



QEM



# FACTSHEET

## Julia Creek Vanadium Project

EPIC Environmental (Epic) is working with QEM Limited (QEM) on the approvals process for the Julia Creek Vanadium Project (the Project). The purpose of this Factsheet is to provide information on the Project, and to respond to questions raised by stakeholders.

### WHO IS QEM?

QEM Limited is a publicly-listed company (ASX:QEM) focused on the exploration and development of its flagship project in Julia Creek, Queensland. QEM is the only company in the world currently in a position to develop a vanadium and oil combination project, which will progress under the leadership of a management team that has extensive experience in the resources sector.

### WHAT IS INVOLVED IN THE PROPOSED JULIA CREEK PROJECT?

QEM Limited (QEM) is planning the development of the Julia Creek Vanadium Project in northwest Queensland, which involves the establishment of a mine, processing facilities, and infrastructure to produce vanadium pentoxide and transport fuels from oil shale deposits. Spanning approximately 250km<sup>2</sup>, the Project envisages incorporating the following industrial activities:

- Mining of oil shale
- Oil separation and distillation
- Vanadium recovery
- Mineral by-products
- Renewable power from solar and wind
- Green hydrogen production
- Water supply and storage
- Waste management

### WHAT IS THE SCOPE OF THE PROJECT?

QEM's Julia Creek Vanadium Project holds one of the single largest vanadium deposits in the world with 2,760 megatonnes (Mt) of vanadium, and the added benefit of 783 million barrels of oil contained within the same ore body.

The Project aims to capitalise on these deposits by establishing an operating mine, processing facilities, and supporting infrastructure with production potential up to 10,000 tonnes per annum (tpa) of vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>). The transport fuel produced (from oil shale) is estimated to be in the range 640 to 1280 kilo litres (kl) per day, depending on the process technology selected. Where practical, energy requirements will be provided from renewable sources.

The main components of the Project are illustrated below:

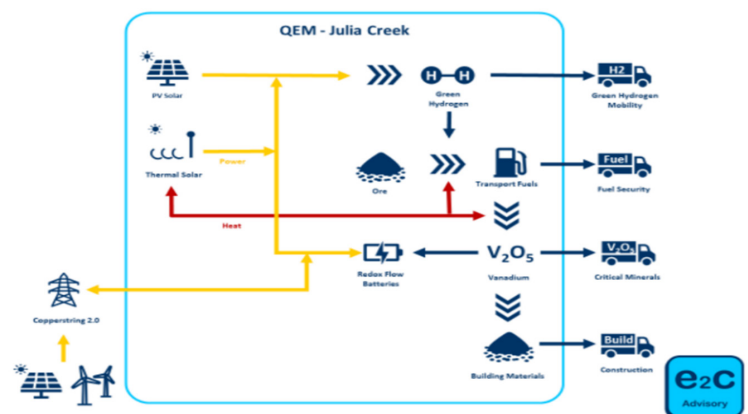


Figure 1: Project activities (QEM 2021)

## WHERE IS IT LOCATED?

The Project is located approximately 6 km to the east of Julia Creek township, on the southern side of the Flinders Highway. The Project area spans up to 30 km from east to west, and 12 km from Flinders Highway to the southern border of the Project.

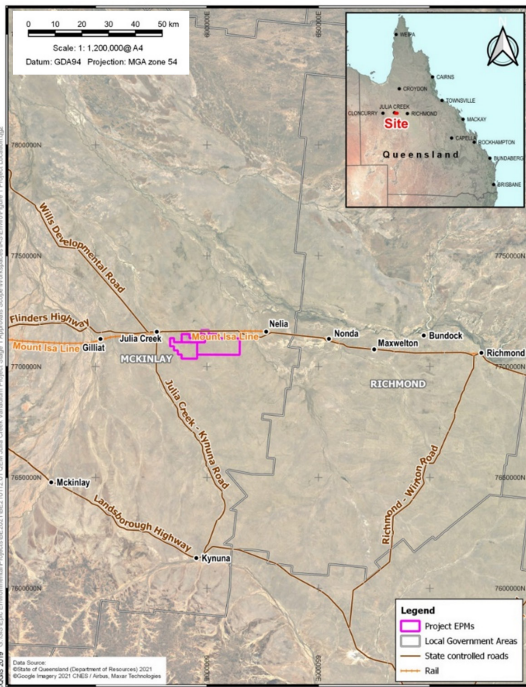


Figure 2: Project location (Epic Environmental 2021)

## WILL I BE ABLE TO SEE THE SITE FROM THE ROAD?

The site will be adjacent to the Flinders Highway so it is expected that parts of the Project would be visible from the road. However, visual amenity impacts and management options will be assessed as part of the EIS process.

## WILL THERE BE JOBS FOR LOCALS AND HOW DO I GET ONE?

The Project will require a localised workforce during the construction phase, with an ongoing workforce required for the operational life of the Project. QEM is prioritising the employment of a local workforce and businesses to meet Project needs, with a goal to sustainably develop the local community through employment and spending. Information about how to become involved will be made readily available to the local community as the Project moves closer towards construction and operational phases.

## WHAT ARE THE PROJECT TIMEFRAMES?

Construction and operation of various Project components are to be staged as follows:

- Renewables and hydrogen facilities
  - Solar / wind studies – July 2021
  - Design energy and hydrogen plant – October 2021
  - Construction and commissioning – April 2023
- Demonstration plant
  - Design, testwork, and construction – October 2022
  - Commissioning and operation – April 2025
- Vanadium and oil processing facilities
  - Design of processing facilities – July 2024
  - Construction – July 2025
  - Commission and first product – January 2028
- Mining
  - Mine planning and scheduling – January 2023
  - Pit development – July 2026
  - Stockpile shale feed – July 2027

## WHAT ARE THE KEY STEPS IN THE PROJECT PROCESS, INCLUDING APPROVALS?

The key steps are:

- Preparation of an Initial Advice Statement, major project application, and coordinated project determination
- Publication of Environmental Impact Statement (EIS) (including the Social Impact Assessment)
- Public notification of the EIS, consultation, and opportunity to comment
- QEM to respond to submissions on the EIS
- Coordinator General's assessment report on the EIS
- Pit construction expected to commence in mid-2026
- Mining operations expected to commence from mid-2026

## WILL THERE BE A FLY-IN FLY-OUT WORKFORCE USED?

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While QEM will target local employment, additional workers or specialists may be required, particularly during construction. Any required Fly-in Fly-out (FIFO) and Drive-in Drive-out (DIDO) workers will likely utilise either the Julia Creek, Cloncurry or the Mount Isa Airports before transiting via road to the site. Accommodation options for these workers is currently under investigation, and may include developing accommodation villages or housing offsite, taking into account responsible safe post-work travel distances.

## WILL THERE BE AIR EMISSIONS FROM THE PROCESSING PLANT?

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Processing methods and potential emissions will be examined as a part of the processing demonstration plant operation which will be developed in mid-2022. Additional studies will also be undertaken for the EIS to assess potential air quality (including odour) impacts, and to develop mitigation strategies. These mitigation strategies are of particular importance to QEM given the innovative methods proposed and the proximity of the Project to Julia Creek town.

## WILL THE MINE HAVE AN IMPACT ON GROUND WATER?

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Preliminary estimates indicate that the depth of resource is between 50 metres to 80 meters below ground level (mbgl). It is currently understood that an artesian aquifer occurs approximately 240 mbgl. While this is well below the target resource, it is possible for groundwater to occur within the oil shale. Further studies will be undertaken as part of the EIS, and any impacts that may occur due to the Project activities will be identified.

## WILL I BE ABLE TO INVEST IN QEM?

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QEM is a publicly listed company on the Australian Stock Exchange (ASX). For more information on QEM Limited please see our Investor Centre.

<https://www.qldem.com.au/investor-centre/>

## WILL THERE BE A LOT OF DUST & NOISE?

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Operations and earthworks associated with mining can generate significant levels of dust (especially during dry weather) and noise. However, impacts will be minimised by adhering to best-practice construction principles and appropriate management of activities. For instance, noise management options may require blasting to be excluded from Project activities, or limiting mining operations to certain times of the day. Dust impacts may be mitigated by staging earthworks so areas are only exposed to elevated dust levels for a short amount of time.

Mitigation options and best-case approaches will be further investigated during the noise, vibration, dust, and air quality studies that are required for the EIS process.

## WHERE WILL PEOPLE LIVE & WHAT IMPACT WILL THAT HAVE ON JULIA CREEK'S INFRASTRUCTURE?

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QEM will continue working with the McKinlay Shire Council and relevant government departments to forecast the availability of existing and planned infrastructure in Julia Creek for the Project's workforce. This will include necessary housing, water, sewerage, hospital, educational and social services available for use by the Project's workforce.

The Project is expected to require the use of local and state roads to access the site. This would mean that increased volumes of traffic will be generated from the Project, and the impacts of this will be assessed during the EIS.

## FURTHER INFORMATION

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If you would like to register as an interested stakeholder please:

- Send your contact details to [info@qldem.com.au](mailto:info@qldem.com.au)
- Call us on +61 7 5646 9553

For more information on this project see <https://www.qldem.com.au/project/>