



# BLACK CANYON

## ASX Announcement



09 May 2023

ASX:BCA

## Corporate Presentation – RIU conference

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Black Canyon (ASX: BCA) is pleased to release the following presentation that Executive Director, Mr Brendan Cummins will be presenting at the RIU Sydney Resources Round-up, on Tuesday 9 May.

The video of the presentation will be available from the company's website at [www.blackcanyon.com.au](http://www.blackcanyon.com.au) once received.

This announcement has been approved by the Board of Black Canyon Limited.

For further details:

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**BLACK CANYON**

# **PILBARA FOCUSED MANGANESE DEVELOPER AND EXPLORER**

Brendan Cummins – Executive Director  
RIU Resources Round-Up Conference

May 2023

# Disclaimer & Forward Looking Statements

The Company does not purport to give financial or investment advice. No account has been taken of the objectives, financial situation or needs of any recipient of this document. The opinions and recommendations in this presentation are not intended to represent recommendations of particular investments to particular persons. This presentation does not constitute financial product advice.

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This document has been prepared as a summary only, and does not contain all information about the Company's assets and liabilities, financial position and prospects and the rights and liabilities attaching to the Company's securities. This document should be read in conjunction with any other reports and information provided or released by the Company.

Some of the statements contained in this presentation are forward-looking statements. Forward looking statements include but are not limited to, statements concerning estimates of expected costs, statements relating to the advancement of the Company's investments and other statements which are not historical facts. Although the Company believes that its expectations reflected in the forward-looking statements are reasonable, such statements involve risk and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements. Various factors could cause actual results to differ from these forward-looking statements include the potential that the Company's projects may experience technical, geological, metallurgical and mechanical problems, changes in product prices and other risks not anticipated by the Company or disclosed in the Company's published material.

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## COMPETENT PERSONS STATEMENT

The information in this report that relates to exploration results and exploration targets and results is based upon information reviewed by Mr Brendan Cummins who is a member of the Australian Institute of Geoscientists (AIG). Mr Cummins is an Executive Director of Black Canyon Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Cummins consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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## SCOPING STUDY CAUTIONARY STATEMENT

The Scoping Study referred to in this presentation has been undertaken for the purpose evaluating the potential development of the Flanagan Bore Manganese Project, Pilbara region, Western Australia. It is a preliminary technical and economic study of the potential viability of the Flanagan Bore Manganese Project. The Scoping Study outcomes, Production Targets and forecast financial information referred to in the release are based on low level technical and economic assessments that are insufficient to support estimation of Ore Reserves. The Scoping Study is presented to an accuracy level of +/- 35%. While each of the modifying factors was considered and applied, there is no certainty of eventual conversion to Ore Reserves or that the Production Target itself will be realised. Further exploration and evaluation and appropriate studies are required before Black Canyon will be in a position to estimate Ore Reserves or to provide any assurance of any economic development case. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study. All (100%) of the Mineral Resources scheduled for extraction over the 20 year mine life in Scoping Study production targets are classified as Indicated. Only 40% of the Global Mineral Resource has been scheduled for mining in this Scoping Study. No Inferred Mineral Resources have been used in the Scoping Study.

The Mineral Resources underpinning the production target in the Scoping Study have been prepared by a competent person in accordance with the requirements of the JORC Code (2012). For full details on the Mineral Resource estimate, please refer to the ASX announcement of 13 April 2022. Black Canyon confirms that it is not aware of any new information or data that materially affects the information included in that release and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not been changed. This Scoping Study is based on the material assumptions outlined in the announcement. These include assumptions about the availability of funding. While Black Canyon considers that all the material assumptions are based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, funding in the order of \$44 million will likely be required. Investors should note that there is no certainty that Black Canyon will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Black Canyon's existing shares. It is also possible that Black Canyon could pursue other strategies such as project finance, strategic partners, a sale or partial sale of its interest in the Flanagan Bore Project. The Flanagan Bore Project is part of the Carawine Joint Venture ("Carawine JV"), with Carawine Resources Ltd ("CWX" ASX:CWX). The respective interests of each party currently being Black Canyon 75% and CWX 25%. Black Canyon is the manager of the joint venture, with both parties deemed to be contributing to JV expenditure according to their interests.

This announcement contains forward-looking statements. Black Canyon has concluded that it has a reasonable basis for providing these forward-looking statements and believes it has a "reasonable basis" to expect it will be able to fund development of the Flanagan Bore Manganese Project. However, a number of factors could cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely of the results of this study.

# Corporate Overview

**BCA**  
ASX Code

**\$1.7M**  
Cash (As of 31 March 2023)

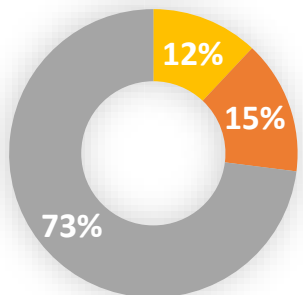
**51.7m**  
Shares on Issue

**\$10.3M**  
Market Cap (As at 04/05/2023)

**3.15M**  
Unlisted Options (\$0.25 exercise)

**\$8.6m**  
Enterprise Value

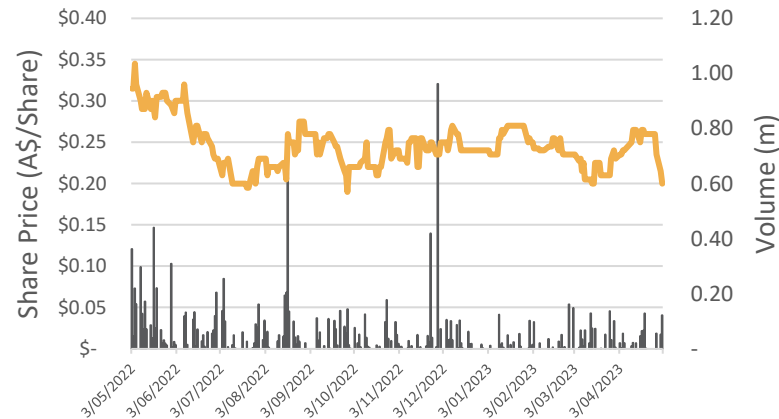
## BCA Shareholders



- Board and Management
- Small Cap Institutions
- Other Shareholders

**Top 20 shareholders – 39%**

## Shareprice Performance



# Experienced Board



**Graham Ascough**  
(Non-Executive Chairman)

### Geophysicist

Mr Ascough is a resources executive and geophysicist with more than 30 years' experience. He is presently Non-Executive Chairman of Musgrave Minerals Ltd, Sunstone Metals Ltd and PNX Metals Ltd.



**Brendan Cummins**  
(Executive Director)

### Geologist

Mr Cummins has over 25 years' experience across precious, base metals and bulk commodities. Extensive experience in resource development, feasibility, project development, environmental approvals and permitting.



**Simon Taylor**  
(Non-Executive Director)

### Geologist

Mr Taylor is a resources industry executive with over 30 years' experience in geology, finance and corporate management at CEO and Board levels. He is also a Non-Executive Director of Chesser Resources Ltd, Stellar Resources Ltd and Petratherm Ltd



**Adrian Hill**  
(Non-Executive Director)

### Finance

Mr Hill is a senior executive with over 25 years' experience in strategic and finance roles in the resources, energy infrastructure and investment banking industries. He has an established record in strategy development, corporate structuring and capital raising.

# Explorer and Developer



## Manganese focused



Essential for alloys used in the steel industry and critical for Electric Vehicle Li-Ion batteries

## Growth Potential



MRE announced at LR1 and FB3 – 171 Mt @ 10.3% Mn. Higher Grade - 40Mt @ 13.0% Mn

Significant organic growth potential across the Balfour Manganese field

## Premier location



Tier 1 location – WA Projects located in East Pilbara, existing Mn mines of Woodie Woodie, Butcherbird and export infrastructure at Port Hedland

## Development Options



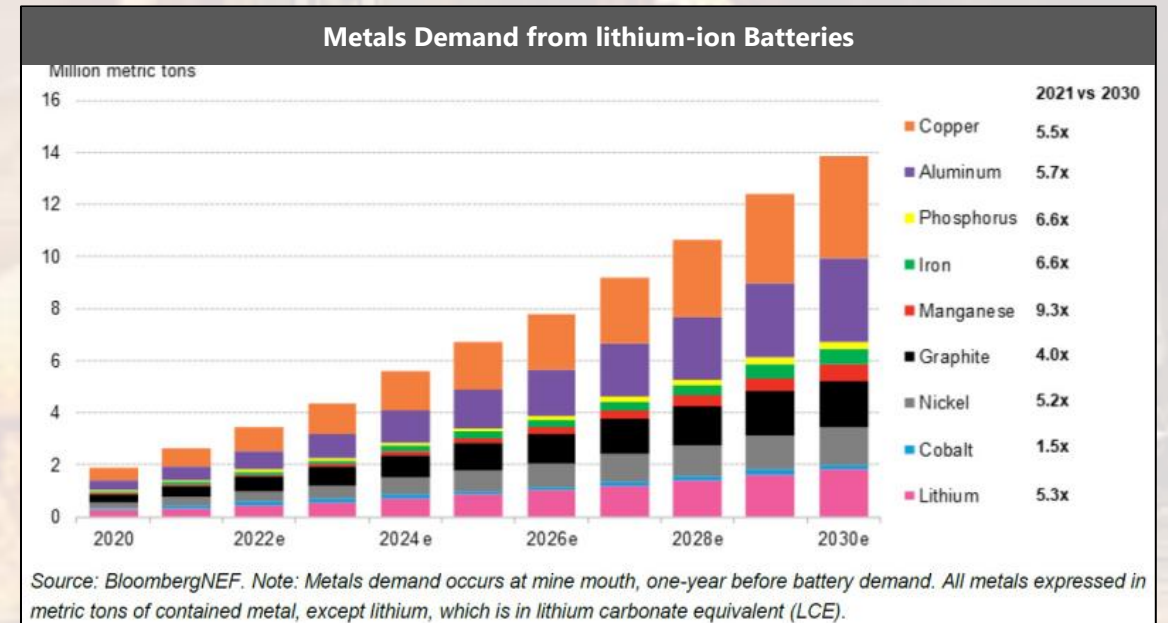
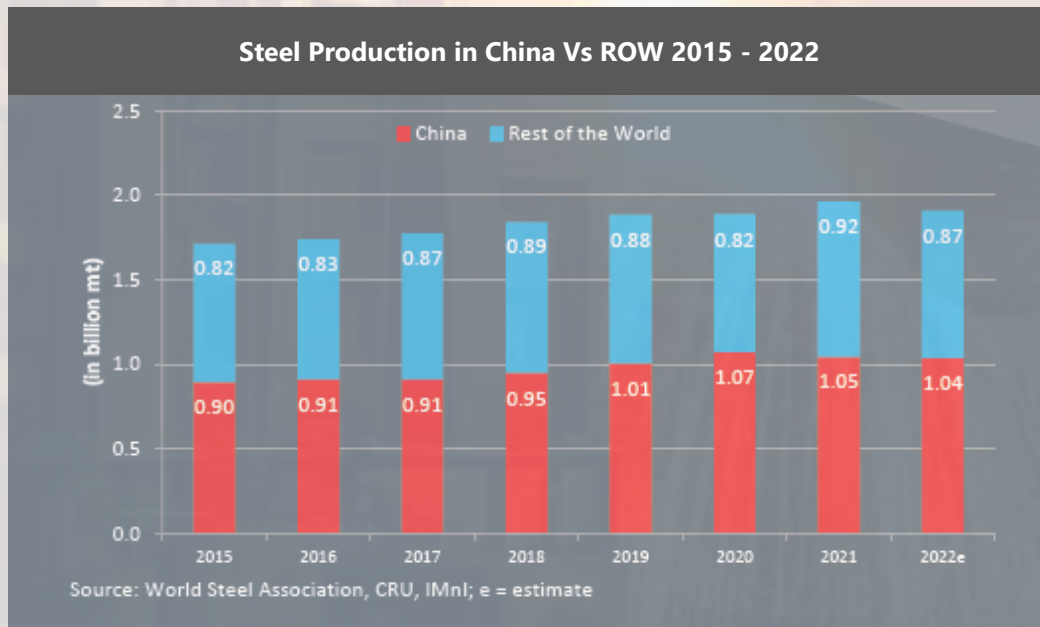
Traditional manganese concentrate for the steel alloying industry

Downstream HPMSM processing for EV battery precursor material

# Manganese Fundamentals

## Essential for steel and critical for EV Li-ion batteries

- ▶ Manganese (Mn) is the fourth most consumed metal in the world by tonnage with 60Mt tonnes ore mined on an annual basis
- ▶ Approximately 90% is used in steel manufacturing with Mn alloys added to prevent corrosion, resist abrasion, and increase hardenability.
- ▶ Mn ore is smeltered to make a ferro or silico manganese alloy used in steel production (15kg Mn/t rebar).
- ▶ Baseload demand for manganese ores continues from China with the emergence of India
- ▶ NMC batteries contain 10 to 30% manganese that equates to 10 - 60kg manganese depending on battery chemistry and pack size
- ▶ Emergence of LFMP, high lithium-manganese and sodium-based chemistries
- ▶ Bloomberg/NEF estimate 9.3x demand for manganese required for Li-Ion batteries by 2030

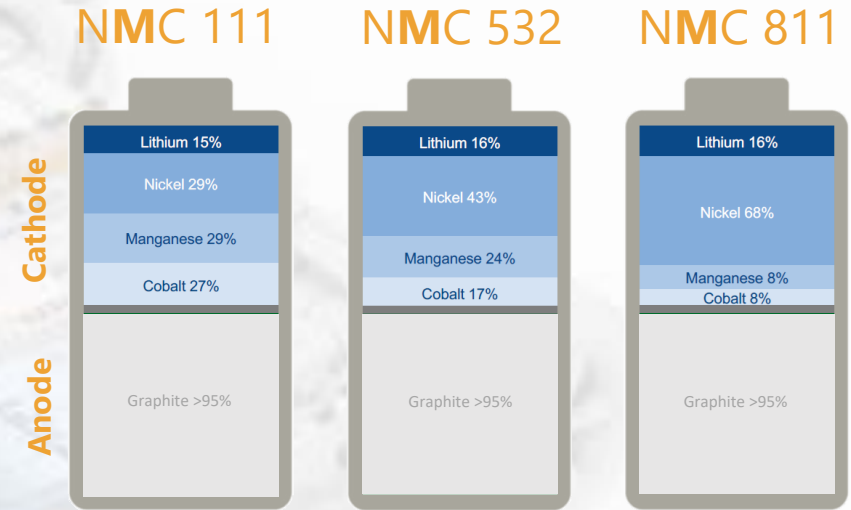


# Manganese – Critical Energy Mineral

## More manganese required to feed the battery technology evolution

- ▶ Development of more battery manufacturing capacity in the USA and Europe with the Inflation Reduction Act and Critical Raw Materials Act respectively
- ▶ CATL announced (July 2022) the M3P battery which adds Mn (21%) to batteries increasing the range to 700km without substantially increasing the manufacturing cost\*
- ▶ Svolt unveiled the Dragon Armour (Dec 2022) high manganese iron-nickel cells achieve a range of greater than 900km with mass production expected in 2024\*\*
- ▶ Umicore (Feb 2023) starts industrialization of its leading manganese-rich HLM (high lithium, manganese 60%) battery with production planned to commence in 2026\*\*\*
- ▶ Sodium based batteries with up to 28% Mn content are being further investigated

## Ternary (NMC) Li-ion batteries



Source: Pallinghurst-Traxys

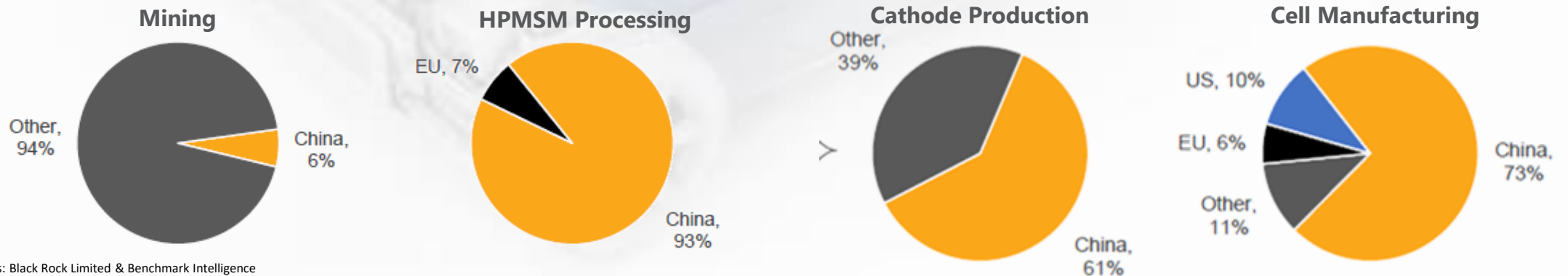
Sources:

\* <https://www.reuters.com/technology/new-catl-m3p-batteries-can-improve-energy-density-by-10-20-chairman-2022-08-27/>

\*\* <https://www.autoevolution.com/news/svolt-develops-the-dragon-armor-battery-pack-and-promises-1000-km-range-206712.html>

\*\*\* <https://www.umicore.com/en/newsroom/news/umicore-starts-industrialization-of-manganese-rich-battery-materials-technology-for-electric-vehicles>

## HPMSM supply chain diversification to be driven by the USA and Europe



Sources: Black Rock Limited & Benchmark Intelligence

# Downstream and Expanded HPMSM Strategy

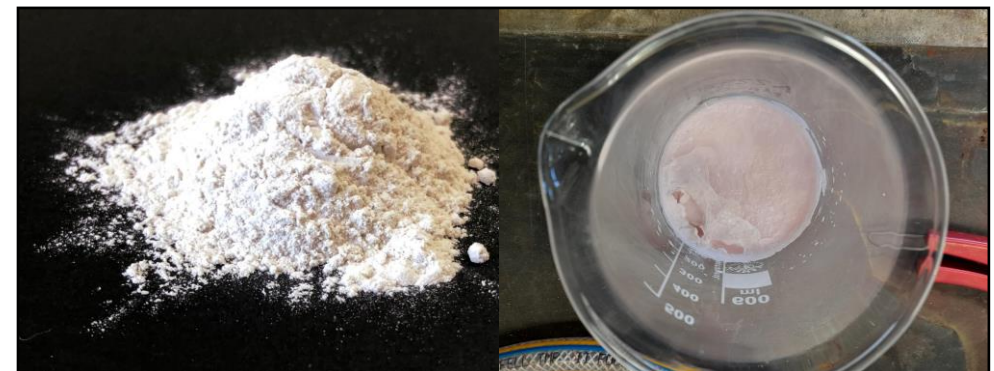
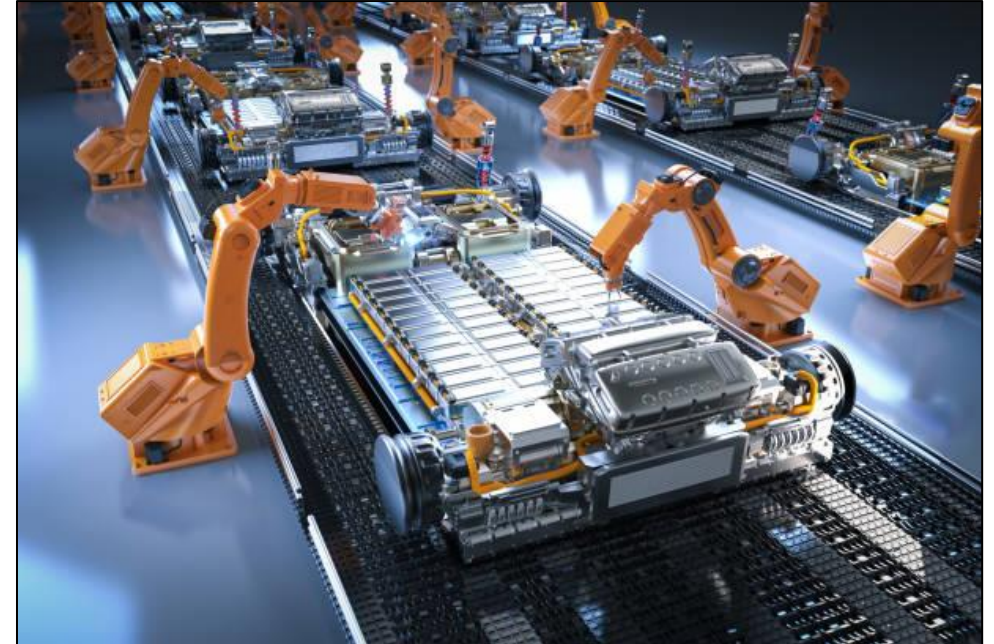
## High Purity Manganese Sulphate

- ✓ Initial leach tests yielded a 91% extraction rate
- ✓ Crystallised Manganese Sulphate crystals containing 32.3% Mn which is greater than 99% Manganese Sulphate purity
- ✓ Highly comparable to the typical 32.2% Mn content of battery grade HPMSM but further purification testwork is required to reduce elemental impurities
- The Company is advancing leaching, purification and crystallising testwork to produce battery grade HPMSM
- Scoping Study scheduled for Q2-Q3 2023

## Expanded HPMSM Strategy

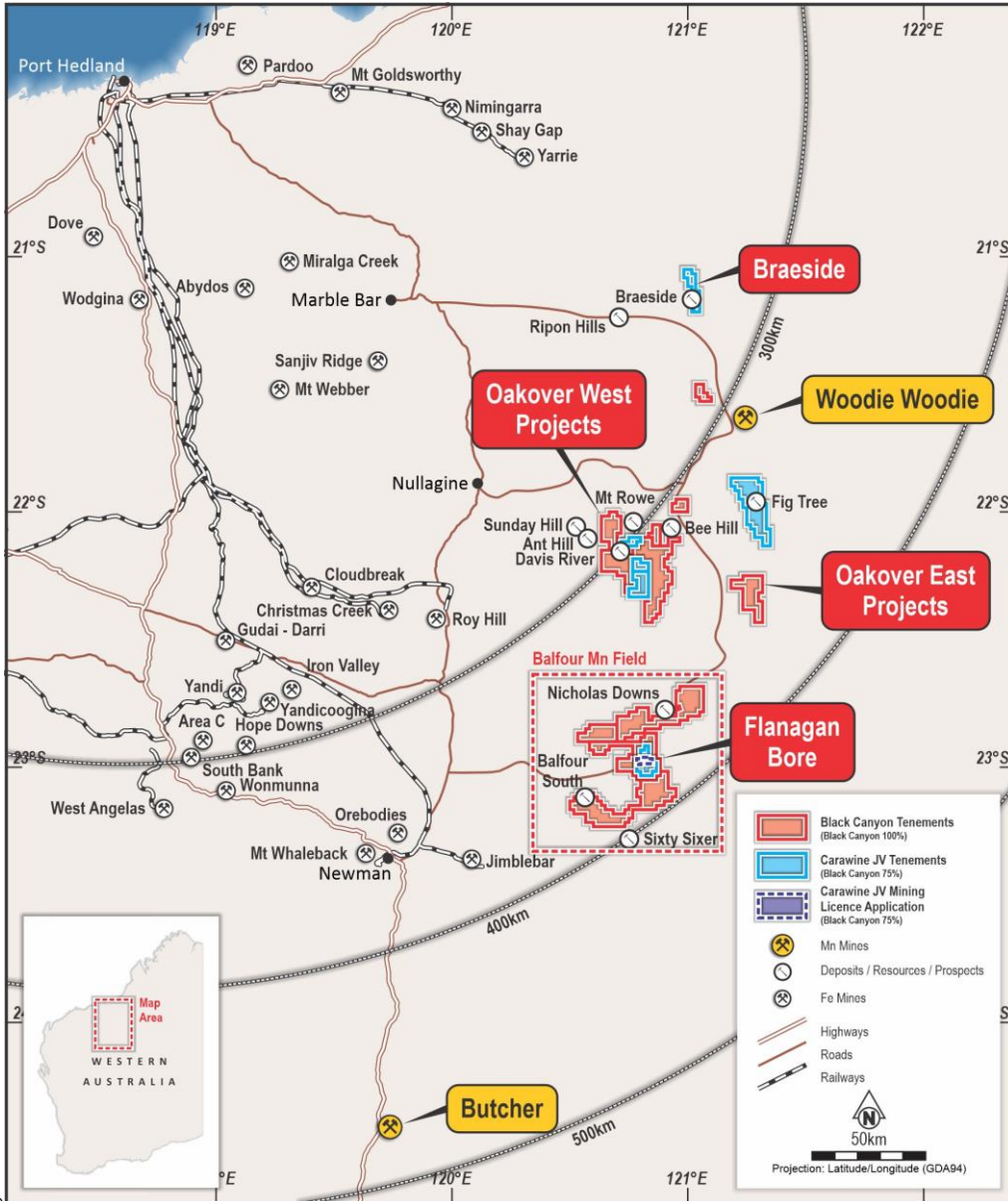
- ✓ Variability testwork across multiple manganese oxide targets to understand the HPMSM flowsheet amenability
- ✓ Targeting manganese oxide targets that show potentially higher insitu grades, variable impurity levels and proximity to infrastructure

Opportunity to fastrack approvals on a small footprint, simple low-CAPEX operation with mining/stockpiling on a campaign basis to supply manganese oxide feedstock to a HPMSM facility located elsewhere





# Asset Overview – 2,500km<sup>2</sup> under tenure



**KR1 Target - E46/1383 (BCA 100%)**



**Hydrothermal Style**



**Drilling at Flanagan Bore E46/1301 (BCA 75%)**



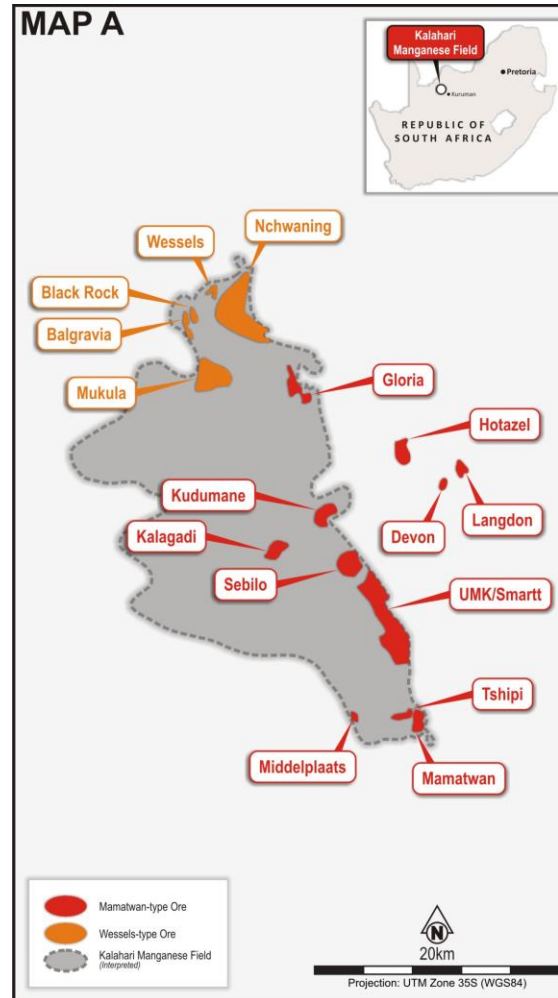
**Supergene Style**



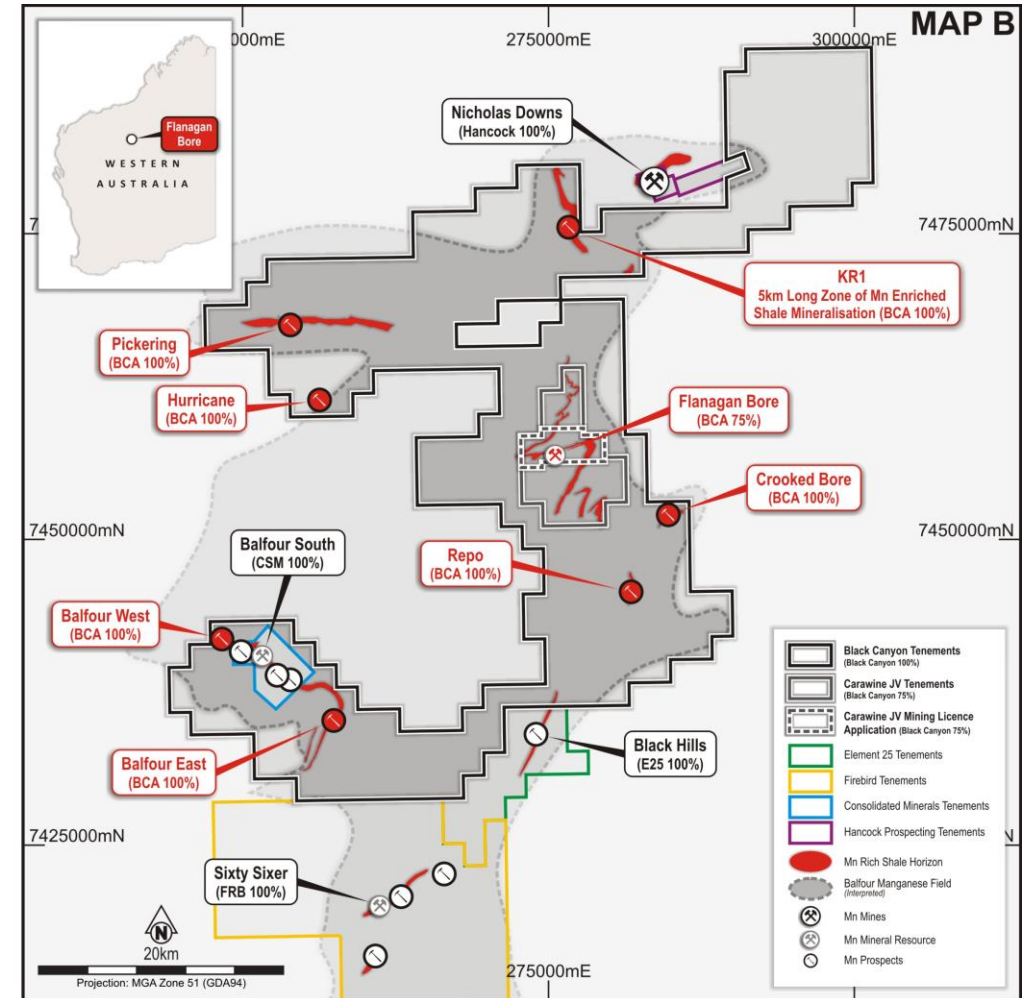
# Potential for Global Scale Discoveries

Parameter	Kalahari	Balfour
<b>Basin Scale</b>	35km x 15km	70km x 30km
<b>Manganese Ore type</b>	Carbonate & Oxide	Oxide
<b>Establishment date</b>	1960's to 2010 (> 20 mines)	2010 (1 mine)
<b>Development stage</b>	Mature	Emerging
<b>Resource Grades</b>	33-44% Mn	10-20% Mn
<b>Ore Processing</b>	Limited	DMS upgrade
<b>Concentrate Grade</b>	37% Mn	30-33% Mn
<b>Mine depths</b>	100 to 300m (OP & UG)	0 to 40m
<b>Distance from Port</b>	1000km	600km
<b>Transport logistics</b>	Train and Truck	Truck

**Kalahari Manganese Field and Mines**



**Balfour Manganese Field, Mineral Resources and Prospects**



# Flanagan Bore - 171Mt @ 10.3% Mn for 17.7Mt of contained Mn

## Outcropping Discovery With Scale, Grade & Thickness

- ▶ Delivers a large-scale, high quality Measured and Indicated Mineral Resource from surface with outcropping higher-grade zones with impressive geological and grade continuity
- ▶ Higher grade zone across LR1 and FB3 comprising 40 Mt @ 13% Mn which is positive for resource optimisation, processing and mining scenarios

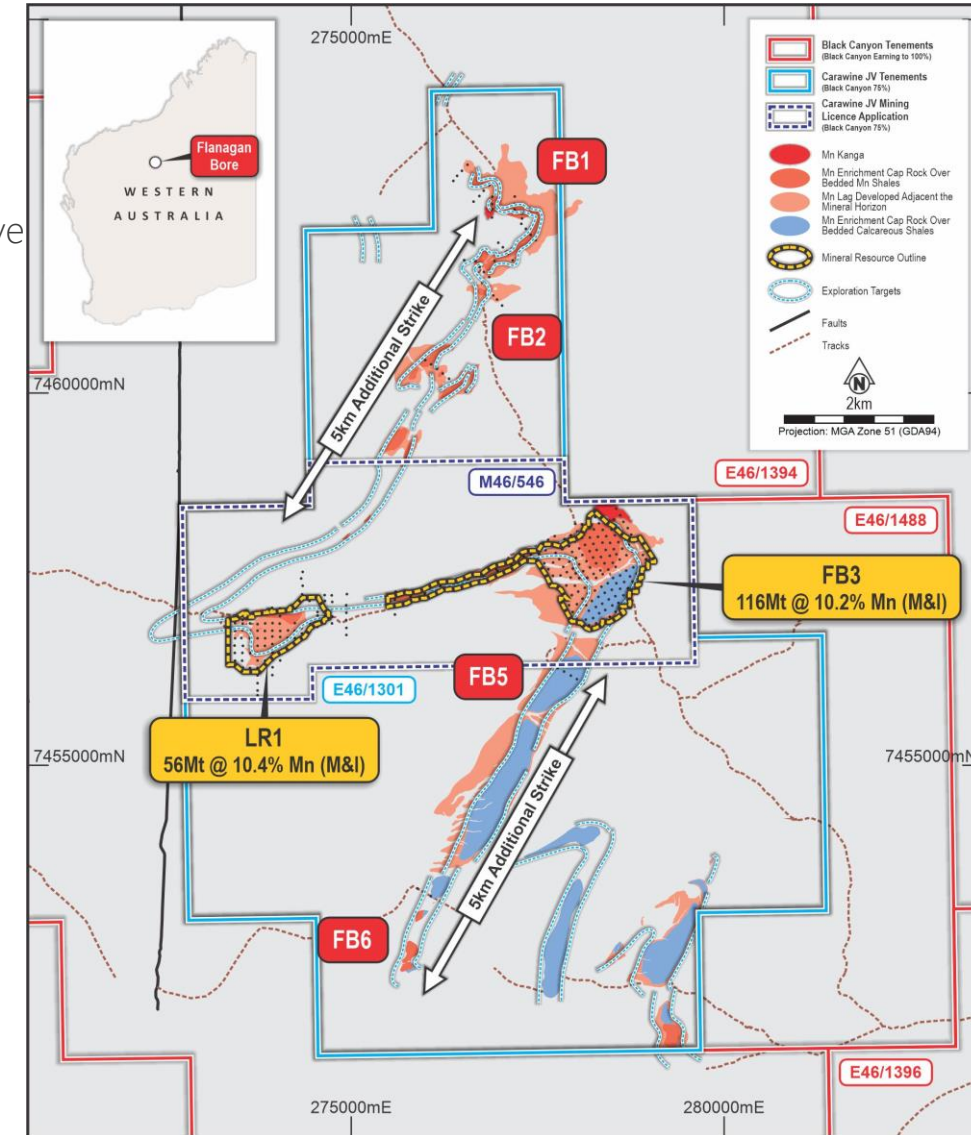
## Mineral Resource Summary at LR1 and FB3<sup>1</sup>

Deposit	Mineral Resource	Material (Mt)	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
FB3	Measured	52	6	10.5	10.4	16.9	4.3
LR1	Measured	47	5	10.3	8.4	16.7	4.6
<b>Total</b>	<b>Measured</b>	<b>100</b>	<b>10</b>	<b>10.4</b>	<b>9.4</b>	<b>16.8</b>	<b>4.4</b>
FB3	Indicated	63	6	10.0	9.6	16.8	4.4
LR1	Indicated	8	1	11.3	9.4	6.9	1.8
<b>Total</b>	<b>Indicated</b>	<b>72</b>	<b>7</b>	<b>10.1</b>	<b>9.6</b>	<b>15.7</b>	<b>4.1</b>
<b>Grand Total</b>		<b>171</b>	<b>17.7</b>	<b>10.3</b>	<b>9.5</b>	<b>16.4</b>	<b>4.3</b>

Notes: (1) Mineral resources reported at a cut-off grade of 7% Mn

Summary of Mineral Resources <sup>(1)</sup>							
Deposit	Mineral Resource	Material (Mt)	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
FB3	Measured	14	2	13.2	11.5	18.2	4.5
LR1	Measured	11	1	13.1	9.7	16.8	4.5
<b>Total</b>	<b>Measured</b>	<b>25</b>	<b>3</b>	<b>13.1</b>	<b>10.7</b>	<b>17.5</b>	<b>4.5</b>
FB3	Indicated	10	1	12.7	10.8	18.1	4.8
LR1	Indicated	5	1	12.9	9.9	6.1	1.6
<b>Total</b>	<b>Indicated</b>	<b>15</b>	<b>2</b>	<b>12.8</b>	<b>10.5</b>	<b>14.5</b>	<b>3.8</b>
<b>Grand Total</b>		<b>40</b>	<b>5</b>	<b>13.0</b>	<b>10.6</b>	<b>16.4</b>	<b>4.3</b>

Notes: (1) Mineral resources reported at a cut-off grade of 11% Mn



# Flanagan Bore Scoping Study Results

## Key Financial and Project Metrics

**\$134**  
million  
Pre-tax NPV<sub>8</sub>

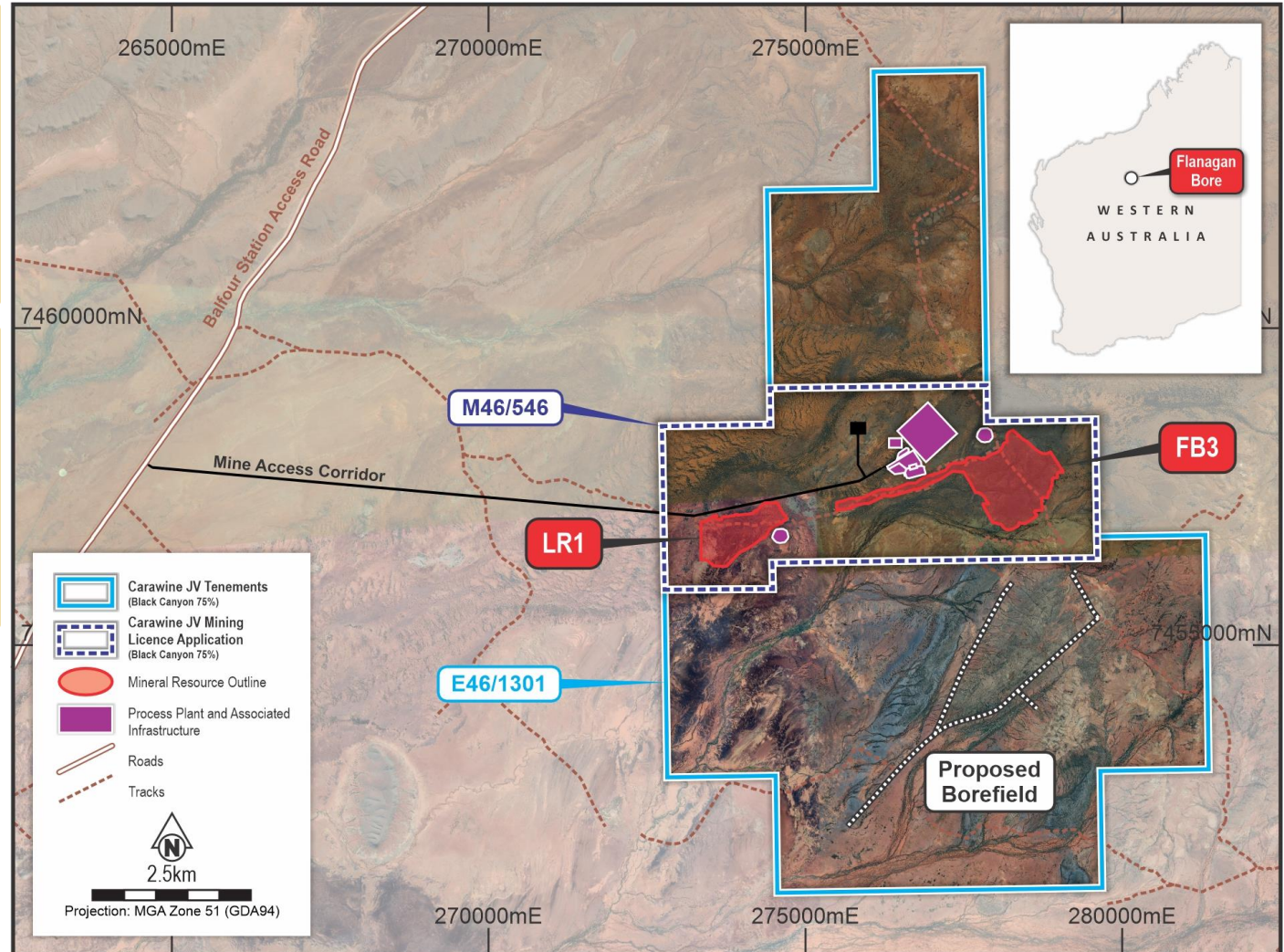
**67%**  
Pre-tax IRR

**20**  
year  
Mine Life

**\$32.1**  
million  
Ave annual cashflow  
(Years 1-4)

**\$44**  
million  
Capital Cost

**<2**  
years  
Payback Period



# Flanagan Bore – Positive Metallurgical Studies

## Crushing and washing testwork

- ▶ Significant manganese grade uplifts from feed grades of 11% and 15% Mn upgraded to approximately 23% and 24% Mn through scrubbing and washing - an important first step for beneficiation.

## Pre-Feasibility level Heavy Liquid Separation Test work

- ▶ Significant manganese concentrates results from lump (8-25mm) and fines (1-8mm) testwork includes
  - LR01 lump product - 32.2% Mn
  - LR01 fines product - 31.4% Mn
  - FB03 lump product - 33.2% Mn
  - FB03 fines product - 33.4% Mn
- ▶ Significant manganese concentrates results from fines (1-8mm) testwork includes:
  - LR01 fines only product - 32.1% Mn
  - FB03 fines only product - 33.0% Mn
- ▶ Overall recoveries across the fines testwork average 70% which are in line with the Scoping Study assumption

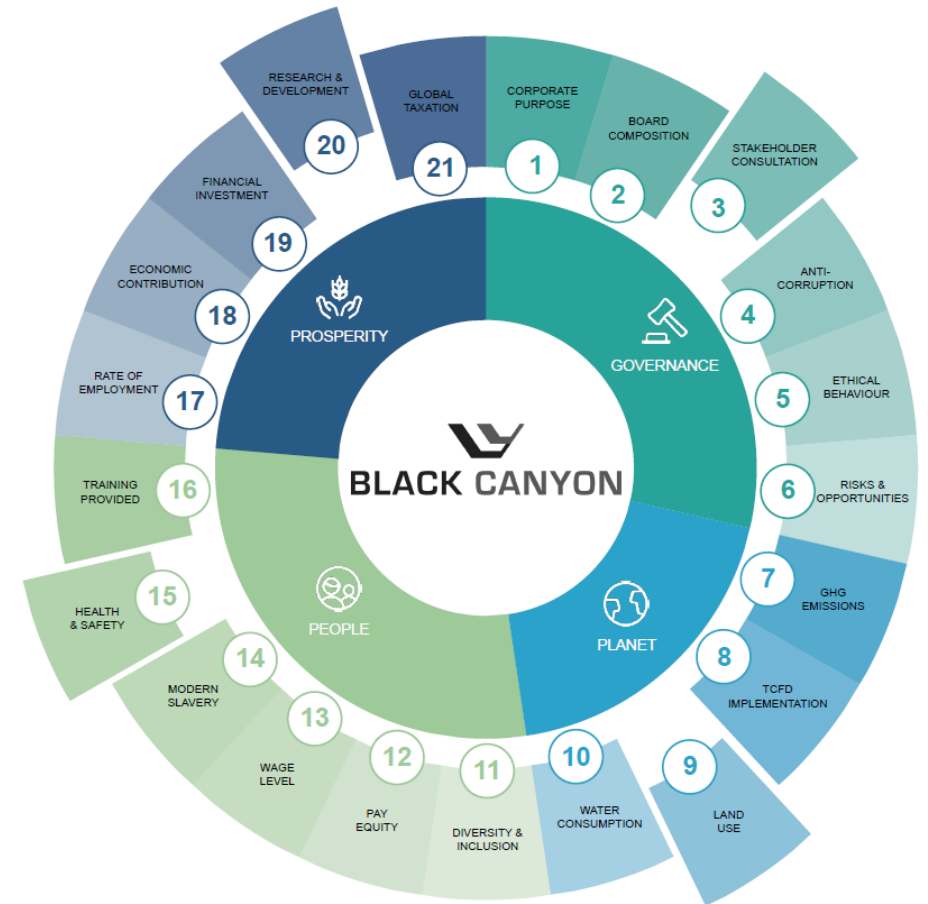


## Highlights and achievements

- ▶ Partnered with Socialsuite to commence ESG reporting against the World Economic Forum (WEF) Stakeholder Capitalism Framework
- ▶ Commenced wider community engagement - Heritage surveys conducted on site prior to drilling, involving Traditional Owners. Cultural Monitors on site for drill line clearing activities
- ▶ Engagement with wider community including pastoralists and local prospectors
- ▶ Ensuring Environmental Compliance

## Focus areas for 2023 (established Q1, 2023)

- ▶ Baseline studies to understand the current environment including land, water, flora, fauna and social surroundings
- ▶ Wider community stakeholder engagement (ongoing)
- ▶ Health & Safety policies/procedures to ensure compliance and a safe work environment for employees and contractors
- ▶ Release inaugural ESG Baseline Report
- ▶ Strong management and effective deployment of capital
- ▶ LifeCycle Assessments (LCA) to establish carbon footprint



Stakeholder Capitalism Metrics ESG Framework

# Planning for Success



## Discovery Drilling – Balfour Mn Field



## BCA Manganese Sulphate for the EV market

HPMSM Hydrometallurgical Studies



HPMSM Scoping Study



HPMSM Pilot Plant



## BCA Manganese Oxide Concentrate for the Steel alloy Market

Manganese Concentrate Metallurgical Studies



Manganese Concentrate Feasibility Studies



Large Scale DMS Piloting



Environment Studies and Permitting





BLACK CANYON

## Why invest in Black Canyon?



Manganese is essential to the steel industry and a critical battery mineral, with strong growth forecast



Clear strategy to add value & grow the Company through discovery, development & downstream processing



Significant exploration programs to continue in 2023 across the Balfour Manganese Field



Delivering results – Discovery, MRE upgrades, positive Scoping Study, ML application lodged, commencement of detailed Feasibility.



Expanded downstream strategy to produce HPMSM to facilitate diversification of supply supporting the value-add strategy





# Contact Us



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Executive Director

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