



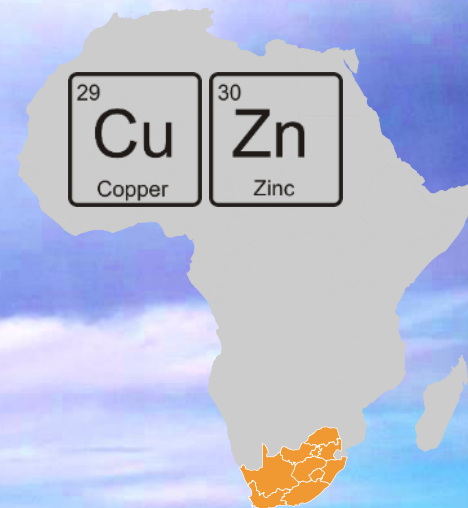
Orion Minerals

ASX/JSE: ORN

## DELIVERING THE PRIESKA PROJECT

A strong foundation for near-term development and long-term growth

Investor Presentation ADU : September 2019



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Orion Minerals

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# ORION MINERALS – COMPELLING INVESTMENT CASE



## THE OREBODY

- Globally significant VMS Resource: 30.49Mt @ 1.2% Cu, 3.7% Zn
- Mineral Reserve: 13.62Mt @ 1.06% Cu, 3.18% Zn

## FOUNDATION PHASE BFS OUTCOMES

- Initial 10-year, 2.4Mtpa operation targeting 22ktpa Cu & 70ktpa Zn
- Strong operating margins and financials
  - Pre-tax free cash flow of A\$1.1bn (post-tax A\$819m)
  - Pre-tax NPV<sub>8%</sub> of A\$574m (post-tax A\$408m)
  - Peak funding of A\$378m
  - Payback period of three years from first production
  - All-in sustaining margin of 44%

## PERMITTING

- Environmental Authorisation awarded July 2019
- Mining Right for initial 24 years (renewable) granted August 2019

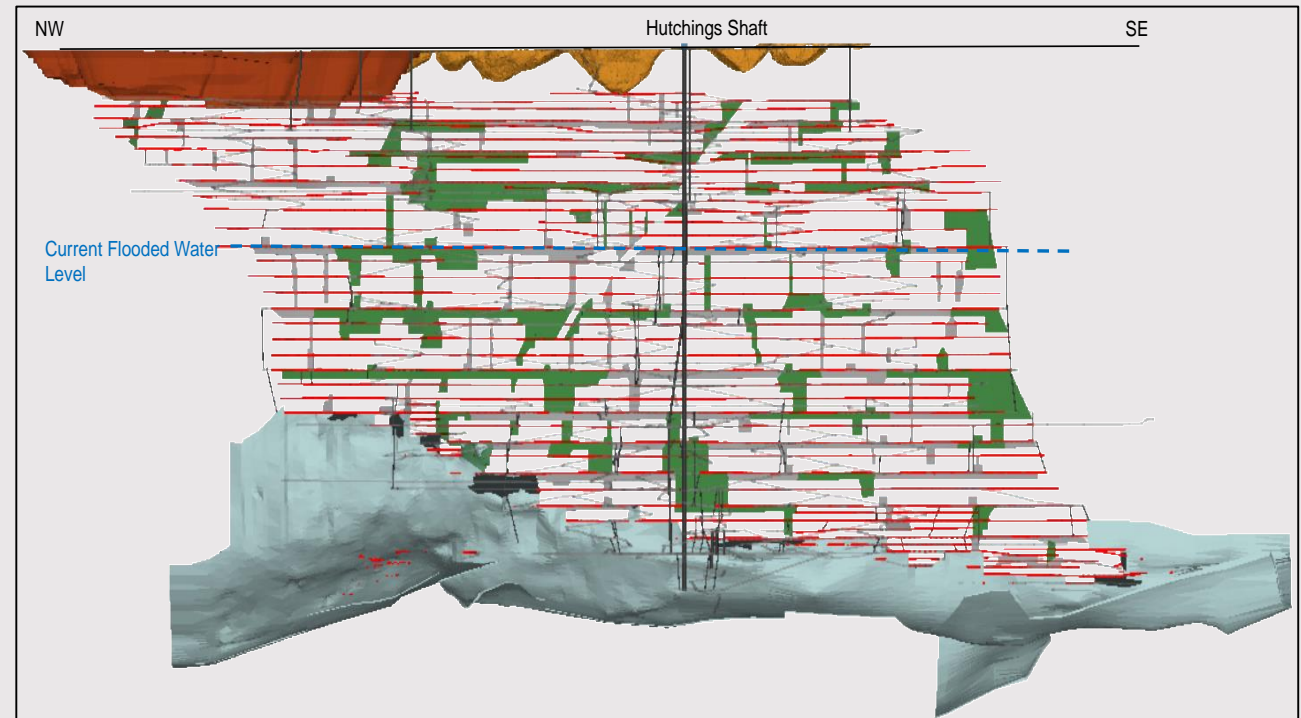
## THE FUTURE

- Exceptional exploration and growth pipeline



# PRIESKA: REAWAKENING A GLOBAL VMS GIANT

- World-class orebody – recorded as a Top 30 global VMS deposit
- Located in Northern Cape Province, 270km south-west of regional capital, Kimberley
- Established mining region, yet least populous region of South Africa
- Historically mined by AngloVaal (1971-1991)
- Recorded historical production of 1Mt of Zn and 430kt of Cu from 46.8Mt of sulphide ore milled\*
- Extensive infrastructure in place
- Near-mine exploration and further expansion potential



\* Source: Mine records

# PRIESKA: DEVELOPING A NEW MINE IN THE FOOTPRINT OF AN OLD ONE

## Extensive infrastructure already in place:

- Primary shafts and underground decline roadways
- Sealed access roads to project site
- 48km via bitumen road to existing rail siding
- Four high-voltage regional lines linked to national electricity grid
- 175MW operational solar power plants in area with additional 675MW approved and 300MW pending authorisation
- 800km rail link to major bulk commodity and deep-water ports
- Bulk water pipeline supplies to site
- Good contractor accommodation facilities ~3km from site
- Low environmental sensitivity – existing mine footprint





# KEY SOCIAL IMPACTS OF THE PROPOSED MINE

## EMPLOYMENT CREATION

- Estimated that 846 people (operational Phase) will be employed
- Empirical multiplier effect potentially creates 2,500 associated jobs

## INCREASE IN GROSS DOMESTIC PRODUCT

- District GDP increase expected to increase by 20.3% at optimal mining
- Combined multipliers may increase local economy by 30%
- Local sourcing of select goods and services

## CREATE THE POTENTIAL FOR BENEFICIAL MULTIPLIERS

- Mine support services will develop locally
- Increase in local residents, expected to promote infrastructure upgrades
- Stimulation of related synergic industries

## LOCAL AND BEE ENTERPRISE DEVELOPMENT

- Will create opportunities for local entrepreneurs



# PRIESKA: MINE OF THE FUTURE

Implementing a modern operating philosophy (4IR enabled) can contribute to achieving quantum changes in key output parameters that are traditionally slow to improve or have regressed in the local mining industry, including:

- Safety and health improvements
- Improved environmental conditions, reduced pollution and contamination
- Improved energy efficiency and lower energy costs
- Productivity improvements
- Operating cost reductions

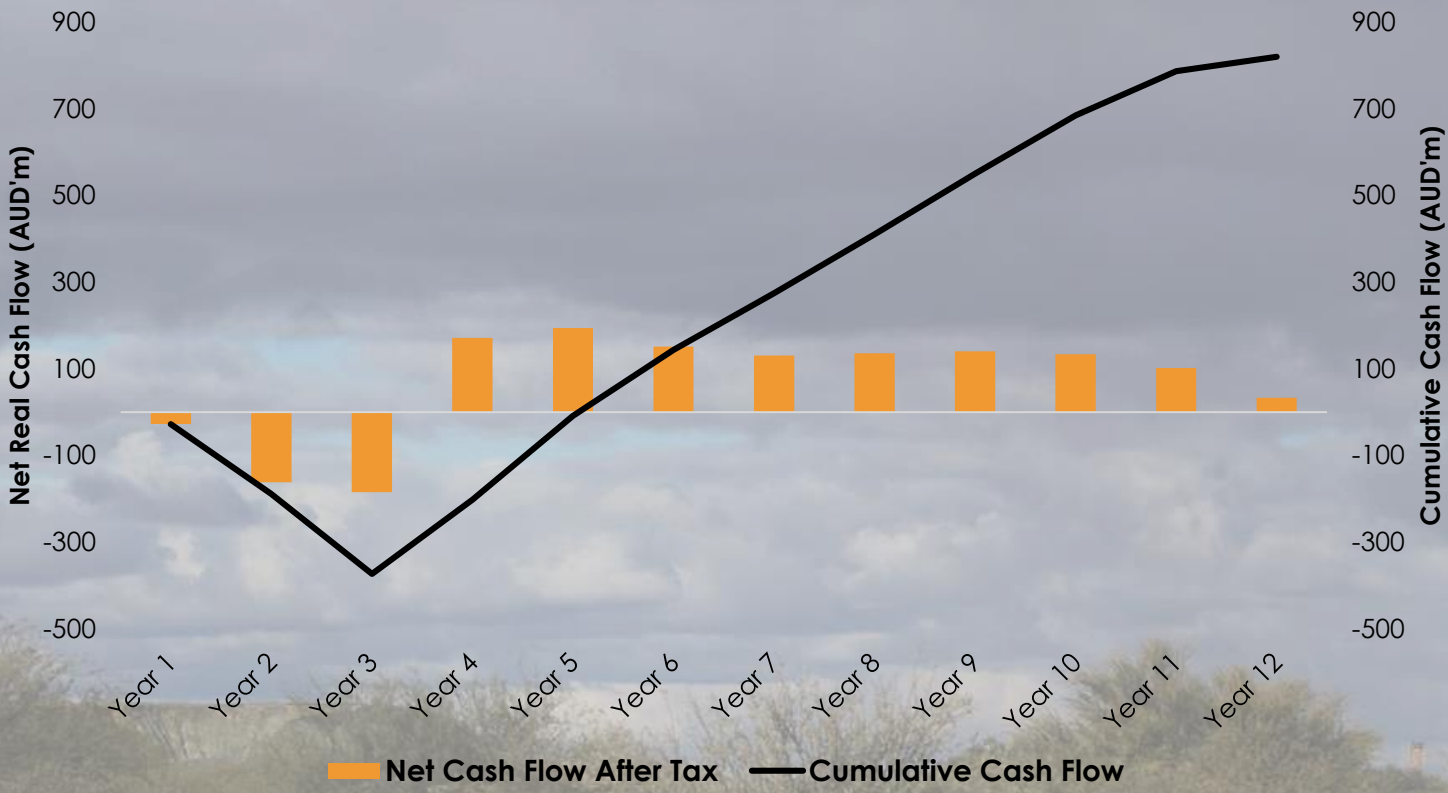
**Benchmark  
Globally**

**Implement  
Enablers**

**Be Fast  
Followers**

**Always Make  
Commercial  
Sense**

# STRONG CASHFLOW





# PRIESKA BFS HIGHLIGHTS



## FOUNDATION PHASE



## LOM EXTENSION PHASE

- Demonstrates compelling investment case to establish financially robust mine with initial 10-year life
    - Pre-tax free cash flow of A\$1.1bn (post-tax A\$819m)
    - Pre-tax NPV<sub>8%</sub> of A\$574m (post-tax A\$408m)
    - Peak funding of A\$378m
    - Payback period of three years from first production
    - All-in sustaining margin of 44%
  - Optimisation studies continue
  - Investigating by-product production
- LOM extensions leveraging off Foundation Phase development and requiring limited or no additional capital works
  - Tonnage targeted
    - Remainder of current Global Resource, 9.13 Mt at 1.4% Cu and 3.6% Zn
    - Evaluating existing pillar extraction (7-8 million tonnes) after voids are paste filled
    - High grade strike extensions of resource requiring additional drilling, not yet in JORC resource

# PRIESKA: NEXT STEPS

## FOUNDATION PHASE

- Orion progressing key commercial work streams:
  - Permitting
  - Concentrate marketing
  - Project financing
- Final investment decision targeted in H2 2019
- Commencement of construction targeted for late 2019/early 2020
- Ongoing optimisation studies
- Evaluating by-product production and sales
  - Barite
  - Pyrite

## LOM EXTENSION PHASE

- Resource extension drilling to commence following establishment of underground drilling platforms
  - targeting strike extensions and folded limb of the main Prieska VMS lens, which remains open
- Exploration for near mine satellite bodies to continue from surface



# APPENDICES





# BANKABLE FEASIBILITY STUDY DASHBOARD



Price and FX Assumptions	Unit	Value	Financial Performance	Unit	Value
Metal price – Cu	USD/t	6,834	NPV pre-tax (post-tax) @ 8.0% discount rate	AUD M	574 (408)
Metal price – Zn	USD/t	2,756	IRR pre-tax (post-tax)	%	38% (33%)
Exchange rate	ZAR:USD	14.5 :1	Payback from first production	years	2.9
Exchange rate	ZAR:AUD	10 : 1	Undiscounted free cash flow pre-tax (post-tax)	AUD M	1,127 (819)
Exchange rate	AUD:USD	1.45 : 1	Peak funding	AUD M	378
Production Metrics	Unit	Value	Project Cost Metrics	Unit	Value
Life of Mine	Years	9.7	Average cash operating unit cost (C1)	AUD/t	80
Treatment plant capacity	Mtpa	2.4	All-in-sustaining cost per unit ROM t	AUD/t	94
ROM Plant Feed – tonnage	kt	20,827	All-in-sustaining cost per unit Cu_Eq t sold	AUD/t Cu	5,470
ROM Plant Feed – grade - Cu	%	1.1%	All-in-sustaining cost per unit Zn_Eq t sold	AUD/t Zn	1,582
ROM Plant Feed – grade - Zn	%	3.4%	Price received (net of NSR) - Cu	AUD/t Cu	9,785
Concentrate tonnage - Cu	kt	790	Price received (net of NSR) - Zn	AUD/t Zn	2,830
Concentrate tonnage - Zn	kt	1,180	All-in-sustaining margin	%	44%
Concentrate grade – Cu U/G (O-Pit)	%	23.8% (25.6%)	Operating breakeven grade (Cu_Eq)	%	1.2%
Concentrate grade – Zn U/G (O-Pit)	%	49.9% (35.5%)			
NSR as % of metal price – Cu U/G (O-Pit)	%	98.7% (91.2%)			
NSR as % of metal price – Zn U/G (O-Pit)	%	71.3% (53.7%)	Project Cash Flows	Unit	Value
Metal sold (in concentrates) - Cu	tonnes	189,000	LoM net revenue	AUD M	3,284
Metal sold (in concentrates) - Zn	tonnes	580,000	LoM operating costs (+ Royalty and Tax)	AUD M	1,673
Total Sales as Cu equivalent	tonnes	357,000	Project Start-up Capital Expenditure	AUD M	402
Total Sales as Zn equivalent	tonnes	1,230,000	Sustaining Capital Expenditure	AUD M	83

There is a low level of geological confidence associated with Inferred Mineral Resources and 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 will be realised.

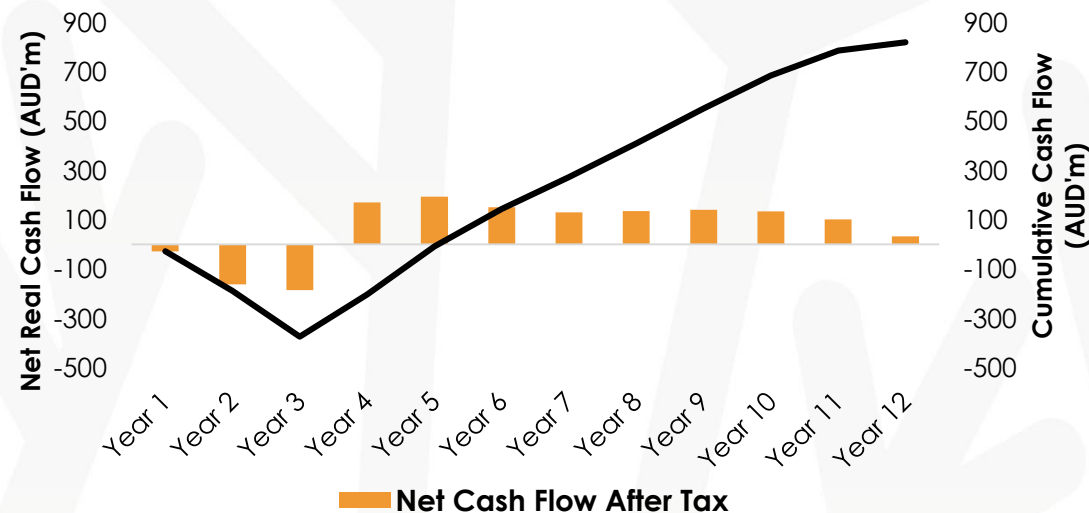
Table: Key BFS Results for the Foundation Phase of the Prieska Copper-Zinc Project. Note that the Study estimation accuracy level is  $\pm 15\%$ .

# CONSTRUCTION MILESTONES

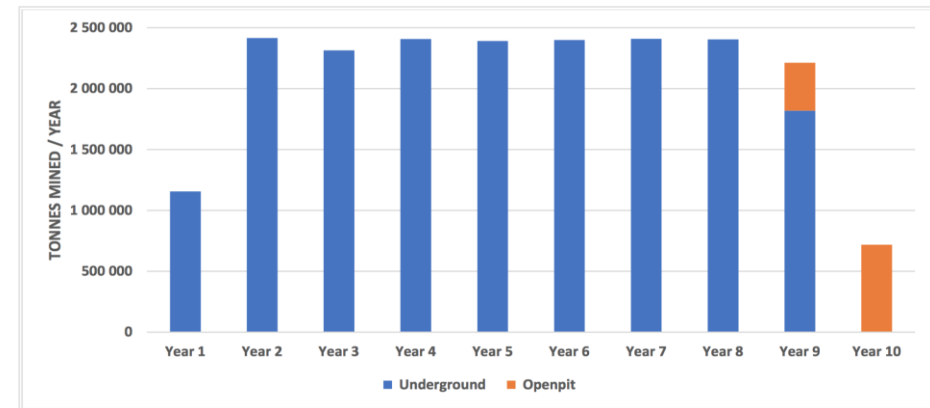
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# MINING PRODUCTION PROFILE

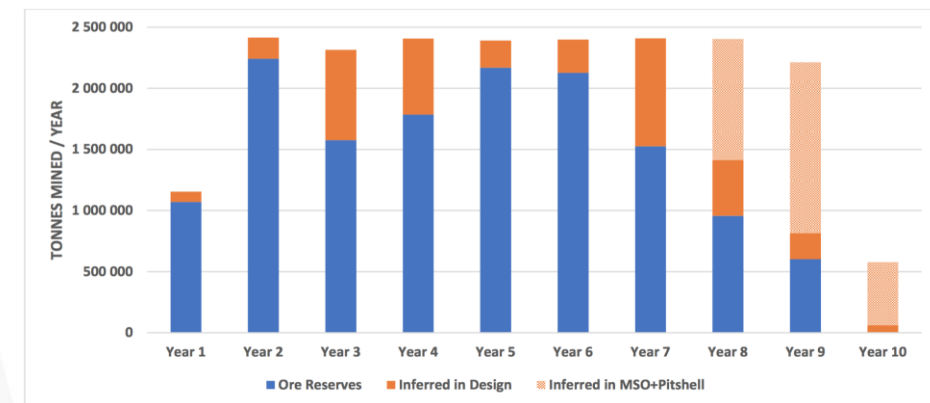
- Underground mining for majority of the Foundation Phase
- Small open pit mined on retreat
- Underground mining to commence on completion of:
  - mine dewatering
  - shaft refurbishment
- Underground establishment program of 23 months before first ore mined
- Underground mining will build up over 14 months to steady-state run-of-mine production rate of 200ktpm or 2.4Mtpa



## MILLED ORE SOURCES



## MILLED ORE JORC CATEGORIES





# MINERAL RESOURCE

Total Prieska Project Mineral Resource for Repli + Vardocube Tenements (Effective Date: 11 January 2019)						
Mineral Resource	Classification	Tonnes	Cu (tonnes)	Cu (%)	Zn (tonnes)	Zn (%)
Deep Sulphide Resource	Indicated	18,507,000	217,000	1.17	667,000	3.60
	Inferred	10,219,000	117,000	1.1	417,000	4.1
+ 105m Level Resource	Indicated	624,000	10,000	1.54	19,000	3.05
	Inferred	1,138,000	17,000	1.4	16,000	1.4
Total	Indicated	19,131,000	227,000	1.18	686,000	3.59
	Inferred	11,357,000	134,000	1.2	433,000	3.8
Grand Total		30,488,000	361,000	1.2	1,119,000	3.7
Deep Sulphide Resource bottom cut-off = 4% Equivalent Zn; +105m Level Mineral Resource bottom cut-off = 0.3% Cu. Mineral Resources stated at zero % cut-off. Tonnes are rounded to thousands, which may result in rounding errors.						

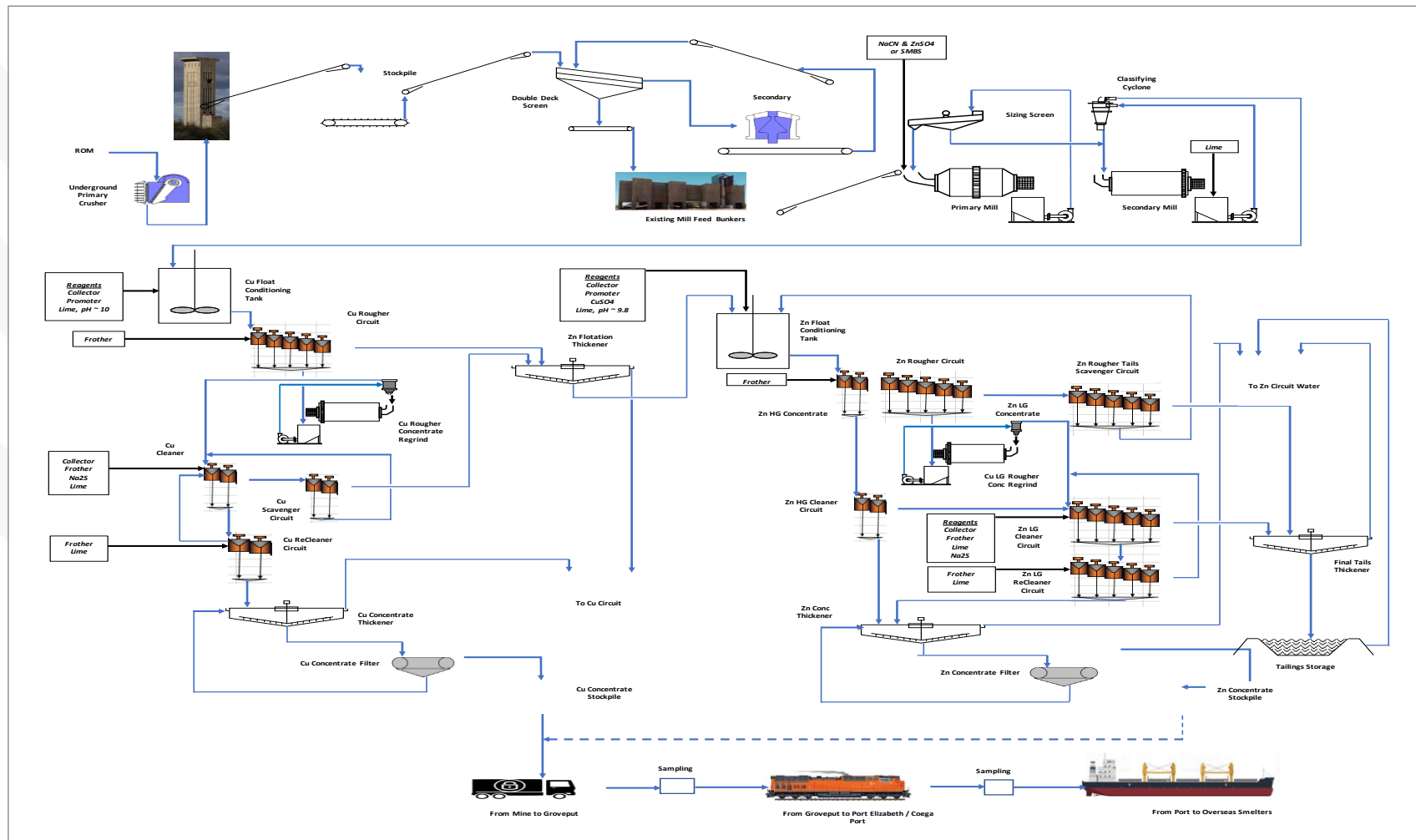
**The Mineral Resources are inclusive of the Mineral Reserves**

# MINERAL RESERVE

Preiska Project Ore Reserves Estimate (Effective Date: 16 June 2019)								
Deposit	Ore Reserve Classification	Tonnage (Mt)	Cu		Zn		Cu Equivalent	
			Metal Tonnes (kt)	Grade (%)	Metal Tonnes (kt)	Grade (%)	Metal Tonnes (kt)	Grade (%)
+ 105 Supergene	Probable	0.48	7	1.5	16	3.3	11	2.2
Deep Sulphide	Probable	13.14	136	1.0	417	3.2	257	2.0
<b>Total</b>	<b>Probable</b>	<b>13.62</b>	<b>143</b>	<b>1.1</b>	<b>433</b>	<b>3.2</b>	<b>268</b>	<b>2.0</b>

Prieska Ore Reserves calculated using financial assumptions and modifying factors stated in the Study. Tonnes are rounded to thousands, which may result in rounding errors.

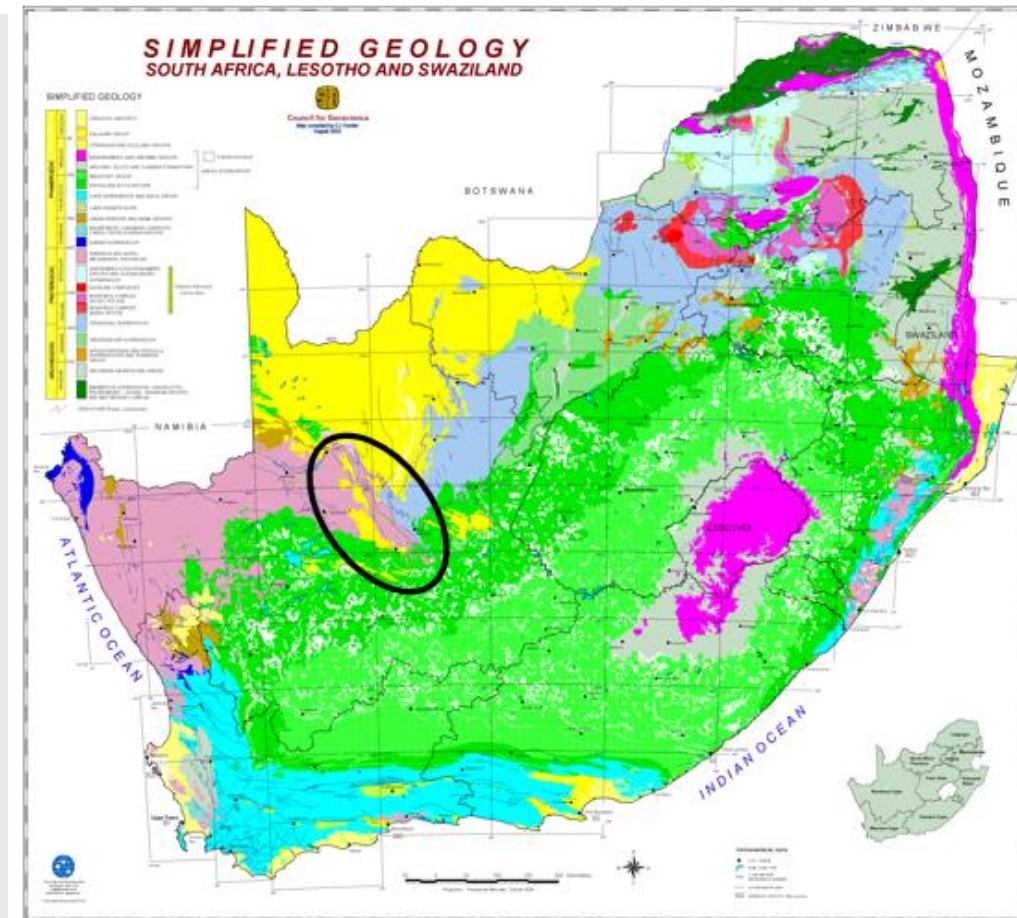
Refer ASX release 26 June 2019





# A DOMINANT LAND-HOLDING IN AN UNDER-EXPLORED MINERAL BELT

- Highly prospective yet under-explored mineral province
- 22 identified VMS occurrences historically confirmed by major mining houses
- Reputed to have the highest concentration of zinc on the African continent\*:
  - Large-scale sediment-hosted deposits classified as Broken Hill, SEDEX and VMS
  - >40Mt of contained zinc
- Several known intrusive Ni-Cu-PGE occurrences with limited modern exploration
- Potential for discovery of high-grade Ni-Cu deposits

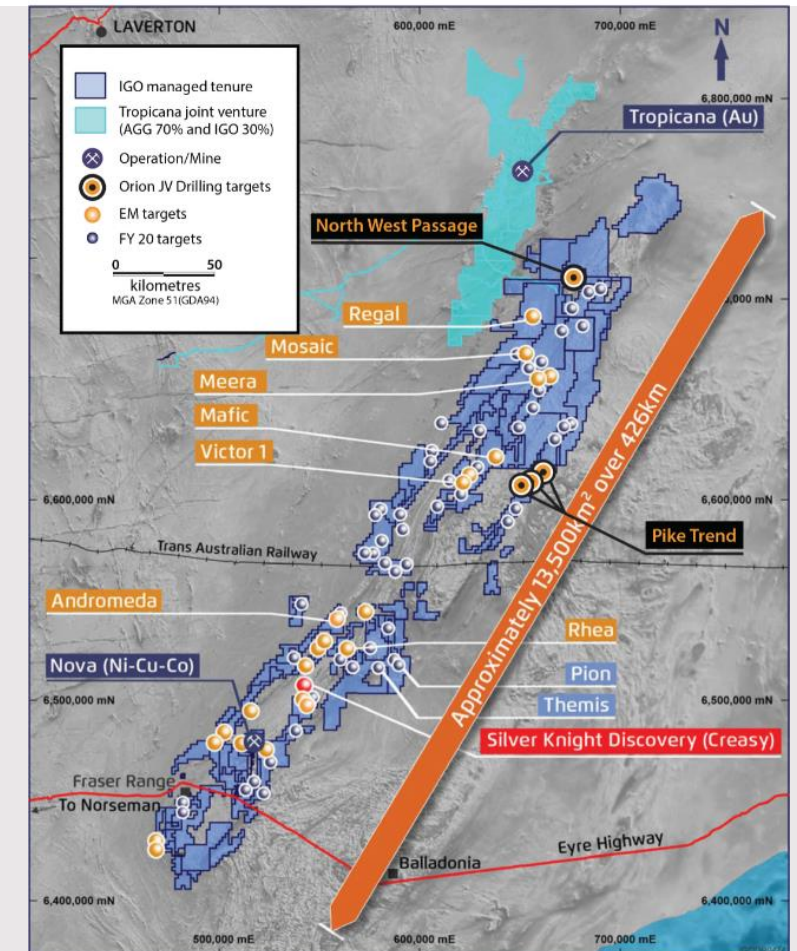


\* Source: Vedanta Capital Markets Day presentation, March 2015

# FRASER RANGE: SEARCHING FOR A SUPERNOVA

**“We have a conviction the (Nova) system is much larger than we believed, and the increased probability of additional discoveries means we are motivated to significantly increase our spending in 2020.” – IGO Managing Director Peter Bradford, quoted on Miningnews.net, 31 July 2019**

- IGO has commenced drilling on the North West Passage Ni-Cu JV geophysical prospect
- Drilling will also test combined Ni-Cu Intrusive and Cu-Zn VMS targets identified at the Pike, Pike-Eye and Hook Prospects
- Drilling forms part of a larger exploration program across the northern part of the Fraser Range and it is expected that, following completion of drilling at the North West Passage, drilling will move to the highly prospective Pike Trend (IGO 70% : Orion 30%) during the latter part of 2019



# CORPORATE STRUCTURE



Orion Minerals

Capital structure summary	Current	Post Capital Raising
Shares on issue <sup>1</sup>	2,145M	2,145M
Options on issue <sup>2</sup>	302M	312M
Cash on hand <sup>3</sup>	\$1.4M	
Placement of Shares – (Tranche 2) <sup>2</sup> - (\$0.8M)		20M
Founding BEE investor share exchange <sup>4</sup> - (\$4.2M)		135M
AASMF loan <sup>5</sup>	\$1.8M	
Convertible notes (2.6cps convert, 12% coupon, Sep'19 maturity) <sup>6</sup>	\$5.8M	
Convertible loan (2.6cps convert, 12% interest, Jan'20 term) <sup>7</sup>	\$4.0M	
<b>Total Shares (post Share issues)</b>		<b>2,300M</b>
Market capitalisation (2.9cps (ASX)) <sup>8</sup>	\$62M	\$67M

Primary listing on the ASX.

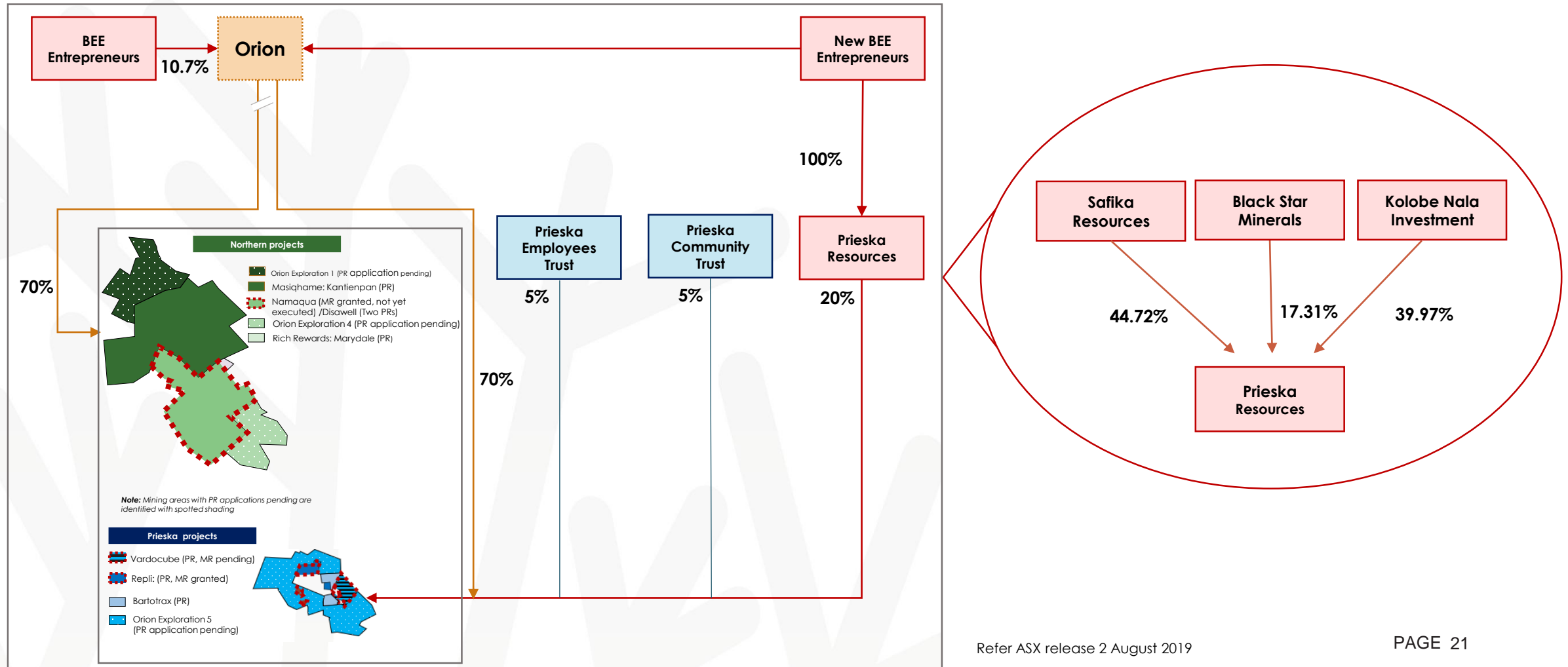
Secondary listing on Main Board of the Johannesburg Stock Exchange.

Significant shareholders	Current %	Post capital raising %
Tembo Capital	22.4	20.9
Independence Group NL	7.2	6.7
Tarney Holdings	5.2	4.9
Wyllie Group	5.1	4.8
Silja Investment & Alexander Haller <sup>9</sup>	3.2	3.0
<b>Total</b>	<b>43.2</b>	<b>40.3</b>

1. Fully paid ordinary Orion shares (**Shares**) on issue as at 30 Aug'19.
2. Completion of Tranche 2 of the \$8M capital raising, being the issue of 20M Shares at 4.0cps (together with one free attaching option for every two Shares issued) (approved by shareholders at a General Meeting held 7 Jun'19 (**Meeting**)) (refer ASX release 16 Apr'19).
3. Cash on hand as at 30 Jun '19.
4. Founding BEE investor exchange for Shares (approved by shareholders at the Meeting) (refer ASX release 16 Apr'19).
5. Refer to the Company's Half Year Accounts for period ended 31 Dec'18 for information related to the Loan Agreement (ZAR14.25M) that Repli has entered into with AASMF. Balance shown as at 30 Jun'19.
6. Refer to ASX release 25 Jan'19 and the Company's Half Year Accounts for period ended 31 Dec'18 for information related to the Convertible Notes.
7. Orion announced on 25 Jan'19 that it had entered into a \$3.6M loan facility with Tembo Capital (excluding capitalised interest and fees) (**Loan Facility**). Under the terms of the Loan Facility, Tembo may at its election have the balance of the Loan Facility settled by the issue of Shares at a deemed issue price of 2.6cps (subject to receipt of shareholder approval). Refer to ASX release 25 Jan'19 and the Company's Half Year Accounts for the period ended 31 Dec'18 for additional information. Balance shown as at 30 Jun'19.
8. Calculated based on closing price of ORN Shares on the ASX on 30 Aug'19. Closing price of ORN Shares on the JSE on 30 Aug'19 was ZAR0.30.
9. Alexander Haller is deemed to have a relevant interest in securities held by Silja Investment.



# PIVOTAL \$8M CAPITAL RAISING AND BEE TRANSACTION

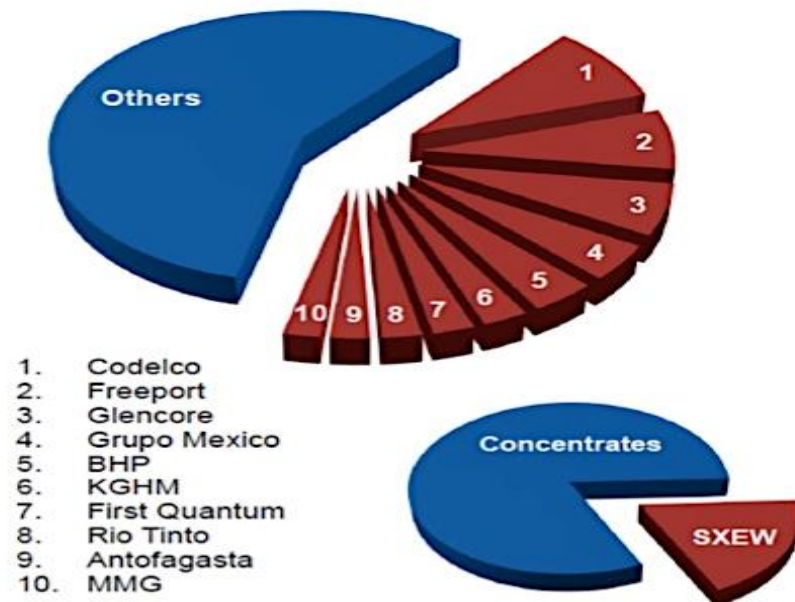


# PROBLEM LOOMING: COPPER SUPPLY CHAIN

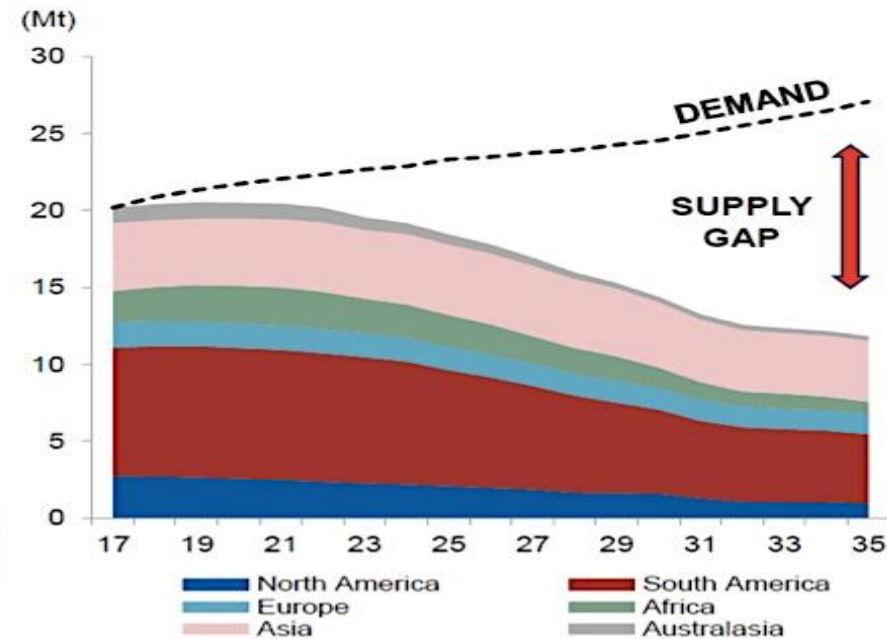
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Without projects supply gap will exceed 15Mt by 2035

1. Copper Mine Production 2017: 20.4Mt

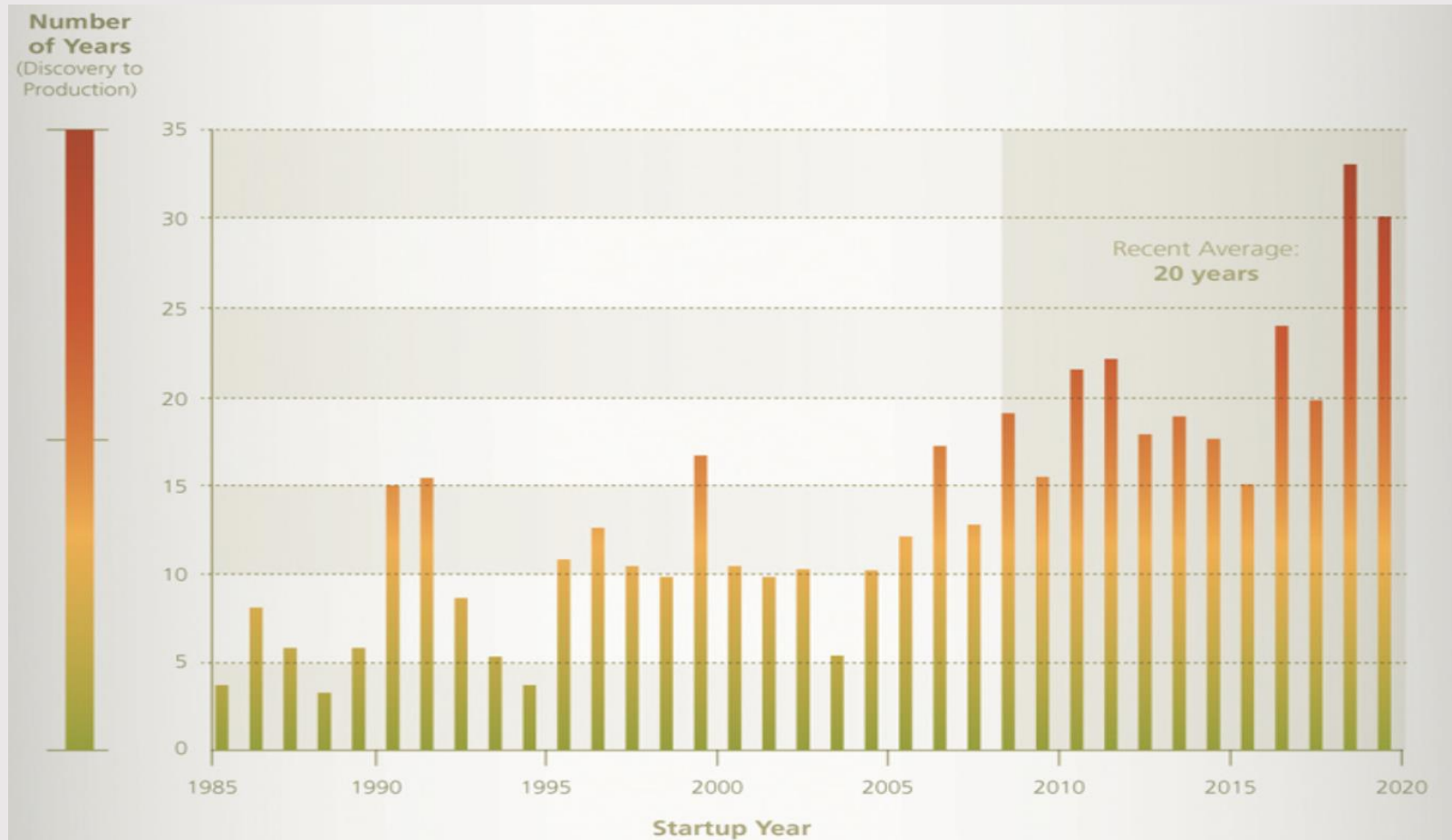


2. Committed\* Mine Supply Forecast



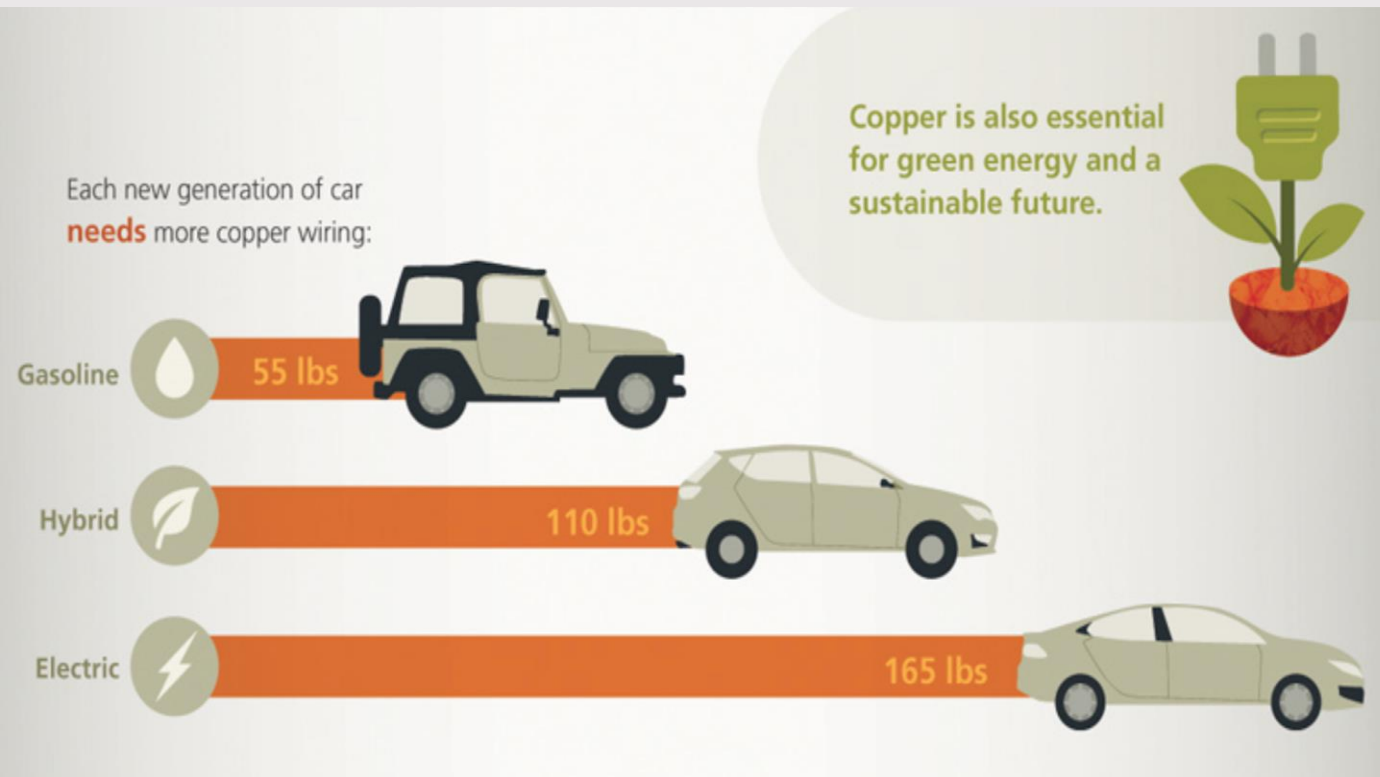
\* Committed = Existing Operations and Firm Expansions

# LARGE COPPER MINES HAVE A **VERY LONG LEAD TIME**



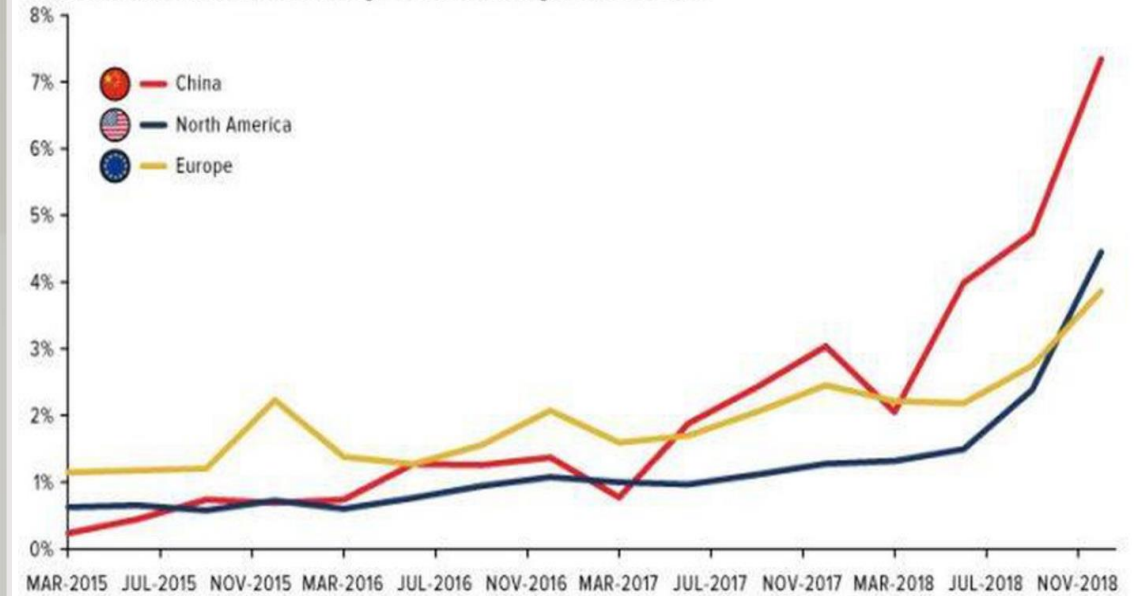


# ADD A MAJOR NEW DEMAND DRIVER



## China Leads the World in Electric Vehicle Adoption

Electric Vehicle Sales as a Percentage of Total Passenger Vehicle Sales



Source: China Association of Automotive Manufacturers, BNEF, U.S. Global Investors

China Leads the World in Electric Vehicle Adoption U.S. GLOBAL INVESTORS

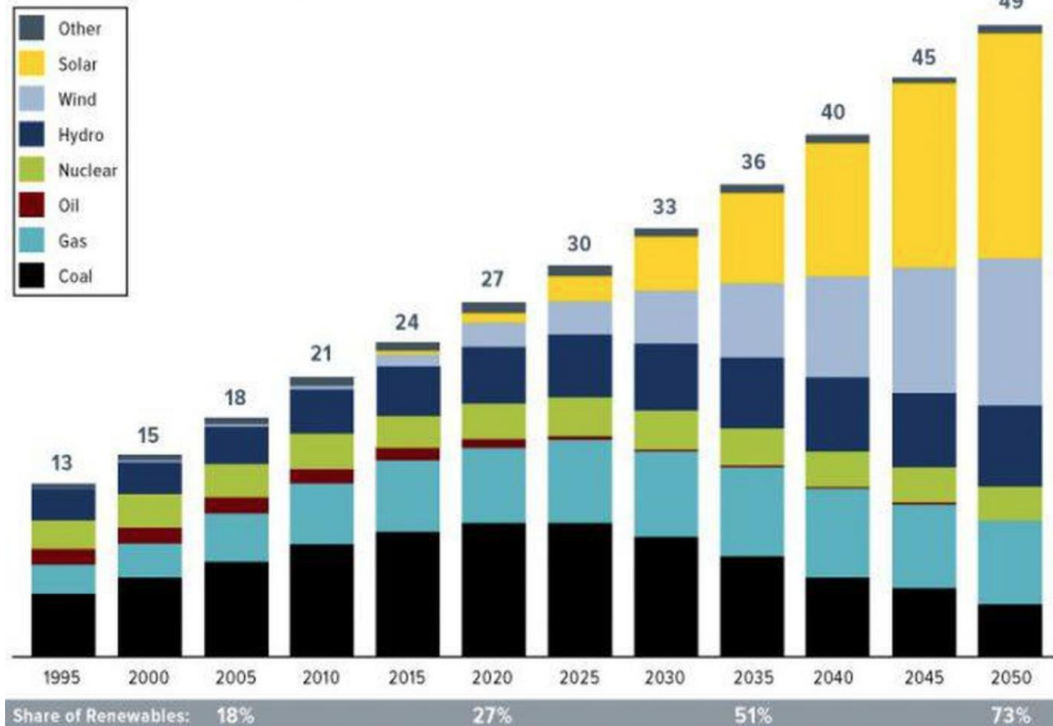
# ALSO COPPER HUNGRY RENEWABLE ENERGY



Orion Minerals

## Renewable Energy Projected to Account for Three Quarters of Global Power Generation by 2050

Thousands of Terawatt Hours (TWh)



\*"Other" includes biomass, geothermal and marine.

Source: McKinsey Energy Insights' Global Energy Perspective (January 2019), U.S. Global Investors

Renewable Energy Projected to Account for Three Quarters of Global Power Generation by 2050 U.S. GLOBAL INVESTORS

Copper is also essential for green energy and a sustainable future.



An average of 3.6 tonnes of copper is used for each MW of wind power capacity

Mining(dot)Com: Visual Capitalist: 23 June 2015





Orion Minerals

ASX/JSE: ORN

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