# TNG LIMITED



## DEVELOPING THE NORTHERN TERRITORY AUSTRALIA

121 Conference, London, April 2015

Paul Burton Managing Director

## Disclaimer

#### **Forward-Looking Statements**

This presentation has been prepared by TNG Ltd. This document contains background information about TNG Ltd current at the date of this presentation. The presentation is in summary form and does not purport to be all inclusive or complete. Recipients should conduct their own investigations and perform their own analysis in order to satisfy themselves as to the accuracy and completeness of the information, statements and opinions contained in this presentation.

This presentation is for information purposes only. Neither this presentation nor the information contained in it constitutes an offer, invitation, solicitation or recommendation in relation to the purchase or sale of TNG Ltd shares in any jurisdiction. This presentation may not be distributed in any jurisdiction except in accordance with the legal requirements applicable in such jurisdiction. Recipients should inform themselves of the restrictions that apply in their own jurisdiction. A failure to do so may result in a violation of securities laws in such jurisdiction.

This presentation does not constitute investment advice and has been prepared without taking into account the recipient's investment objectives, financial circumstances or particular needs and the opinions and recommendations in this presentation are not intended to represent recommendations of particular investments to particular persons. Recipients should seek professional advice when deciding if an investment is appropriate. All securities transactions involve risks, which include (among others) the risk of adverse or unanticipated market, financial or political developments. To the fullest extent permitted by law. TNG Ltd. its officers, employees, agents and advisers do not make any representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of any information, statements, opinions, estimates, forecasts or other representations contained in this presentation. No responsibility for any errors or omissions from this presentation arising out of negligence or otherwise is accepted. This presentation may include forward looking statements. Forward looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of TNG Ltd. Actual values, results or events may be materially different to those expressed or implied in this presentation.

#### **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 is 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.

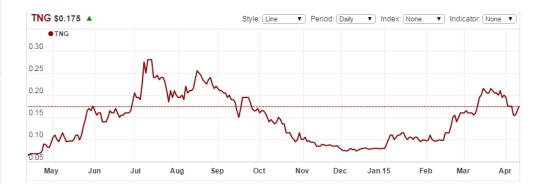
# Corporate Overview

Major Shareholders	
WWB Investments P/L	10.40%
Ao-Zhong International Mineral Resources	10.01%
Aosu Investment & Development Co	9.06%
(Directors along with their related companies hold app 14% of issued capital)	proximately

<b>Board of Directors</b>	Board	of D	irectors
---------------------------	-------	------	----------

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

Key Corporate and Financial Data		
ASX code:	TNG	
Market capitalization (at 17.5c):	\$110 M	
Shares on issue:	623M	
Cash: (End Dec Qtr)	\$7M	
Auditors: KPMG Lawyers: Clifford Chance		



## TNG Projects, Northern Territory, Australia



## Mount Peake Project – Key Facts

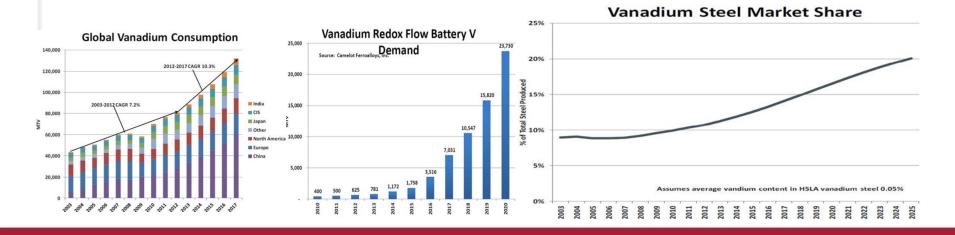
# A low risk high value strategic metals project

- World class project
- Located in Northern Territory excellent jurisdiction for resource projects
- Large, flat lying, tabular ore-body at shallow depth strip ratio <1</li>
- Close to existing infrastructure Road, Rail Gas
- Host rock amenable to hydrometallurgical processing
- TNG focussed on high purity products, high recoveries
- Extract maximum value by producing 3 product streams –V205, Ti02, Fe203
- Pre-Feasibility completed in 2012 very robust economics
- NT Government and Traditional Owners supportive of development
- Water source located
- No environmental impediments EIS due for completion in June 2015
- Definitive Feasibility Study underway due for completion in June 2015

## Mount Peake Project - Products

## Vanadium - increasing demand for structural steel and high tech devices

- Growth in vanadium market forecast to be 4% to 7% pa until 2021.
- China is the major driver of increased demand for vanadium to 2021.
- Chinese consumption increasing : Grade 2 (no V) steel rebar to Grade 3 (with V) high strength steel rebar.
- Chinese vanadium consumption forecast to increase from 36% (of total world market) in 2011 to 45% in 2016.
- Mount Peake's high purity flake should provide a premium in the chemical and high technology markets.
- Specialty markets for premium price include specialty chemical, catalyst production/recycling, electrical storage cell production and high specification alloys.
- Current Price of V<sub>2</sub>O<sub>5</sub> approx. US\$6/lb V<sub>2</sub>O<sub>5</sub> (approx. USD \$14,000 / Tonne) expected to double by 2017



## Titanium dioxide – increasing demand from China

- Market is currently focussed on China (around 50% of the world market)
- Chinese market is supply-constrained shifting from domestic to international feed stocks.
- Chinese demand growing at 8% pa, world demand averaging 4 to 5% pa.
- Majority of existing product streams are focussed on pigment production and the chloride production process for high grade, pigment-quality TiO<sub>2</sub> powder.
- Other applications (not currently in the market) which show promise for a bulk tonnage market include solar energy and water purification.

#### High purity iron oxides – opportunities for entering high specification, high-value markets

- Product should draw a premium price (as produced).
- With additional QA/QC, there is potential to enter small, high-specification and high-value markets.
- Campaign-style basis could avoid over-supplying these small "niche" high-value markets.
- FeV lump market is four times larger than the high purity  $V_2O_5$  market.
- Project provides flexibility to balance production between high purity flake and ferrovanadium lump to ride out short-term price fluctuations.
- Globally, expect average market growth of 3.5% to 4% over the next 5 years.

## Mount Peake Ore



## Host Rock – Vanadiferous Titanomagnetite

- Highly amenable to magnetic separation at low intensities
- Ore competency reduced by high pressure grinding rolls (HPGR)
- Reduced load on downstream grinding circuit
- Capable of producing three product streams through TIVAN hydrometallurgical process

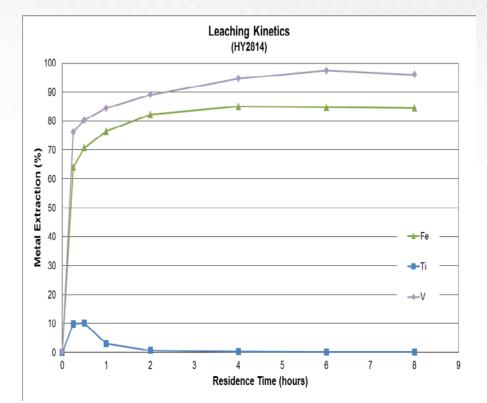


Mount Peake Magnetic Concentrate

## **Metallurgical Achievements**

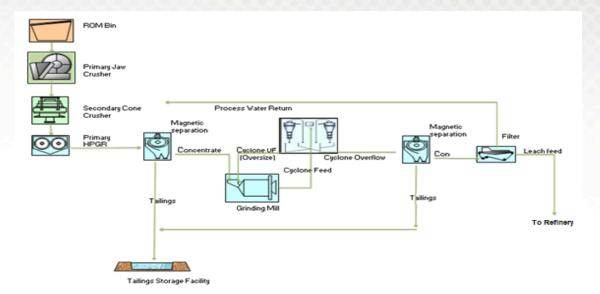
#### Mount Peake Metallurgy

- Bulk magnetic separation achieved over 90% vanadium recovery
- Magnetic concentrate contains low magnesia (MgO) grades of 2.2% and low alumina (Al<sub>2</sub>O<sub>3</sub>) grades of 3.0%
- Bulk TiVAN leaching achieved over 96% vanadium extraction after 6 hours
- Liquid extraction efficiently recovering vanadium ready for  $V_2O_5$  precipitation
- Leach and SX Process well understood
- Potential to further refine TiO2 to pigment grade will significantly value add

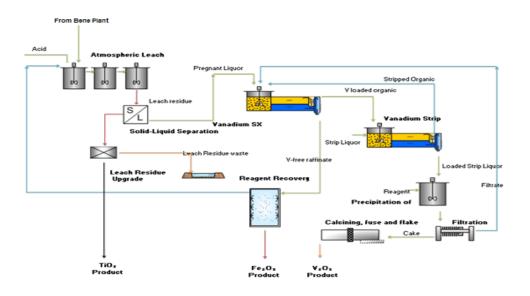


# Flowsheet Overview – Beneficiation to Refinery

### Beneficiation



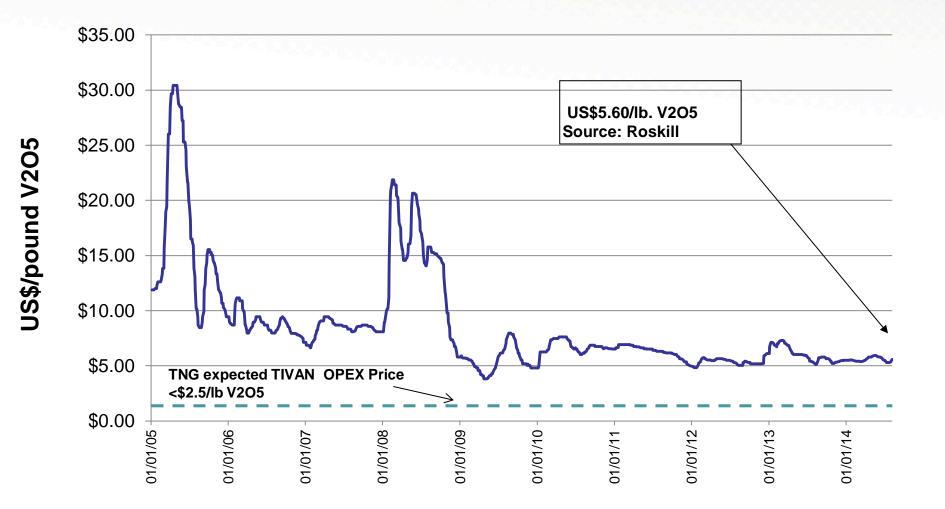
Refinery



# **TIVAN's Operating Cost**



HISTORICAL V205 PRICE AND TNG'S FORECAST PRODUCTION COST



# Mount Peake Project – Financial Summary

## 2012 PFS production economics

- The Base case of 2.5 Mtpa increasing to 5.0 Mtpa by Year 5 to produce 15.0 ktpa V<sub>2</sub>O<sub>5</sub> flake product, underpins the viability of the project.
- The Pre-Feasiblity Study was led by expert consultants with experience in titanomagnetite projects: Snowden, METS, GHD and SKM.
- A Feasibility Study is currently underway.

Supporting data in Appendix. Refer ASX announcements 12/7/2012, 6/2/2013, 9/9/2013 and 19/9/13.

Item	Units	Value
Resource	Mt	160
Life of mine	years	17.2
V <sub>2</sub> O <sub>5</sub> production	kt	245
Gross revenue	A\$M	11,814
Royalty	A\$M	296
Net revenue	A\$M	11,518
Operating costs	A\$M	5,729
Capital costs - initial	A\$M	563
Capital costs - sustaining	A\$M	152
Capital costs - contingency	A\$M	27
Cash flow	A\$M	8,145
A\$:US\$ exchange rate	-	1.0
NPV (@ 8%)	A\$M	2,6
IRR (pre-tax)	%	38

## Mount Peake Project – Mine Plan

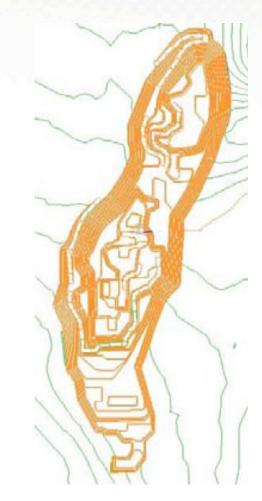


### Proven mining strategies and innovative processing design

• Conventional open pit mining in four stages, with a very low average LOM strip ratio of 0.95

ROM	2.5 Mtpa, increasing to 5 Mtpa by year 5
Process route	TIVAN <sup>™</sup> hydrometallurgical process
Waste mined	72 Mt
Ore production	76 Mt
Average head grade	0.39% V <sub>2</sub> O <sub>5</sub> , 27.09% Fe, 7.02% TiO <sub>2</sub>
Average recoveries	>90% V <sub>2</sub> O <sub>5</sub> , 80% Fe, 67% TiO <sub>2</sub>
Total metal production	245 kt $V_2O_5$ , 20,246 kt Fe, 6,495 kt Ti $O_2$
Mine life	17.2 years
Strip ratio	0.95

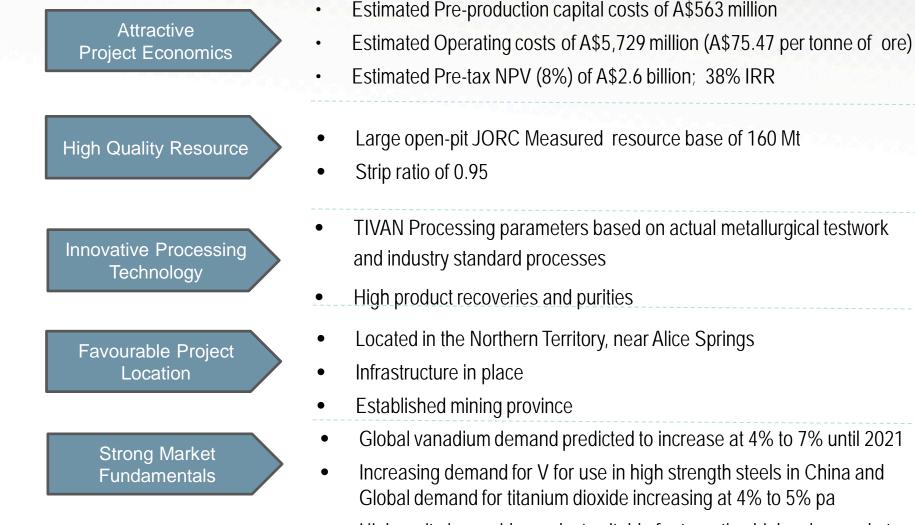
Supporting data in Appendix. Refer ASX announcements 12/7/2012, 6/2/2013, 9/9/2013 and 19/9/13.



# Mount Peake Project – Summary



#### A low risk vanadium project underpinned by strong economics



• High purity iron oxide product suitable for targeting high value markets

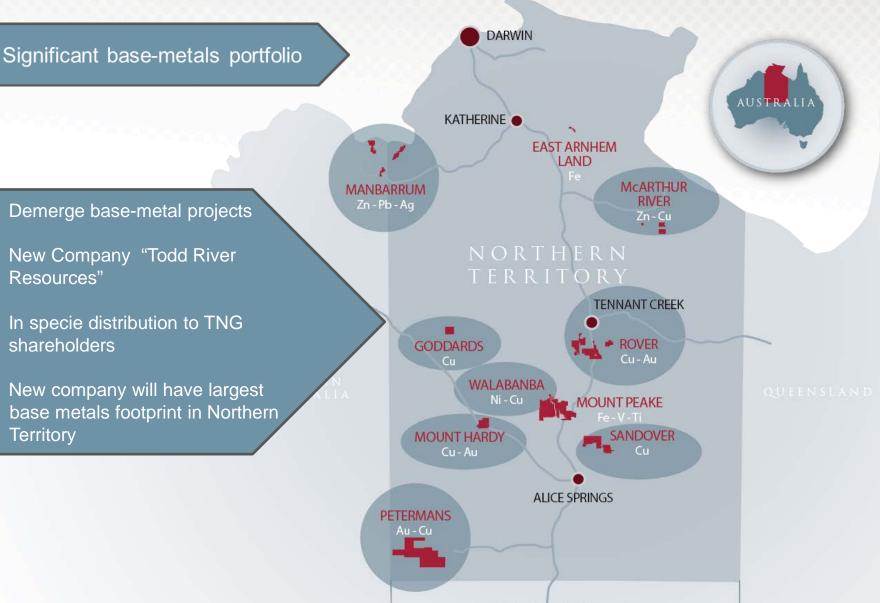
## Mount Peake Project – Summary



## Other Assets 100% Owned: Copper, Gold, Zinc

•

•



SOUTH AUSTRALIA

## TNG – Investment Summary

## **Investment Summary**

- Mineral-asset rich project portfolio in NT, Australia
- Developing a world-class Vanadium-Titanium-Iron Project
- Vanadium products poised for growth
- Potential to upgrade Titanium Dioxide product will add significantly to project economics
- High purity chemical Iron for structurally sound markets
- Production potential 2017
- Lowest cost producer @ <\$2.5 llb v205
- Huge upside to resource potential
- Quality base metal projects to add value with demerger

# TNG LIMITED

ASX: TNG

# THANK YOU Paul Burton – Managing Director

#### 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% V2O5, 5% TiO2 and 23% Fe (Indicated 110Mt @ 0.29% V2O5, 5.3% TiO2 and 23% Fe; Inferred 48Mt @ 0.24% V2O5, 4.5% TiO2 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% V2O5 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.(refer ASX announcement 24/9/2013)

#### 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 (±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.