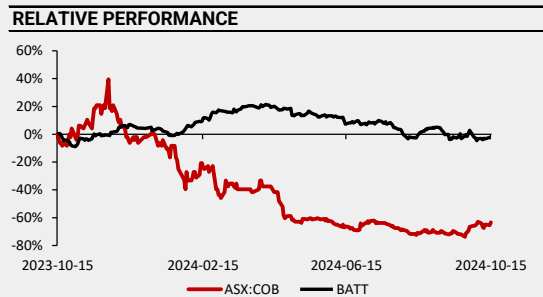
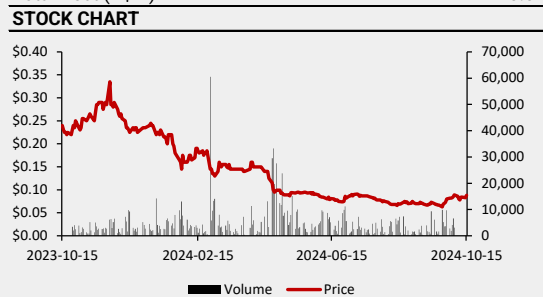


# Cobalt Blue Holdings Ltd. (ASX:COB) Developing Australia's First Co Refinery

Initiating Coverage  
October 15, 2024

(Currency is A\$ unless noted otherwise)

Closing Price (A\$/sh)	\$0.09	
Target (A\$/sh)	\$0.20	
Rating	BUY (S)	
Return to Target	127%	
52 Week Low / High (C\$/sh)	\$0.06 / \$0.34	
<b>CAPITALIZATION</b>	<b>Basic</b>	<b>Diluted</b>
Shares Outstanding (M)	422.00	469.70
Market Capitalization (A\$M)	37.1	
Enterprise Value (A\$M)	31.4	
Cash & Cash Equivalents (A\$M)	8.7	
Total Debt (A\$M)	3.0	



RELATIVE VALUATION (EV/lb CoEq)	A\$	US\$
Cobalt Blue Holdings Limited	0.15	0.11
Explorer/Developer Peers	1.93	1.39

VALUATION	A\$M	A\$/sh
Kwinana refinery	-	-
Broken Hill	407.68	0.87
ReMine+	63.40	0.13
Project NAV	471.09	1.00
Corporate adjustments	5.74	0.01
<b>Corporate NAV</b>	<b>476.83</b>	<b>1.02</b>

MAJOR SHAREHOLDERS
Management and Insiders (9%), A10 Investments Pty Ltd (2%), St Ives No5 Pty Ltd (1.7%)

**DISCLOSURE CODE:**  
(Please refer to the disclosures listed on the back page)  
Source: RCS estimates, Company Information, Capital IQ

**Company Description**  
Cobalt Blue Holdings Limited is focused on producing metals critical to the global energy transition. The company is focused on a long-term mine to battery strategy based on three pillars; the Kwinana Co-Ni refinery in western Australia, the Broken Hill Co Project in New South Wales, and the ReMine+ initiative that aims to use patented technology to reprocess pyrite present in tailings facilities around the globe and extract critical metals. Once the refinery is in production, management expects to become one of the largest Co producers outside of China (and top 10 globally). Phase 1 plans are to produce ~3,000tpa of Co Sulfate and ~500tpa Ni sulfate from 3rd party feed at its Kwinana refinery, with Phase 2 expected to double production and incorporate mixed hydroxide precipitate (MHP) from its Broken Hill project.

**We are initiating coverage on Cobalt Blue Holdings Ltd., with a BUY (S) rating and A\$0.20/sh target price.** Cobalt Blue is focused on advancing the Kwinana Co refinery (KCR) in Western Australia, in partnership with Japanese energy conglomerate, Iwatani Corp. The refinery aims to produce 3,000tpa of Co sulfate (from third-party feedstock during Stage 1), a precursor material used in Li ion battery cathodes. **Given Co's role in the green energy transition and its part in helping countries achieve electrification targets, the metal is classified as a critical mineral. With China currently controlling ~80% of refined Co supply, we see the Kwinana refinery, located in a tier 1 jurisdiction, playing a major role in the Allied Nation supply chain.**

- **Proprietary technology developed based on 3 years of testing.** Pilot plant testing to validate the flowsheet began at the Broken Hill Co project in 2021. This was followed by a larger demo plant starting in 2022. Initially ~10t of material was tested from the Broken Hill Co project, but third-party feedstock testing is now underway.
- **Well located with access to infrastructure.** Kwinana is being developed on an existing industrial site and enjoys a favourable permitting/regulatory regime. The site has access to a port, power, water, reagent suppliers and an experienced workforce.
- **Co sulfate produced would be eligible under US IRA/FEOC rules.** Critical minerals produced by foreign entities of concern (FEOC) would not be eligible for tax credits in the US. Once in production, the Kwinana refinery would rank amongst one of the largest, non-FEOC owned, refineries globally.
- **Feedstock contracts and financing negotiations up next.** Feedstock samples have been tested from three different operations to date. Final equity investment terms are being negotiated with Iwatani, after which project financing initiatives will commence.
- **Long term Co demand fundamentals remain strong.** Co is a key component in NCM batteries. Although it costs ~20% more to produce than its LFP counterparts, it has higher energy density, resulting in longer ranges in EVs. In the LT demand is to be driven by YoY EV growth (but at a slower pace than previously estimated).
- **MoU with State of Queensland and HudBay Minerals for ReMine+.** Testwork on material provided from various operations in Australia and the Flin Flon mine in MB are underway.
- **Highly technical team at the helm.** CEO, Mr. Kaderavek, has experience operating and managing mining and infrastructure projects, while Executive Manager, Dr. Tong, a metallurgist with over 20 years of experience, holds several processing patents.

**We are initiating coverage with a BUY (S) rating and A\$0.20/sh target price.** Our target price is based on a sum of parts valuation method for the Broken Hill project and ReMine+ initiative. We estimate a NAVPS of A\$1.02/sh for Cobalt Blue, to which we ascribe a 0.20x multiple to account for technical, financial and execution risk. **Upcoming catalysts:** 1) Permit applications (Q4/24), 2) Final investment decision (H1/25), 3) Construction (2026). **Mining/exploration is inherently risky** and Cobalt Blue Holdings is subject to various risks.

## Table of Contents

Executive Summary	1
Upcoming Catalysts	1
Investment Thesis	2
Relative Valuation	9
Valuation	10
The Kwinana Co Refinery	12
The Broken Hill Co project	16
ReMine+20	
Risks	22
Appendix A: Management & Directors	23

## Executive Summary

**Cobalt Blue Holdings is a mining and mineral processing company focused on providing metals required for the green energy transition.**

It has three components to its strategy: 1) in the short term, to develop Australia's first Co refinery, using third-party feedstock, and in the long term 2) integrate this refinery with material from the Broken Hill Co-Ni project and 3) reprocess tailings using proprietary technology (ReMine+ initiative) to produce critical metals left in waste (Figure 1). The Kwinana Co refinery (KCR), located ~30km from Perth, is being advanced in partnership with Iwatani Corp., a leading Japanese multinational company that specializes in the production and trading of commodities. Given the role Co plays in Li ion batteries, which are in turn used in everything from wind turbines to EVs, the objective is to produce ~3,000 tpa of Co sulfate, which would be eligible under US IRA/FEOC rules, and play a major role in the Allied Nation Co supply chain. **With a handful of refineries operating outside of China and Chinese influenced areas like Indonesia, the Kwinana Co refinery is of strategic importance. A final investment decision (FID) is expected in H1/25, followed by an estimated 12-month construction period.**

**We are initiating coverage on Cobalt Blue Holdings with a BUY (S) rating and A\$0.20/sh target price.** While the company is focused solely on the development of the Kwinana Co refinery, our valuation is derived from the Broken Hill Co project and the ReMine+ initiative. As refinery economics are still being ironed out, we value the company's longer-term initiatives and apply a multiple of 0.20x to account for technical, financial and execution risk.

**Figure 1: Cobalt Blue's strategy**



Source: Company reports

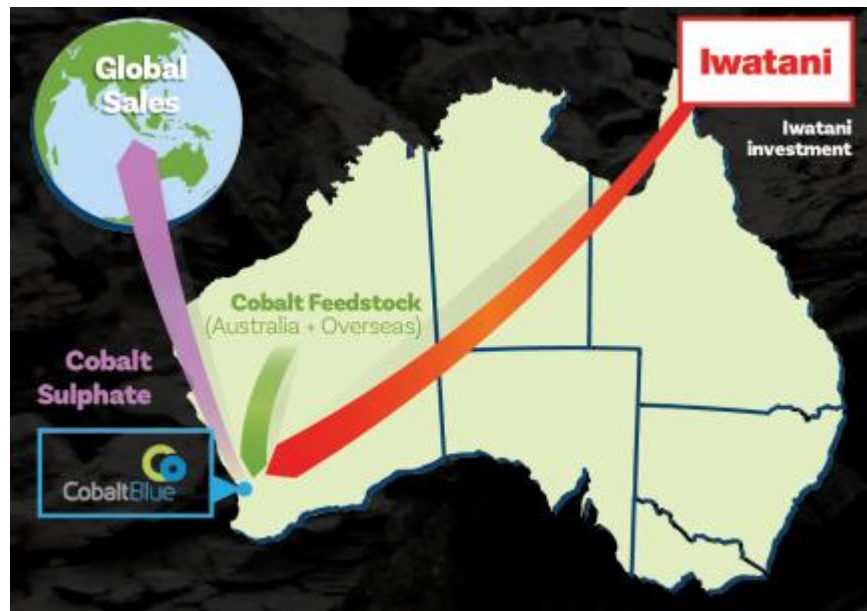
## Upcoming Catalysts

- 1) Permit applications (Q4/24)
- 2) Final investment decision (H1/25)
- 3) Construction commencement (H2/25)

## Investment Thesis

**Developing Australia’s first Co-Ni refinery.** Cobalt Blue is focused on producing battery grade, IRA-compliant, cobalt and nickel sulfate for the global battery market. In partnership with Iwatani Corp., a Japanese company that specializes in the production and trading of commodities, an industrial site in Western Australia has been selected to construct the Kwinana refinery (Figure 2). Given the refinery’s location on an existing industrial site, it enjoys several benefits including a favourable permitting regime and the presence of several buildings that can be repurposed to suit the company’s processing needs. Management estimates that once a final investment decision (FID) is made, it would take approximately ~12 months to complete construction of the refinery.

**Figure 2: Location of the Kwinana Co-Ni refinery in Australia**

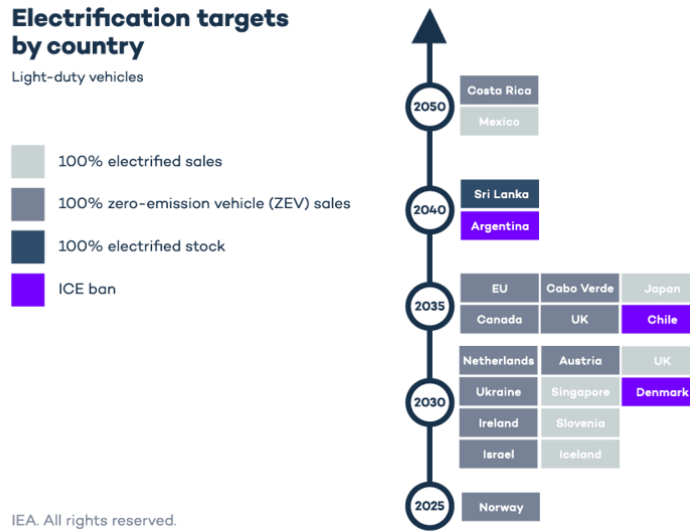


Source: Company reports

**Co is listed as a critical mineral in Canada, the EU and US**

**Co is a critical mineral.** Co is an important component in certain cathode chemistries used in Li ion batteries. These batteries are critical components in today’s digital age, as they are used to power everything from laptops to smart phones to EVs. As the world moves towards a low carbon economy, EV adoption represents one of the most important factors in helping countries achieve their decarbonization objectives. As such, many governments across Europe and North America have set electrification targets (Figure 3) and have put policies in place to help them achieve these goals. **Co is listed as a critical mineral in Canada (critical minerals strategy) and the EU (critical raw materials act) while in the US, the inflation reduction act (IRA) seeks to promote investment in and development of clean energy sources.**

**Figure 3: Electrification targets by country and year**

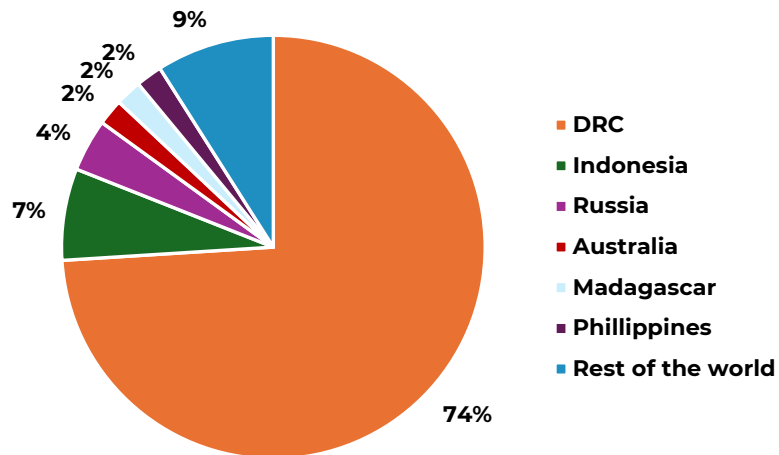


Source: IEA

**In 2023, 74% of supply came from the DRC, and it is expected to retain its position as the top producer**

**Primary supply of Co controlled by DRC and Indonesia, with refined supply controlled by China.** Almost all of the world’s primary production of cobalt is due to its by-product nature. Co typically occurs in Cu or Ni deposits and given the strategic nature and demand for Cu recently, in 2023 the Democratic Republic of Congo (DRC) was the largest producer of Co globally (accounts for 74% of global primary Co production), followed by Indonesia (Figure 4). The DRC is expected to retain its position as the top producer, as six of the ten largest Cu-Co mines in the world are located in the country. The three largest mines are owned by China’s CMOC (Kisanfu and Tenke Fungurume) and global commodity trading giant Glencore (Kamoto).

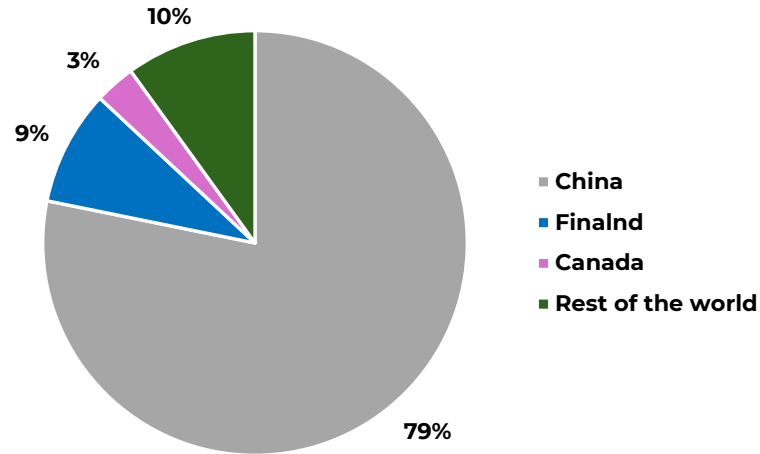
**Figure 4: 2023 primary Co production by geography**



Source: USGS (2024)

Given China's interest in primary Co production, all material extracted in the DRC is refined in China, as a result of which ~80% of refined Co supply comes from China (Figure 5).

**Figure 5: 2023 refined Co production by geography**

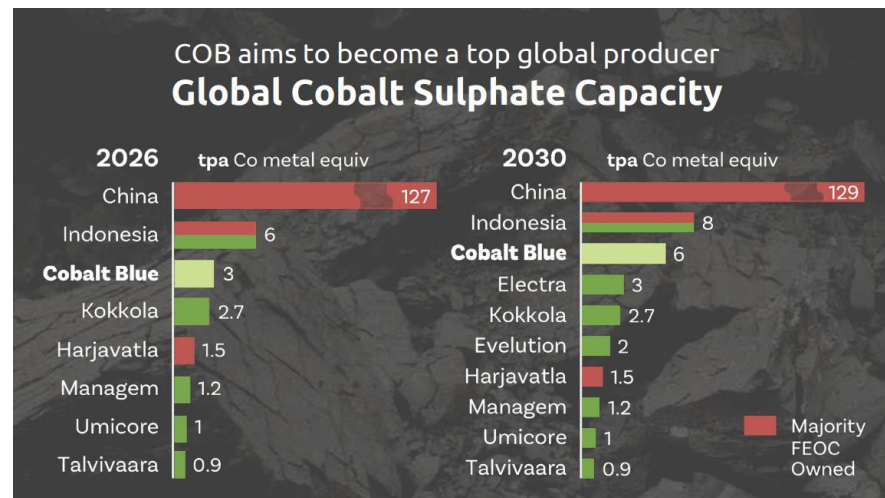


Source: Cobalt Institute's Cobalt Market Report 2023

**FEOC countries include China, Russia, North Korea and Iran**

**Co sulfate produced at Kwinana would be eligible under US IRA/FEOC rules.** Per guidelines and definitions included in the IRA, any critical minerals that are extracted, processed or recycled by a foreign entity of concern (FEOC) and used in EVs, will not be eligible for any tax credits. FEOC countries include China, Russia, North Korea and Iran. Once up and running, the Kwinana refinery will rank amongst one of the largest, non-FEOC owned, refineries in the world (Figure 6).

**Figure 6: Global Co sulphate capacity by region/company**



Source: Company reports



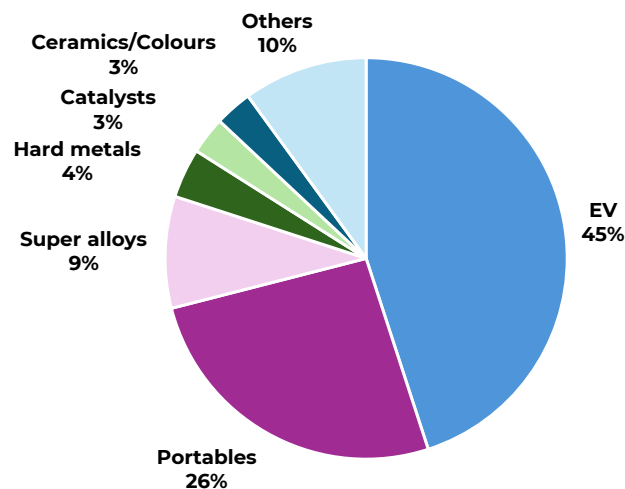
Final negotiations with Iwatani underway

**US DoD funding highlights strategic importance of developing Co supply chains.** Electra Battery Materials Corp. (TSXV:ELBM, BUY, C\$2.70 target, David A. Talbot) recently announced that it has been awarded US\$20M from the Department of Defense for its Co sulfate refinery in Ontario. **The investment in Ontario is the largest investment made by the US DoD outside of its home country and demonstrates the strategic importance of developing critical mineral supply chains outside of China.** The US has been looking to diversify its supply chains away from China and since the Kwinana Co refinery is located in Australia, an allied nation, its development could be of interest to the US and other governments around the globe.

**Equity investment by Iwatani pending.** In Dec/23, the company entered into a non-binding agreement with Iwatani Australia Pty. Ltd. Iwatani is currently considering an appropriate level for equity ownership in the refinery and would fund the appropriate percentage of the ~A\$60M capex based on this investment. Final binding agreement terms are being negotiated.

**Demand for Co supported predominantly by the EV market.** The most commonly used cathode chemistry in EVs today are nickel cobalt manganese (NMC), nickel cobalt aluminium oxide (NCA) and lithium iron phosphate (LFP). While LFP cathodes are cheaper to produce, it has lower energy density resulting in shorter ranges for EVs, compared to the Ni/Co based chemistries. In 2023 45% of the demand for Co (~90kt) came from EVs (Figure 7), and while EV demand is slowing, we highlight that it is still forecast to grow YoY, albeit at a slower pace than previously anticipated.

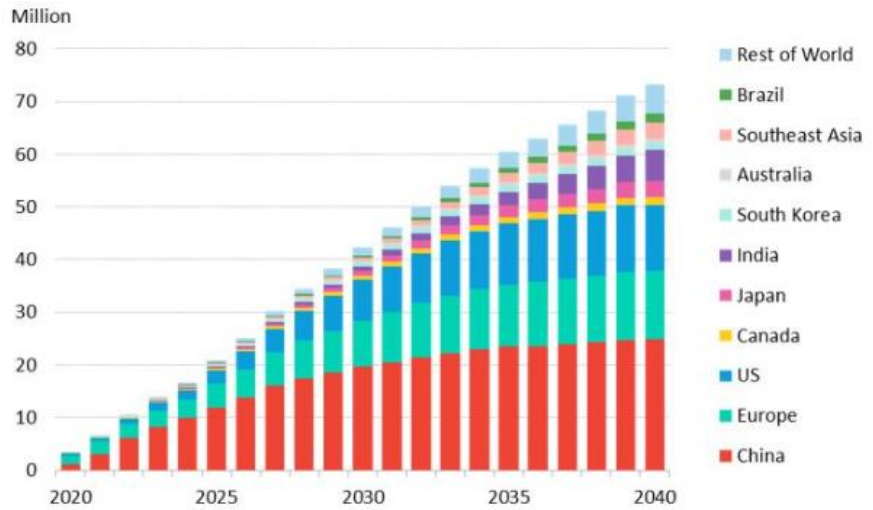
**Figure 7: 2023 cobalt demand by end use**



Source: Cobalt Institute's Cobalt Market Report 2023

Figure 8 shows Bloomberg NEF's EV sales forecast till 2040 by geography, under its economic transition scenario (ETS). Under this scenario, EV sales growth is based on current trends and policies, with the assumption that no new policies are introduced.

**Figure 8: Global EV sales forecast by geography under BNEF's economic transition scenario**



Source: BNEF

**In the LT Kwinana could be supported by the ~211M lb CoEq I&I resource at Broken Hill**

**Kwinana refinery could be supported by Broken Hill in the long term.**

The Broken Hill Co project is a large tonnage, low grade, Co-Ni sulphide deposit (127Mt at 867 ppm CoEq). While the project is well located with access to infrastructure like road, rail and power, in Feb/24 the decision was made to place the project under strategic review. The primary driver for this decision was the decline in Co prices since 2022 (Figure 9) stemming from oversupply of the metal, as well as slipping demand.

**Figure 9: LME Cobalt Cash price (US\$/lb)**

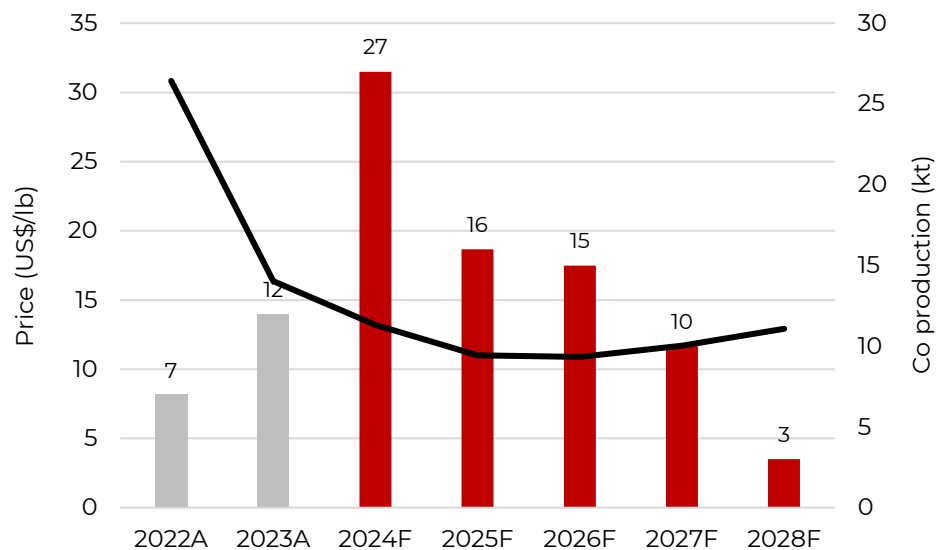


Source: S&P Capital IQ Pro

On the supply front, given its by product nature to Cu, companies have been ramping up production of the metal to capitalize on current Cu prices. On the demand front, automakers are moving away from using Co in batteries, turning to cheaper battery chemistries (LFP batteries are 20% cheaper to produce on average) and to avoid human rights and environmental issues that have been linked to Co mining in the DRC.

As such, S&P Global Commodity Insights forecasts that the market will remain in surplus till 2028, with an excess of 27kt of Co forecast for this year (Figure 10). **As EV demand picks up in the long term, driven by electrification targets, we expect the market for Co to rebound, providing support for the re-assessment of the Broken Hill Co project.**

**Figure 10: Actual and forecast Co production and prices**



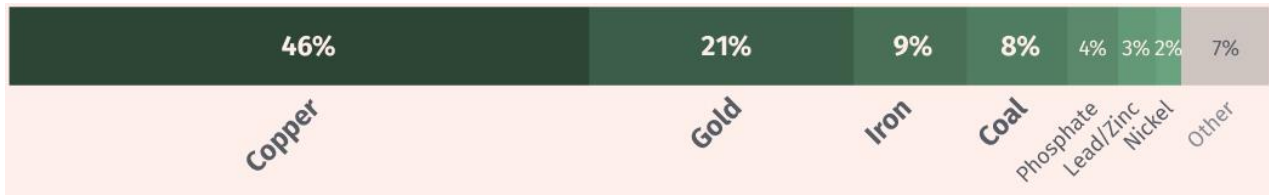
Source: S&P Global Commodity Insights

**MOU in place with State of Queensland and HudBay Minerals to conduct testwork**

**ReMine+ initiative to add incremental value.** Tailings are a common waste product produced when extracting metal from ore. Historically, many mining companies have focused on the production of one or two commodities from a polymetallic deposit, ignoring other metals (like Co or Ni) that may be present. **Some reports state that there are +280Bt of mine tailings globally that contain +US\$3.4T of in-situ metals, with annual tailings production estimated to be in the range of 10Bt to 12Bt per annum** (Figure 11). Cobalt Blue has developed patent pending, processing technology that re-processes pyrite and other sulfide materials from tailings to yield Co and other metals. The ReMine+ initiative (or Cobalt in Waste Streams project as it was previously known) was rolled out in 2021 after sampling material from over 30 partners globally. Currently the company has MOUs in place to conduct testwork on material provided by the State of Queensland (from various operations) and HudBay Minerals (from the Flin Flon mine in MB, Canada), with all sampled material to be tested at Broken Hill's technology development centre.



**Figure 11: Tailings contribution by commodity**



Source: Global Tailings Review

**Recent heap leach pad failures at the Çöpler and Eagle Au mines bring ReMine+ to the forefront**

**ReMine+: economic + environmental benefits.** In addition to recovering a critical metal like Co from tailings, which has economic implications, this patented process also has significant environmental benefits. When sulphur bearing minerals, such as pyrite contained in tailings, are exposed at surface, they can react with air and water to form sulfuric acid. Some of this acid, which could further dissolve heavy metals such as Cu, Pb and Hg can leach into surface and ground water causing contamination to not only humans, but animals and plants. Re-processing of tailings under Cobalt Blue's process results in the remaining material containing less sulphur, meaning that this material has a lower likelihood of oxidizing into sulphuric acid. **Reprocessing technology enabling tailings to become more stable/less acidic and harmful to the environment, has also been in the limelight following breach of the tailings dam at Vale's Corrego de Feijão mine in Brumadinho, Brazil in Jan/19** (11.7M m<sup>3</sup> of tailings material was unleashed in a tidal wave resulting in 259 deaths and destruction over 8km), **and failure of the heap leach pad at SSR Mining's Çöpler Au mine in Turkey in Feb/24** (unleashing 10Mt of cyanide-laced ore and resulting in 9 deaths) **as well as Victoria Gold's Eagle Au mine in Canada in Jun/24** (unleashing 300,000 m<sup>3</sup> of cyanide-laced ore).

**Led by a strong management and Board.** Cobalt Blue benefits from the leadership of an experienced management team and Board, that has a proven track record of developing and operating a variety of global mining projects. On the management team, Mr. Kaderavek, CEO, has experience with managing, operating and assessing mining and infrastructure projects across Australia, North America and Europe. Dr. Andrew Tong, Executive Manager, is a metallurgist with over 20 years of experience in mining and processing. He is an inventor and holds several patents for processing of base and precious metals. Mr. Joe Lam, Senior Process Engineer, has over 30 years of experience in process development in Australia and China. He is the inventor of a halide copper electrowinning cell and co-inventor of technology used to upgrade low grade, polymetallic ore to concentrate. Mr. Adam Randall, Demonstration Plant Manager, has been involved in the development of processing technology for over 30 years and has carried out cutting edge research for the development of hydrometallurgical processing facilities. He has overseen the construction and operation of several pilot and demonstration facilities in Australia and internationally. **With a seasoned leadership team that has a wealth of technical experience in processing technology, we believe the company can advance the Kwinana Co sulfate refinery to the next stage, creating value for its shareholders.**

**Cobalt Blue is undervalued compared to its peers on an EV/lb CoEq and P/NAV basis**

## Relative Valuation

**We do not believe that the company's current pricing reflects its ~211M lb CoEq resource or the upside present from its refinery and re-mining initiatives.** We look at two different sets of peers for Cobalt Blue: 1) for its refinery and Broken Hill project (Figure 12), and 2) for its ReMine+ initiative (Figure 13).

Looking at others in the space that are either advancing a Co sulfate refinery or Co/Ni asset, Cobalt Blue currently trades at a discount to its peers on an EV/lb CoEq basis at US\$0.11 vs. US\$1.39. **We believe the company's closest peer is Electra Battery Materials Corp. (TSXV:ELBM, BUY, C\$2.70 target, David A. Talbot) that is advancing a 6,500t Co sulfate refinery in Ontario and recently received a US\$20M award for its development from the US Department of Defense.** Once Cobalt Blue completes testing of feedstock samples and receives permits, we believe it could close this valuation gap to its peers. We also note that on a P/NAV basis the company is trading at 0.10x – a large discount to resource peers at 0.39x and technology peers at 0.93x.

**Figure 12: Comparables for Kwinana refinery and Broken Hill project**

Company	Ticker	Price (A\$/sh)	YTD Perf.	Shares (M)	Mkt. Cap A\$M	Cash A\$M	Debt A\$M	EV A\$M	EV/lb A\$M	EV/lb US\$M	P/NAV
<b>Cobalt Blue Holdings Limited</b>	<b>ASX:COB</b>	<b>\$0.09</b>	<b>-63%</b>	<b>422.0</b>	<b>\$37.1</b>	<b>\$8.7</b>	<b>\$3.0</b>	<b>\$31.4</b>	<b>\$0.15</b>	<b>\$0.11</b>	<b>0.10x</b>
Electra Battery Materials Corporation	TSXV:ELBM	\$0.92	70%	57.4	\$52.6	\$5.6	\$60.9	\$107.9	\$2.54	\$1.83	0.39x
Jervois Global Limited	ASX:JRV	\$0.01	-70%	2,702.8	\$35.1	\$32.0	\$274.3	\$277.5	\$3.03	\$2.18	-
Fortune Minerals Limited	TSX:FT	\$0.06	38%	508.9	\$30.2	\$0.0	\$12.2	\$42.3	\$0.21	\$0.15	-
Global Energy Metals Corporation	TSXV:GEMC	\$0.02	-56%	67.6	\$1.5	\$0.9	\$0.0	\$0.5	-	-	-
<b>Median</b>								\$75.1	\$2.54	\$1.83	0.39x
<b>Average</b>								\$107.1	\$1.93	\$1.39	0.39x

Source: RCS estimates, S&P Capital IQ

**Figure 13: Comparables for ReMine+ Initiative**

Company	Ticker	Price (A\$/sh)	YTD Perf.	Shares (M)	Mkt. Cap A\$M	Cash A\$M	Debt A\$M	EV A\$M	P/NAV
<b>Cobalt Blue Holdings Limited</b>	<b>ASX:COB</b>	<b>\$0.09</b>	<b>-63%</b>	<b>422.0</b>	<b>\$37.1</b>	<b>\$8.7</b>	<b>\$3.0</b>	<b>\$31.4</b>	<b>0.10x</b>
EnviroGold Global Limited	CNSX:NVRO	\$0.08	-61%	252.9	\$19.1	\$0.2	\$5.7	\$24.7	-
Pan African Resources PLC	AIM:PAF	\$0.68	111%	1,916.5	\$1,303.0	\$39.5	\$197.0	\$1,460.6	1.07x
DRDGOLD Limited	NYSE:DRD	\$15.46	31%	86.1	\$1,331.7	\$42.8	\$2.4	\$1,291.3	0.79x
Amerigo Resources Ltd.	TSX:ARG	\$1.95	30%	168.4	\$328.7	\$44.5	\$21.6	\$305.8	-
Cerro de Pasco Resources Inc.	CNSX:CDPR	\$0.19	71%	414.1	\$80.4	\$0.2	\$7.7	\$87.8	-
<b>Median</b>								\$305.8	0.93x
<b>Average</b>								\$634.0	0.93x

Source: RCS estimates, S&P Capital IQ

## Valuation

We use a sum-of-parts valuation method to arrive at our BUY (S) rating and A\$0.20/sh target price (Figure 14). Given the three elements of Cobalt Blue's business model i.e. refinery, project and re-mining technology, we view this method as the most suitable approach. **While the company is solely focused on advancing the Kwinana Co refinery, our valuation is derived primarily from the Broken Hill Co project and ReMine+ initiative.** After accounting for cash and debt, we apply a 0.20x multiple to account for technical, execution and financial risks.

Figure 14: NAV summary

Asset	Status	Valuation Method	A\$M	A\$/sh	%
Kwinana Refinery	Development	N/A	-	-	0%
Broken Hill	Stragic Review	In-situ value at US\$1.38/lb	\$407.68	\$0.87	85%
ReMine+	Development	Comparables	\$63.40	\$0.13	13%
<b>Total project NAV</b>			<b>\$471.09</b>	<b>\$1.00</b>	<b>99%</b>
<i>Corporate adjustments:</i>					
Cash			8.74	0.02	2%
Debt			3.00	0.01	1%
<b>Corporate NAV</b>			<b>\$476.83</b>	<b>\$1.02</b>	<b>100%</b>

Multiple	0.20x
<b>Target Price</b>	<b>\$0.20</b>

Source: RCS estimates

### Kwinana Co refinery

In Nov/23 a study outlining certain economic metrics for the refinery was published. The study assumed for Stage 1, production of 3,000 tpa Co sulfate and 500 tpa Ni sulfate, preconstruction costs of A\$10M and capital costs of A\$60M. An update provided in Oct/24 outlined an after-tax NPV<sub>8%</sub> of A\$90M and IRR of 23%, assuming LT Co price of US\$28/lb (RCS LT Co price is US\$20/lb). While the study provided high level metrics (including metrics for Stage 2 which would double production), **the company is still in the feedstock testing and engineering design phase, because of which some of the operating costs (material/feedstock, transport, reagent, power, labour, etc.) that are required to perform a discounted cash flow analysis, are still being ironed out.** We also highlight that Iwatani is currently considering an appropriate level for equity ownership in the refinery, and once agreed, would alter the company's interest in the project. **As details are in flux, we do not provide a value for the refinery but would look to update our valuation as details are provided.**

### The Broken Hill Co project

Although the Broken Hill Co project is currently undergoing a Strategic Review, it hosts ~211M lb CoEq in M&I+I resources. As shown in our Relative Valuation section (Figure 15), based on where peers are currently trading, we apply an in-situ metric of US\$1.39/lb (or A\$1.93/lb) to Broken Hill's resource base to arrive at a value for the project. Using the

**We value Broken Hill's ~211M lb CoEq resource base at US\$1.39/lb**

company's current outstanding shares, we ascribe a value of ~A\$407M or A\$0.87/sh for Broken Hill.

**Figure 15: Broken Hill in-situ valuation**

Asset	M&I+I Resources (CoEq M lb)	Average US\$EV/lb	Value (A\$M)	Shares Outstanding	Value (A\$/sh)
Broken Hill	211.4	\$1.39	\$407.35	469.7	\$0.87

Source: RCS estimates

**We value the ReMine+ initiative at ~A\$63M**

### ReMine+

We use the comparables valuation method to value Cobalt Blue's ReMine+ initiative (Figure 16). Our list of peers includes companies that are looking at re-processing tailings as either part of its primary or secondary business. **Since Cobalt Blue's technology is still being tested at various sites across the globe and binding agreements outlining revenue potential are yet to be signed, we apply a multiple of 0.10x to the average EV of its peers, to arrive at our valuation.**

**Figure 16: Comparables for ReMine+ initiative**

Company	Ticker	Price (A\$/sh)	YTD Perf.	Shares (M)	Mkt. Cap A\$M	Cash A\$M	Debt A\$M	EV A\$M	P/NAV
<b>Cobalt Blue Holdings Limited</b>	<b>ASX:COB</b>	<b>\$0.09</b>	<b>-63%</b>	<b>422.0</b>	<b>\$37.1</b>	<b>\$8.7</b>	<b>\$3.0</b>	<b>\$31.4</b>	<b>0.10x</b>
EnviroGold Global Limited	CNSX:NVRO	\$0.08	-61%	252.9	\$19.1	\$0.2	\$5.7	\$24.7	-
Pan African Resources PLC	AIM:PAF	\$0.68	111%	1,916.5	\$1,303.0	\$39.5	\$197.0	\$1,460.6	1.07x
DRDGOLD Limited	NYSE:DRD	\$15.46	31%	86.1	\$1,331.7	\$42.8	\$2.4	\$1,291.3	0.79x
Amerigo Resources Ltd.	TSX:ARG	\$1.95	30%	168.4	\$328.7	\$44.5	\$21.6	\$305.8	-
Cerro de Pasco Resources Inc.	CNSX:CDPR	\$0.19	71%	414.1	\$80.4	\$0.2	\$7.7	\$87.8	-

<b>Median</b>	\$305.8	0.93x
<b>Average</b>	\$634.0	0.93x

Multiple	0.10x
<b>ReMine+ value</b>	<b>\$63.4</b>

Source: RCS estimates, S&P Capital IQ

**Cobalt Blue has ~A\$8.8M in cash and A\$3M in debt on the balance sheet.** The company has ~43M options outstanding with a weighted average strike price of ~A\$0.20 (Figure 17). The A\$3M promissory note was issued in conjunction with the acquisition of the Broken Hill project and can be repaid in part or whole at any time. The note holds an interest rate of 6% payable in 2024 and 2025.

**Figure 17: Cobalt Blue capital structure**

Capital structure	#
Shares outstanding	422.0
Options	43.3
Performance rights	4.2
<b>Fully diluted shares</b>	<b>469.5</b>

Source: Company reports

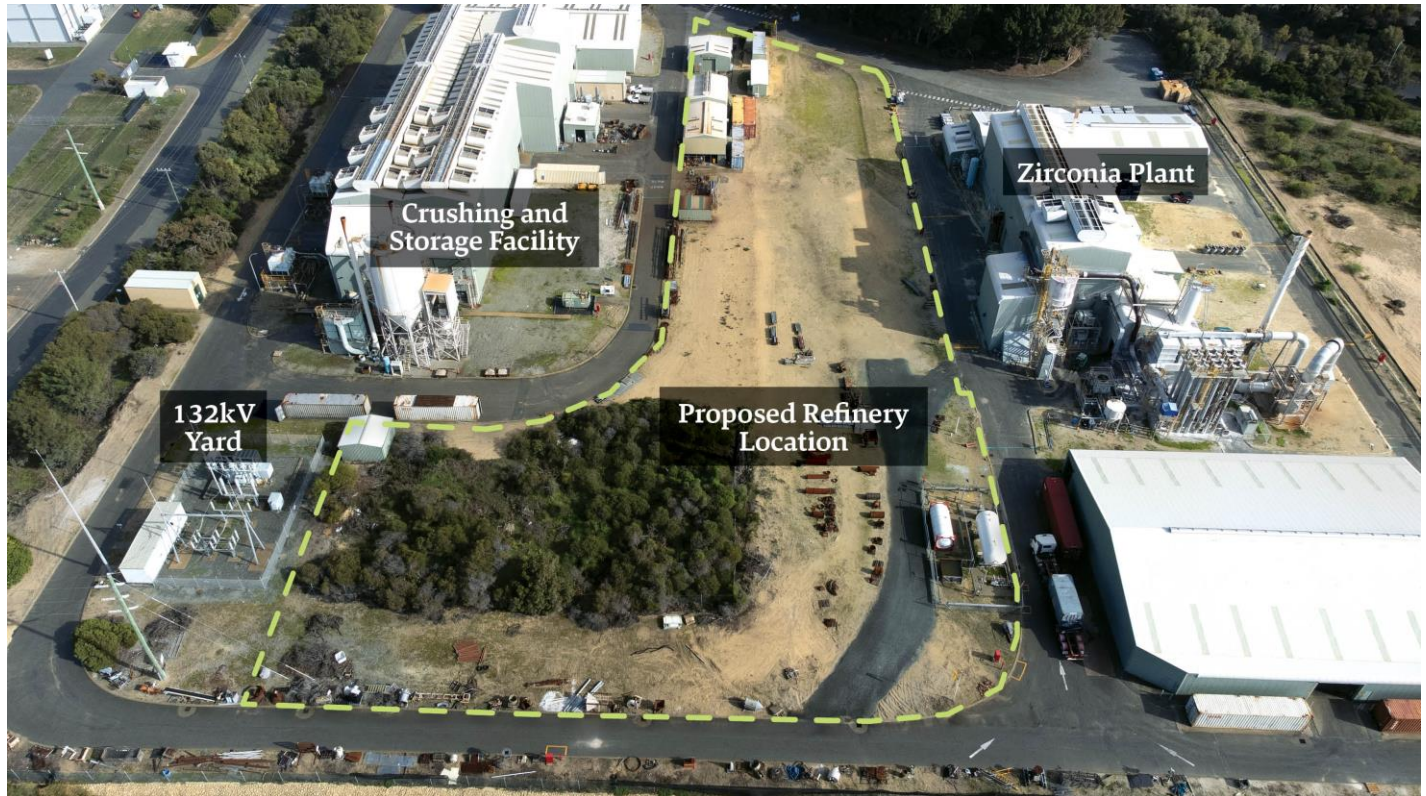


**The refinery is located within an industrial complex and has access to existing infrastructure facilities**

### The Kwinana Co Refinery

The refinery is located within the Kwinana industrial complex, ~30km from Perth in Western Australia. The proposed site (Figure 18) for the plant is located within the Doral Fused Materials site, which is owned by Iwatani Australia, a subsidiary of Iwatani Corp., a leading Japanese multinational company that specializes in the production and trading of commodities.

**Figure 18: Aerial view of the Kwinana site**



Source: Company reports

**Iwatani Australia is considering an appropriate level for equity investment**

### History & Ownership

In Nov/23 Cobalt Blue completed a study to evaluate the potential construction and operation of a cobalt-nickel refinery. The study demonstrated that the investment case was sound with potential to capitalize on the growing demand for ex-China produced critical minerals and provide robust returns.

In Dec/23, the company entered into a non-binding agreement with Iwatani Australia Pty. Ltd (a subsidiary of Iwatani Corp.). Iwatani is currently considering an appropriate level for equity ownership in the refinery, which would be subject to a binding agreement.

### Location & Infrastructure

The refinery is located close to other battery manufacturing facilities in Kwinana (Figure 19) and enjoys several benefits including access to a port, power, water, reagent suppliers and an experienced workforce. Given its location in an existing industrial park it is also subject to a



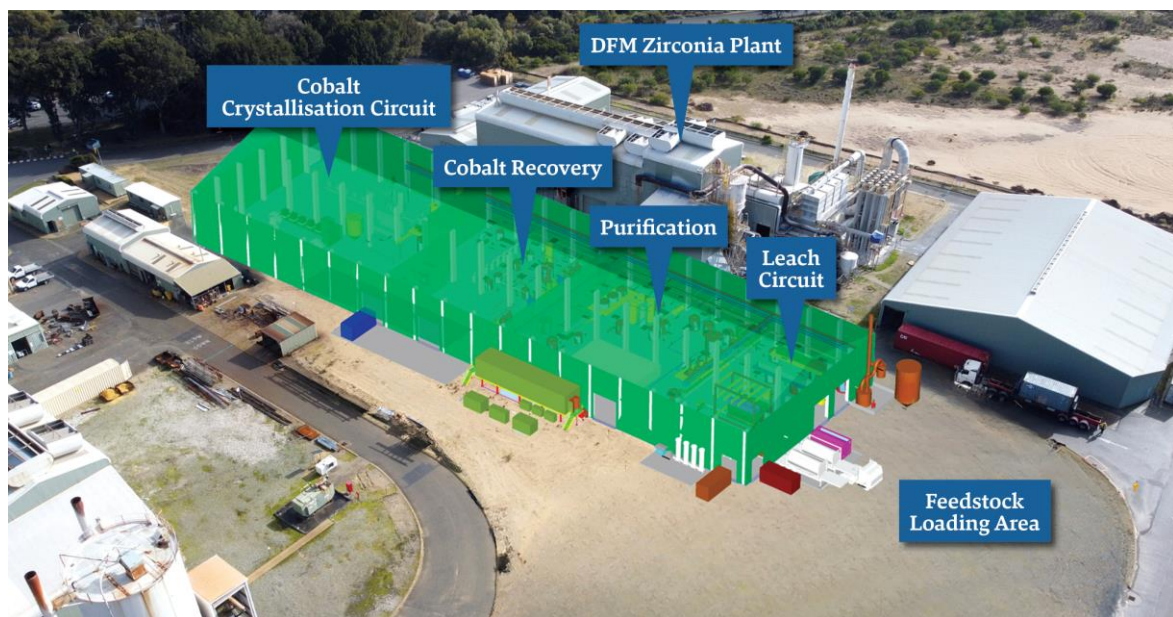
favourable permitting regime/regulatory environment. Existing buildings and facilities on site can also be repurposed to suit the company's processing needs (Figure 20).

**Figure 19: View of the surrounding areas**



Source: Company reports

**Figure 20: 3D render of the refinery site**



Source: Company reports

Stage 1 capital is estimated at ~A\$60M

### Metallurgy & Processing

The flowsheet for the refinery is to be based on testing completed at the company's Broken Hill demonstration plant, also known as the Technology Development Centre (TDC). To date ~10t of material has been processed through the refinery circuit with the data collected expected to inform process and engineering design. The company expects to receive another 5 to 10t of feedstock shortly for further processing. Additionally, external consultants have been engaged for civil works, structural, electrical and instrumentation design.

### Cobalt Refinery Study

A study published in Nov/23 (and updated in Oct/24) outlined preconstruction costs of A\$10M with Stage 1 plant capacity of 3,000 tpa of Co and 500 tpa Ni, and produce sulphate salts for use as raw materials to the precursor cathode material (pCAM) industry. Capital costs for Stage 1 are estimated at A\$60M with an NPV<sub>8%</sub> of A\$90M and IRR of 23% (Figure 21). Stage 2 contemplates expansion of up to 6ktpa of Co at incremental capital of A\$23M (Figure 22), including the potential to source material from the Broken Hill project.

**Figure 21: Select Stage 1 metrics from updated Oct/24 study**

Financials (100% owned) <sup>1</sup>		
Total Cobalt Revenue	A\$ M	4,454
Total Nickel Revenue	A\$ M	168
Total EBITDA	A\$ M	465
Total Operating Cash Flow	A\$ M	367
Valuation (100% owned)		
Net Present Value (8% discount rate, post tax)	A\$ M	90
Internal Rate of Return (post tax)	%	23
Total Capital Payback Period	Years	5.2
Assumptions (100% owned)		
Cobalt Price	US\$/lb	Up to US\$28.00/lb by 2031
Nickel Price	US\$/lb	7.50
Exchange Rate	AUD:USD	Up to 0.71 by 2029

Source: Company reports

**Figure 22: Stage 1 and 2 metrics**

Stage	Capital Expenditure (\$m)	Cobalt Processing Capacity (metal tpa)	Post Tax NPV (\$m)	IRR (Post Tax %)	Typical annual EBITDA (A\$m)
One	60	3,000	90	23	24
Two	23	+3,000	105*	64*	22*
Combined Stage One + Stage Two	83	6,000	175**	29**	43**

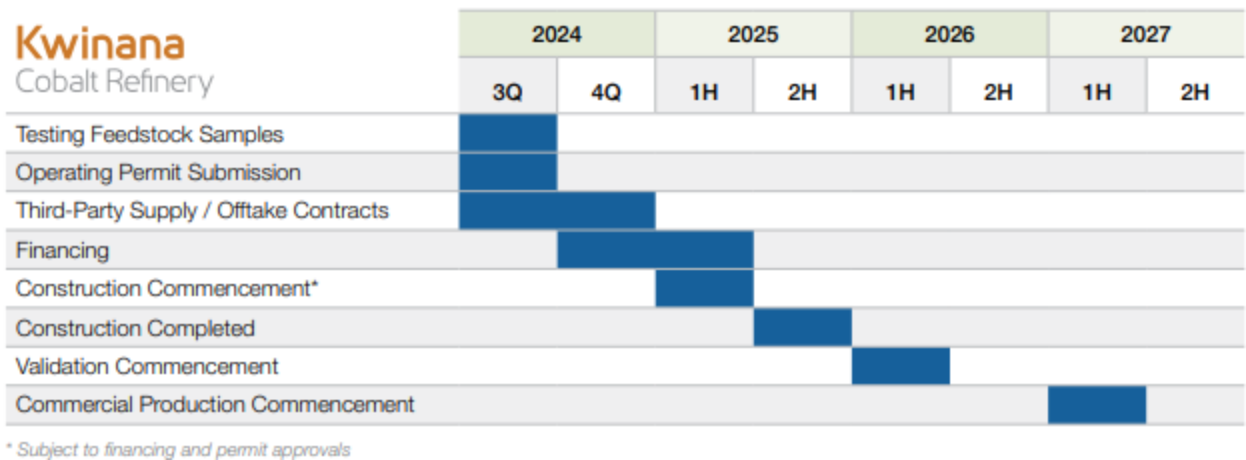
Source: Company reports

Operating permits are anticipated in H1/25

### Permitting

A comprehensive Air Quality Impact Assessment (AQIA) has been completed and determined the impact of existing, as well as new emissions from the site. The AQIA has demonstrated that the emissions are significantly less than the prescribed ground-level concentrations of pollutants at different locations around the site. A biodiversity assessment has also been completed, paving the way for clearing a small amount of vegetation at the site. Furthermore, consultants have also been appointed to develop a Works Approval application for submission to the Department of Water and Environmental Regulation. The permit for the site is expected to be received by H1/25 (Figure 23).

**Figure 23: Indicative timetable (fiscal calendar)**



Source: Company reports

### Feedstock & Offtake Agreements

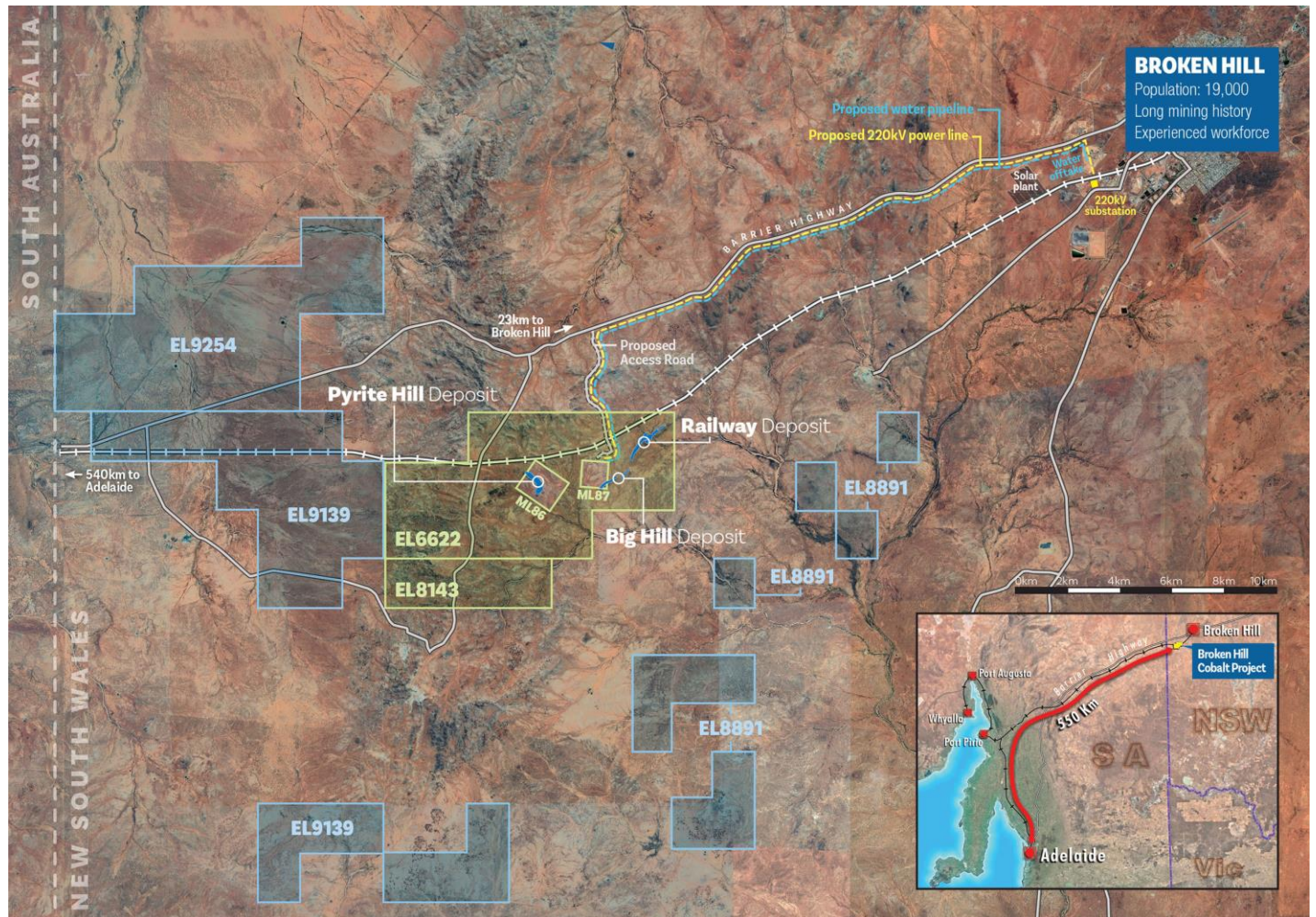
Discussions remain ongoing with both feedstock and offtake providers. Management has indicated that suppliers will have to adhere to strict criteria and that the company will only source material from sources that do not contravene USA Foreign Entities of Concern (FEOC) definitions. Samples for offtake have been provided to parties based in both Asia and Europe.



## The Broken Hill Co project

The project is located ~25km to the SW of the town of Broken Hill in New South Wales. The project covers an area of ~37 sq. km within a broader tenement holding of 220 sq. km (Figure 23).

**Figure 23: Location of the Broken Hill project in NSW**



Source: Company reports

### Location & Infrastructure

Given the project's location near the town it has access to power via a high voltage grid, as well as a solar and wind farm located ~5km and ~25km away. The project is connected to major cities through highways and an airport, which is located close to town, and to Port Pirie via a ~400km-long rail line.

### Geology & Mineralization

The project is located in a deformed and metamorphosed Proterozoic supracrustal rock succession named the Willyama Supergroup. This rock formation also hosts the giant, Broken Hill Pb-Zn-Ag orebody. There are three distinct deposits on the property, known as Pyrite Hill, Big Hill and Railway and are characterized by moderate to steeply dipping

stratabound zones of disseminated to semi-massive cobaltiferous pyrite mineralization. Pyrite Hill is geographically separate from the other two deposits, which are considered to be the same mineralized body. The two areas are separated by a zone of low-grade mineralization and minor structural dislocation. The three deposits extend over ~5km of strike and vary in thickness from 10m to 300m.

The sulphide mineralisation generally comprises 10–35% sulphides (almost exclusively pyrite), 25–45% quartz, 25–55% albite (sodium feldspar – NaAlSi<sub>3</sub>O<sub>8</sub>), and minor amounts of micas, clays and iron minerals. Co occurs exclusively within the pyrite crystal lattice forming a strong correlation between pyrite content and Co grade.

### Mineral Resource Estimate

Since 2017, over 40,000m of drilling has been completed at the project. Based on the last round of drilling completed at Broken Hill in 2022 (78 holes for 12,280m) an updated mineral resource estimate was provided in Nov/23 outlining ~127Mt at average grades of 867 ppm CoEq (Figure 24). **Assuming LT Co and Ni prices of US\$20.00/lb and US\$10.00/lb respectively, we estimate all three deposits host ~211M CoEq lb of contained metal.**

**Figure 24: Mineral resource estimate for the Broken Hill project**

Classification	Tonnes (Mt)	CoEq (ppm)	Co (ppm)	S (%)	Ni (ppm)	Contained Co (kt)	Contained S (kt)	Contained Ni (kt)
<b>Pyrite Hill</b>								
Measured	18.0	1,273	1,020	10.8	189	18.3	1,935	3.4
Indicated	8.7	889	703	8.0	137	6.1	693	1.2
Inferred	7.2	1,188	946	10.3	181	6.8	742	1.3
Total	33.9	1,156	923	9.9	174	31.3	3,371	5.9
<b>Big Hill</b>								
Measured	5.7	735	592	6.0	110	3.4	342	0.6
Indicated	10.1	745	599	6.0	120	6.0	609	1.2
Inferred	2.8	750	596	6.4	123	1.7	181	0.3
Total	18.6	742	596	6.1	118	11.1	1,131	2.2
<b>Railway</b>								
Measured	–	–	–	–	–	–	–	–
Indicated	41.1	809	643	7.1	125	26.4	2,915	5.1
Inferred	33.0	713	563	6.4	115	18.5	2,093	3.8
Total	74.1	766	607	6.8	121	45.0	5,008	8.9
<b>Total</b>								
Measured	23.7	1,143	917	9.6	170	21.7	2,277	4.0
Indicated	59.9	810	644	7.0	126	38.6	4,217	7.6
Inferred	43.0	795	629	7.0	127	27.0	3,016	5.4
Total	126.5	867	690	7.5	134	87.3	9,510	17.0

Source: Company reports

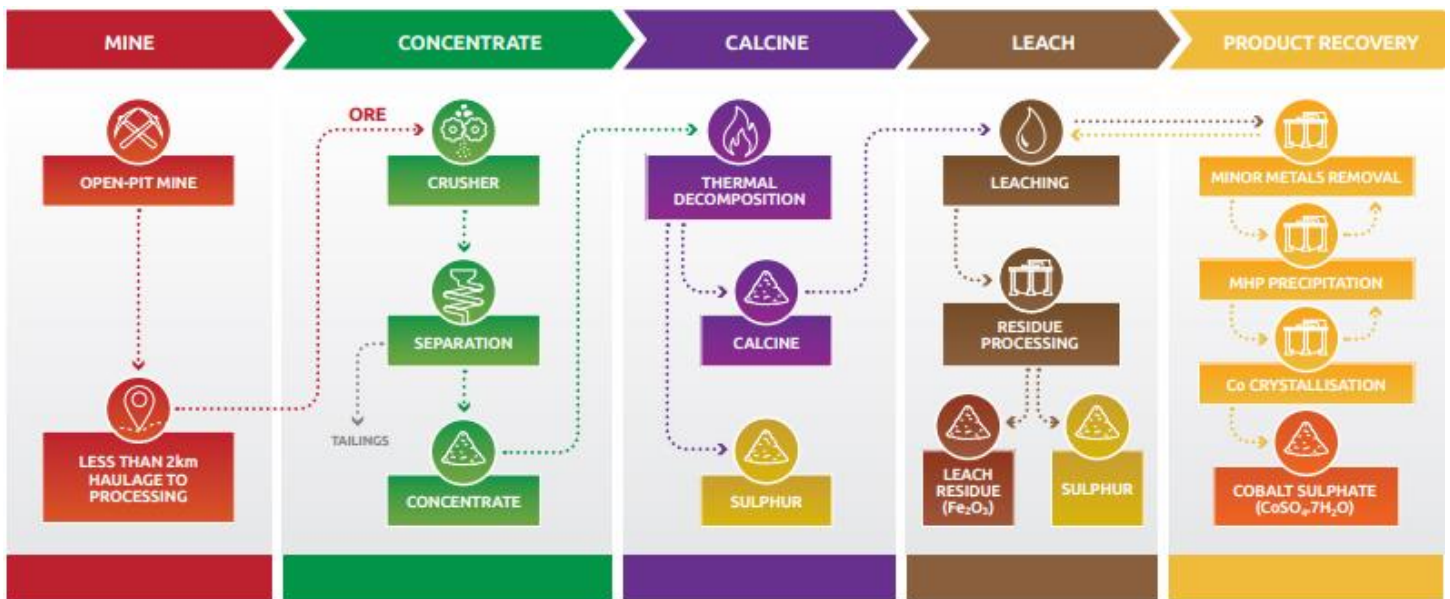


Metallurgical process is patent pending

### Mining & Processing

A PFS published in 2018, followed by an update in 2020, outlined extraction of ore using multiple open pits, conventional drill and blasting techniques, load, haul and dump processes. The company has also developed a patent pending metallurgical process for treating Co pyrite material and producing Co sulphate (Figure 25). Treatment of Co pyrite involves two key steps: 1) conversion of pyrite to pyrrhotite and S, and 2) leaching of the pyrrhotite. The solubilised Co is then recovered by precipitation as a mixed hydroxide precipitant with grades of 30% Co and 7% Ni.

Figure 25: Process flowsheet



Source: Company reports

### Pilot & Demonstration Plant

A pilot plant for the project began operating at 2-3t of capacity in May/21. Following successful operations of over 1,000 operating hours, the company scaled this up to a demonstration plant to treat up to ~4kt of ore from the Pyrite Hill deposit.

By Dec/22 the concentrator circuit had completed processing 4,200t of ore over a period of 65 days to yield 680t of wet concentrate. Mass recoveries of between ~17 to 20% were consistently achieved yielding average concentrate grades of 4,434 ppm Co. The combined recovery for the concentrator circuit was typically 95%, exceeding the recoveries assumed in the 2020 project update study of 90%.

In Mar/23 treatment of the concentrate began through the kiln to convert pyrite into pyrrhotite and elemental sulphur, with a feed rate of 150-300kg/hr. Approximately ~5t of kiln calcine was leached during commissioning of the leaching circuit (Figure 26) with first large scale MHP production achieved from the demonstration plant. Operation of the demonstration plant continued through 2023 with the decision made in Aug/23 to test third party feedstock material to inform the development of the Kwinana Co refinery.

Testing of third-party feedstock underway to inform development of Kwinana

**Figure 26: Demo plant pressure oxidization leach circuit**

Source: Company reports

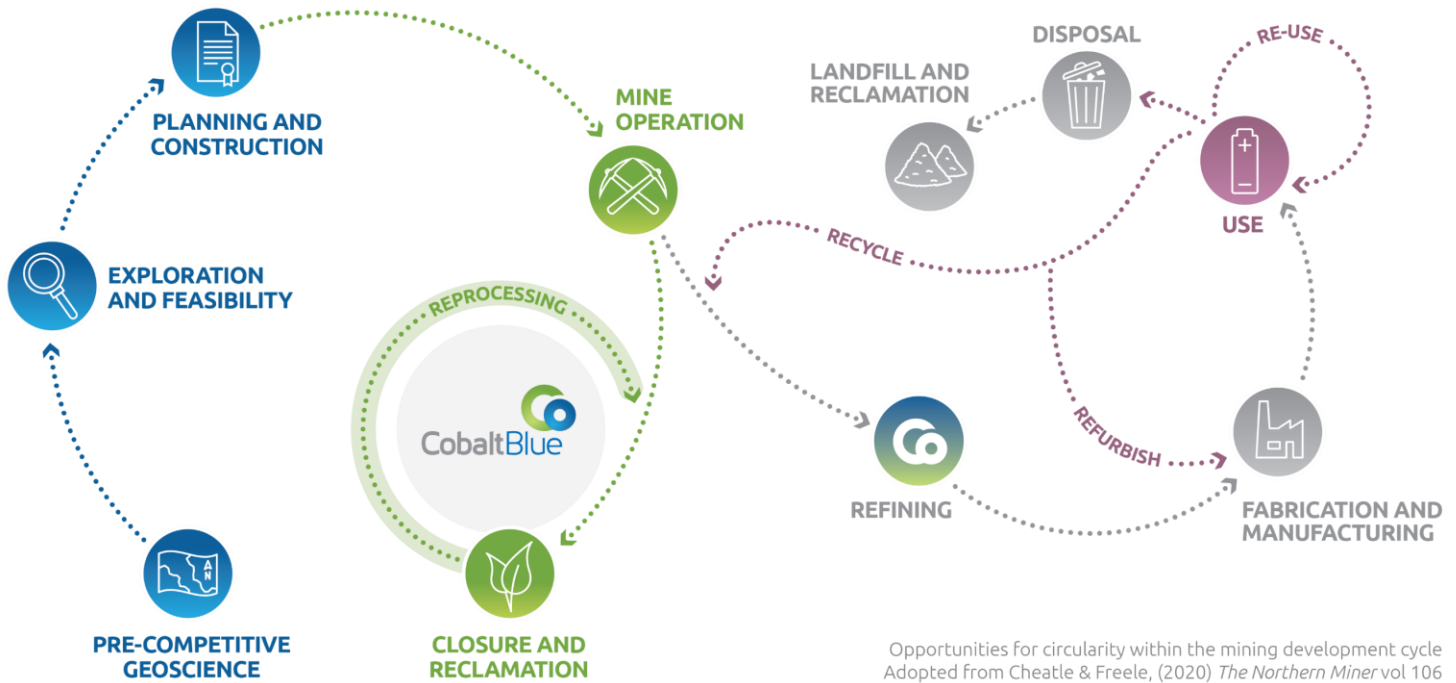
**Strategic Review**

While the demonstration plant continues to provide technical information required to advance Broken Hill to a Definitive Feasibility Study, in Feb/24 the company made the decision to place the project under Strategic Review and pause all activities, in light of recent Co pricing (Figure 9).

### ReMine+

Pyrite is a common waste product from mining activities, especially Cu and Ni mining, where it is deposited in the tailings (Figure 27). Traditionally, many mining companies have focused on the production of one or two commodities from a particular deposit, ignoring the other metals that are present. Cobalt Blue’s patent pending, processing technology has been developed to include the re-processing of pyrite and other sulfide material in waste, that contain metals such as Co.

Figure 27: Circularity within the mining cycle



Source: Company reports

### History

Originally known as the Cobalt in Waste Streams project, the company rolled out its strategy to reprocess tailings in 2021, after sampling material from over 30 partners globally.

### MOU with State of Queensland

In Dec/21, Cobalt Blue signed an MOU with the State of Queensland’s Department of Resources to assess opportunities for the recovery of Co from mine waste. Per the terms of the MOU, the company would undertake testwork to evaluate processing options and the application of its proprietary technology to recover metals from feedstock provided by the Department of Resources. Material was to be sampled at Broken Hill’s pilot plant.

### Testwork agreement with HudBay Minerals

In Jun/23, the company announced that it had entered into a testwork co-operation agreement with HudBay Minerals Inc. (TSX:HBM, Not Rated) to assess whether its proprietary processing technology could

recover Au, Ag, Cu, Zn, Co and S from HudBay's Flin Flon tailings in MB. The tailings facility at Flin Flon contains over 100Mt of material from over 90 years of operation. A 50 kg sample from Flin Flon was received with laboratory scale 'proof of concept' testing completed. This included flotation, thermal decomposition of pyrite, and leaching of calcine with overall results achieving +90% conversion of pyrite into pyrrhotite and elemental S. Final testing is ongoing, with results expected to inform the design a flowsheet and advance discussions on next steps.

#### **MOU with Regeneration Enterprises**

In Mar/24, the company executed an MOU with Regeneration Enterprises, a public benefit company which seeks to produce minerals for the energy transition by remining, reprocessing and restoring existing mine sites. The MOU outlined the scope under which Cobalt Blue's processing technology would be included in Regeneration's suite of technologies and services, that help unlock value at legacy mine sites. Roles and responsibilities of both parties will be determined on a site-by-site basis.

## Risks

Exploration, development, and mining projects are inherently risky investments given the large initial expenses that are required in advance of any potential revenue. Our view is based on publicly available information and conversations with management. We note that our estimates and view are not without political, social, technical, geological, or financing risks typical for junior mining and exploration-stage companies. For Cobalt Blue Holdings Ltd., four risks are of note.

1. **Geopolitical/jurisdictional risks** – Some of these risks may be out of the control of the company, including royalty and taxation levels, land agreement liabilities, regulatory, environmental and permit requirements and timing, global trade wars and political instability. We note that the Cobalt Blue's Kwinana Co refinery and Broken Hill Co project are located in Australia, a tier 1 mining jurisdiction.
2. **Technical risks** – This covers a wide variety of issues that we see associated with the refinery and project, including execution, exploration, development and exploitation strategies and methods. It would cover such issues as accuracy of geological interpretation, resource/reserve estimates and economic studies and inputs such as commodity prices, cost and grade fluctuations, assay reconciliation, metallurgical and processing issues, and exploration success. Our positive view relies on using existing technical data however future results may differ and negatively impact our assumptions.
3. **Corporate risks** – These may include project execution by management, investor relations effectiveness, or market sentiment. Management pedigree and performance are paramount, and market sentiment may also be an issue. While cobalt and nickel prices have recently reached multi-year lows, we expect a turn around in prices in the longer term, but note that our estimates may be negatively impacted by a change in market sentiment.
4. **Financial risks** – These may occur at the project or corporate level, including variation in valuation parameters/metrics, commodity price or foreign exchange fluctuations, access to credit including debt, equity financing or potential for shareholder dilution.

As new information becomes available, we may refine our numbers and update our risks.



## Appendix A: Management & Directors

### Joe Kaderavek – CEO

Mr. Kaderavek has held senior management roles with PwC, Five Oceans Asset Management, Bankers Trust, and Deutsche Bank. He has managed operational reviews and strategic option assessments across mining, processing, railway, and port facilities throughout Australia, North America, and Europe. In addition, Mr. Kaderavek has worked in equities and investment research, focused on mining, minerals processing, energy storage, and battery technologies. He has managed investments in the global resources and minerals processing industries, including the management of turnaround projects supporting corporate targets, mergers, and divestment activities..

### Dr. Andrew Tong – Executive Manager

Dr. Tong is a metallurgist with over 20 years of experience in project development, mining and processing. He has formerly held senior management corporate roles including CEO and Board roles for Compass/Northern Territories Resources, Goldsmith Resources (Peru) and Australia Gold. He is an inventor and holds several patents for processing minerals containing base and precious metals. Mr. Tong is a member of the Australasian Institute of Mining and Metallurgy (AUSIMM).

### Danny Morgan – CFO & Company Secretary

Mr. Morgan has over 30 years professional financial and commercial experience, including senior roles at Donaldson Coal, Hydra Energy, Oil Search and Roc Oil. He has experience across IPO's, Mergers & Acquisitions, Project Financing, Joint Ventures, Project Developments and Financial Reporting. Danny holds a Master of Applied Finance, a Bachelor of Commerce, a Graduate Diploma in Applied Finance and Investment and is a member of Chartered Accountants Australia & New Zealand.

### Dr Helen Degeling – Project Acquisition Manager

Dr. Degeling is a PhD qualified geologist with over 18 years' experience in industry, academia and government. She has worked as an exploration geologist and Exploration Manager in gold and base metals throughout Western Australia, New South Wales and Queensland, as well as consulting to a variety of mineral explorers and producers both domestically and abroad. As the Director, Minerals Geoscience for the Geological Survey of Queensland she initiated the Queensland Government's Circular Economy, Secondary Prospectivity, traceability and Sustainable REE processing programs. She is a passionate advocate for the growth and evolution of the minerals sector in line with the demands of a just transition towards decarbonisation and adoption of ESG standards globally. In her current role as Project Acquisition Manager for Cobalt Blue, she aims to realise the opportunities for green metal extraction from mine waste to support the energy transition.

### Adam Randall – Demonstration Plant Manager

Mr. Randall has been directly involved in the mining industry and associated mineral processing technology development for over 30 years. During this time, he has worked both within Australia and internationally on gold, copper, zinc, tin, and mineral sands projects, in

roles ranging from mining and processing operations through to cutting edge research and development for hydrometallurgical mineral processing. He has overseen the successful construction and commissioning of several pilot and demonstration processing facilities, as well as refurbishment and upgrade projects for commercial processing plants.

**Joe Lam – Senior Process Engineer**

Mr. Lam is a chemical engineer with more than 30 years of experience in minerals processing project development in Australia and China. For the past 15 years, he has been representing Australian parties to export sustainable mineral processing technologies to China, focusing on secondary metal resources and recycling industrial metallic intermediaries. He is the sole inventor of a halide copper electrowinning cell and the co-inventor of a technology used for upgrading low-grade polymetallic ore or concentrate.

**Joel Crane – Investor Relations/Commercial Manager**

Mr. Crane has spent the majority of his career specialising in commodity and economic market analysis. His well-earned reputation in the industry has been gained through being able to translate complex issues into concise conclusions. American by birth, Australian by choice - Joel brings an international perspective to Cobalt Blue. His extensive career portfolio includes 12 years working in top-tier global financial institutions (Morgan Stanley, Deutsche Bank) covering all major metals and bulk commodities – including the key battery raw materials. For the five years prior to joining Cobalt Blue, he was with Rio Tinto (Singapore and Melbourne) where, as a Senior Manager, he led teams within the internal Market Analysis Group that were tasked with conducting and communicating market and business analysis to the executive leadership. In this role, Joel directly supported the CEO with economic and commodity market analysis.

**Robert Biancardi – Independent Chairman**

Mr. Biancardi has held senior roles with numerous major corporations over 35 years, including IBM, Citibank, Westpac, and Evolution Healthcare. He has also held several directorships of private companies - Rockridge Private Equity, Infomedix Health, Engagis Digital, and Hutchisons HCCS Ltd. He is also a past Board Member of the Heart Foundation, past President of the Restaurant & Catering Assoc, and is currently Chairman the Diabetes Research Association. Mr. Biancardi has a Bachelor of Commerce along with a post-graduate Diploma in Management from the University of NSW-AGSM and a Harvard Leadership Certificate. He is a Fellow of the Institute of Chartered Secretaries.

**Hugh Keller – Independent Director**

With 35 years' legal experience before retiring from full-time practice, Mr. Keller was a Managing Partner at Blake Dawson (now Ashurst) and its predecessor firms. He has also been a Non-Executive Director and an Audit Committee Member of ASX-listed Thakral Holdings Ltd and LJ Hooker Ltd.

**Alina Islam | Mining Analyst**  
**Daniel Kozielowicz | Research Associate**  
**Shikhar Sarpal | Research Associate**  
**Surya Sankarasubramanian | Research Associate**

**Red Cloud Securities**  
120 Adelaide W, Suite 1400  
Toronto ON, M5H 1T1  
[research@redcloudsecurities.com](mailto:research@redcloudsecurities.com)  
[www.redcloudresearch.com](http://www.redcloudresearch.com)

Disclosure Statement  
Updated October 15, 2024

Recommendation / Target Change			Red Cloud Securities has this percentage of its universe assigned as the following:	
Date	Rating	Target	Status	%
2024-10-04	NA	NA	BUY	70%
2024-10-15	BUY (S)	0.20	BUY (S)	25%
			HOLD	0%
			TENDER/ SELL	3%
			NA	3%
			UNDER REVIEW	0%

**Disclosure Requirement**

Red Cloud Securities Inc. is registered as an Investment Dealer and is a member of the Canadian Investment Regulatory Organization (CIRO). Red Cloud Securities registration as an Investment Dealer is specific to the provinces of Alberta, British Columbia, Manitoba, Ontario, Quebec, and Saskatchewan. We are registered and authorized to conduct business solely within these jurisdictions. We do not operate in or hold registration in any other regions, territories, or countries outside of these provinces. Red Cloud Securities bears no liability for any consequences arising from the use or misuse of our services, products, or information outside the registered jurisdictions.

Part of Red Cloud Securities Inc.'s business is to connect mining companies with suitable investors. Red Cloud Securities Inc., its affiliates and their respective officers, directors, representatives, researchers and members of their families may hold positions in the companies mentioned in this document and may buy and/or sell their securities. Additionally, Red Cloud Securities Inc. may have provided in the past, and may provide in the future, certain advisory or corporate finance services and receive financial and other incentives from issuers as consideration for the provision of such services.

Red Cloud Securities Inc. has prepared this document for general information purposes only. This document should not be considered a solicitation to purchase or sell securities or a recommendation to buy or sell securities. The information provided has been derived from sources believed to be accurate but cannot be guaranteed. This document does not take into account the particular investment objectives, financial situations, or needs of individual recipients and other issues (e.g. prohibitions to investments due to law, jurisdiction issues, etc.) which may exist for certain persons. Recipients should rely on their own investigations and take their own professional advice before investment. Red Cloud Securities Inc. will not treat recipients of this document as clients by virtue of having viewed this document.

Red Cloud Securities Inc. takes no responsibility for any errors or omissions contained herein, and accepts no legal responsibility for any errors or omissions contained herein, and accepts no legal responsibility from any losses resulting from investment decisions based on the content of this report.

Company Specific Disclosure Details

Company Name	Ticker Symbol	Disclosures
Cobalt Blue Holdings Ltd.	ASX:COB	

1. The analyst has visited the head/principal office of the issuer or has viewed its material operations.
2. The issuer paid for or reimbursed the analyst for a portion, or all of the travel expense associated with a visit.

3. In the last 12 months preceding the date of issuance of the research report or recommendation, Red Cloud Securities Inc. has performed investment banking services for the issuer.
4. In the last 12 months, a partner, director or officer of Red Cloud Securities Inc., or an analyst involved in the preparation of the research report has provided services other than in the normal course investment advisory or trade execution services to the issuer for remuneration.
5. An analyst who prepared or participated in the preparation of this research report has an ownership position (long or short) in, or discretion or control over an account holding, the issuer's securities, directly or indirectly.
6. Red Cloud Securities Inc. and its affiliates collectively beneficially own 1% or more of a class of the issuer's equity securities.
7. A partner, director, officer, employee or agent of Red Cloud Securities Inc., serves as a partner, director, officer or employee of (or in an equivalent advisory capacity to) the issuer.
8. Red Cloud Securities Inc. is a market maker in the equity of the issuer.
9. There are material conflicts of interest with Red Cloud Securities Inc. or the analyst who prepared or participated in the preparation of the research report, and the issuer.

Analysts are compensated through a combined base salary and bonus payout system. The bonus payout is determined by revenues generated from various departments including Investment Banking, based on a system that includes the following criteria: reports generated, timeliness, performance of recommendations, knowledge of industry, quality of research and client feedback. Analysts are not directly compensated for specific Investment Banking transactions.

**Recommendation Terminology**

Red Cloud Securities Inc. recommendation terminology is as follows:

- BUY – expected to outperform its peer group
- HOLD – expected to perform with its peer group
- SELL – expected to underperform its peer group
- Tender – clients are advised to tender their shares to a takeover bid
- Not Rated or NA – currently restricted from publishing, or we do not yet have a rating
- Under Review – our rating and target are under review pending, prior estimates and rating should be disregarded.

Companies with BUY, HOLD or SELL recommendations may not have target prices associated with a recommendation. Recommendations without a target price are more speculative in nature and may be followed by "(S)" or "(Speculative)" to reflect the higher degree of risk associated with the company. Additionally, our target prices are set based on a 12-month investment horizon.

**Dissemination**

Red Cloud Securities Inc. distributes its research products simultaneously, via email, to its authorized client base. All research is then available on [www.redcloudsecurities.com](http://www.redcloudsecurities.com) via login and password.

**Analyst Certification**

Any Red Cloud Securities Inc. research analyst named on this report hereby certifies that the recommendations and/or opinions expressed herein accurately reflect such research analyst's personal views about the companies and securities that are the subject of this report. In addition, no part of any research analyst's compensation is, or will be, directly or indirectly, related to the specific recommendations or views expressed by such research analyst in this report.