



Orion Minerals

<sup>29</sup>  
**Cu**  
Copper

<sup>30</sup>  
**Zn**  
Zinc

<sup>28</sup>  
**Ni**  
Nickel

<sup>27</sup>  
**Co**  
Cobalt

**PGE**  
PGE

<sup>79</sup>  
**Au**  
Gold

<sup>47</sup>  
**Ag**  
Silver

# FUTURE METALS FOR A NEW ERA OF DEMAND

Accelerating Towards Production

Errol Smart / Managing Director and CEO  
Investor Presentation / May 2022

ASX: ORN | JSE: ORN  
[www.orionminerals.com.au](http://www.orionminerals.com.au)

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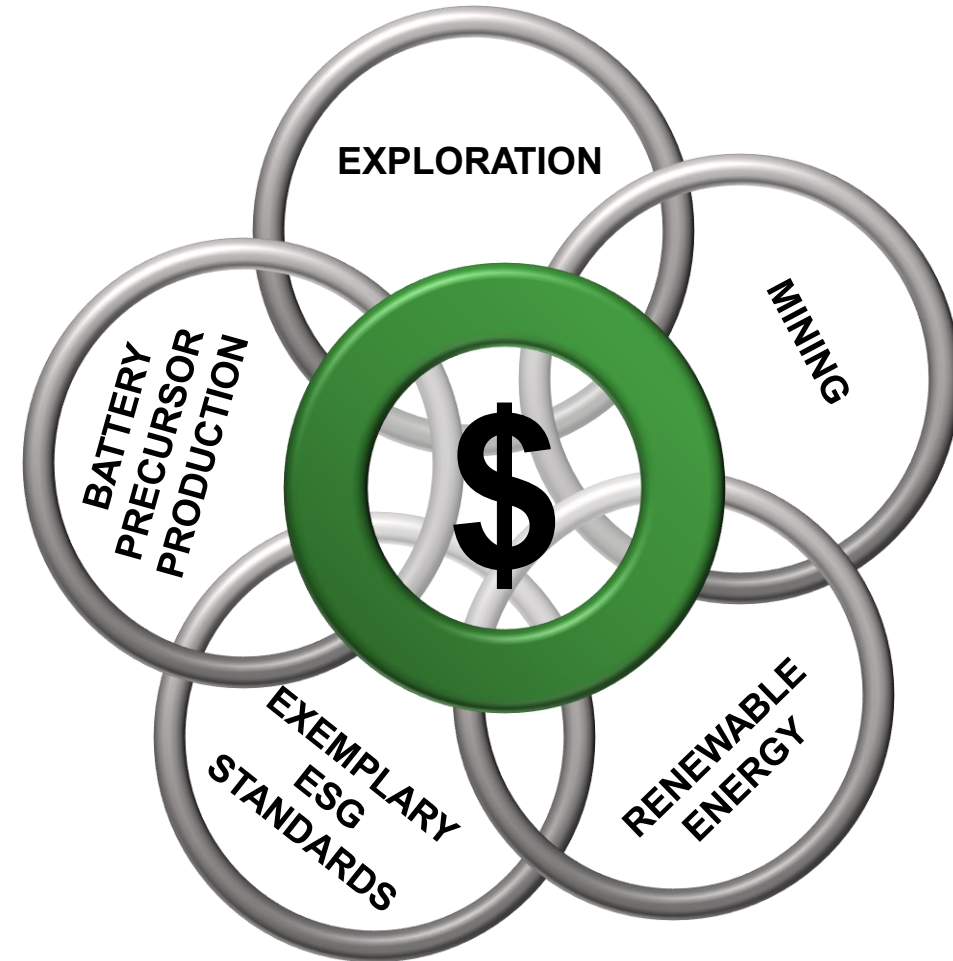
# OUR MISSION

FULLY INTEGRATED FROM EXPLORATION TO MARKET



Orion Minerals

PRODUCING FUTURE FACING METAL  
PRODUCTS – ESG CERTIFIED METALS,  
TRACKED VIA BLOCKCHAIN FROM  
EXPLORATION TO SALE



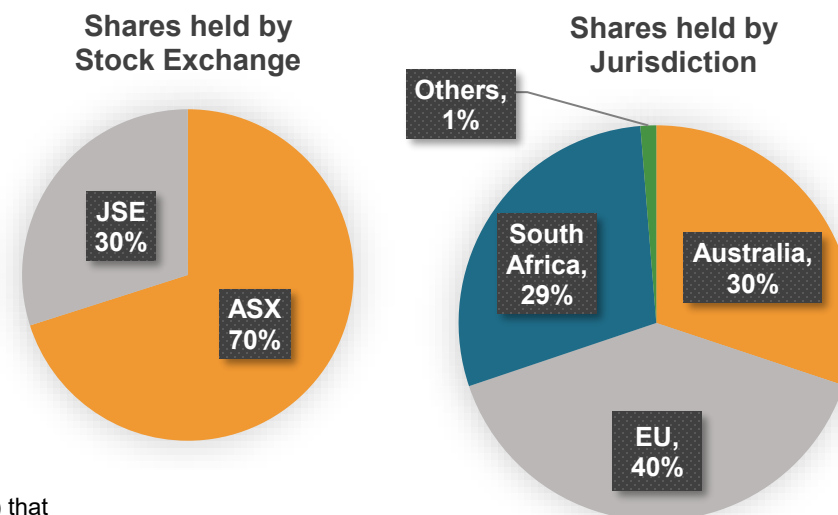
# COMPANY SNAPSHOT



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Capital Structure Summary	Current	Significant Shareholders	Share Issue %
Shares on issue <sup>1</sup>	4,382M	Tembo Capital (EU/Netherlands)	23.5
Options on issue	232M	Delphi Group (EU/Germany)	13.1
Cash on hand <sup>2</sup>	AUD6M	IGO Limited (Australia)	3.5
AASMF Loan <sup>3</sup>	AUD2M	Tarney Holdings (Denis Waddell) (Australia)	2.6
<b>Market capitalisation (AUD2.5cps) <sup>4</sup></b>	<b>AUD110M</b>	<b>Total</b>	<b>42.7</b>

Board of Directors	Senior Management
Denis Waddell, Chairman	Walter Shamu, COO
Errol Smart, MD & CEO	Martin Bouwmeester, CFO & Company Secretary
Alexander Haller, NED	Michelle Jenkins, Executive: Finance & Administration
Mark Palmer, NED	Louw van Schalkwyk, Consulting Geologist
Godfrey Gomwe, NED	Nelson Mosiapoa, Group Corporate Social Responsibility Advisor
Tom Borman, NED	Marcus Birch, Commercial & Business Support Manager



1. Fully paid ordinary Orion shares (**Shares**) on issue at 5 May'22.
2. Cash on hand at 31 Mar'22.
3. Refer to Orion's December 2021 Interim Financial Report for information related to the loan agreement (ZAR14.25M) that Prieska Copper Zinc Mine (Pty) Ltd has entered into with Anglo American sefa Mining Fund (**AASMF**) and Mar'22 Quarterly Cash Flow report. Balance shown at 31 Mar'22.
4. Volume weighted average price (5 day) at 5 May'22 of ORN Shares trading on the ASX & JSE.

# FUTURE FACING METALS



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DEVELOPMENT  
**READY**

ADVANCED  
**STAGE**

EXPLORATION  
**UPSIDE**



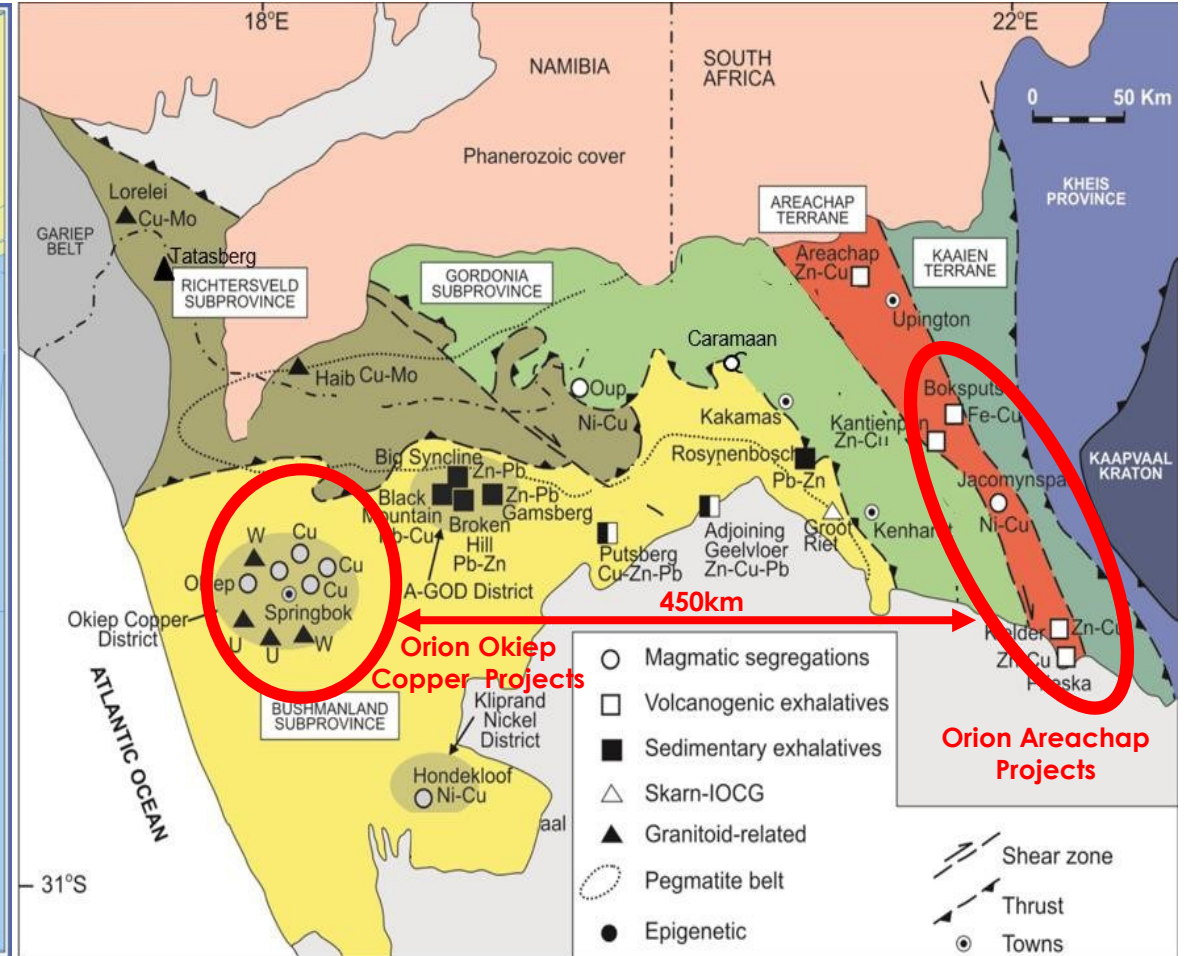
South Africa				Australia
<b>Prieska (PCZM)</b>	<b>Okiep Copper Project (OCP)</b>	<b>Jacomynspan (JMP)</b>	<b>Bokspits</b>	<b>Fraser Range</b>
70% ownership	56-70% ownership	50-70% ownership	Earning 70% ownership	10-30% free carried to feasibility
Copper-Zinc	Copper-Ni Tungsten	Nickel-Copper-Cobalt-PGE-Au Li, Be and REE	Copper-Gold + Nickel-Copper-Cobalt-PGE-Au	Nickel-Copper
BFS & fully permitted	BFS underway Mining Right Imminent	Scoping Study 2012 being revisited. Granted Mining Right	Exploration	Exploration

# FOCUS ON TWO HIGHLY PROSPECTIVE SOUTH AFRICAN BASE METAL DISTRICTS

BROWNFIELDS SUCCESS BEING FOLLOWED BY GREENFIELDS EXPLORATION



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Refer ASX/JSE releases 2 February 2021, 10 February 2021, 29 March 2021 and 2 August 2021

# A NEW FUTURE METALS GIANT IN THE MAKING

## FAST-TRACKING TOWARDS DEVELOPMENT AND PRODUCTION

- Two brownfields development assets in South Africa's Northern Cape
- Extensive upside exploration potential, high-quality Mineral Resources
- Mineral Rights include known deposits of Copper, Zinc, Nickel, Cobalt, PGE, Au, Ag, W, REE, Li.
- Studies underway to accelerate three base metal projects towards first production
- Substantial exploration upside in under-explored districts
- Strong ESG credentials with available renewable and green hydrogen power
- Financing and strategic partner engagement well advanced
- Perfectly aligned with new market dynamics for future-facing metals
- Investigating battery precursor metal production potential



# ESG – CORE FOCUS OF OUR BUSINESS



- **BEE (30%) Black Empowerment for mining projects of which:**
  - 20% Entrepreneurs
  - 5% Community Trust
  - 5% Employee Trust
- Community focused
- Environmentally conscious

AAMEG Award 2020 (Junior Mining Leader on ESG)

- MD & CEO Errol Smart
  - Chairman of the Minerals Council South Africa's Junior and Emerging Miners' Leadership Forum



# GREEN POWER – GREEN FOOTPRINT



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- Water conservation and recycling – tailings water available for re-use and excess delivered to local community for irrigation
- Tailings – predominantly in ground placement / void filling / carbon sequestration



## Renewable Energy Advantage

- 170MW Solar Power and 200MW Wind Power operational on site at PCZM, feeding into Eskom grid
- Additional dedicated 55MW Hybrid Wind + Solar Renewable Energy facility scoped for PCZM
- Long Term Target for PCZM and OCP to be 100% Renewable Energy Powered
- “Project Carbon Neutral Roadmap”
- The Northern Cape Province – one of the best areas in the world for wind and solar (PV) energy
- PCZM & OCP sites are within South Africa’s “Renewable Energy Corridors”



# PCZM – A GREEN METAL PRODUCER



Scope 1+2 - Carbon Neutral target

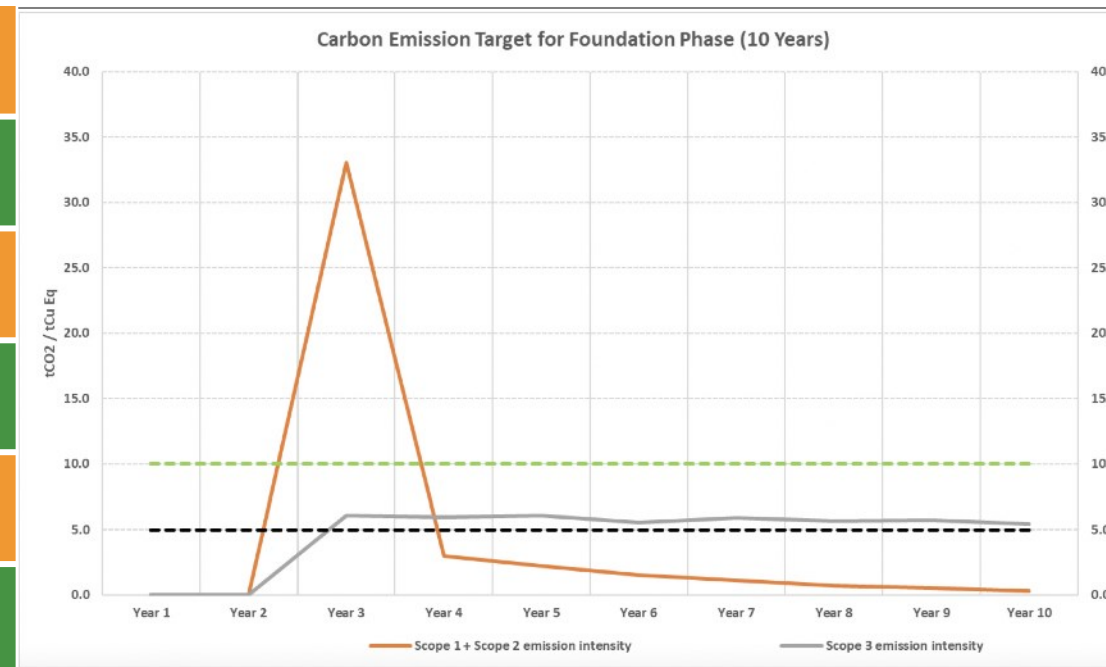
Mine sales – potentially attract “green” premium

Investigating Battery Precursor Production

Desirable for offtake customers

ESG – investment eligibility

Cost savings – carbon credits / low emissions



PARAMETERS	Description	UoM	Foundation Phase A					Foundation Phase B				
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Total Carbon Emissions</b>		<b>ktCO2</b>	<b>71</b>	<b>64</b>	<b>113</b>	<b>331</b>	<b>419</b>	<b>381</b>	<b>344</b>	<b>316</b>	<b>297</b>	<b>279</b>
Scope 1 - Direct Emissions		ktCO2	22	22	22	20	18	12	8	4	3	0
Scope 2 - Indirect Energy Emissions		ktCO2	49	42	74	91	95	71	47	31	23	14
Scope 3 - Indirect Emissions (Other)		ktCO2	-	-	18	221	306	298	289	281	272	264
<b>Overall emission intensity</b>		<b>tCO2/t Cu Eq</b>	-	-	<b>39.1</b>	<b>8.9</b>	<b>8.4</b>	<b>7.1</b>	<b>7.1</b>	<b>6.4</b>	<b>6.2</b>	<b>5.8</b>
Scope 1 + Scope 2 emission intensity		tCO2/t Cu Eq	-	-	33.0	3.0	2.2	1.5	1.1	0.7	0.5	0.3
Scope 3 emission intensity		tCO2/t Cu Eq	-	-	6.1	6.0	6.1	5.6	5.9	5.7	5.7	5.5

# NEXT GENERATION WORK PRACTICES

## Fourth Industrial Revolution (4IR) enabled

- Orion will be an industry leader within South Africa, adopting next generation technology and work practices
- Fresh start - no workplace or IR legacy issues
- High tech and mechanised - minimising employee exposure to high-risk environment
- Skilled workforce
- Improved environmental conditions, reduced pollution and contamination



**Winner: Enhanced Labour Standards category  
for Junior ESG Awards, 2022**

Benchmark  
Globally

Implement  
Enablers

Be Fast  
Followers

Always Make  
Commercial  
Sense

# BENEFICIATION INVESTIGATIONS

## Potential to unlock value locally, using beneficiation to produce “Future Metal Products”

- Abundant solar and wind renewable energy installed or being developed, with large-scale green hydrogen and ammonia soon to be added
- Combination of low-cost green energy and rapidly-developing clean beneficiation technology coupled with unprecedented demand growth for battery metal salts and specialist powders (Precursor Battery Products) provides unique opportunity
- Specialist Precursor Battery Products trade at large premiums to the contained metal value
- Modern technology and engineering advances have removed the need for roasting and smelting and reduced CAPEX and OPEX
- Low-cost beneficiation with enhanced revenue may reduce mining cut-off grades and increase production from moderate-grade ore sources



## Orion commissioning testwork and scoping feasibility assessments on:

- **Modified carbonyl and chlorine metal vapour technology**
  - MOU and term sheet signed for earn in with Stratega Metals
  - Modified derivation of process technology already in use at Sudbury, Norilsk and Jinchuan
  - Roasting/smelting steps eliminated with use of metal vapour extraction of sulphide concentrates followed by separation and purification of metals
  - Zero emissions, no water used and low energy requirement



- **Hydrometallurgical Atmospheric Acid Leach Process**
  - For application to oxides and mixed oxide - sulphide ore without pre-concentration





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# Areachap Projects

# A\$120M\* NON-BINDING TERM SHEET SIGNED FOR FUNDING ARRANGEMENT & STREAM FUNDING PACKAGE FOR PCZM

- Term Sheet signed with Triple Flag for funding package, including stream finance.
  - Triple Flag is a highly respected precious metal royalty and streaming finance provider
- Funding Arrangement secured to fund:
  - Early commencement of dewatering
  - Completion of early mining feasibility study
- Stream Finance available to fund mine development following completion of Early Mining Feasibility Study
- Funding Arrangement and Stream Finance provide a significant step on the path to total project funding
  - assists with early mine development



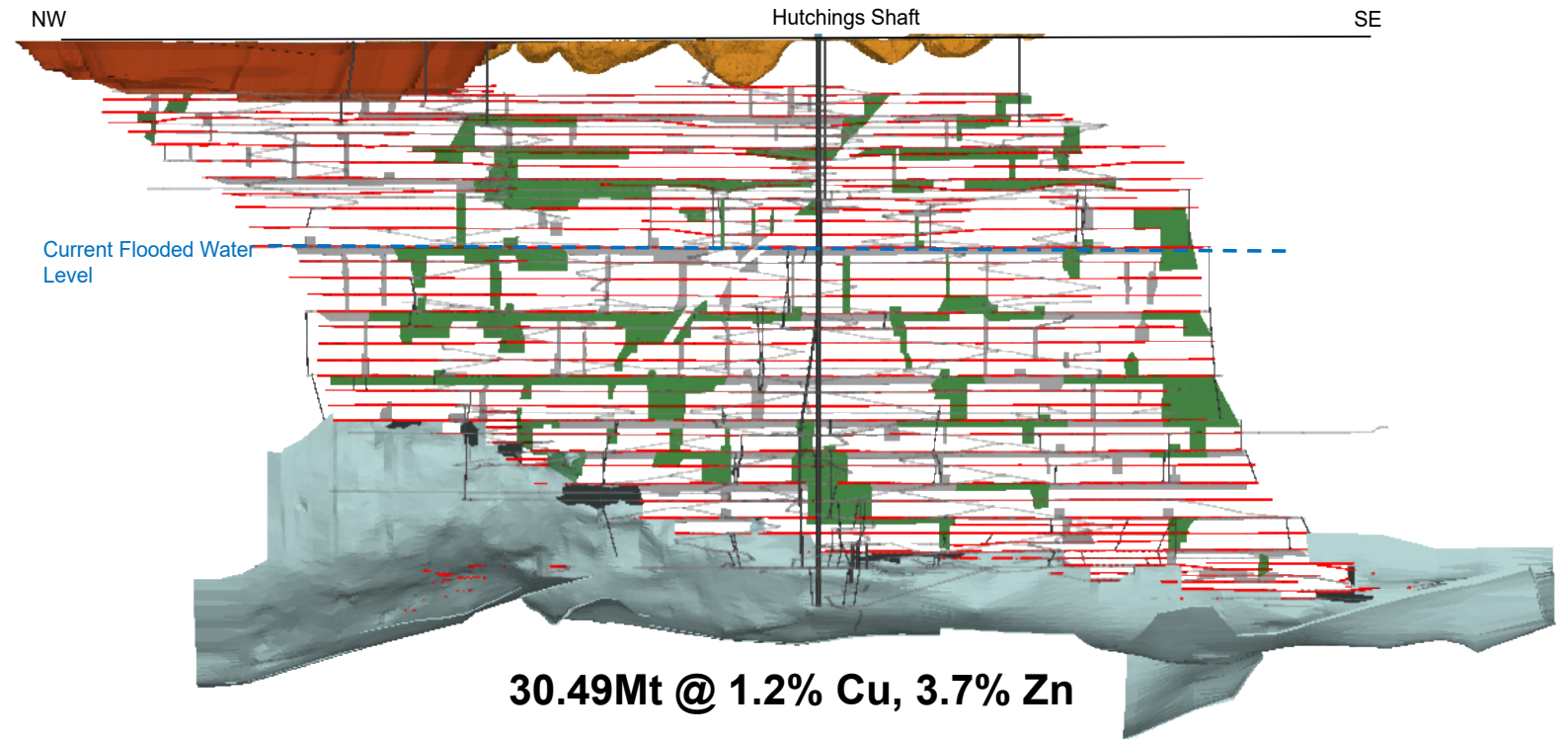
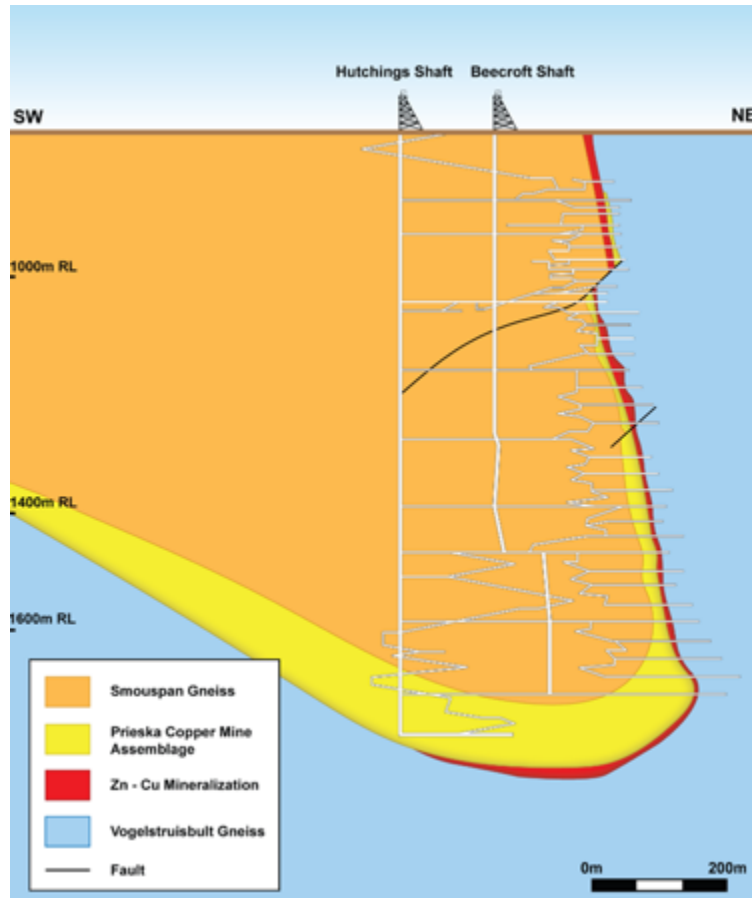
## Early Funding Arrangement:

- A\$10m to be advanced against calculated repayments equal to 0.8% of gross revenue from future mineral sales
- Conditional on Orion securing A\$20m of co-funding as equity/debt/offtake finance

## Precious Metal Stream

- US\$80m (A\$110m) to be advanced against delivery of 84% of future Au and Ag by-product production, reducing to 50% of Au and Ag after delivery of 94.3k Oz of Au and 5,710k Oz of Ag
- Orion also receives payments of 10% of the delivered precious metal value at spot Au and Ag at the time of delivery

# PCZM – CROSS & LONG SECTIONS



Refer ASX/JSE release 15 January 2019

# PRIESKA (PCZM) COPPER ZINC PROJECT (70%)

## The orebody

- Globally significant VMS Resource: 30.49Mt @ 1.2% Cu, 3.7% Zn
- Increased Mineral Reserve: 14.5Mt @ 1.1% Cu and 3.2% Zn

## Foundation phase as per bfs-20 outcomes

- Initial 12-year, 2.4Mtpa operation, targeting 22ktpa Cu and 70ktpa Zn
- Life-of-mine production 226kt Cu and 680kt Zn
- Strong operating margins and financials
- Pre-tax free cash flow AUD1.6bn (post-tax AUD1.2bn)
- Pre-tax NPV8% AUD779m (post-tax AUD552m)
- Payback period of 2.4 years from first production
- All-in sustaining margin of 47%
- Peak Funding requirement AUD413m

## Fully permitted

- Mining Right granted to PCZM in September 2019
- Mining Right granted to Vardocube in August 2020
- Environmental Financial Provision in place fully capitalised
- Environmental approval notices received for both PCZM and Vardocube
- Water Use Licence granted in August 2020

Refer ASX/JSE releases 8 July 2019, 3 September 2019, 9 March 2020, 26 May 2020, 6 August 2020 and 17 August 2020

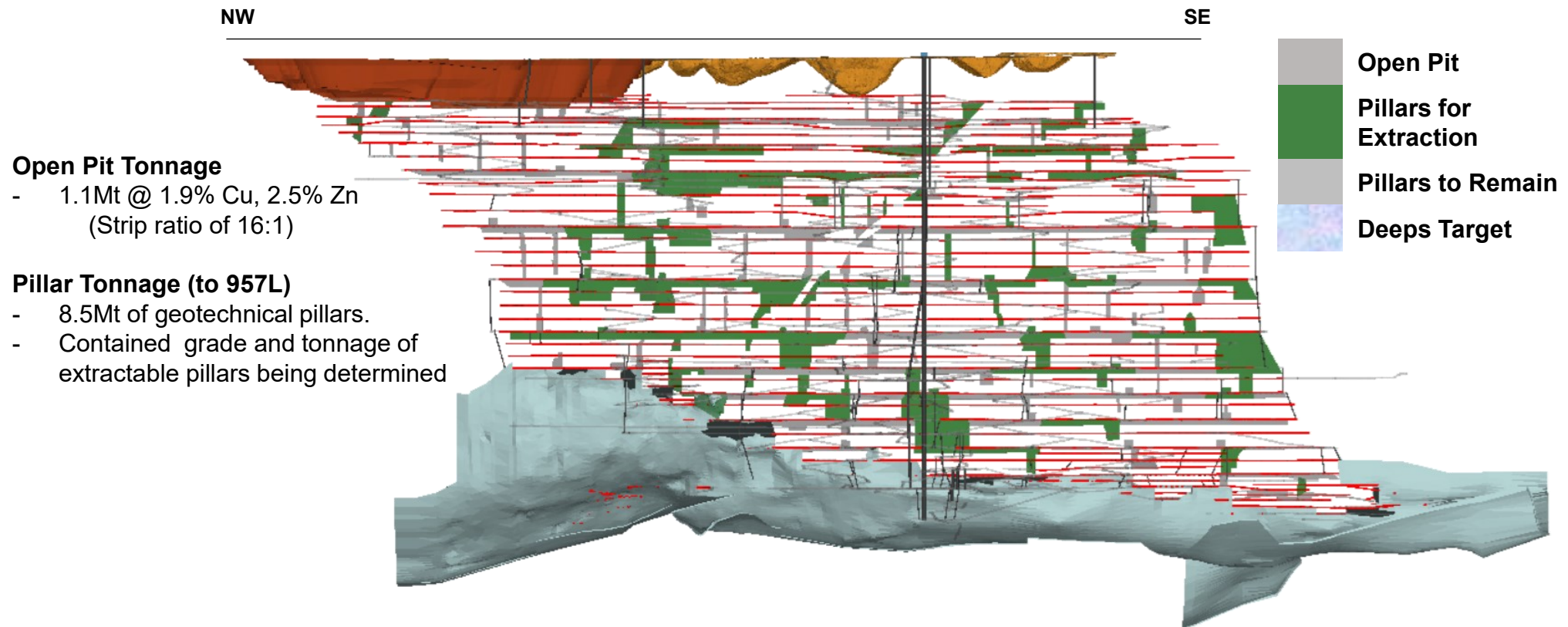


“The completion of the updated BFS marks another huge step towards the development of a modern, state-of-the-art base metals mine at Prieska, which is ideally placed to become the standard bearer for a new generation of world-class mines in South Africa.” – Orion Minerals MD Errol Smart



# SHALLOW MINERAL RESOURCES – EARLY MINING TARGETS

- Shallow Mining Plan aims to target mining from the open pit, remnant pillars, while dewatering underway
- Feasibility studies underway to fast-track development
- Stream Finance and early funding advance, provide opportunity fast-track development

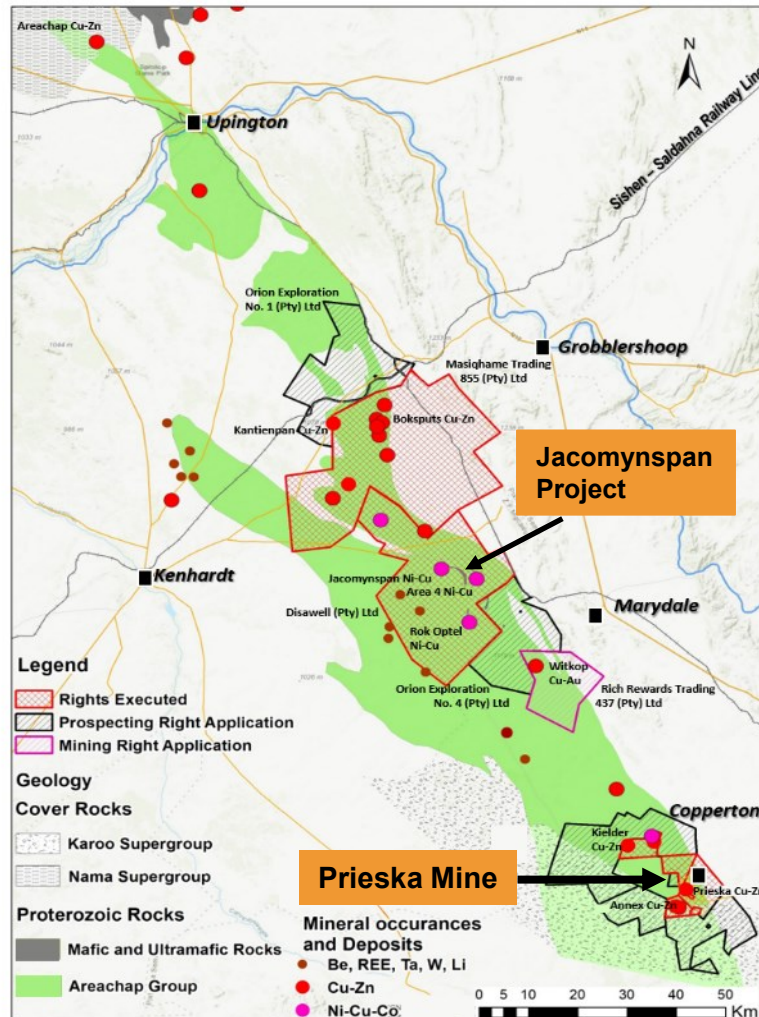


# ENORMOUS EXPLORATION UPSIDE

## AREACHAP – AN UNDER-EXPLORED BELT WITH HIGH METAL ENDOWMENT



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### Multiple Cu-Zn VMS and Ni-Cu-Co intrusive targets within Orion's mineral rights

- Prieska Cu-Zn near mine, open pit and underground targets with high grade intersections
- Jacomynspan – Mining Right with potential for sulphide Ni-Cu-PGE-Au open pit & shallow underground mining
- Several high grade Cu-Au targets with historical and recent drill intersections
- Several Li, Be, REE occurrences & old diggings to be investigated

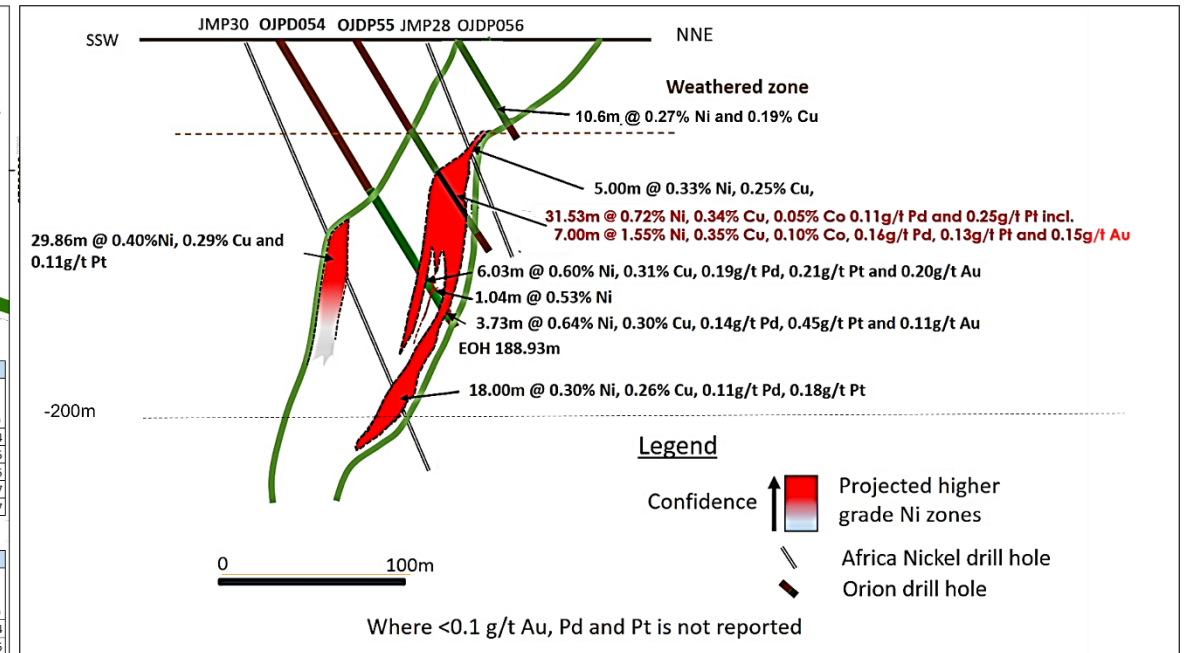
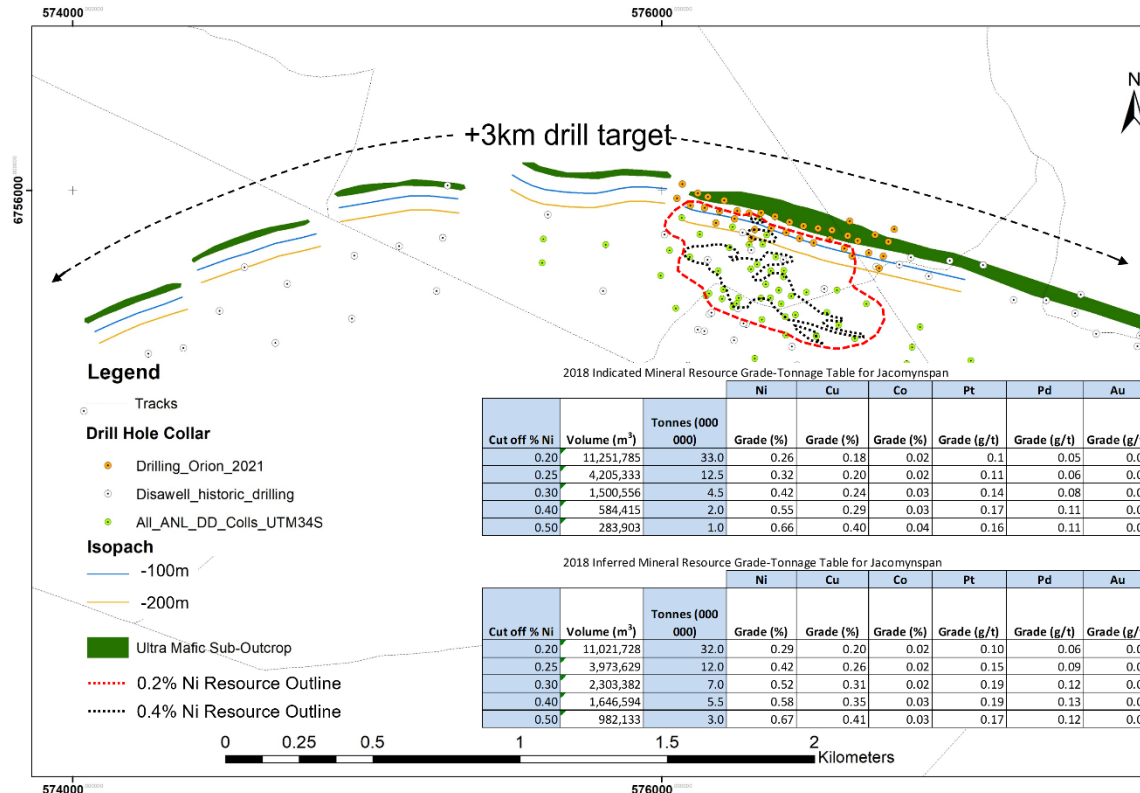
# JACOMYNSPAN

## POTENTIAL TO BE A SIGNIFICANT FUTURE METALS PRODUCER



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### Granted Mining Right over Ni-Cu-Co-PGE+Au Intrusive Complex



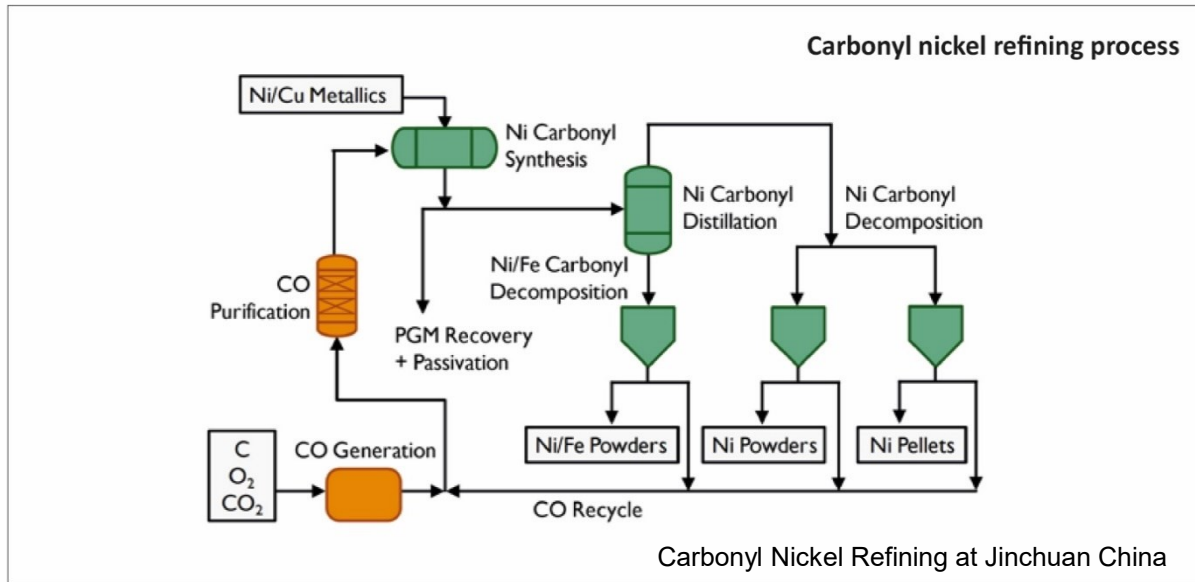
Investigating innovative proprietary technology to recover Battery Metals and high-value Battery Precursor Products – a value game changer

Refer ASX/JSE release 3 March 2018

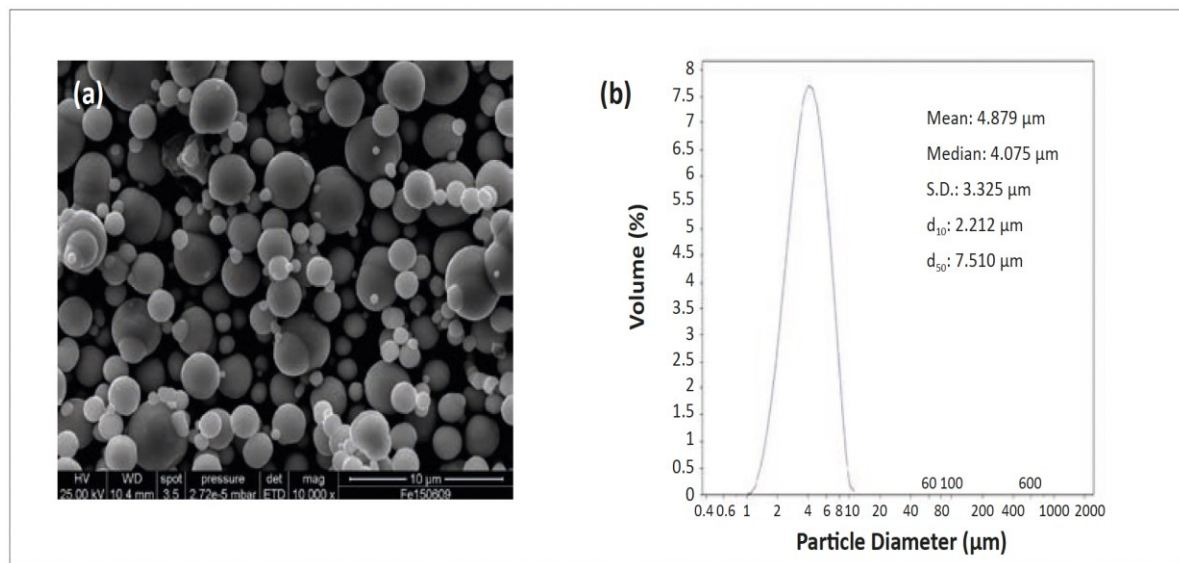
# HIGH VALUE FUTURE METAL PRODUCTS



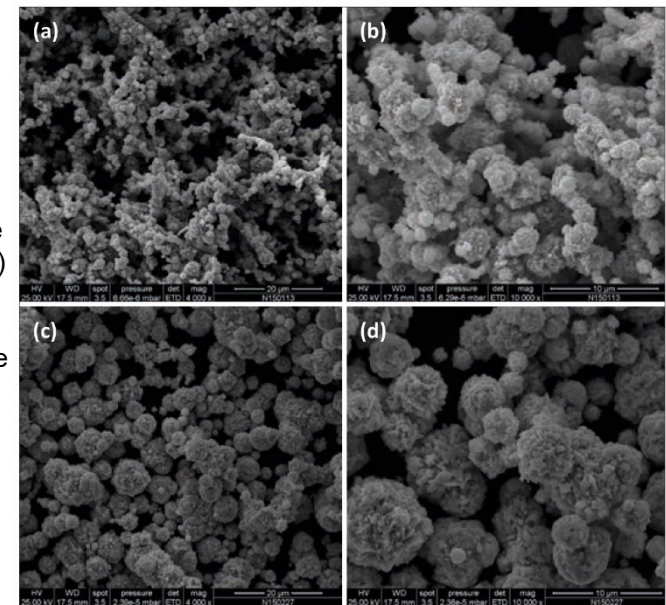
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Commercial applications of discrete carbonyl nickel powder



Micro granular Fe (left) and Ni (right) metal carbonyl powders  
Currently available on market





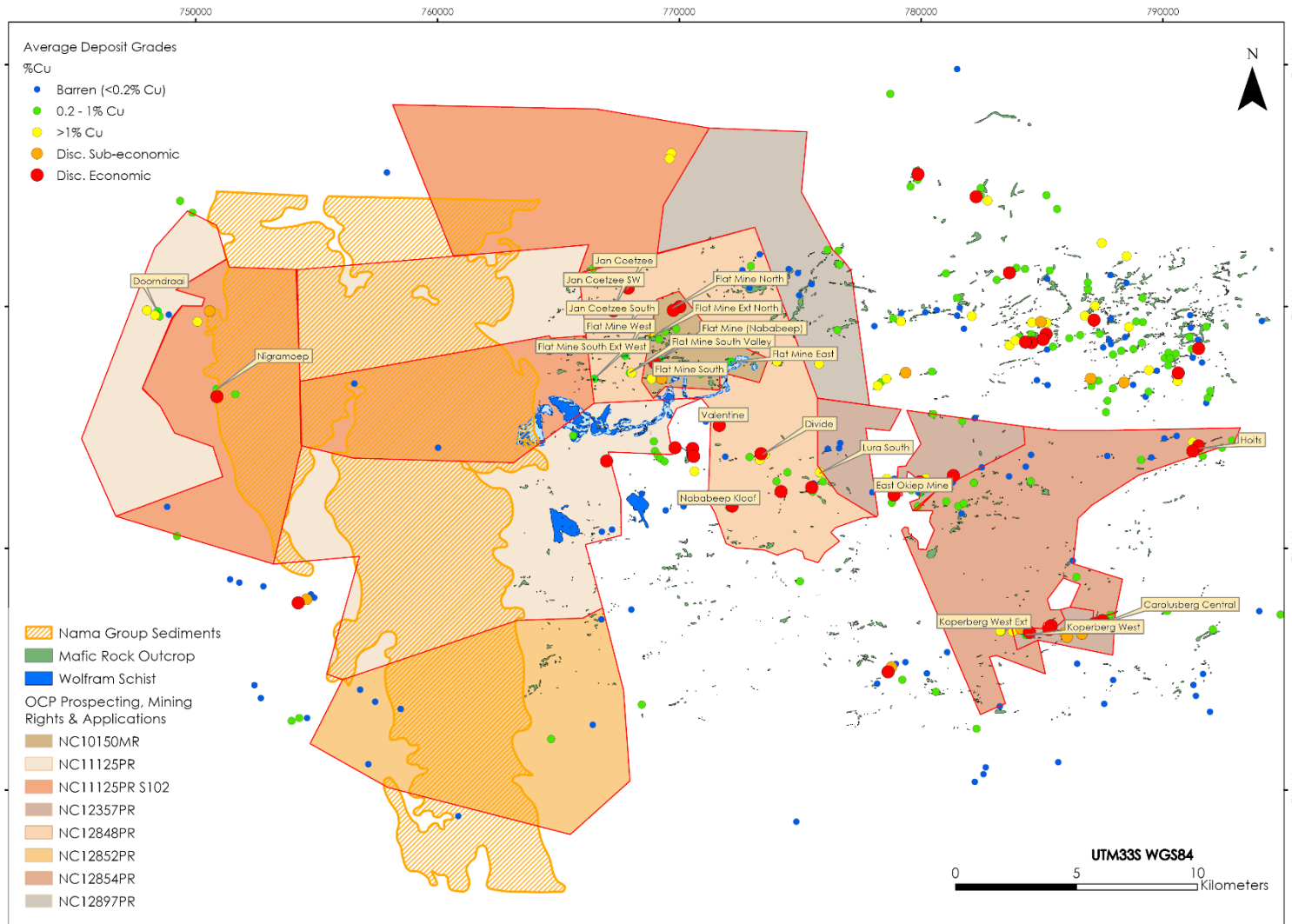
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# OCP Projects

# OCP HISTORICAL DISCOVERIES AND MINES



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- Mineralised intrusive bodies intrude structures aligned in east-west trending structural corridors
- 25% of mineralised corridors hidden under thin surface cover
- Modern geophysics expected to assist in detecting mineralisation underneath the thin cover
- Orion has now proved the existence of a Ni rich sulphide mineralisation phase, not previously targeted

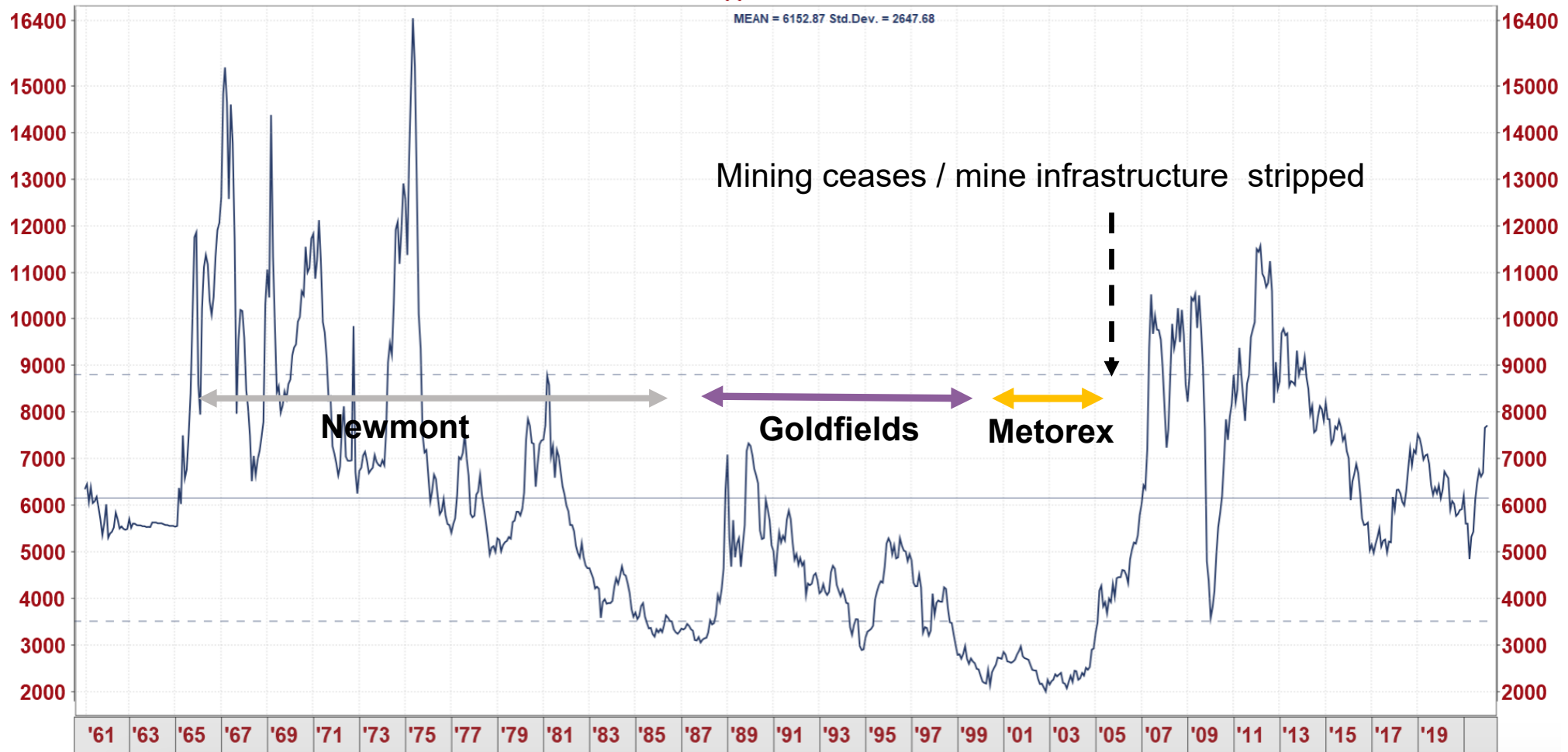
# OCC:

## HISTORICAL OWNERSHIP CHANGES COINCIDED WITH Cu PRICE LOWS



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### Copper Price \$/ton (real)



Source: Peter Major Mergence Capital

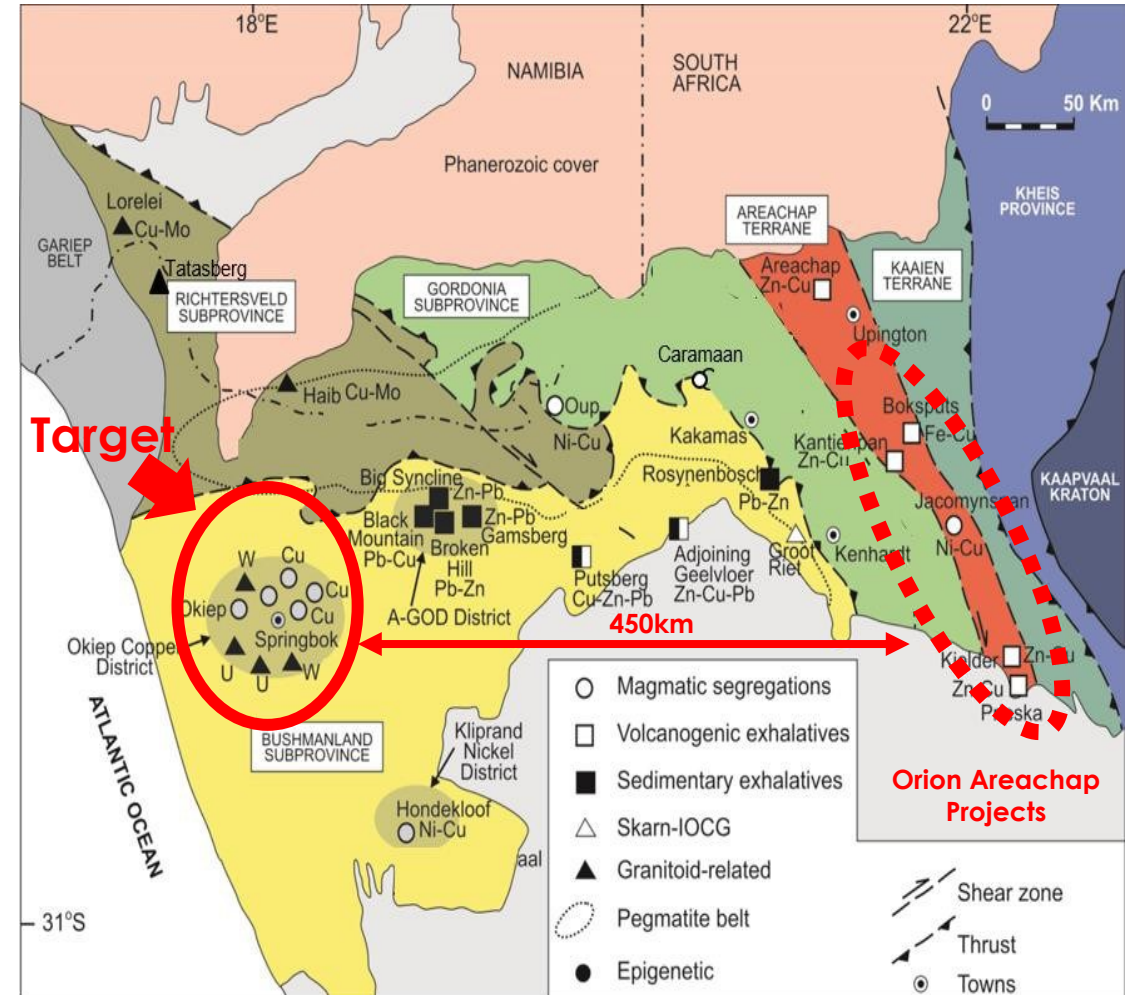
# OKIEP COPPER PROJECT (OCP) (56%-100%)



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- **Exercised option** to acquire and applying for additional prospecting rights in the Okiep Copper Complex (OCC):
  - Historical production of +2Mt of copper
  - Non-JORC resource ex-Goldfields of 52Mt @ 1.3%
  - **JORC Mineral Resource of 11.5Mt at 1.4% Cu, containing 159,000 tonnes Cu**
  - Tremendous exploration upside
- Promises outstanding operational synergies with Orion's Prieska Copper-Zinc Project, located 450km east of OCC
- Total acquisition cost, payable in stages in cash and shares, of:
  - Purchase price: ~AUD7.1million (Cash 24% : Shares 76%)
  - Deferred Payment subject to exploration success ~AUD9.1m (100% shares)

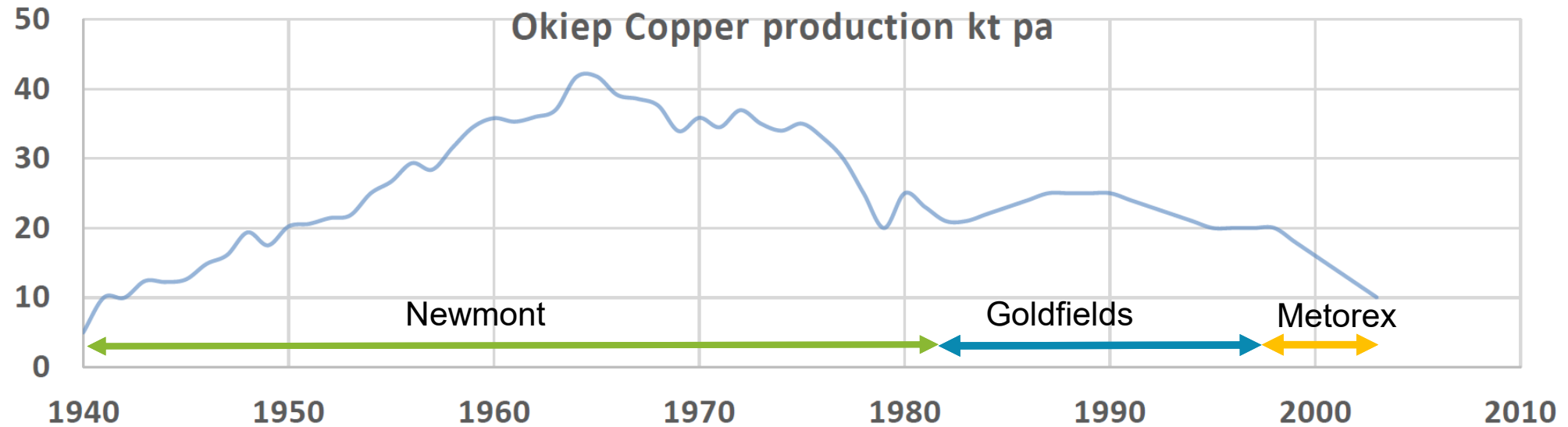
**Significant opportunity for Orion to develop a second base metal production hub alongside Prieska**



Refer ASX/JSE releases 2 February 2021, 10 February 2021, 29 March 2021 and 2 August 2021



# OKIEP – HISTORICAL PRODUCTION PROFILE



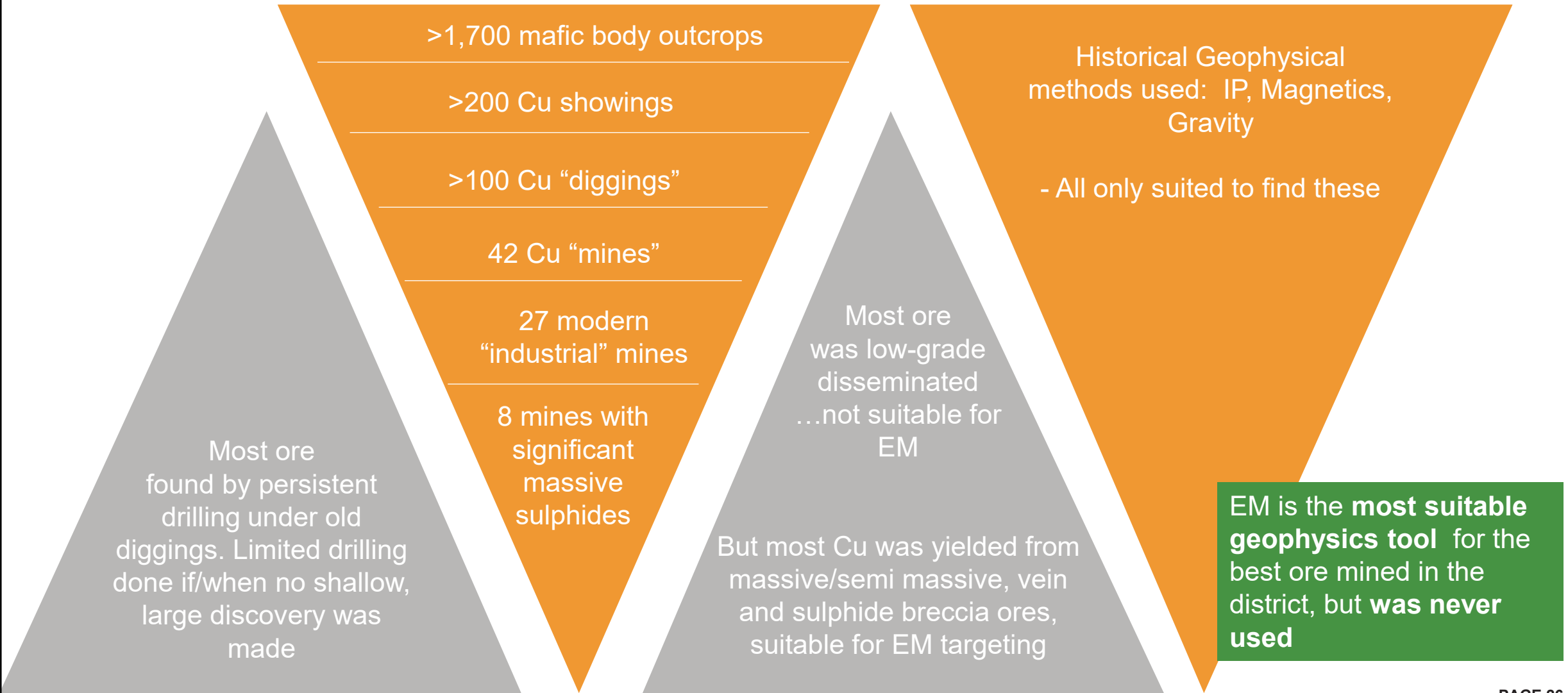
- **Produced 2.1Mt Cu from 121Mt ROM @ 1.9% Cu**
  - Peaked at 2.4Mtpa ROM, mainly from underground mining
  - Ore sourced from 42 separate mines within the district (20km radius)
  - Consistently achieved >90% plant recoveries to >30% Cu in concentrate

Refer ASX/JSE release 2 February 2021

# OKIEP DISTRICT – MODERN EXPLORATION/ EM OPPORTUNITY



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**EM is the most suitable geophysics tool for the best ore mined in the district, but was never used**

# OCP – FLAT MINES SCOPING STUDY INDICATES ROBUST ECONOMICS

- Industrial Development Corporation (IDC) intend to be our partners
- Foundation phase is modelled for 12 years
  - Concurrent exploration targeting mine expansion
- Scoping Study indicates potential for robust pilot-phase mine:
  - Production for the pilot phase of 9Mt at 1.29% Cu producing 102kt of copper in saleable concentrates
  - First production possible within 16 months of the start of construction
- **Capital of AUD58 million (including 15% contingency)**
- **All-in-sustaining costs of USD4,478/t (USD2.03/lb) of copper sold**
- **NPV<sub>10</sub> (post tax) of AUD114million (at USD7,593/ton Cu)**
- **All-in-sustaining margin of 40%**
- Average annual undiscounted free cash flows of AUD32 million post-tax
- Break-even grade of 0.8% Cu for both un-optimised open pit and underground mining operations





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# Appendices

# PCZM PROJECT BFS 2020: EXECUTIVE DASHBOARD

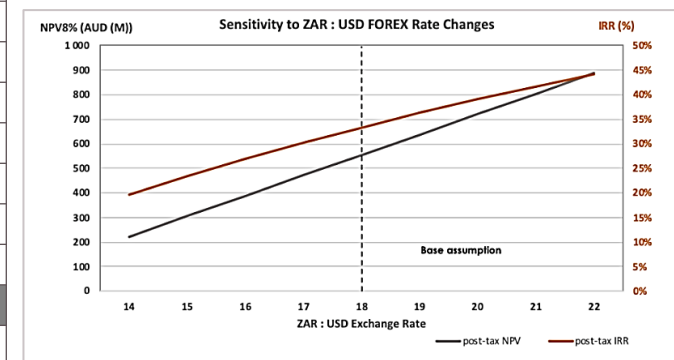


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## Key assumptions and Project Performance Parameters

Price and FX Assumptions	Unit	Value	Financial Performance	Unit	Value	Unit	Value
Metal price - Cu	USD/t	6,680	NPV (pre-tax) @8% discount rate	ZAR (M)	8,566	AUD (M)	779
Metal price - Zn	USD/t	2,337	NPV (post-tax) @8% discount rate	ZAR (M)	6,069	AUD (M)	552
Exchange rate	ZAR : USD	18 : 1	IRR (pre-tax)	%	39%	%	39%
Exchange rate	ZAR : AUD	11 : 1	IRR (post-tax)	%	33%	%	33%
Exchange rate	AUD : USD	1.64 : 1	Payback from first production	years	2.4	years	2.4
Production metrics	Unit	Value	Undiscounted free cash flow (pre-tax)	ZAR (M)	17,691	AUD (M)	1,619
Life of Mine (Phase 1)	Years	11.5	Peak funding	ZAR (M)	4,542	AUD (M)	413
Treatment plant capacity	Mtpa	2.4	Project Cost Metrics	Unit	Value	Unit	Value
Phase 1 tonnage - ROM	kt	25,250	Average cash operating unit cost (C1)	ZAR/t	807	AUD/t	73
ROM Plant Feed Grade - Cu - U/G (O-Pit)	%	1.0 (1.3)	All-in-sustaining cost per unit ROM t	ZAR/t	972	AUD/t	88
ROM Plant Feed Grade - Zn - U/G (O-Pit)	%	3.3 (2.4)	All-in-sustaining cost per unit Cu eq t sold	USD/t Cu	3,531	AUD/t Cu	5,779
Overall Plant Recovery - Cu	%	83.9%	All-in-sustaining cost per unit Zn eq t sold	USD/t Zn	828	AUD/t Zn	1,355
Overall Plant Recovery - Zn	%	81.9%	Price received (net of NSR) - Cu	USD/t Cu	6,604	AUD/t Cu	10,807
Concentrate tonnage - Cu - U/G (O-Pit)	kt	1,071 (54)	Price received (net of NSR) - Zn	USD/t Zn	1,588	AUD/t Zn	2,599
Concentrate tonnage - Zn - U/G (O-Pit)	kt	1,256 (46)	All-in-sustaining margin	%	47%	%	47%
Concentrate grade UG - Cu - U/G (O-Pit)	%	19.8 (25.5)	Operating breakeven grade (Cu eq)	%	1.0%	%	1.0%
Concentrate grade UG - Zn - U/G (O-Pit)	%	52.9 (35.0)	Project Cashflows	Unit	Value	Unit	Value
NSR as % of metal price - Cu - U/G (O-Pit)	%	99.3 (92.1)	LoM net revenue	ZAR (M)	43,404	AUD (M)	3,946
NSR as % of metal price - Zn - U/G (O-Pit)	%	68.4 (51.3)	LoM operating costs (plus State Royalty)	ZAR (M)	20,082	AUD (M)	1,826
Metal sold (in concentrates) - Cu	tonnes	226,000	Project Start-up Capital Expenditure	ZAR (M)	4,100	AUD (M)	372
Metal sold (in concentrates) - Zn	tonnes	680,000	Sustaining Capital Expenditure	ZAR (M)	1,510	AUD (M)	137
Total Sales as Cu equivalent	tonnes	386,000	Income Tax	ZAR (M)	4,865	AUD (M)	442
Total Sales as Zn equivalent	tonnes	1,644,000	Cash Flow After Tax	ZAR (M)	12,826	AUD (M)	1,166

NPV Sensitivity (AUD (M))	% Change	-15%	-10%	-5%	0%	+5%	+10%	+15%	0%
Zn Price USD/lb	0.90	0.95	1.01	1.06	1.11	1.17	1.22	1.06	1.06
Cu Price USD/lb	2.58	2.73	2.88	3.03	3.18	3.33	3.48	3.03	3.03
% Change	ZAR:USD	post-tax NPV (at 8% discount rate)							IRR
-15%	15.30	112	185	257	329	400	471	541	25%
-10%	16.20	176	252	328	403	478	553	629	28%
-5%	17.10	238	319	398	477	557	636	716	31%
0	18.00	301	385	468	552	636	719	804	33%
+5%	18.90	363	451	538	626	714	803	892	36%
+10%	19.80	425	517	609	701	793	887	981	38%
+15%	20.70	487	583	679	775	873	971	1,070	41%



Level of Accuracy of Financial Model  $\pm$  15%, LoM = Life of Mine, NSR = Net Smelter Return, NPV = Net Present Value, IRR = Internal Rate of Return

There is a low level of geological confidence associated with Inferred Mineral Resources and therefore there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources so that the Production Target or financial forecast information referred to in this Study will be realised.

Refer ASX/JSE release 26 May 2020

# OCP – FLAT MINES PILOT PROJECT SCOPING STUDY



## Executive Dashboard

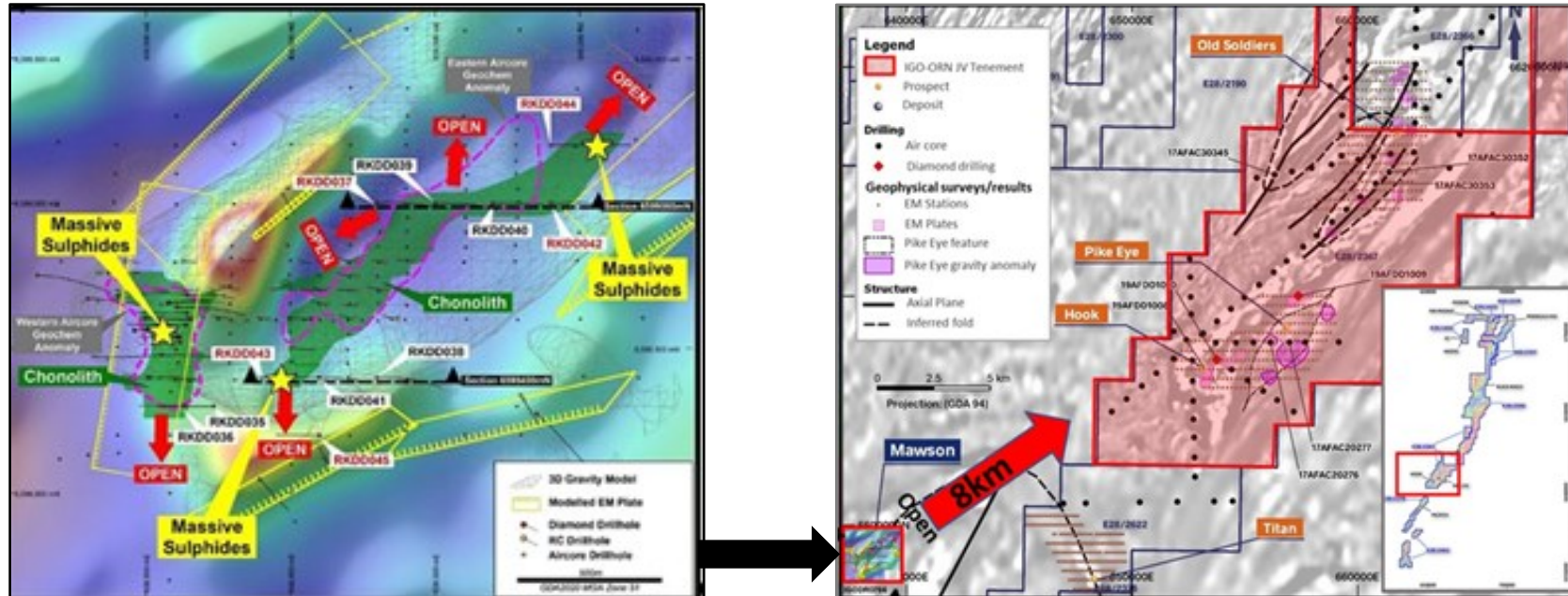
Price and Forex Assumptions		Unit	Value	Financial Performance		Unit	Value	Unit	Value
Metal price - Cu	USD/t	7,593	NPV (pre-tax) approximated @10% discount rate	ZAR (M)	1,896	AUD (M)	170		
Metal price – Au	USD/oz	1,889	NPV (post-tax) approximated @10% discount rate	ZAR (M)	1,267	AUD (M)	114		
Metal price – Ag	USD/oz	24	IRR (pre-tax)	%	44%				
Exchange rate	ZAR : USD	17.2 :1	IRR (post-tax)	%	37%				
Exchange rate	ZAR : AUD	11 .1: 1	Payback from first production	years	3.25 years				
Production Metrics		Unit	Value	Undiscounted free cash flow (pre-tax)	ZAR (M)	4,607	AUD (M)	413	
Life of Mine (Proof-of-Concept Phase)	Years	11.8	Peak funding	ZAR (M)	643	AUD (M)	58		
Treatment plant capacity	ktpa	780	Project Cost Metrics		Unit	Value	Unit	Value	
Proof-of-Concept Phase tonnage - RoM	kt	9,011	Average cash operating unit cost (C1)	ZAR/t	781	AUD/t	70		
Proof-of-Concept Phase tonnage – RoM U/G	kt	7,479	All-in-sustaining cost per unit RoM t	ZAR/t	873	AUD/t	78		
Proof-of-Concept Phase tonnage – RoM O-Pit	kt	1,531	All-in-sustaining cost per unit Cu t sold	USD/t Cu	4,478	AUD/t Cu	6,904		
RoM Plant Feed Grade - Cu - U/G	%	1.29%	Price received (net of NSR) - Cu	USD/t Cu	7,441	AUD/t Cu	11,473		
RoM Plant Feed Grade - Cu – O-Pit	%	1.28%	All-in-sustaining margin	%	40%				
RoM Plant Feed Grade – Au	g/t conc	2.2	Operating breakeven grade - Cu	%	0.83%				
RoM Plant Feed Grade – Ag	g/t conc	34	Project Cash Flows		Unit	Value	Unit	Value	
Overall Plant Recovery - Cu	%	87.4%	LoM net revenue	ZAR (M)	12,712	AUD (M)	1,142		
Concentrate tonnage - Cu	kt	386	LoM operating costs (plus State Royalty)	ZAR (M)	7,320	AUD (M)	657		
Concentrate grade - Cu	%	25.8%	Project Start-up Capital Expenditure	ZAR (M)	595	AUD (M)	53		
NSR as % of metal price - Cu	%	96.9%	Sustaining Capital Expenditure	ZAR (M)	188	AUD (M)	17		
Metal sold (in concentrates) - Cu	Tonnes	102,329	Income Tax	ZAR (M)	1,368	AUD (M)	123		
Total Cu Sales	Tonnes	386,787	Cash Flow After Tax	ZAR (M)	3,241	AUD (M)	291		

Level of Accuracy of Financial Model ± 25%, LoM = Life of Mine, NSR = Net Smelter Return, NPV = Net Present Value, IRR = Internal Rate of Return

There is a low level of geological confidence associated with Inferred Mineral Resources and therefore there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the Production Target or financial forecast information referred to in this Study will be realised. Source: *ORN Okiep Financial Model revision 4.0*

# EXPLORATION: AUSTRALIA FRASER RANGE (10-30% ORN FREE CARRIED) – JV WITH IGO

Location of Pike Project (IGO: ORN JV) relative to Legend Mining's Mawson Ni-Cu discovery



## Pike Project

- ORN 30% free-carried by IGO through to first Pre-Feasibility study
- 2019 diamond drilling intersected Ni-Cu sulphides in ultramafic intrusive and same geological features as Mawson
- **Significant off-hole conductor to be tested this quarter**

Refer Orion March 2021 Quarterly Activities Report

# SENIOR MANAGEMENT



**Errol Smart**

*Managing Director &  
Chief Executive Officer*

Errol is a Geologist, with professional registration for JORC purposes. He has more than 28 years' industry experience in exploration, mine development and operations. He is also the Chairman of the Junior and Emerging Miners Forum of the Minerals Council South Africa.



**Martin Bouwmeester**

*Chief Financial Officer &  
Company Secretary*

Fellow of CPA Australia with over 20 years' experience in exploration, mine development and Operations. Key member of the team which evaluated, funded and developed the Fosterville Gold Mine.



**Walter Shamu**

*Chief Operating Officer*

Mining engineer with a B.Eng (Mining Engineering) and Masters in Engineering (Rock Mechanics), as well as LLB (Law). He has more than 20 years' experience in exploration, mining development and mining operations throughout Africa.



**Michelle Jenkins**

*Executive: Finance &  
Administration*

Chartered Accountant with more than 20 years' experience in exploration and mining, with a BSc Hons (Geology) and a Bachelor of Accounting Science. Has held role of CFO/FD with a number of exploration and mining companies throughout Africa.



**Louw van Schalkwyk**

*Consulting  
Geologist*

Geologist with over 30 years' experience with major South African mining houses. Part of the team that discovered the 60Mt Gamsberg East Zinc deposit in the Northern Cape. Also discovered the Byumba Gold deposit in Rwanda in 2008.



**Nelson Mosiapoa**

*Group Corporate Social  
Responsibility Advisor*

Founder and trustee of the Mosiapoa Family Trust. Policy scholar of science and technology; served on the policy unit of the governing party in South Africa prior to the first democratic elections.



# BOARD OF DIRECTORS



**Denis Waddell**

*Chairman*

Denis is a Chartered Accountant with extensive experience in corporate finance and management of exploration and mining companies.



**Errol Smart**

*Managing Director & Chief Executive Officer*

Errol is a Geologist, with professional registration for JORC purposes. He has more than 28 years' industry experience in exploration, mine development and operations. He is also the Chairman of the Junior and Emerging Miners Forum of the Minerals Council South Africa.



**Alexander Haller**

*Non-Executive Director*

Alexander is a Partner at Zachary Capital Management, which provides advisory services to private investment companies. He is an ex-JP Morgan advisor on corporate mergers and acquisitions.



**Mark Palmer**

*Non-Executive Director*

Mark is an investment banker with 12 years' experience working with entities in Australia. He has been Investment Director at Tembo Capital since 2015.



**Godfrey Gomwe**

*Non-Executive Director*

Godfrey is the former CEO of Anglo American's Thermal Coal business and he served as Executive Director of Anglo American South Africa until August 2012.



**Tom Borman**

*Non-Executive Director*

Tom is a respected and highly experienced global mining executive who served more than 11 years working for the BHP Billiton Group in various senior managerial roles, including that of Chief Financial Officer of an Australian-listed mining company.



Orion Minerals

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**ASX/JSE: ORN**