

PFS OPTIMISATION STUDY ENHANCES MARDIE PROJECT

- **Pre-Feasibility Study (“PFS”) Optimisation Study concluded, delivering improved project economics**
 - **Pre-tax NPV₁₀ of A\$560M, IRR of 20% and annual EBITDA of A\$155M**
 - **Pre-tax NPV₈ of A\$875M (8% discount rate used in majority of peer feasibility studies¹)**
 - **Salt cash cost² reduced by 19% to A\$16/t FOB**
 - **Sulphate of Potash (“SOP”) cash cost² reduced by 16% to A\$211/t FOB**
 - **Total capital cost increased to A\$498M allowing increased production and development of a port at Mardie**
- **Key changes to the development case for the PFS Optimisation Study include:**
 - **Salt production increased from 3.5Mtpa to 4.0Mtpa**
 - **SOP production increased from 75ktpa to 100ktpa**
 - **Salt and SOP now exported via a port at Mardie, eliminating all road haulage costs**
 - **Operating life increased from 30 years to 60 years**
- **This development case will be incorporated into the Definitive Feasibility Study (“DFS”) that is due in late 2019**

BCI Minerals Limited (ASX:BCI) (“BCI” or the “Company”) is pleased to report the outcomes of a recently completed PFS Optimisation Study for the Mardie Salt & Potash Project. This announcement should be read together with the cautionary statement on page 8 and BCI’s PFS announcement dated 1 June 2018.

The PFS report supported the technical and financial viability of the Mardie Project. Following completion of the PFS, BCI has initiated a DFS and is currently progressing project designs, tenure, environmental approvals and early construction works for the Project.

As part of initial DFS planning activities, BCI investigated a number of optimisation opportunities, most notably an increase of salt and SOP production along with the development of an export facility at the Mardie site. The PFS Optimisation Study has incorporated these initiatives into the development case, proving that they will add significant value to, and further de-risk, the Mardie Project.

Commenting on the PFS Optimisation Study, BCI’s Managing Director, Alwyn Vorster, said: *“The recent approval by the Minister for Ports for an export facility at the Mardie Project site and PFS flowsheet optimisation work resulting in higher production targets, support important amendments to our DFS scope. The PFS Optimisation Study has shown these amendments will deliver lower operating costs and improve the overall project economics.”*

¹ Source: Capital IQ.

² Cash costs include all costs associated with production, site management, logistics, contingency, marketing costs and royalties, but excluding sustaining capex. Cash costs are in Australian dollars and no escalation or inflation is included.

“With salt, Mardie is expected to be cost competitive with existing large WA salt operations owned by major companies. Given SOP is a by-product of salt production and its location on the coast, Mardie should logically have a SOP on-ship cost of A\$50-100/t lower than any other WA SOP projects that are located 800-1,000km from their preferred port.”

1. Salt and SOP Production

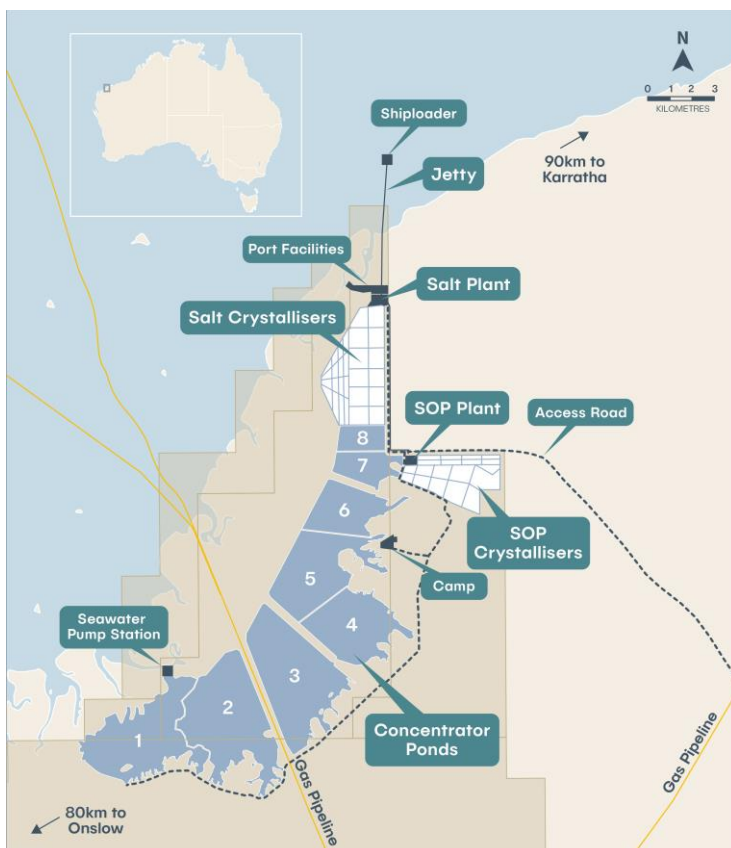
The Project will produce salt via solar evaporation of seawater, crystallisation and dry harvesting of raw salt, which is then processed to produce a high purity product (typically 99.7% NaCl dry basis). The remaining liquor (bitterns) extracted from the primary salt crystalliser ponds will be subject to further crystallisation, harvesting and processing to produce SOP (typically 51% K₂O).

The PFS established a project layout and operational case capable of producing 3.5Mtpa of salt and 75ktpa of SOP. BCI and independent experts have increased the project footprint layout and optimised the pond and crystalliser mass balance to establish an operational case capable of producing 4.0Mtpa of salt and 100ktpa of SOP.

To facilitate the higher production, a total of 147 gigalitres (“GL”) per annum of seawater (containing 4.7Mt of NaCl and 150kt of SOP equivalent) is flowed through a total concentrator pond footprint of 79km² and crystalliser footprint of 20km². This represents an increase of 15GL of seawater, 9km² of concentrator ponds and 3km² of crystallisers. This revised seawater intake and project footprint was factored into the Environmental Review Document submitted to the Environmental Protection Agency (“EPA”) in April 2019.

Total salt recovery has increased slightly due to elimination of road transport losses (refer Project Logistics section below). Total SOP recovery has increased from 56% to 67% in-line with K-UTEC’s engineering study completed for the PFS, with BCI previously adopting a more conservative assumption.

Figure 1: Project Layout



2. Project Logistics

The PFS envisaged salt being trucked ~70km by private haul road to a new port at Cape Preston East, which was assumed to be developed and operational by the time it is required by Mardie. It was assumed the Mardie Project paid access charges to utilise existing road and port infrastructure at Cape Preston East and incurred capex to construct new salt specific export infrastructure. In the PFS, it was assumed that SOP is trucked ~100km to Dampier for export through the general cargo facility.

The PFS Optimisation Study case adopts the approach of BCI developing a new port facility at the Mardie site to export salt and SOP, a concept which the Minister for Ports recently approved.³ This will eliminate road haulage costs and make Mardie's development case independent and not reliant on the prior development of Cape Preston East, or high cost access to the Dampier general cargo facility.

The Mardie Port will comprise a trestle jetty with a conveyor (or light rail) and road, which traverses the intertidal zone for ~3km before extending into the ocean for a further ~3.5km to reach ship loading infrastructure and a transshipment berth pocket. Salt will be conveyed in bulk form to the end of the jetty, loaded onto transshipment vessels via a ship loader and transhipped to ocean going vessels anchored approximately 15 nautical miles offshore.

Bulk SOP will be exported in a similar manner via smaller vessels or in parcel lots. SOP packaged in bulka bags will be transported to the end of the jetty and loaded on to transshipment vessels via a fixed crane and then transhipped to geared ocean going vessels anchored offshore.

3. Capex Estimate

The PFS capex estimate has been updated for the revised development case capable of producing 4.0Mtpa of salt and 100ktpa SOP, and development of the Mardie Port. The capex estimate has been independently verified within an overall level of accuracy of $\pm 25\%$ and is classified as an AACE Class 4 estimate as defined under AACE Recommended Practice No 18R-97.

The capex required for salt production facilities is \$401M and for SOP is \$97M, resulting in a total capex of \$498M. A breakdown of capex to full production by project component is provided in Table 1 below:

Table 1: Capex Estimate by Project Component

Area Description	Salt Capex (A\$M)	SOP Capex (A\$M)	Total Capex (A\$M)
Concentrator and Crystalliser Ponds	70	16	86
Process Plants	29	50	79
Port	200	4	204
Supporting Infrastructure	18	5	23
Indirect Costs	51	14	65
Contingency	33	8	41
Total	401	97	498

³ Refer to BCI's March 2019 Quarterly Report released on 15 April 2019.

Capex for the concentrator ponds, primary crystallisers, salt purification plant, site infrastructure and salt export facilities at Mardie has been allocated to salt production. Capex for the secondary crystallisers, bitterns treatment, SOP processing plant and incremental site and export infrastructure has been allocated to SOP production.

As per the PFS, the capital estimate excludes the costs for infrastructure provided by contractors or service providers including the accommodation village, power supply and transshipment vessels. Recovery of the capex for these elements is included in the opex estimate.

4. Opex Estimate

The PFS opex estimate has been updated for the revised development case as shown in Table 2. The opex estimate has been independently verified within an overall level of accuracy $\pm 25\%$ and is classified as an AACE Class 4 estimate as defined under AACE Recommended Practice No 18R-97.

Table 2: Opex Estimate for Salt

Area Description	Salt Opex (A\$/t)	SOP Opex (A\$/t)
Production	6.25	147.00
Haulage	-	-
Port Handling and Transshipment	4.85	12.20
Corporate and Overheads	1.80	-
Contingency	1.30	15.90
C1 Cash Costs (FOB)	14.20	175.10
Marketing	0.85	14.30
State Government Royalty	0.75	17.85
Native Title Royalty	0.20	3.55
Cash Costs (FOB)	16.00	210.80
Sustaining Capex	1.00	20.00
AISC (FOB)	17.00	230.80

Mardie is expected to be cost competitive with the five existing large Western Australian salt operations owned by Rio Tinto and major Japanese companies.

Mardie is expected to be the lowest cost SOP project in Western Australia, given SOP is a by-product of salt production and because Mardie is located on the coast, whereas other SOP projects have to incur transport costs to reach their preferred port (between 800-1,000km away).

5. Summary of Changes in Key Assumptions

Table 3 below sets out all changes in key assumptions relative to the PFS.

Table 3: Changes in Key Assumptions

Assumption	PFS	Optimised PFS
Salt Production Target	3.5Mtpa	4.0Mtpa
SOP Production Target	75ktpa	100ktpa
Seawater Intake	132GLpa 4.2Mtpa NaCl 135ktpa SOP equivalent	147GLpa 4.7Mtpa NaCl 150ktpa SOP equivalent
Concentrator Pond Area	70km ²	79km ²
Crystalliser Area	17km ²	20km ²
NaCl Total Recovery	83%	85%
SOP Total Recovery	56%	67%
Salt Logistics	Trucked ~70km to Cape Preston East for export (bulk freight)	Exported directly from Mardie Port (bulk freight)
SOP Logistics	Trucked ~100km to the Dampier Cargo Wharf for export (bulka bags)	Exported directly from Mardie Port (bulk and bulka bags)
Capex Estimate	A\$335M	A\$498M
Sustaining Capex	A\$1.7M pa	A\$6.0M pa
Salt Cash Cost Estimate	A\$20/t	A\$16/t
SOP Cash Cost Estimate	A\$250/t	A\$211/t
Operating Life	30 years	60 years
Salt Price	US\$30/t FOB	Unchanged
SOP Price	US\$500/t FOB	Unchanged
Exchange Rate	0.75 US\$ per A\$	0.70 US\$ per A\$
Discount Rate	10% real	Unchanged

Aside from the production, logistics, capex and opex changes noted above, other key changes include:

- Operating life has been increased from 30 years to 60 years, reflecting the 21-year term of a Mining Lease with two extensions (63 years), less a 3-year construction period. Note that the Mardie Project will utilise an inexhaustible seawater resource and its operating life is therefore only limited by the term of its tenure and the sustaining capital model implemented. Sustaining capital allowance has been increased from A\$1.7M to A\$6.0M per annum to reflect the increased operating life; and
- Exchange rate has been adjusted from 0.75 US\$ per A\$ to 0.70 US\$ per A\$, reflecting a depreciation of the Australian dollar and a realignment of forward exchange rates.

6. Financial Evaluation

The PFS Optimisation Study presents an attractive investment case, with key financial metrics as follows:

Table 4: Key Financial Metrics Assumptions

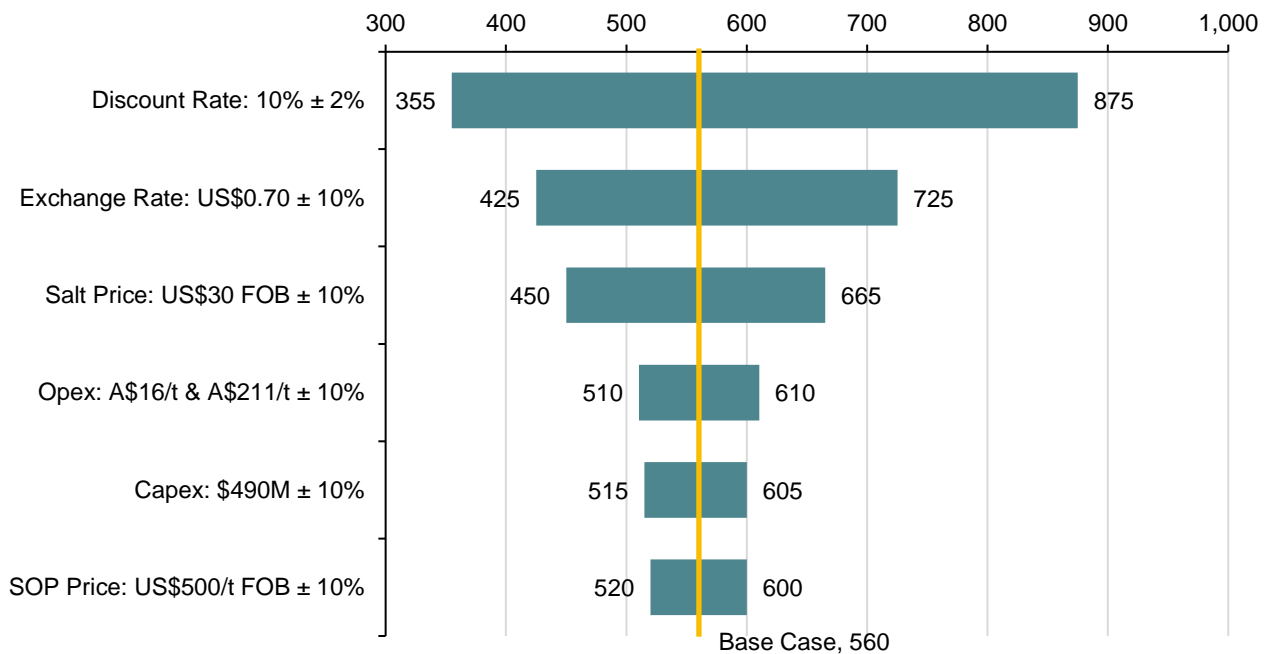
	PFS	Optimised PFS
Pre-tax NPV ₁₀	A\$335M	A\$560M
Pre-tax IRR	20.1%	20.3%
Annual EBITDA at full production	A\$102M	A\$155M
NPV to capex ratio	1.0x	1.1x
Payback period (from production)	5 years	5 years

As per the PFS, financial evaluation is based on ungeared cash flows estimated on a real basis.

BCI notes that the majority of companies with development projects use an 8% discount rate in their studies (source: Capital IQ). Using an 8% discount rate, the Mardie Project has a pre-tax NPV of A\$875M and an NPV to capex ratio of 1.8x.

Sensitivity of the pre-tax NPV to changes in key assumptions is set out in Figure 2 below. The Mardie Project is most sensitive to changes in discount rate, exchange rate and salt price assumptions. The Project is least sensitive to capex, SOP price and opex.

Figure 2: Pre-tax NPV Sensitivity Analysis (A\$M)



7. Project Status and Forward Work Plan

The PFS Optimisation Study case will form the base case of the DFS and will be further defined, including assessment of additional project enhancement opportunities, in the DFS. The forward work plan is focused on completing the DFS during the December 2019 quarter, securing all required development approvals and making a final investment decision by the March 2020 quarter.

-END-

For further information:

P: +61 8 6311 3400

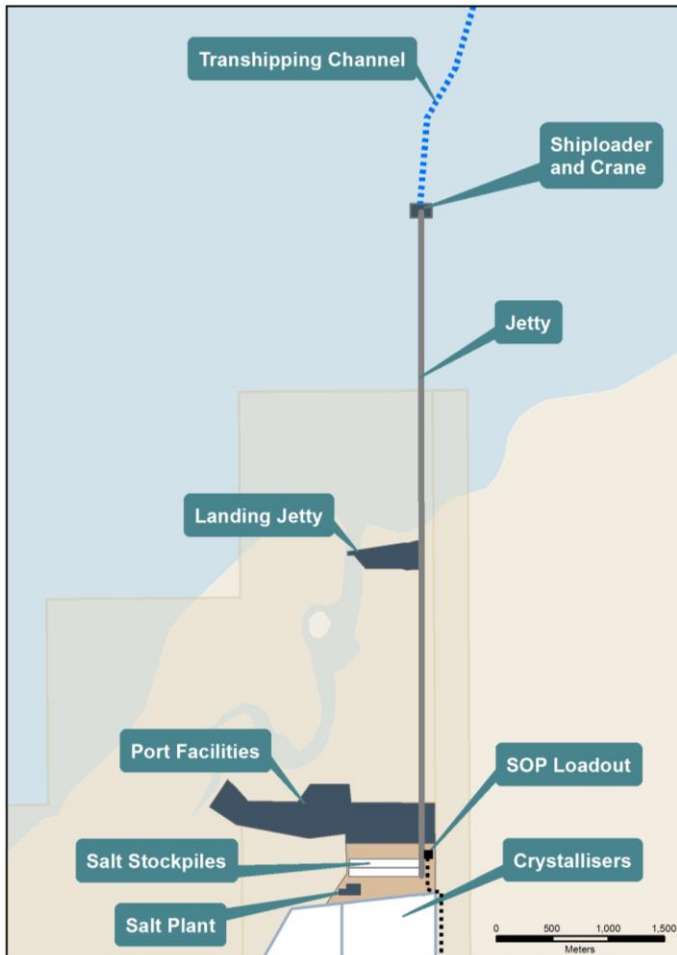
E: info@bciminerals.com.au

Alwyn Vorster
Managing Director

Simon Hodge
Chief Financial Officer

Brad Milne
Investor Relations Manager

APPENDIX: PORT LAYOUT MAP



CAUTIONARY STATEMENT

The PFS Optimisation Study case is based on material assumptions outlined throughout BCI's announcement released on 1 June 2018 entitled "Mardie Salt & Sulphate of Potash Project – Positive Pre-Feasibility Study Completed" ("PFS Announcement"), as modified by this announcement. Assumptions contained in the PFS Announcement continue to apply and have not materially changed, unless modified by this announcement.

This announcement contains prospective financial material which is predictive in nature and may be affected by inaccurate assumptions, known or unknown risks and uncertainties and may differ materially from results ultimately achieved. This announcement contains "forward-looking statements". All statements other than those of historical facts are forward-looking statements. Where BCI expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. However, forward-looking statements are subject to risks, uncertainties and other factors, which could cause actual results to differ materially from future results expressed, projected or implied by such forward-looking statements. Such risks include, but are not limited to, commodity price volatility, currency fluctuations, increased production costs and variances in production rates, as well as political and operational risks and governmental regulation and judicial outcomes. BCI does not undertake any obligation to release publicly any revisions to any "forward-looking statement" other than as required by law relating to any material changes in assumptions.

The Project is proposing to produce salt and SOP from seawater. The JORC Code is not applicable to such a project and accordingly Ore Reserves and Mineral Resources are not reported. However, the input resource, seawater from the ocean, is abundant and has a known and consistent chemical composition.

ABOUT BCI MINERALS

BCI Minerals Limited (ASX:BCI) ("BCI") is an Australian-based company that is developing a salt and potash business supported by iron ore royalty earnings.

BCI is focused on rapidly advancing its 100% owned Mardie Salt & Potash Project, a potential Tier 1 project located on the West Pilbara coast in the centre of Australia's key salt production region.

Mardie will produce high-purity salt (typically 99.7% NaCl) and sulphate of potash ("SOP") (typically 51% K₂O) via solar evaporation of seawater. Using an inexhaustible resource and a production process driven mainly by natural solar and wind energy, Mardie is a sustainable opportunity to supply the salt and potash growth markets in Asia over many decades.

The long-term demand outlook for both salt and SOP is positive. Salt, or NaCl, is an essential mineral used extensively in modern life. High purity salt produced at Mardie will be used in chemical and industrial processes that create thousands of everyday products. Demand in this market segment, particularly in Asia, is expected to grow strongly over the next decade and result in a supply deficit.

Increasing population and urbanisation requires more and better-quality food to be produced from less arable land. SOP is a premium fertiliser providing two key nutrients – potassium and sulphur – which improves plant growth and makes it drought resistant. SOP is mostly used on high value crops where yield increases deliver larger financial benefits.

Following a positive Pre-Feasibility Study in 2018, a Definitive Feasibility Study on a 4Mtpa salt and 100ktpa SOP operation is underway and due to be completed by late 2019. Key approvals are expected to be in place by early 2020 and a Final Investment Decision (FID) is targeted by Q1 2020.

BCI receives quarterly royalty earnings from Iron Valley, an iron ore mine located in the Central Pilbara region of Western Australia which is operated by Mineral Resources Limited (ASX:MIN) (95Mt JORC Ore Reserve¹). BCI's EBITDA from Iron Valley has ranged from ~A\$6-18M per annum and is A\$6M for the first 9 months of FY19.

A process is underway for the divestment of BCI's iron ore and exploration portfolio. The first transaction completed in December 2018, with the sale of the Kumina iron ore tenements to MIN for total consideration of A\$35M cash, of which \$8M is still to be received after operations commence.

KEY STATISTICS

Shares on issue:	397.6 million	
Cash and cash equivalents:	\$35.4 million	as at 31 March 2019
Board:	Brian O'Donnell	Non-Executive Chairman
	Alwyn Vorster	Managing Director
	Michael Blakiston	Non-Executive Director
	Jenny Bloom	Non-Executive Director
Major shareholders (>5%):	Wroxby Pty Ltd	29.1%
Website:	www.bciminerals.com.au	

1: Refer to BCI's announcement "Updated Mineral Resources and Ore Reserves" dated 18 October 2018 for further details. BCI is not aware of any new information or data that materially affects the information included in that announcement.