Market Update

CobaltBlue
green energy technology

26 July 2022

Cobalt Blue Holdings Limited

A Green Energy Exploration Company

ASX Code: **COB**

Commodity Exposure:

Cobalt & **Sulphur**

Directors & Management:

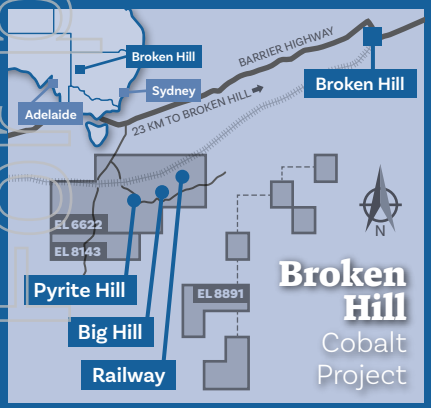
Robert Biancardi	Non-Exec Chairman
Hugh Keller	Non-Exec Director
Robert McDonald	Non-Exec Director
Joe Kaderavek	CEO & Exec Director
Danny Morgan	CFO & Company Secretary

Capital Structure:

Ordinary Shares at 26/07/2022:	**322.2m**
Unlisted Options/Rights:	**18.1m**
Market Cap (undiluted):	**$251m**

Share Price:

Share Price at 26/07/2022:	**$0.78**



Cobalt Blue Holdings Limited

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Highlights

Demonstration Plant Transitioning to Operations

KEY POINTS

- Cobalt Blue Holdings Limited (ASX:COB) has completed mining 2,300 t of ore for the Broken Hill Cobalt Project (BHCP) Demonstration Plant Program.
- Comminution and concentrate circuits are commissioned with operations underway.
- Transitioning to operations for remainder of plant aiming to produce Mixed Hydroxide Precipitate (MHP) and cobalt sulphate.
- Large scale (industry pre-qualification) test samples expected to be shipped from August.

Cobalt Blue's Chairman, Rob Biancardi said:

"24-hour operations will commence shortly across the entire Demonstration Plant. This reflects real progress by our technical team and will allow BHCP to ship large scale test samples during Q3, providing a strong backdrop to commercial discussions."

Demonstration Plant

COB has designed, built, and is now commissioning and operating a Demonstration Plant in Broken Hill. The plant is aiming to treat a minimum of 3,000 t of ore (up to 4,000 t) and produce circa 10 t of cobalt products (mixed hydroxide and/or cobalt sulphate).

During 2021 COB successfully built and operated a smaller scale Pilot Plant. This facility has now been upgraded over the last six months to increase capacity and includes all processing unit operations to treat ore to produce MHP (typically 30% cobalt and 5% nickel), followed by refining to cobalt sulphate. The Demonstration Plant program forms a key basis for the Broken Hill Cobalt Project Definitive Feasibility Study.

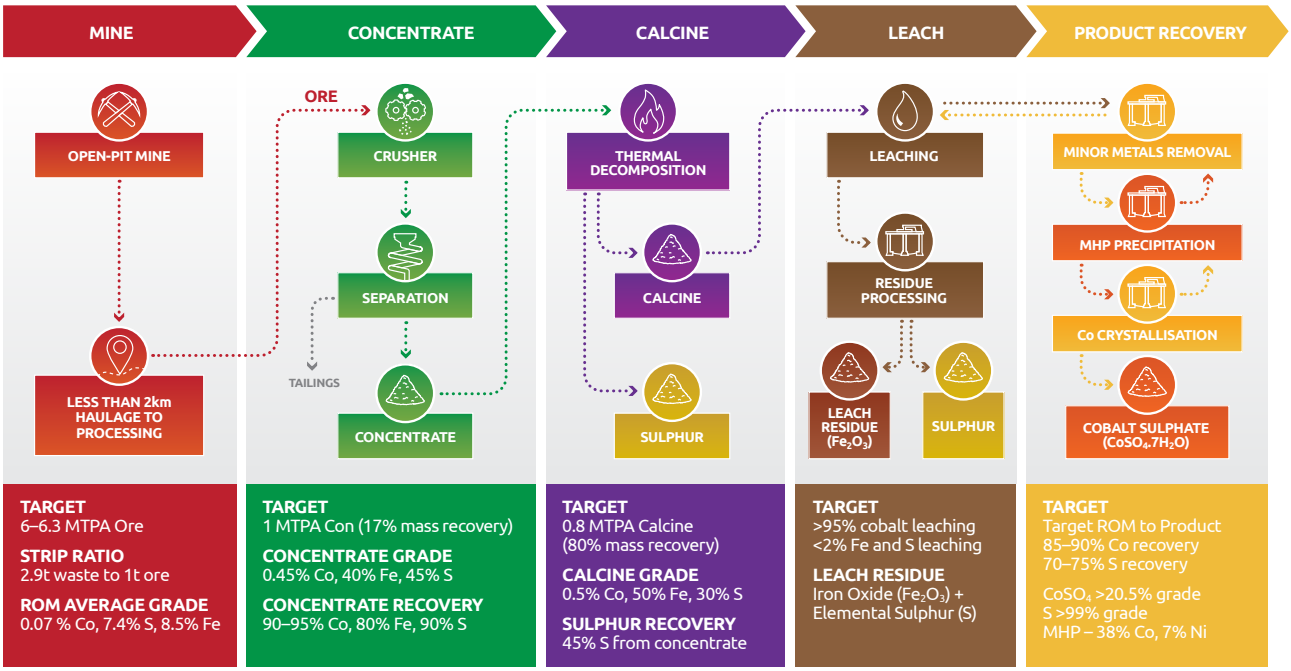
Ore for the plant is being sourced from the Pyrite Hill deposit. A 60 m long underground portal was developed to access the orebody. To date 2,300 t of ore has been extracted.

The ore has been stage crushed, followed by dry milling in a roller mill to a top size of ~ 1 mm. The fine ore is now being processed through the concentrator circuit. The concentrate circuit is comprised of rougher and cleaner gravity spirals, and a scavenger flotation cell. The target is to generate a minimum of 600 t of concentrate from 3,000 t of ore.

The pyrite concentrate will be treated using the COB patented flowsheet to recover cobalt and elemental sulphur. The flowsheet is shown in Figure 1. In addition to the milling and concentrator circuits, the Demonstration Plant contains:

- A kiln for thermal decomposition of pyrite into pyrrhotite and elemental sulphur
- An autoclave circuit for leaching pyrrhotite
- Iron removal circuit
- MHP circuit
- Refining circuit to produce cobalt sulphate (ion-exchange, solvent extraction, crystallisation)
- Onsite production of oxygen for the leach, and nitrogen for the kiln

Figure 1 – **BHCP Process Diagram**



The Demonstration Plant program is expected to operate in aggregate for 20 weeks on a 24/7 basis. The program will be split into campaigns, to allow for analysis and optimisation of the plant performance.

Samples of MHP and cobalt sulphate will be provided to prospective offtake parties. Early supply of samples will assist with qualification into the battery manufacturing chain, ahead of future commercial operations at the BHCP.

Samples of cobalt sulphate will also be provided to the Australian Future Batteries Industry CRC Precursor Pilot Plant. This plant was recently opened in Perth (11th July 2022). The Pilot Plant is a collaborative activity with 19 industry, research and Government participants (https://fbicrc.com.au/cathode-facility-officially-launched/). COB looks forward to production of Australian NCM precursor using BHCP cobalt sulphate as a raw material input.

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Figure 2 – **Mine site – crushed ore stockpiles**

Figure 3 – **Concentrator – in action**

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Figure 4 – **Kiln – with scrubber**

Figure 5 – **Pressure Oxidation Vessels**

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Figure 6 – **Demonstration Plant Control System**

Figure 7 – **Cobalt refining – manganese removal**

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COB Timeline

Development schedule for the BHCP is shown below:

Figure 8 – **BHCP Development Schedule**

	PRE-2021	2021	2022	2023	2024	2025
Business Achievements	100% Project Ownership CRC-P Grant	Global Cobalt Sample Program Major Project Status and CMAI grant	Offtake Cobalt Qualification Program – 2022 Major Project Status and CMAI grant	Final Investment Decision	Construction Period Mine Development EPC Renewable Power Contracts	Refinery Commissioning First Commercial Production
Technical Studies	Project Update 2020 PFS 2018	Feasibility Study	Feasibility Study	Definitive Feasibility Study and Approvals		
Process Testing	Pilot Scale Testwork	Pilot Plant – 30 Tier 1 Partners Offtake Contract Negotiations (begin)	Larger scale (24/7) Operations Commercial Qualification Samples Bulk Sample			First On Specification Production
Environmental Approvals		EIS Field Studies	EIS Field Studies	EIS Submission SSD Determination	ESG/CO_2 Reporting	ESG/CO_2 Reporting Operating Permits (approved)
	PRE-2022		MILESTONES			

Cobalt Blue Background

Cobalt Blue (ASX:COB) is an exploration company focussed on green energy technology and strategic development of the Broken Hill Cobalt Project in the far west of New South Wales. This strategic metal is in strong demand for new generation batteries, particularly lithium-ion batteries now being widely used in clean energy systems.

COB is undertaking exploration and development programs on the Broken Hill Cobalt Project. The Broken Hill Cobalt Project, 23 km west of Broken Hill and 400km by rail from Port Pirie consists of four granted tenements (EL6622, EL8143, ML86 and ML87) with total area of 63km^2. The main targets for exploration are well known and document large-tonnage cobalt-bearing pyrite deposits. The project area is under-explored, with the vast majority of historical exploration directed at or around the outcropping pyritic cobalt deposits at Pyrite Hill and Big Hill.

Potential to extend the Mineral Resource at Pyrite Hill, Big Hill, Railway and the other prospects is high. Numerous other prospects within COB's tenement package are at an early stage and under-explored.

Looking forward, we would like our shareholders to keep in touch with COB updates and related news items, which we will post on our website, the ASX announcements platform, as well as social media such as Facebook (f) and LinkedIn (in). Please don't hesitate to join the 'COB friends' on social media and to join our newsletter mailing list at our website.

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This announcement was approved by the Board of Directors.

Released Information

This ASX announcement refers to information extracted from the following reports, which are available for viewing on COB's website http://www.cobaltblueholdings.com

- 20 June 2022: Demonstration Plant – Ore Extraction Underway, Commissioning Continues
- 12 May 2022: COB advances Demonstration Plant Commissioning
- 23 March 2022: COB commences underground development to support Demonstration Plant
- 16 September 2021: BHCP Resource Update
- 10 September 2021: Premium cobalt samples finalised
- 05 July 2021: Transition to Demonstration Plant

COB confirms it is not aware of any new information or data that materially affects the information included in the original market announcement, and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. COB confirms that the form and context in which the Competent Person's findings presented have not been materially modified from the original market announcement.

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