Quarterly Report

CobaltBlue
green energy technology

27 April 2022

Cobalt Blue Holdings Limited

A Green Energy Exploration Company

ASX Code: **COB**

Commodity Exposure:

Cobalt & **Sulphur**

Directors & Management:

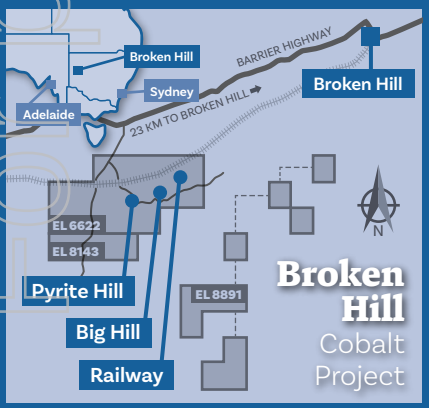
Robert Biancardi	Non-Exec Chairman
Hugh Keller	Non-Exec Director
Robert McDonald	Non-Exec Director
Joe Kaderavek	CEO & Exec Director
Danny Morgan	CFO & Company Secretary

Capital Structure:

Ordinary Shares at 27/04/2022:	**315.3m**
Unlisted Option/rights:	**24.9m**
Market Cap (undiluted):	**$262m**

Share Price:

Share Price at 27/04/2022:	**$0.83**



Cobalt Blue Holdings Limited

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cobalt-blue-holdings

Highlights

March 2022 Quarterly Report

BROKEN HILL COBALT PROJECT

- Feasibility Study update
- Demonstration Plant update
- Bulk Sample update
- Grant of Australian Major Project Status

COBALT TRENDS

- March 2022 Market Report
- EV demand trends
- The LFP debate

COBALT IN WASTE STREAMS PROJECT UPDATE

CORPORATE

- Expenditure
- Other

Broken Hill Cobalt Project (BHCP)

Feasibility Study update

Stage 1 of the Feasibility Study workplan was completed during the quarter with the finalisation of Pilot Plant operations.

Work on stage 2 of the Feasibility Study commenced during the quarter, including Demonstration Plant and Bulk Sample works (see below) and the evaluation and selection of Feasibility Study engineering and technical gropus for the Process Plant, Infrastructure/services, Mining/Resource, Integrated waste landform, Environmental Impact Statement (EIS) and Project Cost Estimate activities.

During the quarter the Department of Planning, Industry and Environment re-issued the Secretary's Environmental Assessment Requirements (SEARs), which will form the basis of the EIS. The re-issued SEARs are a reaffirmation of the existing set to which we had been working.

Demonstration Plant update

During the quarter the Pilot Plant was decommissioned and work commenced for the reconfiguration for the Demonstration Plant.

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The Demonstration Plant comprises two phases. Firstly, mined ore will be crushed, milled and treated to produce a cobalt-pyrite concentrate at the mine site. Secondly, the concentrate will then be trucked to the Demonstration Plant in Broken Hill for extraction and recovery of cobalt as Mixed Hydroxide Precipitate (MHP) and/or cobalt sulphate.

Milling and concentrator equipment is being commissioned in Broken Hill, ahead of relocating these to the mine site (Figure 1). First ore processing (concentration) is on target for early May.

The reconfiguration works included removing pilot plant items, concrete pad works, tank cleaning and installing new equipment items.

The throughput of the leach plant has been upgraded from 40 kg/hr to 125 kg/hr. Key major equipment items are progressively arriving at site – larger leach vessels, oxygen and nitrogen plants, and kiln and sulphur recovery equipment. Installation of these items will be completed in April, with the plant ready to then process concentrate from the mine site in early May.

Trials and commissioning of individual processing circuits are ongoing. During the quarter work was also focused on optimisation of the solvent extraction separation of cobalt (Figure 2), as part of the refining of MHP into high purity cobalt sulphate.

Figure 1 – **Commissioning of the float cell**

Figure 2 – **Cobalt solvent extraction**

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Bulk Sample update

3,500–4,000 tonnes of ore will be mined from Pyrite Hill to support 20 weeks of continuous operation of the Demonstration Plant. Two underground development drives will provide access laterally to the cobalt-pyrite ore body for ore extraction.

Site establishment works have been completed and excavation of the box cut is well advanced with installation of the decline portal to commence shortly. The decline will extend approximately 80 metres, and intersect with the ore body approximately 40 metres below surface.

Recent blast and excavation activities are shown in Figure 3 and 4.

Figure 3 – **Initial blast to advance excavation of the Pyrite Hill box cut.**

Figure 4 – **Load and haul activities at the Pyrite Hill box cut.**

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Grant of Australian Major Project Status

During the quarter the Australian Government granted Major Project Status to the BHCP. Major Project Status extends for a three-year period to support the project through its development phase.

The awarding of Major Project Status provides COB with extra support from the Major Project Facilitation Office Agency, including a single-entry point for Australian Government approvals, project support and coordination with State approvals.

The grant of Major Project Status by the Australian Government acknowledges the strategic significance of the BHCP as a key national project and is formal recognition of the national economic implications of the BHCP through its contribution to growth, productivity, government revenue, industry and regional development.

Cobalt Trends

March 2022 Quarter Market Report – Robust pricing with sulphates outperforming metal

Cobalt metal prices rose around 15–20% during the quarter from the low US$30s /lb towards high US$30s /lb, substantially above calendar year 2021 average prices in the mid US$20s /lb.

Similar price appreciation has been observed in downstream products amid supply-side constraints. A combination of Covid-related issues and a scarcity of shipping containers has continued to disrupt Durban port in South Africa, a key export channel for Democratic Republic of Congo (DRC) feedstock supply. Most of that material is shipped to China, where many major ports have been severely disrupted as a consequence of China's "Covid-zero" policy that remains in place. It has been reported that lead times from DRC minesite to China refinery sit around five months vs typical three months. At the same time, Chinese refineries are starting to push back on the nearly 1-year price appreciation. Chinese market regulators are introducing a number of measures to suppress the persistently strong commodity prices, signalling their appetite to absorb commodity price inflation is waning.

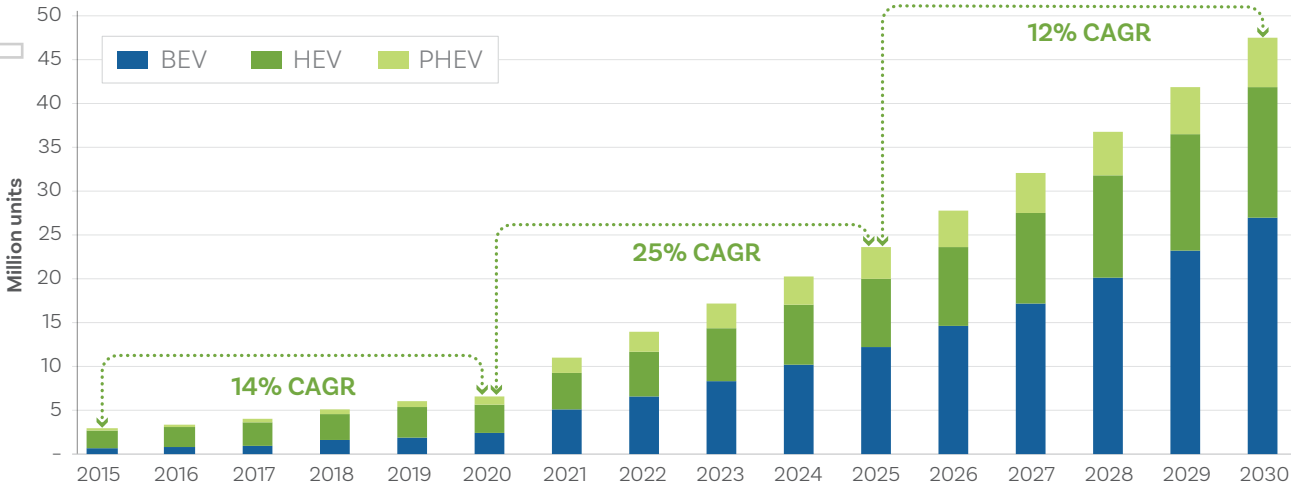
EV demand trends

Some US states (Washington, California) have introduced legislation to cease sales of new Internal Combustion Engines (ICEs) over the next 10-15 years. California, which commands 11% of national car sales and thus influential, has also set a target of tripling EV sales by 2026, representing 35% of all new car purchases (vs 12% current).

After totalling ~6.2m unit sales in 2021, many forecasters are expecting EV sales to rise above 10m units in 2022. According to BNEF, the key factors driving higher forecast sales are more models on the market, tougher climate policies, fleet purchases, and carmakers pushing cars with a plug. China remains the biggest market and is projected to account for over half of global sales this year, with Europe around 30% and the U.S. the third-largest market. However, there are some headwinds to the ambitious forecasts. The surge in EV demand is putting significant pressure on supply chains that are impacting production. Most OEMs have downgraded car output guidance due to a lack of certain materials and/or parts. Also, there is a growing concern among consensus forecasters that commodities face headwinds from slowing consumer and business demand. If inflation outpaces wage growth and also during a period of rising interest rates, consumer confidence and spending is likely to reduce – which could affect car purchasing decisions.

Nevertheless, EV sales continued to grow in the quarter, with all major car markets seeing healthy growth. In the US, the only carmakers to post increased sales were all electric, while the overall industry reported a 15% YoY decline in new vehicle sales.

Figure 5 – **EV Sales 2015-2030e**



Source: Wood Mackenzie, Cobalt Blue

BEV= Battery Electric vehicle HEV = Hybrid electric vehicle PHEV = Plug-in hybrid electric vehicle
CAGR = Compound annual growth rate

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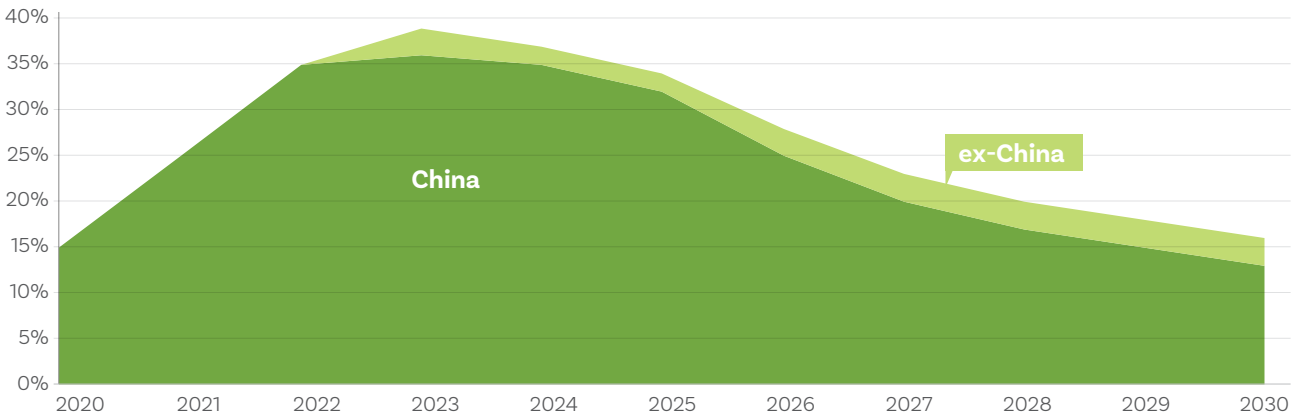
The LFP debate: Will EV makers accept the trade-off of lower energy density?

Lithium Iron Phosphate batteries (LFP) have already been accepted by the stationary battery Energy Storage System (ESS) sector, where energy density (thus weight) tends to be a less decisive factor. But given ESS only makes up a relatively low share of total battery raw material demand, the use of non-nickel/cobalt bearing batteries will not materially impact total battery raw material demand.

However, over the past couple of years, some EV makers have started to accept this trade-off of lower energy density for lower cost advantage in some of their car models. While this trend has so far been almost exclusive to carmakers in China, the data demonstrates LFP has gained market share over past 2 years.

Figure 6 – **LFP global share increasing from 15% in 2020 to 36% by 2023**



Source: UBS

Trade-offs

There are two important trade-offs when comparing LFP with nickel/cobalt bearing batterie for cars:

1. Energy Density, and
2. Cost.

Both trade-offs favour LFP over the next 2-4 years but swing back to nickel-cobalt's advantage in the mid-2020s.

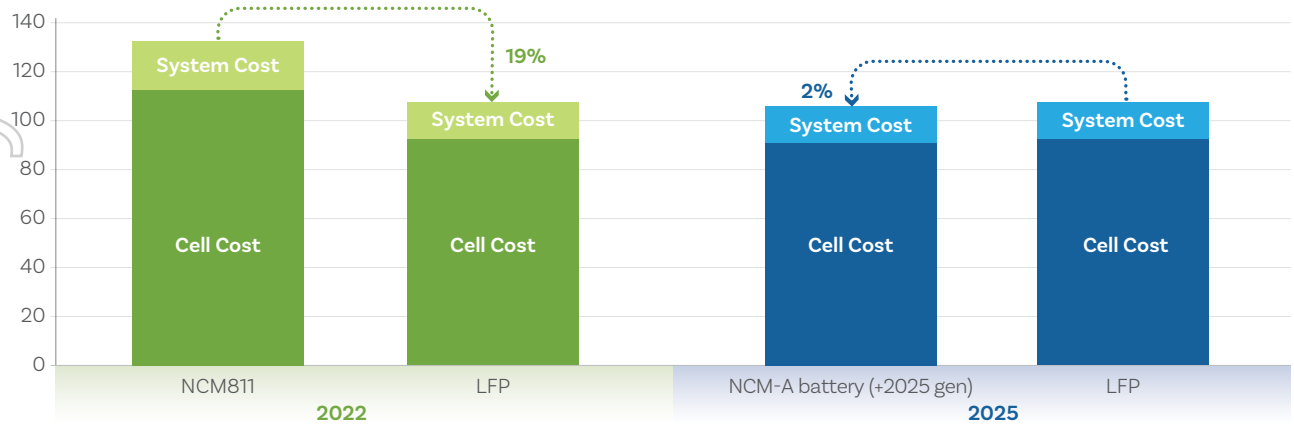
Energy density

LFP batteries possess good power characteristics, enhanced safety for high temperature or demanding conditions and a long-life span. However, they have relatively low energy density and poor performance at lower temperatures. While they can be fully discharged and charged without as much damage to the cell over time, LFP batteries do not generally deliver the same range as NCA and other types. This is a trade-off some carmakers / consumers are willing to make, especially in high- population centres where range is not as large of an issue as places where people tend to travel further distances outside of cities. However, this technical advantage with iron-based cells has largely plateaued. Whereas with nickel-cobalt based technology, there is a clear technological path to raise energy density through the end of the decade, thus eroding LFP's attractiveness.

Cost

In the current inflationary market conditions, iron cells have a cost advantage over nickel / cobalt. According to UBS, LFP has a 19% cost advantage compared to the mainstream NCM 8 series. However, over time, technological advances will even out that advantage. While nickel cells will see iterative upgrades every 18–24 months, the LFP cathode crystal structure puts a cap on lithium-ion storage capacity – meaning iron cells will tread water over the next decade and are expected to be eventually phased out.

Figure 7 – **2022–2024 battery system costs**



Source: UBS

Broadening choices

Despite the longer-term advantages of the nickel / cobalt bearing batteries, some carmakers, such as US carmakers Tesla and Rivian are moving forward with LFP cells to diversify their model offerings, expand available supply and broaden the cost base. Volkswagen will also use LFP batteries in its "entry-level" EVs. Concern over nickel and cobalt supply security and bouts of unsettling price volatility also led to those decisions. However, this strategy, while favouring the lower-end of the EV market, has its limits. The installed capacity base of LFPs and existing expansion plans appear to have plateaued. Battery researchers Roskill (now Wood Mackenzie) estimate 95% of LFP cathode manufacturing is based in China, and expansion plans have drastically slowed. Moreover, there has not been a financial investment decision (FID) on iron EV battery capacity outside of China. From FID to commercialisation large scale battery factories require 3-5 years. Consequently, until there is more investment in the segment, there is a near-term cap on LFP share.

Currently the big three South Korean battery makers (LG Energy Solution, Samsung SDI and SK On) are focusing on high-nickel NCM and NCA batteries (products with a nickel content of at least 90%).

In summary, while LFPs have gained some market share over the past two years, those gains are expected to plateau and eventually erode due to continued performance enhancement in nickel/cobalt batteries.

Cobalt in Waste Streams Project update

During the quarter COB liaised with the Queensland Department of Resources for an initial testwork sample. The first testwork sample was recently received and testwork will commence shortly.

Corporate News

Expenditure

COB's activities primarily relate to exploration and evaluation of the BHCP. There were no activities related to production or development. During the quarter COB incurred[1] $2.0m on exploration and evaluation activities, primarily relating to technical services.

COB's accompanying Appendix 5B (Quarterly Cashflow Report) includes an amount in item 6.1 which constitutes directors' fees and salaries.

Other

During the quarter COB's share price fluctuated between 42 cents and 90 cents.

During the Quarter, COB received $4.2m from the exercise of placement and consultant options. There are presently 15.3m outstanding "in the money" placement options which if converted will contribute a further A$6.9 million.

1 *Refers to expenditure incurred on an accounting accruals basis as distinct from expenditure reported in the Appendix 5B, which refers to expenditure on a cash basis. The amounts were extracted from the unaudited records of the COB Group.*

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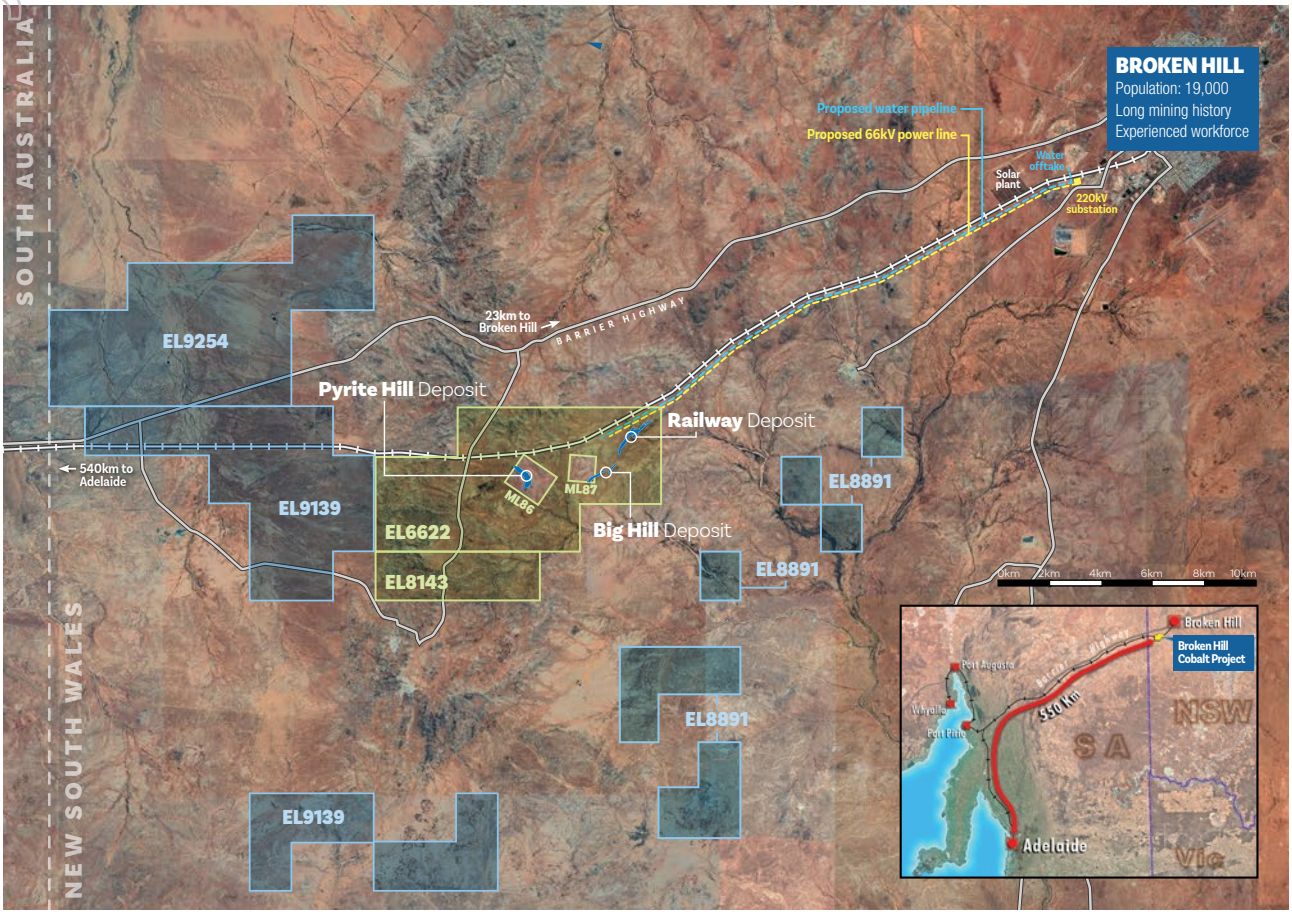
The Broken Hill Cobalt Project

The Broken Hill district map shows the proximity of the Broken Hill Cobalt Project to Broken Hill, the supporting rail line and road network, as well as the availability of both power and water utilities to support future production.

Figure 8 – **Broken Hill Cobalt Project Tenement Map**



Cobalt Blue Background

Cobalt Blue Holdings Limited (ASX: COB) is an exploration and project development company. Work programs advancing the Broken Hill Cobalt Project in New South Wales continue. Cobalt is a critical mineral in strong demand for new generation batteries, particularly lithium-ion batteries now being widely used in clean energy systems.

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.

This announcement was approved by the Board of Directors.

For more information, please contact:

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Investor Relations/Commercial Manager
joel.crane@cobaltblueholdings.com

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Previously 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

- 23 March 2022: Commencing underground development
- 2 March 2022: Grant of Australian Major Project Status

COB confirms it is not aware of any new information or data that materially affects the information included in the original market announcements and where applicable in the case of estimates of Mineral Resources or Reserves, 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 any Competent Person's findings presented have not been materially modified from the original market announcement.

Tenement Holding

The COB Group held the following mining tenements at the end of the quarter:

Broken Hill Cobalt Project

Tenement	Location	Interest at end of quarter
EL 8891	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 6622	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 9254	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 8143	Broken Hill Region, New South Wales	100% legal and beneficial interest
EL 9139	Broken Hill Region, New South Wales	100% legal and beneficial interest
ML 86	Broken Hill Region, New South Wales	100% legal and beneficial interest
ML 87	Broken Hill Region, New South Wales	100% legal and beneficial interest

No tenements or farm-in or farm-out agreements were disposed of during the quarter.

Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

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Name of entity

COBALT BLUE HOLDINGS LIMITED

ABN	Quarter ended ("current quarter")
90 614 466 607	March 2022

Consolidated statement of cash flows		Current quarter $A'000	Year to date (9 months) $A'000
1.	**Cash flows from operating activities**		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	-	-
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(330)	(825)
	(e) administration and corporate costs	(330)	(1,350)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	-	-
1.5	Interest and other costs of finance paid	(1)	(5)
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	39
1.8	Other (provide details if material)	-	-
1.9	**Net cash from / (used in) operating activities**	**(661)**	**(2,141)**

2.	**Cash flows from investing activities**		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	(505)	(1,550)
	(d) exploration & evaluation	(1,285)	(3,594)
	(e) investments	-	-
	(f) other non-current assets	(116)	(223)

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Consolidated statement of cash flows		Current quarter $A'000	Year to date (9 months) $A'000
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (Research and development incentive refund)	-	339
2.6	**Net cash from / (used in) investing activities**	**(1,906)**	**(5,028)**

3.	**Cash flows from financing activities**		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	6,526
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	4,225	4,327
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	(402)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	(108)	(310)
3.10	**Net cash from / (used in) financing activities**	**4,117**	**10,141**

4.	**Net increase / (decrease) in cash and cash equivalents for the period**		
4.1	Cash and cash equivalents at beginning of period	10,860	9,438
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(661)	(2,141)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(1,906)	(5,028)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	4,117	10,141

Consolidated statement of cash flows		Current quarter $A'000	Year to date (9 months) $A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	**Cash and cash equivalents at end of period**	**12,410**	**12,410**

5.	**Reconciliation of cash and cash equivalents** at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	**Current quarter $A'000**	**Previous quarter $A'000**
5.1	Bank balances	12,410	10,860
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	**Cash and cash equivalents at end of quarter (should equal item 4.6 above)**	**12,410**	**10,860**

6.	**Payments to related parties of the entity and their associates**	**Current quarter $A'000**
6.1	Aggregate amount of payments to related parties and their associates included in item 1	145
6.2	Aggregate amount of payments to related parties and their associates included in item 2	

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

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7.	**Financing facilities** *Note: the term "facility' includes all forms of financing arrangements available to the entity.* *Add notes as necessary for an understanding of the sources of finance available to the entity.*	**Total facility amount at quarter end $A'000**	**Amount drawn at quarter end $A'000**
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	**Total financing facilities**	-	-
7.5	**Unused financing facilities available at quarter end**		-

7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

On 17 January 2020 the Company executed agreements with American Rare Earths Limited (ASX: ARR) to acquire 100% ownership and legal title of the Broken Hill Cobalt Project (including all tenements). The consideration included a five-year $3,000,000 secured promissory note (PN) issued to ARR, with interest of 6% per annum payable in years 4 and 5. The PN can be repaid by the Company at any time in whole or in part without penalty. Once the PN is repaid in full, the security will be extinguished.

8.	**Estimated cash available for future operating activities**	**$A'000**
8.1	Net cash from / (used in) operating activities (item 1.9)	(661)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(1,285)
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(1,946)
8.4	Cash and cash equivalents at quarter end (item 4.6)	12,410
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	12,410
8.7	**Estimated quarters of funding available (item 8.6 divided by item 8.3)**	6.4

Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.

8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:

8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: Not applicable

8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: Not applicable

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: Not applicable

Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.

Compliance statement

1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.

2 This statement gives a true and fair view of the matters disclosed.

Date: 27 April 2022

Authorised by: The Board
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.

2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.

3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.

4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [*name of board committee – eg Audit and Risk Committee*]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".

5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.

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