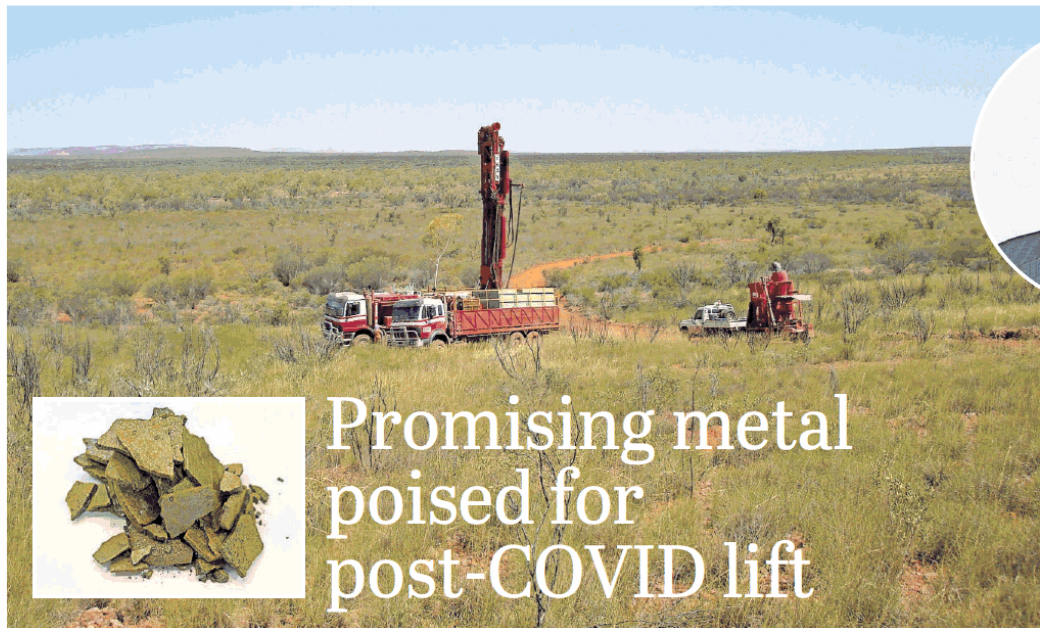


ADVERTISING FEATURE

Vanadium projects



TNG chief executive Paul Burton says the company is keen to harness its Mount Peake project in the Northern Territory to capitalise on vanadium's promise to contribute to global clean-energy solutions. Inset: vanadium flakes.

Promising metal poised for post-COVID lift

It has been a year of uncertainty for commodities as the global economy struggles to regain its equilibrium amid the tumult of COVID-19.

One commodities sector that has had its considerable momentum stalled by the pandemic-induced economic lockdown is vanadium, which prior to 2020 had been buoyed by strong underlying demand for steel and the global move to renewable energy, both core markets for the metal.

According to US metals industry consulting firm TTP Squared, global vanadium consumption grew from 71,700 metric tons pure vanadium (mtV) in 2011 to 102,025 mtV in 2019.

Vanadium, a medium-hard metal with a natural resistance to corrosion, is used to increase the tensile strength and water resistance of steel and other specialty alloys as well as a high-purity chemical.

Steel accounts for 85 per cent of vanadium demand but the metal also features in vanadium redox flow batteries (VRFB), which use vanadium electrolyte to store extensive amounts of energy. Vanadium batteries are most commonly used for grid-level energy storage applications alongside intermittent wind and solar energy systems.

The COVID-19 pandemic has overshadowed climate change and the imperative to embrace a clean-energy future, but the sector believes the quest for clean energy will re-emerge in 2021 as economies recover.

In October, the Morrison government released the Australian Critical Minerals Prospectus 2020, produced by the Australian Trade and Investment Commission (Austrade) and Geoscience Australia,

aimed at advancing Australia's position as a supplier of critical materials, including vanadium.

"Australia has an abundance of critical minerals and has the potential to be a global leader in the ethical and environmentally responsible supply of key critical minerals. Expanding supply and meeting the growing demand is a key focus of Australia's Critical Minerals Strategy," Austrade says.

The strategy, released in 2019, aims to "position Australia as a world leader in the exploration, extraction, production and processing of critical minerals".

One Australian company, Perth-based, ASX-listed TNG, is set to become a global player in the vanadium market.

TNG is a resource and mineral processing technology company focused on building a world-scale strategic metals business based on its flagship Mount Peake project in the Northern Territory.

Located 235 kilometres 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 oxide.

"We are not aware of any other vanadium deposit as advanced as ours anywhere in the world," says TNG chief executive Paul Burton.

"The scale and quality of Mount Peake position us to be a top-10 global producer."

The Mount Peake deposit has a JORC-compliant resource of 160 million tonnes, making it one of the world's largest undeveloped vanadium-titanium-iron projects.

The project is located close to the Alice Springs-Darwin rail line, the Stuart Highway and the new

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Paul Burton

LPG pipeline, with mining, native title and environmental approvals having been granted for the mine site.

The Front-End Engineering and Design study into the Mount Peake project being conducted by German engineering and construction group SMS is also expected to be completed in the first half of 2021.

TNG's proposed vanadium pentoxide production is fully accounted for under life-of-mine offtake agreements with Korea's Woorin International, Asia's second-largest exporter of vanadium pentoxide, which has agreed to purchase 60 per cent of the operation's vanadium output, and Geneva-based commodities trader Gunvor, which has agreed to purchase 40 per cent of Mount Peake's vanadium. TNG also has offtake agreements in place for its titanium dioxide pigment (used in coatings and plastics)

and iron oxide (used for steel production).

TNG intends to produce 6000 tonnes of high-purity vanadium pentoxide annually from its proposed processing facility in Darwin.

In addition to its flagship project, TNG has formed a VRFB business unit to be operated through its TNG Energy subsidiary.

TNG Energy will focus on developing low-carbon technology for direct application to Mount Peake and will be available for licensing. TNG's aim is to produce its own vanadium electrolyte and become a commercial supplier of VRFBs for stand-alone, off-grid power systems.

Burton says VRFBs can replace diesel power generation at remote sites – such as Indigenous communities, mine-sites and pastoral stations – providing an economically viable alternative while assisting with carbon emission reduction and promoting green energy.

"The development of our VRFB business is part of our strategy to diversify the Mount Peake product portfolio and capitalise on the growing momentum globally for alternative energy solutions," he says.

TNG has also partnered with SMS to jointly develop a carbon-neutral technology for the production of green hydrogen from various renewable, secondary and fossil hydrocarbon sources as part of an "optimisation strategy" for the Mount Peake project.

The technology has the potential to be applied for the production of hydrogen and syngas from fossil, biogenic and waste materials, opening up additional business opportunities for TNG and SMS in the fast-growing hydrogen and e-fuels economy.

TNG LIMITED

BUILDING A GLOBAL STRATEGIC METALS COMPANY

Developing the world-class Mount Peake Vanadium-Titanium-Iron Project in the Northern Territory

Three high-purity products for growing global markets

Vertically integrated business plan with downstream processing in Australia

Green Energy Strategy encompassing Hydrogen Production Technology and VRFB business units

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