

MACQUARIE WA FORUM

4 December 2019

WESTERN AREAS LTD



AGENDA

CORPORATE



GROWTH AND EXPLORATION



OPERATIONS



THE NICKEL MARKET



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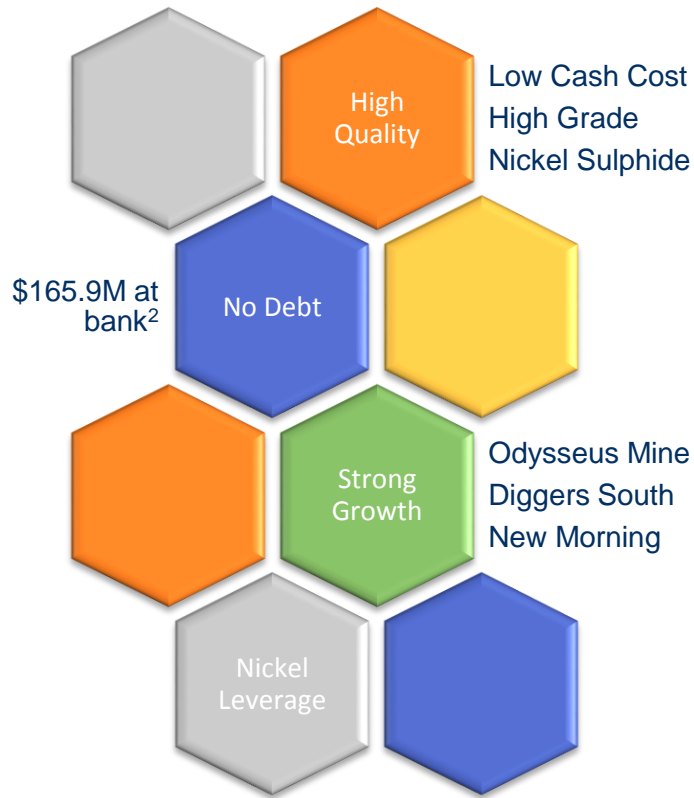
The information within this PowerPoint presentation was compiled by Western Areas management, but the information as it relates to exploration results, mineral resources or ore reserves was prepared by Mr Graeme Gribbin, Mr Andre Wulfse or Mr Marco Orunesu-Preiata respectively. Mr Gribbin, Mr Wulfse and Mr Orunesu-Preiata are full time employees of Western Areas Ltd. Mr Gribbin is a member of Australian Institute of Geoscientists (AIG). Mr Wulfse and Mr Orunesu-Preiata are members of Australian Institute of Mining and Metallurgy (AusIMM) and have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’(2012 JORC Code). Mr Gribbin, Mr Wulfse and Mr Orunesu-Preiata consent to the inclusion in this presentation of the matters based on the information in the form and context in which it appears.



CORPORATE



Corporate overview



ASX code	WSA
Share price	2.82
Shares outstanding (m)	273.5
Market Cap (A\$m) ¹	771.3
Cash (A\$m) ²	165.9

COSMOS

Odysseus

165kt Ni Ore Reserves
265kt Ni Mineral Resource
Early works complete

FORRESTANIA

Flying Fox

2.3kt Ni mined Q1FY20
19.0kt Ni Ore Reserves
76.6kt Ni Mineral Resource

Spotted Quoll

3.5kt Ni mined Q1FY20
61.1kt Ni Ore Reserves
75.5kt Ni Mineral Resource



FY20 guidance

Category	FY20 Guidance
Nickel tonnes in Concentrate Production	21,000 to 22,000
Unit Cash Cost of Production (Nickel in Concentrate)	A\$2.90/lb to A\$3.30/lb
Mine Development	A\$33m to A\$38m
Capital & Growth	A\$7m to A\$10m
Odysseus Development	A\$75m to A\$85m
Exploration	A\$14m to A\$17m

Comments

- **Nickel Production** - guidance in line with the prior year
- **Unit cash costs** - guidance reflects:
 - Increased proportion of Spotted Quoll material being mined from the lower stage two area of the mine
 - Expected cost trends for rise & fall, labour rates and mining consumables
- **Mine Development** - sustaining and mine development similar to prior year
- **Capital and Growth** - feasibility studies and capital expenditure at the Cosmic Boy Concentrator and scat leach trial
- **Odysseus Development** - expenditure relates to development of the Odysseus mine. Selected activities, largely the shaft haulage equipment, bought forward into FY20, total pre-production capital remains unchanged
- **Exploration** - investment materially in line with the prior year, includes Spotted Quoll extension drilling



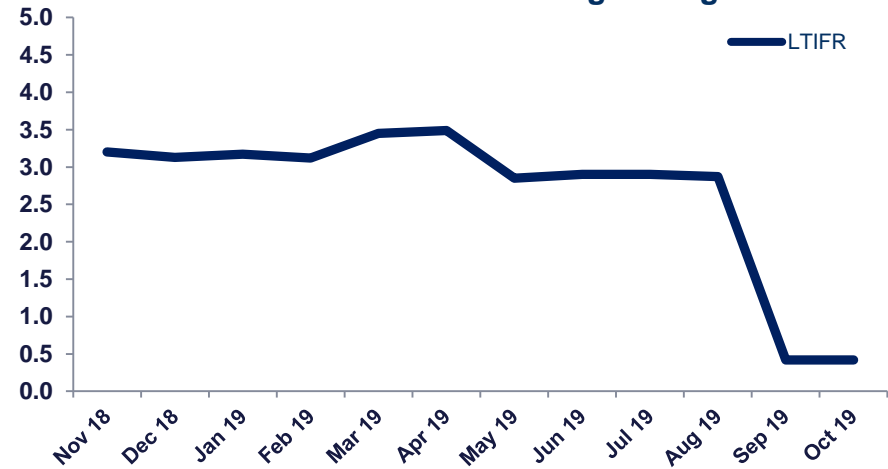
Western Areas are safe areas



Days LTI free

Spotted Quoll	3,124	Aug-11
Cosmos	1,491	Oct-15 (no injuries)
Cosmic Boy Concentrator	419	May-18
Exploration	405	Sep-18
Flying Fox	223	Mar-19

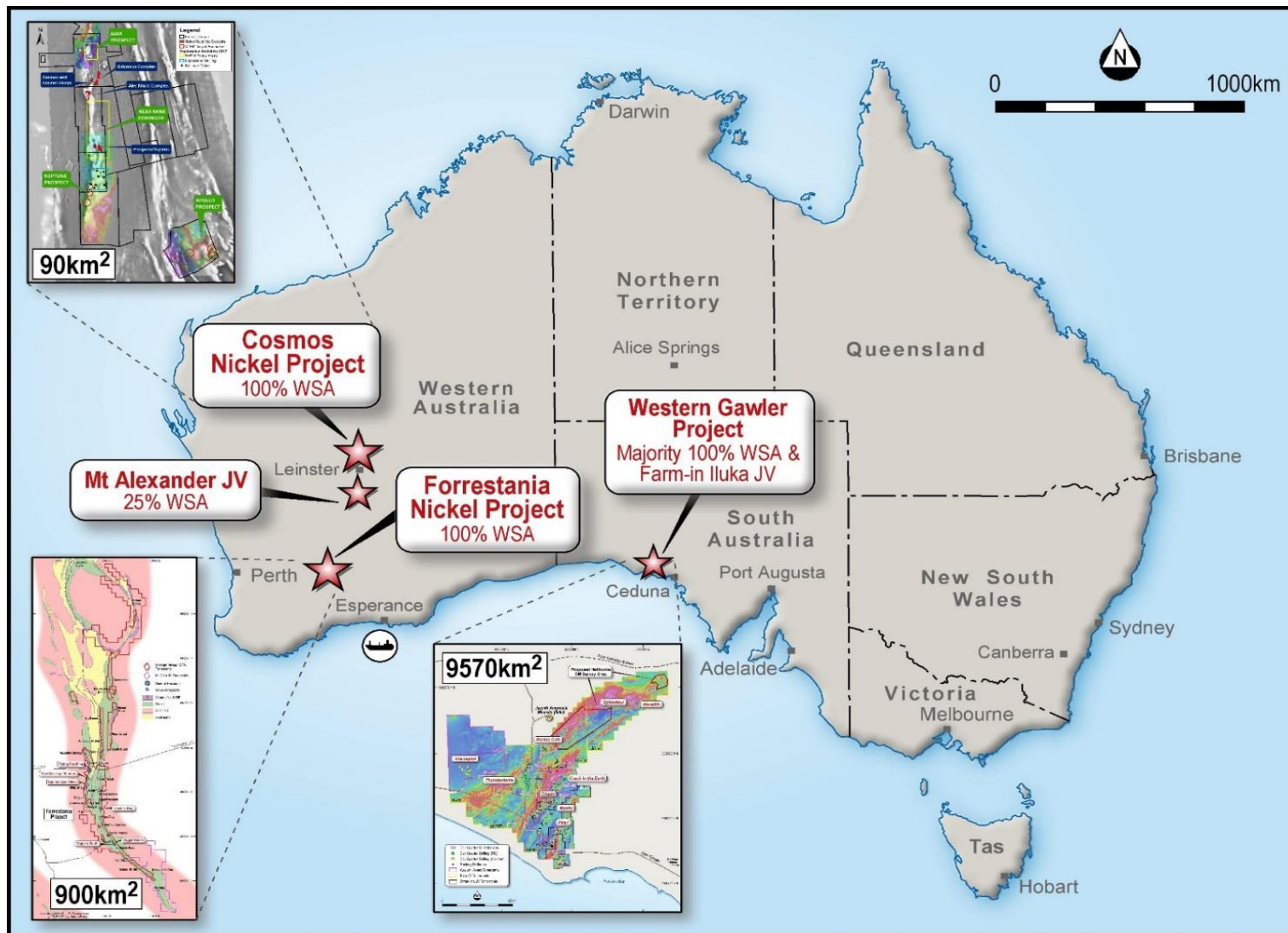
12 month LTIFR moving average



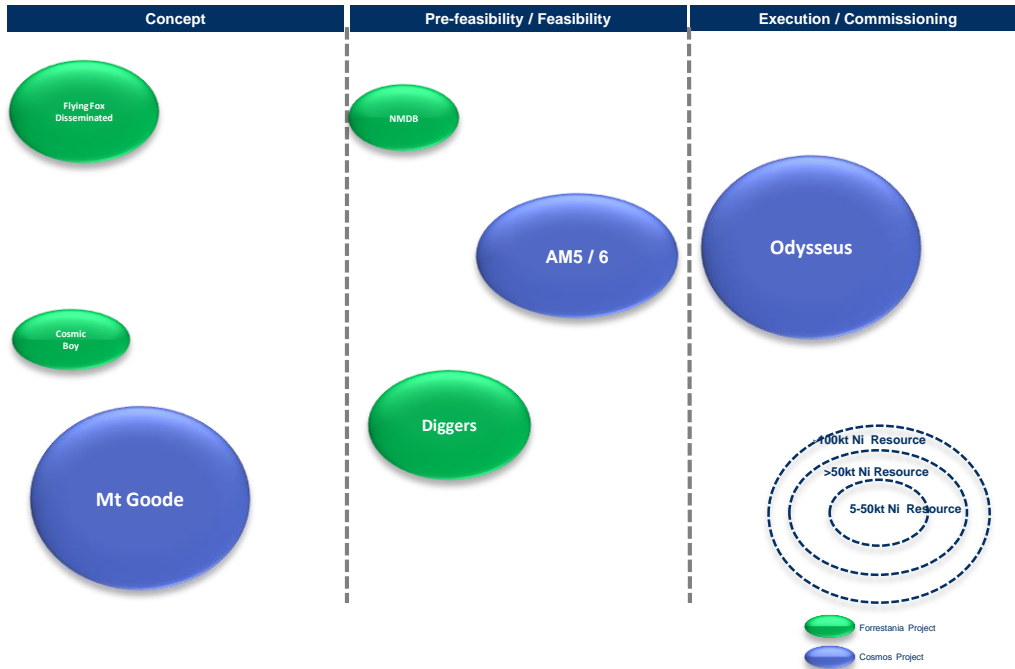
GROWTH AND EXPLORATION



Key tenement holdings



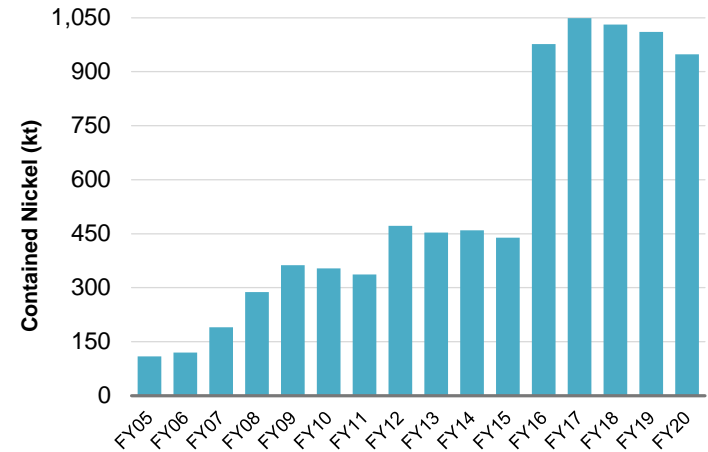
Nickel growth pipeline



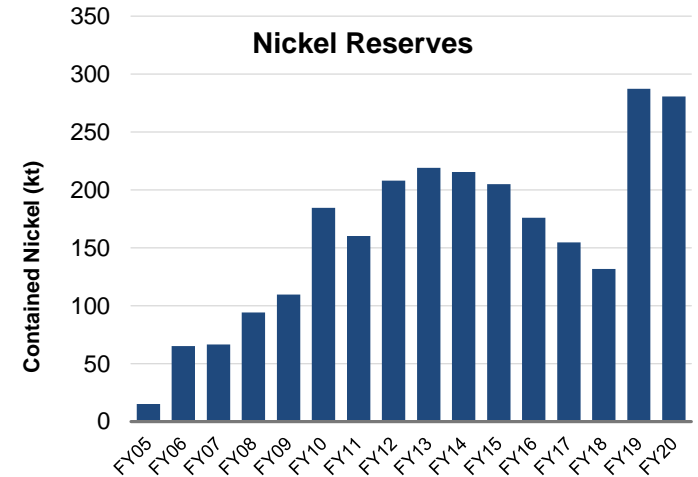
- Many projects in the pipeline to drive nickel production well into the future
- Ore Reserves have substantially increased in FY19 with Odysseus

Ore Reserves & Mineral Resources

Nickel Resources



Nickel Reserves



Mill recovery enhancement project (MREP)

Produces additional new higher-grade product (45%-50% Ni)

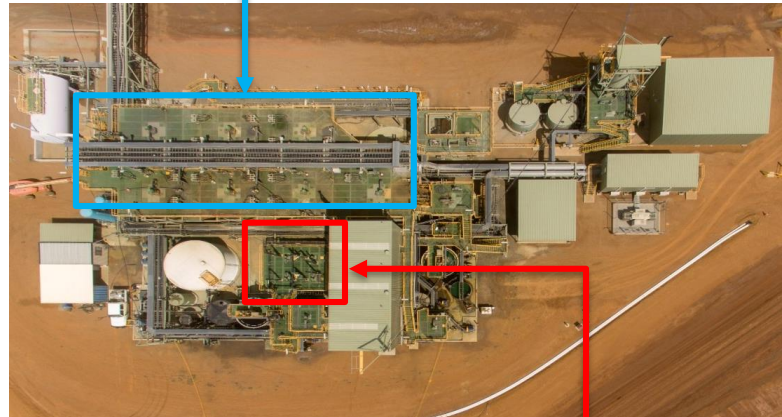
Generating value from waste tailings

New customers - EV battery market

- Product specification achieved. Now ramping up leach volume to nameplate capacity (1,400t nickel pa max)
- Filtration and bagging facilities to sell a new high grade nickel sulphide product complete
- Premium payables versus flotation concentrate
- Back-end of plant capable of up to 4,000t of nickel pa – Mill Scats, New Morning, Flying Fox LG to provide future feed options

Front End – BioHeap Leach

- 1400 tpa capacity
- Tailings stream from Cosmic Boy - applies BioHeap Leach, then passes to precipitation

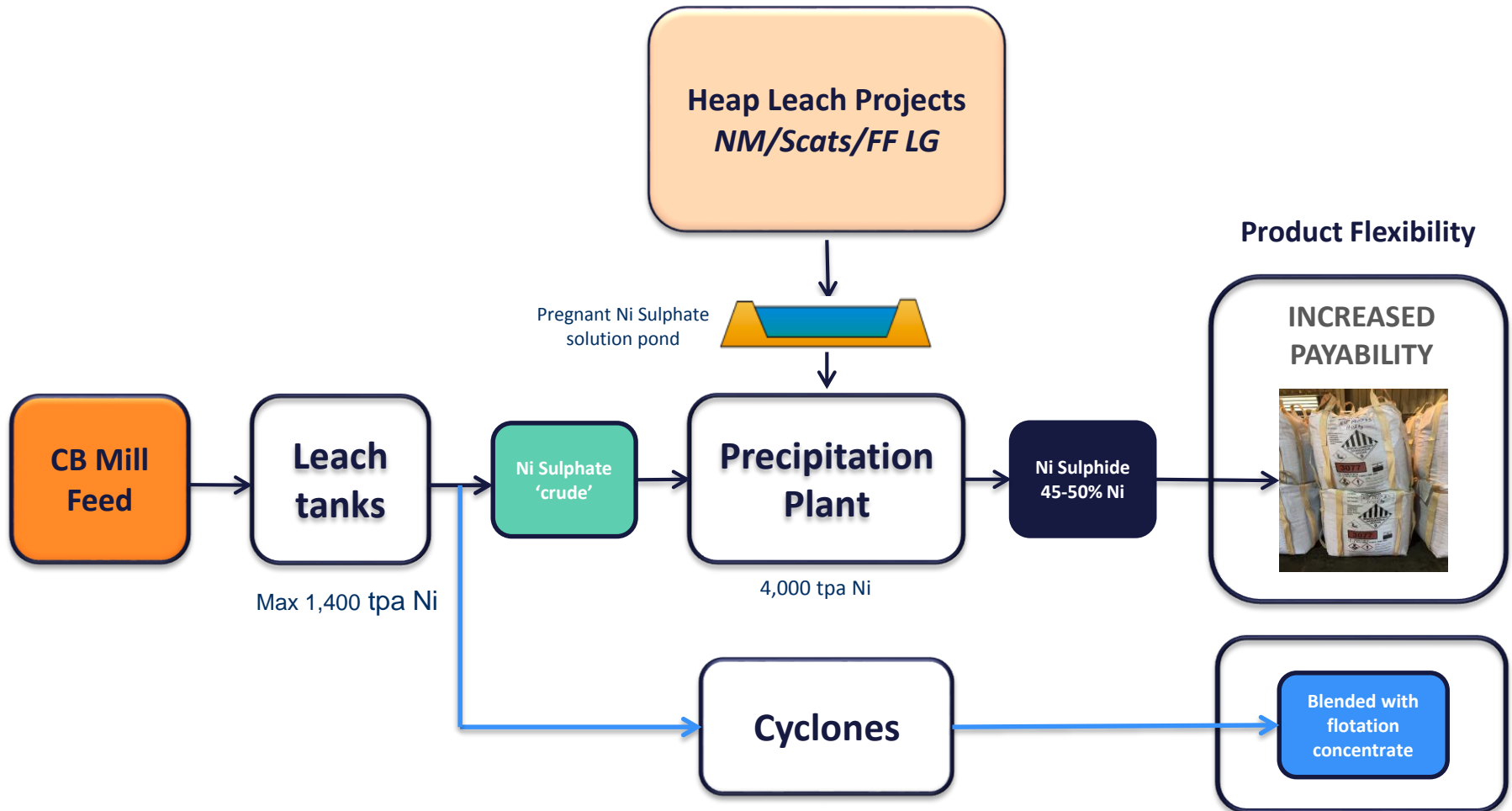


Back End – Precipitation

- 4000 tpa capacity
- 1400 tpa - leached material from BioHeap front end
- 2600tpa - other sources of nickel in solution eg. heap leach elsewhere in Forrestania, or scats treatment



MREP unlocks value





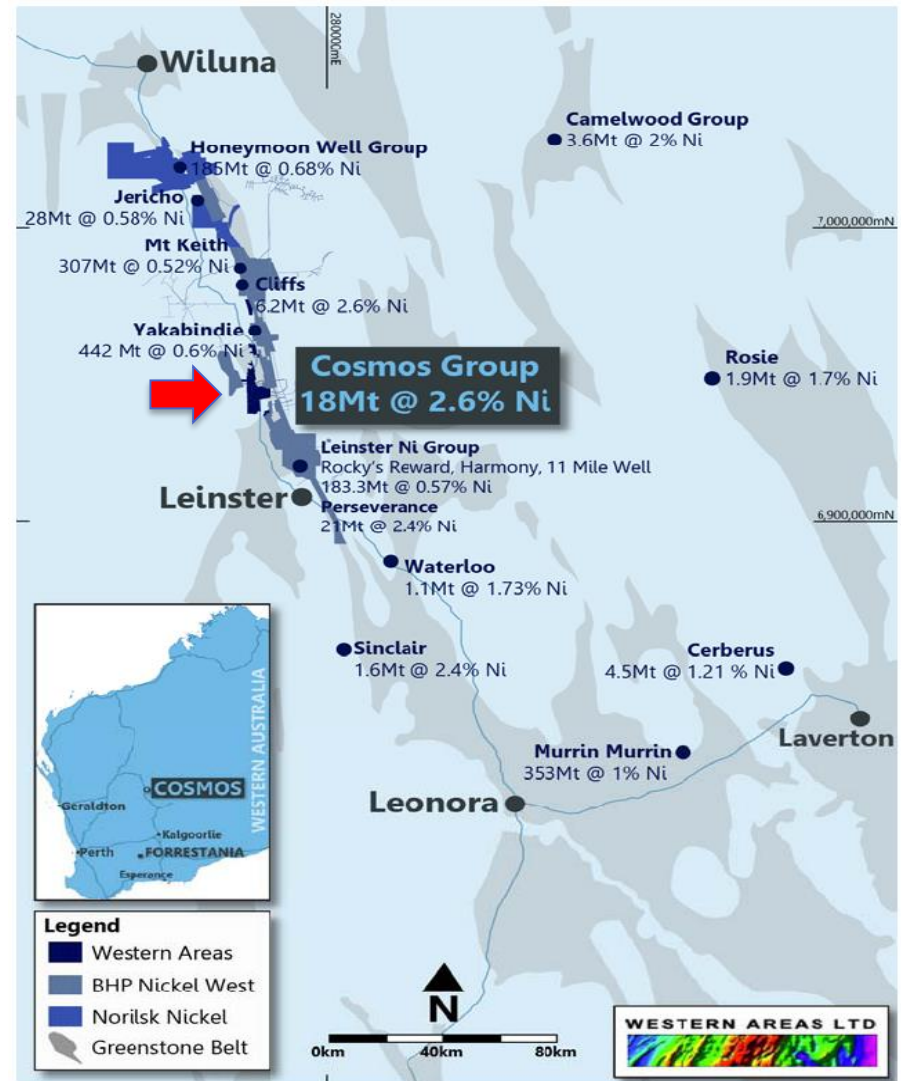
ODYSSEUS MINE DEVELOPMENT



Cosmos – the new hub!

WESTERN AREAS' SECOND OPERATION:

- Outstanding nickel address
- Early works completed on schedule-Decline rehabilitation to 500m below surface and underground pump station construction near completed
- Camp commissioned with over 250 rooms available out of 520



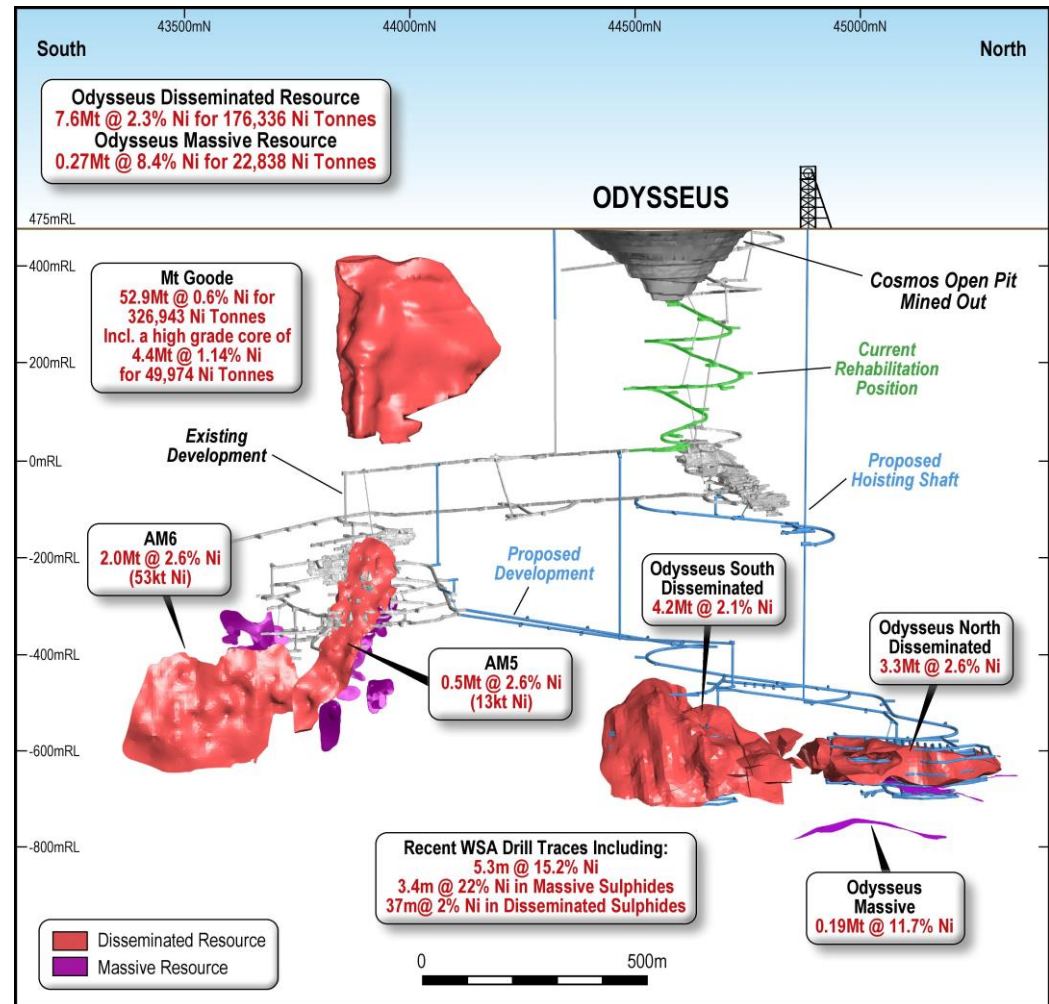
Odysseus – now a long life project > 10yrs

Long life, low cost project:

- ✓ Ore Reserve 8.1mt @ 2.0% for 164kt nickel
- ✓ Mine life > 10 years
- ✓ AISC A\$3.50/lb
- ✓ Average nickel in concentrate production >13.0ktpa (14.6ktpa from FY24-FY31)

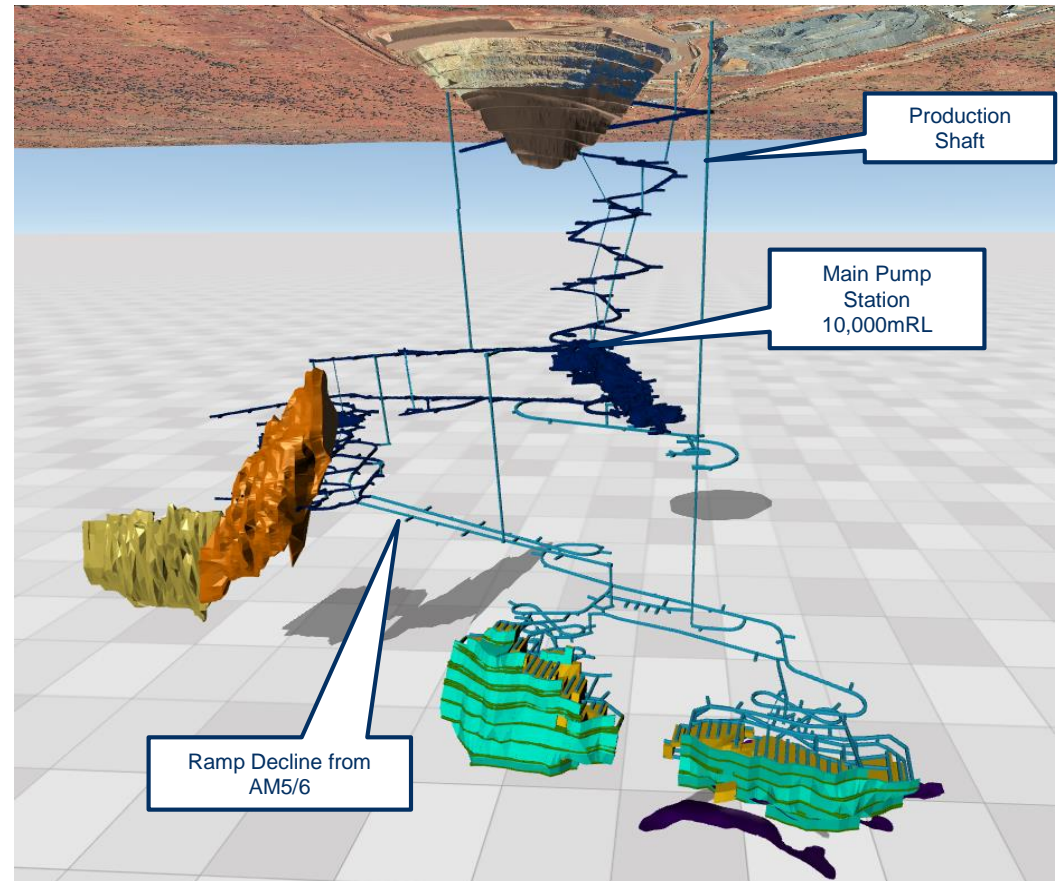
Significant upside:

- ✓ AM5 & AM6 deposits contain an Indicated Mineral Resource of 57.6kt of nickel (not included in DFS)
- ✓ Record massive sulphide intersections



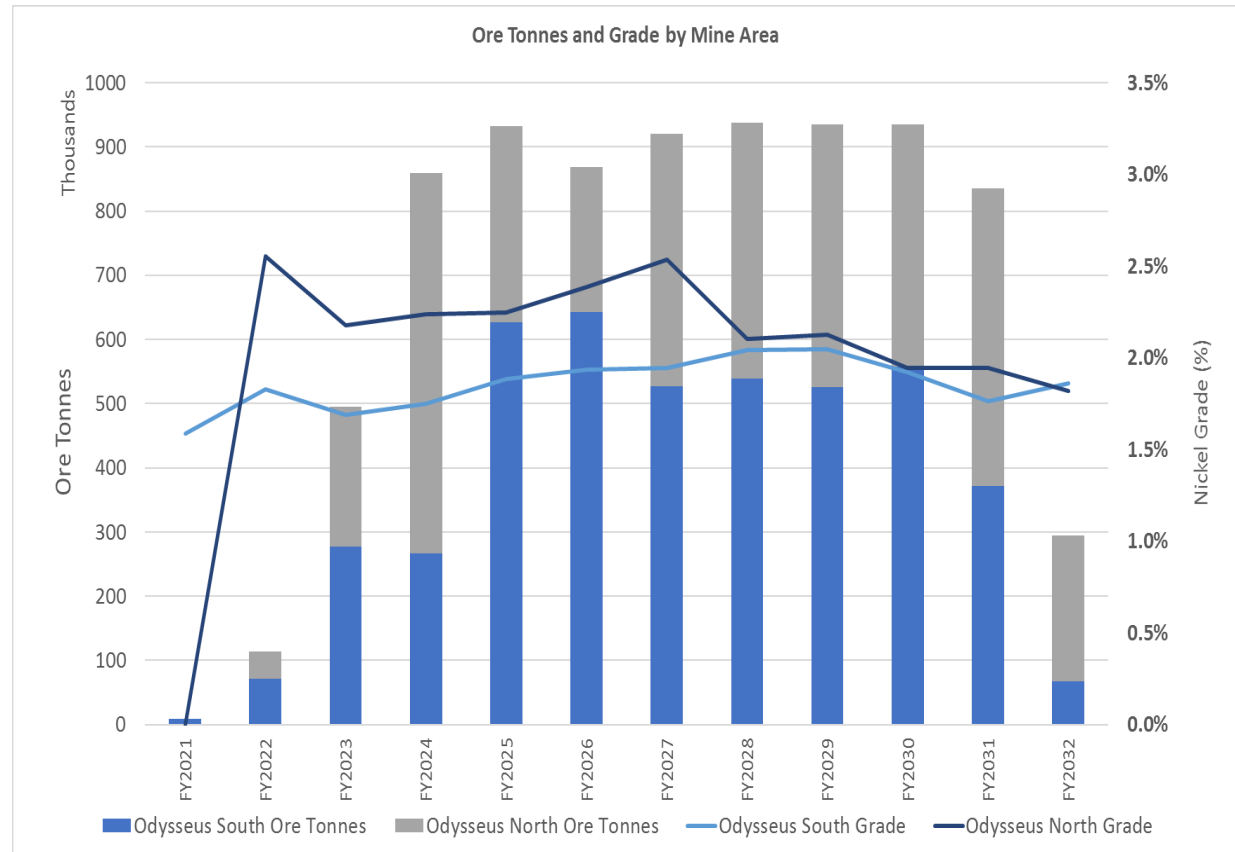
Odysseus – underground infrastructure

- **Pre-production capex A\$299m includes:**
 - ✓ Shaft hoisting
 - ✓ Larger 900ktps mill
 - ✓ WSA is well funded with cash and has no debt
 - ✓ Updated development expenditure profile is now FY20 – A\$80m, FY21 – A\$66m, FY22/23 – A\$143m
 - ✓ Significant optionality on decision-making and spending
 - ✓ Already receiving funding interest from offtake providers and third parties, including banks



Production ~900k tpa ore

- Minimum 10 year mine life on reserves
- Annual ore production of 900kt
- First Ni concentrate late CY 2022
- Consistent annual nickel production



Shaft infrastructure

- WSA has purchased a high quality, second hand head gear and winder
- Shaft infrastructure dismantling completed. Now being refurbished in South Africa prior to shipping to Perth
- Significant economical and environmental benefits versus trucking

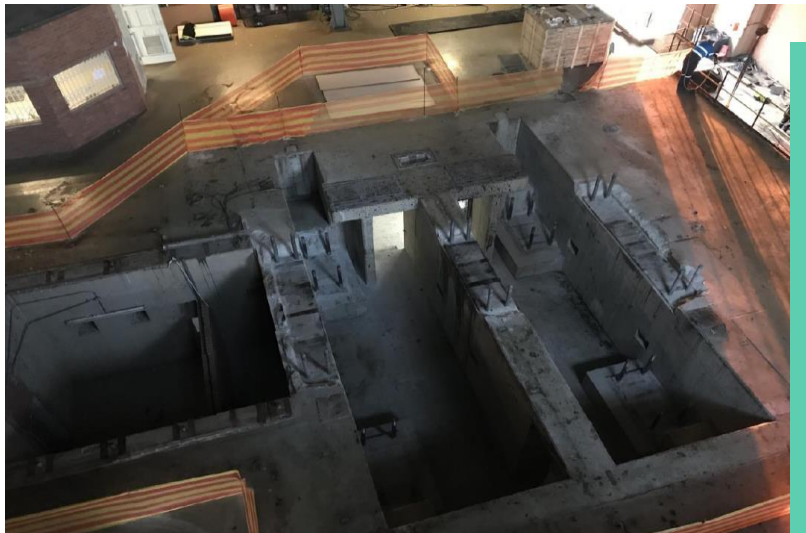
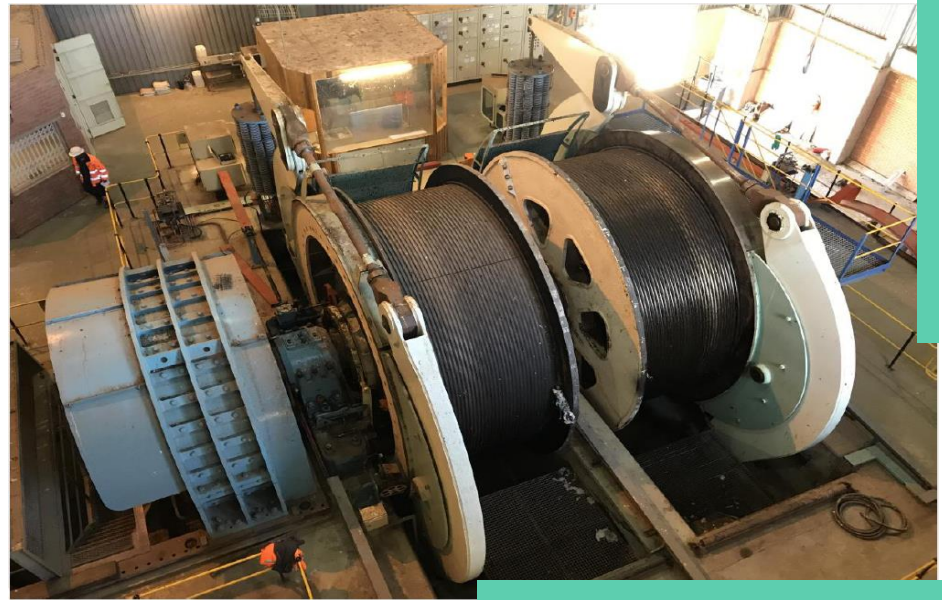


Key Metrics:

- ✓ *5.5m diam. raise bore*
- ✓ *4 guide ropes per conveyance*
- ✓ *1.27Mtpa (ore and waste)*
- ✓ *12 t skips*
- ✓ *1 truck required to feed shaft*
- ✓ *4.5 MW peak power*



Shaft infrastructure



The benefits of shaft hoisting!

Electrical power vs diesel

- Future proofing the operation
- Combined with renewable power = energy efficient site, 85% reduction in CO₂
- Low, consistent opex and proven technology
- Fully automated winder and materials handling system direct to mill
- Cycle time: ~3 mins

Equivalent truck fleet ~ 8 trucks

- Save 1.5 ML diesel burnt pa (DPM)
- Remove 5 MW of heat generated from diesel engines
- Remove minimum 200m³/s of additional ventilation requirement (another vent shaft)
- Removes issue of existing decline constraints



OPERATIONS

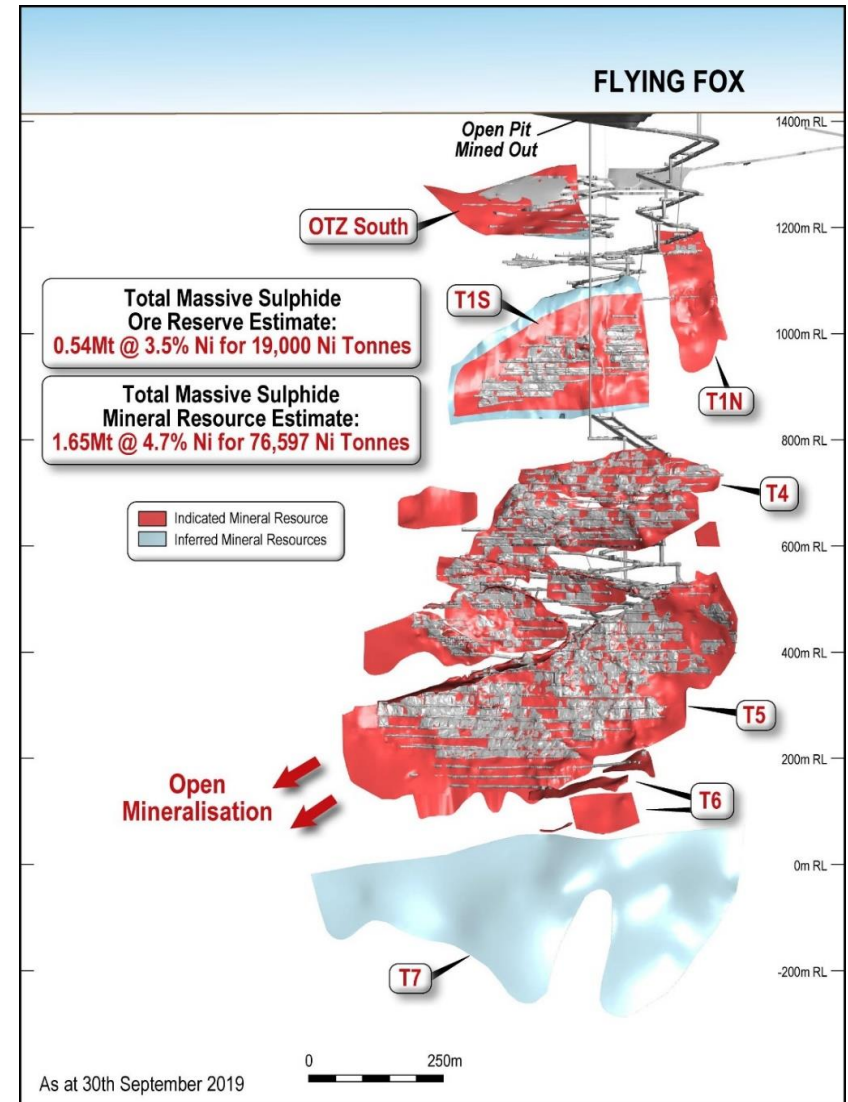


Flying Fox mine

Reserve Contained nickel	0.54Mt @ 3.5% 19,000 Ni tonnes
Resource Contained nickel	1.65Mt @ 4.7% 76,597 Ni tonnes
Mine life (on reserves)	3 years

Key points:

- FY19 production – 9.9k Ni tonnes
- Has been operating for over 13 years
- Significant low grade disseminated resource
- Lower grade & heap leach evaluation underway

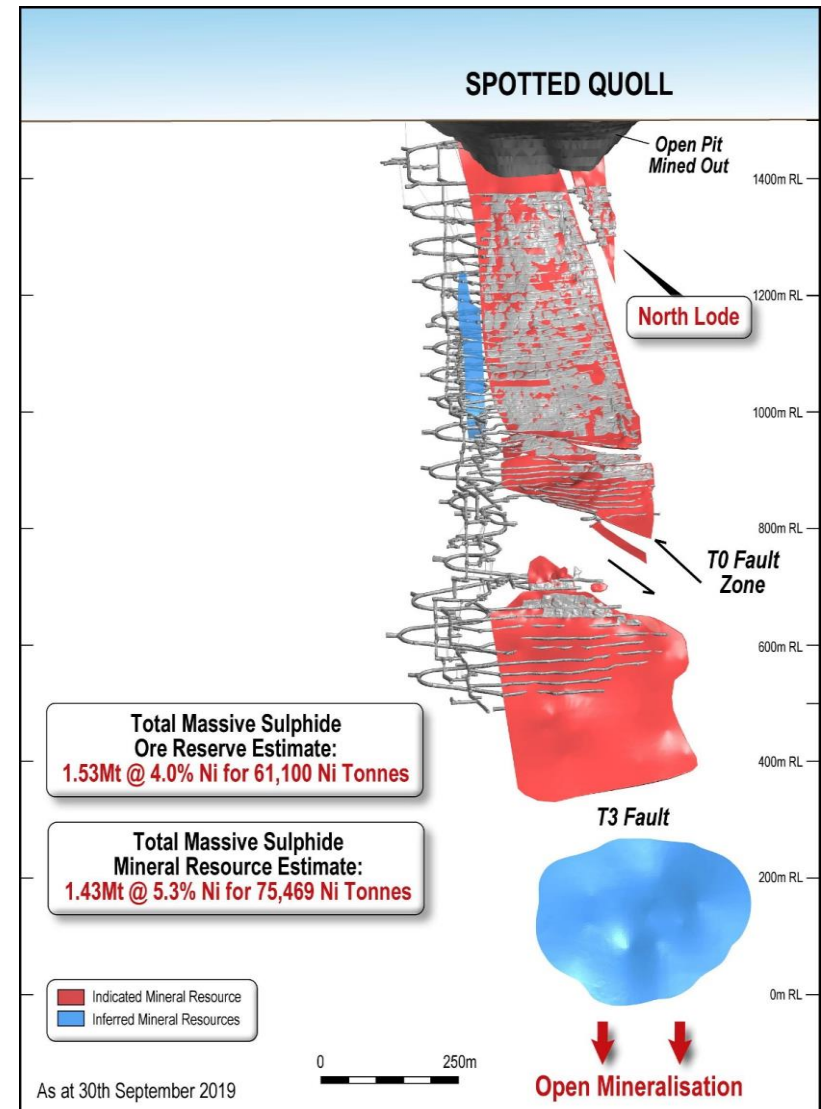


Spotted Quoll mine

Reserve Contained nickel	1.53Mt @ 4.0% 61,100 Ni tonnes
Resource Contained nickel	1.43Mt @ 5.3% 75,469 Ni tonnes
Mine life (on reserves)	6 years

Key points:

- Has never recorded an LTI
- FY19 production – 13.3k Ni tonnes
- Production has outperformed reserve tonnes and grade consistently
- Top down mining with paste fill
- Resource extension drilling commenced – nickel tonnes being added to Resource



Cosmic Boy nickel concentrator

Concentrator Summary

- 12% above name plate capacity of 550,000 tpa
- Concentrate grades of between 15.0% to 16.0% Ni
 - ✓ Premium blending product (Fe/Mg ratio >15:1)
 - ✓ Desirable to smelters and roasters

Export Infrastructure and Logistics

- Export concentrate transported to Esperance Port in containers and shipped through to China
- BHP Nickel West concentrate delivered to Kambalda by road



Offtake contracts best in class

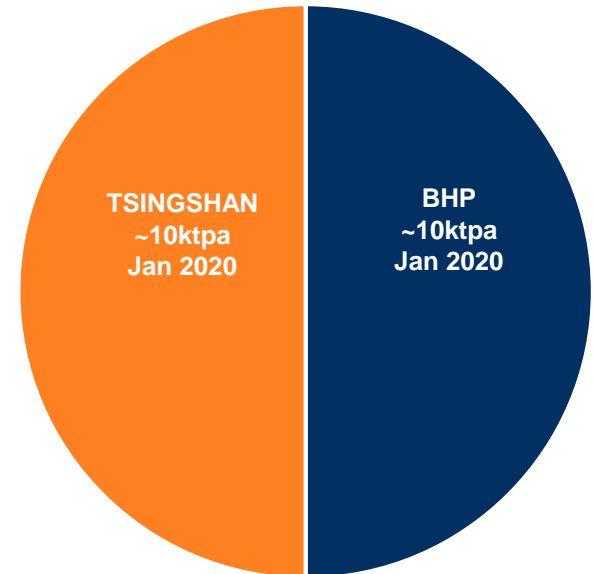
*Existing offtake agreement 3 months to expiry.
Currently in market with tenders – strong response*

Premium blending concentrate - superior commercial terms

Significant increase in inbound off-take enquiries for Nickel Sulphide concentrate post current contract period, primarily linked to the Electric Vehicle battery pre-cursor sector

Our Partners:

- **BHP:** 50%
 - **Tsingshan:** 50%
- ✓ China's largest stainless steel producer
 - ✓ Consumes ~25% of China's nickel demand



Roasting

- Creates a high grade nickel oxide that can be blended with laterite ore
- By-product of sulphuric acid for 'pickling' stainless steel
- Most concentrates do not suit roasting
- Proven process - opening up opportunities with Tsingshan



THE NICKEL MARKET



What we are seeing

▪ Recently visited:

- ✓ Tsingshan (largest stainless steel producer in the world) - has strong growth plans, and buying refined nickel on the LME
- ✓ Jinchuan (largest nickel cathode producer in China)
- ✓ CATL (One of China's largest EV precursor producer)

▪ **Recent Indonesian decision** to bring forward ore export ban to 1st Jan 2020 from Jan 2022 – currently accounts for ~10% of supply

▪ **LME and other stockpiles shrinking** on the back of current stainless demand and EV growth

Estimated electrification impact per vehicle (avg NMC battery)

40-50kg Ni	50-75kg Cu
5-15kg Co	+ Cu for charging point + Cu for grid access

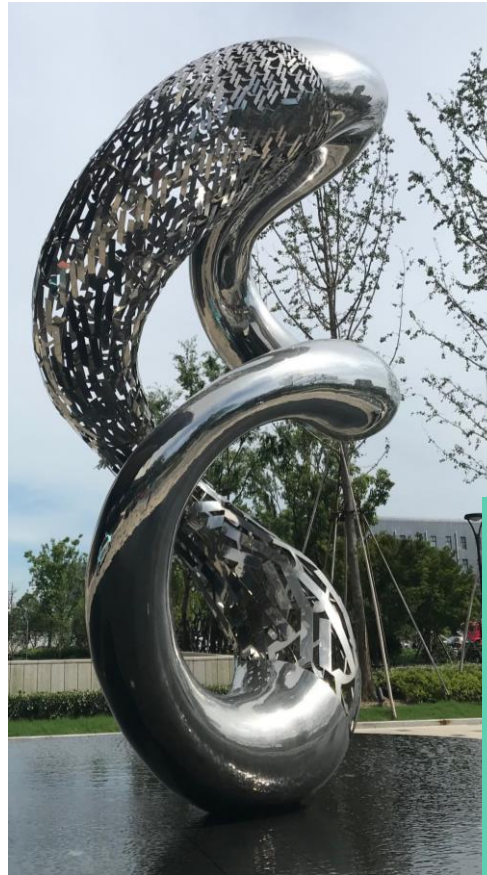
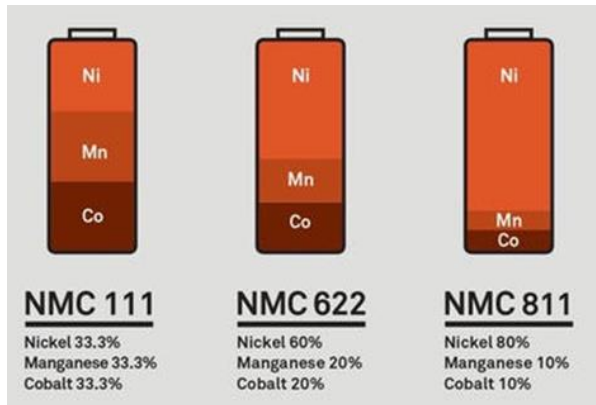


Source: LME, SHFE, Bloomberg, OBA estimates



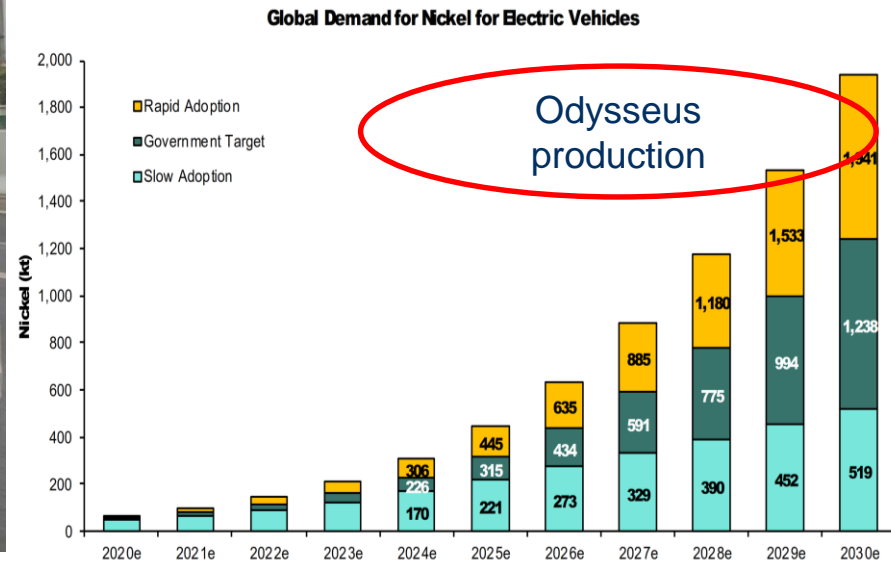
The present – driven by stainless steel

- **Technology change to NCM 811** which requires even more nickel
- **Current nickel price too low** to incentivise new project development. New mine development can take 3 years – the nickel “pie” is not expanding
- **May see divergent market in nickel supply** emerging between stainless steel and EV

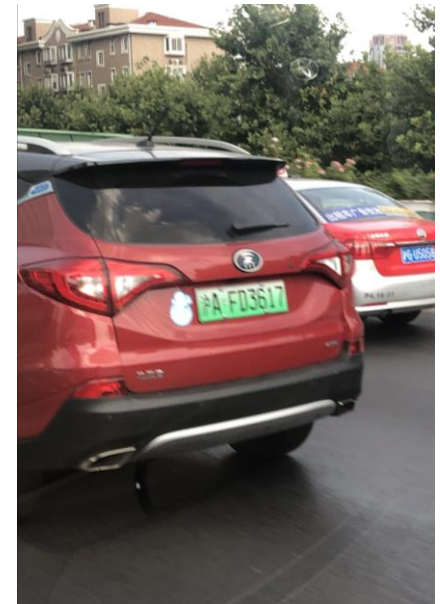


The future – EV demand for nickel

- Potentially very significant incremental demand versus a current nickel market size of c.2,200kt
- Research indicates NMC 811 will be the fastest growing battery combination by 2025!



Source: Bernstein - June 2018



Nickel deficits NOW a reality!

Long term trends supporting Ni consumption growth:



Vehicle Electrification



Increasing mobility



Growth in Renewables



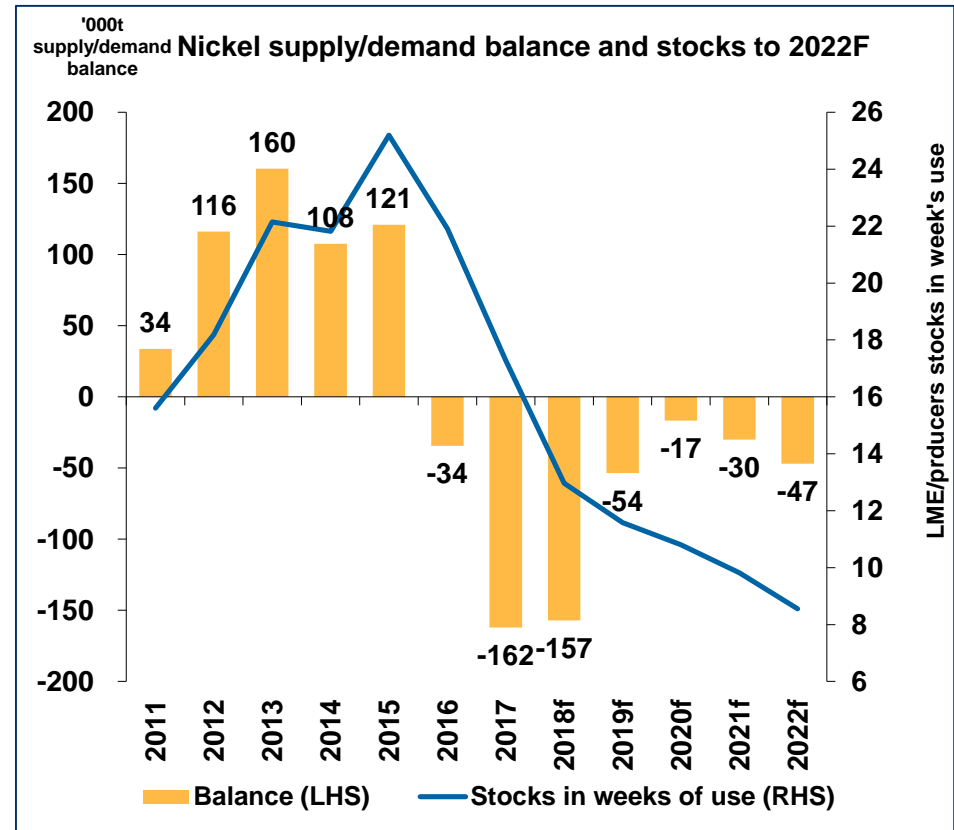
Population growth



Growing disposable incomes



Urbanization



Source: INSG, CRU, LME, Macquarie Strategy, August 2018



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