

10 October 2016

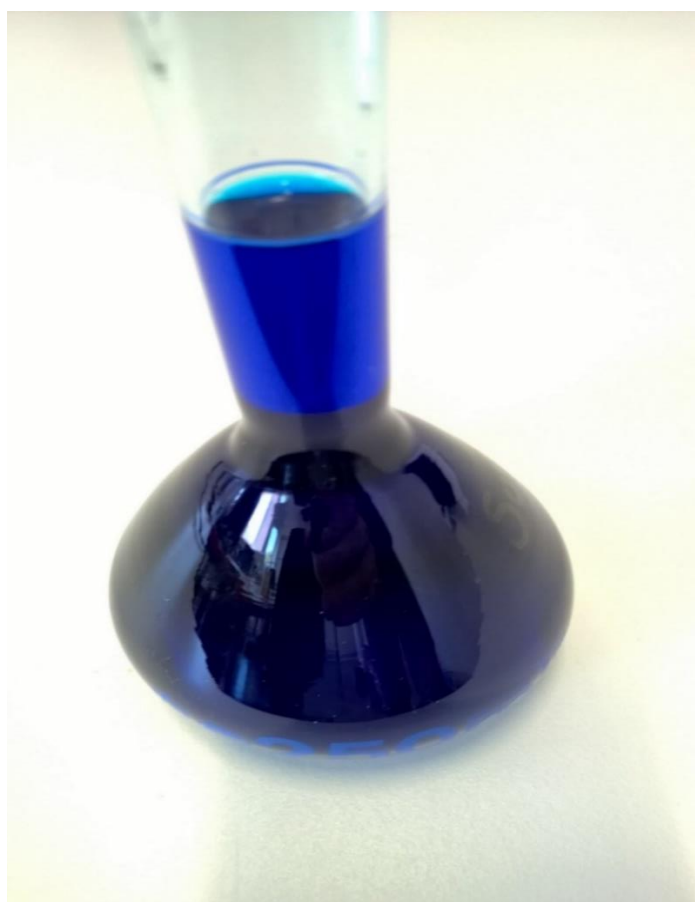
## SUCCESSFUL PRODUCTION OF COMMERCIAL-GRADE VANADIUM ELECTROLYTE FROM MOUNT PEAKE TAKES TNG UP THE VALUE CHAIN INTO THE GLOBAL BATTERY SECTOR

*Production of vanadium electrolyte – used in Vanadium Redox Batteries (VRB's) – from Mount Peake vanadium pentoxide adds a significant new dimension to TNG's future business plan*

Australian strategic metals company TNG Limited (ASX: TNG) is pleased to announce that it has successfully produced high-purity vanadium electrolyte for the first time using vanadium pentoxide from its flagship 100%-owned **Mount Peake Vanadium-Titanium-Iron Project** in the Northern Territory, demonstrating the viability of the processing chain from the mine to the final product and adding a significant new dimension to its growth plans.

The electrolyte was produced as part of the company's continuing strategy to maximise value from the Mount Peake project and was carried out under TNG's instruction at the SMS group (SMS) laboratories in Vienna, where the final engineering design of the Company's 100%-owned TIVAN™ technology is being undertaken.

The vanadium electrolyte (VE) is produced by dissolving and mixing vanadium pentoxide ( $V_2O_5$ ). Vanadium Redox Batteries (VRB's) require a high-purity VE, which therefore benefits from starting with a high purity  $V_2O_5$  product. TNG's testwork and optimisation work indicates it will be able to produce  **$V_2O_5$  at minimum 99.5% purity**, which is currently among the highest globally.



### **High-purity Vanadium Electrolyte produced from TNG Mount Peake $V_2O_5$**

The technology process to produce the high purity VE was carried out at SMS' Vienna laboratories under a confidentiality agreement and instruction from TNG, using  $V_2O_5$  product from TNG's vanadium deposit, delivered during the Pilot Plant trials.

SMS ranks the applied chemical processing method used as best-in-class, not only in terms of CAPEX and OPEX but also in terms of scalability and operational flexibility, demonstrating that the commercial production of this high-value material is a viable option for the TNG.

TNG considers the ability to produce commercial grade vanadium electrolyte from its own vanadium pentoxide as a very positive development, allowing full vertical integration of its production pipeline as well as the ability to enter the fast-growing Vanadium Redox Battery (VRB) alternative energy sector. When combined with its existing capability to produce Ferro-Vanadium from the technology provided by its off-taker partner WOJIN, TNG is now well placed to supply every vanadium market.

TNG estimates the current global market size for Vanadium Redox Batteries to be an annually sold storage capacity of 300 to 400MWh, with the market growing at a high double digits' number every year. The largest single VRB installations rank at capacities of approximately 60MWh. The storage of 1MWh requires approximately 80 cubic meters of electrolyte, which contains the equivalent of approximately 15 tonnes of  $V_2O_5$ .

TNG is in discussions with a number of potential Vanadium Redox Battery producers and will update the market on the progress of these discussions and the potential development of a VE plant in the near future.

TNG and SMS will now evaluate the feasibility of the construction of an VE production facility integrated with the TIVAN™ plant. This would allow TNG entry into the local growing Australian and nearby SE-Asian VRB sector as a regional electrolyte supplier.

### **Management Comment**

TNG's Managing Director, Mr Paul Burton, said the successful production of a high-value vanadium electrolyte was a significant breakthrough for TNG and the Mount Peake Project development consortium.

"This gives us an exciting edge as an emerging vanadium producer, demonstrating that we can effectively span the entire value chain from mine to final product and supply every sector of the global vanadium market," Mr Burton said.

"This is a strategically important development which will allow us to potentially become a direct supplier into the emerging Vanadium Redox Battery market globally," he added. "The exponential growth of this market is expected to be driven by the rapid growth of off-grid alternative energy solutions and the transformation of the battery market globally thanks to improving technologies and falling costs as renewable energy becomes an economically viable proposition for the mass market.

"We are delighted to have achieved this important step which will allow us to maximise the use of the vanadium resource at Mount Peake, and marks another significant milestone in our successful partnership with the SMS group," he continued.

"We look forward to the next steps with SMS as we work towards completing the financing and development of Mount Peake and explore options for a future value-add downstream addition to the project via the production of vanadium electrolyte."

Paul E Burton  
Managing Director

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**Inquiries:**

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

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