

1H 2022

# Company Presentation

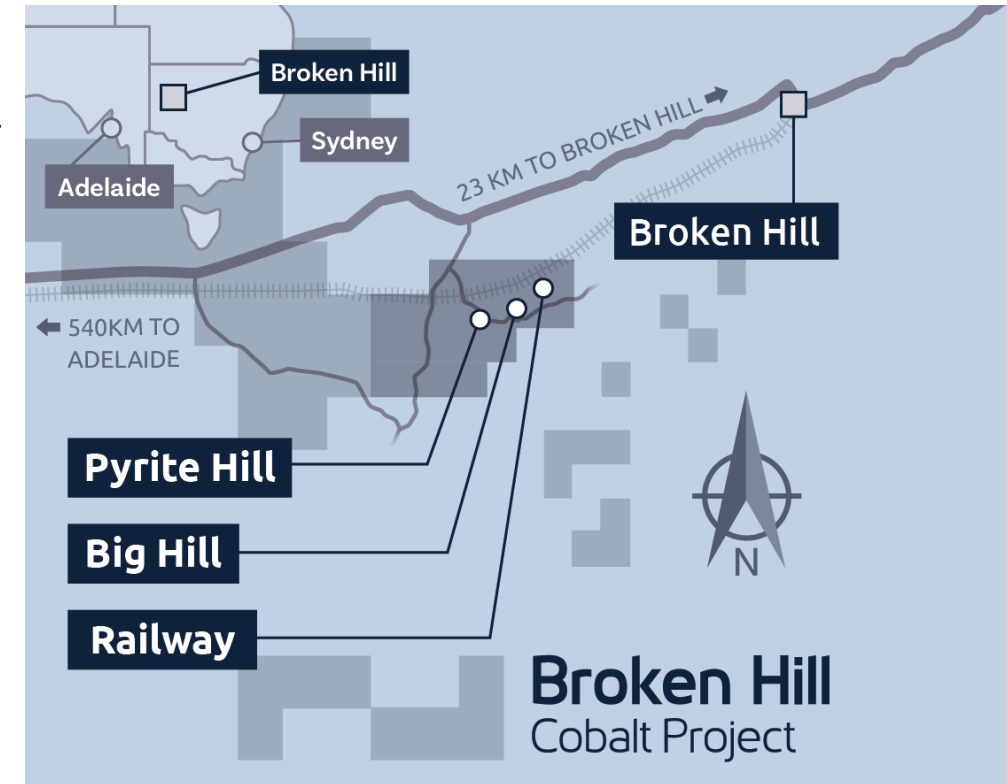
ASX: COB



# Our Aim: Australian Ethical Cobalt Producer

The directly integrated BHCP solution offers a vastly superior emission footprint and ethical value chain over alternatives

1. **Volume certainty:** Long life, large volume cobalt supply. BHCP represents 10% of non-DRC cobalt supply by 2025. Enough cobalt to enable ~300k Electric Vehicles (EVs) per year (5m over life of mine).
2. **Supply and ESG certainty, ex-DRC mine:** Chemical processing at site to specification, full supply chain transparency “from Broken Hill to global partners.”
3. **Customized cobalt products** to meet tightening EV production specifications.
4. **Large scale qualification commercial samples** from Q2 2022.





# BHCP – Timeline

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<b>Broken Hill</b> Cobalt Project					
Business Achievements	Mitsubishi – Sulphur Agreement 100% Project Ownership		Global Cobalt Sample program – Mid 2021	Cobalt Qualification Program	Final Investment Decision – Q1 2023
Technical Studies	Resource upgrade Drilling: +9,500m Resource: 111Mt	Project Update 2020 – July 2020	Feasibility Study	Feasibility Study and Approvals – Q4 2022	
Metallurgical Studies	Concentration – Pilot Scale Testwork		Pilot Plant – Mid 2021	Demonstration Plant – 1H 2022	
Environmental Approvals	CPDP Submitted	Scoping Report – Jan 2020 SEARs issued – Feb 2020		EIS Submission – Q4 2022 SSD Determination – Q4 2022	
<b>Partnerships</b>					
Business Achievements			Cobalt in Waste Streams project – from 2H 2021		
	A C H I E V E M E N T S			G O A L S	

Source: Cobalt Blue Holdings Limited



# BHCP – Capital Structure

## Capital Structure:

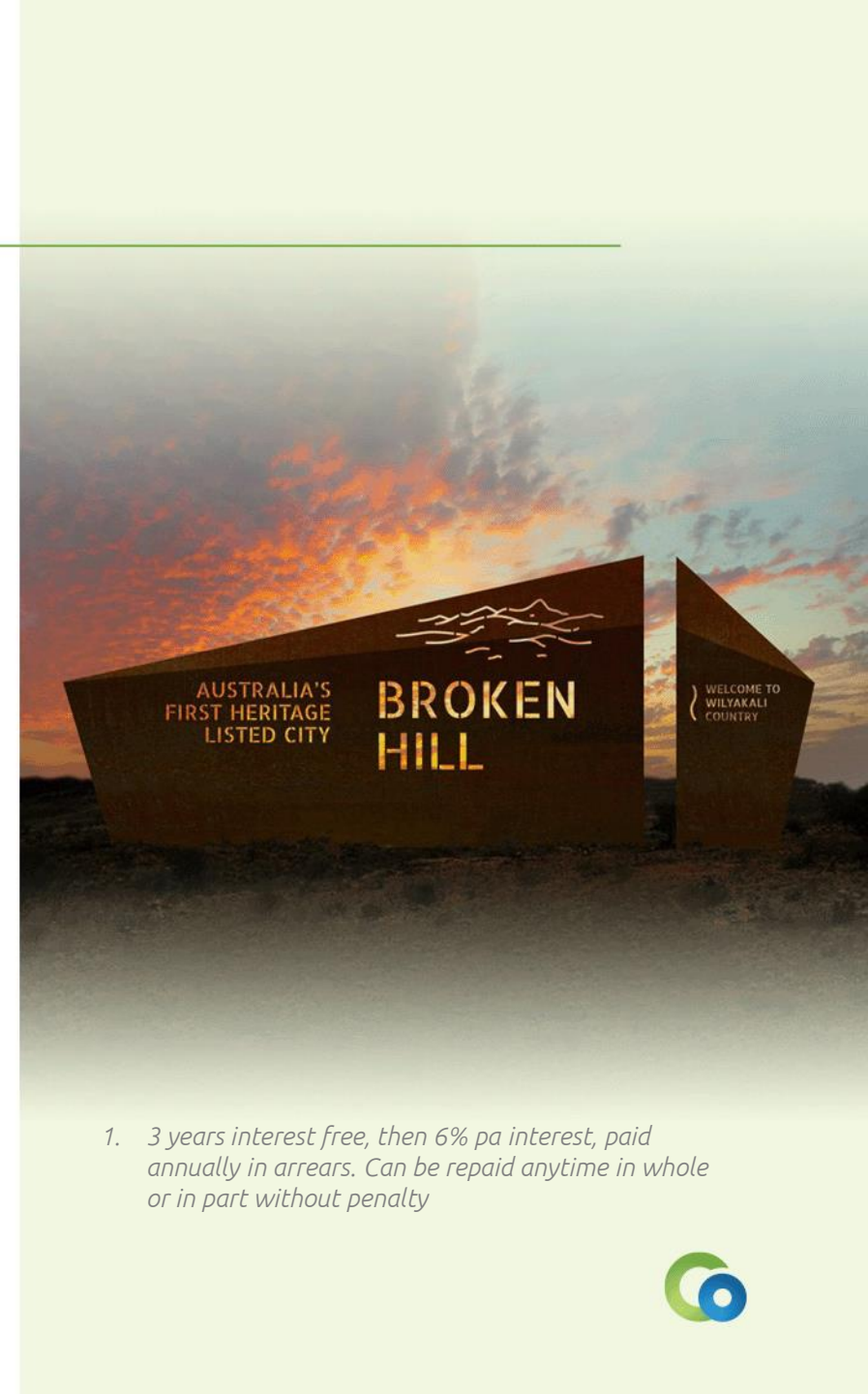
- Ordinary Shares at 07/03/2022: 298.5m
- Options (unlisted): 33.8m
- Promissory Note<sup>1</sup> (5yr to 2025): \$3.0m
- Market Cap (undiluted): \$240m

## Share Price:

- Share Price at 25/03/2022 : \$0.82

## Parameters:

- 3,500 tpa cobalt metal – marketed as 10ktpa MHP or 17ktpa (20.8%) cobalt sulphate
- 300,000 tpa sulphur
- 17-year operations



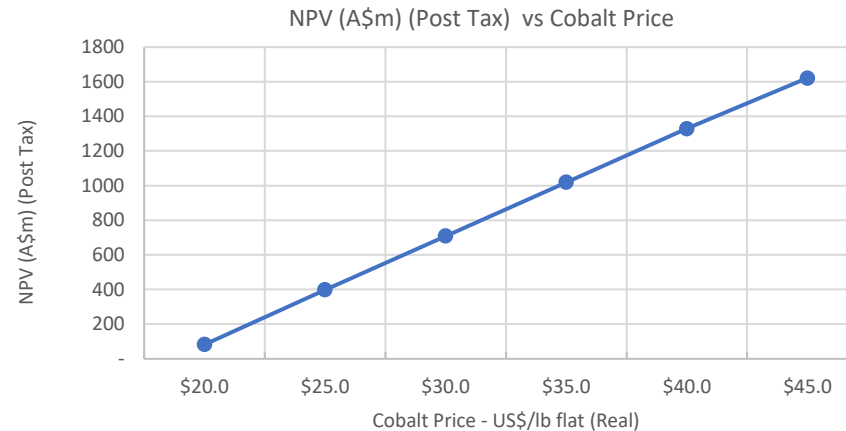
1. 3 years interest free, then 6% pa interest, paid annually in arrears. Can be repaid anytime in whole or in part without penalty



# BHCP – Project Metrics

## Financials\*

- Pre-Tax NPV<sub>7.5</sub> A\$861m (IRR 23%)
- Post Tax NPV<sub>7.5</sub> A\$554m (IRR 19%)
- Payback: 4.5 years
- EBITDA A\$3.05B generated LOM



	2020 Project Update*	Current Spot (22-Feb)
LT Co price (as sulphate)	US\$27.50/lb	US\$36.05/lb
LT Sulphur price	US\$145/t	US\$280/t
LT Ni price (sulphate)	US\$6.00/lb	US\$11.00/lb
LT AUD	US\$0.70	US\$0.72
NPV (post tax 7.5% discount rate)	A\$554m	A\$1,021m
IRR	18.9%	26.8%

\* Project Update 2020 – Value Engineering Study including nickel credits.



# BHCP: Globally Significant Project

**Australia's largest cobalt sulphide deposit – a top 10 global cobalt mine**

## Cobalt Prod by Region

DRC	109
Other Africa	6
Asia	15
Americas	7
Europe	5
Oceania	9
<b>Total</b>	<b>151</b>

## Cobalt Supply ex DRC

	2021	2030
China	6.9	5.5
Indonesia	4.8	15.4
Australia	4.8	8.6
Cuba	4.0	4.0
Philippines	3.7	4.2
Canada	2.6	4.3
Russia	2.4	3.5
Finland	2.1	2.2
Madagascar	1.6	3.2
Zambia	1.6	4.3
Morocco	1.6	1.6
New Caledonia	1.1	2.2
South Africa	0.7	0.7
Others	1.2	2.0
<b>Total</b>	<b>39</b>	<b>62</b>

## Cobalt Prod by Operation, ex-DRC (2026)

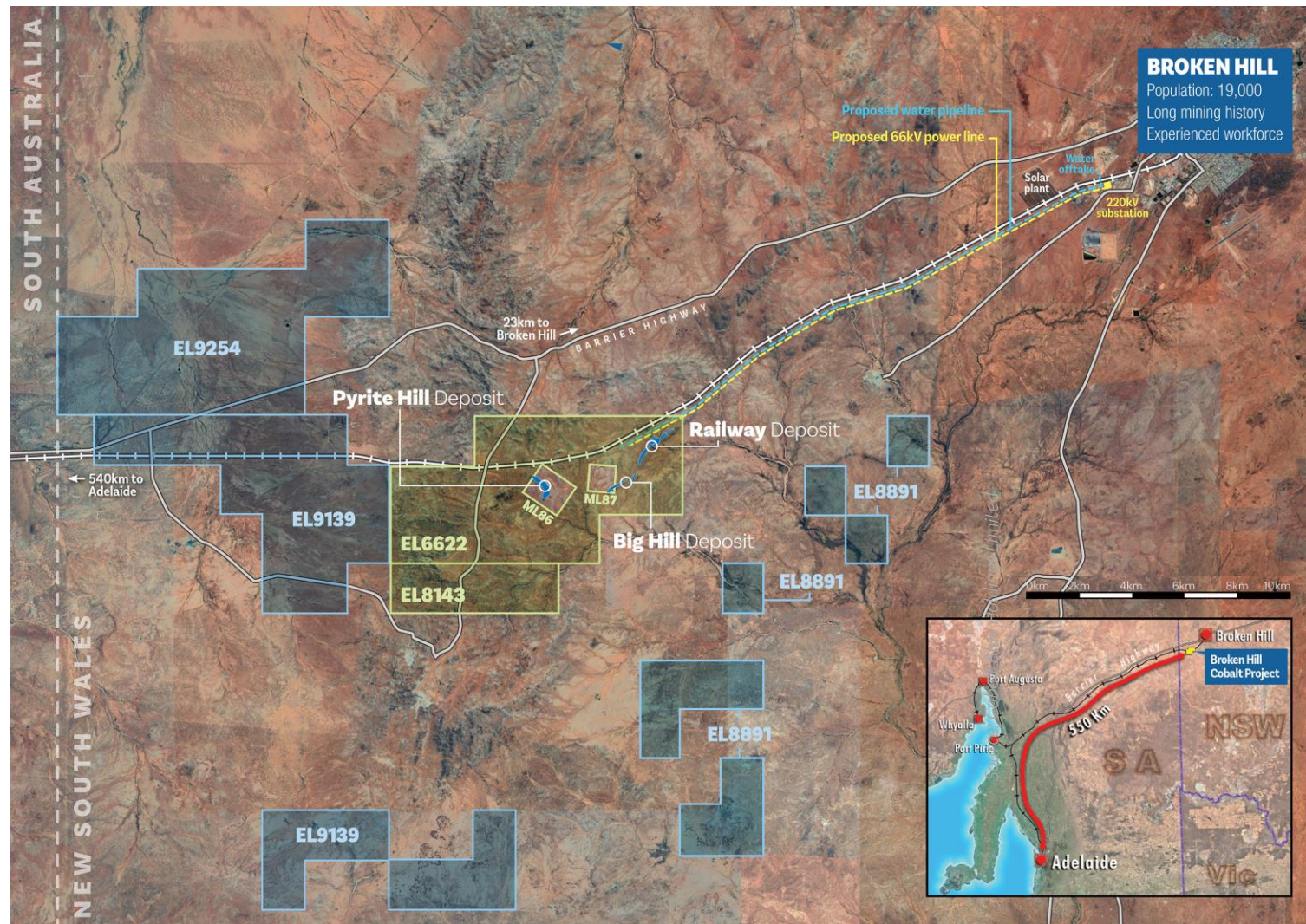
Weda Bay (Indo)	7.5
Morowali - QMB (Indo)	4.5
Morowali - Huayue (Indo)	4.4
Obi (Indo)	4.0
Ambatovy (Madagascar)	4.0
Pedro Sotro Alba (Cuba)	3.9
Murrin Murrin (Aust)	3.5
<b>BHCP</b>	<b>3.5</b>
Sunrise (Aust)	3.2
Ramu (PNG)	2.9
Taganito (Philippines)	2.4
Goro (New Caledonia)	2.2
Talvivaara (Finland)	1.1
Harjavalta (Finland)	1.1





# BHCP – Logistical Advantages

*Broken Hill: people, power, water, road and rail benefits*



ASX: COB



# BHCP – Straightforward Infrastructure

- Secured access to nearby established infrastructure means small spend:
  - Raw water allocation of 1.2GLpa (capacity to go to 1.5GL if required).
  - 75MW power allocation (NEM), 20km powerline to Broken Hill - district has highest renewable resource domestically.
  - Access along sealed highway roads, 4km to mine site, transcontinental railway passes through the tenement.
- Nearby Telstra tower ensures stable onsite connection.



Source: Cobalt Blue Holdings Limited

*"I've been involved with numerous projects – its never this easy."*

Dale Vrenegoor, joined in 2021 as Project/Exploration Geologist





# BHCP – Pilot Plant Achievements

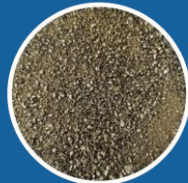
## Proven COB Process at Pilot Plant scale

Study Level	Period	Concentrate Circuit		Pyrolysis Circuit		Leaching/Purification	
Scoping Study	2017	20–30 kg	Lab scale	1 kg	Lab scale	1 kg	Lab scale
Pre-Feasibility Study	2018	820 kg	Bulk trial in batch mode	100 kg	2–3 kg batches	30 kg	0.2–1 kg batches
Project Update	2020	45 tonne	Continuous pilot circuit 2–3 t/hr	150 kg	Continuous pilot circuit 4–8 kg/hr	20 kg	1–3 kg batches
Pilot Plant	2021	45–50 t	Continuous pilot circuit 2–3 t/hr	Up to 15 t	Commercial sized furnace 100–150 kg/hr	Up to 15 t	Pilot equipment 1t batches
Demonstration Plant	2022	3000 t	Mobile plant 10–15 t/hr	Up to 500 t	Commercial sized furnace 100–150 kg/hr	Up to 500 t	Demonstration plant 50–100 kg/hr

Source: Cobalt Blue Holdings Limited



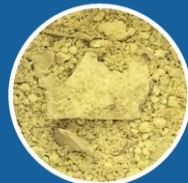
**Ore**  
Pyrite/Albite



**Concentrate**  
Pyrite - FeS<sub>2</sub>



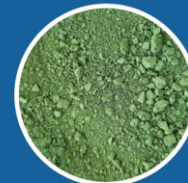
**Calcine**  
Pyrrhotite - Fe<sub>7</sub>S<sub>8</sub>



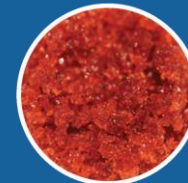
**Elemental Sulphur**



**Leach Residue**  
Fe<sub>2</sub>O<sub>3</sub>

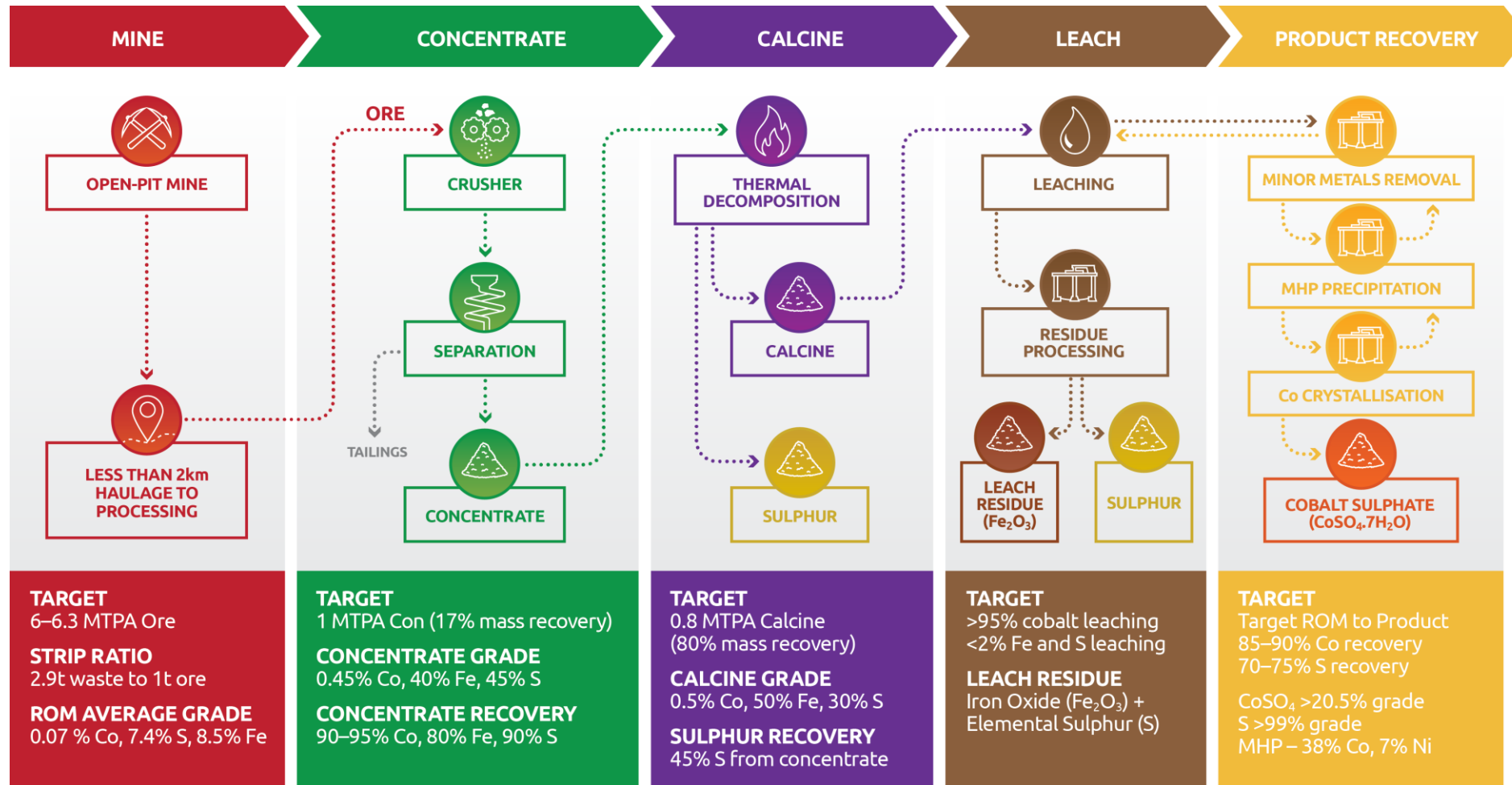


**Co-Ni Mixed Hydroxide**



**Cobalt Sulphate**  
CoSO<sub>4</sub>·7H<sub>2</sub>O

# BHCP Cobalt Sulphate Production Flowsheet



Source: Cobalt Blue Holdings Limited

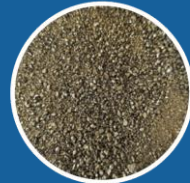


# BHCP – The pilot plant

## Concentrate circuit

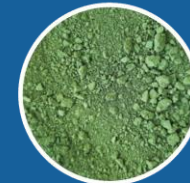


**Ore**  
Pyrite/Albite

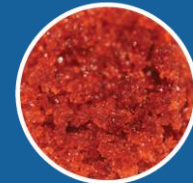


**Concentrate**  
Pyrite - FeS<sub>2</sub>

## MHP circuit



**Co-Ni Mixed Hydroxide**



**Cobalt Sulphate**  
CoSO<sub>4</sub>·7H<sub>2</sub>O

Source: Cobalt Blue Holdings Limited



# BHCP – MHP

## BHCP – Co-Ni Mixed Hydroxide Product (MHP)

- High Grade: 37% cobalt.
- Byproduct Credit: 7% nickel.
- Low trace metal impurities – Cu, Fe, Mn.
- Trading terms typical grade is 30% Co content.

### Typical content from testwork:

Ca	Co	Cl	Cu	Fe	Mn	Ni	Zn
2.5 %	37 %	7 %	0.01 %	0.07 %	0.85 %	7 %	0.1 %



# BHCP – Cobalt Sulphate

## BHCP – Cobalt Sulphate Heptahydrate ( $\text{CoSO}_4 \cdot 7\text{H}_2\text{O}$ )

- High Grade: 20.8% cobalt.
- Low trace metal impurities.



Metal	Units	COB	AVG 9 producers
Co	%	>20.8%	>20.5
Al	ppm	2	<10
As	ppm	<1	<5
Ca	ppm	<0.01	<10 (can be up to 100)
Cd	ppm	<0.001	<10
Cr	ppm	<0.01	<5
Cu	ppm	1	<10
Fe	ppm	<1	<10
K	ppm	0.6	<5 (can be up to 100)
Mg	ppm	27	<20 (can be up to 100)
Mn	ppm	5	<10 (can be up to 100)
Na	ppm	128	<20 (can be up to 100)
Ni	ppm	<10	<10 (can be up to 100)
Pb	ppm	<0.05	<10
Si	ppm	<0.5	<20
Zn	ppm	<2	<10

Source: Cobalt Blue Holdings Limited



# BHCP – Elemental Sulphur

## BHCP – Elemental Sulphur

- >99% purity (max 0.2% Fe, 0.5% SiO<sub>2</sub>)
- Physical Form: Prills (2–5 mm)
- Australia: 1 mtpa deficit market:
  - fertiliser feedstock (55%)
  - metallurgical consumption (43%)

Al	600	ppm
Ca	160	ppm
Co	<20	ppm
Fe	0.10	%
Mg	60	ppm
Na	100	ppm
SiO <sub>2</sub>	0.45	%
S	99.3	% by difference

Source: Cobalt Blue Holdings Limited





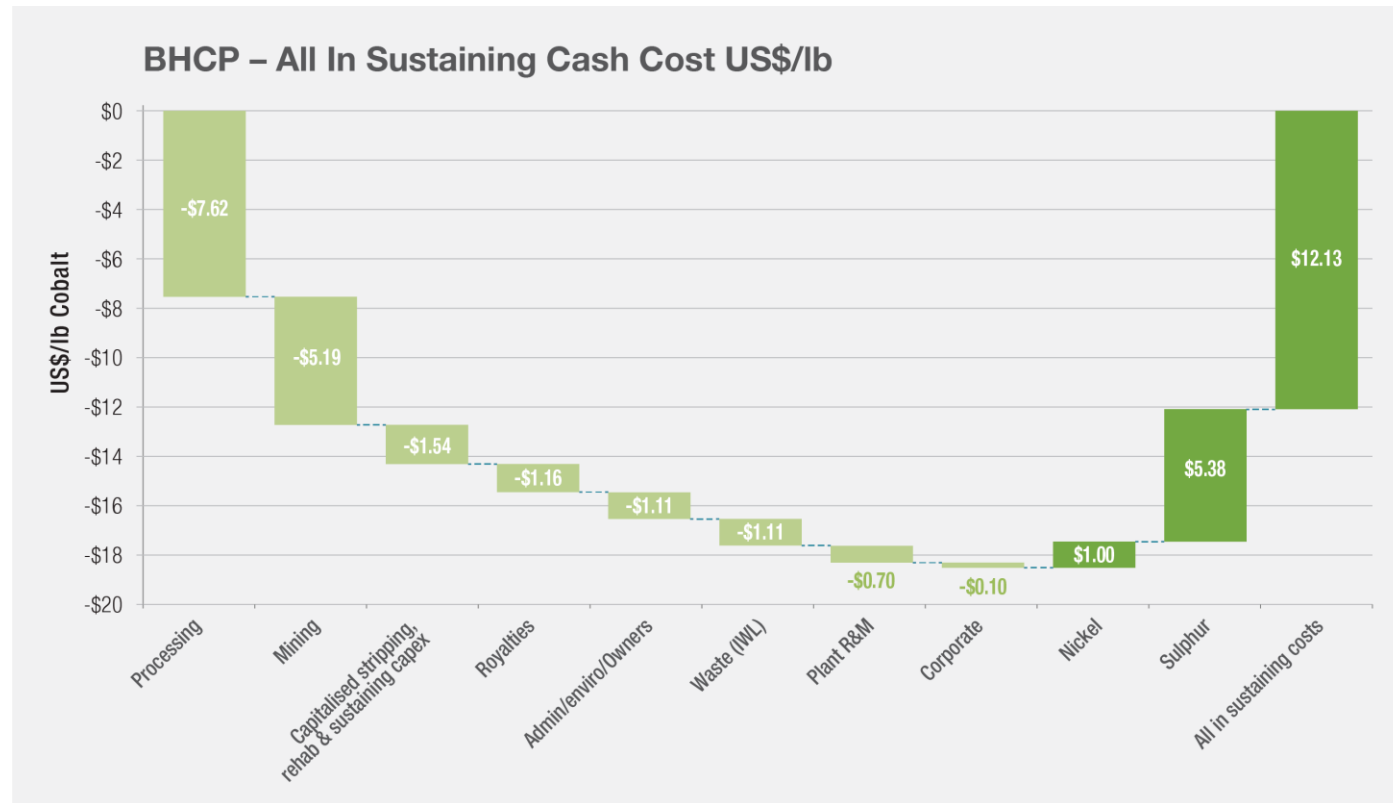
# BHCP – Flexible, low-cost production

- Cobalt sulphate production from MHP intermediate
- Low costs: cobalt C1 (US\$9.34/lb)\* & AISC (US\$12.13/lb)\*.



\* Project Update 2020 – Value Engineering Study including nickel credits.

## Sulphate (Co metal equiv revenue)



Source: Cobalt Blue Holdings Limited

# BHCP – Capital and Operating Costs

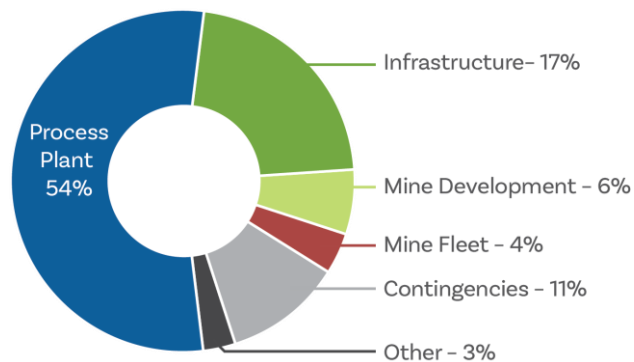
## Capital Costs (A\$)

Process Plant	\$343
Infrastructure	\$137
Mine Development	\$38
Mine Fleet	\$22
Other	\$20
<b>Total</b>	<b>\$560</b>

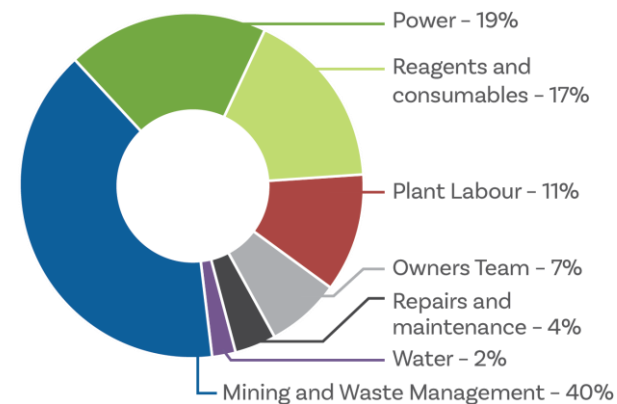
## LOM Operating Costs

- Cobalt Sulphate ~US\$12/lb (ASIC)
- Cobalt Hydroxide (MHP) ~US\$9/lb (ASIC)
- Economic resilience (px vs LT)

## Pre-Production Capital



## Operating Cost Breakdown



ASX: COB

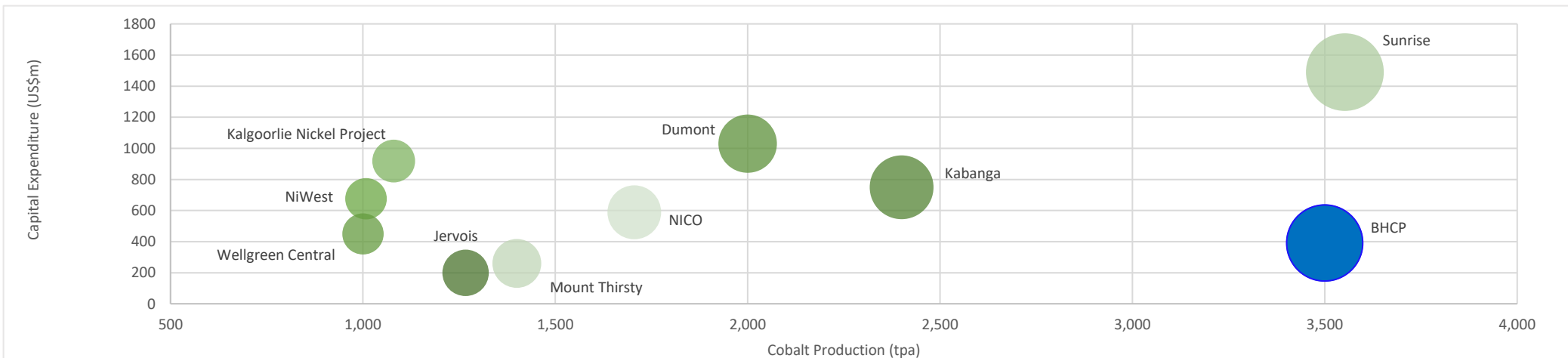
Source: Cobalt Blue Holdings Limited



# BHCP – outstanding capital efficiency

Project	US\$ Capex	Cobalt (tpa)	By-products	Cobalt Payable (% LME)	Mine Life (years)	Capital Intensity (US\$/ktpa Co)
BHCP (Aust)	392	3,500	Sulphur	100%	17	112
Jervois (USA)	200	1,267	Cu / Au	100%	13	158
Mount Thirsty (Aust)	260	1,400	Ni	80%	12	186
Kabanga (Tanzania)	750	2,400	Ni	Low	20	313
Kalgoorlie Nickel Project (Aust)	918	2,150	Nickel	100%	>25	427
Sunrise (Syerston) (Aust)	1490	3,552	Ni/Sc	100%	> 25	420
Wellgreen Central (Canada)	450	1,000	Ni/Cu	Low	20	450
NiWest (Aust)	676	1,008	Nickel	100%	> 25	671
Dumont (Canada)	1030	2,000	Ni/Pt	Low	20	515
NICO (Canada)	589	1,705	Bi/Au	100%	> 20	346

Source: Cobalt Blue Holdings Limited





# Strategic Arrangements / Partnerships

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## Existing commercial partnerships

- LG International: First Mover partnership provides capital and technical assistance on high purity battery grade cobalt sulphate
- Cooperative Research Centre & Future Batteries Industries project to fund and validate our refining process research and participate in development of Australian battery industry
- Sojitz Corporation (cobalt), Mitsubishi Corporation (sulphur)
- Cobalt in waste Streams Project (CWSP) – key QLD Govt agreement executed.

## Other important external fundamentals

- Granted [\*Major Project Status\*](#) by the Australia Government (Federal)
- Participant in in bilateral discussions between Australia and South Korea MOU on Cooperation in Critical Mineral Supply Chains



# Funding Capacities

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## Currently well-funded

- Recent raisings/placements, options – current cash

## Multiple options on the table

- Cutfield Freeman appointed strategic financial advisor, working to identify best-fit financiers/facility
- A\$2bil [Critical Minerals Facility](#): COB a “premier critical minerals project in Australia”
- Export Finance Australia – offers conditional financing support, peers have received up to A\$250 million in debt funding
- Clean Energy Finance Corporation
- Bilateral government credit



# Cobalt Blue – Who We Are

*“Extensive expertise – mineral development, investment management, corporate law and energy storage.”*

## **Independent Chairman – Robert Biancardi**

IBM, Citibank, Westpac and Evolution Healthcare (senior management and director). Numerous directorships of private companies.

## **Independent Director – Hugh Keller**

Partner Blake Dawson (now Ashurst) and its predecessor firms for 35 years until retirement in 2010. Non-executive director of two other companies.

## **Independent Director – Rob McDonald**

40 years of international mining sector experience, Investment banking/private equity investment management.

## **Chief Executive Officer – Joe Kaderavek**

Equities research lead / investment management, resources and energy storage technology focus. Operational reviews and strategic assessments - mining, minerals processing (BHP, Rio Tinto) and infrastructure in Australia, North America and Europe.

## **Executive Manager – Dr Andrew Tong**

Metallurgist with +15 years experience in project development, operating mining and processing activities, and patenting innovative minerals processing technology.



## **Chief Financial Officer – Danny Morgan**

Chartered Accountant with +25 years' professional financial and commercial resource sector experience including IPO's, M&A, Project Financing, JV's and Project Developments.

## **Investor Relations – Joel Crane**

Commodities economist with +15 years experience analyzing bulk, base and precious metals in global investment banks and major resource company (Rio Tinto).





# Mineral Resource Summary

Category	Mt	CoEq (ppm)	Co (ppm)	S (%)	Ni (ppm)	Contained Co (kt)	Contained S (Kt)	Contained Ni (kt)
<b>Pyrite Hill</b> (at a 275 ppm CoEq cut-off)								
Measured	18	1,276	1,030	10.9	191	18.3	1,935	3.4
Indicated	7	931	742	8.5	141	5.3	613	1.0
Inferred	6	1,171	943	10.1	174	5.9	627	1.1
<b>Total</b>	<b>31</b>	<b>1,176</b>	<b>946</b>	<b>10.2</b>	<b>176</b>	<b>29.5</b>	<b>3,179</b>	<b>5.5</b>
<b>Big Hill</b> (at a 275 ppm CoEq cut-off)								
Indicated	11	742	604	5.8	129	6.7	644	1.4
Inferred	7	655	529	5.4	105	4.0	404	0.8
<b>Total</b>	<b>19</b>	<b>707</b>	<b>574</b>	<b>5.6</b>	<b>119</b>	<b>10.7</b>	<b>1,041</b>	<b>2.2</b>
<b>Railway</b> (at a 275 ppm CoEq cut-off)								
Indicated	41	775	619	6.9	118	25.1	2,798	4.8
Inferred	28	727	571	7.0	116	15.8	1,938	3.2
<b>Total</b>	<b>68</b>	<b>755</b>	<b>599</b>	<b>6.9</b>	<b>118</b>	<b>40.9</b>	<b>4,709</b>	<b>8.1</b>
<b>Total</b> (at a 275 ppm CoEq cut-off)								
Measured	18	1,276	1,030	10.9	191	18.3	1,935	3.4
Indicated	59	788	631	6.9	123	37.1	4,062	7.2
Inferred	41	781	619	7.2	123	25.6	2,979	5.1
<b>Total</b>	<b>118</b>	<b>859</b>	<b>687</b>	<b>7.6</b>	<b>133</b>	<b>81.1</b>	<b>8,968</b>	<b>15.7</b>

1 (CoEq = Co + S % × 18.0078 + Ni ppm × 0.2639). Note minor rounding errors may have occurred in compilation of this table.

Source: Cobalt Blue Holdings Limited



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