

**ANNUAL GENERAL  
MEETING**

**21 November 2019**

**WESTERN AREAS LTD**



# AGENDA

## CORPORATE



## GROWTH



## NICKEL MARKET



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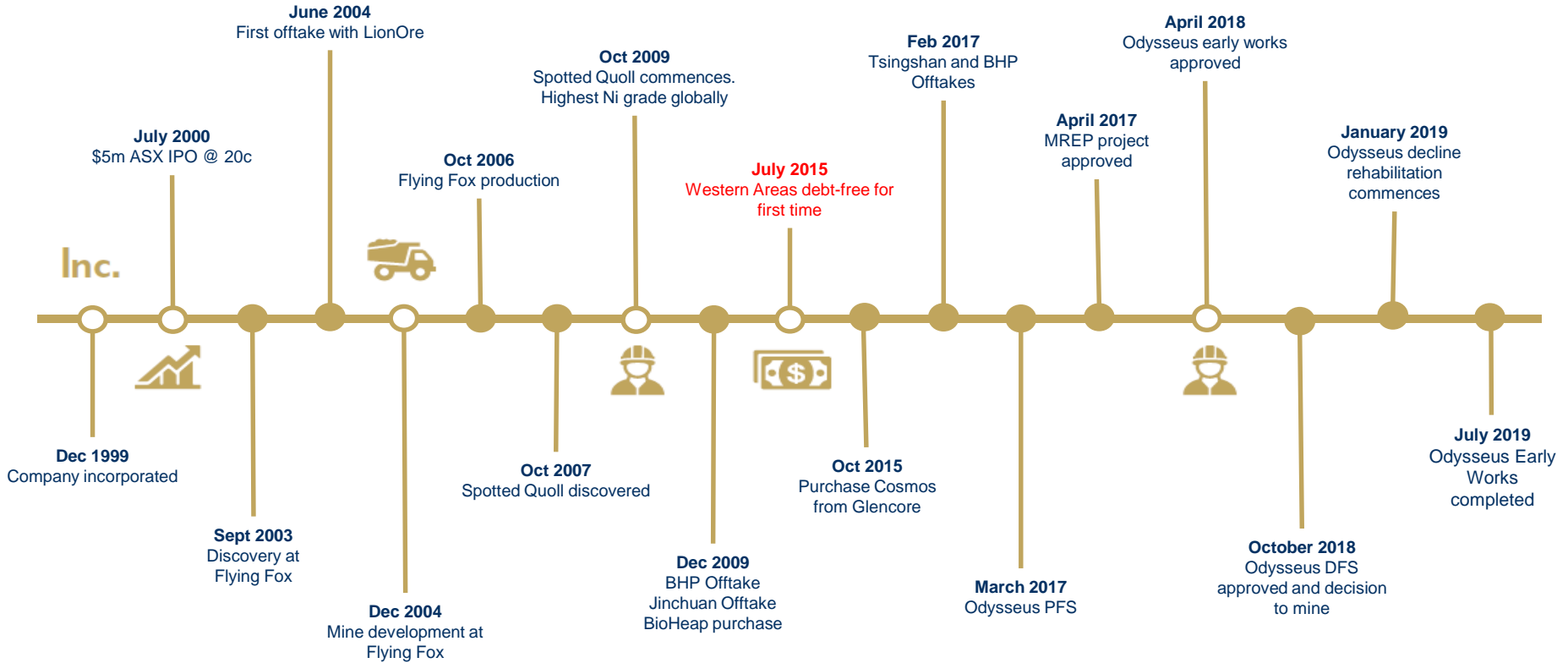
The information within this PowerPoint presentation was compiled by Western Areas management, but the information as it relates to exploration results, mineral resources or ore reserves was prepared by Mr Graeme Gribbin, Mr Andre Wulfse or Mr Marco Orunesu-Preiata respectively. Mr Gribbin, Mr Wulfse 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



# Western Areas success timeline



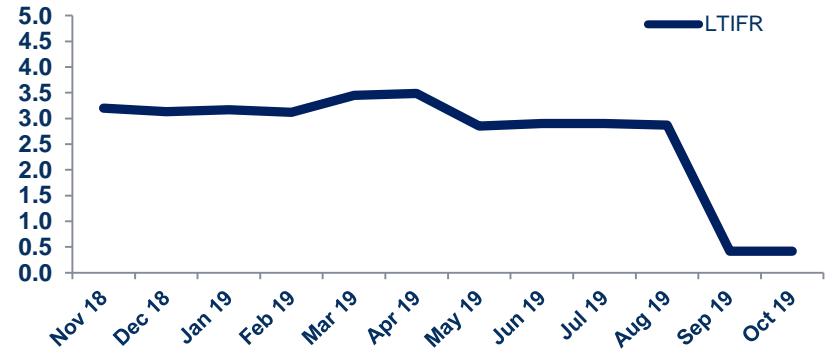
# Western Areas are safe areas



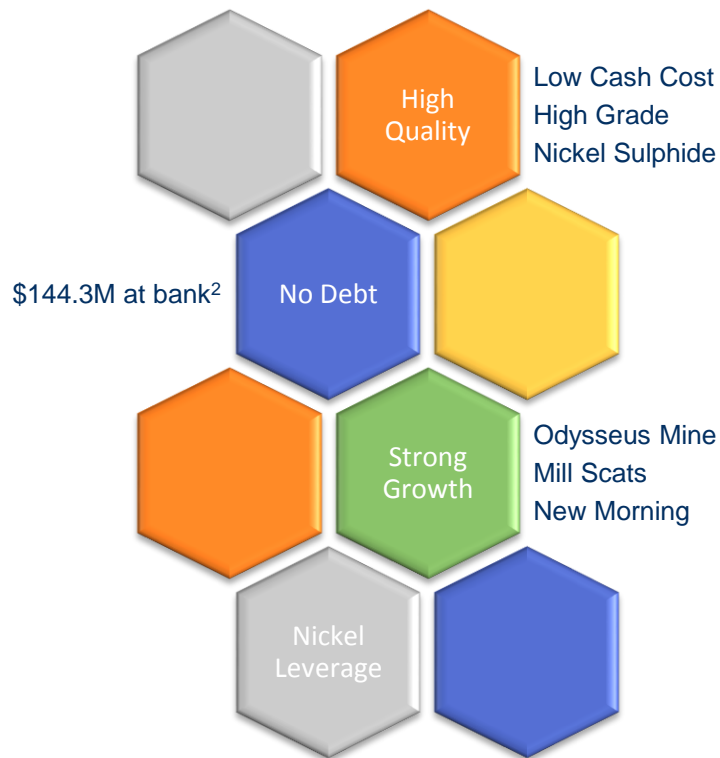
## Days LTI free

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



# Corporate overview



<b>ASX code</b>	<b>WSA</b>
<b>Share price</b>	<b>2.84</b>
<b>Shares outstanding (m)</b>	<b>273.5</b>
<b>Market Cap (A\$m) <sup>1</sup></b>	<b>776.7</b>
<b>Cash (A\$m)<sup>2</sup></b>	<b>144.3</b>

## COSMOS

### Odysseus

165kt Ni Ore Reserves  
199kt Ni Mineral Resource  
Early works complete

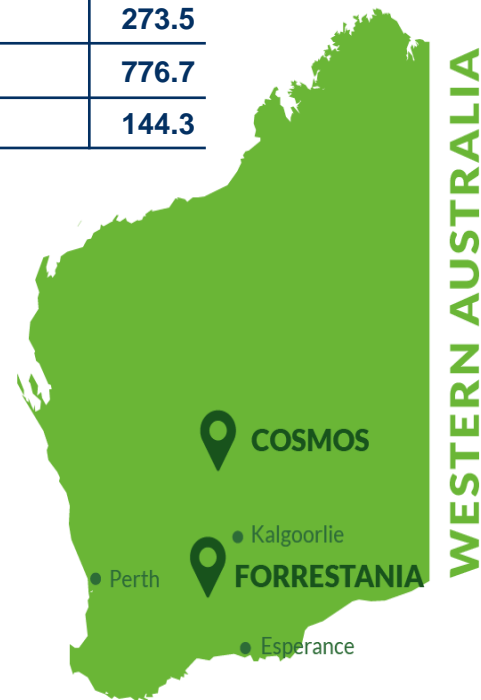
## FORRESTANIA

### Flying Fox

9.8kt Ni mined FY19  
21.1kt Ni Ore Reserves  
79.3kt Ni Mineral Resource

### Spotted Quoll

13.3kt Ni mined FY19  
64.2kt Ni Ore Reserves  
78.9kt Ni Mineral Resource

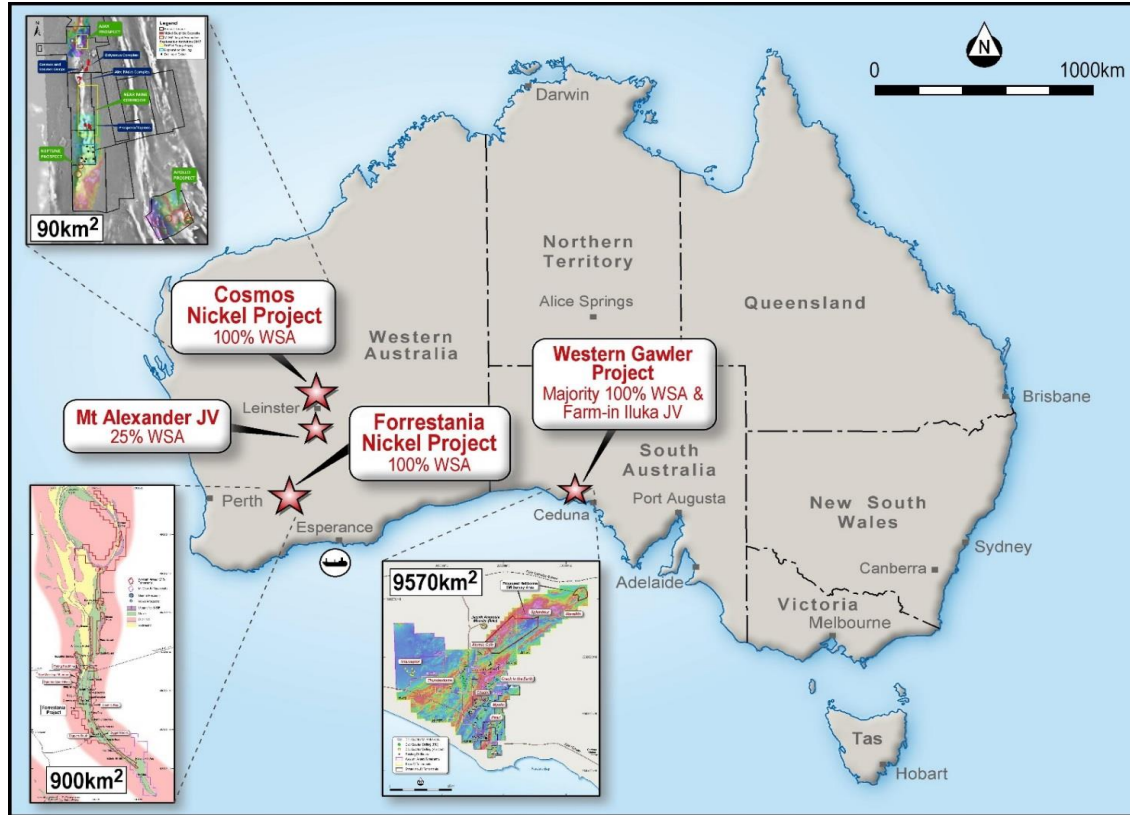


# GROWTH

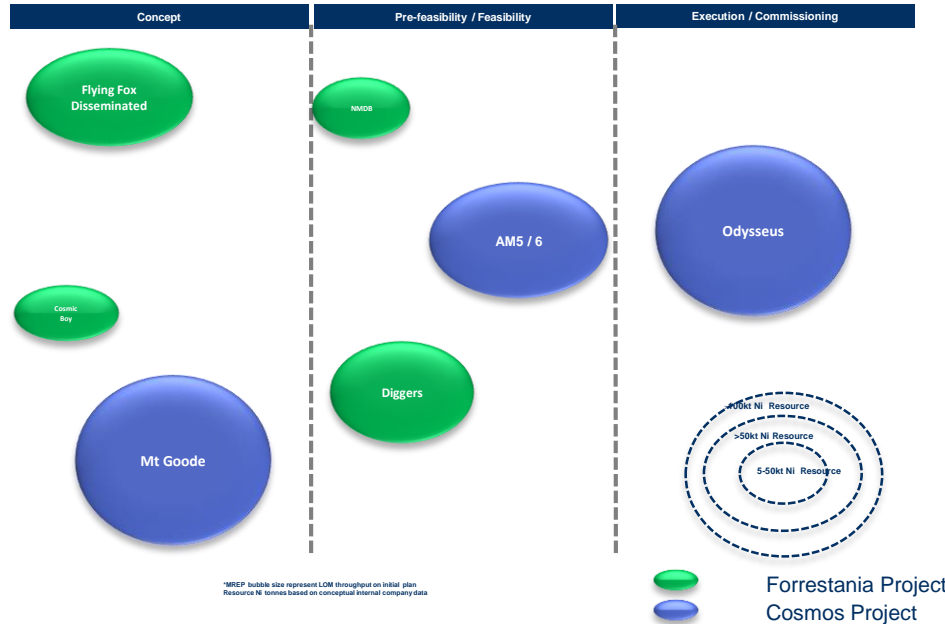




# Key tenement holdings

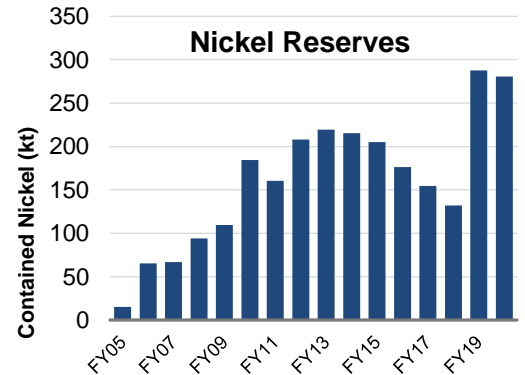
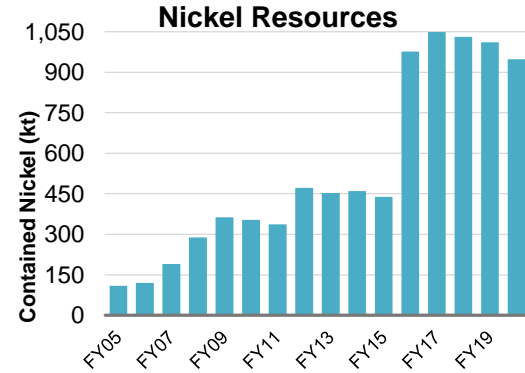


# Nickel growth pipeline



- 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



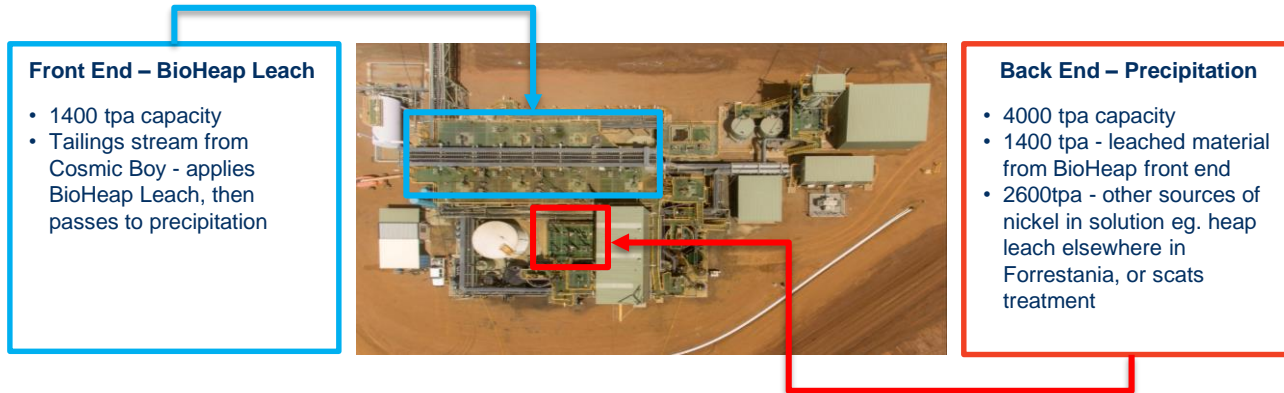
# Mill recovery enhancement project (MREP)

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

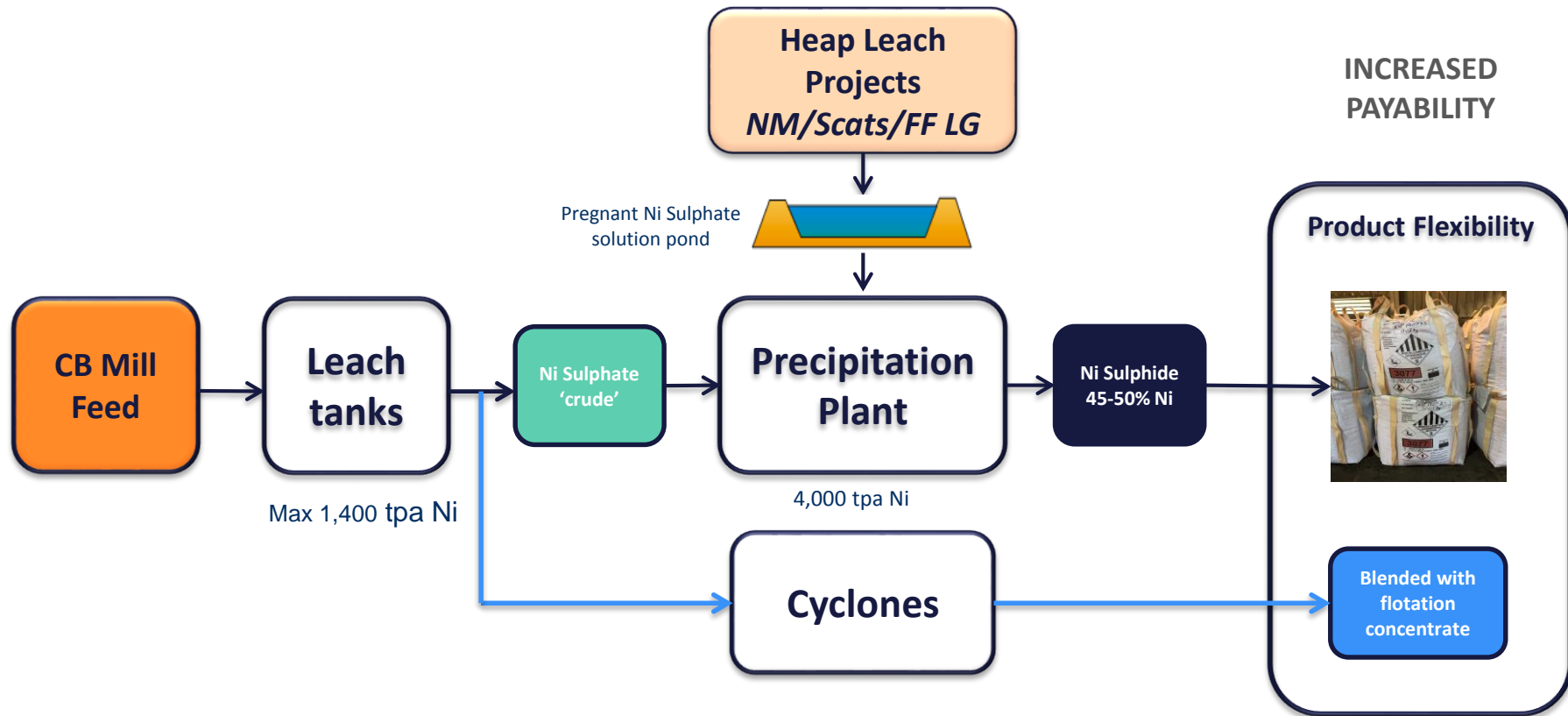
*Generating value from waste tailings*

*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



# MREP Flowsheet



# Cosmos – the new hub!

## WESTERN AREAS' SECOND OPERATIONAL HUB

### Outstanding Nickel Address:

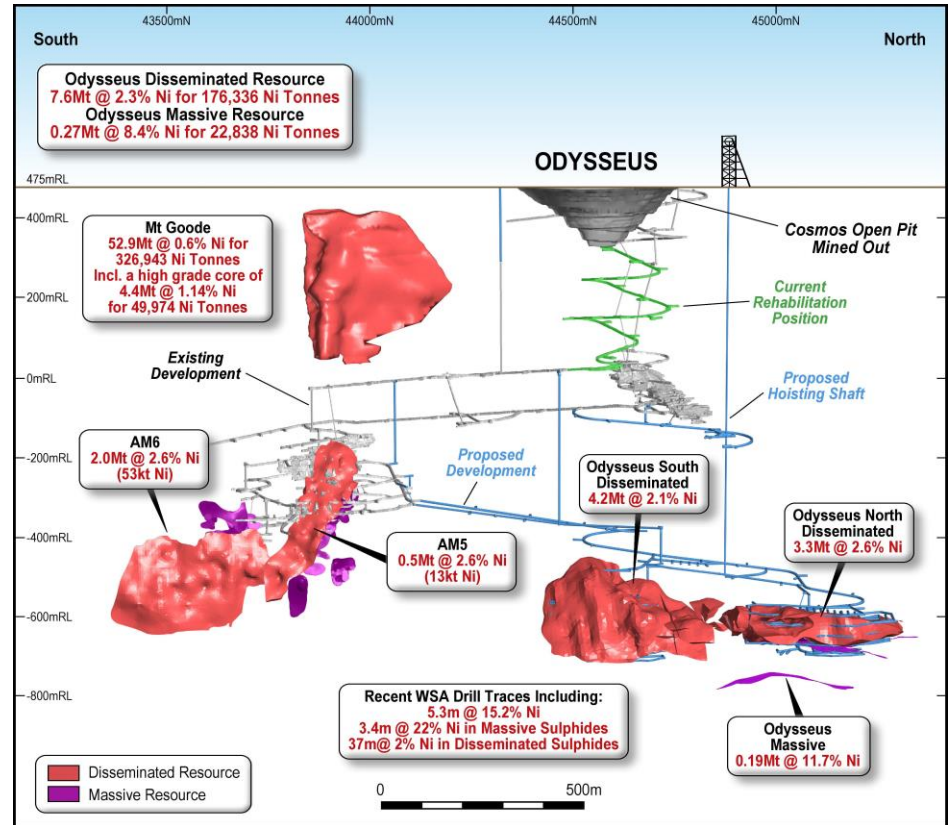
- Within prolific Leinster – Wiluna Nickel camp
- Jubilee Mines sold in 2007 to Xstrata for A\$3.1B!
- WSA purchase from Glencore, Oct 2015 for \$24M
- WSA DFS completed in Oct 2018; and
- Mining commenced in January 2019.



# Odysseus – now a long life mine > 10yrs

## Western Areas' Second Operation:

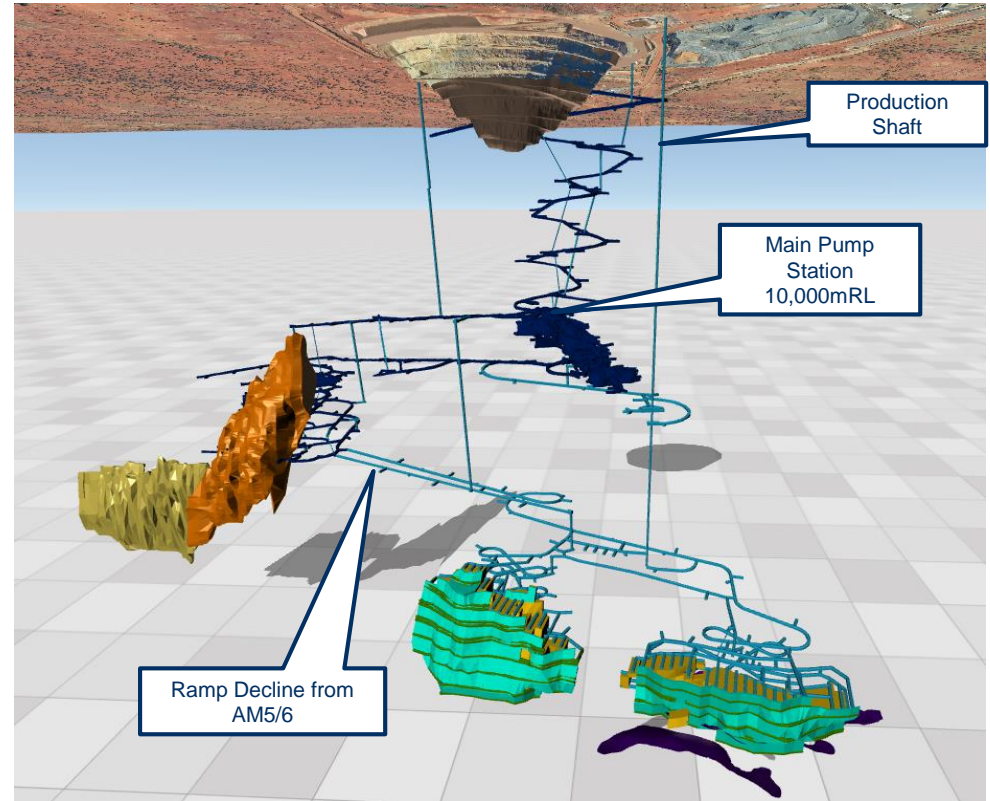
- **Long life, low cost project:**
  - ✓ Ore Reserve 8.1mt @ 2.0% for 164kt nickel
  - ✓ Mine life > 10 years
  - ✓ AISC A\$3.50/lb
  - ✓ Average nickel in concentrate production >13.0ktpa (14.6ktpa from FY24-FY31)
- **Significant upside:**
  - ✓ AM5 & AM6 deposits contain an Indicated Mineral Resource of 57.6kt of nickel (not included in DFS) – currently completing reserve estimation
  - ✓ Record massive sulphide intersections



# Odysseus

- **Pre-production capex A\$299m includes:**

- ✓ Shaft hoisting
- ✓ Larger mill (900ktpa immediately)
- ✓ WSA is well funded with cash and no debt
- ✓ Updated development expenditure profile is now FY20 – A\$80m, FY21 – A\$66m, FY22/23 – A\$143m
- ✓ Already receiving funding interest from offtake providers and third parties, including banks



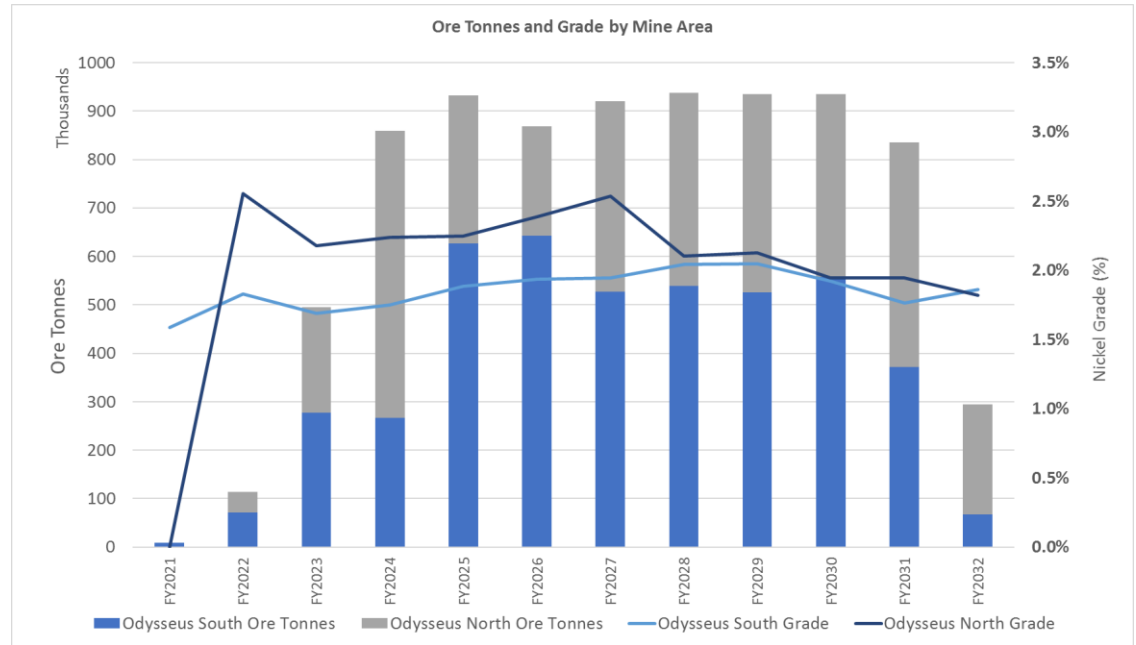
# Main pump station commissioned





# 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 for refurbishment in South Africa prior to shipment to Perth in March/April 2020
- Significant economical benefit 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.*



# Head frame-going going gone!



# Why shaft hoisting?

## Electrical power vs diesel

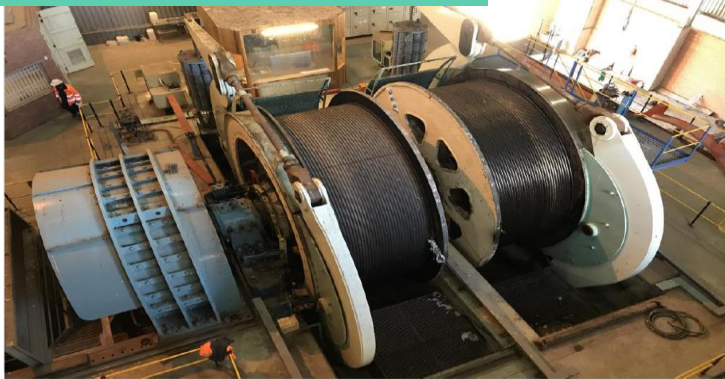
- Future proofing the operation
- Combined with renewable power = energy efficient site, 85% reduction in CO<sub>2</sub>
- Low consistent opex and proven technology
- Fully automated winder and materials handling system direct to mill
- Cycle time: ~3 mins

## Equivalent truck fleet ~ 8 trucks

- Save 1.5 ML diesel burnt pa (DPM)
- Remove 5 MW of heat generated from diesel engines
- Remove minimum 200m<sup>3</sup>/s of additional ventilation requirement (another vent shaft)
- Removes issue of decline constraints



# Winder



# NICKEL MARKET



# Offtake contracts best in class

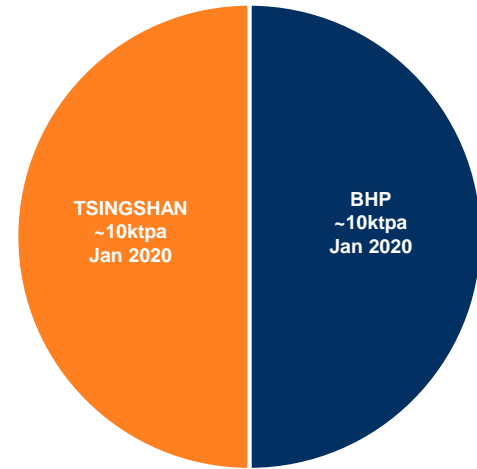
*Existing offtake agreement 4 months to expiry.  
Currently in market with tenders – strong response*

*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



# What we are seeing

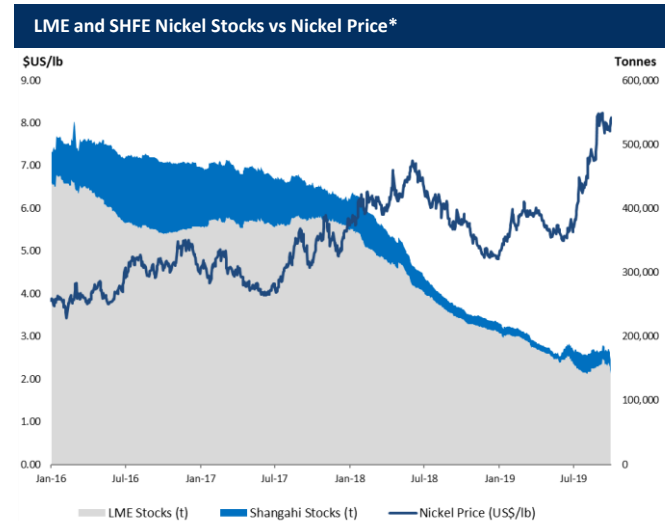
## ▪ Recently visited:

- ✓ 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 pre-cursor 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 <b>Ni</b>	50-75kg <b>Cu</b>
5-15kg <b>Co</b>	+ Cu for charging point + Cu for grid access



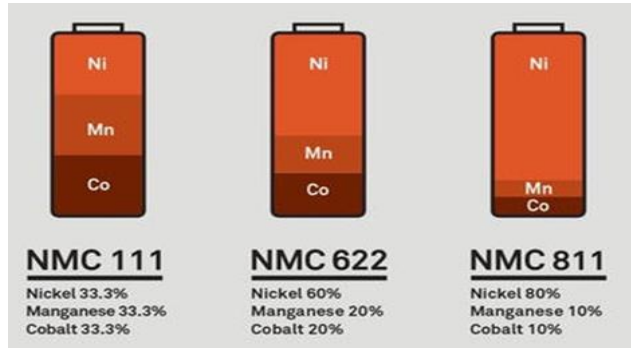
Source: Global Mining Research, Bloomberg





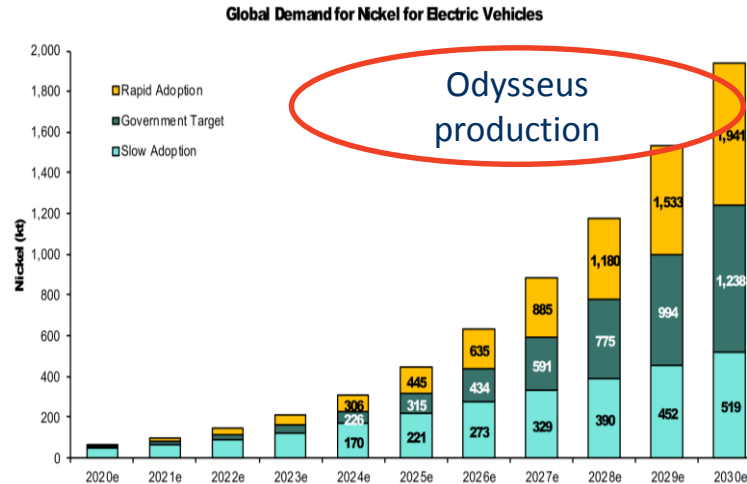
# The present – driven by stainless steel

- **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

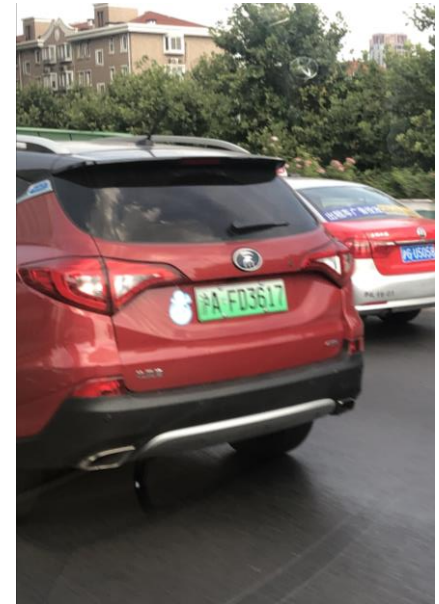


# The future - EV demand for nickel

- Potentially very significant incremental demand versus a current nickel market size of c.2,200kt
- Research indicates NCM 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



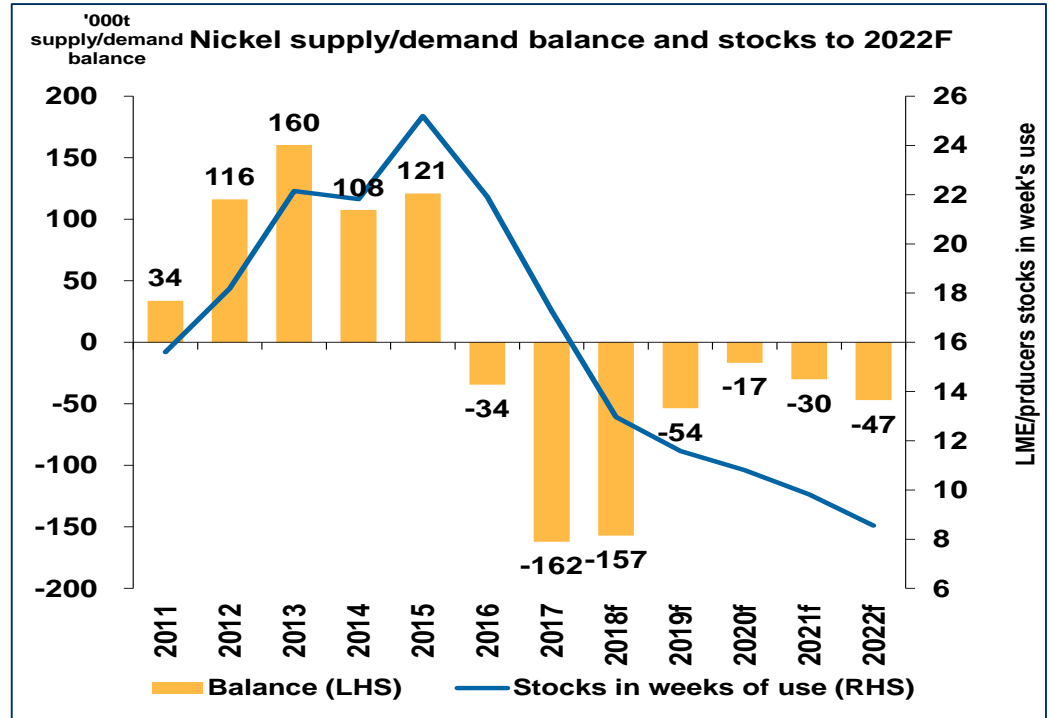
Population growth



Growing disposable  
incomes



Urbanization



Source: INSG, CRU, LME, Macquarie Strategy, Feb 2019

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