

TNG ADVANCES STRATEGY FOR GREEN ENERGY TO ENHANCE MOUNT PEAKE PROJECT

TNG's green energy strategy encompasses both Vanadium Redox Flow Batteries and Green Hydrogen

Key Points:

- TNG intends to utilise both vanadium redox flow battery (“VRFB”) and green hydrogen technology within the proposed power supply mix for the Mount Peake Project.
- Technology & Process Design Study has been completed for the development of a high-purity Vanadium Electrolyte Production Facility to support the commercialisation of VRFB technology in Australia and enhance value from the Mount Peake product suite.
- Plans are progressed for a Vanadium Electrolyte Production Facility, which will include the application of VRFBs at the Mount Peake Project.
- The commercial and technical parameters for the development of the “HySustain™” green hydrogen technology project in Darwin have been progressed in joint venture with Malaysian-based energy group AGV Energy & Technology.
- The application of the HySustain™ technology to the Mount Peake Project is being evaluated as part of current project development planning with the aim of reduced energy costs and environmental footprint.

Australian resource and mineral processing technology company TNG Limited (ASX: TNG) (“TNG” or the “Company”) is pleased to provide an update on the status of its green energy projects, which are being progressed in conjunction with the development of the Mount Peake Vanadium-Titanium-Iron Project (“Mount Peake Project” or the “Project”) in the Northern Territory.

TNG is advancing a number of green energy initiatives - including vanadium electrolyte/redox flow batteries and green hydrogen - as part of its strategic approach to reducing net carbon emissions from the Mount Peake Project while also generating new business opportunities that will create shareholder value.

VANADIUM ENERGY PROJECT – VANADIUM ELECTROLYTE & BATTERIES

TNG is developing its 100%-owned critical and battery minerals project, the Mount Peake Project in the Northern Territory, which is at an advanced stage of engineering, planning and approvals ahead of project financing and final investment decision.

The Company is targeting production of up to 6,000 tonnes per annum (“tpa”) of high-purity vanadium pentoxide from the Mount Peake Project, in addition to titanium dioxide pigment and iron ore fines products.

Vanadium pentoxide is an important commodity for strengthening steel, with an emerging additional market in energy storage through the production of vanadium electrolyte (“VE”) from Vanadium Pentoxide, which is used in vanadium redox flow battery (“VRFB”) technology to chemically store renewable energy (eg, solar photovoltaic and wind generated energy).

VRFBs offer a number of key benefits for sustainable large-scale energy storage, including:

- Long lifespans of potentially 20-plus years with minimal performance degradation;
- Ease of scalability for larger applications through modularisation;
- Low maintenance requirements;
- Ability to discharge without battery damage;
- Non-flammability of the vanadium electrolyte, with-no thermal or fire system management required; and

- Ability to recover and re-use the vanadium electrolyte at the end of the battery life.

These benefits are directly applicable to the Mount Peake Project, which will have a long life (37 plus years) and significant annual power requirement, and will assist in managing power reliability and costs as part of a combined renewable/traditional energy supply mix at operational commencement. Whilst VRFB are known to have lower energy densities than other similar battery systems, this is not an issue for the stationary (non-mobile) applications to which they are best suited which includes mining operations.

In addition to the planned application of VRFBs at Mount Peake, the Company's aim is to capitalise on forecast growth in demand in the VRFB sector, and its plans to produce high-purity vanadium pentoxide. As a result, TNG has established a "vanadium energy" strategy with the dual objective of producing vanadium electrolyte and commercialising VRFBs in Australia.

The vanadium energy strategy will add value to TNG's product strategy through further downstream processing, while also playing an active role in reducing carbon emissions from the Mount Peake Project and contributing to Australia's broader greenhouse gas emissions reduction strategy.

Technology and Process Design Study

TNG has undertaken a Technology and Process Design Study for the development of a production facility to produce high-purity VE for the VRFB market ("VE Study").

The VE Study has now been completed and key outcomes and findings of the VE Study identified:

- The preferred form of vanadium pentoxide as the preferred feedstock for the process, this is planned to be derived from vanadium pentoxide flake (the vanadium product planned to be produced at Mount Peake);
- Preferred process options, with process flowsheets, descriptions and design criteria, and a mass balance, developed for each option.
- Darwin as the indicative location of the facility with existing ready access to all necessary infrastructure; the next phase of work will also consider the option of a Mount Peake based VE production facility as part of the consolidated mining and processing operation.

TNG previously produced high-specification commercial grade VE in 2016 (see ASX Announcement of 10 October 2016) and will target a low impurity VE product to position itself as a high-quality producer in the market.

Battery Trial

TNG has partnered with leading Singaporean-based battery technology development company V-Flow Tech to supply batteries as part of its vanadium energy strategy.

TNG is in the process of finalising arrangements with a leading institution in the Northern Territory to undertake a battery trial to test the performance of a V-Flow VRFB in a microgrid setting. The battery trial is intended to provide independent validation of the technical performance of the battery to facilitate the commercialisation phase under the Company's business plan. TNG also is engaging with the Northern Territory Government on commercial opportunities.

Next Steps

Following the successful completion of the VE Study, the Company is now evaluating utilising VRFBs at its Mount Peake operation and incorporating these into the current non-process infrastructure design and energy supply mix.

This will include validating the operational, technical and commercial viability of a full-scale VE facility to provide the feedstock for VRFBs, which will include the assessment of using VRFB at one or more facilities at the Mount Peake Project, in addition to third party commercial applications. This will include process design and engineering, definition of non-process infrastructure, robust capital and operating cost estimations, project scheduling, implementation planning and operational planning.

HYSUSTAIN DARWIN PROJECT

TNG and its joint venture partner, Malaysian-based green energy company AGV Energy & Technology (“AGV”), are developing the HySustain Darwin Project (“HySustain Darwin”), a green hydrogen production project being planned for Darwin in the Northern Territory. TNG and AGV signed a Project Development Agreement under which the parties will jointly develop green hydrogen production projects in Australia to service demand in emerging domestic and regional markets in Australia, the Malaysian peninsula, Japan and Korea (see ASX announcement of 3 September 2021).

HySustain Darwin is a proposed large-scale green hydrogen production facility that will utilise the HySustain™ technology (“HySustain”) solution developed by AGV and its global development partners to produce green hydrogen using the electrolysis of demineralised water and 100% renewable energy.

The development of the HySustain Darwin Project will also assist in verifying the applicability of the HySustain technology to the Mount Peake Project as part of the broader energy supply mix for mining and processing operations.

The joint venture believes that Australia is well positioned to become a leading supplier in green hydrogen, with ample potential for cost competitive renewable energy, strong existing trade links to key Asian energy markets, and a demonstrated track record in large-scale development and industrialisation of energy industries.

The HySustain technology solution is well advanced, based on the results from a test plant in Europe to validate its operational and commercial feasibility.

Development Concept

HySustain Darwin is planned to be implemented with a first phase of development targeting green hydrogen production of 110,000tpa. Both Australian domestic and Asian energy export markets are being considered for off-take, with more mature off-take interest initially seen from Asian markets.

The export market will require the conversion of the green hydrogen to green ammonia or liquified hydrogen for transport. Green ammonia is the most common hydrogen-carrying compound, and is transported using bulk chemical-carrier tanker ships. Conversion to green ammonia is currently the preferred option for HySustain Darwin, subject to off-taker requirements.

The production target of 110,000tpa of green hydrogen is equivalent to approximately 600,000tpa of green ammonia.

Reliable and cost competitive supply of renewable electricity and water is fundamental to green hydrogen production and conversion to green ammonia. HySustain Darwin intends to source 100% renewable energy from solar photovoltaic and wind power, supported by an energy storage solution to meet targeted operational availability. The project intends to procure renewable energy either through an independent power provider or a project owned purpose-built facility.

HySustain Darwin is actively engaging with potential power providers on this basis, and also with large renewable energy investment funds focused on developing renewable energy facilities for green hydrogen projects. TNG has engaged with the Northern Territory Government on water supply and is confident that reliable water supply on acceptable commercial terms will be available for the life of the project.

Project Location

The HySustain Darwin Project is planned to be located in the Middle Arm Industrial Precinct near Darwin, an area marked by the Northern Territory Government as a globally competitive precinct for low emission petrochemicals, renewable hydrogen and minerals processing.

Following a formal request by TNG, the Northern Territory Government has reserved a site in Middle Arm for the HySustain Darwin Project ahead of the application and lease negotiations.

The reserved site is the previous site proposed to be used for the Mount Peake Project downstream processing facility. TNG previously completed an extensive body of work for this site for Mount Peake, which will significantly benefit planning for HySustain Darwin.

Middle Arm is home to the operational Santos LNG and the INPEX Ichthys LNG processing facilities. The precinct offers excellent supporting services, including utilities, gas and water, and is located in close proximity to Darwin International Airport, Darwin Port, the Darwin to Adelaide railway and freight terminal, and the existing road network.

The Northern Territory Government is spearheading further master planning for the precinct in support of expediting approvals processes and development of additional common use infrastructure.

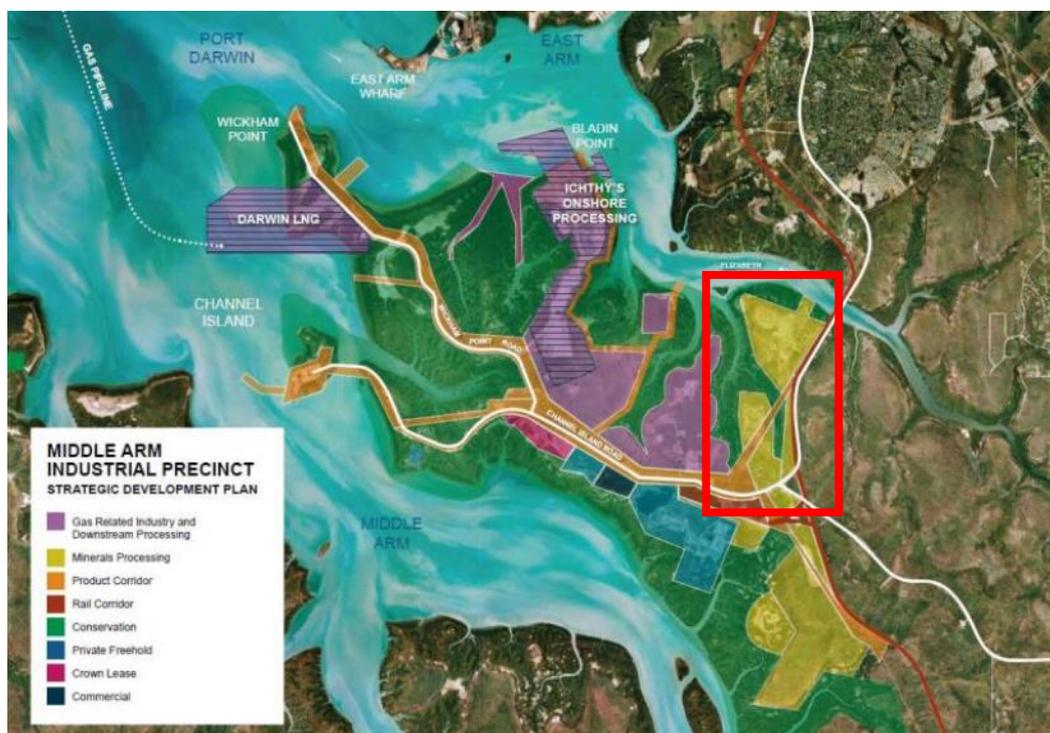


Figure 1: Middle Arm Industrial Precinct Plan (red inset – project site)

Commercial Study and Next Steps

TNG and AGV are jointly progressing a commercial study for HySustain Darwin to strategically evaluate the project development concept and scope its preliminary commercial and technical viability. The joint venture is also preparing a development strategy as part of this study for the next phase of development for HySustain Darwin.

The joint venture has initiated early engagement with potential off-takers in Asia and prospective financiers on the main future project financing requirements.

The application of the HySustain green hydrogen technology to the Mount Peake Project will also be investigated, to confirm its commercial and technical suitability, as well as to position the Company to take advantage of the predicted growth in commercial use of green hydrogen.

MOUNT PEAKE PROJECT – APPLICATION OF RENEWABLE ENERGY STRATEGY

The progression of TNG's green energy initiatives supports the Company's strategic approach to climate change management for the Mount Peake Project. Both the vanadium energy and green hydrogen initiatives also offer direct opportunities for use at the Mount Peake Project.

TNG has been progressing its energy development program for the Mount Peake Project taking into consideration the application of green hydrogen as part of the TIVAN® processing technology. This program will include an assessment of the applicability of the HySustain technology at the Mount Peake Project. In addition, the TNG Project team, in consultation with external energy experts, is assessing opportunities for targeted microgrid-scale integrated VRFB and solar installations across the proposed mine site.

Authorised by the TNG Board of Directors

Paul E Burton
Managing Director & CEO

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Inquiries:

Paul E Burton
 Managing Director & CEO + 61 (0) 8 9327 0900

Paula Raffo
 Company Secretary & IR + 61 (0) 8 9327 0900

Nicholas Read
 Read Corporate + 61 (0) 8 9388 1474

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About TNG

TNG is a Perth based resource and mineral processing technology company focussing on building a world-scale strategic metals business based on its flagship 100%-owned Mount Peake Vanadium-Titanium-Iron Project in the Northern Territory. Located 235km north of Alice Springs, Mount Peake will be a long-life project producing a suite of high-quality, high-purity strategic products for global markets including vanadium pentoxide, titanium dioxide pigment and iron ore fines. The project, which is expected to be a top-10 global producer, has received Major Project Status from the Northern Territory and Federal Governments.

TNG is also advancing a green energy strategy with the dual objective of offsetting carbon emissions from its planned future operations and generating new business opportunities in the alternative energy market to create additional shareholder value, with a focus on green hydrogen and vanadium redox flow batteries.

Forward-Looking Statements

This report has been prepared by TNG Limited. This report is in summary form and does not purport to be all inclusive or complete. Recipients should conduct their own investigations and perform their own analysis in order to satisfy themselves as to the accuracy and completeness of the information, statements and opinions contained.

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Production Targets and Financial Information

Information in relation to Mount Peake production targets and financial information included in this report is extracted from an ASX Announcement dated 11 September 2019 called "Optimised Delivery Strategy for Mount Peake" available on the Company's website on www.tngltd.com.au. The Company confirms that all material assumptions underpinning the production target and financial information set out in the announcement released on 11 September 2019 continue to apply and have not materially changed.