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COB – Scaling Up to Ethical Cobalt

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Cobalt Blue (COB, \$0.74, mkt cap \$246M)

Right Commodity, Right Jurisdiction, Right Time

- **Right Commodity:** cobalt is a critical battery material, facing a market [deficit](#) in coming years and staring down a wall of growing [EV demand](#).
- **Right Jurisdiction:** Broken Hill Cobalt Project (**BHCP**) has its mine situated in Broken Hill, NSW with existing workforce, power, water, road, rail from a mining rich region crying out for new projects. Tier 1 project location with cobalt as a primary product is a major point of difference.
- **Right Time:** it's a Herculean task to source ethical cobalt from a jurisdiction that doesn't also have contentious ESG queries. COB offers prospective battery makers and auto OEMs tier one supply provenance.

Clear Project Tailwinds

- **Supply and ESG certainty:** The mine is situated in Broken Hill, NSW. Mined supply is dominated by the DRC, with some three quarters of global mined supply originating from there. In contrast, BHCP sits squarely within the four walls of NSW, a region with a rich mining tradition. Chemical processing at site will be to spec, with full supply chain transparency for prospective offtakers, with the refiner in Australia (location to be finalised).
- **Volume certainty:** deposit is a long life, large volume cobalt supply. Broken Hill Cobalt Project (BHCP) will target a meaningful (10%) contribution to non-DRC cobalt supply by 2025. This will be enough cobalt to power 300k EVs p.a. and 5M over LOM.

- **Critical metals lists:** western governments are establishing critical minerals lists – and more to the point – scrambling to source supply for the lists. They’re also realising the extent to which they can help with guaranteeing supply, provenance, and ESG credentials, especially for cobalt through reinvigorated policy implementation and legislation enactment.
- **Customised cobalt products will add options:** COB is set to explore this idea further to embed the strategic importance of both the asset and development of its processing know-how by meeting narrowing EV product specs, as OEMs finalise their own technologies, and recognising producer specs are not homogenous.

Progressing the Project

- **Demo plant commissioning:** 4,500t ore has already been mined from BHCP’s Pyrite Hill to support 20 weeks of continuous operation of the Demonstration Plant. The concentrator circuit has completed phase 1 testwork on 500t ore, and targeting 2,500-3,000t in the next 4 weeks. The gravity circuit upgrade is so far performing in line with expectations and has produced a 5x grade improvement from concentration. The demo plant is set to target 10-15t/hr in the concentrate circuit, 100-150kg/hr in the pyrolysis circuit, and 50-100kg/hr for leaching/purification. COB will look to produce 60t of mixed hydroxide product (MHP) product. Initial volume might not sound like much at first blush, but we know who’ll be watching with interest – potential offtake counterparties looking to see the success in the scale up of 100-1,000x at the front and back end processes.
- **Existing partnerships showcase sophisticated international interest:** LG International have a longstanding relationship with COB providing capital and technical assistance on high purity BG cobalt sulphate. Similarly, Sojitz Corporation for cobalt and Mitsubishi Corp for elemental sulphur. Battery and auto makers from key jurisdictions including North Asia, Europe, and North America are keenly anticipating demo plant product.
- **Major Project Status:** this is formal recognition of the strategic importance of the BHCP, with obvious appeal to Government entities. It goes without saying that supply chain provenance is desirable and arguably a non-negotiable attribute for developed world manufacturers and consumers. We note longstanding Korean government and multinational support and interest in BHCP.
- **Long life, low capital intensity, robust financials:** 2020 updated pre-feasibility study highlighted a long life project (17 years) 67kt cobalt metal, average annual production (steady state) 3,500tpa contained Co, in 20.5%+ cobalt sulphate concentrate. Company estimated a NPV_{7.5} of \$490M on \$560M capex assuming US\$27.50/lb cobalt and targeting AISC US\$13.10/lb. Lowest quartile costs as well as lowest quartile capital intensity among greenfield cobalt projects, which act as a great defence against a commonly volatile market for prices, the other being BHCP’s credentials for delivering supply chain provenance. Capex will have undergone some change in the intervening period, though optimisation is set to provide some benefit.
- **ESG credentials are major drawcards:** the growing market recognition of strategic importance of the Broken Hill Cobalt Project in delivering supply chain security and enhanced sovereign capacity in the battery minerals refining space. Engineering firms have been selected for the FS, due in coming months. Extensive environmental surveys for the EIS are also on foot.
- **Opportunity is now:** Trading at a fraction of NPV given its strategic importance in the battery mineral supply chain for a resource and potential refiner in Australia. Successful

iterations of the demo plant will go a long way to proving up scalability and the innovative process flow sheet, and in our view should trigger a technical derisk and rerate of the stock.

Upcoming Milestones

- Process testing to encompass larger scale operations with commercial qualification samples and bulk samples;
- Commercial cobalt qualification program parallel process and offtake;
- Feasibility study with DFS to follow immediately in 2023;
- Funding solution updates with likely input from export finance coupled with debt;
- Targeting FID and EIS submission in 2023.

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Specific disclosures: The analyst attended a site visit to the Broken Hill Cobalt Project in June 2022 for which accommodation and related travel expenses were paid for by the company.

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