

25 March 2024

## DOWNSTREAM PARTNERING OUTCOME - STUDY COMMENCES WITH GANFENG

### HIGHLIGHTS

- Pilbara Minerals and Ganfeng sign a binding term sheet to complete a joint feasibility study on a ~32 thousand tonnes per annum (**ktpa**) downstream lithium conversion plant<sup>1</sup> (**Feasibility Study**).
- Feasibility Study will consider location, fiscal incentives, flowsheet, sustainability and economics. Location evaluation will focus on emerging battery materials hubs with an aim to diversify respective businesses geographically and ensuring emerging markets for lithium demand are efficiently served.
- Feasibility Study expected to be completed in March Quarter 2025 (**CY25**) with an option to progress to a final investment decision (**FID**) and formation of a joint venture (**JV**) following that.
- Agreement made on a range of principles which the parties intend to give effect to if the JV proceeds, including 50:50 JV ownership, offtake of 300 ktpa of spodumene concentrate supplied by Pilbara Minerals, and willingness to explore IRA benefits via project equity sell-down (if required).
- Costs are limited to the Feasibility Study and no capital investment is expected on the JV until FY26 and then only if FID is approved.
- The Feasibility Study represents a key milestone in Pilbara Minerals' downstream strategy, creating further potential to:
  - extract a greater proportion of value across the battery materials supply chain;
  - benefit from the substantial increase in public and private investment planned to develop geographically diversified battery chemicals processing capability; and
  - further strengthen a customer relationship, while supporting Pilbara Minerals' core upstream business through a concomitant offtake agreement.

### OVERVIEW

Australian lithium producer Pilbara Minerals Limited (ASX: PLS) (**Pilbara Minerals** or the **Company**) is pleased to announce that it has executed a binding term sheet (**BTS**) with a subsidiary of Ganfeng Lithium Group Co. Ltd (**Ganfeng**<sup>2</sup>) to complete a joint Feasibility Study for a potential downstream conversion facility to produce lithium chemicals. The Feasibility Study will also assess production of a potential intermediate lithium chemicals product in Australia to reduce transportation volumes and carbon footprint. Ganfeng is one of the world's leading lithium chemical converters.

Key terms of the BTS are provided in Appendix A.

Pilbara Minerals' Managing Director and CEO, Dale Henderson, said:

*"We are delighted to have selected our long-standing customer, Ganfeng, to join us in taking the next step towards a major downstream facility for lithium battery chemicals production. This incremental move supports our strategic aim to capture greater value through the supply chain and realise the benefits of supply chain integration."*

*"Ganfeng is a leader and major supplier of lithium chemicals globally. Over the course of its 24-year history, Ganfeng has grown extensive global supply chain relationships with many of the major operators in this emerging battery materials industry. Ganfeng has also distinguished itself for its strong R&D capability and operating performance, especially for producing low cost and high-quality lithium"*

<sup>1</sup> ~32 ktpa lithium carbonate equivalent (LCE) of lithium chemicals (hydroxide and/or carbonate).

<sup>2</sup> The term, "Ganfeng" is used in this Announcement to refer to Ganfeng Lithium Group Co. Ltd or any subsidiary or subsidiaries thereof, as the context requires.

chemicals. These attributes, in combination with our strong alignment to maximise shareholder returns, provide a great match to extend our established relationship together.

*“The Feasibility Study provides an important first step, enabling our two companies to combine our efforts in exploring a preferred location and optimal flowsheet for a downstream lithium chemicals facility which will maximise project economics whilst meeting agreed sustainability standards. This study-first approach provides Pilbara Minerals with the option, but not the obligation, to proceed with a lithium chemicals joint venture. This is a prudent approach to ensure Pilbara Minerals only proceeds with a joint venture if the investment case is sufficiently compelling.”*

Ganfeng's President and Vice Chairman, Wang Xiaoshen, said:

*“We are very pleased to be growing our relationship further with Pilbara Minerals, a trusted partner which has proved to be a reliable and capable supplier of lithium concentrate over the last six years. Further, the two companies share strong alignment in our growth ambitions and we have considerable strengths we can leverage through working together.*

*“This Feasibility Study marks an important step as we jointly pursue the best growth opportunities. We look forward to working with Pilbara Minerals to leverage our expertise in lithium chemical conversion to develop the investment case for a globally competitive lithium chemicals joint venture to service leading customers in the lithium-ion supply chain.”*

## **PARTNERING PROCESS**

The BTS with Ganfeng is the outcome of a partnering process in which Pilbara Minerals engaged with a wide range of potential partners globally that included: battery manufacturers, cathode producers, original equipment manufacturers (**OEMs**) and lithium chemical converters.

The process attracted strong interest from these parties with Ganfeng selected based on:

- Proven expertise – Ganfeng is one of the global leaders in lithium chemical conversion, with more than 20 years' experience, including more than five years converting Pilbara Minerals product.
- Best-in-class conversion intellectual property (**IP**) – with access to proprietary flowsheets for both lithium carbonate and battery grade lithium hydroxide, developed and refined via the operation of seven lithium chemical plants.
- Maximising economics – Ganfeng is well placed to maximise project economics via its design, construction, operational and chemicals marketing expertise, including using modular design practices.
- Tier 1 customer base – established relationships with Tier 1 cathode producers, cell manufacturers and OEMs to maximise future sales of lithium chemicals.
- Shared environmental, social and governance (**ESG**) objectives – strong alignment with Pilbara Minerals on key ESG objectives given established supply chains with Tier 1 battery customers.

## **FEASIBILITY STUDY**

The Feasibility Study will consider a conversion plant that could produce ~32 ktpa lithium carbonate equivalent (**LCE**) of lithium chemicals (hydroxide and/or carbonate) along with a potential intermediate lithium chemical product in Australia, leveraging Ganfeng's extensive experience as a lithium chemical converter.

The Feasibility Study will consider the operating costs, capital costs, fiscal incentives, and overall economics of a potential lithium chemicals plant in various jurisdictions together with a qualitative assessment of other relevant factors including ESG, permitting timeline and supply chain logistics.

Location assessment for the lithium chemical plant will focus on an agreed list of countries including

Australia to explore greater geographical diversification in the battery chemicals supply chain. Preliminary engagement with several countries has indicated strong interest in establishing lithium chemical production with potential economic, taxation and funding incentives on offer, together with access to land and offers of assistance with permitting and approvals. Completing the Feasibility Study will allow the parties to identify the optimal lithium chemicals flowsheet and plant location to maximise project economics while meeting agreed ESG standards.

The Feasibility Study will ultimately enable Pilbara Minerals to appropriately assess the merits of further downstream integration through a measured, data driven approach, with the aim of maximising shareholder value by securing incremental margin beyond that which Pilbara Minerals’ world class upstream business can deliver on a standalone basis. Beyond economic benefits, integration benefits are also expected care of long-term consistent mine to downstream chemicals facility supply. Consistent raw materials supply can enable optimisation for lower overall production costs and improved chemicals marketing appeal to downstream lithium chemicals customers.

On Feasibility Study completion, Pilbara Minerals and Ganfeng have the option to proceed to FID for a jointly owned lithium chemical facility. Both parties retain flexibility to decide whether to approve FID and incorporate the JV, including consideration of the Feasibility Study investment case and prevailing lithium market outlook at the time. Other than the modest Feasibility Study and pre-FID costs, the BTS does not commit Pilbara Minerals to any other material capital commitments or funding requirements unless it commits to proceed beyond FID.

The outcomes of the Feasibility Study are expected in the March Quarter 2025, which creates an option for Pilbara Minerals and Ganfeng to progress to a FID for the chemicals JV thereafter. An indicative timeline is detailed below (refer Figure 1).

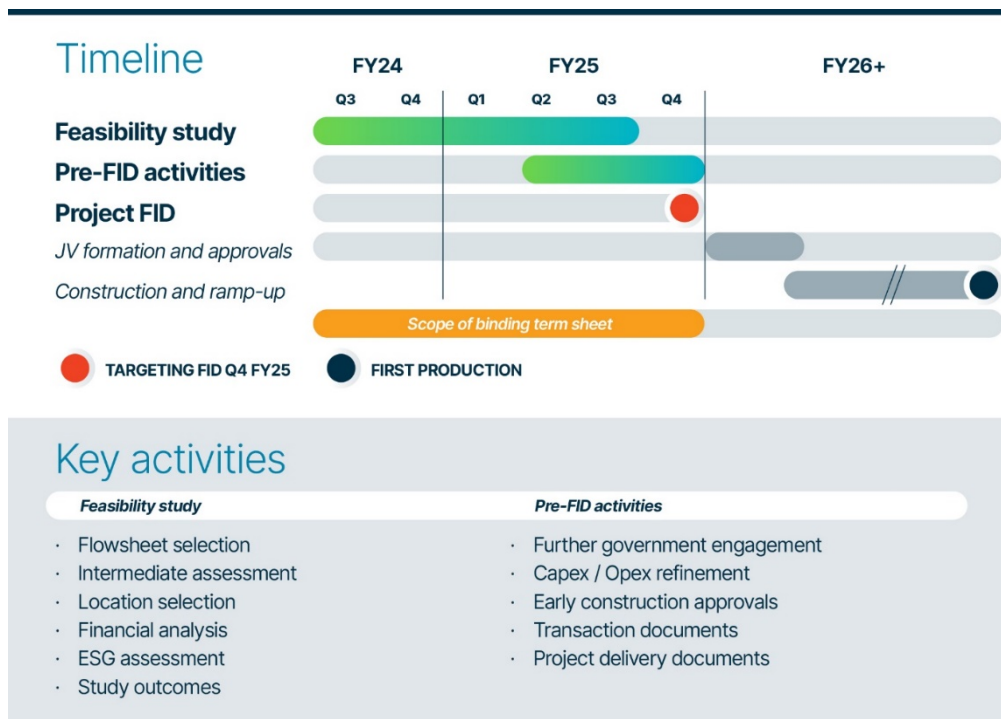


Figure 1: Indicative study timeline

## MINE EXPANSION STRATEGY

Pilbara Minerals' development strategy for the Pilgangoora operation has pursued a staged mine development expansion to lift production output progressively over time as supported by the lithium market. These progressive increases in production tonnage have typically been committed to either offtake supply agreements or downstream partnership opportunities. This BTS with Ganfeng adds to two existing strategic partnerships established by the Company to date, being the downstream Joint Venture with POSCO and the Joint Venture with Calix Limited for the construction of a midstream lithium chemicals demonstration plant.

The Company is currently executing two mine expansion projects to lift production output of spodumene concentrate, being the P680 and P1000 projects. The completion of these projects will provide an increase in the annual nameplate production run rate to approximately 1Mtpa<sup>3</sup>. Once fully expanded and at nameplate production, this expanded production profile will support all offtake commitments which currently exist from CY27 and the additional supply of ~300 ktpa to the JV's lithium chemical plant if FID is approved and the JV is formed. Beyond these commitments, this expanded production profile also provides a significant level of unallocated production. For this unallocated production profile, Pilbara Minerals will consider a range of sales avenues that include: offtake, spot sales, mid-stream and/or further downstream partnerships.

Pilbara Minerals is also progressing studies to assess the feasibility of expanding production capacity beyond 1Mtpa with outcomes expected in the June Quarter 2024. Any further expansion of the Pilgangoora Operation will provide further opportunities to diversify Pilbara Minerals' sales avenues.

## EVOLVING LITHIUM-ION SUPPLY CHAIN

The lithium-ion battery (**LiB**) supply chain continues to grow rapidly in service of the burgeoning demand for LiB related products for growing use cases such as e-mobility and mass energy storage.

The lithium supply chain has experienced rapid development across multiple fronts, including strong LiB growth (forecast CAGR of 22%<sup>4</sup> from 2023 to 2030), continued advancements in battery chemistry technologies, government legislation and incentive programs, and planned geographic diversification of processing and manufacturing.

China currently holds a dominant role across the LiB supply chain, maintaining a large market share of capacity across lithium refining (73%), cathode manufacture (86%) and battery manufacture (83%) in 2023<sup>5</sup>. While China is expected to maintain a significant role within the LiB supply chain moving forward, it is expected that there will be growing geographical diversification with new hubs emerging in key strategic regions.

Given this evolving landscape for the lithium-ion supply chain, the Feasibility Study has been intentionally designed to explore the optimal; process technology, chemical end-product, and jurisdiction to ensure the economics are maximised and risks minimised for the future JV.

Release authorised by Dale Henderson, Pilbara Minerals Limited's Managing Director and CEO.

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<sup>3</sup> Based on 5.7% lithia concentrate grade. Actual production achieved in any year will depend on the actual concentrate grade and mined grade and is variable over the mine plan.

<sup>4</sup> Source: Benchmark Mineral Intelligence – Lithium Forecast Q4-2023

<sup>5</sup> Source: Benchmark Mineral Intelligence

### **About Pilbara Minerals**

Pilbara Minerals is the leading ASX-listed lithium company, owning 100% of the world's largest, independent hard-rock lithium operation. Located in Western Australia's resource rich Pilbara region, the Pilgangoora Operation produces spodumene and tantalite concentrates. The significant scale and quality of the operation has attracted a consortium of high quality, global partners including Ganfeng, General Lithium, POSCO, Yahua and Yibin Tianyi.

### **About Ganfeng**

Ganfeng is a leading global company across the lithium value chain, with a diverse product mix including lithium chemicals, lithium metals and lithium batteries. Ganfeng owns a number of facilities which make it one of the world's largest lithium chemical processors with comprehensive lithium extraction technology. Founded in 2000, Ganfeng is listed on the Shenzhen Stock Exchange and Hong Kong Stock Exchange (HKEX: 1772, SZSE: 002460).

### **Important Information**

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.

Guidance as to production, unit costs and capital expenditure is based on assumptions, budgets and estimates existing at the time of assessment which may change over time impacting the accuracy of those estimates. These estimates are developed in the context of an uncertain operating environment including in respect of inflationary macroeconomic conditions, incomplete engineering and uncertainties surrounding the risks associated with mining and project development including the approvals, construction, commissioning and ramp up of P680 and P1000 which may delay or impact production and have a flow on effect on sales. Actual results may therefore vary significantly depending on these risks and the timing required to address them. All information is provided as an indicative guide to assist sophisticated investors with modelling of the Company. It should not be relied upon as a predictor of future performance.

Information in this announcement regarding production targets and expansions in nameplate capacity of the Pilgan Plant in respect of the P680 and P1000 projects 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 24 August 2023. The relevant proportions of proven Ore Reserves and probable Ore Reserves are 9% proved Ore Reserves and 91% 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.

## Appendix A

### Key terms of the binding term sheet

<b>The BTS includes a binding commitment to complete a joint Feasibility Study with key terms including:</b>	<p>Joint obligation to complete the Feasibility Study (funded 50:50) in accordance with an agreed Feasibility Study execution plan.</p>
	<p>Feasibility Study to be commenced on execution of the BTS and progressed in accordance with an agreed indicative timetable.</p>
	<p>Each party to provide technical support and assistance in connection with, and jointly manage, the Feasibility Study.</p>
	<p>Each party to provide reasonable background IP required to complete the Feasibility Study on a non-exclusive royalty free licence basis.</p>
	<p>Parties to consider the potential benefits of introducing a third party in the JV such as a customer, to contribute equity, take a minority interest and potentially purchase some or all of the lithium chemicals produced, with consequential amendments to the participating interests of the parties in the JV.</p>
	<p>If FID is approved by both parties, each party will negotiate in good faith the transaction documents including the JV agreement, upstream offtake agreement and any intellectual property licences, before, and as a condition precedent to forming the JV.</p>
	<p>BTS to terminate on the earlier of:</p> <ul style="list-style-type: none"> <li>(a) 31 December 2025 if JV formation conditions precedent have not been met including the execution of transaction documents;</li> <li>(b) the date on which the parties agree to terminate the BTS; or</li> <li>(c) a party terminating the BTS as a consequence of a default event by the other party, including a material default or insolvency event.</li> </ul>
	<p>Standstill and orderly sell-down provisions governing Ganfeng's existing shareholding in Pilbara Minerals during the Feasibility Study period and over the term of the JV (if formed).</p>
	<p>If the parties elect not to approve FID (and do not proceed with JV formation) after the Feasibility Study, Pilbara Minerals will supply and Ganfeng will take and pay for an additional 100 ktpa of spodumene concentrate under offtake, over CY27-CY30. As part of this arrangement, the parties have also agreed a release from any offtake obligations arising from the mooted Stage 2 Pilgangoora Operation expansion.</p>
<b>Future transaction documentation for JV - Key Principles</b>	<p>Several key principles have been agreed which, if the parties proceed to FID, are intended to be reflected in the JV, offtake and other key agreements. These include but are not limited to:</p> <ul style="list-style-type: none"> <li>• 50:50 equity ownership in the lithium chemicals JV (unless a third party is introduced);</li> <li>• ~32 ktpa LCE lithium chemicals plant (targeting flexibility for either hydroxide or carbonate) fed by ~300 ktpa of spodumene concentrate.</li> <li>• Ganfeng to licence on a non-exclusive, irrevocable, royalty free basis (except as set out below), all necessary background intellectual property and improvements, to operate the lithium chemical facility by the JV.</li> <li>• Potential royalty to be negotiated if Ganfeng's proprietary alkaline leach carbonate flowsheet (as opposed to conventional hydroxide flowsheets) is adopted by the JV, on reasonable and competitive terms.</li> <li>• One party will have the right to appoint the CEO of the JV while the other party will have the right to appoint the CFO.</li> <li>• Ganfeng will second, transfer and provide access to personnel with specialist technical expertise to support the success of the JV, while Pilbara Minerals has the right to also second a number of personnel into the JV.</li> <li>• Customary reserve matters and deadlock provisions.</li> <li>• Customary pre-emptive rights with a 90-day option period post receipt of sale</li> </ul>

	<p>notice.</p> <ul style="list-style-type: none"> <li>• Lithium chemicals JV to market and sell 100% of product with contracts &gt;6 months to have price review mechanisms. Marketing plan and offtake agreements to be a shareholder reserve matter.</li> <li>• Pilbara Minerals has the option to either sell, or require Ganfeng to purchase, some or all of its JV interest at market value, if events cause a material adverse impact, including events such as decisions of a government or implementation of change of law as a consequence of Ganfeng being an entity registered or controlled by the People's Republic of China (<b>PRC</b>) or any decision of the PRC government or judicial body or the implementation of any change of law by the PRC. Ganfeng has equivalent protections where the event results from Pilbara Minerals being an Australian entity or decisions of the Australian government or judicial body or the implementation of a change of law by Australia.</li> <li>• For a period of 5 years after commissioning of the lithium chemical facility, and to the extent required to satisfy Inflation Reduction Act (<b>IRA</b>) compliance, Ganfeng will sell down its JV interest at fair market value or implement some other ownership structure to secure favourable IRA benefits for the JV.</li> <li>• Pilbara Minerals and JV to enter into an offtake agreement as follows: <ul style="list-style-type: none"> <li>○ Pilbara Minerals to supply and JV to take ~300 ktpa of spodumene concentrate;</li> <li>○ 15 year term;</li> <li>○ Spodumene concentrate to be supplied on a CIF basis;</li> <li>○ Provisional and final pricing;</li> <li>○ Market pricing which must not exceed the price payable from time to time under the current offtake agreement between Pilbara Minerals and Ganfeng (which is based on prevailing market price) with regular price reviews.</li> </ul> </li> </ul>
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