

## Critical vanadium

# Technology Metals rides vanadium upswing



The company is positioning itself to benefit from looming demand growth for vanadium. Pictured below left is a sample of high purity (+99 per cent) vanadium pentoxide from Gabanintha; inset, Perth-based Technology Metals managing director Ian Prentice.

While investors focus on opportunities in key battery minerals such as lithium and cobalt, prospects for another lesser-known battery mineral are on the upswing.

Vanadium, traditionally used as an alloying agent to strengthen steel, has seen its price surge over the past year, mainly on the back of growing demand in China.

A junior ASX-listed explorer holding significant vanadium assets in WA is now positioning itself to benefit from looming demand growth for this key ingredient.

Perth-based Technology Metals is in the process of developing its Gabanintha Vanadium Project, 40 kilometres south-east of Meekatharra, in the mid-west region of Western Australia.

The company acquired its tenements ahead of an ASX listing in December 2016, and after extensive drilling, in March this year announced a global resource estimate of almost 120 million tonnes, at 0.8 per cent vanadium pentoxide.

This includes a high-grade core of 55 million tonnes, at 1.1 per cent vanadium pentoxide, and an indicated resource of 21.6 million tonnes, at 0.9 per cent.

"This places us as the third-highest grade deposit in the world, outside of China," says managing director Ian Prentice.

"What we have also demonstrated over the last nine to 12 months is that this is a very high purity ore."

Currently, 90 per cent of the world's vanadium output is consumed by the steel industry – mainly for rebars used in construction – because a small addition of the alloying agent boosts steel



strength and allows a reduction in weight.

But the dynamics of the market are changing, with other sectors starting to take a big chunk of production.

Two sectors account for this new demand – the aerospace industry, where vanadium is being used to make lighter-weight materials for aircraft; and vanadium redox flow batteries that are used for grid-level power storage.

Some analysts estimate vanadium demand will double over the next 10 years, from the current 83,000 tonnes per annum.

A key reason for this will be a steady increase in intensity-of-use in the steel industry, particularly in China.

"China has a big policy push to increase the quality of their rebar because of increasing demands from high-rise construction, so that is a

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Ian Prentice, Technology Metals

big driver on the demand side," Prentice says.

There is also a strong push on the environmental side to move a large proportion of China's energy generation to renewables, and vanadium redox batteries are one of the key storage solutions, he adds.

With demand set to increase, the supply side of the market has increasingly come into focus.

Most production typically comes not from primary producers, but out of integrated steel operations, with vanadium a byproduct from the steel production. In 2017, nearly three-fourths of supply came from slag, mostly from China and Russia. But with steel production under pressure because of oversupply, and output from China limited because of stricter environmental regulations, there has been a squeeze on the supply side.

"We are seeing forecasts of a 100 per cent increase in demand over the coming decade, but you look at the supply side and you can't see where that is coming from," says Prentice.

"Companies like ourselves have a fantastic opportunity to get product to market."

The tight market situation has resulted in vanadium prices more than doubling to \$US14-15 per pound within a 12-month period.

Prices are not expected to pull back dramatically in the near term.

Prentice believes Gabanintha's timing is, therefore, just right.

The company will complete a pre-feasibility study before the end of June and plans to move straight into further testing, with the definitive feasibility study expected to be completed by April 2019. It hopes to make a development decision in the second quarter of 2019 and is targeting a further 18 months for construction, with actual mining targeted for early 2021.

While the focus will remain on vanadium, it will look for some way to extract revenue from the iron and titanium present in its ore body, and says there is also the potential for gold and copper at its broader tenement holdings. Technology Metals raised \$3 million in March, issuing shares to investors at 30¢ each, to advance work at the project.

Over the longer term, however, it plans to emulate its larger lithium mining peers and enlist end-users to help develop the project.

It has already sent some samples to end-users in China, and Prentice says the company is open to various options, including direct investment at project level, equity investment at company-level, and even off-take agreements.

"The people who really need this product are going to be looking around the world and we are getting ourselves positioned to be one of the front-runners," he says.

## Leading The Charge in the Vanadium Industry

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