

ASX ANNOUNCEMENT



9 July 2021

Green Hydrogen Strategy advances as first stage of PFS indicates Wind Power viable at Julia Creek

- **DNV Australia completes first stage of pre-feasibility study, indicating suitability of wind farms to power Green Hydrogen production on site**
- **DNV currently investigating solar farm potential as the second stage of the PFS**
- **Siecap's Hydrogen Market Report highlights global demand for Green Hydrogen to increase by 750% by 2050**

QEM Limited (ASX: QEM) ("**QEM**" or "**Company**") is pleased to provide the following update on the development of its Julia Creek vanadium and oil shale project in North Queensland and assessment of green hydrogen opportunities on site at the project.

QEM Managing Director Gavin Loyden said he was delighted to see the key aspects of the Company's clean energy strategy advancing.

"The results of the wind farm stage of the study brings QEM another step closer to becoming a pioneering Queensland producer of green hydrogen," Mr Loyden said.

"As an Affiliate of H2Q, the Queensland Hydrogen Industry Group, we are excited to contribute to the initial development of the Queensland hydrogen industry, particularly in the green hydrogen space."

"The hydrogen market report independently produced by Siecap further reinforces that our path towards green hydrogen, commencing with investment in on-site renewable energy generation, is the optimal one to deliver long-term value for QEM."

"This is further supported by QEM's potential to become a supplier of green energy into the proposed \$1.5 Billion Copperstring 2.0 high voltage transmission line development, adjacent to our Julia Creek Project."

Green Hydrogen Power Generation PFS

QEM confirms that DNV Australia ("DNV") has successfully completed the first stage of a pre-feasibility study ("PFS") into power generation from solar and wind resources, as part of the Company's broader assessment into the production potential of green hydrogen on site at QEM's Julia Creek project.

The PFS, which was announced to market on 8 April 2021, encompassed solar and wind resource mapping, a preliminary solar photovoltaic (solar PV) system design, as well as a preliminary wind turbine layout.

The first stage focused on the wind farm aspects, with DNV modelling a detailed wind resource map, incorporating the Julia Creek project specifications and relevant constraint parameters. Based on this wind resource map, DNV has developed a preliminary wind farm layout with a rated capacity of 126 megawatts, consisting of 21 wind turbine generators.

QEM Limited

Level 11, 216 St Georges Terrace
Perth WA 6000 Australia

John Foley [Chairman](#)

Gavin Loyden [Managing Director](#)

Daniel Harris [Non-Executive Director](#)

David Fitch [Non-Executive Director](#)

www.qldem.com.au
info@qldem.com.au
+61(0) 8 9481 0389

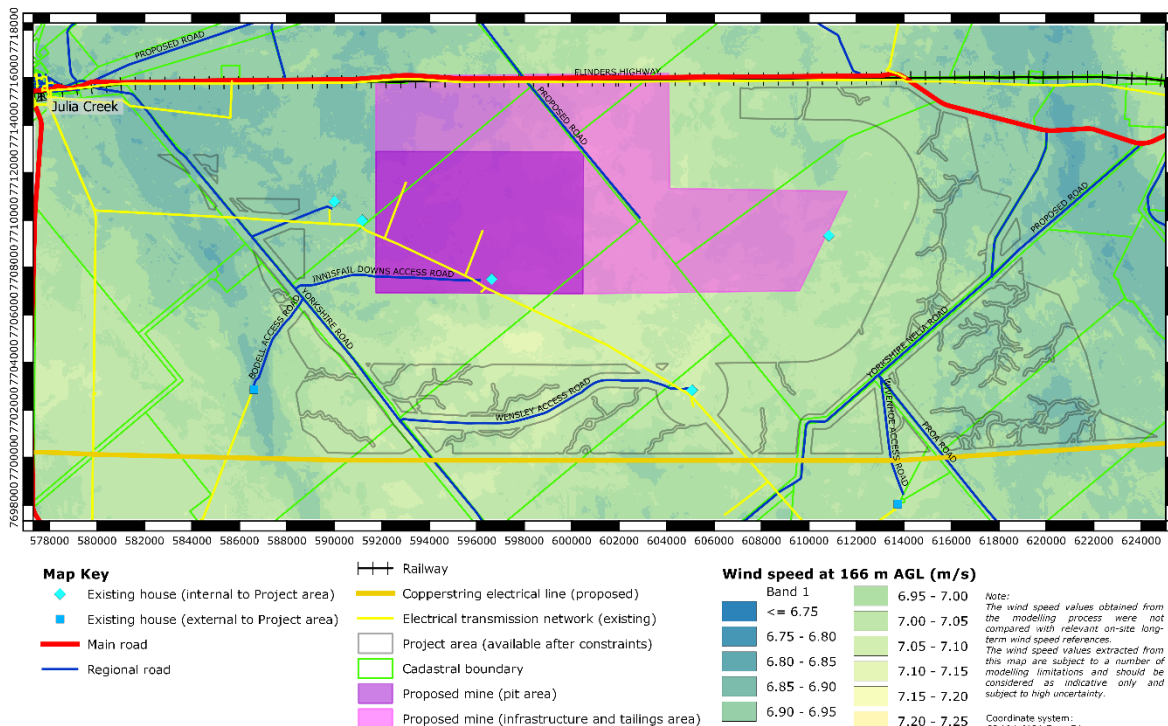
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DNV has also identified an area supporting a complementary solar farm. It is currently finalising the second stage of the PFS, which is investigating the solar resources, with anticipated completion by the end of the month.

DNV has recommended further wind studies, including monitoring on-site wind speeds, to provide enhanced confirmation of this indication. This first stage provides a positive indication of the viability to develop a wind farm in conjunction with other renewable energy sources to power green hydrogen production on site.

Map showing available areas for Wind Turbine Generators and Solar Farm Area



Source: DNV Australia

Market Rationale

As part of QEM’s Project Execution Strategy (PES) Agreement with Sicep (refer to ASX Announcement 20 April 2021), Sicep has provided compelling market data for QEM to progress its green hydrogen production strategy. In its key conclusions, Sicep states that “Green Hydrogen is regarded as one of the most promising renewable energy sources, with global demand predicted to increase by 750% by 2050 creating a \$12 trillion USD Industry.” Further, with 70% of global demand predicted to come from Asia, “demand is predicted to create an Australian hydrogen export market worth \$2.6 billion by 2030.”

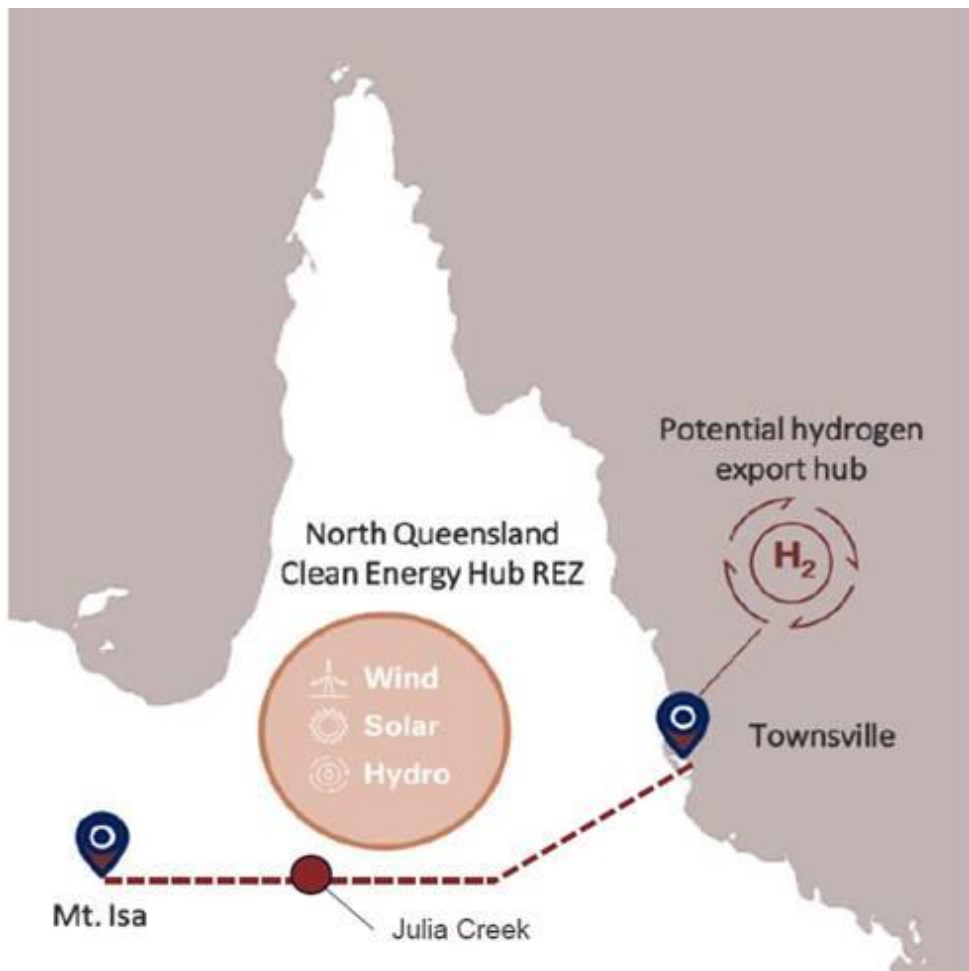
The Julia Creek Project is located in a highly advantageous location and has the potential to form part of a world class renewable projects and green hydrogen hub. Key location advantages:

- ✓ Within the Northwest Minerals Province (NWMP), an area designated for significant support by the Queensland government, and the only location with AEMO rated wind and solar resources in Australia.

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- ✓ Copperstring 2.0 is a \$1.5 billion, 1,000km high voltage transmission project, servicing Townsville and the NWMP and will run within 10km of the Julia Creek Project, allowing for access to the electricity grid.
- ✓ The Flinders River is within 25km and will be investigated as a potential water source for use in hydrogen production.
- ✓ Located along the Flinders Highway, the main road linking Townsville and Mt Isa. Mt Isa is approx. 235km to the west.
- ✓ With over 70% of the world's hydrogen demand estimated to come from Asia, the NWMP is well positioned to become a hydrogen export hub.



QEM's Julia Creek Project is located approximately 5.5km south-east of the township of Julia Creek and 235km east of Mount Isa, along the Flinders Highway. The above map shows the project location adjacent to the proposed Copperstring 2.0 electrical line.

ENDS

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

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For further information, please contact:

Gavin Loyden
Managing Director
P: +61 7 5646 9553
E: gavin@qldem.com.au

Shane Murphy
Investor Relations
P: +61 420 945 291
E: shane.murphy@fticonsulting.com

*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 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 and vanadium pentoxide. QEM strives to become a leading producer of transport fuels, including hydrogen 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.

QEM also seeks to construct a hybrid renewable energy project at Julia Creek capable of feeding power to the grid via the CopperString 2.0 network and to supply power for an on-site Green Hydrogen electrolyser to support the hydrogen requirements of the project and additionally, to meet local market demand and to create a hydrogen hub for the North West Minerals Province.

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 5.5km east of the township of Julia Creek. In close proximity to all major infrastructure and services, the project is intersected by the main infrastructure corridor of the Flinders Highway and Great Northern Railway, connecting Mt Isa to Townsville.

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