

ASX ANNOUNCEMENT



16 June 2021

QEM Progressing oil & vanadium Pilot Plant

- **Specifications and design of bench-scale pilot plant completed**
- **Bench-scale pilot plant remains on target to be operational during 1H FY22**
- **Another milestone reached in developing Australian Critical Mineral**

QEM Limited (ASX: QEM) (“**QEM**” or “**Company**”) is pleased to announce it has finalised the specifications and design of a bench-scale pilot plant for the Julia Creek vanadium and oil shale project.

As announced to the market on 24 May 2021, QEM engaged E2C Advisory Pty Ltd to undertake the design and selection of the bench-scale pilot plant to facilitate more advanced test work on a larger scale.

A purchase order has been signed with specialist manufacturer AMAR Equipment who is now drafting the final technical drawings for the plant, to be provided before 30 June 2021.

The Company anticipates it will sign a construction agreement early next month, upon approval of the final specifications, with work on the bench-scale pilot plant to promptly follow.

QEM remains on target to commence operational activity at the bench-scale pilot plant during 1H FY22.

The pilot plant will facilitate larger scale testing and generate the bulk product material required to optimise the vanadium recovery from the resource at the Julia Creek vanadium and oil shale project. Vanadium was designated a Critical Mineral by the Australian Government in 2019 and is not yet produced in Australia.

The Company is also progressing the study of green hydrogen production onsite at Julia Creek with DNV Australia to further enhance the potential value that can be derived from the project (see ASX announcement 8 April 2021). Green hydrogen is a key part of QEM’s ethical and responsible vanadium and oil processing and carbon emission reduction strategy. QEM will look to produce green hydrogen by harnessing the abundant local solar and wind resources available at Julia Creek, both for the energy needs of its own project and potentially others in the North West Minerals Province.

QEM is also pleased to note that the Queensland government intends to invest \$2 billion into the Queensland Renewable Energy and Hydrogen Jobs Fund¹. One of the aims of the fund is to drive future development in Queensland’s North West Minerals Province (where Julia Creek is located), with a key objective being Vanadium production in Queensland. QEM will carefully review eligibility criteria for this funding.

QEM Managing Director Gavin Loyden said the latest milestone marked another key step in the Company unlocking the significant value potential at Julia Creek.

“QEM is the only project in Queensland that is seeking to produce both vanadium pentoxide and hydrogen. Advancing the bench-scale pilot plant, in tandem with the continued green hydrogen studies, illustrates that we are pragmatically developing both the green hydrogen component, and the vanadium and oil shale component of the Julia Creek project.”

¹ <https://statements.qld.gov.au/statements/92322>

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This announcement was authorised for release on the ASX by the Board of QEM Limited.

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*The information in this announcement that relates to the mineral resource and contingent resource estimates for the Company's Julia Creek Project was first reported by the Company in its IPO prospectus dated 20 August 2018 and supplementary prospectus dated 12 September 2018 (together, the "Prospectus") and the subsequent resource upgrade announcement ("Resource Upgrade") dated 14 October 2019. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Prospectus and Resource Upgrade, and in the case of estimates of Mineral Resources and Contingent Resources, that all material assumptions and technical parameters underpinning the estimates in the Prospectus and Resource Upgrade continue to apply and have not materially changed.

ABOUT AMAR

Amar has 45 years of experience in design, manufacture & supply of high-pressure high-temperature batch and continuous reactors & allied systems. For the past four decades, Amar has supplied over 5000 systems and cemented a place for itself as one of the leading manufacturers of pressure reactors, pressure vessels, pilot plants and flow reactors catering to all major industries worldwide. Amar Equipment is an ISO 9001 – 2015 [certified company](#) with customers that include many multinational corporations such as SHELL, BAYER and GE and Australian clients including ANSTO, CSIRO and a number of Australian universities.

ABOUT QEM

QEM Limited (ASX:QEM) is a publicly listed company which is focussed on the exploration and development of its flagship Julia Creek Project, covering 250km² in the Julia Creek area of North Western Queensland.

The Julia Creek vanadium / oil shale project is a unique world class resource with the potential to deliver innovative energy solutions, through the production of energy fuels, hydrogen and vanadium pentoxide. QEM strives to become a leading producer of liquid fuels and in response to a global vanadium deficit, also aims to become a global supplier of high-quality vanadium pentoxide, to both the nascent energy storage sector and the Australian steel industry.

This globally significant JORC (2012) Mineral Resource of 2,760 Mt @ 0.30% V₂O₅ is one of the single largest ASX listed vanadium resources and represents a significant opportunity for development.

The tenements form part of the vast Toolebuc Formation, which is recognised as one of the largest deposits of vanadium and oil shale in the world and located less than 16km east of the township of Julia Creek. In close proximity to all required services, the project is intersected by the main infrastructure corridor of the Flinders Highway and Great Northern Railway, connecting Mt Isa to Townsville.