



QEM
ASX : QEM

NOVEMBER 2023

Newsletter | Project Update

Julia Creek Vanadium Project

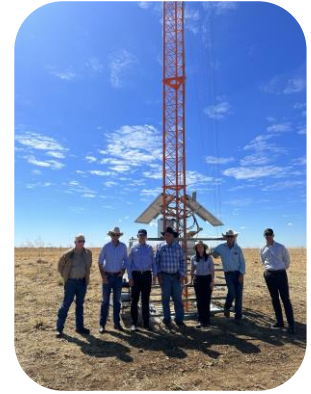


IN THIS ISSUE:

- i. Julia Creek Project Update
- ii. Environmental Update
- iii. Renewable Project Update
- iv. Community Update

QEM welcomes the opportunity to provide an update on the Julia Creek Project. QEM Limited (QEM) is an ASX-listed company developing the Project, located in one of the world's richest critical minerals regions, on Wunumara Aboriginal Lands, six km south-east of Julia Creek in the McKinlay Shire, North West Queensland.

The Project holds a globally significant vanadium resource and significant hydrocarbon resources which will utilise sustainable energy solutions for its production needs and to provide excess energy to the grid via the Copperstring network.



Images on QEM's tenement: (L-R) QEM Project Coord. Lian D'Netto at 2023 Drilling Campaign, Local mayors and Qld gov representatives with Lian D'Netto

The QEM team has had a busy year, and it's not over yet!

- o Scoping study being developed by RPM Global
- o Encouraging bench scale pilot plant results
- o High yielding vanadium extraction methods
- o 2023 exploration program complete - awaiting update to JORC
- o Renewable power project attracts global developer interest
- o Board changes - appointments of Tim Wall as Chair and Tony Pearson as Non-executive Director
- o Circular economy project

Julia Creek Scoping Study

RPM Global commenced a Scoping Study for QEM on 31 March 2023 which is due for completion shortly. QEM completed a mining scoping study back in 2016 that focused on vanadium production only, and with a smaller footprint. The current study includes the addition of transport fuel products and will produce a mining model for both commodities, provide the initial mining schedule, update the project economics and define the scope and flowsheet options for a Pre-Feasibility Study which QEM intends to commence in 2024.

Julia Creek Renewables Project

In July 2022, QEM commissioned a 163-metre meteorological mast for the Julia Creek Renewables Project to compliment the Fulcrum 3D SoDAR and Solar Monitoring Station installed that May. Additional studies have been conducted over the past year to de-risk the proposed 1GW hybrid wind/solar farm. Environmental assessments, topographic surveys, preliminary flood modelling and geotechnical studies were completed at potential wind turbine locations. In July 2023, QEM assessed a number of non-binding offers and shortlisted three global developers, owners, and operators for one of Queensland's largest proposed renewable energy projects:

- o ACCIONA Energía;
- o Enel Green Power; and
- o Origin Energy and Energy Estate (joint venture).

At the time of writing, QEM remains in active discussion with the shortlisted parties.

2023 Drilling Campaign

QEM began planning for the 2023 drilling campaign in March 2023 to include 12 drilling locations for resource exploration and definition, geotechnical studies, water monitoring boreholes and waste characterisation. Conduct and Compensation Agreements (CCAs) were issued and executed by our landholders in May and the drilling program ran from 10 July to 3 August 2023. The updated JORC Report is expected this December. We would like to thank our landholders for their ongoing support.



Images: QEM 2023 drilling campaign and core samples

Environmental Update



Following ecology and flood studies conducted in late 2022, ground and surface water quality monitoring has continued on a monthly basis. Eleven monitoring events have been conducted so far this year and will continue into 2024. The monitoring program will characterise environmental baseline conditions and inform the engineering design for tailings storage facilities.



Images: 2023 Water Monitoring Campaign

Vanadium Extraction from Industrial Waste



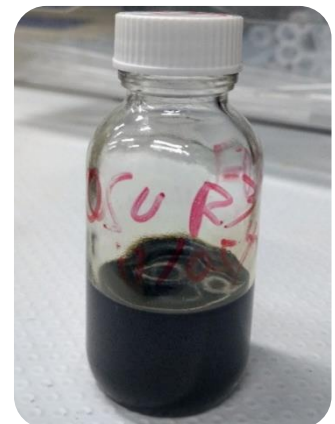
QEM put agreements in place with Sun Metals Corporation and Incitec Pivot Limited on 7 March and 27 June 2023 respectively, for the off-take of all vanadium-bearing spent catalyst from Sun Metals operations in Townsville and Incitec's Mount Isa operations for five years with an option to extend. These collaborations represent Circular Economy opportunities where Queensland industrial waste can be upcycled to battery grade vanadium pentoxide (V2O5). Spent catalyst recycling is an environmentally beneficial solution, without which valuable metals like vanadium may be lost or sent to landfill.

Image taken at Sun Metals offices, Townsville: (L-R) DK Choi - Operations Director Sun Metals, Joanne Bergamin - Communications Director and Gavin Loyden - Managing Director, QEM Limited

Pilot Plant



After the successful commissioning of QEM's bench-scale pilot plant housed in HRL Laboratories facility in Victoria in 2022, QEM conducted a number of successful oil extraction trials over the last year, which demonstrated the effectiveness of the novel technology at a larger scale than was previously achieved in the laboratory. Vanadium is then extracted from the remaining solid material, once oil is removed in a secondary process.



Images: QEM's bench scale pilot plant in HRL Laboratories Victoria; Julia Creek Oil Shale; Sample of raw oil produced from Julia Creek shale, using QEM extraction techniques.

Investment in our community is a high priority for QEM.

In 2022, QEM invested in a permanent presence in the town of Julia Creek, just 6km from our flagship vanadium project. QEM leased the property which was formerly the Suncorp Bank, for office space and employee accommodation. Early in 2023, local tradespeople renovated the premises, ready for the official opening on 17 April 2023 by Mayor of McKinlay Shire Council Philip Curr, during the MITEZ Vanadium Forum in Julia Creek. We are particularly grateful to everyone in Julia Creek who lent a hand to ensure the office was ready in time.



Image: Official opening of QEM's Julia Creek Office, 17 April 2023

Over the past year, QEM contributed to the region with several work packages being assigned to local contractors in Julia Creek and the North West Minerals Province, for work including steel fabrication, plant hire, civil site works, building renovations, as well as preparation for QEM's 2023 drilling campaign.

QEM also seeks to support the greater communities in which we operate, with a particular focus on youth and women's development, education and sport. QEM proudly supports the Julia Creek Saints as well as the Town vs Country Women's Netball, Juniors and Seniors' Rugby League.



In 2023, QEM has been pleased to support:

- o Julia Creek Dirt N Dust Festival
- o Saxby Roundup
- o Isolated Children's Parents' Association Queensland Inc. Conference
- o Sedan Dip
- o The Big Weekend
- o Beach Races

The company's Managing Director Gavin Loyden, who is based on the Gold Coast, raised \$5,300 for the homeless when he slept out on 22 June for the Vinnies CEO Sleepout. Also on the Gold Coast, QEM sponsored a table at the "Investing in Women in Resources" event, organised by QEM's Joanne Bergamin, Founder of Women in Mining and Resources (WIMARQ) Gold Coast. QEM also fully supports Ms Bergamin in her volunteering for St Vincent de Paul Society and participating regularly in resources industry STEM days at local girls' school, St Hilda's (images below).

