

Cobalt Blue Holdings Limited

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CEO's Letter to Shareholders

With 2020 underway and COB moving to 100% ownership and legal title of the Broken Hill Cobalt Project (BHCP) I wish to update shareholders on our business.

In December 2019 we reaffirmed a two-part strategy for Cobalt Blue Holdings Limited (COB), namely:

1. Bringing the BHCP into production; and
2. Commercialisation of COB's proprietary technology through COB Partnerships.

The Broken Hill Cobalt Project Demonstration Plant

A key stepping stone on our development path is to build a metallurgical testing centre in Broken Hill. This centre will scale from an initial Pilot Plant Operation (producing ~100-300 kilograms of cobalt sulphate from 90 tonnes of ore) to a larger scale fully integrated Demonstration Plant (producing 1–2 tonnes of cobalt sulphate using up to 2,000 tonnes of ore). The results will form the evidentiary basis for the engineering designs and cost estimates for the BHCP Feasibility Study. The centre will also allow COB to produce varying specifications of cobalt products (including mixed hydroxides and sulphates) for potential commercial partners.

Our technical team has made strong advances developing the Pilot Plant. In December we announced that critical equipment was being QA/QC assessed. That equipment is now in transit to Broken Hill. We expect these first deliveries by late February, commissioning in late Q2, and first operations mid-year.

Figure 1: **Pilot Plant - Leaching Circuit Equipment - final inspection before shipping**



The Pilot Plant will be focussed on testing the leaching and product recovery circuits. Previously, in 2019, COB completed concentrate trials on 45t of ore at ALS Metallurgy. The 7t of concentrate is now being prepared for thermal decomposition (pyrolysis) trials at ANSAC. The resulting calcine will be processed in the Pilot Plant in mid-2020.

I'd like to take this opportunity to emphasize the considerable scale of this testwork and the opportunities it brings. As part of the development stages of the BHCP, it is imperative that we reliably produce on-spec product for acceptance testing. This will underpin offtake negotiations, and related project finance discussions. The QA/QC testing for cobalt chemicals in battery manufacture requires 1–5kg samples for homogeneity and purity confirmation, and then minimum samples of 100–150 kg for actual test battery manufacture. The battery is then performance tested to meet the demanding standards supporting tomorrow's EV fleets.

The Demonstration Plant is aiming to deliver multiple production acceptance samples to leading battery production facilities across Asia, Europe and North America. Global industry uptake of our test product requires such extensive acceptance testing, so that our commercial product can qualify as a precursor feedstock from the outset of the BHCP operations. Potential commercial partners will be able to visit the project mine site as well as the Demonstration Plant in 2020, providing inspection of the entire production chain of the BHCP.

Process Flexibility

In order to take advantage of prevailing cobalt market conditions, the BHCP has a flexible production strategy. By developing a process that produces a range of commercially saleable intermediate products, the project will be able to optimise its suite of products at any one time.

The BHCP refinery will therefore produce:

- An intermediate **Mixed Hydroxide Product (MHP)** containing ~25% Co and ~2% Ni. The high cobalt to nickel ratio is unique and is likely to command a premium payable content sale price, for blending with typical nickel rich MHPs.
- A final **Cobalt Sulphate** will be produced from further refining the MHP. The target product specification is a >20.5% Co content sulphate crystal, suitable for use in cathode precursor manufacture.

Ore Reserve Statement

COB is aiming to release an updated Ore Reserve Statement in mid-2020. This will be based upon the 2019 Mineral Resource and incorporate other modifications to the BHCP since the PFS, e.g. tailings and waste management, power supply and cost studies and updated mining schedules. We expect this more optimised series of studies to significantly improve the economics delivered as part of our PFS in mid-2018. Our target remains to produce cobalt sulphate at a cash cost of US\$10/lb (C1 basis - net of by-products). This will place the project in the lowest cost quartile of cobalt projects globally. The concurrent timing of the Ore Reserve Statement with the successful commissioning of the Pilot Plant will deliver significant project milestones.

State Significant Development

We recently held a Scoping Meeting (6 January 2020) with the Department of Planning, Industry and Environment (DPIE) presenting the BHCP. This is the first step in the process towards State Significant Development (SSD) approval. A formal Scoping Report was then submitted on 21 January 2020 for assessment.

An application for SSD approval will now proceed under the NSW Environmental Planning and Assessment (EP&A) Act (1979) including the preparation of an Environmental Impact Statement (EIS) during 2020–2021.

Water Management

COB was recently successful in the right to apply for a water access license under the Controlled Allocation Order for various groundwater sources in NSW. A water access license is required for the Broken Hill Cobalt Project to account for the interception of groundwater created by the mining operation. This allocation is within the amount set for extraction within the Groundwater Sharing Plan by the NSW Government.

In conjunction with our earlier advice from Essential Water that they are able to allocate raw water via the Wentworth to Broken Hill Pipeline to the Broken Hill Cobalt Project, we have mitigated water risk to the project. The project will not divert agricultural or potable water from Broken Hill, rather COB has been allocated (unused) excess raw water from the pipeline once Broken Hill's needs have been satisfied.

Development Timeline

The development timeline to 2022 is shown in Figure 2.

Figure 2 – COB’s Development Timeline

2017	2018	2019	2020	2021	2022
<ul style="list-style-type: none"> ■ IPO ■ Resource upgrade Drilling: +8,000m Resource: 55Mt ■ Scoping Study 	<ul style="list-style-type: none"> ■ Resource upgrade Drilling: +12,500m Resource: 72Mt ■ LGI – Cobalt First Mover ■ Pre Feasibility Study 	<ul style="list-style-type: none"> ■ Mitsubishi – Sulphur Agreement ■ Concentration – Pilot Scale Testwork ■ Resource upgrade Drilling: +9,500m Resource: 111Mt ■ 100% Project Ownership ■ CPDP Submitted 	<ul style="list-style-type: none"> ■ Pilot Plant – Q2 2020 ■ Ore Reserve Update – Q2 2020 ■ Scoping Report – Jan 2020 ■ SEARs issued – Q2 2020 	<ul style="list-style-type: none"> ■ Demonstration Plant – Q1 2021 ■ EIS Submission – H2 2021 	<ul style="list-style-type: none"> ■ Feasibility Study and Approvals – Q1 2022 ■ Final Investment Decision – Q1 2022 ■ SSD Determination – H1 2022
A C H I E V E M E N T S			G O A L S		

Financing Plans

To achieve our development plan we will require additional capital. A combination of joint venture, additional equity and debt raisings along with asset securitisation and offtake financing is in the mix.

Commonwealth Government Development Assistance

COB has been awarded A\$2.4 million from the Cooperative Research Centre (CRC) – Project Round 8 Funding from the Australian Government, for applied research and development of the processing of cobalt-pyrite ore to generate battery ready cobalt sulphate over the next three years. We are delighted that the Australian Government is financially supporting the continued development of the technology.

The grant will allow COB to lead a consortium from UNSW, ANSTO and ANSAC (Anergy Australia) to undertake applied research in support of the BHCP Pilot/Demonstration Plants.

By undertaking the program of work co-funded by the CRC-P grant, COB will achieve the following outcomes:

- trained personnel that can be employed in future operations.
- de-risk technical aspects of pyrite mineral processing to produce battery ready cobalt sulphate.
- potential to apply the technology to other projects in Australia.
- pilot/demonstration test a new method for elemental sulphur production in Australia.

COB Partnerships

Since 2017, COB has developed a processing technology for recovering cobalt from pyrite at the BHCP. In addition to the BHCP, COB is considering opportunities to apply the technology to additional project sites.

There are two testwork programs underway:

- **Millennium Project** (100% Global Energy Metals Corporation: GEMC.TSX)
The project is situated in the Cloncurry district of North Queensland. COB has completed flotation trials, producing separate high grade copper-gold and cobalt-copper-gold concentrates. The cobalt-copper-gold concentrate was being treated using the COB technology for recovery of the metals. The program is now complete and we expect to release details shortly.
- **Carrapateena Mine** (100% OZ Minerals Ltd: OZL.ASX). OZL has recently brought Carrapateena into operation to produce copper concentrates. OZL has engaged COB to evaluate the treatment of a secondary pyrite concentrate using the COB technology for recovery of cobalt sulphate (along with copper and gold). The testwork program is expected to conclude by the end of May.

Once the COB Pilot/Demonstration Plant is operating in Broken Hill, this will provide COB with the option to test third-party samples at scale, depending on the requirements for third-party feasibility studies.

Commercial Visits

We have recently completed (3-7 February 2020) commercial visits to Korea and Japan to update our partners on project progress. Collectively, all partners were delighted that COB has moved to 100% BHCP ownership, a milestone that significantly assists development and funding. This round of discussions emphasised that cobalt remains a vital ingredient to lithium ion batteries with strong demand forecasts from today’s levels across major battery producers.

