



**Breakaway
Research**

March 2014

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Company Information

ASX Code	TNG
Share Price	A\$0.042
Ord Shares	550.5m
Options	52.6m
Market Cap	A\$25.3m
Cash (Dec 14)	A\$5.6m
Total Debt	A\$0m
Enterprise Value	A\$19.7m

Directors

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

Substantial Shareholders

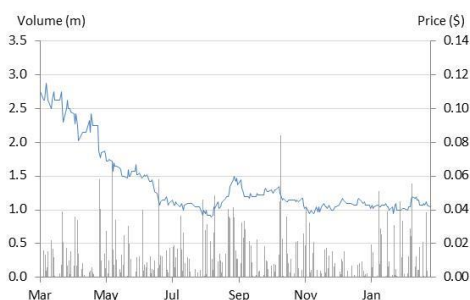
Ao-Zhong Int. Min Resources	11.25%
Aosu Inv. & Develop. Co	10.81%
WWB Investments P/L, Mr & Mrs Brown	10.33%
JP Morgan Nom's	1.68%
Mr Paul Burton	1.45%

Source: TNG

Company Details

Address	Level 1, 282 Rokeby Rd Subiaco, WA, 6008
Phone	+618 9327 0900
Web	www.tnglimited.com.au

1 Year Price Chart



TNG Limited (TNG)

*Quality Projects, Right Jurisdiction
Clear Strategy to Value Appreciation*

Recommendation: Speculative BUY

Key Points

- **Two pronged strategy - focus on ferrous and strategic metals projects plus options for value-adding to base metals projects**
- **Ferrous metals portfolio expanded with applications over Sherwin Iron Formation at Roper River – a proven company maker region**
- **Review of flagship Mount Peake 2012 PFS results in improved project economics from an already robust base**
- **Exploration success at Mount Peake indicates potential for significant resource expansion**
- **Two stage production scenario investigated at Mount Peake**
- **Beneficiation optimisation work for Mount Peake completed – positive results indicate potential for lower capex and opex than in 2012 PFS**
- **TIVAN® hydrometallurgical pilot plant progress, discussions with potential commercialisation/licencing partners**
- **Flagship Mount Peake V-Ti-Fe Project awarded “Major Project” status by the Northern Territory Government**
- **Encouraging exploration results from Mount Hardy and McArthur base metals projects**
- **Indicative value of \$0.28/share, contingent on successfully attracting an equity partner to fund and develop Mount Peake**

TNG has made considerable progress over its portfolio of development and exploration projects, and has developed a two-pronged strategy, with the focus on its ferrous and strategic metals projects, with value adding options being explored for the non-core assets. A review of the 2012 Mount Peake PFS and comminution optimisation results has generated improvements to the already robust project economics, and exploration results point to the potential for additional resources. The addition of the Roper River licences has strengthened the ferrous metals side of the portfolio.

Company Overview

TNG continues to work towards development of its Mount Peake V-Ti-Fe project, and commercialisation of the TIVAN® hydrometallurgical process. It is expected that the DFS will be completed by late 2014 – timing will be dependent upon results of the pilot scale TIVAN® testwork and obtaining funding. The Company is now exploring DFS and development funding options, with the preferred option being introduction of a project equity or offtake partner.

Exploration work has also continued over the Mount Hardy and McArthur base metals projects, with very encouraging results from these high quality assets. Achieving funding, further exploration success and positive TIVAN® pilot plant results should be key price drivers over the short to medium term.



Investment Thesis

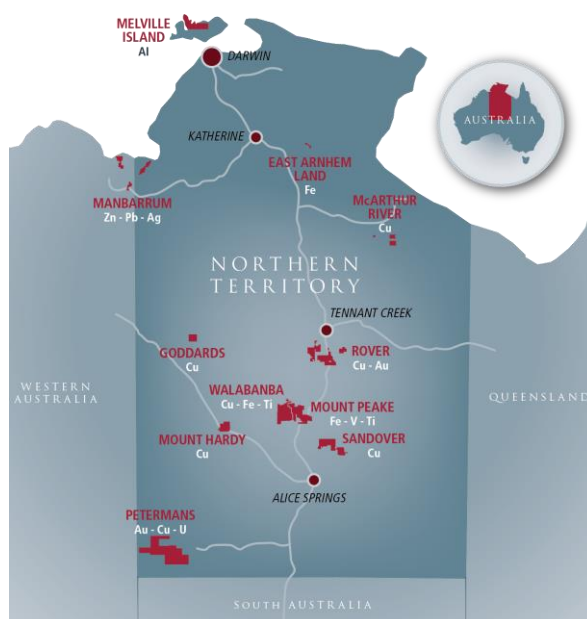
Background

TNG Limited (“TNG” or “the Company”), in which Breakaway initiated coverage in October 2012, is an ASX listed explorer and developer.

Flagship project is the Mt Peake V-Ti-Fe Project in the NT

The flagship project is the 100% owned Mount Peake V-Ti-Fe Project, located 235km north of Alice Springs in the Northern Territory, which has resources of 160Mt grading 0.28% V₂O₅, 5.3% TiO₂ and 23% Fe. Recent exploration success at Mount Peake has enhanced the possibility of significant resource expansions.

TNG Project Locations



Source: TNG

Positive PFS in 2012, reviewed in 2013

A positive Pre-Feasibility Study (“PFS”) was completed in mid-2012, reviewed in early 2013, and TNG is now working on a Definitive Feasibility Study (“DFS”) due for completion in late 2014.

Portfolio of other attractive projects

The Company has other iron ore projects, as well as a portfolio of attractive base metal projects, largely located in the Northern Territory (“NT”) of Australia.

Corporate Strategy and Activities

The Company has responded well to difficult market conditions

Despite the current difficult market conditions for junior explorers, TNG has continued to advance its projects. The Company has also developed a solid two-pronged strategic framework going ahead, with the focus to be on ferrous and specialty metals, including Mount Peake. This has been strengthened with applications for the Roper River iron ore tenements, as announced on January 28, 2014.

Two-pronged strategy, with the focus on ferrous and strategic metals

The second stream relates to the base metals projects. Although these are prospective with excellent technical merit, they are not TNG’s primary focus, and hence the Company has been actively looking at options to properly fund these properties, including farm-in or sale agreements. Unfortunately a \$5 million sale of the Manburrum Project to Legacy Iron Ore (ASX: LCY) did not proceed however the company is exploring new options for returning value from this project.

Options for the value adding to the portfolio of base metals projects

Depending on market conditions, a potential option could be a spin out the base metals



projects into a new vehicle – our view is that the portfolio would make an attractive IPO package in the right market.

Coffers boosted by \$4.8 million in raisings, \$3.1m R & D refund

TNG has recently raised \$4.8 million through a placement, SPP and shortfall placement. In addition the treasury was boosted by the receipt of a \$3.1 million Research and Development refund claim from the Federal Government. This has left the Company's finances in a healthy state.

Key is The TIVAN® Process

The key to Mount Peake is the TIVAN® hydro-metallurgical process

The key to the success of Mount Peake is the TIVAN® process, a hydrometallurgical process that produces three products – premium (>96%) battery grade vanadium pentoxide (V_2O_5), titanium dioxide concentrate (TiO_2) and high purity iron oxide powder (Fe_2O_3).

Three products – V_2O_5 , TiO_2 , Fe_2O_3

The process is being developed jointly by TNG and Mineral Engineering Technical Services ("METS") of Perth, along with the CSIRO. The technology is owned 100% by TNG, and is currently being optimised for pilot-scale testwork.

Bench and pilot scale testwork has been successful

Bench scale and pilot scale development testwork to date has been very successful; resulting in high recoveries to high grade products. The process uses well understood individual process technologies that have been applied globally for many years – it is the combining these into an overall flowsheet that is new.

Existing vanadium operations generally use complex pyrometallurgical processes

This is in contrast to the pyro-metallurgical processes used in a number of other vanadium operations, which are relatively complex, expensive and produce only a vanadium product, thus not extracting full value from the process feed.

Potential Vanadium Industry Game Changer

TIVAN® could be a potential game changer in the vanadium industry

Should the scale up and commercialisation of the TIVAN® process prove successful, it has the potential to be a game changer in the vanadium industry. One key is that it has the potential to provide a reliable supply of high purity, battery grade V_2O_5 , one thing that is apparently lacking in the current market – this is a point raised by some independent analysts.

This then may help drive the development of Vanadium Redox Batteries ("VRB"), which has been stymied partly by the lack of suitable V_2O_5 which is required for the battery electrolyte. These batteries have the capacity for grid scale power storage, with trials being run in a number of countries.

Simple Mineralisation

Simple, flat-lying mineralisation, fresh rock

Other factors that differentiate Mount Peake from other vanadium operations include the simple, flat-lying nature of the ore body (low and consistent strip ratios over time) and largely fresh rock (no clays to affect processing). There are significant thickness of mineralisation in the magnetite gabbro sill, which should result in a low strip, low dilution open cut mining operation

Project Development Options – Early Start up?

Possible two stage development at Mount Peake, with early cash flow from sales of concentrate

As part of the DFS process TNG is investigating the possibility of a two stage development at Mount Peake – an initial two to three year term producing titano-magnetite concentrate for export, followed by production of the high quality products using TIVAN®. This would involve, for a 5Mtpa mining operation, an initial investment of \$230



million for the mine, concentration circuit and transport infrastructure, followed by \$482 million for the processing plant and completion of ancillaries.

Water and power requirements for the TIVAN® plant will not be known until the completion of the pilot plant optimisation work, with these factors impacting on the siting of the plant. The DFS for the full processing option cannot be completed until it is known where the plant will be sited.

The two phase scenario will bring in early cash flow whilst the TIVAN® planning is finalised and the plant constructed.

Negotiations are currently underway with potential offtake partners for the concentrate. A critical point here is the credits that can be negotiated for the vanadium – these are required for phase 1 to be feasible.

The 2012 DFS has also been reviewed both internally and externally – this has resulted in improved project economics due to changes in exchange rates and iron revenue being understated in the original PFS. In addition comminution optimisation work has resulted in potential reductions in capex and opex.

Infrastructure In Place

A key requirement of any bulk commodities project is access to infrastructure. Although remote, the project is well placed in relation to infrastructure, being close to the Adelaide-Darwin railway, Alice Springs gas pipeline and Stuart highway.

Project Funding

TNG are looking at options of funding the DFS and development of Mount Peake. The preferred option is to bring in a project equity partner; this partner will ideally be an offtaker of one or more of the products and or a major EP&C partner to fund and develop the project.

Company Valuation

We have completed a DCF cashflow model for Mount Peake, and from it derived a value to TNG based on a conceptual investment scenario.

Our project value, using an 8% real DR, is \$544 million, with an IRR of 19%. TNG's share, used in the table below, is based on a 40% free carried interest, with distributions commencing once capital has been paid out of cash flow. This includes an upfront payment of \$33 million for the sale of a 60% equity stake in the current resources.

Indicative TNG Valuation

Project	Value	Method	Risk Factor	Riskd Value	Value/Share
Mount Peake	\$336 million	DCF, 8% real DR	40%	\$134 million	\$0.24
Roper River	\$2 million	Estimate	100%	\$2 million	\$0.005
Mount Hardy	\$5 million	Estimate	100%	\$5 million	\$0.01
McArthur	\$2 million	Estimate	100%	\$2 million	\$0.005
Manburrum	\$5 million	Based on MoU	100%	\$5 million	\$0.01
Cash	\$5.6 million	December 31	100%	\$5.6 million	\$0.01
Total				\$153.6 m	\$0.28

Source: Breakaway Analysis

It has to be noted that the value ascribed to TNG for Mount Peake (86% of our NAV) is conceptual – this is totally dependent upon an offtake/equity partner signing up, and the terms of any agreement.

Looking at DFS and development funding – prefer an equity or offtake partner

DCF value of \$544 million for Mount Peake

Indicative valuation of \$0.28/share for TNG, based on a 40% FCI in Mount Peake



Risks

We see a number of key risks, particularly associated with Mount Peake.

Prime risk is funding

The prime risk at the moment is attracting a partner to complete the DFS, and potentially fund development. The terms of such an agreement are key drivers in TNG's value.

Main technical risk is metallurgy, however results from work to date indicate a good chance of success

The main technical risk is metallurgy, and success in commercialisation of the TIVAN® process. This is critical – without this the project will not work. However results to date indicate that there is a good chance that this will succeed.

As in all commodities projects prices and exchange rates are also key determinants of success. The Mount Peake Project, when TIVAN® is utilised is reasonably robust, and then will be able to absorb moderate negative movements in these factors.

Market and commodity prices are risks, however the project should absorb moderate changes in prices

Whilst on the market, what effect will the addition of over 15,000t of supply make on the vanadium market? The figure is above 20% of current global demand, but importantly the current supply mines are reaching the end of their mine lives, particularly in South Africa. In addition developments in battery technology and higher intensity of use in steel may significantly increase demand over the coming years,

TNG will need to work hard to secure offtake agreements in a market that is dominated by a few suppliers, and the company's aim of being able to supply battery grade V₂O₅ will be a positive.

The concentrate exporting phase of the proposed two phase development is not so robust – this will be highly sensitive to any changes in markets. In addition successful negotiation of vanadium credits for the first phase of the two phase operation is vital – these credits are required for this operation to be viable.

Infrastructure risk is largely mitigated

Transport and port infrastructure is in place, thus mitigating one key risk area of bulk commodities markets. The proximity to a gas supply is also a positive, which will help reduce operating costs.

The key risk with the other projects is exploration risk, typical for projects at this stage. Results to date however have shown the potential at Mount Hardy and MacArthur River.



Project Review

Background

TNG has a diverse property and technology portfolio in two main streams:

*Two main streams –
ferrous and strategic
metals, base metals and
gold*

- Ferrous and Strategic Metals
 - Mount Peake V-Fe-Ti
 - TIVAN® V-Fe-Ti hydrometallurgical process technology
 - Roper River Fe
- Base Metals and Gold
 - Mount Hardy Cu-Au
 - MacArthur River Pb-Zn-Ag-Cu
 - Manburrum – Pb-Zn-Ag
 - Sandover – Cu
 - Various Cu-Au JV projects (not discussed here)

Mount Peake V-Ti-Fe Project, TIVAN® Metallurgical Process (TNG 100%)

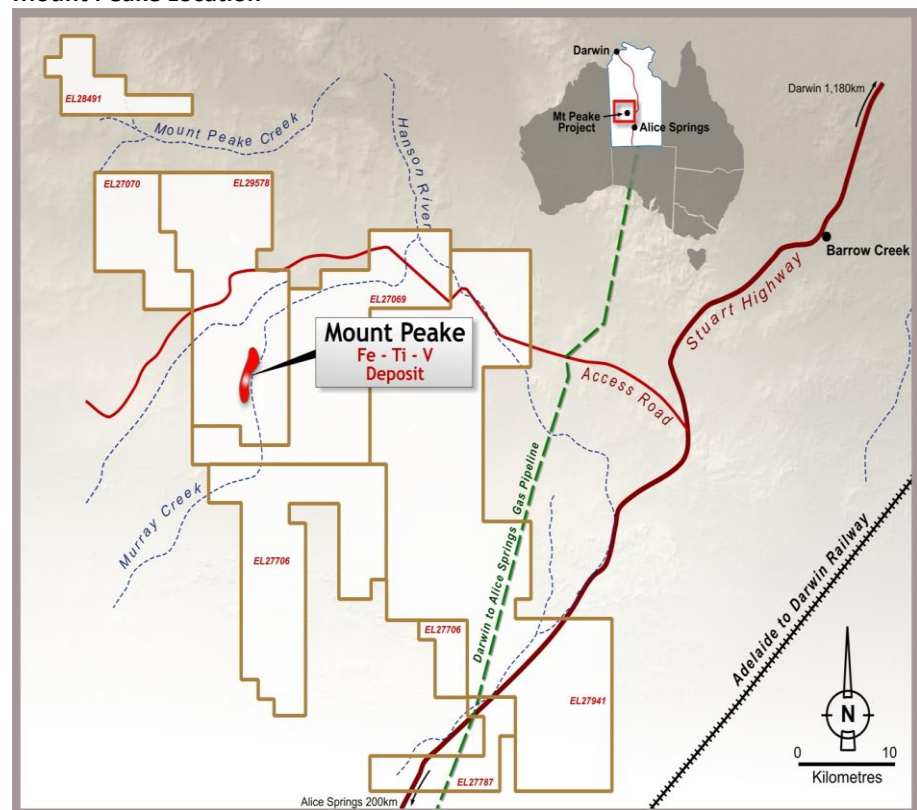
*Mount Peake V-Ti-Fe is
the most advanced
project*

Mount Peake is TNG's key and most advanced project. It is being advanced in parallel with the TIVAN® metallurgical process, a solvent extraction process developed to extract high purity vanadium, iron and titanium oxides from magnetite concentrates.

Mount Peake is located approximately 235km north of Alice Springs, and close to key Central Australian infrastructure, including the Stuart Highway (40km), the Adelaide to Darwin Railway (60km, and 1180km to Darwin along the railway) and the Alice Springs gas pipeline (30km).

Mount Peake Location

*Mount Peake is well
located with regards to
infrastructure*



Source: TNG



Development Strategy and Progress

The overall strategy is to develop the Mount Peake Project, to produce high grade and purity V, Fe and Ti products using the TIVAN® technology. A DFS is currently underway, following completion of a robust PFS in October 2012. It is expected that the DFS will be completed in late 2014 or early 2015.

The 2012 PFS assumed a fully integrated operation at Mount Peake; however the location of the TIVAN® process plant will be dependent upon power and water requirements, which will not be known until the completion of the pilot scale testwork currently underway. This also feeds into the finalisation of the DFS – this cannot be completed until the plant location is also finalised.

A two stage project being considered –

- *stage one involves selling magnetite cons*
- *stage 2 processing using TIVAN®*

As such, an staged start-up development is also being considered:

- Stage 1: Concentrate production and export through Darwin for two to three years whilst the plant site is finalised and plant constructed,
- Stage 2: Processing of concentrates using TIVAN®.

TNG continue to advance the DFS (including the EIS), and the TIVAN® pilot plant testwork.

Work and milestones completed to date as part of the DFS include:

- Resource upgrade – 86% of the resource is now in the Measured and Indicated categories
- Ongoing optimisation and pilot plant metallurgical testwork
- Acquisition of 100% of the TIVAN® process, Q4, CY13
- GHD appointed to complete the EIS, with completion expected in Q1, CY14
- Internal and external PFS reviews, with positive economic outcomes
- “Major Project” status granted by the NT Government in Q3, CY13
- Notice of Intent (“NOI”) lodged with the NT Government in Q2, CY13
- Heads of agreements signed with Darwin Ports (port access) and Genessee & Wyoming (logistical transportation study) in Q1, CY14
- Ongoing negotiations for a Mining Agreement with the NT Government
- Discussions with potential DFS and project funding partners

Significant advances on the DFS

Major Project status will provide a “whole of government” approach to the project development, and recognises that the project is one of significance to the NT. The NOI is a key step in the approvals project, giving the government formal notification that it intends to develop the project.

Project Funding

According to the Company, completion of the DFS will require around \$5 million in cash. The preference is to fund the project (which will include completion of the DFS) either through attracting a project equity partner or through an offtake partner, with discussions underway with potential partners. Again, given the current market, sole funding development by TNG is not an attractive option, and the Company recognises this. Our value modelling is contingent upon attracting an attractive funding deal.

Partners being sought to fund DFS and development

The Company is also in discussion for potential titano-magnetite concentrate offtake from the two stage strategy.



PFS Results and Reviews

Robust PFS delivered in 2012

A robust PFS was delivered by the Company in July 2012, which has subsequently been reviewed both internally and externally.

The PFS assumed an open-cut mining operation, with on-site integrated processing.

Outcomes and assumptions from the original PFS, as delivered by Snowdon, Sinclair Knight Mertz (SKM) and METS were as follows.

Mount Peake PFS parameters and outcomes

Operating Parameters	
Total ore mined	75.9Mt
Total waste movement	72Mt
Total material moved	147.9Mt
Strip ratio	0.95: 1
Processing rate	2.5Mtpa expanding to 5Mtpa after 3 years
Average head grade	0.39% V ₂ O ₅ , 27.09% Fe, 7.02% TiO ₂
Average recoveries	80% V ₂ O ₅ , 66% Fe, 67% TiO ₂
Average annual production	15,300tpa V ₂ O ₅ , 1.13Mtpa Fe ₂ O ₃ , 375ktpa TiO ₂ con
Life of mine	17.2 years + 2.8 years pre-production
Financial Outcomes (pre-tax and financing)	
Total Revenue	A\$ 11.8 billion
Surplus operating cash flow	A\$ 5.8 billion
Net cash flow	A\$ 5 billion
CAPEX	A\$560 million (2.5Mtpa), A\$151 million (expansion)
Total operating costs	A\$75/tonne ore
Net annual cash flow	A\$ 294 million
Pre-tax IRR	31.8%

Source: TNG

Subsequent reviews have improved economics

The reviews have enhanced the project economics, due to exchange rates changes, and also revenue from the iron product being significantly underestimated in the PFS. No operating parameters were changed during the reviews. The revised figures indicate an increase in project IRR from 31.8% to 47.5%, and an increase in NPV₈ from \$1.9 billion to \$3.7 billion as presented below.

Revised Project Financials

	Original PFS	Revised PFS AUD = 1.00 US	Revised PFS, AUD = 0.85 US
LOM Cashflow	A\$5.8B	A\$6.79B	A\$9.13B
NPV ₈	A\$1.88B	A\$2.65B	A\$3.68B
Pre-Tax IRR	31.8%	38.7%	47.5%

Source: TNG

Two Stage Strategy

Two stage strategy being considered for Mount Peake

As announced in July, 2013, TNG is now considering a two stage operation for Mount Peake. This would involve an initial titano-magnetite concentrate production and sale phase, whilst finalising the development and location of the TIVAN® plant. The second stage would involve processing through TIVAN® to produce the high quality vanadium, iron and titanium products.

First stage shipping concentrate, 2nd processing through TIVAN®

The Company has considered 1.5Mtpa and 3Mtpa concentrate operations for the first stage, and has estimated annual net revenues of \$40 million to \$202 million, depending on throughput rates and product pricing assumptions. Estimated capital costs (±25%), extracted from the 2012 PFS (and scaled for the larger scenario) are \$230 million for the 1.5Mtpa case and \$349 million for the 3Mtpa case.



The targeted concentrate specifications are 1.2% V₂O₅, 56% Fe and 18% TiO₂, from a 30% DTR recovery. Our analysis indicates that this equates to recoveries of ~60% Fe, ~75% Ti and ~90% V to a titano-magnetite concentrate.

These are comparable with concentrates for which Aurox Resources successfully negotiated offtake agreements for their Balla Balla Project in 2009 with RockCheck Steel and Chengde Iron and Steel Group. These graded 1% V₂O₅, 58% Fe and 14% TiO₂. Aurox was subsequently taken over by Atlas Iron.

In discussion regarding titano-magnetite concentrates offtake

TNG is currently in discussions with potential offtakers for a titano-magnetite concentrate. High Ti concentrates have long been considered problematic, given that the Ti content does significantly increase viscosity in the blast furnace, but there are steel producers, as evidenced by Aurox's experience, that can treat these concentrates.

Credit for vanadium critical in concentrates

Our view is that if the company was to pursue the 2 stage scenario the key to a successful offtake agreement for Mount Peake's concentrates is what percentage of value is paid for the vanadium in the concentrate.

We do note from Aurox (February 2009 presentation) that Aurox was to be paid for the iron content only. However, with a potential significant increase in vanadium demand on the horizon, there is a possibility of favourable terms being negotiated.

Geology and Resources

Mineralisation in a flat-lying gabbro-norite sill, contains large thicknesses of mineralisation that is continuous between holes

The Mount Peake deposit is located within outliers of sediments of the Neoproterozoic Georgina Basin, which unconformably overlies units of the Aileron Province, a subdivision of the Palaeoproterozoic Arunta Group. The mineralisation is hosted within a flat-lying magnetite-bearing gabbro-norite sill, believed to be of Neoproterozoic to Cambrian age that has intruded the older units. Drilling has indicated large thicknesses of mineralisation (up to 170m), and exhibits good lateral continuity between drillholes.

The gabbro hosting the mineralisation is part of a 20km long x 10km wide NW trending sill or sill complex, with the mineralisation in the uppermost parts of the sill. The identified JORC- resources are confined to one part of the complex, with other areas now being explored.

Current resources (which were upgraded in 2013) are presented in the table below, with 74% of the 160Mt deposit in the JORC Measured category, and 86% in the Measured and Indicated categories. In addition there is an exploration target for the project.

Mount Peake JORC-Compliant Resources

Category	Tonnes (Mt)	V ₂ O ₅ %	TiO ₂ %	Fe%	Al ₂ O ₃ %	SiO ₂ %
Measured	118	0.29	5.48	23.64	8.18	32.81
Indicated	19.5	0.28	5.33	22.05	9.09	33.98
Inferred	22	0.22	4.41	19.06	10.38	37.79
TOTAL	160	0.28	5.31	22.81	8.6	33.64
Target	500-700	0.2-0.4	-	25-35	-	-

Source: TNG

86% of the resource is in the Measured and Indicated categories

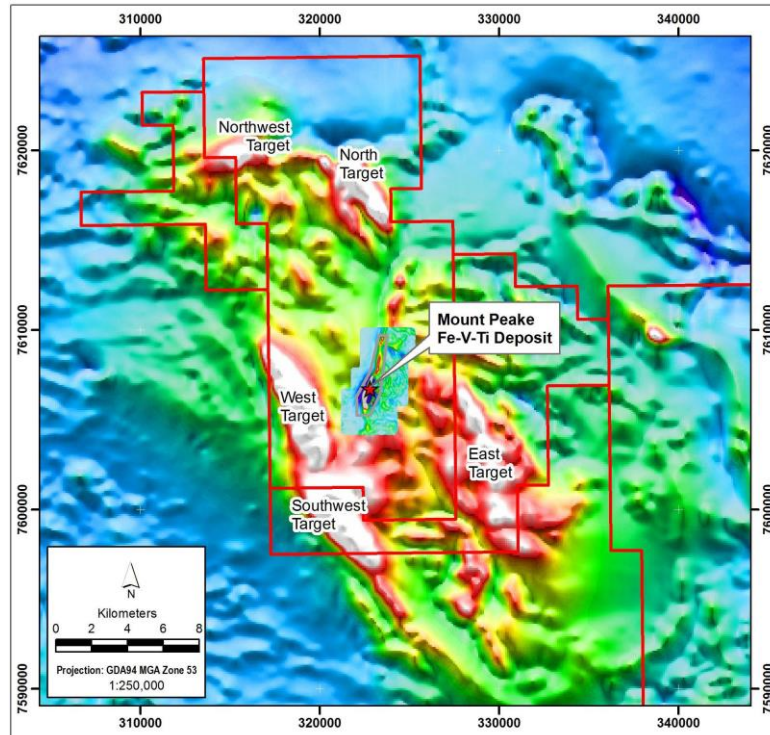
Excellent exploration potential

The potential for significant additional resources has been confirmed by the discovery of magnetite-bearing gabbros in regional targets. One of these, the Eastern Target, has a strike length of four kilometres, and surface rock chip sampling has returned values up to 0.634% V₂O₅, 24.6% TiO₂ and 48% Fe. These are the highest values noted to date outside of the Mount Peake resource.

Drilling is planned on these targets for early 2014.



Mount Peake Deposit and Targets



Source: TNG

TIVAN® and Metallurgy

Key is proving the viability of the hydro-metallurgical TIVAN® process

The key to the success of Mount Peake is proving the viability of the revolutionary TIVAN® metallurgical process. This is being jointly developed jointly by TNG and Mineral Engineering Technical Services (“METS”) of Perth. The technology is owned 100% by TNG, and is currently being optimised for pilot-scale testwork. TNG has also signed an MoU with a major Austrian/German based international group to commercialise and licence the process, and potentially being provided with the EPCM contract for the processing plant.

Testwork to date has given excellent results, with high recoveries of V, Fe and Ti to quality products

The TIVAN® process is a hydrometallurgical process that produces three high purity products – battery grade (>96% purity) vanadium pentoxide powder (V_2O_5), titanium dioxide concentrate (TiO_2) and high purity (99.9%) iron oxide powder (Fe_2O_3). Bench scale and pilot scale development testwork to date has been very successful; resulting in high metallurgical recoveries from concentrate to high purity products:

- >80% V_2O_5 recovery to a 99.6% product
- >80% Fe_2O_3 recovery to a 99.9% product
- >75% TiO_2 recovery to a maximum grade of 55%

Estimated treatment costs 40% cheaper than conventional pyro-metallurgical processing

It is estimated that treatment costs will be around 40% cheaper than current salt-roast pyro-metallurgical process used to treat vanadium ores, with the added advantage that commercial iron and titanium products will also be extracted.

The process uses well understood individual process technologies that have been applied globally for many years – it is the combining these into an overall flowsheet that is new.

Comminution optimisation test work, using “off the shelf” technology has given very encouraging results

Comminution optimisation testwork has recently been completed, with this including a high pressure grinding roll (“HPGR”) and low intensity magnetic separation (“LIMS”) circuit, with this being well proven “off the shelf” technology. Results from this optimisation have been very encouraging, returning better than expected parameters.



This will result in lower grinding power requirements and equipment size, and potentially lower capital and operating costs as indicated in the PFS.

Final pilot scale leaching testwork about to commence at CSIRO

A final master composite is now being prepared from a 15 tonne bulk sample, with this expected to be shipped to the CSIRO (whom the company has engaged to use their extensive facilities in Perth with the final pilot plant test work) leading to final leaching and solvent extraction pilot plant testwork by the end of the next quarter. It is only this leaching and solvent extraction stage that requires the upscaling testwork – the front end and back end processes are industry standard and therefore de-risked.

This work will allow completion of the commercialisation of the TIVAN® process, and development of the full-scale flowsheet. As mentioned earlier, completion of this work and analysis of the results is a key part of advancing the DFS.

Project Valuation

We have completed a DCF model for Mount Peake

We have completed DCF modelling of the base case staged development scenario, to arrive at an indicative value for the Mount Peake Project, and then a conceptual idea of the value to the Company.

We have generally used Company guidance in our inputs; however have verified figures where possible.

Costs are largely as for the PFS

Mount Peake – Operating Parameters

Operating Parameters	
Production Profile	2 years construction, 2 years concentrate sale, 16 years TIVAN® processing
Processing rate	5Mtpa ore, 1.5Mtpa concentrate
Total ore mined	90Mt
Total waste movement	85.5Mt
Total material moved	175.5Mt
Strip ratio	0.95: 1
Average head grade	0.39% V ₂ O ₅ , 27.09% Fe, 7.02% TiO ₂
Recoveries to concentrate	30% DTR, 90% V ₂ O ₅ , 60% Fe, 75% TiO ₂
Concentrate Grade	1.20% V ₂ O ₅ , 56% Fe, 18% TiO ₂
TIVAN® Recoveries from Con	90% V ₂ O ₅ , 95% Fe, 70% TiO ₂
Average annual production	Phase 1 – 1.5Mtpa concentrate Phase 2 - 15,600tpa V ₂ O ₅ , 1.17Mtpa Fe ₂ O ₃ , 350ktpa TiO ₂ con

We have used lower metals prices than in the PFS to reflect current and forecast prices

Prices and Terms	
Equity Partner Terms	TNG keep a 40% FCI, collect 40% of profits once capital has been paid back, up-front payment of A\$33 million
V ₂ O ₅	US\$18,000/tonne - LOM
FeV	US\$25,500/tonne - LOM
Iron Ore	US\$1.60/dmtu CFR - LOM
TiO ₂	US\$400/tonne - LOM
AUD to USD Exchange Rate	0.85 - LOM
Sales Terms	100% Fe, 15% FeV , Stage 1 concentrate sales 100% all products, TIVAN® processing

Source: Breakaway Analysis



The value to TNG will rely on terms reached with any potential/offtake partner, and thus what we propose is indicative only. Our base case is:

TNG's share of value based on a 40% FCI, with distributions after payment of capital, and an upfront payment for equity stake in resource

- Equity partner takes an 60% stake, funds development, TNG remains with a 40% free carried interest
- Initial payment of \$33 million on signing, based on 10% of our modelled NPV/tonne of resource
- Payments of 40% of free cash flow to TNG only after capital has been paid back from cash flow – this occurs in year 6 of production.

The DCF valuation resulted in the following financial outcomes.

Mount Peake – Financials

Financial Outcomes and Parameters (pre-tax and financing of 2 phase project)

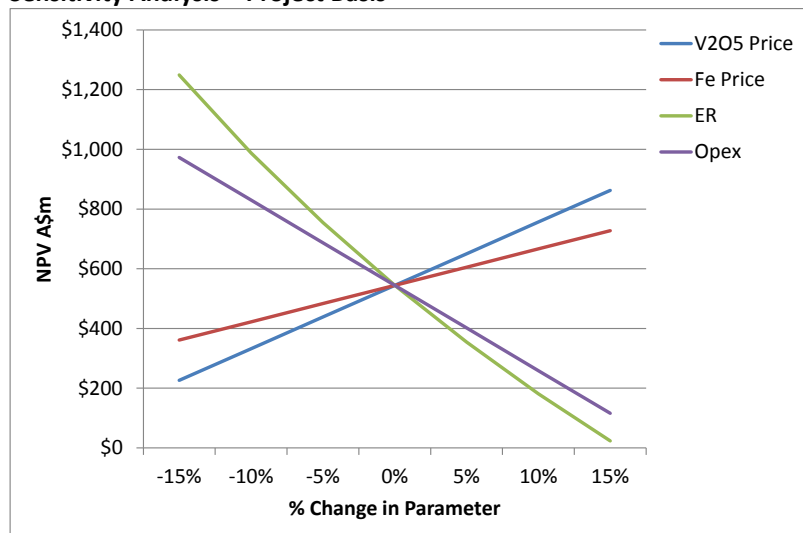
NPV, 8% real DR	A\$544 million
NPV, TNG's cash flow	A\$336 million
Total Revenue	A\$ 9.6 billion
Surplus operating cash flow	A\$ 1.9 billion
CAPEX	A\$230 million (phase 1), A\$482 million (phase 2)
Total operating costs	A\$76/tonne ore – average LOM, includes mining, processing, transport, royalties
Peak annual cash flow	A\$ 159 million
Pre-tax IRR	19%

Source: Breakaway Analysis

NPV8 of A\$544 million, IRR of 21%. Reflects lower prices than used in PFS, somewhat mitigated by lower exchange rate

We have carried out a sensitivity analysis of the Project, with results presented below. As expected the project is most sensitive to the AUD: USD exchange rate, with costs in Australian dollars and revenues in US dollars.

Sensitivity Analysis – Project Basis



Source: Breakaway Analysis

Sensitivity analysis indicates project is most sensitive to exchange rate and opex

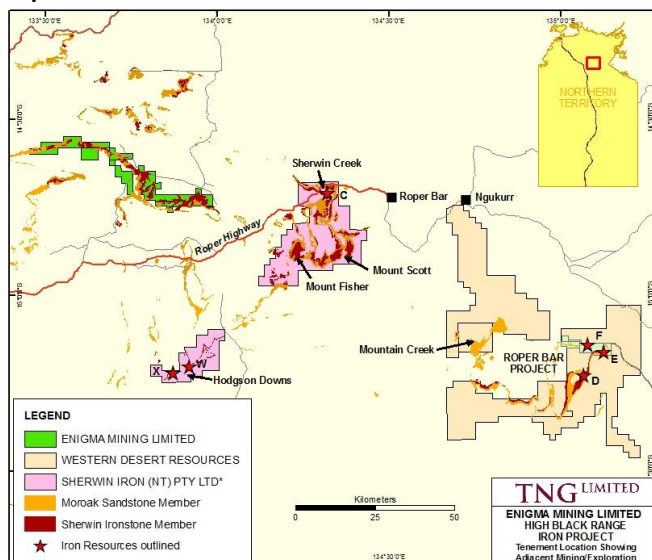


Roper River Iron Ore

With its recent applications (ELA30207 and ELA30208, 209km²) over its Black Range Project, TNG has consolidated its position in what is now emerging as a new Australian iron ore province. The applications, which are expected to be granted over the next few months, are located over the Sherwin Iron Formation.

Ferrous metals stream strengthened by Roper River applications

Roper River Tenement Location



Source: TNG

The Sherwin Iron Formation has now been confirmed as an iron ore producer. Western Desert Resources (ASX: WDR, "WDR") is currently mining and shipping DSO ore from the formation, and Sherwin Iron (ASX: SHD, "SHD") is mining and shipping a bulk sample.

The Sherwin Iron Formation is a proven iron ore producer

There has been a rapid recent development of the Sherwin Iron Formation, which was first identified as a potential iron ore source by BHP in the 1950's and 1960's. There was then a hiatus until WDR commenced exploration work in 2008, and by the end of 2013 had become a producer. This has seen WDR grow to a market capitalisation of \$310m from a 2007 IPO.

Key Base Metals/Gold Projects

TNG holds or has interests in a number of base metals (and one bauxite project). Work has been concentrated on two of these, Mount Hardy and McArthur River, with corporate activity on Manburrum.

TNG is looking at value adding to its base metal and gold projects

As outlined above, TNG is looking at value adding strategies for its non-ferrous projects, including asset sales and farm-in agreements.

Mt Hardy Copper-Gold Project (TNG 100%)

The project is located over the historic Mount Hardy Copper Field, approximately 100km NW of Alice Springs. The project covers units of the Proterozoic Aileron Province within the Arunta Block. Originally interpreted as being possibly VMS, it may actually be shear hosted mineralisation, possibly related to nearby granites.

Mount Hardy is interpreted as being shear hosted mineralisation

Recent work at Mount Hardy has included both reverse circulation ("RC") and diamond drilling programmes, which intersected encouraging hypogene copper mineralisation. This work targeted geophysical anomalies, with a number still remaining untested. These include off-hole EM and HELITEM EM conductors, with the HELITEM being flown by TNG.



Recent work has included EM surveying and RC/diamond drilling

Intersections of up to 13m @ 1.17% Cu and 1.82% Zn were drilled, and the final holes intersected broad zones of poly-metallic mineralisation.

Work by TNG, which is the first explorer to apply modern techniques over the copper field, indicates the potential for a large scale system., with the following conclusions being drawn:

- Extensive mineralisation at surface and at depth in a 2km by 2km area
- Poly-metallic mineralisation has been intersected at depth in zones of structural and geophysical control, and,
- Re-interpretation of the 2012 HELITEM work has identified that eight of the remaining targets are priority areas for further work.
- If VMS in style, it is possibly similar polymetallic mineralisation being intersected by Kidman Resources (KDM: ASX) and KGL Resources (KGL: ASX) to the NE of Alice Springs

A number of EM targets remain to be tested

Given the results to date, this project requires significant further work, including geophysics and drilling. Funding will be required, and the Company is looking at options for funding the project, including bringing in a farm-in partner.

Project requires additional drilling and geophysics

McArthur Project (TNG 100%)

The McArthur Project, located 50km south of McArthur township and covering units of the McArthur Basin, is considered prospective for Zn-Pb-Cu-Ag mineralisation, similar to that at the McArthur River Mine some 60km to the north. The tenements re located on the west side of the Batten Trough, adjacent to the western bounding structures, considered as potential fluid pathways.

Work carried out by TNG has included a reinterpretation of historic exploration data, resulting in the identification of extensive coincident geophysical and soil geochemical anomalies. These include three zones –

- A 3000m long by up to 450m wide central zinc zone,
- A 800m long north-eastern copper zone, and,
- A 1200mm long south-west copper zone.

A reinterpretation of work at McArthur has resulted in the identification of coincident soil geochemical and geophysical anomalies

The juxtaposition of low resistivity/high chargeability IP areas and soil geochemistry over prospective stratigraphy point to the potential for base metals mineralisation. Field checking by TNG geologists, along with the logging of historic drill core, has confirmed the potential for base metals mineralisation. TNG is planning a geophysical programme to define drill targets, with this work planned for the 2014 field season.

Manburrum Project (TNG 100%)

The Manburrum Project, located 80km NE of Kununurra, includes a number of Mississippi Valley Type (“MVT”) Pb-Zn-Ag deposits discovered by TNG in 2007, which contain around 35Mt of mineralisation. The area also contains a number of untested targets, with an exploration target of 80-100Mt at 1.5% - 2.5% Zn.

Manburrum is an MVT province, which TNG is looking at monetising

TNG retained 100% of the project following the withdrawal of KBL Mining Limited in 2013, and is now looking at monetising this asset, however during 2013 a proposed \$5 million sale to Legacy Iron Ore (ASX: LCY) fell through.



Sandover Project (TNG 100%)

The Sandover tenements, which were granted in late 2012, are considered prospective for copper-gold mineralisation. They are located over high grade metamorphics of the Aileron Province, and are located in the vicinity of known mineral occurrences, including Kidman Resources Home of Bullion polymetallic deposit.

Breakaway's View

TNG has built a portfolio of quality properties

TNG has built a portfolio of quality properties, and has made steady progress on the key Mount Peake Project. The addition of the Roper River tenements has strengthened the ferrous metals portfolio.

Mount Peake has a number of potential advantages

The Mount Peake Project has a number of advantages, largely by virtue of the TIVAN® hydrometallurgical metallurgical process, which, from bench scale testwork produces high quality vanadium, titanium and iron products. Other advantages include a simple, clean and low strip ore body.

Results from the upcoming pilot scale test work will be critical for Mount Peake

Results from the upcoming final pilot scale work will be critical however – this will need to work for the project to be viable. Given that the individual processes within the overall flow sheet are well proven, and that bench scale and previous pilot testwork was successful, we are confident that there is a high probability of success in this next pilot scale work, and that the process will be successfully commercialised.

A key risk is obtaining sufficient funding to complete the DFS, and then developing the project, probably through attracting an equity/offtake partner. TNG has been pro-active in responding to the current market for junior resources companies, developing strategies to progress its two property streams.

The viability of the mooted two phase scenario is contingent upon offtake terms and what credits the Company will get for the vanadium content in the titano-magnetite concentrate – the first stage is not viable on iron content alone and the company recognises this.

Outlook for vanadium is positive, with the VRB batteries providing significant blue sky in demand

A number of independent research commentators see the outlook for vanadium as being very positive. Although ~85% of the current 60,000tpa production is used as an alloy in steel production (and hence demand and prices are impacted by global economic trends), there is a growing market for its use in high capacity batteries, particularly for electric cars. In addition there is the issue of the current supply with South African mines nearing end of term and production issues with other operations..

There is the potential for use in utility scale batteries – successful developments in this field would lead to a significant growth in demand for the high purity battery grade V_2O_5 that TNG is looking at producing. There is the possibility that the availability of this product will actually drive development of the technology – until now there has been no reliable supply.

We maintain a speculative buy for TNG

We maintain our rating of TNG Limited as a **Speculative Buy**. We see potential short to medium term price appreciation with success in the TIVAN® pilot plant, as well as securing partners and funding (the key to drive value), initially for the DFS, and then potential project development. Exploration success at Roper River should also be a driver of price, given the history of current operators in the region. The gold and base metals properties should not be forgotten – there is excellent exploration potential, particularly at Mount Hardy and McArthur River, and success should impact positively on the price.



Products and Markets

Vanadium

Our modelling indicates that vanadium products comprise 57% of the \$9.6B revenue for the Mount Peake operation, largely from high purity V_2O_5 , however we have assumed credits for vanadium content in exported concentrates in phase 1.

The main use for vanadium is as a steel strengthening additive

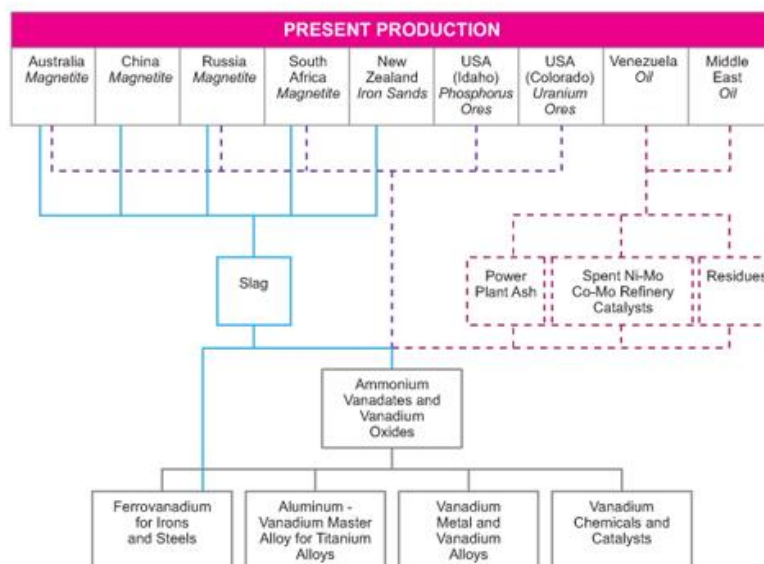
The main use of vanadium is as a steel additive in high-strength steel, which accounts for about 85% of the current global demand of ~65,000t of contained vanadium. Other uses include chemicals, catalysts and in batteries. Vanadium is produced as two main products – FeV for steel-making and V_2O_5 for chemical and battery applications.

Largest source is as a by-product from steel making

The largest source for vanadium is as a by-product from slag produced from the smelting of titaniferous magnetite ores for steelmaking – it is estimated that this accounts for ~60% of supply, with the rest being derived from mining as a primary product.

Over 90% of vanadium is produced in South Africa, China and Russia, with Xstrata and Evraz being the main producers.

Vanadium Sources



Source: Vanitec

Demand and Prices

Key demand driver is the steel industry

The key demand driver at the current time is as an additive in steel – demand closely follows the production of steel. This includes two factors – firstly the natural organic growth in steel production and secondly increasing vanadium intensity in steel to further drive demand with high strength steels replacing lower strength carbon steels.

This second factor is particularly relevant in China, where there is increasing vanadium intensity in rebar due to changes in building standards. Also, China has applied a 15% tariff on vanadium exports, with the potential to drive demand for non-Chinese supplies.

There is blue sky demand in battery applications – motor vehicle and grid scale VRB's

The blue sky in demand is in automotive and grid scale battery usage. The key here will be the adoption of vanadium redox batteries ("VRB's") that have the capacity for multi-megawatt scale storage. This makes them useful for grid scale applications, including grid balancing, and storing energy from variable output sources, including wind turbines and solar cells.



V₂O₅ has recently traded at between US\$5 and US\$7.50/lb, however there is significant potential for uplift with the battery “blue sky”

Development of these has been partly hamstrung by the lack of a suitable battery grade V₂O₅ supply – something which TNG may help solve. Some commentators see the potential for a 5,000 to 10,000tpa deficit in supply by 2017, largely driven by this “blue sky” forecast demand for batteries, with a forecast V₂O₅ price of up to US\$12/lb by 2017.

This provides significant potential for uplift - the standard V₂O₅ price has largely traded between US\$5 to US\$7.50/lb since the end of the GFC, equating to a price of US\$11 to US\$16.50/kg. High purity V₂O₅ trades at a premium of ~US\$2.20/kg over the standard grade product, thus trading within a range ~US\$13.20 to ~US\$18.70/kg.

The market is not particularly transparent, and also prices do not correlate with steel production, even though this is the key demand driver.

High Purity Fe₂O₃

As a base case, TNG’s Fe₂O₃ product should obtain a premium price to the standard Pilbara fines

The second revenue stream at Mount Peake is high Fe₂O₃, which provides 29% of our modelled revenue stream. This is produced as a standard concentrate in phase 1, however as a high purity product from TIVAN® in phase 2.

We have assumed pricing as if this entire product was sold into the seaborne iron ore market, using a forecast CFR price of US\$1.60/dmtu, or US\$112/tonne for the 70% Fe product that is expected to be produced. This price is at a 12% premium per tonne for the standard 63% Pilbara fines price by virtue of its superior grade.

There is also the potential to attract a further premium as grade control material for iron ore mining operations, else as high quality feedstock for DRI and HB iron production.

We see uplift for Fe₂O₃ revenue by virtue of selling some product into the high unit value high purity, specialty Fe₂O₃ market

However there is also a market for the high purity product the TNG are looking to produce. The key consumption here is in magnets and pigments, with other markets in chemicals and food additives.

In this market the product is currently trading at around US\$1,000/tonne as a bagged product. As this is an opaque market we cannot comment on what the demand will be from specialty customers for TNG’s product, but there is good potential to achieve higher revenues than we have assumed by virtue of selling at least part of the Mount Peake production into this market.

TiO₂

We see increasing medium to long term demand for titanium feedstock

The primary use for titanium is in the form of TiO₂ for chemical applications, largely as a white pigment for various products, with around 95% of mined titanium being used in this sector. The balance is for use in its metallic form as a specialty alloy, with the high strength and light weight properties of titanium being desirable in a number of applications, particularly in the aerospace industry.

We see increased demand for the product through increased intensity of use in both sides of demand, as well as natural organic growth.

TNG will be selling their product, which we have modelled as producing 14% of the total revenue (based on a medium to long term forecast of US\$400/tonne), as a 55% TiO₂ concentrate to upgraders, who then provide the final products to the end users.



Board and Management

Acting Chairman

Michael Evans

Mr Evans, a Chartered Accountant, is a highly experienced mining and resource industry executive based in Perth who has extensive executive and board level experience with publicly listed companies in the natural resource sector. He was until recently the founding Executive Chairman of oil explorer and producer FAR Limited (formerly First Australian Resources), a position he held from 1995. Under Mr Evans' stewardship, FAR established and built up an extensive international oil and gas portfolio spanning Africa, North America and Australia – with industry partners including Amoco, Shell, BHP, BP, Exxon, CNOOC and Woodside. Prior to that, Mr Evans was Director of a private Asian Investment company based in Hong Kong pursuing resource opportunities in China.

Between 1983 and 1991, he was Joint Managing Director of Forsayth Group, which he, and his co-Managing Director, built from a junior explorer to become a significant gold producer with interests in five producing mines and two projects mines in Australia and overseas.

Managing Director

Paul Burton

Mr Burton is an Exploration Geologist and Geochemist with over 20 years' experience in exploration and mining throughout Australia and overseas. He previously held the positions of Exploration Manager and Exploration Director with the company and has been involved in the discovery and development of the company's main projects, including their Flagship project Mount Peake. He has also managed successful mineral exploration and feasibility study programs for a range of different commodities, with previous career appointments including senior and executive roles at Anglo American/De Beers Ltd, Normandy Mining Ltd and Minotaur Exploration Ltd. Mr Burton is a graduate of the University of Plymouth, UK (B.Sc Honours Geology), and of McGill University, Canada where he completed the M.Sc in Mineral Exploration.

Mr Burton is a Member of Australian Institute of Mining and Metallurgy, Australian Institute of Company Directors, Canadian Institute of Mining, Metallurgy and Petroleum (CIM), a Fellow of the Association of Exploration Geochemists and a Member of the Institute of Directors, London.

Non-executive Director

Rex Turkington

Mr Turkington is a highly experienced corporate advisor and economist who has worked extensively in the financial services and stockbroking industry in Australia, specializing in the exploration and mining sectors. He has extensive experience with equities, derivatives, foreign exchange and commodities, and has participated in numerous corporate initial public offerings and capital raisings for listed exploration and mining companies. Mr Turkington is currently a Director of an Australian corporate advisory company, offering corporate finance and investor relations advice to listed companies. He holds a first class Honors Degree in economics, BCA. GAICD. AAFSI. ADA1. (ASX), and is an Associate of the Securities Institute of Australia.

Non-executive Director

Zhigang Wang

Mr Wang is Chairman of Aosu which is part of the Wanlong Group of companies (Wanlong Group) comprising Suzhou Wanlong Electric Group Co. Ltd (Wanlong) and Suzhou Beijia Investment Co Ltd. (Beijia). Wanlong holds 51% of the issued capital of Aosu and Beijia holds the remaining 49%. Mr Wang also holds appointments as Director of Technology Management Department of Wanlong, and is a Director of Beijia. Mr. Wang completed his Bachelor degree in Electrical engineering and automation from Shanghai Electric Power University in 2007, and has gained significant professional experience with major industrial groups in China prior to joining Wanlong and Beijia



Non-executive Director

Jianrong Xu

Mr Xu is Deputy Director-General of the East China Mineral Exploration and Development Bureau (ECMED). Mr Xu is the current General Manager of ECE, Deputy Managing Director of Jiangsu Geophysical Society, the Chairman of HK ECE, Hong Kong East China Non-Ferrous International, Mineral Development Co Ltd, Namibia East China Non-ferrous Investments Pty Ltd and other OCMED wholly owned subsidiaries. Mr Xu is also a director of AIM-listed Company, China Africa Resources Plc.

Non-executive Director

Stuart Crow

Mr Crow has more than 25 years experience in all aspects of corporate finance and investor relations in Australia and international markets, and has owned and operated his own businesses in these areas for the last twelve years. He brings extensive working knowledge of capital markets to the Board.

Company Secretary

Simon Robertson

Mr Robertson gained a Bachelor of Business from Curtin University in Western Australia and Master of Applied Finance from Macquarie University in New South Wales. He is a member of the Institute of Chartered Accountants and the Chartered Secretaries Australia. Mr Robertson currently holds the position of Company Secretary for a number of publically listed companies and has experience in corporate finance, accounting and administration, capital raisings and ASX compliance and regulatory requirements.



Analyst Verification

We, Grant Craighead and Mark Gordon, as the Research Analysts, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

Disclosure

Breakaway Investment Group (AFSL 290093) may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of TNG Limited and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

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