

# MOU to supply vanadium to Indian battery manufacturer

## HIGHLIGHTS

Memorandum of Understanding (MOU) executed with Delectrik Systems Pvt. Ltd, a fast-growing Indian Vanadium Redox Flow Battery (VRFB) manufacturer

MOU covers supply of vanadium raw material from Technology Metals' MTMP to Delectrik in India

Indian Government has launched investment of US\$4.3 billion towards the country's energy transition

MOU also contemplates supply of vLYTE electrolyte to Delectrik for use in VRFBs within Australia

Supports the development of the VRFB industry in Australia and represents another key component of Technology Metals' downstream strategy

3 April 2023

Advanced vanadium developer, Technology Metals Australia Limited (ASX: **TMT**) (**Technology Metals** or the **Company**) is pleased to announce that, together with its wholly owned subsidiary, vLYTE Pty Ltd (**vLYTE**), it has entered into a Memorandum of Understanding (**MOU**) with Delectrik Systems Pvt. Ltd (**Delectrik**).

Technology Metals is progressing the development of the Murchison Technology Metals Project (**MTMP**) in Western Australia to produce high purity vanadium pentoxide (**V<sub>2</sub>O<sub>5</sub>**) and through vLYTE is investigating downstream production of vanadium electrolyte in Australia. The Company's objective, supported by this MOU, is for the MTMP to be a stable, secure, primary producer of this critical mineral, to support the deployment of vanadium redox flow batteries (**VRFBs**) for long duration energy storage across the globe.

Delectrik is a fast-growing VRFB manufacturer based in Gurgaon, India that produces its own vanadium electrolyte, as well as designing and manufacturing VRFB systems ranging from kW to MW scale. It is commercially selling its VRFB systems in several regions in addition to India, including the USA, Australia, Western Europe and the Middle East. Delectrik recently announced it has entered into a distribution and manufacturing license with a Saudi Arabian energy systems company and will develop a MWh scale VRFB in Europe to support electric vehicle charging stations, which will be deployed in 2023.

The roll out and scale up of Delectrik's VRFB system deployment will require substantial volumes of vanadium electrolyte.

The MOU encompasses both the supply of vanadium products directly from the MTMP to Delectrik, and the supply of vanadium electrolyte by vLYTE to Delectrik within Australia using vanadium from the MTMP. Specific volumes to be supplied are to be agreed in the next phase of the agreement.

### Managing Director Ian Prentice commented:

*"This MOU supports TMT's development plan for the MTMP and the secure supply of high purity vanadium for long duration VRFBs globally. India is a rapidly emerging renewable energy powerhouse, with the Indian government recently announcing a US\$4.3 billion investment towards the country's energy transition to help reach its goal of Net Zero.<sup>1</sup> This MOU with fast-growing Indian battery manufacturer Delectrik reinforces TMT's path to becoming a preferred supplier of vanadium for these batteries."*

*The MOU contemplates supporting Delectrik's VRFB roll out within Australia, demonstrating the significant potential in Australia for VRFB use in a range of applications, from replacing diesel generation at remote mine sites to storing solar energy for EV charging stations."*

### CEO of Delectrik, Vishal Mittal, commented:

*"Delectrik believes VRFBs will have a vital role in supporting the world's transition to Net Zero and we are thrilled to be part of this journey with our recent deployments of batteries in India, USA, Europe, Middle East and Australia."*

*"Australia is a key region for Delectrik both as a market for its flow batteries and availability of Vanadium resource and as such, the company has recently established a wholly owned subsidiary, Delectrik Systems Australia Pty Ltd. The partnership with TMT is very exciting as it provides Delectrik a secure supply of high-quality vanadium as we expand our business globally."*

<sup>1</sup> AP News: India's finance minister announces new clean energy funds, 1 February 2023; <https://apnews.com/article/india-government-business-climate-and-environment-renewable-energy-00827c7a9d5149368234b5b8a17a2384>

## Memorandum of Understanding

Technology Metals and its wholly owned subsidiary, vLYTE have entered into a non-binding MOU with Delectrik. The MOU encompasses both the supply of vanadium products directly from the MTMP to Delectrik, and the supply of vanadium electrolyte by vLYTE to Delectrik within Australia using vanadium produced at the MTMP. Specific volumes to be supplied in each jurisdiction are to be agreed in the next phase of the agreement.



Figure 1: Delectrik vanadium electrolyte ready for export



Figure 2: Delectrik VRFB ready for dispatch to USA and Australia

The MOU is effective for five (5) years unless the parties mutually agree to formally terminate earlier.

This MOU complements the existing vanadium pentoxide and vanadium electrolyte relationships with, amongst others, Indian and Japanese end users. As the MTMP development progresses, the Company is focused on having a significant portion of projected production committed to high quality customers in rapidly developing vanadium markets.

Newland Global Group (NGG), a leading corporate advisory firm with a focus on leveraging Australia-India trade and investment relations, is acting as TMT's advisor in relation to investment, offtake, and technology-sharing opportunities within India. NGG has been advising companies since 2010 and are market leaders in the bilateral advisory space.

### About Technology Metals Australia

Technology Metals Australia Limited (ASX:TMT) is a future-oriented ASX-listed company focused on the development of its flagship, 100 per cent owned Murchison Technology Metals Project (MTMP), which is expected to meet global demand for high-purity vanadium, increasingly recognised as a critical mineral around the world. The MTMP is located 50km southeast of Meekatharra in the mid-west region of Western Australia and is one of the highest-grade vanadium projects in the world, with planned production at 6% of current global vanadium demand.

The MTMP has a Global Mineral Resource Estimate (MRE) of 153.7Mt at 0.8% Vanadium Pentoxide ( $V_2O_5$ ), with the Integration Study incorporating high-grade ore from the Yarrabubba satellite deposit into the central processing hub at Gabanintha. The completion of the Integration Study has facilitated the progression of the Implementation Phase of the MTMP and the move towards development, construction, and operation of the project.

TMT's vision is to be a leader in the Australian and international vanadium industry playing a crucial role in meeting a growing demand for a critical metal that helps the world to decarbonise. Together with vLYTE, TMT's wholly owned subsidiary focused on adding downstream value to high-quality feedstock, the MTMP will be a strategic, long-life asset supporting the nascent and fast-growing vanadium redox flow battery industry. TMT's ESG values extend beyond the MTMP's production – TMT's contribution to a cleaner world is envisioned to include utilisation of renewable energy generation, battery storage, heat capture and transition to electric options for mobile equipment.

### About Delectrik Systems Pvt. Ltd

Delectrik's products are based on patented stack and system design using a proven and mature VRFB chemistry. The company manufactures RFB10, RFB40 and RFB200 series of VRFBs with 10 kWh, 40 kWh and 200 kWh capacity respectively. These systems are building blocks which can be connected to build even larger systems of 100s of MWh and are designed to offer highly scalable and flexible decentralised electricity solutions for various residential, commercial, industrial and grid-scale stationary applications. Delectrik is commercially selling these products in several regions such as the USA, Australia, Western Europe, the Middle East, and India.

[www.delectrik.com](http://www.delectrik.com)

### AUTHORISED FOR RELEASE ON THE ASX BY THE COMPANY'S BOARD OF DIRECTORS

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### Forward-Looking Statements

This document includes forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Technology Metal Australia Limited's planned exploration programs, corporate activities, and any, and all, statements that are not historical facts. When used in this document, words such as "could," "plan," "estimate," "expect," "intend," "may", "potential," "should" and similar expressions are forward-looking statements. Technology Metal Australia Limited believes that it has a reasonable basis for its forward-looking statements; however, forward-looking statements involve risks and uncertainties, and no assurance can be given that actual future results will be consistent with these forward-looking statements. All figures presented in this document are unaudited and this document does not contain any forecasts of profitability or loss.

## About Vanadium

Vanadium is a hard, silvery grey, ductile and malleable speciality metal with a resistance to corrosion, good structural strength and stability against alkalis, acids and salt water. The elemental metal is rarely found in nature. The main use of vanadium is in the steel industry where it is primarily used in metal alloys such as rebar and structural steel, high-speed tools, titanium alloys and aircraft. The addition of a small amount of vanadium can increase steel strength by up to 100% and reduces weight by up to 30%. Vanadium high-carbon steel alloys contain in the order of 0.15 to 0.25% vanadium while high-speed tool steels, used in surgical instruments and speciality tools, contain in the range of 1 to 5% vanadium content. Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.

An emerging and very significant use for vanadium is the rapidly developing energy storage (battery) sector with the expanding use and increasing penetration of the vanadium redox flow batteries (VRFB's). VRFB's are a rechargeable flow battery that uses vanadium in different oxidation states to store energy, using the unique ability of vanadium to exist in solution in four different oxidation states. VRB's provide an efficient storage and re-supply solution for renewable energy – being able to time-shift large amounts of previously generated energy for later use – ideally suited to micro-grid to large scale energy storage solutions (grid stabilisation).

Some of the unique advantages of VRFB's are:

- a lifespan of 20 years with very high cycle life (up to 20,000 cycles) and no capacity loss,
- rapid recharge and discharge,
- easily scalable into large MW applications,
- excellent long-term charge retention,
- improved safety (non-flammable) compared to Li-ion batteries, and
- can discharge to 100% with no damage.

Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.