

# TNG LIMITED

## *DELIVERING SHAREHOLDER GROWTH*

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Managing Director

Resource Rising Stars Conference,  
30 October 2014



# Disclaimer

## Forward-Looking Statements

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## Competent Person's Statement

### JORC 2004

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Paul Burton who is a Member of The Australasian Institute of Mining and Metallurgy and a Director of TNG Limited. Paul Burton has sufficient experience 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Paul Burton consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources included in the 2012 PFS and is based on information compiled by Lynn Olssen who is a Member

of The Australasian Institute of Mining and Metallurgy and a full time employee of Snowden Mining Industry Consultants Pty Ltd. Lynn Olssen has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Lynn Olssen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Financial Analysis is based on information compiled by Jeremy Peters who is a Member of The Australasian Institute of Mining and Metallurgy and a full time employee of Snowden Mining Industry Consultants Pty Ltd. Jeremy Peters has sufficient experience 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Jeremy Peters consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Mr Damian Connelly, FAAusIMM, Chartered Processional (MET), tMMICA, MSME, MSAIMM was responsible for the preparation of the metallurgical test work results reported herein. Mr Connelly has sufficient experience to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of the Exploration Results, Mineral Resources and Ore Reserves". Mr Connelly consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

### JORC 2012

The information in this report that relates to 2013 Mineral Resource Upgrade for the Mount Peake project is based on and fairly represents, information and supporting documentation compiled by Lynn Olssen who is a Member of The Australasian Institute of Mining and Metallurgy and a full time employee of Snowden Mining Industry Consultants Pty Ltd. Lynn Olssen has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which she 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'. Lynn Olssen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Results and Exploration Targets for Mount Peake and Mt Hardy projects are based on information compiled by Exploration Manager Mr Kim Grey B.Sc. and M. Econ. Geol. Mr Grey is also a member of the Australian Institute of Geoscientists and a full time employee of TNG Limited. Mr Grey has sufficient experience 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 Grey consents to the inclusion in the report of the matters based on his information in the form and context in which it appear.



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## Graphite

5km from Mount Peake resource

40m intercept of continuous graphite mineralisation

Potential for an extensive resource of graphite mineralisation



- Very large coincident EM target
- Analytical and Met test work commenced

(Refer ASX release 21 July 2014, 21 October 2010  
20 August 2014, 17 September 2014)



# Driving Development in 2014:

Landmark Agreements with:

HYUNDAI STEEL - *Investment*

POSCO E&C - *Construction*

WOOJIN METALS - *Vanadium*

GUNVOR - *Iron Ore*

GLOBAL PACIFIC - *TiO<sub>2</sub>*

Discussions continue

Other agreements expected to follow



# TNG's TIVAN Hydrometallurgical Process

## IMPROVED AND UPGRADED

- $>99\%$   $V_2O_5$  recovery  $>96\%$
- $99.9\%$   $Fe_2O_3$  ( $69.2\%$  Fe)  $>85\%$  recovery
- Up to  $70\%$   $TiO_2$   $>75\%$  recovery

Reduction in CAPEX and OPEX achieved

Patent Now Registered in over 20 countries

CSIRO Pilot Plant on track

(Refer ASX release 24 October 2014)





TIVAN:

be the worlds lowest cost and highest grade producer of vanadium pentoxide and vanadium electrolyte

- TIVAN expected to produce 1 tonne of high purity  $V_2O_5$  for approximately \$5000 USD

Equivalent to <\$2.5USD / lb



- $V_2O_5$  with over 99% purity is the key raw material to Vanadium Redox Flow Batteries (VRB).
- Combining VRB energy storage with renewable energy will enable the green energy industry to transform.

# Vanadium Battery Outlook

Increasing use in batteries and high technology metals

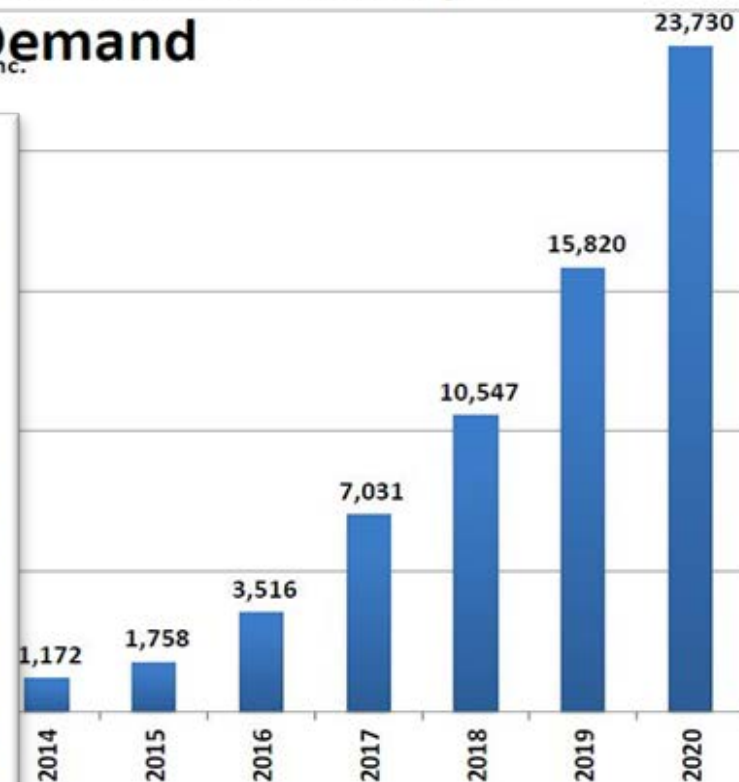
Batteries and storage cells could add exponential demand and growth!

## Vanadium Redox Flow Battery V

25,000

### Demand

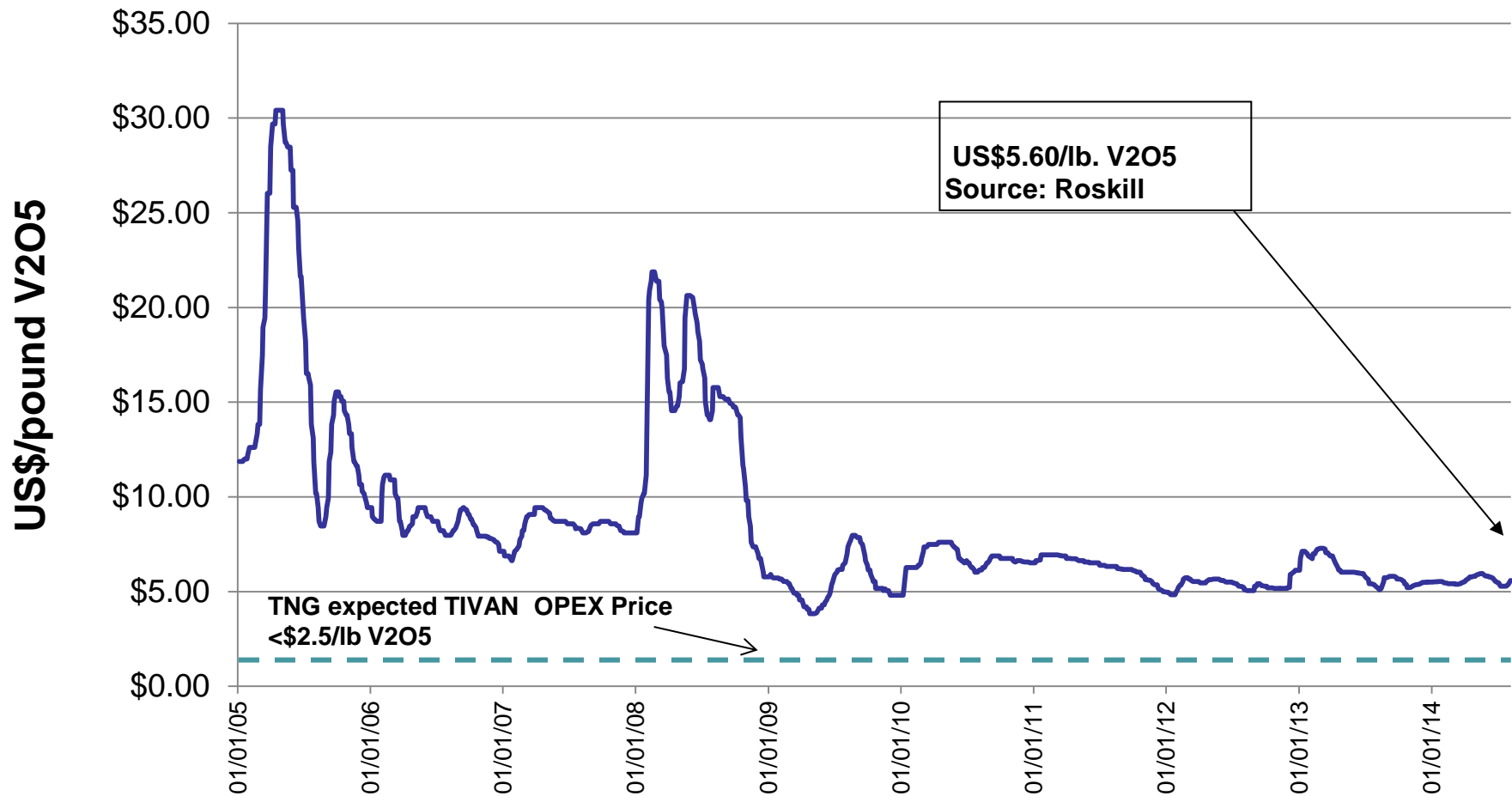
Source: Camelot Ferroalloys, Inc.





# TIVAN's Operating Cost

## HISTORICAL V205 PRICE AND TNG's FORECAST PRODUCTION COST

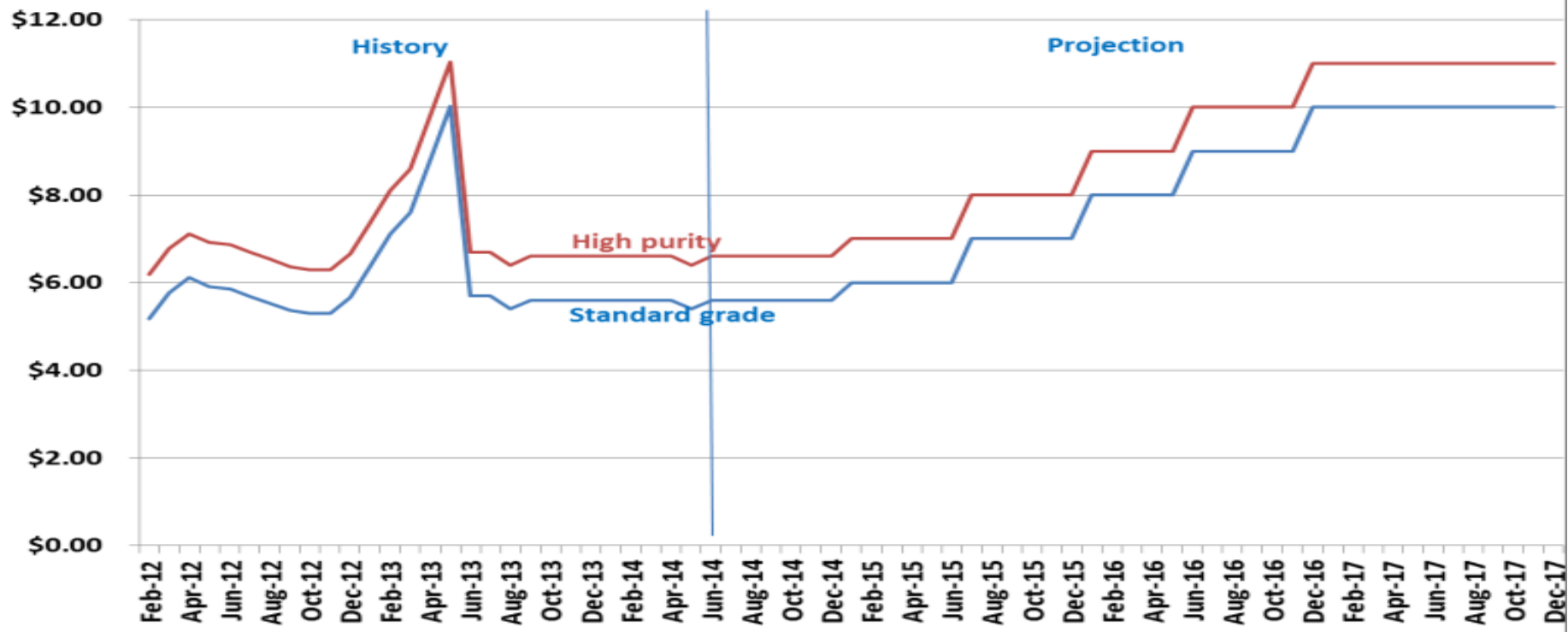


# Vanadium Outlook

Current Price of  $V_2O_5$  approx. US\$6/lb  
 $V_2O_5$  (approx. USD \$14,000 / Tonne)

Forecast to double by 2017  
to US\$ > 25-30,000 / Tonne

**Metal Bulletin V2O5 Monthly Average Price  
2012-2013 Historical, 2013-2017 Projection**

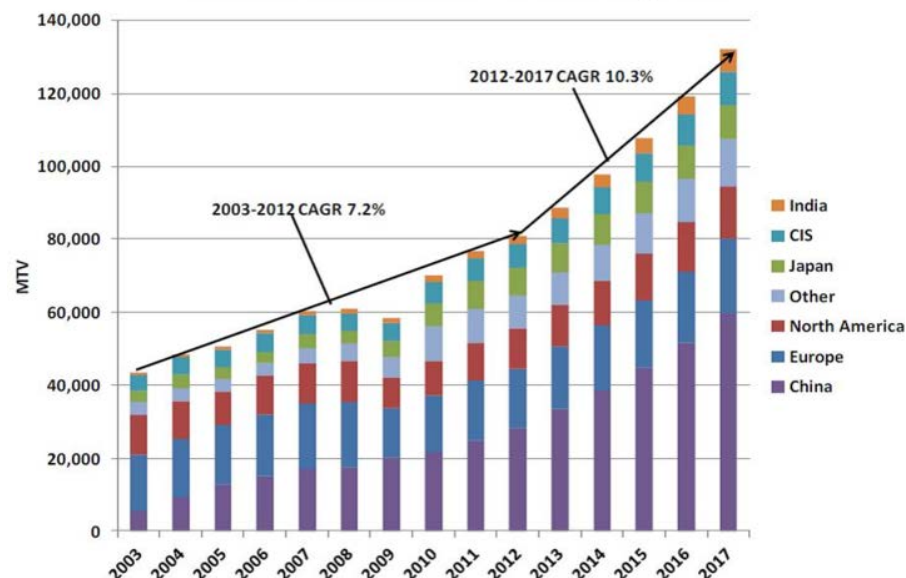


# Vanadium Supply Facts:

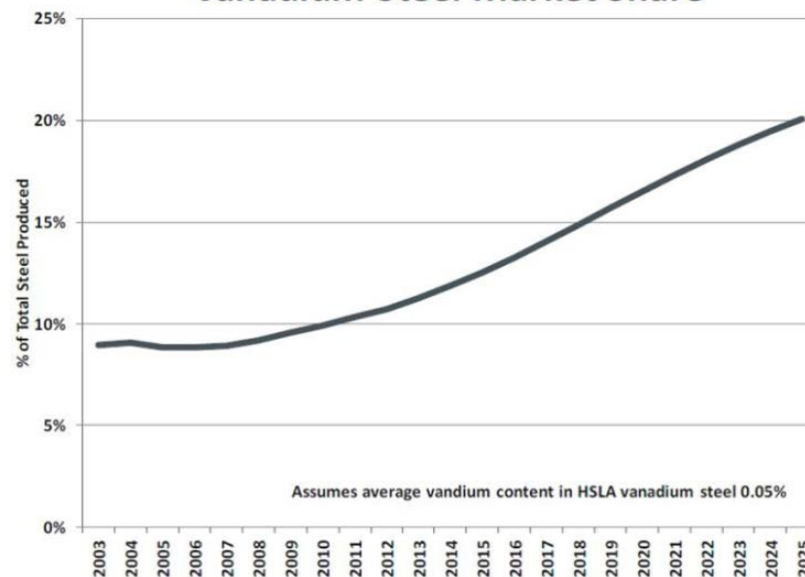
Global Vanadium consumption  
90,000 tonnes (source: Roskill)

Forecast to increase by 30%  
in 2017 to >120,000 tonnes

Global Vanadium Consumption



Vanadium Steel Market Share



➤ 6% increase forecast in Vanadium for Steel, year on year.

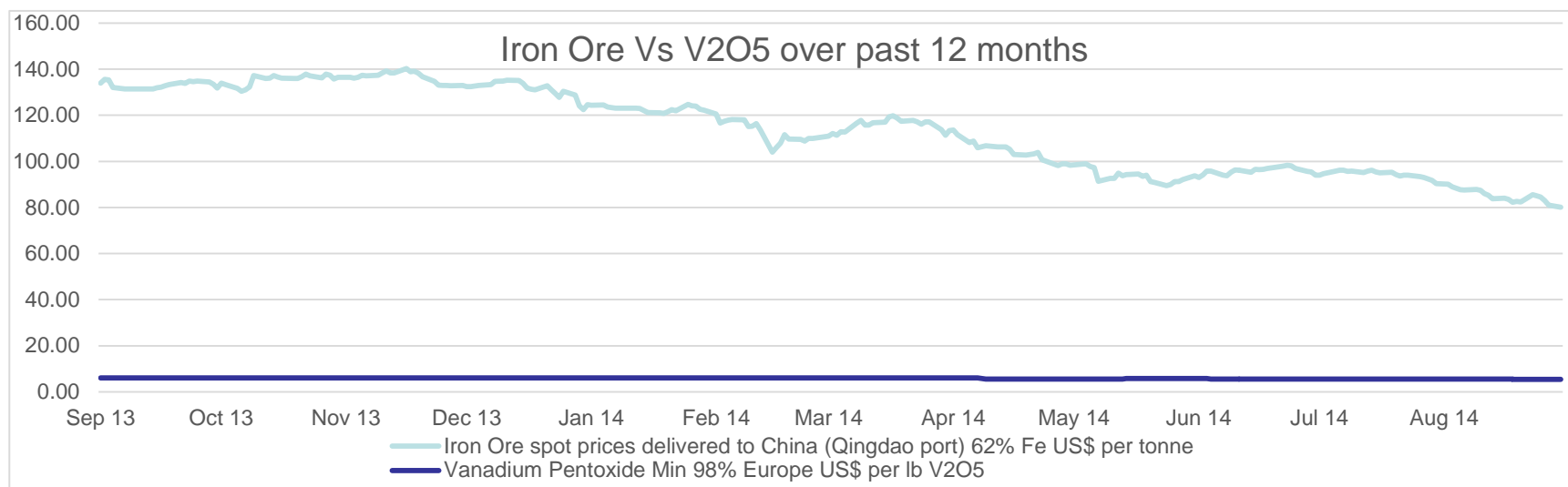
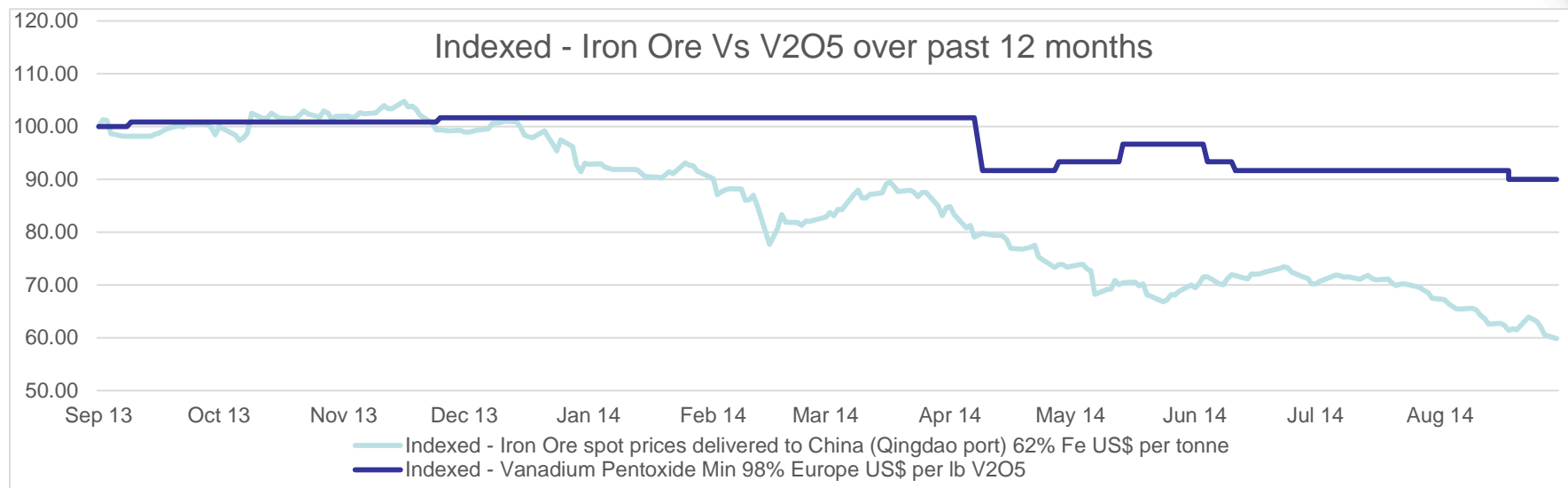
➤ Current producers:

S Africa – depleting / 2 years mine life  
Russia – politically unstable

China – 15% export tariff on  $V_2O_5$   
S America – Largo Resources



# Vanadium Pricing NOT linked to Iron Ore



# Key Project Metrics (PFS):

Mine life:	20 years
Total revenue (LOM):	A\$13.6 billion
NPV:	A\$2.6 billion
Net annual cash flow:	A\$339M
IRR Pre-tax:	38%

Exchange rate:  
USD\$1:AUD\$1

## Annual Production (at 5Mt / annum )

11,000T	V <sub>2</sub> O <sub>5</sub>
290,000T	TiO <sub>2</sub>
900,000T	Fe <sub>2</sub> O <sub>3</sub> .

## Metal Purity

V <sub>2</sub> O <sub>5</sub>	99%
TiO <sub>2</sub>	55%
Fe <sub>2</sub> O <sub>3</sub>	99.9%

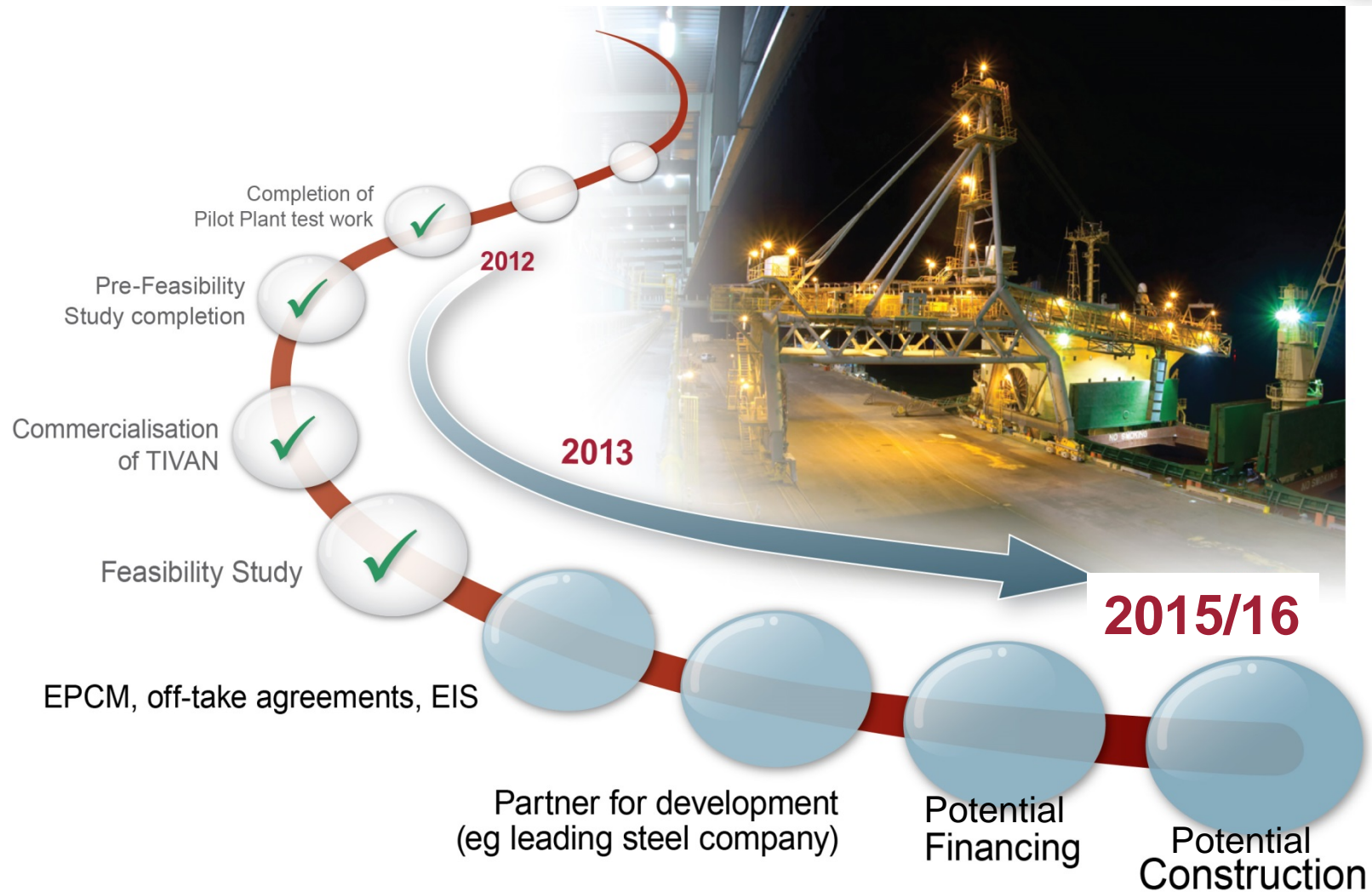
## Total Metal Production

## Tonnes

V <sub>2</sub> O <sub>5</sub>	236,000
TiO <sub>2</sub>	5,822,000
Fe <sub>2</sub> O <sub>3</sub>	17,400,000

Supporting data in Appendix. Refer ASX announcements 12/7/2012;13/02/2013  
Source: Refer ASX announcements 09/092013 ;19/09/13

# Development Pathway Clear





# *The next steps*

## Complete:

TIVAN commercialisation

BFS

EIS

## Secure :

Project finance terms

Binding sales contracts

## Commence :

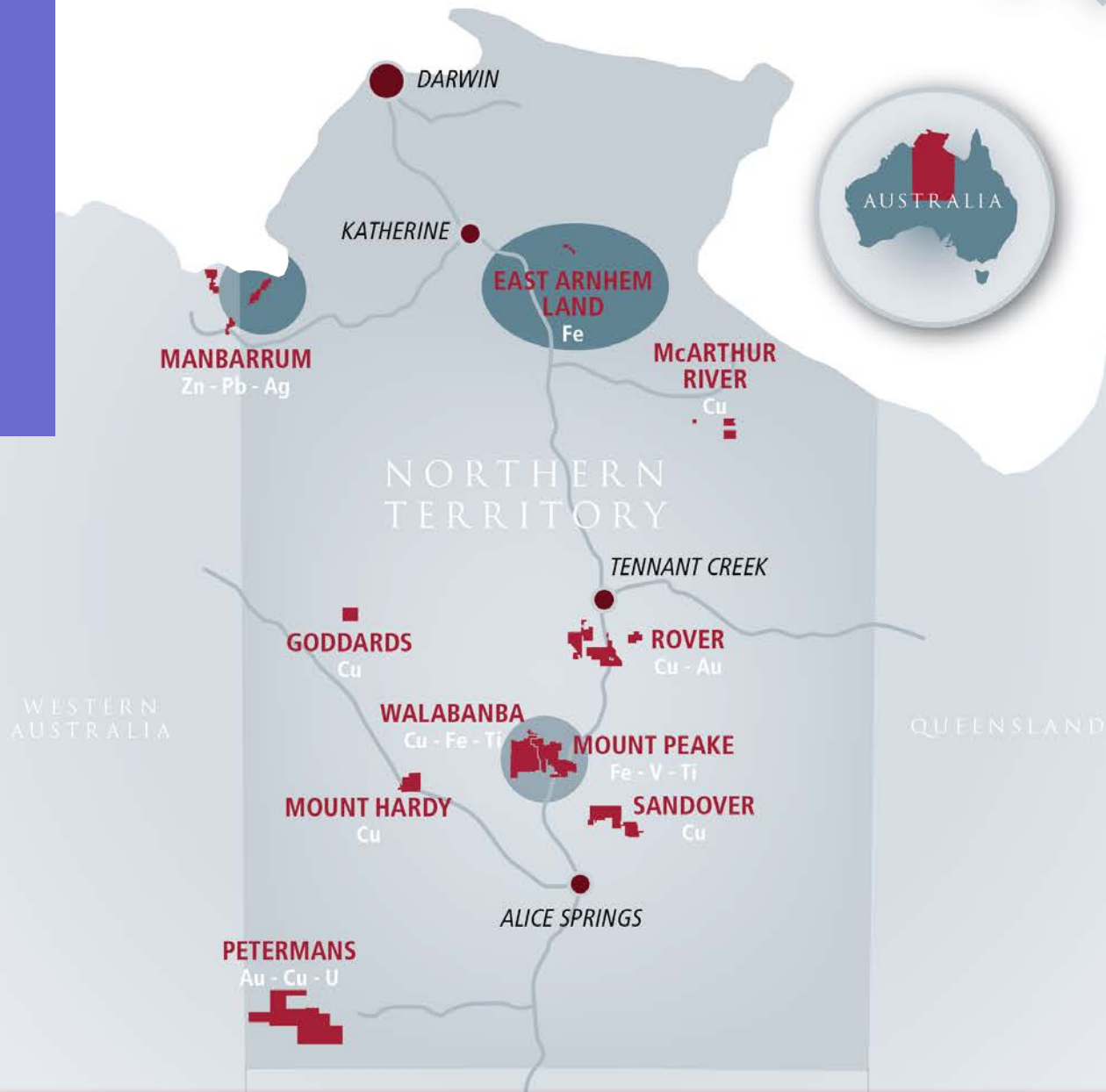
Construction

Mining



# Other Assets 100% Owned: Iron

Expanded Iron exploration portfolio with strategic acquisitions in 2013/2014



*Other Assets 100% Owned: Iron*

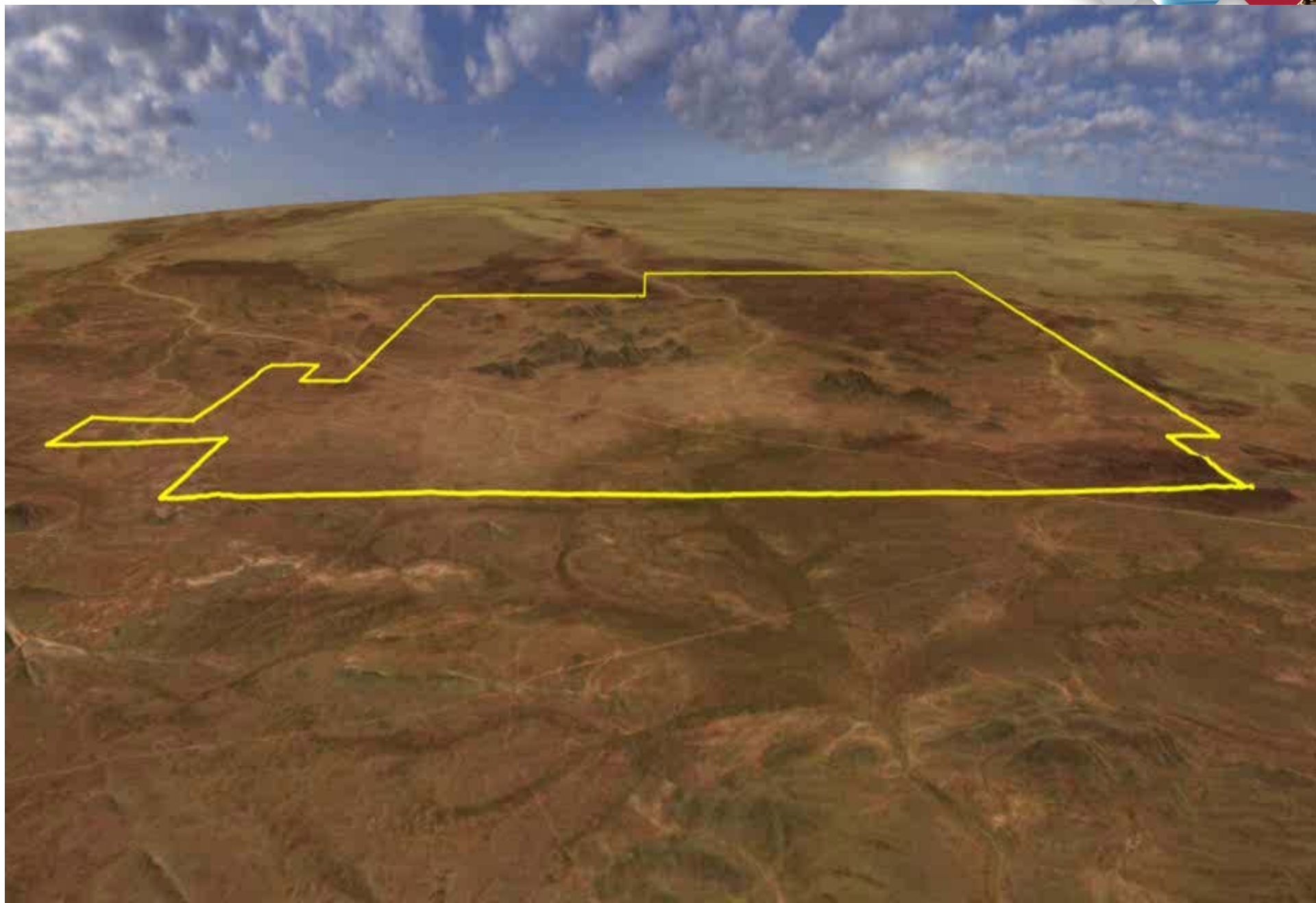




# Other Assets 100% Owned: Copper

Expanded copper exploration portfolio with strategic acquisitions in 2013





# Other Assets 100% Owned: Base Metals

Expanded base metals exploration portfolio with strategic acquisitions in 2013





# Increased Base Metals Portfolio

## McArthur River Copper / base metals Project

60Km SW of Major mines

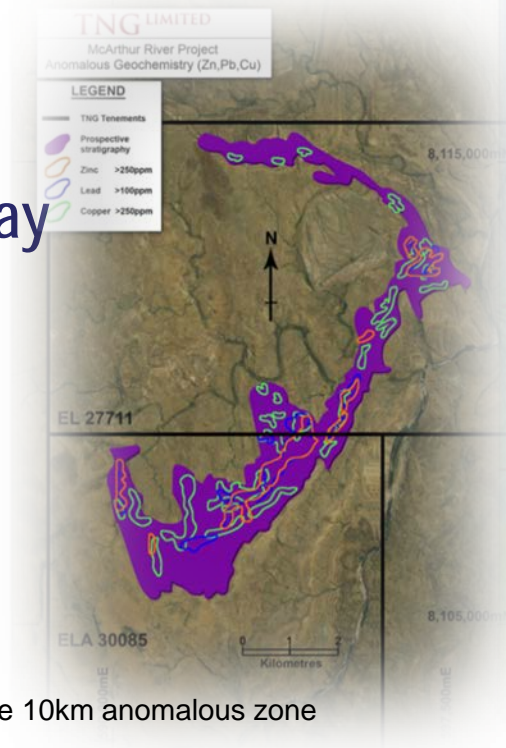
Extensive high-grade surface Cu, Zn, Pb

Rock chips up to 3% Cu,

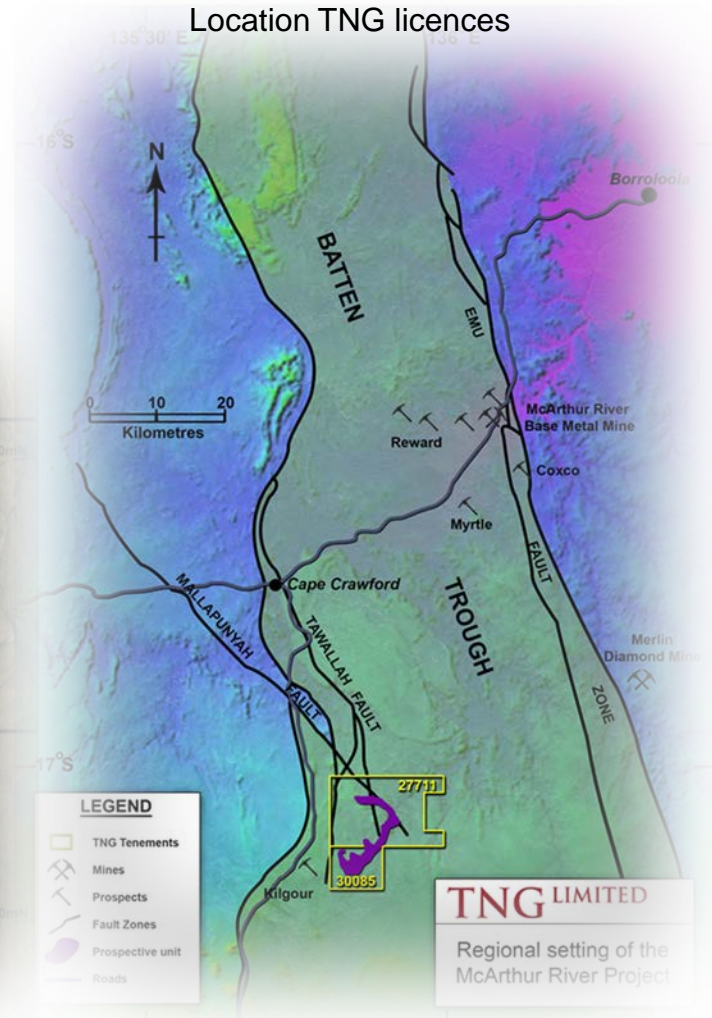
10km zone

Large IP targets

Drill programme underway

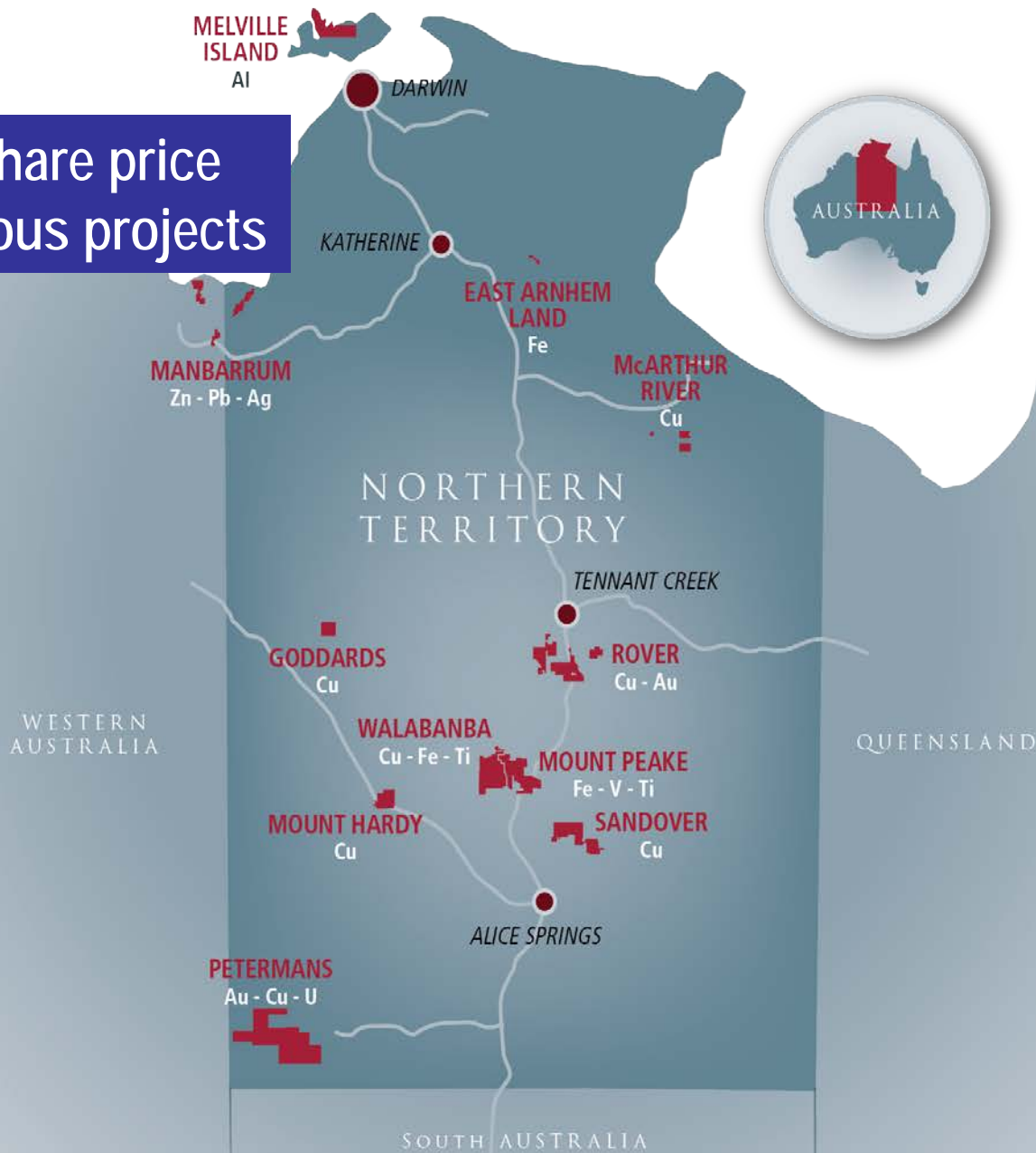


Extensive 10km anomalous zone



# TNG projects : Ferrous and Non-Ferrous

No value in share price  
for non-ferrous projects



# TNG announces De-merger

- ❖ Spin off non-core assets
- ❖ Will create largest Base-Metal Company in NT
- ❖ New company: “TODD RIVER RESOURCES”
- ❖ Add significant value for TNG shareholders by in-specie distribution
- ❖ Allow projects to be fully funded and explored

## Key features:

- Advanced projects Mt Hardy, Manbarrum, McArthur, into New Co.
  - Mount Peake, TIVAN and Iron assets remain with TNG
- 
- TNG remain major shareholder in TRR
  - Provide pathway for development of Mount Peake
  - Time-table for IPO to be announced





# Corporate Overview

## Major Shareholders

Ao-Zhong International Mineral Resources	10.23%
Aosu Investment & Development Co	10.16%
WWB Investments P/L	10.31%

*(Directors along with their related companies hold approximately 14% of issued capital)*

## Key Corporate and Financial Data

ASX code:	TNG
Market capitalization (at 22c):	\$125M
Shares on issue:	554M
Cash: (End June Qtr)	\$4.3M

## Board of Directors

Michael Evans	Acting Chairman
Paul Burton	Managing Director
Stuart Crow	Non-executive Director
Rex Turkington	Non-executive Director
Jianrong Xu	Non-executive Director
Zhigang Wang	Non-executive Director



# Investment Highlights

Mineral-asset rich project portfolio in NT

Developing a world-class **Vanadium-Titanium-Iron Project**

**High-quality and purity products**

Robust Project: LOM revenue of \$13B

**Experienced management team**

**TIVAN® process: competitive advance**

Outlook for **strategic metals** strong

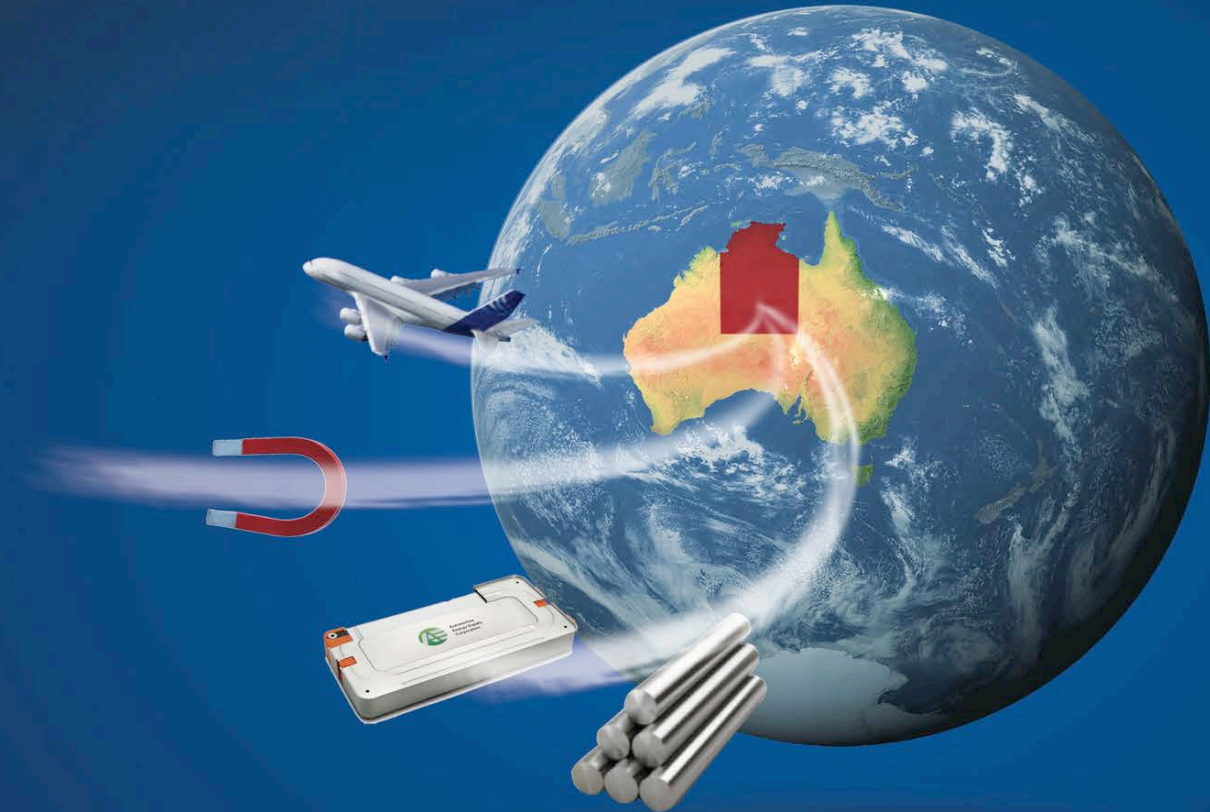
**Huge upside** to resource potential

Quality base metal projects IPO



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ASX: TNG



# THANK YOU

Paul Burton – Managing Director



# Appendix – Supporting Data

## Mineral Resources and Exploration Targets:

The Pre-Feasibility Study (PFS) is based on the updated Indicated and Inferred Resource for Mount Peake published on 12 October 2011 of 160Mt @ 0.3% V<sub>2</sub>O<sub>5</sub>, 5% TiO<sub>2</sub> and 23% Fe (Indicated 110Mt @ 0.29% V<sub>2</sub>O<sub>5</sub>, 5.3% TiO<sub>2</sub> and 23% Fe; Inferred 48Mt @ 0.24% V<sub>2</sub>O<sub>5</sub>, 4.5% TiO<sub>2</sub> and 21% Fe). The Pre-Feasibility assumptions the financial model is based on mining 75.9 Mt of the 160 Mt Mineral Resource Of this amount 20.4% is from the Inferred Mineral Resource category. 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 itself will be realised.

In addition to this resource, TNG has published an Exploration Target of 500-700Mt grading 0.2-0.4% V<sub>2</sub>O<sub>5</sub> and 25-35% Fe. The potential quantity and grade is conceptual in nature, there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

## Pre-Feasibility Study:

Reference to the PFS is to the ASX announcement 9 July 2012, which was prepared based on the Company's presently delineated mineral resource estimate. Any investment decision should be considered based on this information. Full details of the Mount Peake Pre-Feasibility Study are available in the Company's ASX Announcements 9 July 2012 and 19 September 2013. Mining is based on the PFS financial analysis which includes 20.4% of Inferred Resource material (there is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised).

## Key assumptions of 2012 PFS include:

- Operating costs and pit slope angles related to mining estimated to a Pre-Feasibility Study level ( $\pm 25\%$ )
- V<sub>2</sub>O<sub>5</sub> price of US\$20,305/tonne (> 90% grade)
- TiO<sub>2</sub> price of US\$400/tonne (> 55% grade)
- Fe<sub>2</sub>O<sub>3</sub> price of US\$200/tonne (> 69% grade)
- Royalty rate of 2.5% per tonne of plant feed
- Discount rate of 8%
- AUD\$/US\$ exchange rate of 1 US\$ = 1AUD\$

## Nett Annual Cash Flow:

Is defined as the average discounted cash flow per annum after all CAPEX (pre-strip CAPEX, initial CAPEX, and expansion CAPEX) has been deducted, but ignores cost or source of capital, hedging, tax, depreciation, rehabilitation and salvage.