



RESOURCES RISING STARS CONFERENCE

# Australia's next major copper producer

Alasdair Cooke, Executive Director,  
May 2023

ASX | CVV

  
**CARAVEL**  
MINERALS



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### Previous Disclosure

This document may include references to information that relates to Mineral Resources prepared and first disclosed under the JORC Code 2012. The information references the Company's previous ASX announcements

- 23 November 2021 "Major Mineral Resource Upgrade – Caravel Copper Project"
- 12 July 2022 "Caravel Copper Project Pre-Feasibility Study Highlights Robust, Executable Project and Reports Maiden Ore Reserve"
- 20 September 2022 "Pre-feasibility Study Update - Caravel Copper Project"

- 22 March 2023 "Molybdenum Circuit Included in the Definitive Feasibility Study"
- 13 April 2023 "Pre-feasibility Study Processing Update - Caravel Copper Project"

These announcements are available to view on the Company's website [www.caravelminerals.com.au](http://www.caravelminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original market announcement.

### Competent Persons Statements

The information in this report that relates to Exploration Results and Exploration Targets is based on and information compiled by Mr Peter Pring, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pring is a Senior Exploration Geologist with and a full-time employee of Caravel Minerals. Mr Pring is a shareholder of Caravel Minerals. Mr Pring has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration, and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Pring consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on information compiled by Mr Lauritz Barnes, a Competent Person who is a member of both the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Barnes is a consultant to Caravel Minerals and is employed by Trepanier Pty Ltd. Mr Barnes has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves

Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Barnes consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Ore Reserves is based upon information compiled by Mr Steve Craig, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Craig is a consultant to Caravel Minerals and is employed by Orology Consulting Pty Ltd. Mr Craig has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Craig consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

### Forward Looking Statements

This document may include forward looking statements. Forward looking statements include, but are not necessarily limited to, statements concerning Caravel Minerals planned exploration programmes, studies and other statements that are not historic facts. When used in this document, the words such as "could", "indicates", "plan", "estimate", "expect", "intend", "may", "potential", "should" and similar expressions are forward looking statements. Such statements involve risks and uncertainties, and no assurances can be provided that actual results or work completed will be consistent with these forward-looking statements.

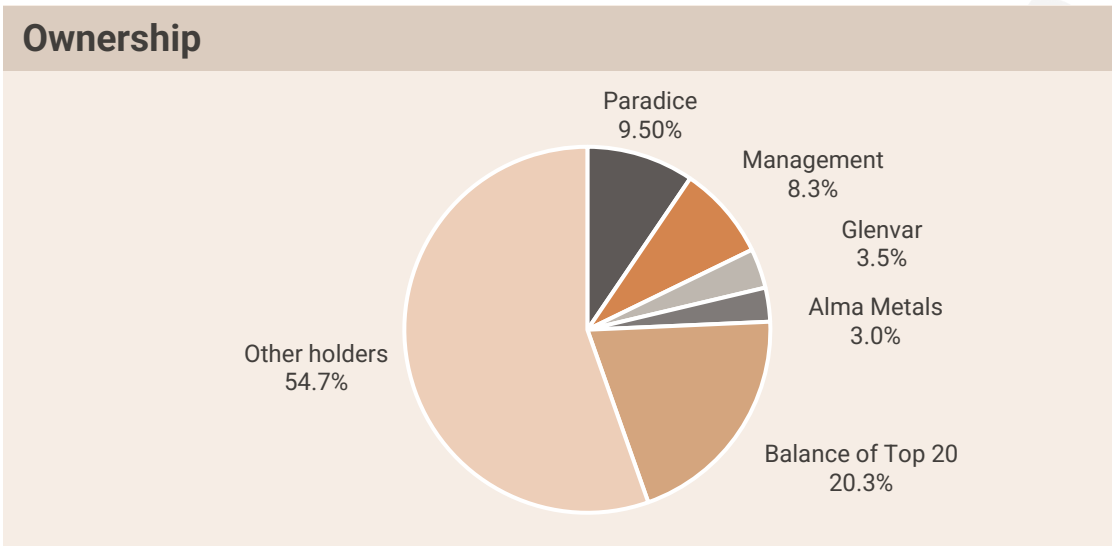
### Authorisation of release

Release of this market announcement is authorised by Alasdair Cooke, Caravel Minerals Limited's Executive Director.

# CORPORATE SNAPSHOT

Snapshot	
ASX ticker	CVV
Share price (16 May 2023)	24c
Shares on issue	480M
Unlisted options (30-75c strike)	27M
Market capitalisation (16 May 2023)	\$115M
Cash (31 March 2023)	\$10M
Enterprise Value	\$105M
Debt	Nil

## Twelve-month Share Price Performance



Board	Management
Wayne Trumble – Chairman	Dan Davis – CFO and CoSec
Richard Monti – Non-Executive Director	Jason Vos – Mining
Alasdair Cooke – Executive Director	Stuart Smith – Metallurgy
Don Hyma – Managing Director	Mick Klvac – Regulatory Approvals
	Bruce McLarty – Commercial and Land
	Chantal Hartstone – Corporate Affairs
	Peter Pring – Geology and Exploration

# CARAVEL OVERVIEW



## Copper

- **Key commodity** in global decarbonisation initiatives
- **Growing supply gap** expected from the middle of the decade, in-line with first production from Caravel



## Globally significant, large-scale project

- **Mine life of 25+ years**
- Largest undeveloped copper project in Australia
- Reserve of 1.4Mt Cu and **Resource of 2.8Mt**, in accordance with JORC



## Robust financials

- **Pre-tax NPV<sub>7</sub> of A\$2bn and IRR of 21% at a US\$4.0/lb Cu price**
- 15% increase in Cu price translates to a A\$1.1bn increase in NPV<sub>7</sub>



## Simple project

- **Open-cut, bulk-mining operation**
- **Conventional copper flotation flowsheet**
- **Good existing infrastructure** for power, roads, ports, comms



## Tier 1 location

- **Western Australia ranked #1** in the Fraser Institute 2021 survey
- **~2-hour drive from Perth**



## Significant upside

- **Significant exploration potential** to expand the resource
- **Opportunities to apply new technologies** for increasing feed grade



## Experienced Team

- Experienced Board and management team
- Management and other stakeholders collective holding >20%

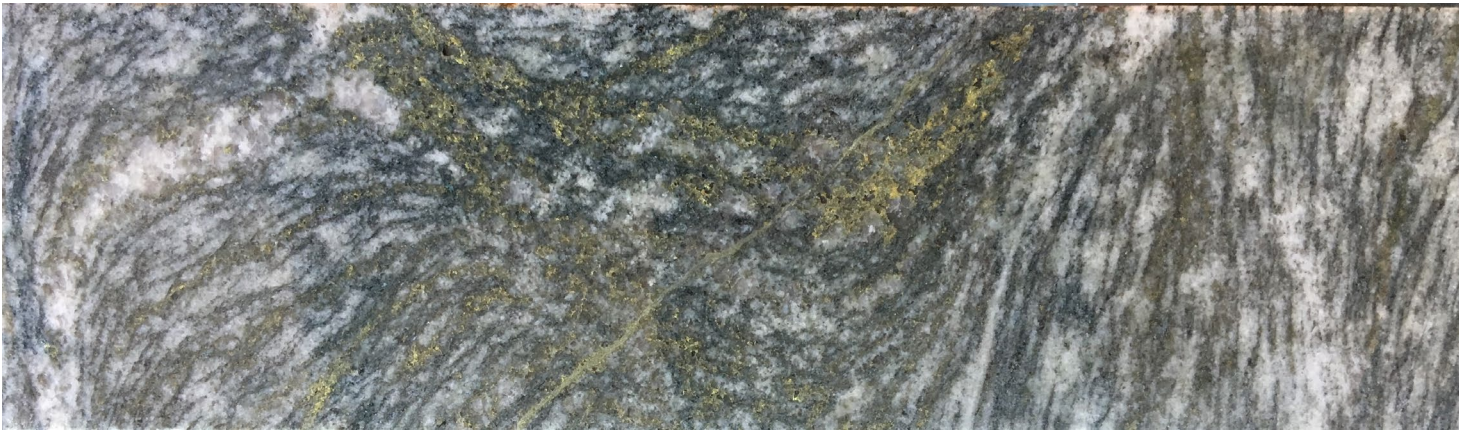




# THE YILGARN IS EMERGING AS A SIGNIFICANT MINERAL PROVINCE

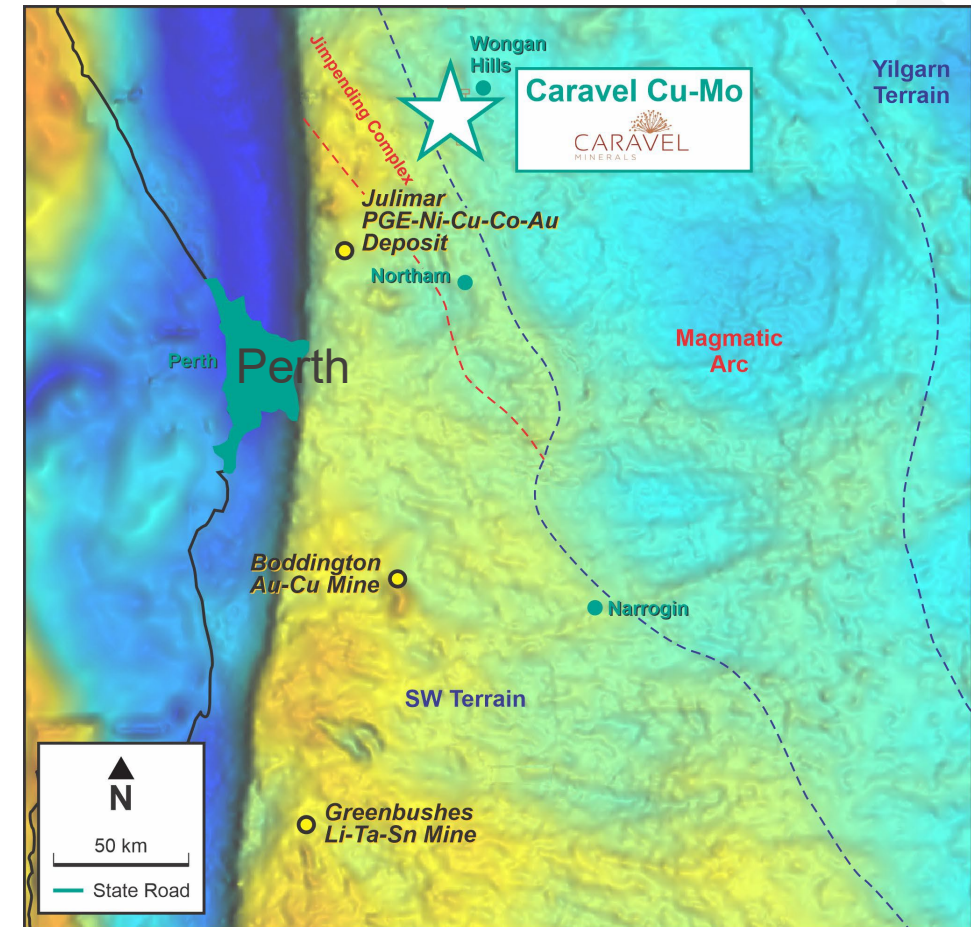
## A relatively unexplored area hosting several of Australia's largest and important mineral discoveries:

- Boddington – Australia's largest gold mine (+20Moz Au)<sup>1</sup>
- Greenbushes – World's largest hard rock lithium mine (8Mt LCE)<sup>2</sup>
- Julimar – Australia's largest PGE deposit (10Moz PGE, Au)<sup>3</sup>
- **Caravel Copper Project – Australia's largest undeveloped copper deposit**



Copper mineralisation in diamond core sample from Bindi deposit

The Caravel deposits are Archaean porphyry copper systems, formed ~2.7 billion years ago on the plate margin of the Yilgarn Craton. Their formation is similar to modern porphyry copper deposits but has been deformed and does not outcrop due to surface weathering. They were only discovered in 2010 by roadside geochemical sampling.



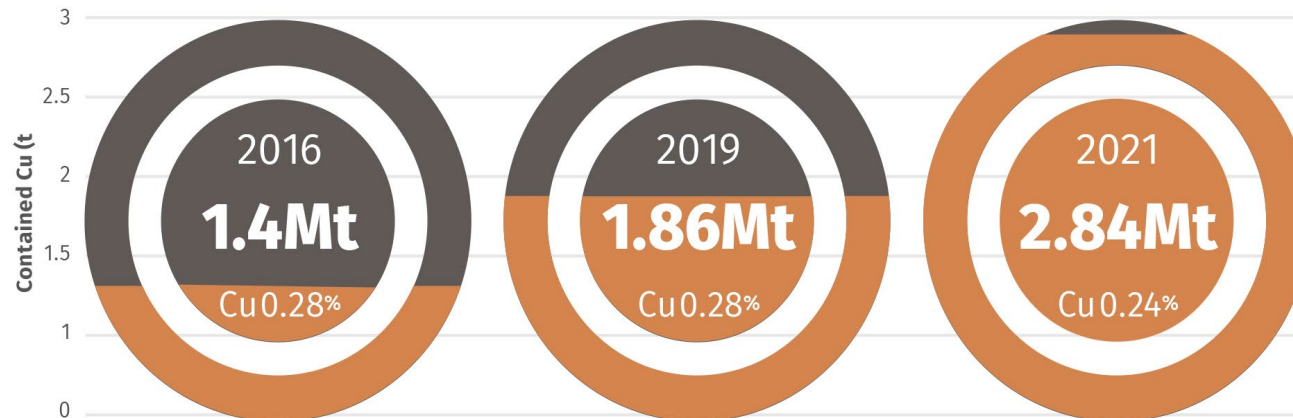
Gravity data for South-Western Australia

Source: 1. Newmont Corporation [www.newmont.com](http://www.newmont.com), 2. <https://www.bbc.com/future/article/20221110-how-australia-became-the-worlds-greatest-lithium-supplier>, 3. Chalice Mining [www.chalicemining.com.au](http://www.chalicemining.com.au)

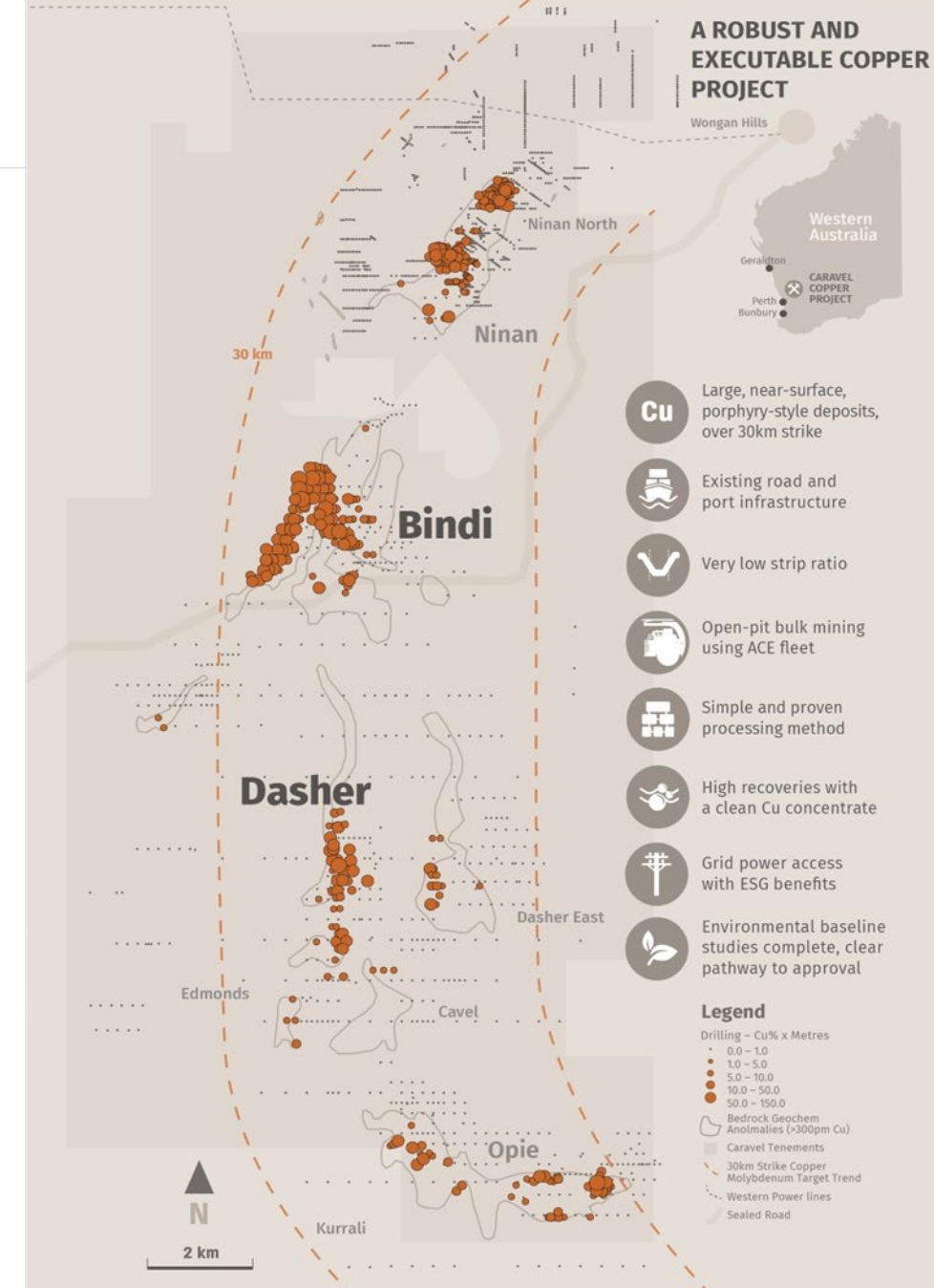
# RESOURCE CONTINUES TO GROW

## Large, near-surface, porphyry style orebodies

- ~80% of the 25+ year mine life is in Ore Reserve
- Well-defined geological model with **high conversion of Resource to Reserves ~88%**
- **Potential to mine Dasher earlier** pending further drilling
- Other mineralised systems along 30km strike to be evaluated



23 November 2021 "Major Mineral Resource Upgrade – Caravel Copper Project"

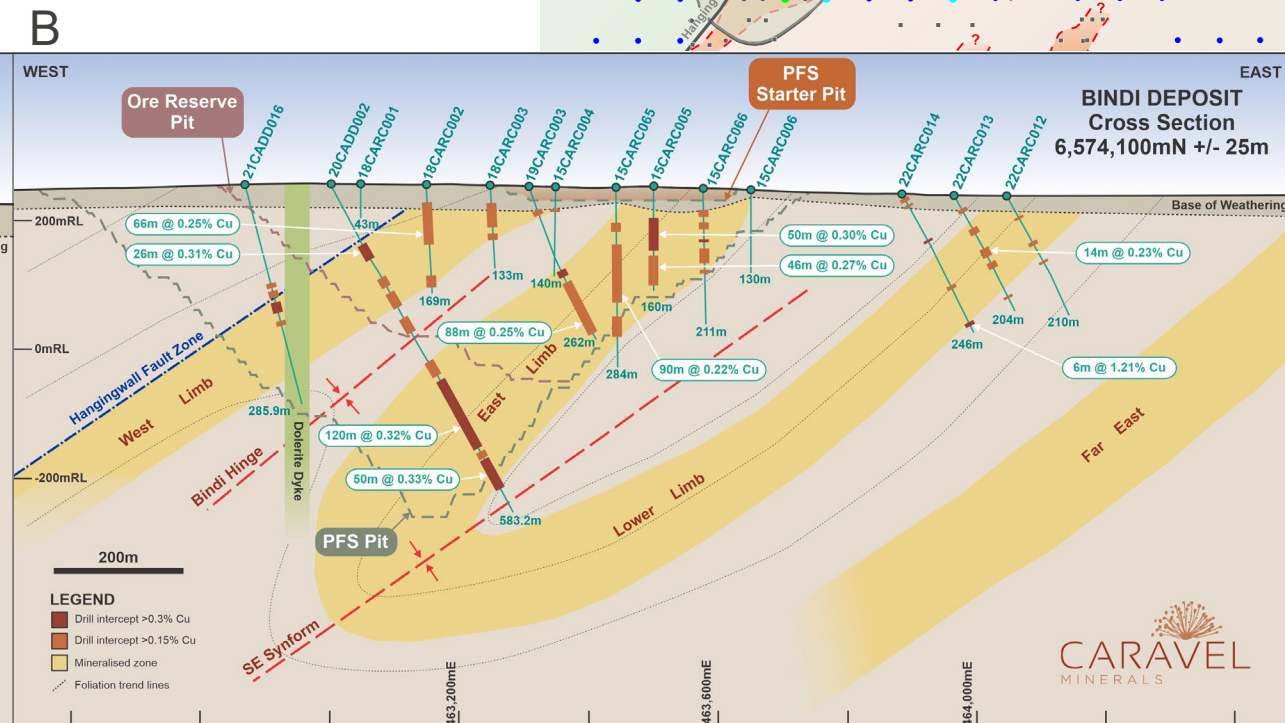
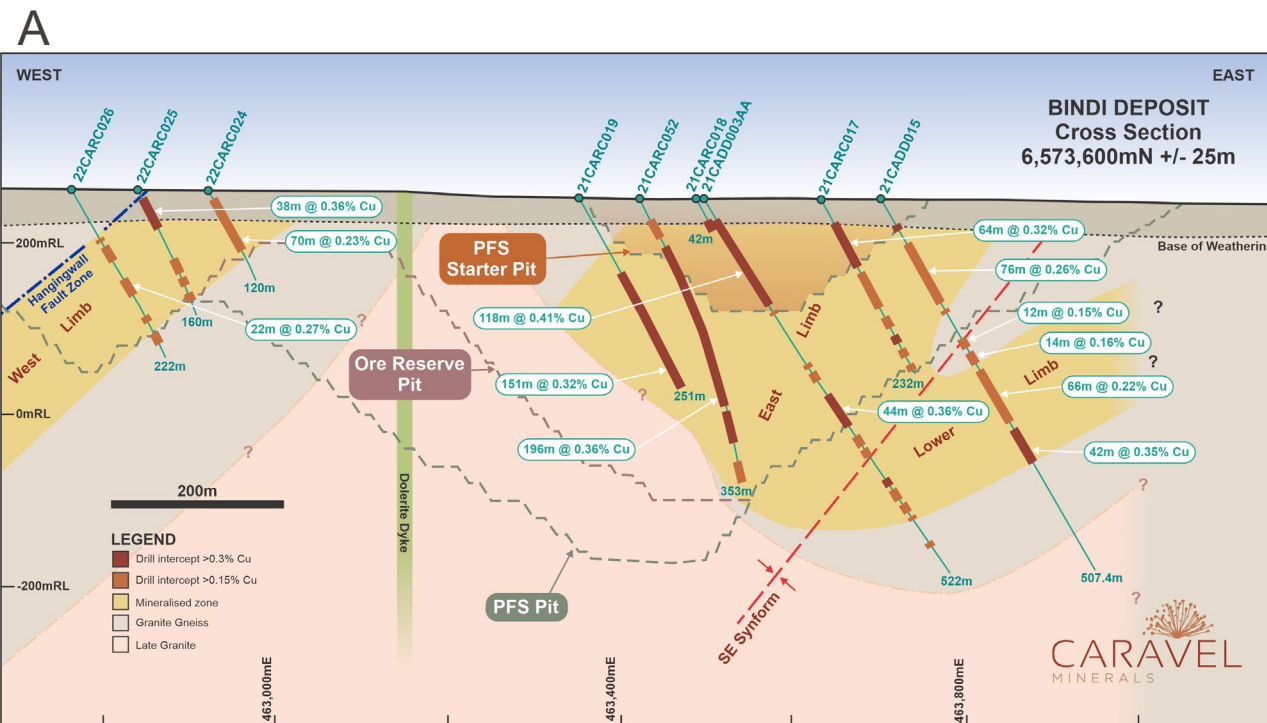
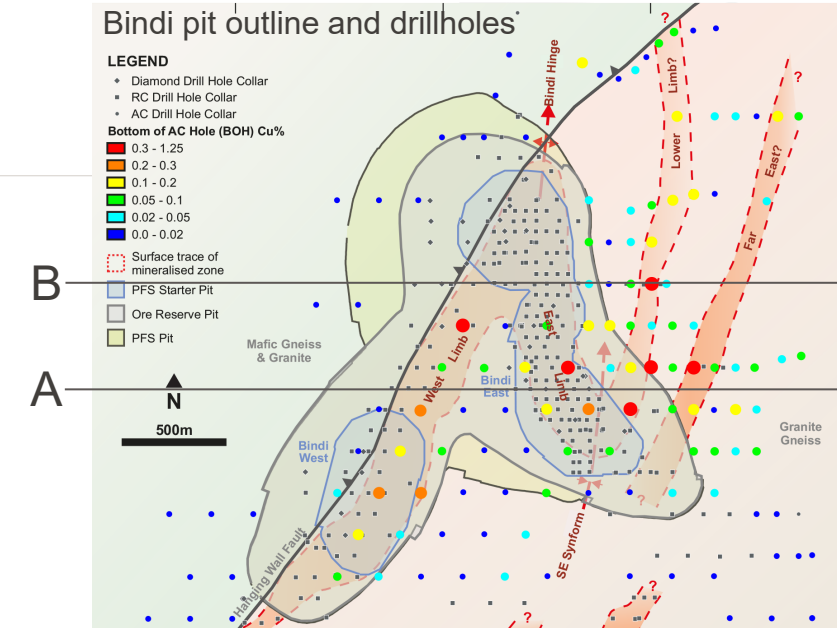




# TARGETS FOR RESOURCE GROWTH POTENTIAL

## Bindi Resource remains open to the east

- Bindi 'Lower Limb' developing as significant resource upside
- Wide zones of mineralisation above cut-off grades east of planned Bindi pit

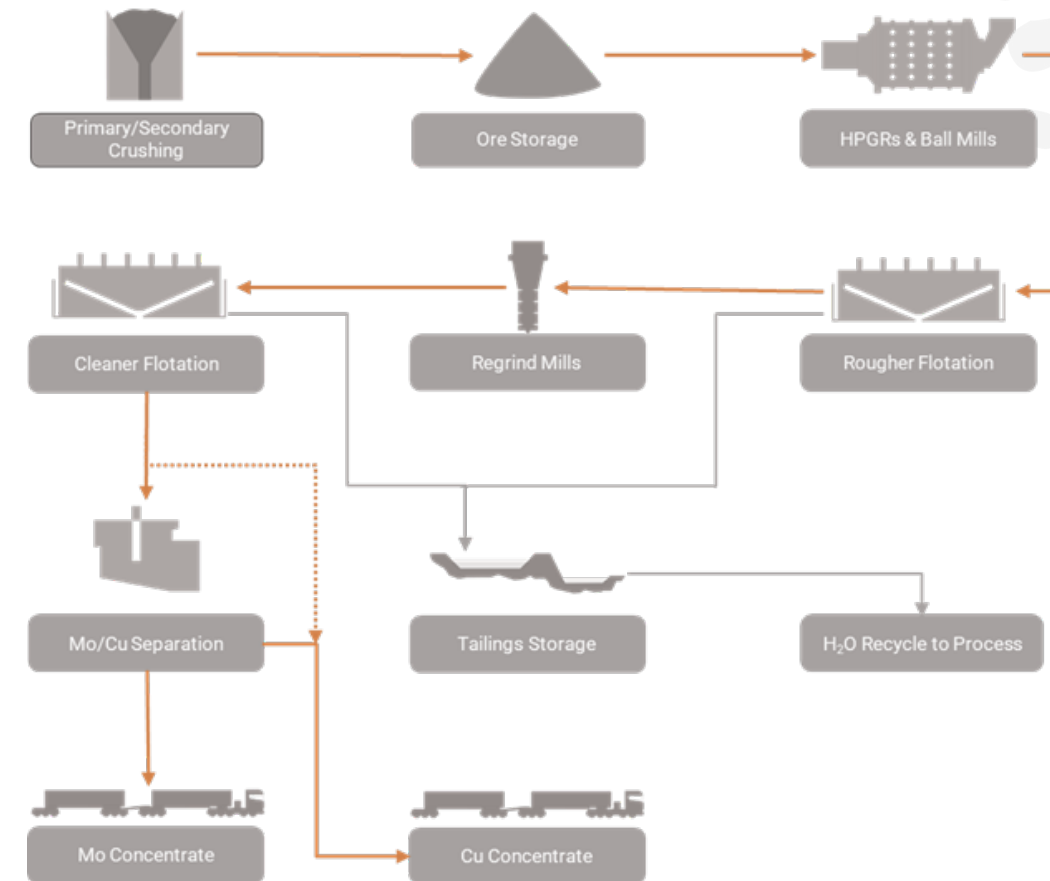
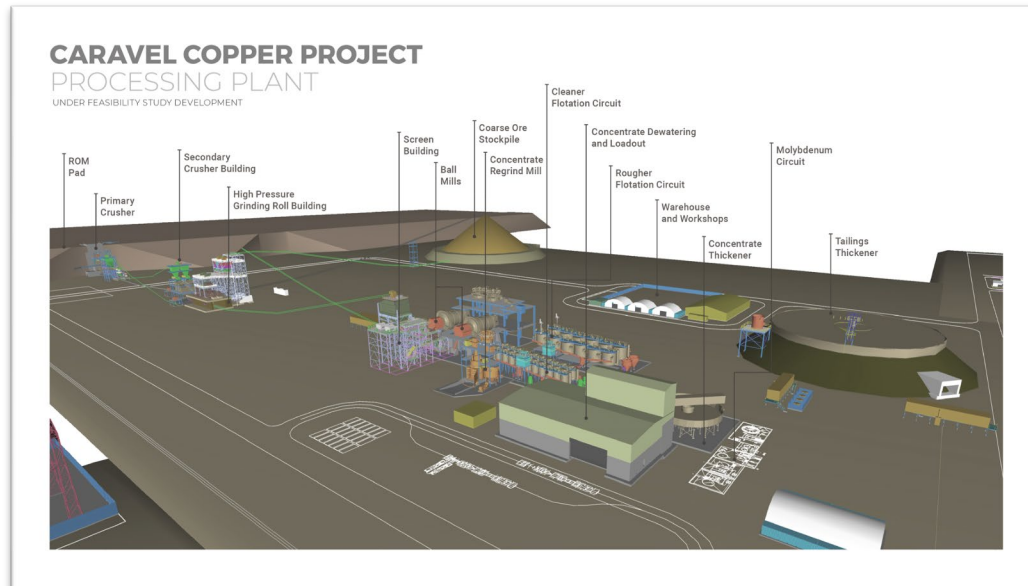


# INDEPENDENT PROCESS FLOWSHEET REVIEW CONFIRMS NO TECHNICAL GAPS

Independent review completed by Lycopodium Minerals Pty Ltd

Focussed on process simplification and industrially proven designs

- Process plant capacity increase from ~27Mtpa to ~30Mtpa
- **Molybdenum circuit** added
- Coarse Particle Flotation (CPF) deferred
- **Cu recovery adjustment from 92% to 89%**
- **Process flowsheet basis now established for the DFS**





# MODERN MINING TECH DRIVES SAFETY AND EFFICIENCY

## WA is a global leader in mine technology development and operation

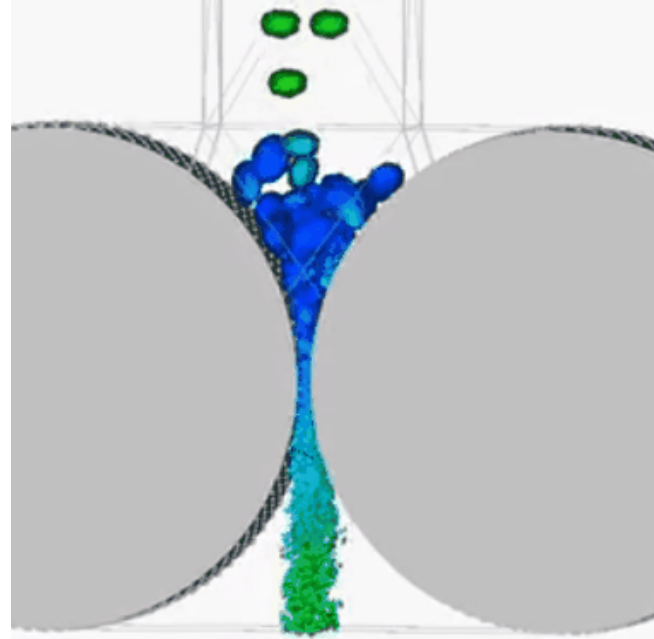
- **Adopting proven autonomous haulage system (AHS) technology** - reduces labour costs, reduces operating costs and increases productivity
- **Implementing trolley assist in ~year 5** when pit ramps are deeper - reduces diesel use and increases productivity
- **Grid power supports a fully electrified fleet** including excavators and drills to reduce costs, lower emissions
- **Shortlisted to two fleet partners and discussing build slots and finance**



# MODERN MINING TECH DRIVES SAFETY AND EFFICIENCY

## WA is a global leader in mine technology development and operation

- **Adopting high pressure grinding rolls (HPGR)** – substantial reduction in power costs (~27%), consumables (no grinding media) and greater operating flexibility
- **Well established technology in Australia** – operating at Boddington, Greenbushes, Cadia and Iron Bridge (largest installation globally)
- **Pilot tests have demonstrated Caravel ores perform well using HPGR** – higher throughputs allowed recent throughput upgrade to 30Mtpa



17 March 2023 "DFS Update - Caravel Copper Project"



# PREPARING FOR DEVELOPMENT THROUGH KEY PARTNERSHIPS

## Lycopodium appointed as lead engineer

- ✓ Bespoke mineral processing plant design experience
- ✓ Recent experience in FQMLs Cobre Panama project
- ✓ Local Perth team

## Civmec uniquely positioned to assist Caravel

- ✓ Located 40 minutes south of Perth in a major industrial park
- ✓ Steel fabrication and module assembly under one roof
- ✓ Module transport and site installation capability
- ✓ Large workforce and demonstrated process plant experience
- ✓ Integrated early into engineering phase



## World class mining fleet capability in WA

- ✓ Autonomous operation the norm in WA
- ✓ Next generation truck and excavator design in development
- ✓ Fleet finance and long-term maintenance opportunity

## Major process equipment manufacturers in Perth

- ✓ Largest global HPGR installation & maintenance facility is located in WA
- ✓ Process equipment packaging and financing under evaluation



# VALUE UPSIDE

## Resource Extension Drilling

- Dasher – potential for **higher Cu grades** to be accessed earlier in mine plan
- Bindi – significant **unclassified mineralisation** may be converted into JORC Inferred Resource
- Bindi Lower Limb – potential for significant **extension of resources** adjacent to existing PFS pit shell

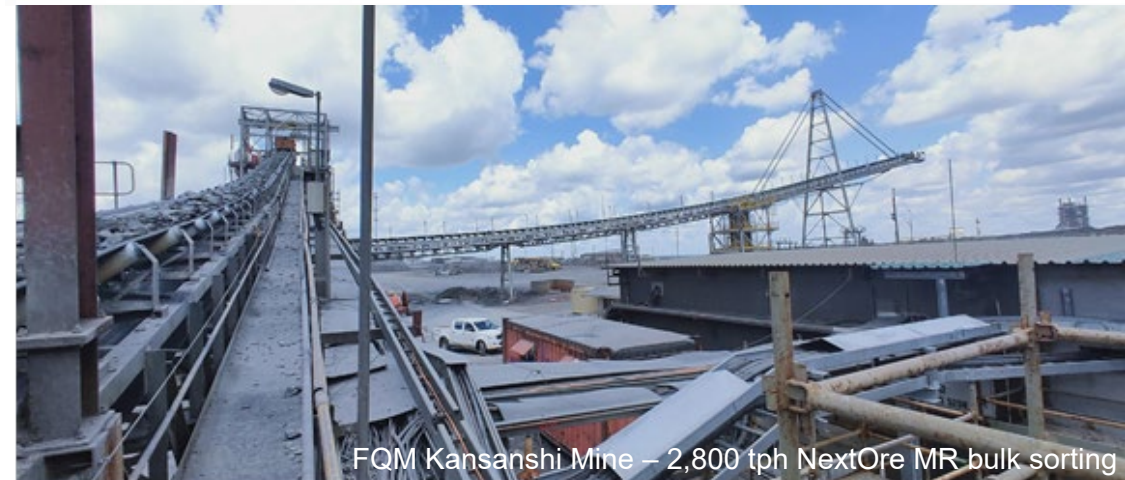
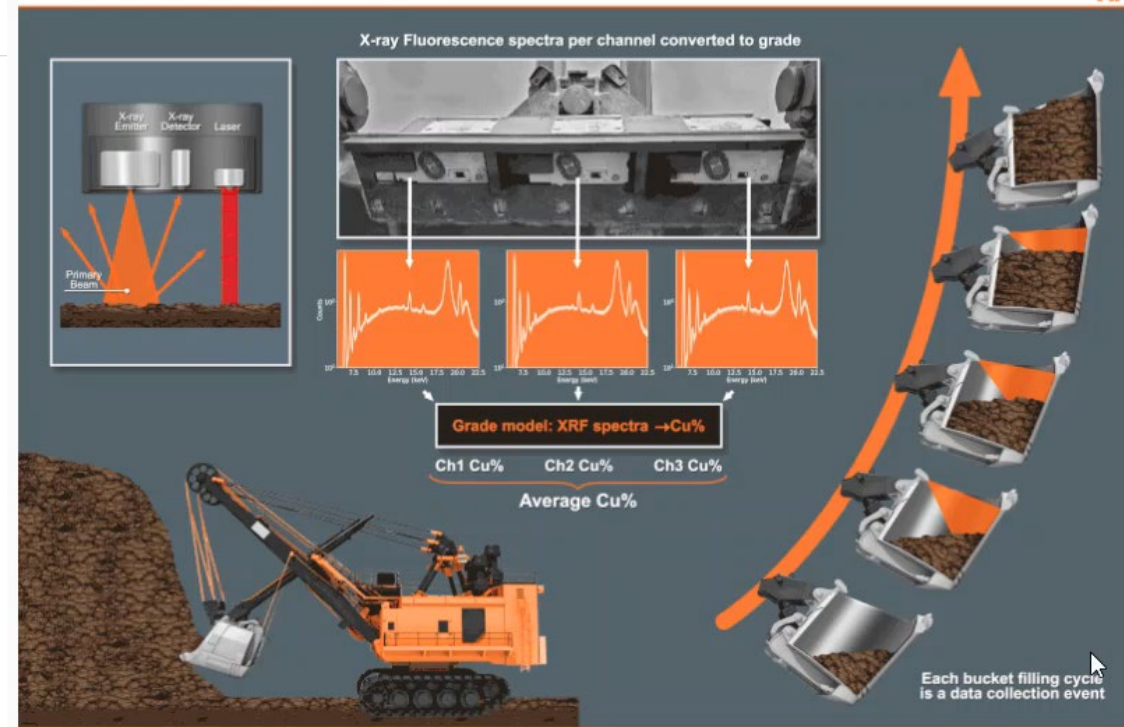
## Revised Mine Plan

- Potential to bring **additional Inferred Resource** and **extensions into the production schedule** to extend the mine life beyond 30 years

## New Technologies and Efficiencies

- **Coarse Particle Flotation** test work continuing, potential for substantial throughput increase as later expansion option
- Assessing **excavator bucket and conveyor belt sensing technology** to reject waste prior to processing, allowing higher copper feed through existing mill design and reduced losses to waste
- Assessing options for the **tailings facility design to reduce the footprint** and increase water recycle to the process plant

## How ShovelSense Works





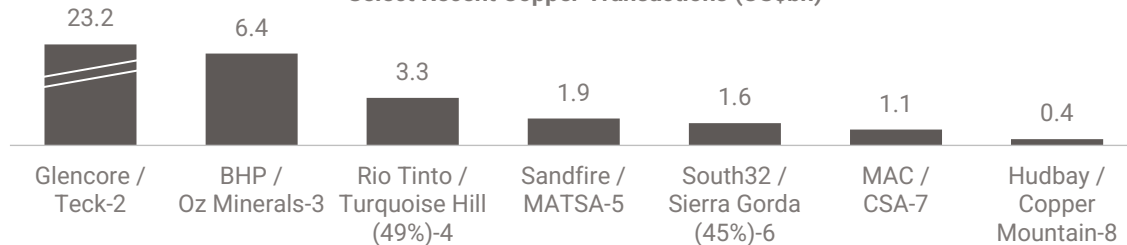
# PRODUCTION SET TO COINCIDE WITH A WIDENING SUPPLY GAP

## There are significant risks to new supply...

- Fiscal and social difficulty in Central and South America
- Over \$30B of investment required by Codelco and BHP to sustain production
- New projects pipeline at all time low

## M&A in focus with copper assets growing in strategic significance...

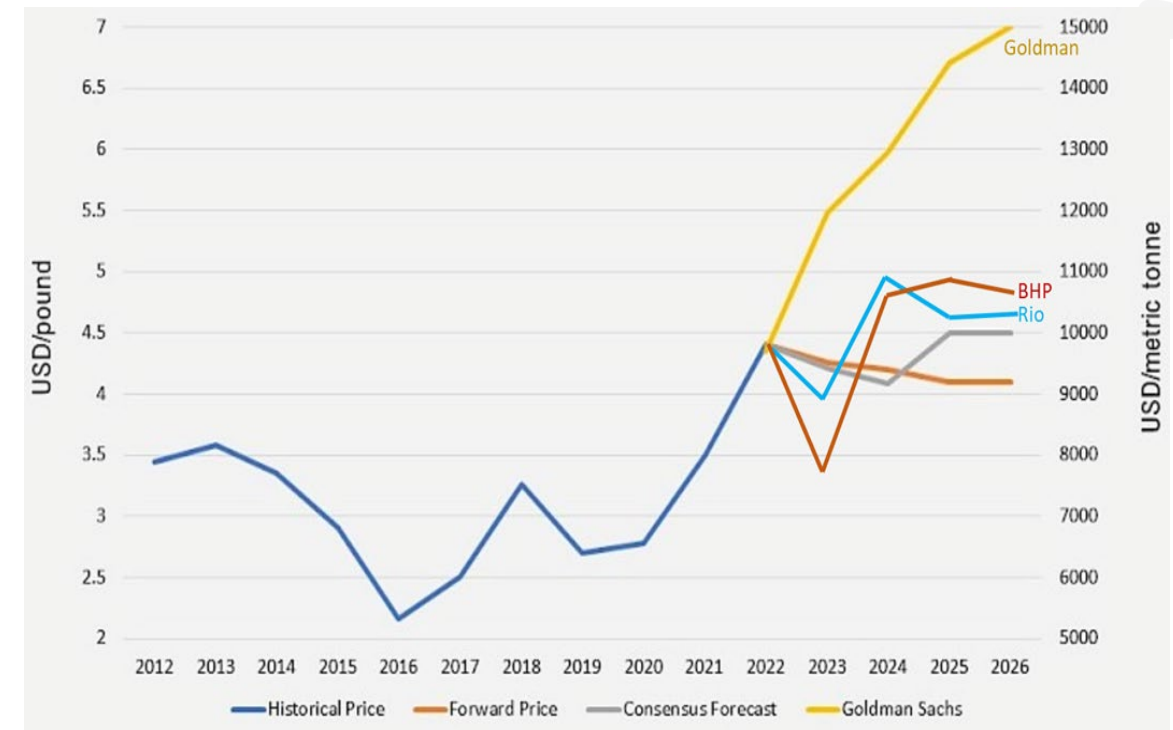
Select Recent Copper Transactions (US\$bn)<sup>1</sup>



1. Shown on an equity value basis, as at the announcement date. Where applicable, converted to US\$ based on FX as at the announcement date. Where multiple offers are announced, the announcement date represents the date of the final revised offer.
2. <https://www.teck.com/news/news-releases/2023/teck-confirms-receipt-of-revised-unsolicited-acquisition-proposal-from-glencore>
3. <https://www.bhp.com/news/media-centre/releases/2023/05/completion-of-oz-minerals-acquisition>
4. <https://www.riotinto.com/en/news/releases/2022/rio-tinto-completes-acquisition-of-turquoise-hill>
5. <https://www.sandfire.com.au/2022/02/01/sandfire-completes-acquisition-of-matsa/>
6. [https://www.south32.net/docs/default-source/all-financial-results/all-financial-results-reports-and-presentations/investor-presentation---sierra-gorda-acquisition.pdf?sfvrsn=edd86229\\_2](https://www.south32.net/docs/default-source/all-financial-results/all-financial-results-reports-and-presentations/investor-presentation---sierra-gorda-acquisition.pdf?sfvrsn=edd86229_2)
7. <https://www.metalsacquisition.com/news/press-releases/detail/45/metals-acquisition-corp-to-acquire-the-csa-copper-mine>
8. <https://hudbayminerals.com/investors/press-releases/press-release-details/2023/Hudbay-and-Copper-Mountain-Combine-to-Create-a-Premier-Americas-Focused-Copper-Producer/default.aspx>

## Copper forecasts support future development...

- Lower price forecasts assume new production comes on-stream as scheduled
- Goldman Sachs assumes high demand and delayed new supply
- Major global producers are forecasting US\$4.50 to US\$5.00/lb through to 2026
- Project financials assume US\$4.00/lb, US\$0.50 price increase adds A\$0.9B of NPV<sub>7</sub>



Source: <https://www.goldmansachs.com/insights/pages/gs-research/copper-is-the-new-oil/report.pdf>, various BHP and Rio Tinto published price forecasts.

# PROJECT FUNDING AND SCHEDULE TO FIRST PRODUCTION (MID-2026)

## Staged approach to project funding

### 1. Vendor financing

- Mining fleet and OEM vendor financing
- Reduces project financing requirement and, where performance based, reduces and transfers operating risks

### 2. Joint Venture and/or Offtake partner

- Few projects with scale of resource/production located in a favourable mining jurisdiction
- Attractive to a range of investors seeking near-term copper production opportunities
- Scale and quality of concentrate of interest to major copper smelters and traders seeking offtake agreements
- **Offtake agreement may be structured to include equity participation**

### 3. Traditional debt

- Commercial banks, Development Banks, ECA's
- Government funding support for critical minerals





# LATEST FINANCIAL RESULTS<sup>1</sup>

Independent process review identified opportunities to increase throughput and reduce costs, adding substantial value




**25+**  
YEARS

Life of Mine with Upside

**#1**

**WA**  
Best Mining  
Investment Location

Fraser Institute 2021



**USD**  
**\$1.23/lb**  
Cash Costs

After Mo, Ag, AU Credits

**AISC**


**USD**  
**\$ 2.07/lb**

Favourable Benchmarking



**AUD**  
**\$ 6.6B**  
Pretax Cash Flow

Significant Net Cashflow



**~65ktpa**  
~143Mlbs/yr  
Cu in Concentrate

~71ktpa first five years  
~156Mlbs/yr

**PROCESS  
PLANT**

**AUD**  
**\$1.165B**

Includes Supporting Infrastructure

**MINE  
PRE  
STRIP**

**AUD**  
**\$ 194M**

Mine Planning Opportunity

**MINE  
FLEET**

**AUD**  
**\$318M**

Fleet Finance Opportunity

**NPV<sub>7</sub>**

**AUD**  
**\$2.0B**  
PRE-TAX

US\$4/lb Cu, US\$20/lb Mo

**IRR**

**21%**

Payback less than 5 years

**Cu**

**2.84Mt**

Growing Mineral Resource



**1.3:1**

Low Life-of-Mine Strip Ratio



**25%**

High Grade Concentrate

1 - ASX Announcement dated 13 April 2023 – PFS Process Review Update

# INVESTMENT SUMMARY

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## **Near-term Australian copper producer, delivering ~65ktpa Cu and ~900t Mo metal per annum**

- 25+ year project life
- 1.4Mt Cu Reserves, 2.8Mt Cu Resources
- Simple open-cut bulk mining and conventional processing
- Low C1 (US\$1.23) and AISC (US\$2.07) costs
- Low capital intensity (~US\$13,000/annual tonne Cu)
- Project NPV A\$2.0B
- Strong ESG profile, low emissions, low environmental impact
- Substantial value upside via resource growth, optimised mine plan, and technology efficiencies
- Definitive Feasibility Study on a 30Mtpa operation due mid-2024







FOR MORE INFORMATION ASX:CVV

[caravelminerals.com.au](http://caravelminerals.com.au)



# APPENDIX - ORE RESERVES AND RESOURCES

## Caravel Copper Project Ore Reserve Summary

STATUS	UNITS		BINDI	DASHER	TOTAL
Proven	Cut-off Grade	Cu%	0.1	0.1	0.1
		Mt	105.4	–	105.4
		Cu%	0.27	–	0.27
	Contained	Cu Mt	0.28	–	0.28
Probable		Mt	369.6	108.4	478.0
		Cu%	0.23	0.27	0.24
	Contained	Cu Mt	0.84	0.29	1.14
Total		Mt	475.0	108.4	583.4
		Cu%	0.24	0.27	0.24
	Contained	Cu Mt	1.13	0.29	1.42

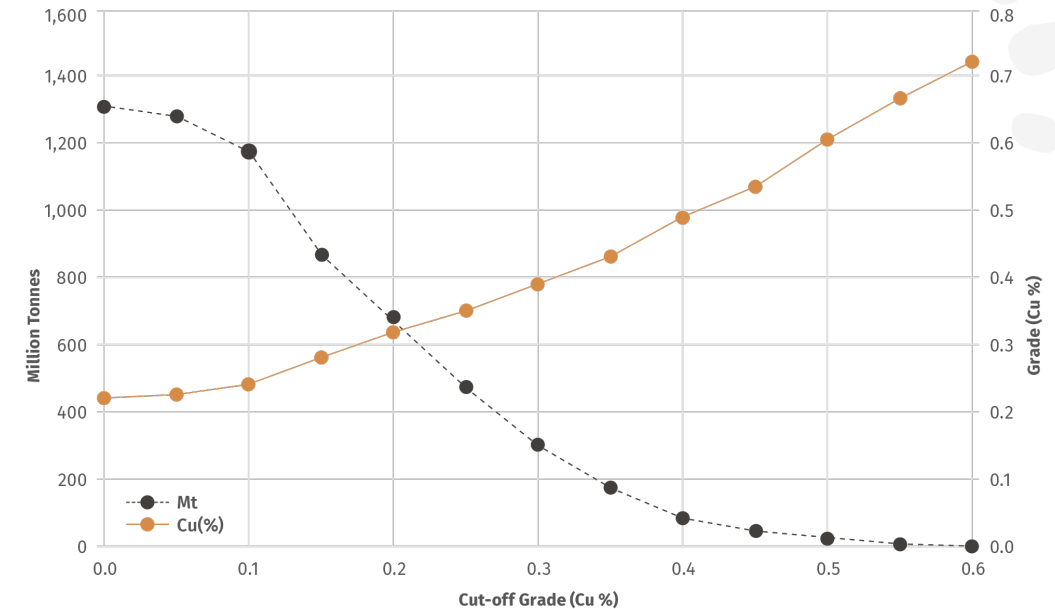
Note: Appropriate rounding applied

## Caravel Copper Project<sup>1</sup> November 2021 Mineral Resource at various Cu cut-off grades

CU CUT-OFF (%)	Mt	Cu (%)	Mo (ppm)	Cu (t)
0.10	1,180.6	0.24	48	2,843,700
0.15	874.9	0.28	57	2,457,200
0.20	678.7	0.31	64	2,116,600
0.25	481.2	0.35	71	1,671,600
0.30	305.2	0.39	80	1,189,400

Note: appropriate rounding applied

## CARAVEL COPPER PROJECT COMBINED GRADE AND TONNES (MEAS + IND + INF)



Grade vs. Tonnage curves for the combined Caravel Copper Project November 2021 Mineral Resource.

See ASX Announcement 23 November 2021 "Major Mineral Resource Upgrade – Caravel Copper Project",  
See ASX Announcement 12 July 2022 "Pre-feasibility Study – Caravel Copper Project"