, corrosion resistance, thermal conductivity and heat resistance to various other applications.

NATURE OF SCOPING STUDY

The Scoping Study referred to in this announcement has been undertaken to determine the potential viability of a staged approach to the Stage 2 expansion and to reach a decision to proceed with more definitive studies. The Scoping Study has been prepared to an accuracy level of $\pm 30\%$. The Scoping 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 Scoping Study will be realised. The results of Scoping Study should not be considered a profit forecast or production forecast.

FORWARD LOOKING STATEMENTS AND IMPORTANT NOTICE

This announcement may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. All references to dollars (\$) and cents in this announcement are to Australian currency, unless otherwise stated. Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.