

TNG TO PARTNER WITH SMS GROUP FOR DEVELOPMENT OF CARBON-NEUTRAL HYDROGEN TECHNOLOGY TO BE APPLIED TO THE TIVAN® PROCESS

Innovation advances TNG's move towards a net zero carbon footprint for its patented TIVAN® Process and opens up additional potential business opportunities

Key Points

- TNG to join SMS group under a strategic partner development agreement (“Agreement”) to develop a CO₂-neutral technology for the production of green hydrogen from various renewable, secondary or fossil hydrocarbon sources by means of plasma pyrolysis, utilising green electrical energy.
- SMS group are advanced in their understanding of this technology and will coordinate all development activities under the Agreement with a focus on the application to TNG’s TIVAN® processing plant.
- Substantial quantities of CO₂-emissions could be eliminated as a result of the introduction of green hydrogen as the reduction agent in the TIVAN® Process.
- The electrical energy consumption of the new process is assumed to be in the range of 15-18kWh of electrical energy per kilogram of hydrogen, which is only a third of incumbent electrolysis processes.
- The use of hydrogen could further differentiate TNG and the TIVAN® Process from competing technologies for the economically feasible extraction of high-quality titanium, vanadium and iron products from titanomagnetite ores, sands and slags.

Australian resource and mineral processing technology company TNG Limited (ASX: TNG) (“TNG” or the “Company”) is pleased to announce its participation in a ground-breaking project with its German-based strategic engineering partner, SMS group (“SMS”), for the development of a carbon-neutral technology for the production of green hydrogen as part of an optimisation strategy for its **Mount Peake Vanadium-Titanium-Iron Project** (“Mount Peake Project” or “Project”) in the Northern Territory.

Under the Agreement, TNG will partner with SMS to develop technology to produce green hydrogen from various renewable, secondary or fossil hydrocarbon sources by means of plasma pyrolysis. SMS are already advanced in their understanding of such technology and will manage all development activities and, specifically, apply the technology to TNG’s TIVAN® Process. SMS will provide a fully detailed development program in support of the specific resourcing required from both parties under the Agreement.

This technology, which consumes roughly one-third of the electricity required to produce the same amount of hydrogen by electrolysis of water, could be the preferred reduction agent for TNG’s TIVAN® Process, marking an important step in the Company’s roadmap towards achieving a net zero carbon footprint for TIVAN®.

The technology also has the potential to be applied for the production of hydrogen and syngas from various fossil, biogenic and waste materials, opening up additional potential business opportunities for TNG and SMS in the fast-growing space of the hydrogen and e-fuels economy, and outside the Company’s proposed core titanium-vanadium-iron business.

A by-product of this process is anticipated to be highly-pure carbon black powder, which currently sells at approximately US\$1,000 per tonne. Possibilities to produce graphene and/or carbon nanotubes from this powder will also be investigated in parallel by SMS.

The Agreement is not expected to impact the Front-End Engineering and Design (“FEED”) study completion and delivery of the turnkey Engineering, Procurement and Construction (“EPC”) proposal from SMS. The Company’s primary focus remains on progression and completion of the remaining engineering and design work streams for the Mount Peake Project, including the current FEED study. The hydrogen technology development program will be progressed in parallel, and subject to confirmation of technical and commercial feasibility and integration with project development planning, has potential application for further optimisation of the Mount Peake Project.

Management Comment

TNG’s Managing Director & CEO, Mr Paul Burton, said: *“There is a huge amount of momentum globally moving towards a hydrogen-based economy, and this is an exciting opportunity for TNG while at the same time has the potential to move our TIVAN® Process towards carbon-neutral which is important as we continue on our pathway to secure TNG’s position as a sustainable metals producer.”*

“We believe that being able to use a carbon-neutral product in our patented TIVAN® process will be a further significant advantage to TNG in relation to other competing technologies used for the extraction of high-quality titanium, vanadium and iron products from titanomagnetite ores, sands and slags.”

“This also continues strengthening our existing partnership with SMS.”

SMS’ Senior Vice President of Strategic Project Development, Mr. Herbert Weissenbaeck, commented:

“From SMS’ perspective, the future of the metallurgical industry will rely on low-cost renewable electrical energy, as well as carbon-neutral means of energy transport and storage. Hydrogen, being a very efficient and carbon-free reduction agent, is thus obviously in the focus of many of our ongoing R&D efforts. Co-developing our plasma pyrolysis technology with TNG, which could reap immediate benefits in the form of effectively decarbonising TIVAN®, is an exciting next step towards green, H2-based metallurgy, and we are looking forward to jointly turning it into industrial reality at TNG’s Darwin processing plant, soon.”

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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 Facilitation status from the Northern Territory Government.

Forward-Looking Statements

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