

# TNG LIMITED

ASX Code: TNG



***Strategic metals for global growth***  
***Company Update – January 2013***

***Paul Burton - Managing Director***

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## Competent Person's Statement

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 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, MAAusIMM, 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 is appears.

# Corporate Overview

## ***On Track:***

***To build a diversified Australian resources company focused on supplying key strategic metals to world markets from an extensive portfolio of quality mineral projects.***

## **Major Shareholders**

Ao-Zhong International Mineral Resources	14.59%
Aosu Investment & Development Co	14.02%
WWB Investments P/L	6.51%

*(Directors hold approximately 17% of issued capital)*

## **Board of Directors**

Jianrong Xu	Chairman
Paul Burton	Managing Director
Neil Biddle	Non-executive Director
Stuart Crow	Non-executive Director
Rex Turkington	Non-executive Director
Zhigang Wang	Non-executive Director

## **Key Corporate and Financial Data**

ASX code:	TNG
Market capitalisation: (at 10c)	\$42M
Shares on issue:	426M
Cash: (as at 31 Dec 2012)	\$7.2M



# Snapshot

## *The right assets...*

- ✓ World-scale strategic metals resource:
- ✓ Innovative, patented TIVAN™ hydrometallurgical process
- ✓ Major copper exploration assets
- ✓ Diversified exploration: Au-Cu-Zn-Pb-Ag-Al

## *The right commodities...*

- ✓ Vanadium and Titanium – high-technology supply materials
- ✓ Strong growth outlook
- ✓ Copper demand increasing with global growth

## *The right partners...*

- ✓ Cornerstone Chinese investors: ECE and Wanlong groups
- ✓ Competitive advantage for finance, EPCM from China
- ✓ Commodities experts engaged for marketing and product sales



# Snapshot Comparison: 2011 – 2012

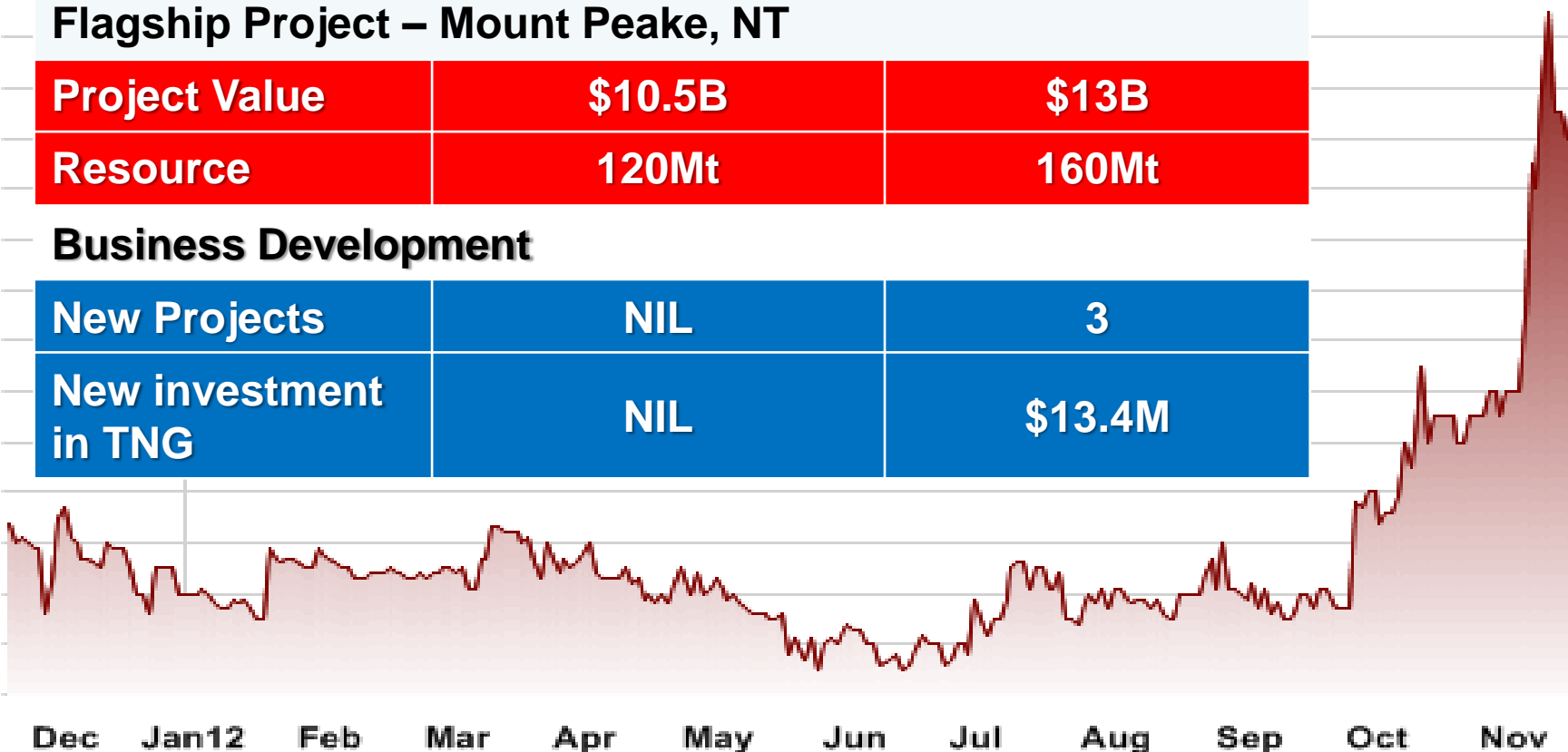
	Nov 2011	Nov 2012
Cash	\$3M	\$9M
Share Price	10c	19c
Market Capitalisation	\$25M	\$80M

## Flagship Project – Mount Peake, NT

Project Value	\$10.5B	\$13B
Resource	120Mt	160Mt

## Business Development

New Projects	NIL	3
New investment in TNG	NIL	\$13.4M



# Partners for Growth

- ✓ China's ECE and Wanlong Groups
- ✓ Secures key cooperation to de-risk and accelerate Mount Peake Strategic Metals development
- ✓ Access to Chinese finance, EPCM, off-take
- ✓ Strategic partnership
- ✓ Maintains strategic flexibility



## ECE:



- Major Chinese mineral exploration, development and mining group
- Over 5,000 employees, has discovered +160 deposits in China worth more than \$10 billion

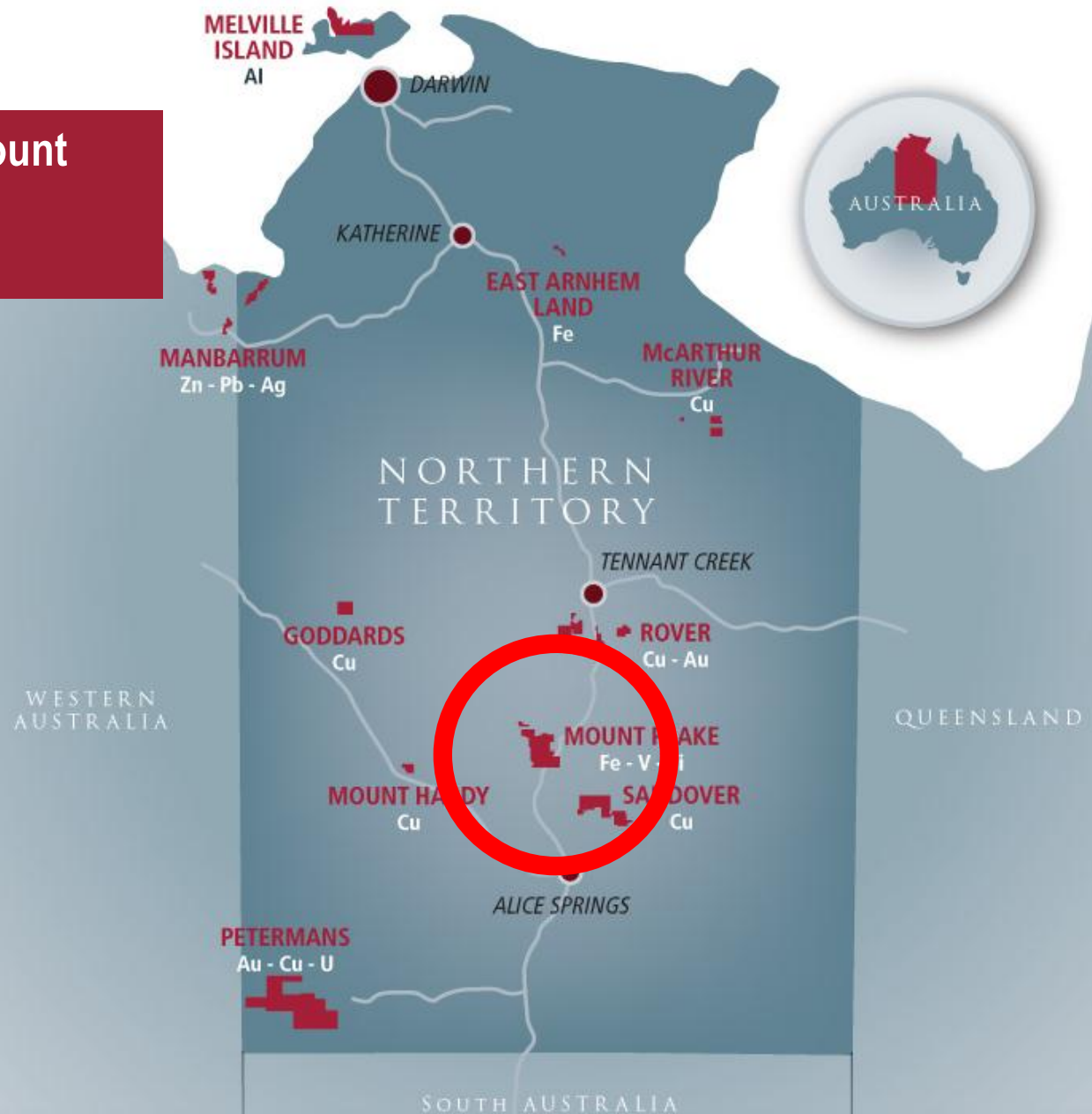
## WANLONG GROUP:



- High technology electronics
- Potential final product end-user

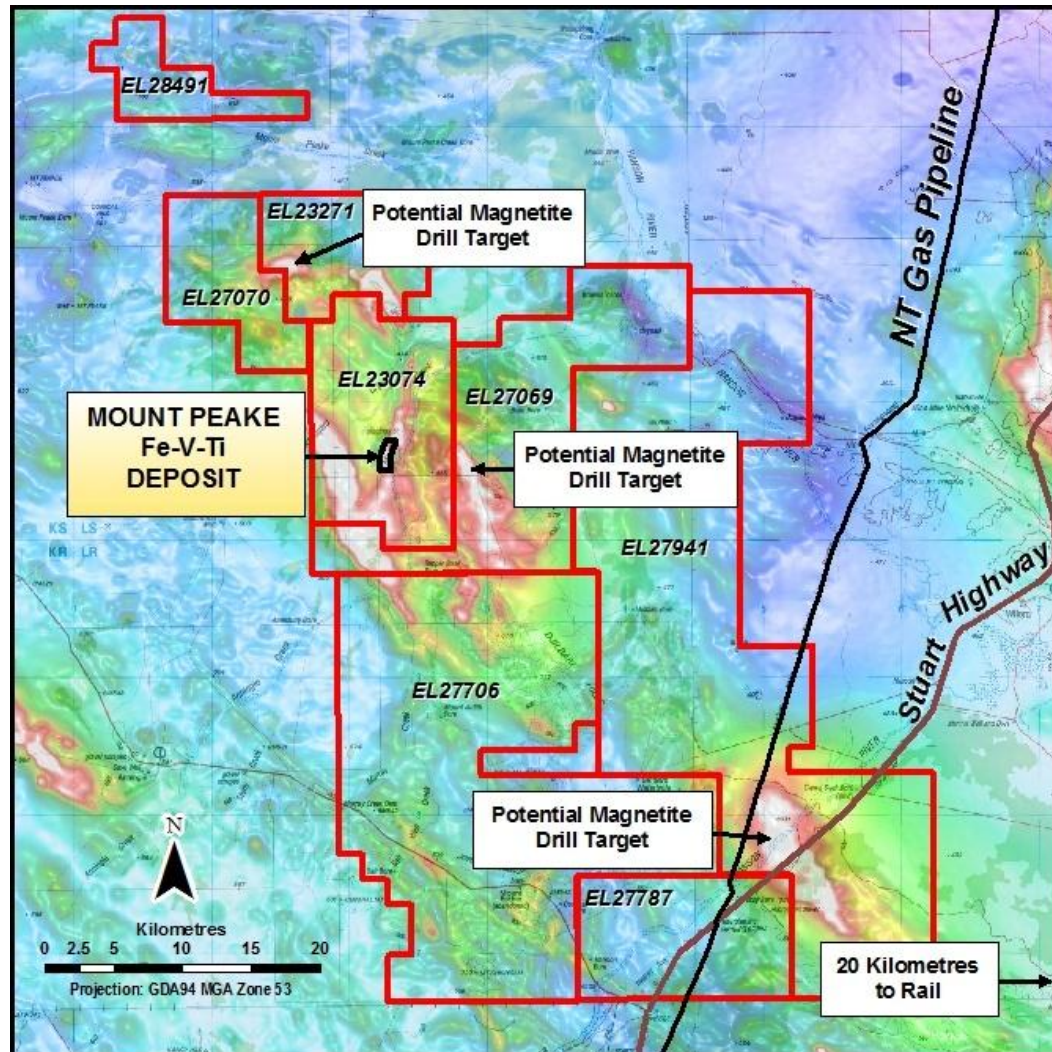
# Flagship Project

✓ Focus on accelerating Mount Peake Strategic Metals development





# Mount Peake: Project Upside



- additional large magnetite-gabbro zones
- Potential for new vanadium- and titanium-bearing zones confirmed
- Supports Exploration Target of **500-700Mt\*** within 2,000 sq km tenement holding

\* Detail and Competent Person's Statement in Appendix



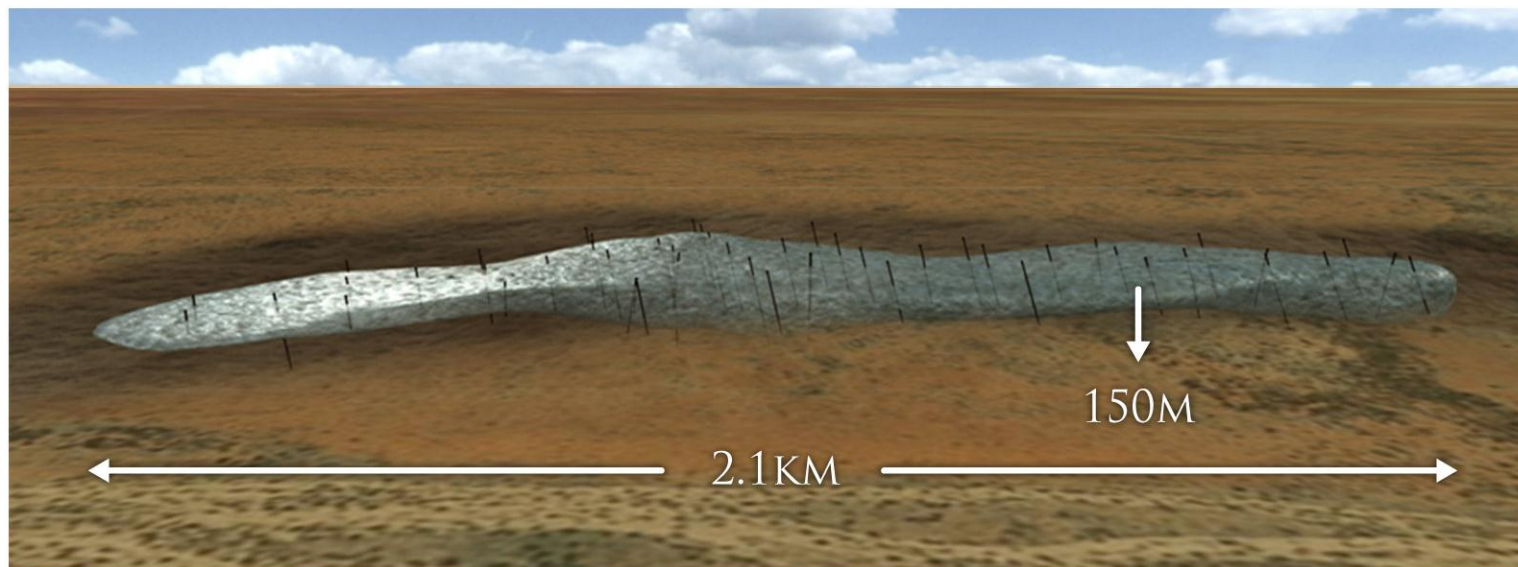
# Mount Peake Resource Increasing

Shallow large-scale resource underpins long-life project

100% owned by TNG

Exploration Target up to 700Mt

JORC Category	Tonnes	V <sub>2</sub> O <sub>5</sub> %	TiO <sub>2</sub> %	Fe%	Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Indicated	110,000,000	0.29	5.3	23	8.1	34
Inferred	48,000,000	0.24	4.5	21	8.8	35
<b>Total</b>	<b>160,000,000</b>	<b>0.27</b>	<b>5.0</b>	<b>22</b>	<b>8.3</b>	<b>34</b>



\* Exploration Target of 500-700Mt with a grade range of 0.2-0.4% V<sub>2</sub>O<sub>5</sub>, 5-8% TiO<sub>2</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 it is uncertain if further exploration will result in the determination of a Mineral Resource.

# Vanadium: The Critical Element



## Steel

- ✓ Rebar & structured beams
- ✓ High speed tools and surgical steels

## Aerospace and Defence

- ✓ Titanium vanadium alloys for all high-technology metals aircraft, missiles, personnel transports, etc

## Chemicals and Pollution Control

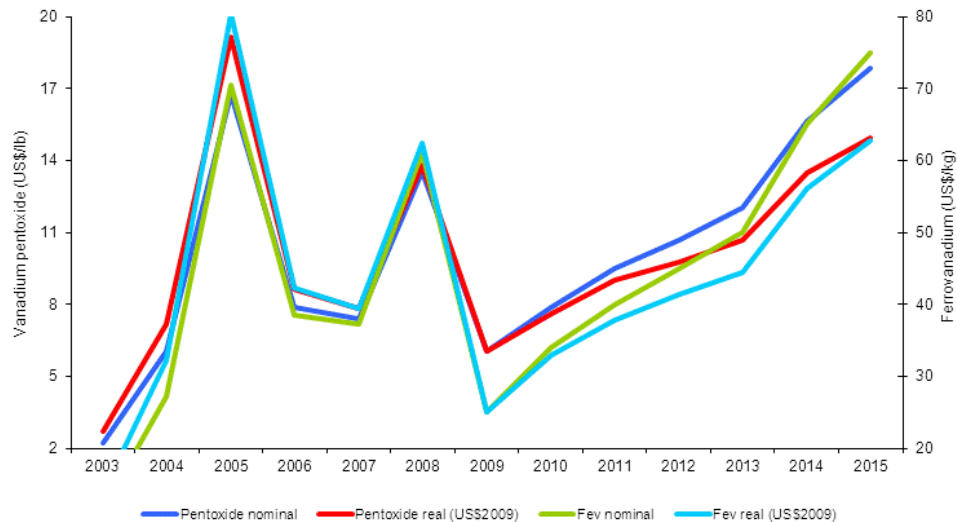
- ✓ Production of synthetic rubber, polyester, fibreglass, sulfuric acid, etc
- ✓ Critical component of catalytic converters to remove sulphur dioxide and other pollutants

## Energy Store – THE SLEEPING GIANT

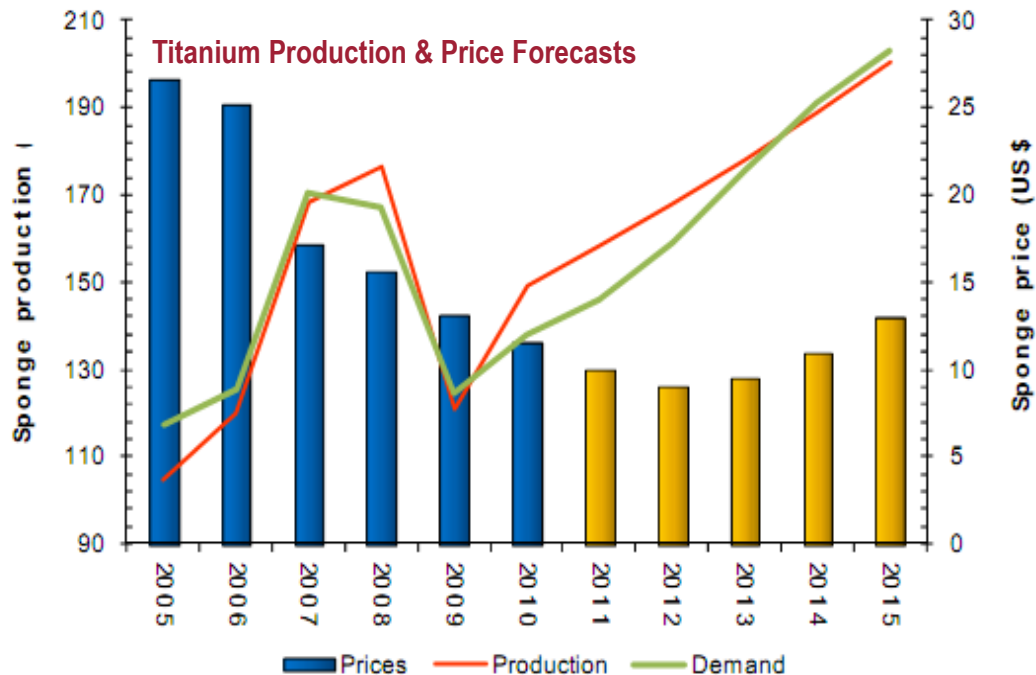
- ✓ The grid scale Vanadium Flow Battery
- ✓ Lithium Vanadium Batteries for electric vehicles

# Strategic Metals set for Growth

## Vanadium Price Forecast



The outlook for vanadium and titanium prices remains strong



Source: Roskill

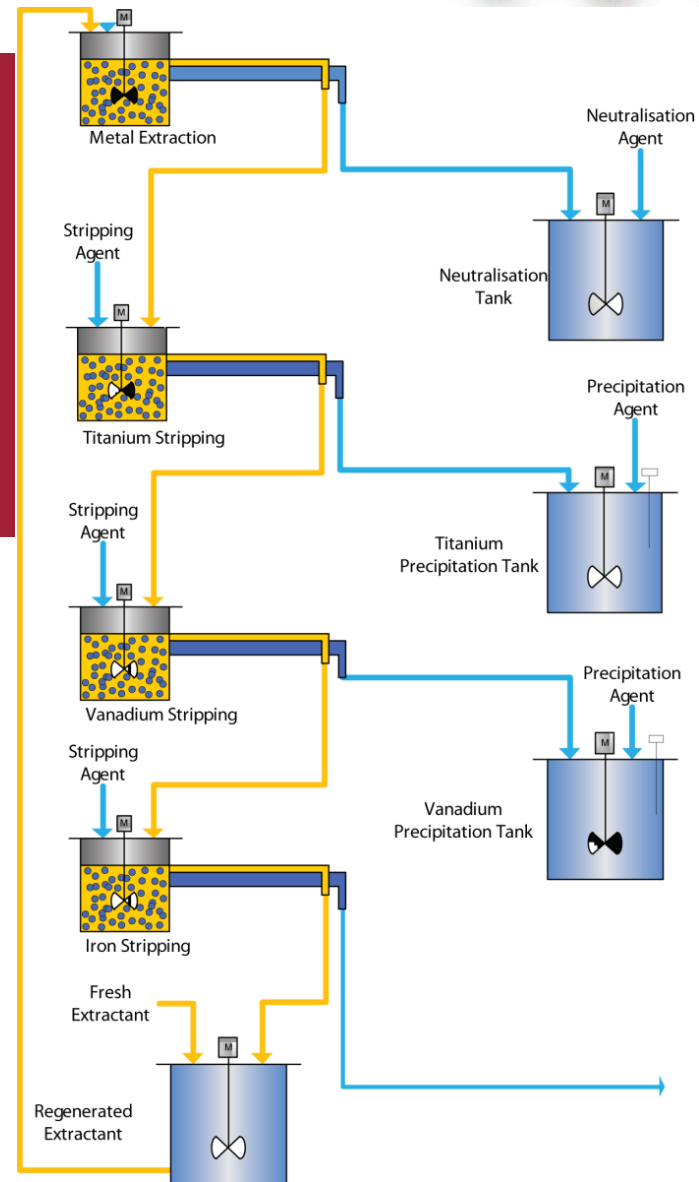


# TIVAN™: Revolutionary Process

✓ Pilot plant test work gave high recoveries and purities of commercial products:

- >99%  $V_2O_5$  (+80% recovery)
- 99.9%  $Fe_2O_3$  (69.2% Fe) (80% recovery)
- Up to 55%  $TiO_2$  (+75% recovery)

✓ Reduced OPEX and CAPEX by 50%



# Pre-Feasibility: Key Outcomes

## Key Physicals

- Total material mined: 176Mt
- Total waste movement: 83Mt
- Total ore mined: 93Mt
- Strip ratio: 0.95
- Mine life: 20 years
- Processing rate: 2.5Mtpa, increasing to 5Mtpa in year 4

## Key Financial Outcomes

- Total revenue (LOM): A\$13.6 billion
- Operating cash flow (LOM): A\$7.4 billion
- Net cash flow (LOM): A\$6.6 billion
- Pre-production capital: A\$563M\*
- Total operating costs: A\$75.50/tonne of plant feed\*\*
- NPV: \$2.6B
- IRR pre-tax: 38.7%

## 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

## Average Concentrate Grade

V <sub>2</sub> O <sub>5</sub>	1.2%
TiO <sub>2</sub>	18%
Fe	55%

## Metal Purity

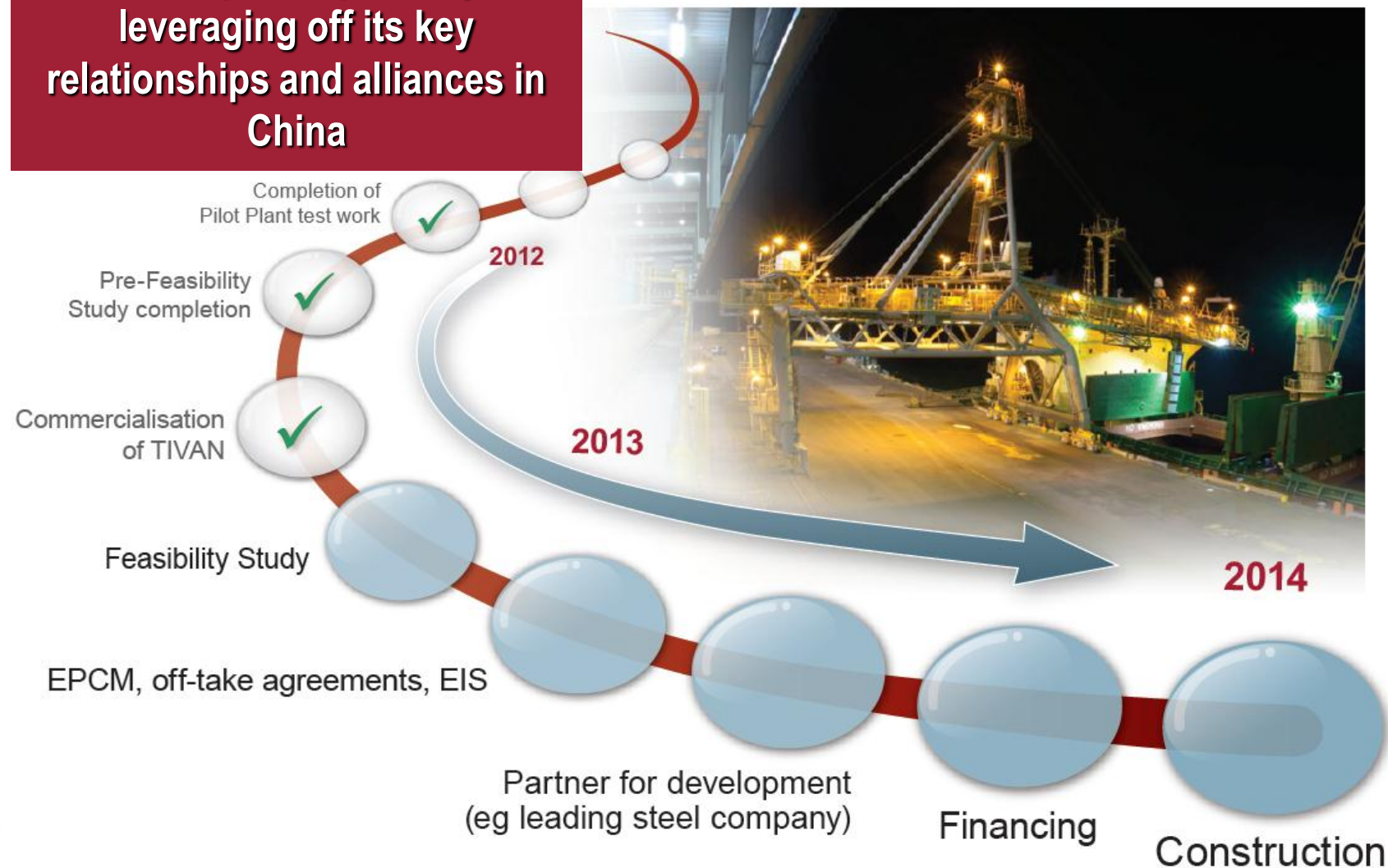
V <sub>2</sub> O <sub>5</sub>	99%
TiO <sub>2</sub>	55%
Fe <sub>2</sub> O <sub>3</sub>	99.9%

\* including all infrastructure

\*\* including mining, processing, transport & royalties

# NEXT PHASE: Project Realisation

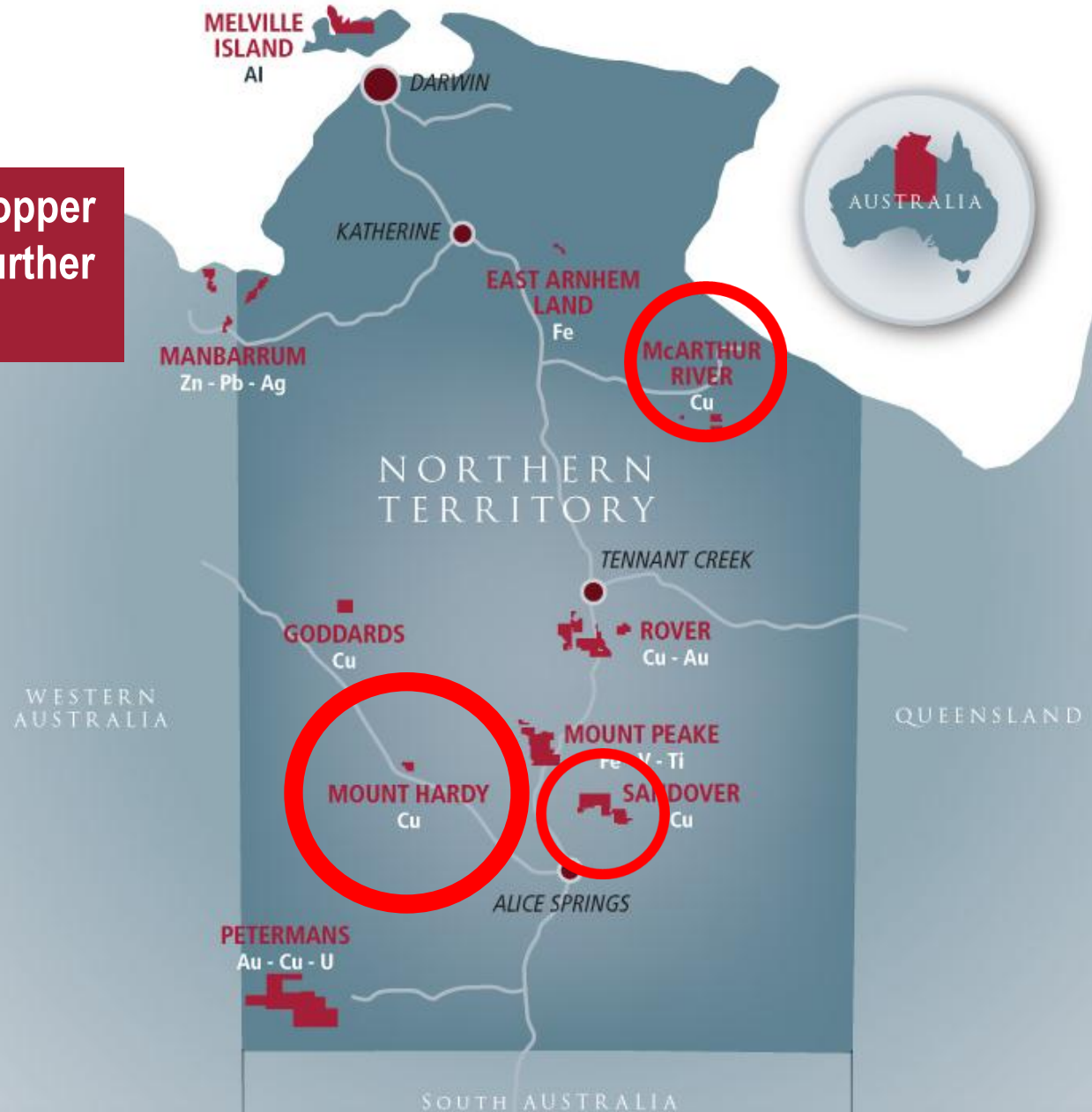
TNG has outlined a clear development pathway, leveraging off its key relationships and alliances in China



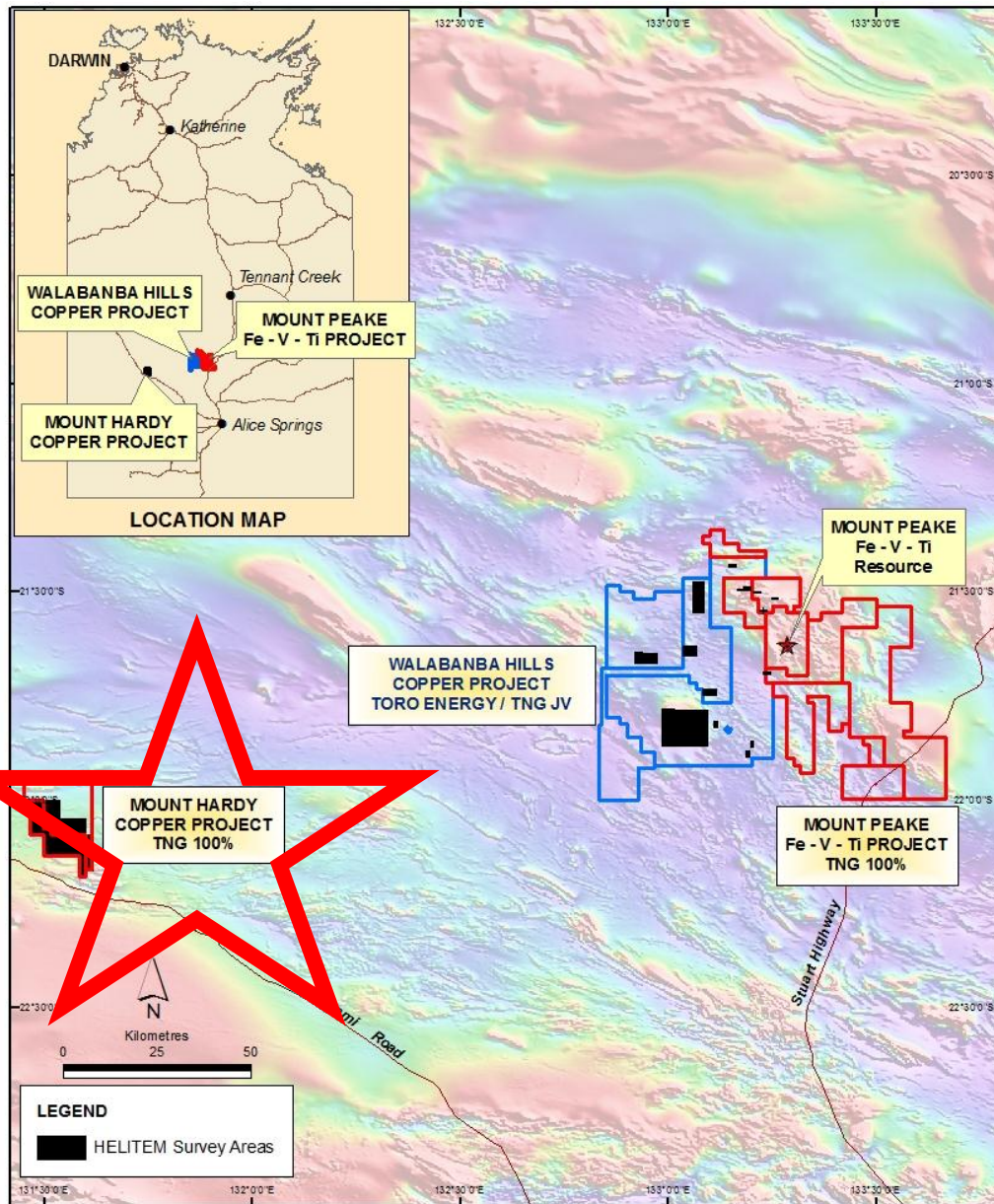


# Expanded Copper Portfolio

Systematically expanded copper exploration portfolio with further strategic acquisitions



# Copper Exploration Ramping Up in 2013

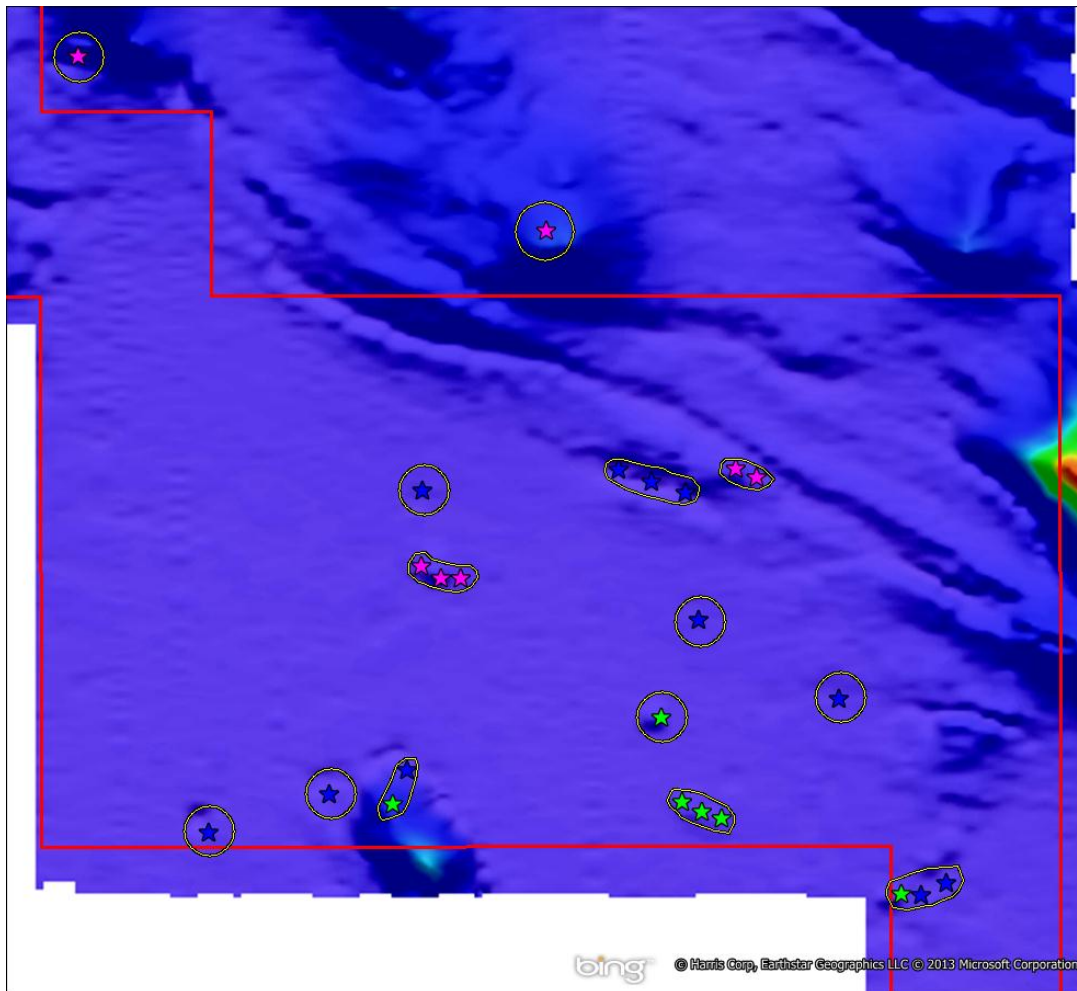


- ✓ **Mount Hardy Copper Project (TNG: 100%)**
  - *Extensive high-grade surface Cu with anomalous Au, Ag and Pb*
  - *Rock chip grades of up to 35% Cu, 18% Pb, 10% Zn, 7g/t Au, 400g/t Ag*
  - *Drilling confirmed extensive mineralisation*
- ✓ **Walabanba Hills (JV with Toro Energy – earning up to 80%)**
  - *Numerous magnetic targets anomalous in Ni, Cu and PGM*
  - *Historical results up to 3,581ppm Ni and 2,410ppm Cu over 20-50m*



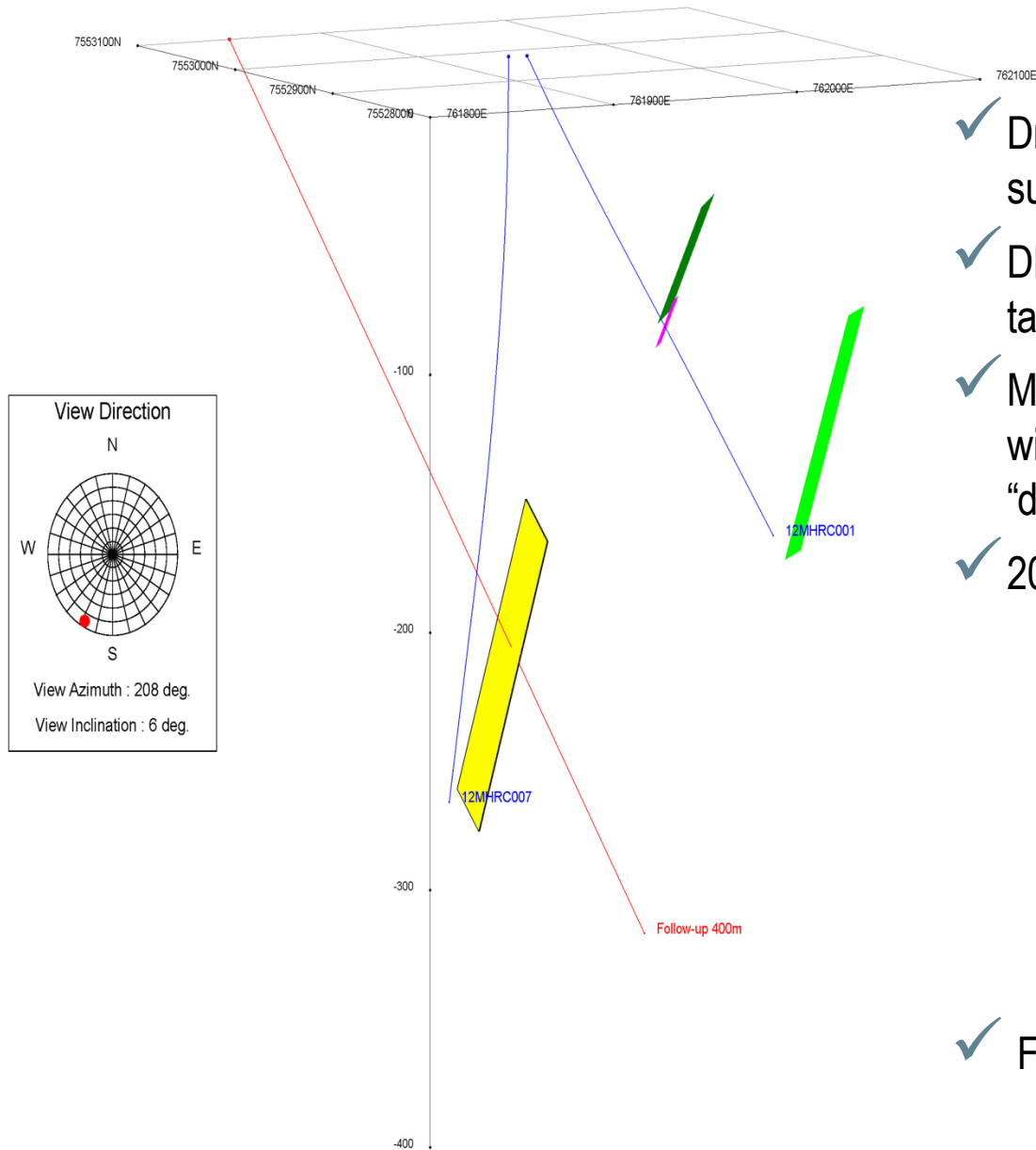
# Copper : Mount Hardy Progress

- ✓ Since acquisition in July 2012 TNG has completed:
  - ✓ 900 line kilometre HELITEM survey
  - ✓ Outlined 23 EM conductor targets (6 followed up)
  - ✓ Ground EM over six areas
  - ✓ Mapping and sampling at eight locations
  - ✓ First pass RC drilling – targeting EM conductors
- ✓ High grade surface copper mineralization at four areas





# Copper : Mount Hardy Results and Plans



- ✓ Drilling confirms copper grades below supergene oxide material
- ✓ DHEM on 2012 RC holes outlines targets warranting further drill testing
- ✓ Mount Hardy and Browns prospects with existing workings, high grades and “drill ready” targets
- ✓ 2013 program including:
  - ✓ IP and gravity geophysical surveys
  - ✓ Further EM target checking
  - ✓ Geological mapping and sampling
  - ✓ Drill testing
- ✓ Field activities commenced

# Mount Hardy project: Visible Copper

## Mount Hardy Project

### EM Target #1

Rock Sample @ 762020mE 7552925mN  
Weathered ferruginous quartz vein with  
hematite gossan and oxide/carbonate  
Cu-Zn-Pb. Malachite, cupriferous hematite  
and limonite

All Analyses are XRF Niton XLt values  
Scale: Hand lens width 14mm

#315  
22.3% Cu  
5.8% Zn  
14.7% Pb

#311  
26.4% Cu  
16.5% Zn  
8.6% Pb

#310  
15.0% Cu  
8.2% Zn  
11.4% Pb

#309  
21.3% Cu  
19.8% Zn  
3.2% Pb

#312  
7.6% Cu  
14.6% Zn  
4.1% Pb

#308  
5.1% Cu  
36.5% Zn  
0.6% Pb

**\* Cautionary Statement:** All chemical analyses results quoted in this announcement are from a Niton XRF portable analyser model XLt. As such they may not be representative of the whole sample, nor should they be seen as a substitute for laboratory-based chemical analysis.



# Mount Hardy project: Extensive Copper

Mount Hardy Project  
Mount Hardy Prospect  
Vein #7 – 350m west of main workings

#334  
23.0% Cu

#335  
7.55% Cu

#333  
11.5% Cu

#332  
31.7% Cu

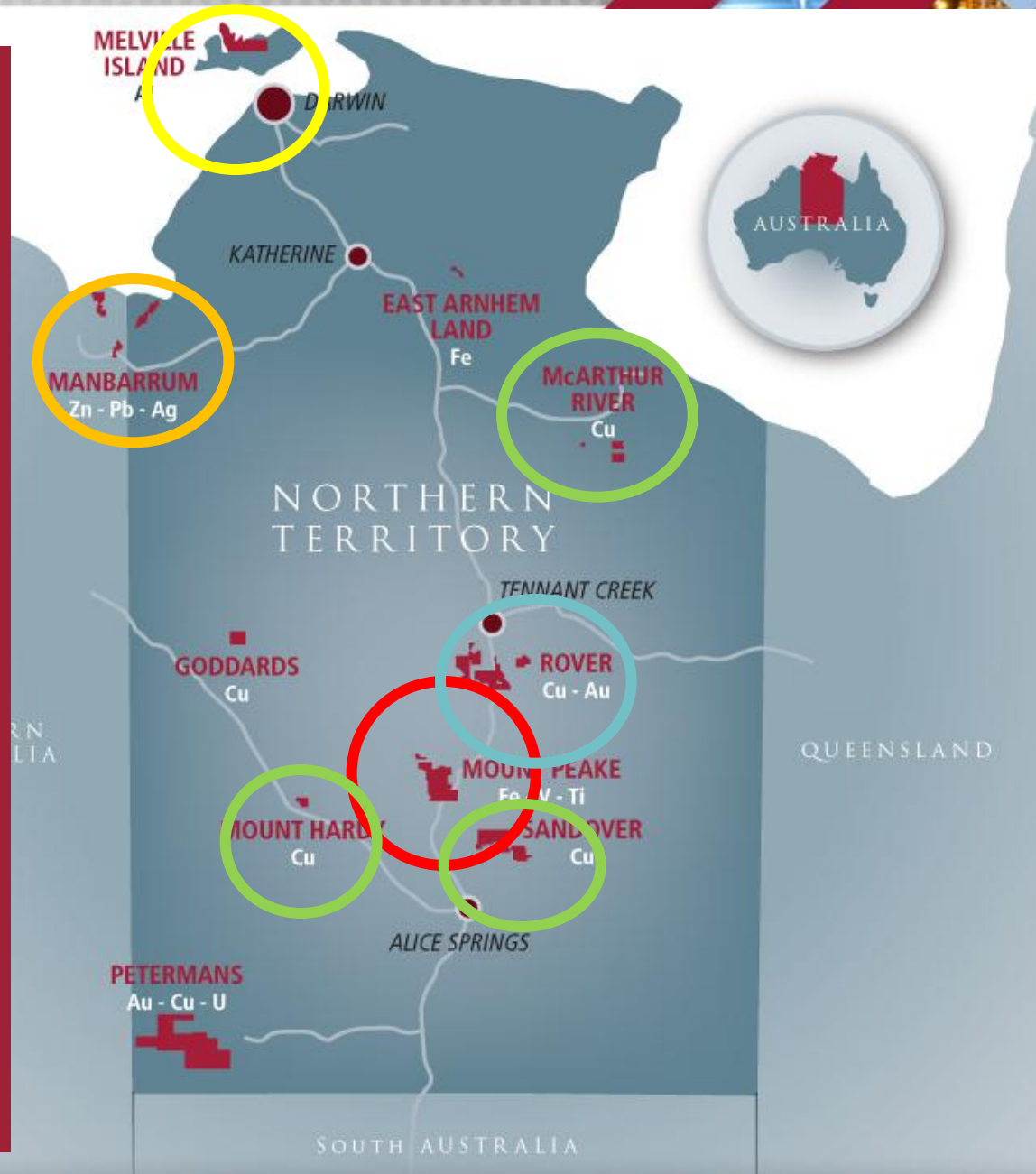
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# TNG Assets Value Increase

Australian mineral exploration portfolio continues to increase in value...

- Mount Peake a \$13B project
- Highly prospective copper exploration tenements
- Manbarrum Zinc Project (*JV with KBL Mining – moving to production*)
- Melville Island (*JV with Rio Tinto*)
- Rover Project (*JV with WDR*)
- Cawse (*JV with Norilsk*)



# Outlook for 2013

- ✓ Completion of Feasibility Study on MOUNT PEAKE
- ✓ Completion of TIVAN™ International Patent
  - Finalise commercial testwork*
- ✓ Upgrade of JORC resource to Measured
- ✓ Advance copper exploration:
  - Potential maiden resource at Mount Hardy*
- ✓ Continue to expand mineral-asset portfolio
- ✓ On-time delivery on projects by experienced management team
- ✓ Outlook for strategic metals and TNG's projects remains strong



\* Exploration Target of 500-700Mt with a grade range of 0.2-0.4%  $V_2O_5$ , 5-8%  $TiO_2$ , and 25-35% Fe. The potential quantity and grade is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.





# THANK YOU

ASX Code: TNG

QUEENSLAND





# Appendix – Background Data

## Exploration Targets:

The potential quantity and grade in any reference to exploration targets and resource potential is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and 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 of 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.

## Key assumptions of PFS include:

- Operating costs and pit slope angles related to mining estimated to a Pre-Feasibility Study level ( $\pm 25\%$ )
- $V_2O_5$  price of US\$20,305/tonne (> 90% grade)
- $TiO_2$  price of US\$400/tonne (> 55% grade)
- $Fe_2O_3$  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.