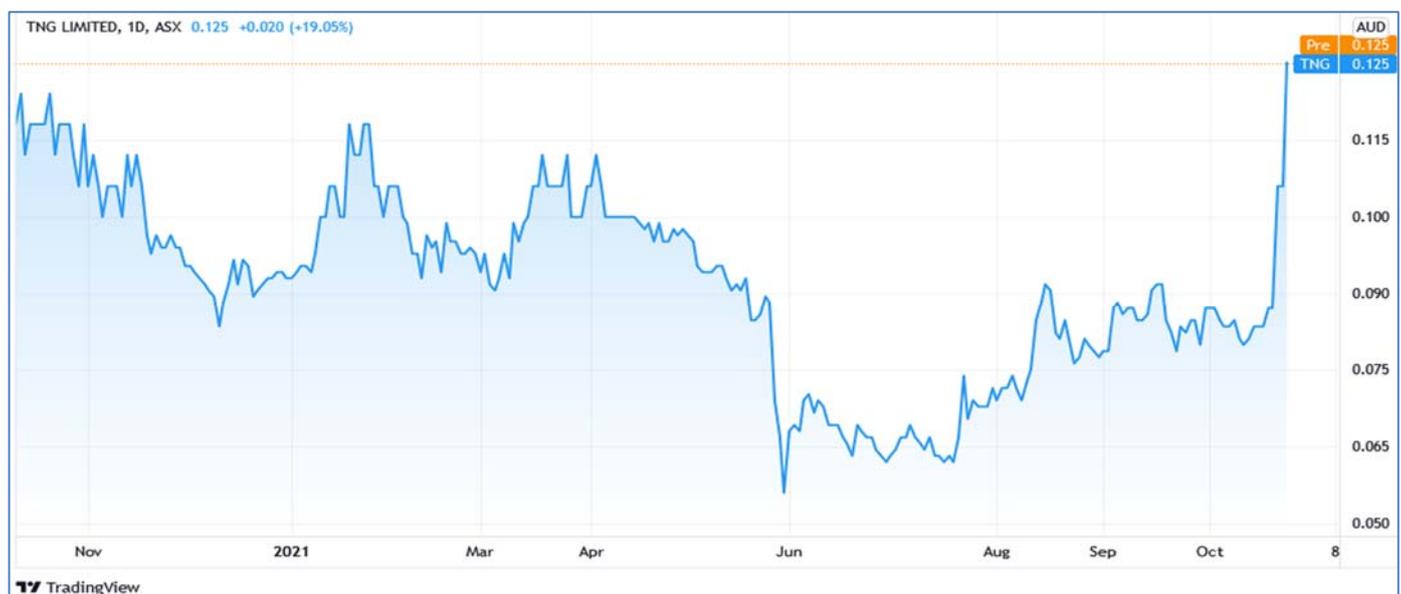


Tuesday 26th October, 2021

Portfolio Stock Developments

TNG Limited - (ASX: TNG, Share Price: \$0.125, Market Cap: \$131m, coverage initiated @ \$0.135 in Aug 2017)



Key Catalyst

TNG to progress development of its flagship Mount Peake Vanadium-Titanium-Iron project in the NT with a fully-integrated mining and processing operation within the Mount Peake mine site.

We introduced TNG to our coverage universe during August 2017, based on its attraction as a strategic metals developer, specialising in titanium, vanadium and iron. The company's focus is the development of its 100%-owned multi-commodity Mount Peake Project, situated in Australia's northern development hub in the NT, where it is planned to produce three key products - vanadium pentoxide (V_2O_5), titanium dioxide (TiO_2) and iron oxide (Fe_2O_3). Mount Peake is one of the largest undeveloped vanadium-titanium-iron projects in the world, and one of the most advanced currently at the pre-development stage. The project will be a top-10 global producer, having received Major Project Facilitation status from the NT Government and Major Project Status from the Federal Government. Studies released during late 2019 forecast a pre-tax IRR of 33% and an NPV_{8%} of \$2.8 billion, with a payback period of just 2.8 years.

Latest Activity

Mt Peake Project Update

TNG has provided a major strategic update with respect to its flagship Mount Peake Vanadium-Titanium-Iron Project, with a fully-integrated mining and processing operation within its existing Mining Leases at the Mount Peake mine site, located 235km northwest of Alice Springs in the Northern Territory.

Overview

TNG has committed itself to progressing an alternative site for the downstream TIVAN® Processing Facility (TPF), following a detailed assessment of alternative locations. The company's preferred alternative involves an integrated and consolidated, single mining and processing operation, located entirely within its existing Mining Leases at the Mount Peake Mine Site.

Importantly, initial evaluation by TNG and the SMS group indicates that the vast majority of the deliverables from the recently completed Front-End Engineering and Design (FEED) study for the TPF could be applied at the Mount Peake Mine Site location with only minor modifications.

The key benefits of a fully-integrated operation are expected to include:

- consolidation of common non-process infrastructure
- reduction in construction requirements, with the Mine Site being located in a non-cyclonic zone
- reduction in solid waste and tailings disposal handling costs
- ability to optimise processing layout and simplify commissioning at one location
- an expected lower-risk final permitting process.

Importantly too, TNG's Mining Lease (ML) for the Mine Site already allows for mineral processing activities to take place, and the ML area is sufficient to accommodate a fully-integrated operation.

TNG has briefed its project financiers and advisors, who have indicated their continued support.

TNG has commenced discussions with the Central Land Council on an enhanced project at the Mine Site, and has also briefed both the Northern Territory Government and the Northern Territory Environment Protection Agency (EPA) to progress final permitting and approvals.

Importantly too, as part of initial discussions, the NT EPA has provided TNG with a roadmap for the environmental approval process for the Mine Site, which the company notes has a higher degree of certainty and is potentially shorter, than the current requirement associated with the Darwin site.

In parallel, TNG is also progressing discussions with the NTG to utilise the existing land at Middle Arm Precinct that's reserved for TNG for the potential development of a green hydrogen production facility under the Company's joint venture with green hydrogen group AGV Energy.

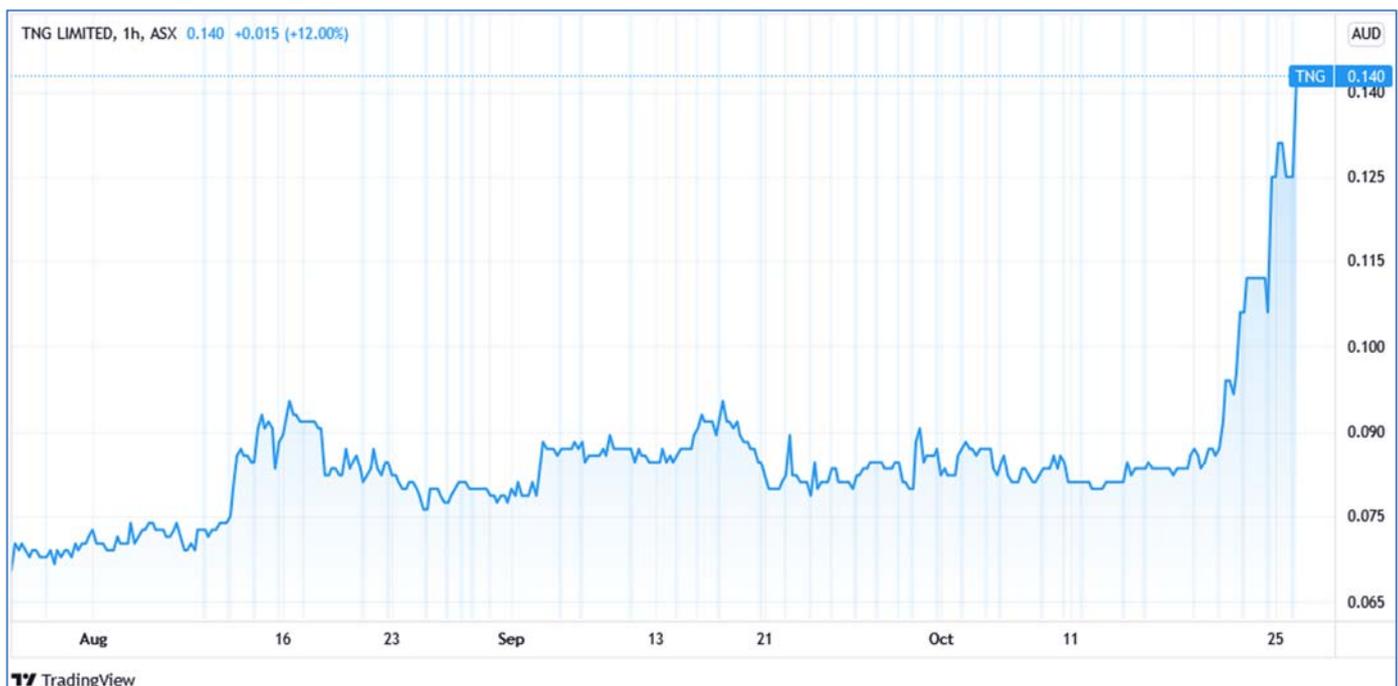
Technical Significance

The revised processing strategy represents a very significant development for TNG, as it involves an integrated and wholly self-contained development at the planned mine site location. Importantly, TNG’s project financiers have provided support for the move.

The co-location of the TPF at the mine site delivers a host of strategic and logistical benefits, and importantly will significantly de-risk the overall development pathway. For starters, construction requirements will be significantly reduced, as the mine site is located in a non-cyclonic zone, with superior geotechnical conditions. There will also be less inclement weather downtime, resulting in improved productivity and schedule savings during both construction and operation.

There will also be a simplified commissioning process at one location, with flow-on simplified take-or-pay arrangements for gas and power. Efficiencies will also be gained through a reduction in double-handling, with the ability to feed the magnetite concentrate from Beneficiation Plant directly into the TPF. The company will also benefit from having access to both Darwin and Adelaide Ports for shipping of final products, rather than being restricted to Darwin Port only.

As can be seen from the price graphic below, the market has reacted positively to TNG’s development update, with the stock performing very strongly in share price terms over recent weeks subsequent to the commitment to locate the TPF at the mine site.



Next Steps

TNG is advancing discussions with tier-1 Australian engineering groups on the potential to work alongside SMS as a major contractor for the project’s development as a single-site mining and processing operation during the Engineering, Procurement and Construction (EPC) phase.

Discussions have commenced with key stakeholders, including the NT EPA and the Central Land Council on the requirements for any permitting changes driven by the consolidation. As part of the initial discussions, the NT EPA has provided TNG with a clear roadmap for the environmental approval process for the Mine Site. The company notes that this roadmap has a higher degree of certainty and is potentially shorter than the current requirement associated with the Darwin site.

In terms of project financing, both KfW IPEX-Bank (the company's mandated lead debt arranger and advisor) and KPMG Corporate Finance (the company's mandated financial advisor), have given their full support to the company's new integrated strategy and remain committed to progressing project financing for development.

TNG is now working with all key contractors and groups on an updated detailed project schedule for the consolidation plan. Initial indications are that TNG expects to undertake and complete all workstreams for the integration at the mine site within the next 12 months – which is similar to the expected timeframe for completion of works and approvals had the TPF remained in Darwin.

Other Key Activity

Green Hydrogen Strategy

TNG recently executed a Project Development Agreement with Malaysian-based AGV Energy & Technology to exclusively develop green hydrogen projects in Australia under a joint venture arrangement using the “HySustain” production technology. As a result of the integration of the TPF at the mine site, TNG is now progressing discussions with the Northern Territory Government on the possible use of the existing land at Middle Arm Precinct currently reserved for the company for the potential development of a green hydrogen production facility under the joint venture.

Clough Appointed to Undertake Mine Site Layout

TNG has also recently appointed Australian engineering and construction company, Clough Projects, to work with TNG's Project Development team and the SMS group on the Mount Peake Project. TNG previously engaged Clough to assess the Definitive Feasibility Study (DFS) for the project and this new contract expands on this early work to progress the overall mine development.

Clough is an experienced engineering and construction company capable of delivering large-scale mining and processing projects with a global workforce of over 2,500 people and operating centres across Australia, Papua New Guinea, Asia, UK, and North America.

Mount Peake Project Overview

TNG is a strategic metals developer, specialising in titanium, vanadium and iron. The company's focus is its multi-commodity Mount Peake Project, situated in Australia's northern development hub, which will produce three key products: vanadium pentoxide (V_2O_5), titanium dioxide (TiO_2) and iron oxide (Fe_2O_3).

Mount Peake is one of the largest of the known vanadium projects in Australia and one of the most advanced. Discovered by TNG during early 2008, the Mount Peake Project comprises a current JORC Indicated Resource of 160Mt grading 0.28% V₂O₅, 5.3% TiO₂ and 23% Fe - making it one of the largest of the known vanadium projects in Australia. The project is located within the highly prospective Arunta Geological Province, 80km northeast of Alice Springs in the Northern Territory.

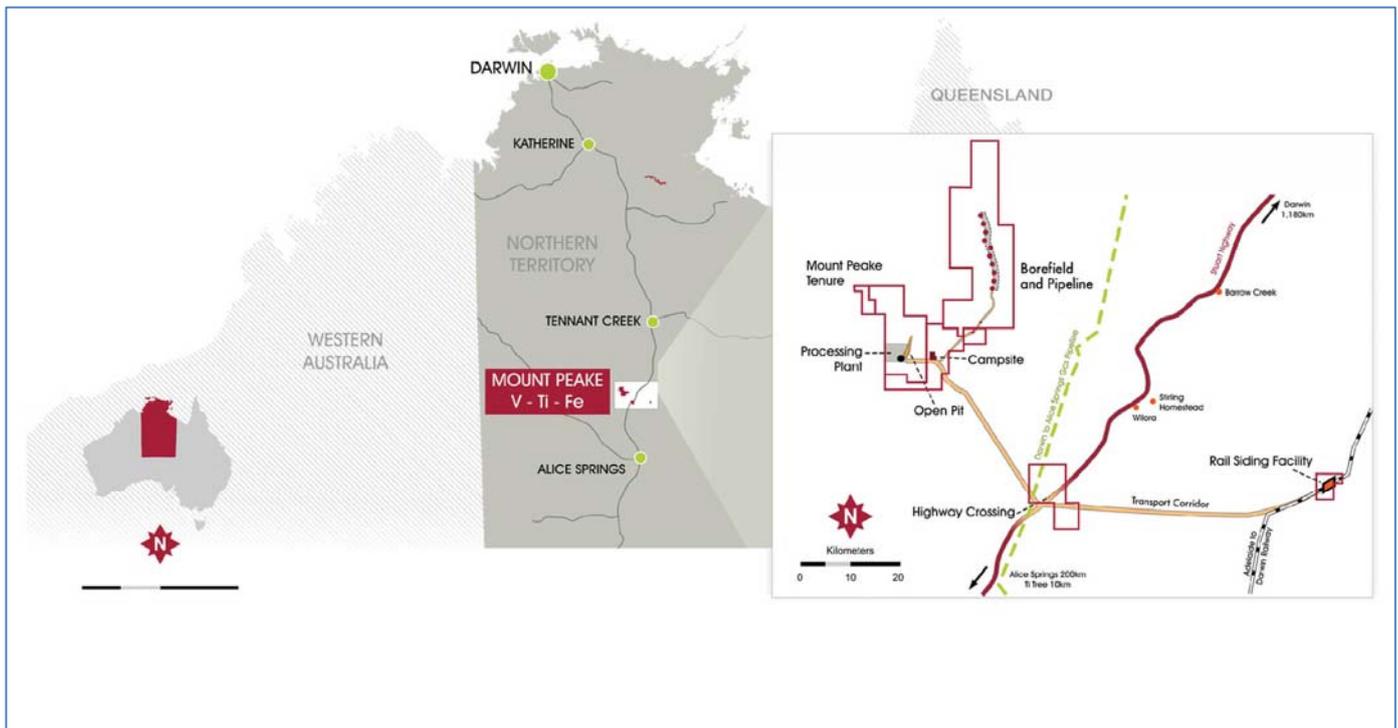


Figure 1: Location of Mt Peake Project and proposed mine site layout.

An optimised delivery strategy and revised mine schedule was released during September 2019, based on an initial production rate of 2 million tonnes per annum ore throughput, which corresponds to 100,000 tonnes per annum of titanium dioxide pigment. The forecast pre-production Capital Expenditure (CAPEX) for Mount Peake is \$824 million.

The revised financial model shows the project's pre-tax internal rate of return (IRR) of approximately 33% and a Net Present Value (NPV) at an 8% discount rate of approximately A\$2.8 billion, with a payback period of 2.8 years.

TNG's proprietary TIVAN® Process is a hydro-metallurgical extraction process designed with Perth-based metallurgical consultants METS, the CSIRO and German metallurgical plant supplier and development partner, SMS Group. The process has undergone six years of development including several successful pilot-plant test stages. The process was designed to use conventional and existing equipment currently used in extractive resources.

The TIVAN process is optimised to produce three key commercial products, setting it apart from other producers:

- High-purity vanadium pentoxide (V_2O_5) and the ability to produce commercial-grade vanadium electrolyte and Ferro-Vanadium
- High-grade titanium dioxide (TiO_2) with the ability to produce a high-quality pigment product from titanium feed residue
- High-purity iron oxide (Fe_2O_3) with the ability to produce Pig iron



What is Vanadium?

Vanadium is a medium-hard, steel-blue metal. Although a lesser-known metal, it is quite valuable in the manufacturing industry due to its malleable, ductile and corrosion-resistant qualities – and is increasingly utilised in battery storage. Around 80% of the vanadium produced is alloyed with iron to make a shock- and corrosion-resistant steel additive called ferrovanadium, which contains between 1% and 6% vanadium.

Vanadium-steel alloys are used to make extremely tough tools such as axles, armour plates, car gears, springs, cutting tools, piston rods and crankshafts. Vanadium alloys are also used to make nuclear reactors because of their low-neutron-absorbing properties. In fact, the first widespread industrial use for vanadium was in the steel framework of the Model T Ford, which allowed for a lighter weight frame that was also of greater tensile strength. When mixed with aluminium and titanium, vanadium can create a very strong alloy that is used for special applications, such as dental implants and jet engines.

In Vanadium Redox Flow Batteries (VRFBs), vanadium is used to create a reliable, safe and stable solution for the storage of renewable energy. The extremely large capacities possible from vanadium redox batteries make them well suited to use in large power storage applications. Vanadium typically doesn't presently have the same market 'sex appeal' as lithium, but in my view it has just as important a role to play in the future of energy storage.

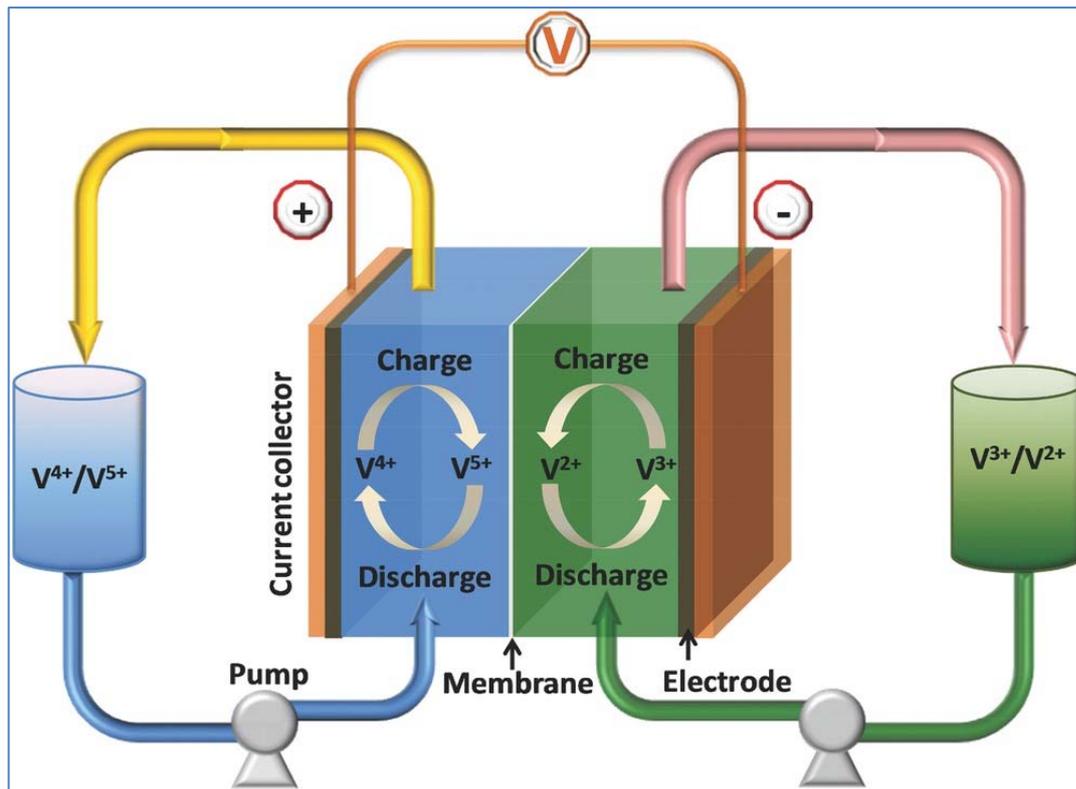


Figure 3: Workings of a Vanadium Redox Flow Battery

Summary

TNG has achieved a major milestone with the confirmation of the location for its TIVAN® Processing Facility (TPF), following a detailed assessment of alternative locations. Importantly, there are significant cost and other benefits attached to locating the plant at the mine site, with the vast majority of the deliverables from the recently completed FEED able to be applied to the Mount Peake Mine Site location with only minor modifications.

The project also appears to have strong government and local support, and with the potential for a green hydrogen development, its ESG credentials will potentially be further enhanced. This will also assist in terms of its attraction to potential project financiers.

TNG has essentially been a big-picture story for the patient investor, but it's encouraging to see this patience being rewarded. TNG remains firmly held within our coverage Portfolio.

Disclaimer: Gavin Wendt, who is a director of Mine Life Pty Ltd ACN 140 028 799, compiled this document. It does not constitute investment advice. I wrote this article myself, it expresses my own opinions and I am not receiving compensation for it. In preparing this article, no account was taken of the investment objectives, financial situation and particular needs of any particular person. Investors need to consider, with or without the assistance of a securities adviser, whether the information is appropriate in light of the particular investment needs, objectives and financial circumstances of the investor. Although the information contained in this publication has been obtained from sources considered and believed to be both reliable and accurate, no responsibility is accepted for any opinion expressed or for any error or omission in that information. I have no positions in the stock mentioned and no plans to initiate any positions within the next 72 hours.