

# PILBARA MINERALS EXERCISES OPTION TO CONTINUE PROGRESSING DOWNSTREAM JV WITH POSCO

Moves Pilbara Minerals closer to becoming a participant in the downstream 'value-added' lithium chemicals market.

## HIGHLIGHTS

- Option to enter into an incorporated downstream joint venture (DJV) with POSCO to develop a 40ktpa LCE (lithium carbonate equivalent) capacity downstream chemical conversion facility in South Korea conditionally exercised by Pilbara Minerals' Board.
- Progression of proposed DJV offers wide-ranging strategic benefits to Pilbara Minerals, including:
  - Further diversification of the Pilgangoora Project's customer base.
  - Vertical integration with a sophisticated international lithium chemicals partner.
  - Access to POSCO's patented PosLX processing technology, which delivers industry-leading battery-ready lithium hydroxide and lithium carbonate products, with very low impurities.
  - Proposed chemical conversion plant offers a comparable capital and operating cost base to recently established/constructed and operating lithium chemicals projects.
  - Plant to be located in the Gwangyang Free Economic Zone in South Korea, offering access to major Korean battery customers and port facilities.
- Plant expected to be the first large-scale chemical conversion plant in South Korea to deliver battery-ready lithium chemicals to the rapidly growing lithium battery materials sector in South Korea.
- POSCO's PosLX technology provides significant differentiation for battery-ready products:
  - Production of industry-leading high quality (very low impurity) battery-ready lithium hydroxide and lithium carbonate products.
  - Patented PosLX electrodialysis processing technology developed over more than eight years.
  - Already demonstrated at commercial scale through existing conversion plant in Gwangyang (approximately 2,500tpa LCE capacity) and using Pilgangoora Project spodumene delivered from October 2018.
- Option exercised subject to finalisation of due diligence, development of the financing package, final POSCO and Pilbara Minerals' board approvals and further development and execution of final and binding joint venture terms.
- Final decision to execute DJV due to be made by Pilbara Minerals' board in May 2019.

Australian lithium and tantalum producer, Pilbara Minerals Limited (ASX: PLS) ("Pilbara Minerals" or "the Company") is pleased to advise that the Company's Board has conditionally exercised its option to enter into an incorporated joint venture with POSCO (for up to 30% participation) for the development of a downstream lithium chemical conversion facility in South Korea.

Pilbara Minerals' Managing Director and CEO, Ken Brinsden, said:

*"We are proud of the relationship we have developed with POSCO over the last year, which has gone from strength to strength as we continue to work through the joint venture development process.*

*"It has been really pleasing to see the positive results generated by the due diligence work to date. The significant investment by POSCO into their PosLX technology has paid off and they have proven their ability to produce an industry leading, battery-ready lithium product through their innovative lithium purification process.*

*"For Pilbara Minerals to have secured a strong and technically capable partner like POSCO is no mean feat and gives us an exciting opportunity to partner with them to enter the battery grade and cathode material product supply market and become a fully vertically integrated global lithium raw materials company.*

*"The rapid growth in lithium chemicals consumption in South Korea cannot be underestimated and we believe this partnership positions Pilbara Minerals at the forefront of this emerging market, which is forecast by Benchmark Minerals Intelligence (October 2018) to position Korean battery manufacturers to supply around 25% of worldwide capacity by 2028," he added.*

The facility, to be located in the Gwangyang Free Economic Zone in South Korea, would have up to 40ktpa LCE capacity and process spodumene from the Pilgangoora Lithium-Tantalum Project (Pilgangoora Project) using POSCO's patented PosLX purification process.

Since Q4 2018, Pilbara Minerals has been undertaking technical due diligence to assess the proposed chemical plant development and work to date has delivered promising results. Due diligence has included a visit of technical staff and assessment of POSCO's existing commercial operations plant using their PosLX technology, based on Pilbara Minerals' spodumene delivered from the Pilgangoora Project.

POSCO has developed their first commercial-scale operation (after the initial development of a pilot scale plant) that produces up to 2,500tpa of lithium chemicals on an LCE basis. Based on spodumene chemical conversion, the plant has the capacity and flexibility to produce both high grade lithium hydroxide, or alternately lithium carbonate products (i.e. the plant has the capacity to be dual purpose) with low impurities in the final products produced.

The battery grade lithium hydroxide produced has to date been tested by major South Korean cathode makers and has passed their qualification process. With PosLX technology, POSCO has been able to demonstrate the production of a very high purity lithium hydroxide which is expected to be highly sought after by South Korean battery manufacturers.

Studies undertaken by POSCO have determined capital development costs of the proposed chemical conversion and purification facilities as being largely consistent with recently established/constructed and operating lithium chemical facilities elsewhere.

Operating costs for the chemical conversion and purification are also expected to be in line with industry standards for the higher purity products produced.

Prior to Pilbara Minerals' Board making a final investment decision regarding its full participation in the DJV, there are still several outstanding conditions that need to be satisfied.

These conditions include completion of further due diligence on the proposed chemical conversion plant, financing, and finalisation of the final binding joint venture and technology licensing terms consistent with key commercial principles previously agreed between the parties.

Once complete, these matters will be put to the Board of Pilbara Minerals for a final decision and commitment to the joint development in mid to late May 2019.

The parties would then aim to complete construction of the chemical conversion plant in late 2020 with commencement of ramp up and production from early 2021.

## MORE INFORMATION

### ABOUT PILBARA MINERALS

Pilbara Minerals (Pilbara Minerals – ASX: PLS) is a mining and exploration 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 proposes to produce tantalite as a 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 semi-conductors, engine turbine blades and medical implants. As well as providing ductility, toughness, corrosion resistance, thermal conductivity and heat resistance to various other applications.

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Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.