

## September 2015 Quarterly Activities Report

### Mount Peake poised for financing and development

#### HIGHLIGHTS

##### **MOUNT PEAKE VANADIUM-TITANIUM-IRON PROJECT (NT)**

- Binding Life-of-Mine Offtake Agreement signed with major Korean ferro-vanadium group, WOJIN IND. CO. Ltd (WJN), for a minimum of 60% of all vanadium products produced from the Mount Peake Vanadium-Titanium-Iron Project in the NT.
- Binding Life-of-Mine Technology Transfer agreement also signed with WJN for TNG's use of WJN's proprietary technology for the production of ferro-vanadium at the TIVAN refinery site. WOJIN's proprietary technology currently has the world's highest vanadium recovery rate and is expected to allow TNG significant additional profitability over the project's life.
- Memorandum of Understanding with Caterpillar Financial Australia for the provision of project finance and/or equipment finance for Mount Peake. The MOU provides scope for Cat Financial to participate in a project funding package in conjunction with other relevant financiers.
- Highly experienced industrial and construction group McMahon Services appointed as Mount Peake Project Manager subsequent to the end of the Quarter to coordinate pre-development activities on behalf of TNG for the interim period until a final construction commitment and project finance is secured.
- Sacred Site Clearance Certificate received from the Central Land Council for the Mount Peake Mine Tenements including the mine and site infrastructure, camp, haul road and rail siding. This Certificate provides approval and clearance for TNG to construct the open cut mine, camp facility, haulage road, access road and rail siding at Mount Peake.
- Subject to all approvals, permitting and financing, construction of Mount Peake is planned to commence in 2016 with first production scheduled for early 2018.

##### **MOUNT PEAKE VANADIUM-TITANIUM-IRON PROJECT (NT) – Definitive Feasibility Study**

- Mount Peake Definitive Feasibility Study completed in July 2015 (outlined in detail in the June 2015 Quarterly Report), which delivered robust financial and technical outcomes including:
  - *Pre-production capital cost estimate of A\$970M (Stage 1 infrastructure, mine site, concentrator and Refinery);*
  - *Pre-tax net annual average production cash flow of A\$785 million;*
  - *Life-of-mine net cash-flow of A\$11.6 billion;*
  - *Pre-tax IRR of 41%;*
  - *Two year pre-production period for construction;*
  - *Initial 17-year project life;*
  - *3Mtpa (Stage 1) mining operation expanding to 6Mtpa (Stage 2) after 4 years of production;*
  - *Average annual production of 17,560tpa V<sub>2</sub>O<sub>5</sub>, 236,000tpa TiO<sub>2</sub> (pigment), 637,000tpa Pig Iron;*
  - *Pay back of 4 years.*

##### **TIVAN® HYDROMETALLURGICAL PROCESS**

- TIVAN® pilot testwork completed with exceptional results. These results formed a vital input for the Mount Peake DFS delivered in July 2015. Further value-add optimisation work is being undertaken prior to final design.

##### **CORPORATE**

- Over \$4.0 million raised following strong take-up of TNGO listed options by shareholders.
- Notification received from substantial shareholder, Ao-Zhong International Mineral Resources Pty Ltd, that Ao-Zhong had reduced its shareholding in TNG from 8.74% to 6.31% due to matters involving Ao-Zhong's parent entity, ECE.
- Cash reserves of \$6.7M at Quarter-end.

## SUMMARY

Following the delivery of the Definitive Feasibility Study (DFS) for the Company's flagship Mount Peake Vanadium-Titanium-Iron Project in the Northern Territory on 31 July 2015, the September 2015 Quarter has seen further outstanding progress for TNG, with the Company making strong headway towards securing binding agreements to support the Project's development.

As outlined in the June 2015 Quarterly Activities Report, the DFS delivered exceptional results, outlining a world-class project capable of generating outstanding returns for shareholders. The DFS found Mount Peake would generate a pre-tax internal rate of return (**IRR**) of **41%** based on a **pre-production capital cost of A\$970 million**, total estimated **life-of-mine net cash flow of A\$11.6 billion** and **operating cash flows of A\$13.6 billion** over an initial 17-year project life.

Following hard on the heels of these results, TNG secured its first binding off-take agreement for Mount Peake with the major Korean-based ferro-vanadium group WOJIN IND., CO., LTD., (WJN).

The life-of-mine off-take agreement encompasses binding commitments for WJN to take or pay a minimum of 60 per cent of the vanadium pentoxide ( $V_2O_5$ ) and other vanadium products from Mount Peake with a minimum guaranteed price which is, based on the cost of production estimates determined under the DFS, 20% above TNG's forecast cost of production. This off-take agreement will allow more accurate forecasts of project's revenue and profitability and creates a strong foundation for the project's financing and development.

TNG also entered into a binding agreement for the transfer of ferro-vanadium (FeV) production technology from WJN. This technology will allow TNG to further diversify the product portfolio assumed in the DFS, move up the vanadium value chain with a product that is directly saleable to major steel mills on a global basis and take advantage from any price advantage of one product over the other ( $V_2O_5$  vs FeV). WJN's proprietary technology has the world's highest vanadium recovery rate and TNG expects this to significantly benefit the company with additional profitability over the project's life.

In addition, subsequent to the end of the Quarter, TNG signed a Memorandum of Understanding (MOU) with Caterpillar Financial Australia Limited ("Cat Financial") to consider the provision of project and/or equipment finance, for the development of the Mount Peake Project, subject to due diligence, approvals, agreed terms and documentation.

It is envisaged that the MOU with Cat Financial, once converted into a binding agreement, will form part of the diversified project finance consortium being assembled to fund the Mount Peake Project. The supply of mobile mining and power equipment represents a significant component of the overall capital cost for development of the project.

Also subsequent to the end of the Quarter, TNG appointed McMahon Services as Interim Project Manager to coordinate the pre-development activities at Mount Peake. McMahon Services ("MCM") is an industry-leading, privately-owned industrial, construction and environmental service provider that has delivered some of Australia's most ambitious and significant construction services projects.

MCM was closely involved with the Mount Peake DFS and contributed significantly to the outstanding outcomes it delivered. It also has a well-established record of facilitating and developing projects both in the Northern Territory and Australia-wide. As Interim Project Manager, MCM will play an integral role in managing and finalising the Mount Peake Project pre-development work, enabling TNG to focus on securing project finance and final permitting.

Project permitting was advanced during the Quarter with the receipt of a Sacred Site Clearance Certificate from the Central Land Council (CLC) for the mine and associated infrastructure required for Mount Peake. This Certificate provides approval and clearance for TNG to construct the open cut mine, camp facility, haulage road, access road and rail siding, and paves the way for TNG to conclude negotiations with the CLC for the Mining Agreement, after which the Mining Licence can be issued by the Northern Territory Minister for Mines, the Hon David Tollner.

Subject to receipt of all approvals, permitting and financing, construction of Mount Peake could commence in 2016 with potential first production in early 2018, when independent commodity forecasts indicate that the price of  $V_2O_5$  is expected to be substantially higher than current prices.

On the corporate front, TNG received a significant injection of capital during the reporting period with A\$4.0 million raised following a strong take-up of TNGO listed options by the Company's shareholders.

## PROJECTS

### VANADIUM-TITANIUM-IRON

#### Mount Peake Project: TNG 100%

The Mount Peake Project is emerging as a world-scale strategic metals project located 235km north-west of Alice Springs in the Northern Territory close to existing key power and transport infrastructure including the Alice Springs-Darwin Railway and the Stuart Highway. With a JORC Measured, Indicated and Inferred Resource totalling 160Mt (118Mt Measured, 20Mt Indicated, 22Mt Inferred), grading 0.28%  $V_2O_5$ , 5.3%  $TiO_2$  and 23% Fe, Mount Peake is one of the largest undeveloped vanadium-titanium-iron projects in the world. The area under licence covers a highly prospective, but poorly explored part of the Western Arunta geological province which offers significant exploration upside for TNG within an extensive 100%-owned ground-holding.

TNG completed a Feasibility Study on the Mount Peake Project in July 2015, paving the way for project financing and development to proceed. Results of the DFS were provided in full in the Company's June 2015 Quarterly Report, with key highlights provided below.

#### Definitive Feasibility Study – Summary

DFS results show an increase in life-of-mine revenues and cash flows compared to the previous results from the Pre-Feasibility Study (PFS) completed in 2012 (see ASX Announcement – 15 July 2013).

The DFS is based on the production of magnetite concentrate on site at Mount Peake. The DFS assumes that concentrate will be trucked to a rail siding and then railed north to a TIVAN® Refinery facility to be located approximately 10km from Darwin Port. From the magnetite concentrate the TIVAN® facility will produce high-purity vanadium pentoxide, titanium dioxide concentrate and iron oxide. Associated downstream plants will produce high grade titanium pigment, and pig iron.

While the additional plant facilities increase the capital requirement of the project, the higher revenues achieved from the higher value end products provide the Company with the potential for an early payback (<4 years) and an exceptional internal rate of return. In addition, the products have well understood markets, transparent pricing and ready demand.

#### DFS financial model

The DFS financial model was compiled and audited by Snowden. Key assumptions and findings are as follows:

#### Summary of Key Financial Parameters from cash flow model:

Mine Life:	15 years
Pre-production capital cost estimate (including all infrastructure:	A\$970 million
Total operating costs (including mining, processing, transport & royalties):	A\$167 per tonne of ore
Total revenue (life-of-mine):	A\$27.3 billion
Operating cash flow (life-of-mine):	A\$13.6 billion
Net cash flow (life-of-mine):	A\$11.6 billion
Discount rate:	8%
Pay back:	4 years
Nett annual operating cash flow:	A\$780M
IRR pre-tax:	41%
NPV (at 8% discounted)	A\$4.9 billion

#### Binding Life-of-Mine offtake and technology agreements signed with WOOJIN

During the Quarter, TNG secured its first binding off-take agreement for the Mount Peake Project, along with a technology transfer agreement for the TIVAN refinery. These landmark agreements, with the major Korean-based ferro-vanadium group WOOJIN IND., CO., LTD., (WJN), were signed by TNG's Managing Director, Mr Paul Burton, and WOOJIN's CEO, Mr Ki, at a formal ceremony held at WOOJIN's headquarters in Seoul, Korea.

The life-of-mine off-take agreement encompasses binding commitments for WJN to take or pay a minimum of 60 per cent of the vanadium pentoxide ( $V_2O_5$ ) and other vanadium products from Mount Peake with a minimum guaranteed price which is, based on the cost of production estimates determined under the DFS, 20% above TNG's forecast cost of production. This off-take agreement will allow more accurate forecasts of the project's revenue and profitability and creates a strong foundation for the project's financing and development.

TNG also entered into a binding agreement for the transfer of ferro-vanadium (FeV) production technology from WJN. The FeV conversion plant will be installed at TNG's TIVAN® refinery site. This technology will allow TNG to further diversify the product portfolio assumed in the DFS, move up the vanadium value chain with a product that is directly saleable to major steel mills on a global basis and take advantage from any price advantage of one product over the other ( $V_2O_5$  versus FeV).

WJN's proprietary technology has the world's highest vanadium recovery rate and TNG expects this to significantly benefit the Company with additional profitability over the project's life.

The signing of these binding agreements cements TNG's strategic plan to become a major player in the global supply chain of vanadium, securing a long-term partnership with one of the world's leading high quality ferro-vanadium producers.



Figure 1: WOOJIN CEO and Chairman Mr Ki (left) with TNG's Managing Director Mr Burton.

Both agreements are governed by Singapore law and require the parties to obtain any relevant approvals regulatory and governmental approvals in Australia and Korea for implementation when production commences which is assumed to be in 2018 subject to finance and all regulatory approvals.

The signing of these two binding agreements marks a significant milestone for the Mount Peake Project following the completion of the DFS and will assist in the Company's financing and commercial plans to deliver on its project development schedule. Subject to receipt of all approvals, permitting and financing, construction of Mount Peake could commence in 2016 with potential first production in early 2018, when independent commodity forecasts indicate that the price of  $V_2O_5$  is expected to be substantially higher than current prices.

In parallel, the Company is also moving forward with discussions on off-take agreements for the remainder of its vanadium production, which includes, but is not limited to, vanadium redox battery grade products, and for its Titanium Pigment and Pig-Iron products, and on a number of key aspects of the Mount Peake project, including the process for mine and development permitting and approvals.

TNG is also currently in initial discussions with parties interested in providing financing for the Mount Peake Project. WOOJIN and other Korean and international groups are currently reviewing both pre-production finance to and investment in, TNG or the Mount Peake Project.

### MOU with Caterpillar Financial for Project and Equipment Finance for Mount Peake

Subsequent to the end of the reporting period, TNG signed a Memorandum of Understanding (MOU) with Caterpillar Financial Australia Limited ("Cat Financial") to consider the provision of project and/or equipment finance, for the development of the Mount Peake Project, subject to due diligence, approvals, agreed terms and documentation.

The MOU marks another important step in TNG's multi-pronged strategy to establish a diversified funding consortium for the Mount Peake Project and follows the the completion of the Mount Peake Definitive Feasibility Study (DFS) in July, and the recent signing of the Company's first-ever binding off-take agreement for vanadium products.

The key terms of the non-binding MOU with Cat Financial:

- Cat Financial has agreed to consider the provision of project finance and/or equipment finance for the Mount Peake Vanadium-Titanium-Iron Project for the purpose of funding the development of the project in conjunction with other relevant project financiers;
- TNG has agreed to consider the procurement of Cat® mobile mining equipment for the Project and awarding the supply contract to Caterpillar's dealership in the Northern Territory, Hastings Deering (Australia) Ltd,;
- TNG has also agreed to consider the procurement of Cat power equipment for the project and awarding the supply contract to Caterpillar's equipment dealership in the Northern Territory, Energy Power Systems Australia.

It is envisaged that the MOU with Cat Financial, once converted into a binding agreement, will form part of the diversified project finance consortium being assembled to fund the Mount Peake Project. The supply of mobile mining and power equipment represents a significant component of the overall capital cost for development of the project.

## McMahon Services appointed Project Manager for Mount Peake

Subsequent to the end of the reporting period, TNG appointed McMahon Services as Interim Project Manager to coordinate the pre-development activities at Mount Peake.

McMahon Services ("MCM") is an industry-leading, privately-owned industrial, construction and environmental service provider that has delivered some of Australia's most ambitious and significant construction services projects.

MCM was closely involved with the Mount Peake Definitive Feasibility Study (DFS) and contributed significantly to the outstanding outcomes delivered in the DFS (see ASX Announcement – 31 July 2015). It also has a well-established record of facilitating and developing projects both in the Northern Territory and Australia-wide.

As Interim Project Manager, MCM will play an integral role in managing and finalising the Mount Peake Project pre-development work, enabling TNG to focus on securing project finance and final permitting.

The scope of the appointment is intended to cover the following key areas:

- Mount Peake mine site and camp facilities design and preparation;
- Selection of refinery site location in consultation with the NT Government;
- Liaison with Government departments to finalise preliminary plans for the Mount Peake rail siding, road access, gas pipeline, electricity powerlines, water pipeline, location of processing plant and ancillary facilities, waste storage and site rehabilitation;
- Coordination and completion of land clearance and refinery licences as required;
- Liaison with the NT Government and Shire Council to obtain approvals and potential financial assistance for the expansion of the planned Ti-Tree Airport;
- Liaison with Darwin Ports Corporation and their nominated providers to obtain the necessary permitting for handling, storage and loading of products;
- Finalisation of rail access conditions and rail-port logistics with rail services provider, GWA;
- Completion of submissions required to access the Federal Government's \$5 billion development funding for Northern Australia Supplier Access to Major Project Funds (SAMP) / tariff concession;
- Coordination of community and stakeholder liaison and indigenous training and development; and
- Establishment of a Darwin office for TNG and provision of administrative support.

The outsourcing of this role to one of Australia's most highly regarded service providers is in keeping with TNG's strategy to bring the Mount Peake Project on line as quickly and professionally as possible.

## Clearance from Traditional Owners for Mount Peake Access and Infrastructure Development

TNG received a Sacred Site Clearance Certificate from the Central Land Council (CLC) during the Quarter for the mine and associated infrastructure required for the Mount Peake Project.

The CLC is the legal representative of the Traditional Owner Group (TOG) for the proposed Mount Peake mine area. Clearance work was conducted by the CLC during the past few months and, following approvals from the TOG, has issued TNG with the approved certificate.

This Certificate provides approval and clearance for TNG to construct the open cut mine, camp facility, haulage road, access road and rail siding at Mount Peake.

This paves the way for TNG to conclude negotiations with the CLC for the Mining Agreement, after which the Mining Licence can be issued by the Northern Territory Minister for Mines, the Hon David Tollner.



Figure 2: Mount Peake Project location diagram showing the areas cleared by the CLC and TOG, and covered by the Sacred Site Clearance Certificate.



## TIVAN® Process

### *TIVAN® pilot plant testwork completed with exceptional results*

As outlined in the June Quarterly Report, the pilot metallurgical testwork program for the TIVAN® downstream refinery of the Mount Peake Project was successfully completed during the Quarter, delivering excellent results which have either met or exceeded expectations in all areas.

The TIVAN® testwork program was carried out at the world-class Commonwealth Scientific and Industrial Research Organisation (CSIRO) hydrometallurgical research facilities in Perth, with the appointed team of CSIRO experts providing significant input and improvements to the process before and during the trial.

The program confirmed the ability to achieve commercial vanadium recoveries of >93% and produce high-purity vanadium pentoxide ( $V_2O_5$ ) of >99% purity, with high-purity iron oxide and titanium dioxide also recovered as valuable by-products.

## Other prospects at Mount Peake

The Company has identified significant other mineralisation potential in the Mount Peake area.

### *Graphite*

The graphite potential of the Mount Peake Project is also continuing to emerge. This work is still at an early stage, however the graphite prospectivity at Mount Peake represents an exciting emerging opportunity for TNG, which will be further tested during 2015.

## OTHER PROJECTS

TNG has numerous projects outside of Mount Peake, all of which offer outstanding prospectivity.

TNG has announced plans to de-merge these projects into a new listed entity, to be named Todd River Resources (see ASX Announcement dated 16 April 2015). The proposed spin-off will see TNG emerge with a 20 per cent cornerstone stake in the new company, with TNG shareholders to hold 80 per cent of the shares via an in-specie distribution.

As a result of this proposed demerger, no work was conducted on these projects during the Quarter as they are under transition to Todd River Resources.

## CORPORATE

### **\$4.0M Raised Following Strong Option Conversion**

During the Quarter, TNG raised over \$4.0 million following a strong take-up of TNGO listed options (\$0.08) by shareholders.

52,163,178 options were converted between 22 June and 4 August 2015, bringing the total funds raised by the exercise of the TNGO options to \$4,173,054.

The funds further strengthen the Company's financial position as it moves into development planning and financing of the Mount Peake Project.

### **Sale of Shares by Substantial Shareholder**

On Friday 11 September 2015, TNG received a letter from a substantial shareholder of the Company, Ao-Zhong International Mineral Resources Pty Ltd (Ao-Zhong), notifying the Company that Ao-Zhong had reduced its shareholding in the Company to 44,978,812 shares by selling 17.271 million shares on-market on 10 and 11 September 2015.

Ao-Zhong, a subsidiary of the East China Mineral Exploration & Development Bureau ("ECE"), acquired its shareholding in TNG in November 2011 via a placement at \$0.11 per share.

The Company is not aware of the reason for sell-down and understands it was an internal decision of the parent entity ECE.

### Resignation of non-executive Director

Subsequent to the end of the Quarter, Mr Jianrong Xu resigned as a Director of the Company. Mr Xu has been a Director of TNG since 24 May 2012 following an investment made in the Company by Ao-Zhong International Mineral Resources Pty Ltd, a subsidiary of East China Mineral Exploration and Development Bureau.

### Cash

TNG had total cash reserves of \$6.7 million at Quarter-end.

Paul Burton  
**Managing Director**  
28 October 2015

## Tenement Schedule

The Group holds an interest in the following tenements or tenement applications at 30 September 2015:

Project	Tenements	Equity
	EL27069, EL27070, EL27941, EL29578, EL 30483, ELR29627, MLA28341, MLA29855, MLA29856, MLA30686	100%
McArthur River	EL27711, EL28503, EL30085	100%
Melville Island	ELA28617	100% (Farm in agreement)
Croker Island	ELA29164	100%
Black Range	EL30207, EL30208	100%
Mount Hardy	EL27892, EL29219, EL 28694	100%
Manbarrum JV	A24518, A26581, EL24395, EL25646, MLA27357	100%
Sandover	ELA29252, ELA29253	100%
Tomkinson	EL30348, EL30359	100%
Stokes Yard	EL30131	100%
Walabanba Hills	EL26848, EL27115	100% (Farm in agreement)
Warramunga/Rover JV	EL25581, ELA25582, ELA25587, MLC647	100% (Farm in agreement)
Peterman Ranges	ELA26383, ELA25564, ELA26384, ELA25562, ELA26382	100% (Farm in agreement)
Goddard's	ELA24260	100% (Farm in agreement)
Cawse Extended	M24/547, M24/548, M24/549, M24/550	20% free carried to production, or can be converted to a 2% net smelter return on ore mined. Unicorn Pit is now excised and a wet tonne royalty applies.
Kintore East	P16/2370, P16/2371, P16/2372, P16/2373, P16/2374	2% gold return interest on production.



## Competent Person's Statements

### Competent Person's Statements

The information in this report that relates to the Mount Peake Mineral Resource estimates is extracted from an ASX Announcement dated 26 March 2013, (see ASX Announcement – 26 March 2013, “Additional Information on the Mount Peake Resource”, [www.tngltd.com.au](http://www.tngltd.com.au) and [www.asx.com.au](http://www.asx.com.au) ), and was completed in accordance with the guidelines of the JORC Code (2012). Initial mining and financial assessment work, based on the Mineral Resource, followed (see ASX Announcement – 15 July 2013, “TNG Considers Two-Stage Development Option for Mount Peake Project, NT”, [www.tngltd.com.au](http://www.tngltd.com.au) and [www.asx.com.au](http://www.asx.com.au)).

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original market announcement.

The information in this report that relates to the Mount Peake Ore Reserve estimates is extracted from an ASX Announcement dated 31 July 2015, (see ASX Announcement – 31 July 2015, “Mount Peake Feasibility Study Confirms a World-Class Project”, [www.tngltd.com.au](http://www.tngltd.com.au) and [www.asc.com.au](http://www.asc.com.au)) and was completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Ore Reserve estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original market announcement.

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.

### Production Targets and Financial Information

Information in relation to the Mount Peake Definitive Feasibility, including production targets and financial information, included in this report is extracted from an ASX Announcement dated 31 July 2015, (see ASX Announcement – 31 July 2015, “Mount Peake Feasibility Study Confirms a World-Class Project”, [www.tngltd.com.au](http://www.tngltd.com.au) and [www.asx.com.au](http://www.asx.com.au)). The Company confirms that all material assumptions underpinning the production target and financial information set out in the announcement released on 31 July 2015 continue to apply and have not materially changed.