QEM Limited (ASX:QEM)

World-class vanadium and transport fuel

QEM is seeking to develop the Julia Creek Vanadium and Energy Project (JCVEP) in Queensland. JCVEP is located near the town of Julia Creek within the Northwest Minerals Province. QEM is seeking to produce two commodities - high purity vanadium pentoxide (primarily for battery electrolyte) and transport fuel - via two distinct process routes.

One of the largest vanadium deposits, with a large oil resource too

JCVEP has a Resource of 2,867Mt with an average V2O5 content of 0.31%. Of this 461Mt is Indicated and 2,406Mt is inferred. It also has a contingent in-situ oil resource of 6.3MMbbls of oil equivalent in the 1C category, 49MMbbls in the 2C category, and 654MMbbls in the 3C category, all within the same orebody. The latest Scoping Study for the project anticipates an average annual production of 10,571 tonnes of vanadium pentoxide, and 313M litres of fuel, with an NPV of A$1,106m, a 16.3% IRR and a Payback period of 5 years.

Governments recognise that JCVEP will be an important project

Both end products have significant demand. For vanadium, we see particular potential in the battery and steel markets, while the demand for oil is unquestioned. The Scoping Study predicted that total revenue for vanadium and oil could be over A$10bn *each*, under the specific prices the study assumed. With vanadium a critical mineral, and (arguably) the world's most versatile, JCVEP has significant government support, particularly from the Queensland state government. The December 2024 declaration of JCVEP as a 'Coordinated Project' particularly excited investors.

Potential upside for QEM to $0.30 per share

Although QEM is at least 5 years away from production, we think there is considerable upside. We have modelled JCVEP and ascribe a valuation of $761.8m in our base case. Once QEM has completed the Pre-Feasibility Study, it could trade at 7.4% of the project's NPV of that study - this would be $0.30 per share using our NPV figure, but it would be $0.43 per share using the original $1,106m NPV from 2024's Scoping Study. There could also be upside if QEM's ambitions to add an electrolyte production plant to the Project's scope are realised. Please see p.19 for more details on our valuation rationale (including the differences in our modelling of JCVEP) and p.22 for the key risks to our thesis.

Share Price: A$0.062

ASX: Resources

Sector:

4 March 2025

Market cap. (A$ m)	11.8
# shares outstanding (m)	190.8
# shares fully diluted (m)	224.6
Market cap ful. dil. (A$ m)	13.9
Free float	100%
52-week high/low (A$)	0.182/0.032
Avg. 12M daily volume ('1000)	9894
Website	qldem.com.au

Source: Company, Pitt Street Research

Share price (A$) and avg. daily volume (k, r.h.s.)

Source: Refinitiv Eikon, Pitt Street Research

Valuation metrics	
Valuation methodology	NPV
Our valuation of JCVEP (A$m)	$761.8
Our valuation of QEM (per share)	0.30
Discount rate	8%

Source: Pitt Street Research

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Table of Contents

Nine key reasons to look at QEM

1) **We believe QEM is undervalued** at its current market value, which is barely over 1% of its project's NPV. If it were trading at its neighbouring peer Richmond Vanadium Technology (ASX:RVT), which has completed its PFS, it would be trading at 7.4% of the $1,106m NPV - which would be $82m and represent a share price of A$0.43 under the current number of shares on issue. We have done our own modelling of JCVEP and valued the project at A$761.8m. 7% of this would amount to $0.30 per share, still a significant upside from the current share price.
2) **QEM's JCVEP is one of the single largest Vanadium deposits in the world** with a 2,867Mt vanadium Resource with average content of 0.31%. With vanadium such a critical commodity and rarely found as a primary mineral, this deposit has significant potential for the creation of shareholder value. Moreover, it also has potential to establish Australia as a vanadium exploration and development destination (with so many reserves still untapped) and establish a Western supply chain for vanadium.
3) **JCVEP also hosts a contingent in-situ oil resource.** It has 6.3MMbls of oil in the 1C category, 94MMbbls in the 2C category, and 654MMbbLs in the 3C category. QEM plans to commercialise this resource as a liquid fuel (such as low sulphur diesel) and contribute to Australia's liquid fuel security, while reducing typical transportation costs.
4) **The project promises significant financial returns.** The latest Scoping Study, complete in August 2024, predicted a post-tax NPV of $1,106m, an IRR of 16.3% and a payback period of 5 years. A Life of Mine of 30 years is anticipated with average annual production of 10,571 tonnes of vanadium pentoxide, and 313M litres of fuel.
5) **JCVEP's offtake products have significant potential to serve several industries** including steel, battery electrolytes and liquid fuels. Vanadium's most common use is in steel and alloys, which currently accounts for nearly 90% of vanadium demand, taking advantage of its anti-corrosive and strengthening properties. However, vanadium is also used in large scale, long duration flow batteries (BESS) as electrolytes and it is anticipated that demand will grow to account for 25% of total vanadium demand by 2040[1]. Batteries with vanadium as electrolytes are far more environmentally friendly and more powerful than ordinary lithium batteries.
6) **There is substantial exploration upside at JCVEP**, as various other prospects have been identified but not yet fully evaluated. These could increase the life of the project and create shareholder value in the near-term. Indeed, the Scoping Study recommended further exploration to upgrade resource confidence levels[2] and has observed that there is potential to develop significant quantities of ore in satellite pits in the project area, particularly on the eastern side of the lease[3].
7) **JCVEP has significant government support**. It has been declared a Coordinated Project by the Queensland government and a Controlled action by the Commonwealth Department of Climate Change, Energy, Environment and Water (DCCEEW). The Coordinated Project Status is a major milestone recognizing JCVEP's complexity, strategic value and potential positive social and economic impact. The Declaration also

[1] CRU Group Data. https://api.investi.com.au/api/announcements/tmt/2f3c55f1-c89.pdf
[2] P.27 of August 2024 Scoping Study
[3] P.7 of August 2024 Scoping Study

establishes the environmental approvals processes, including an Environmental Impact Statement (EIS), which could be assessed and decided through the Joint Queensland and Commonwealth Government Bilateral Agreement. Moreover, once it enters in production, certain tax incentives from the Federal Government, could help its cause, particularly the 10% Production Credit announced in the 2024-25 Federal Budget.

8) **JCVEP has a solid ESG angle**. This is not just because of the emissions reductions that vanadium could achieve and the fact that the project will be powered by renewable energy, but initiatives QEM is undertaking including local community investments, baseline environmental studies and the offsetting of unavoidable emissions through verified carbon credits. The company monitors and discloses its ESG progress and initiatives via Socialsuite's ESG Go platform.

9) **QEM has a quality leadership team.** It has an experienced team with decades of experience in senior management in listed companies generally, as well as in the mining and energy sectors, not to mention vanadium specifically.

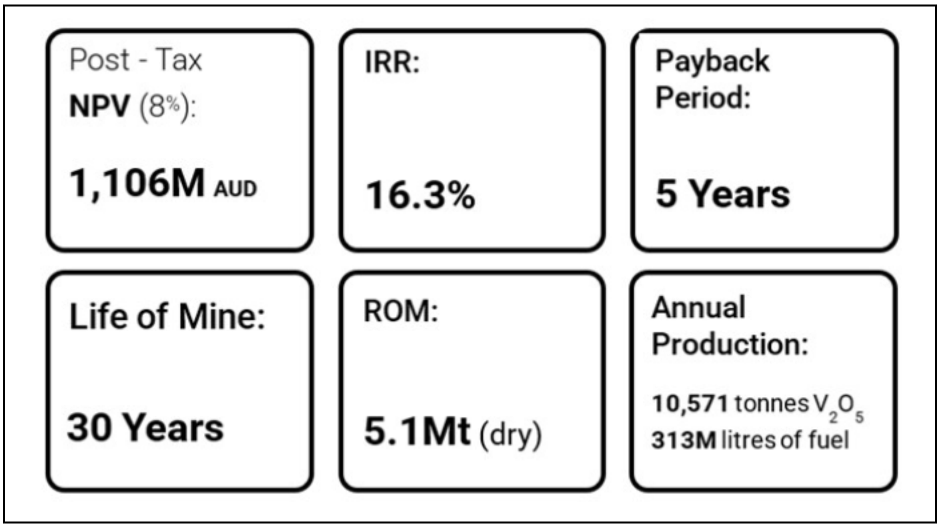
An overview of QEM (ASX:QEM) and JCVEP

QEM's JCVEP is located near Julia Creek in Queensland.

QEM's JCVEP is located near the town of Julia Creek, around 130 km east of Cloncurry in northwest Queensland. QEM seeks to produce two commodities - high purity vanadium pentoxide (primarily for battery electrolyte) and transport fuel - via two distinct process routes, from the same ore body. QEM first picked up the project in 2014 and went public in October 2018.

JCVEP, which is 250km2 in size, covers one of the single largest vanadium deposits in the world today, as well as a significant oil shale deposit. The company anticipates annual production of 10,571 tonnes of vanadium and 313M litres of fuel, and there are several potential applications including batteries, steel and liquid fuels. As we will explore in the body of this report, the August 2024 Scoping Study depicted potential for a project with compelling financial returns (Figure 1).

Figure 1: Overview of JCVEP's key outcomes



Source: Scoping Study into JCVEP, Company

JCVEP covers a large vanadium resource with oil shale potential, contained within the same ore body.

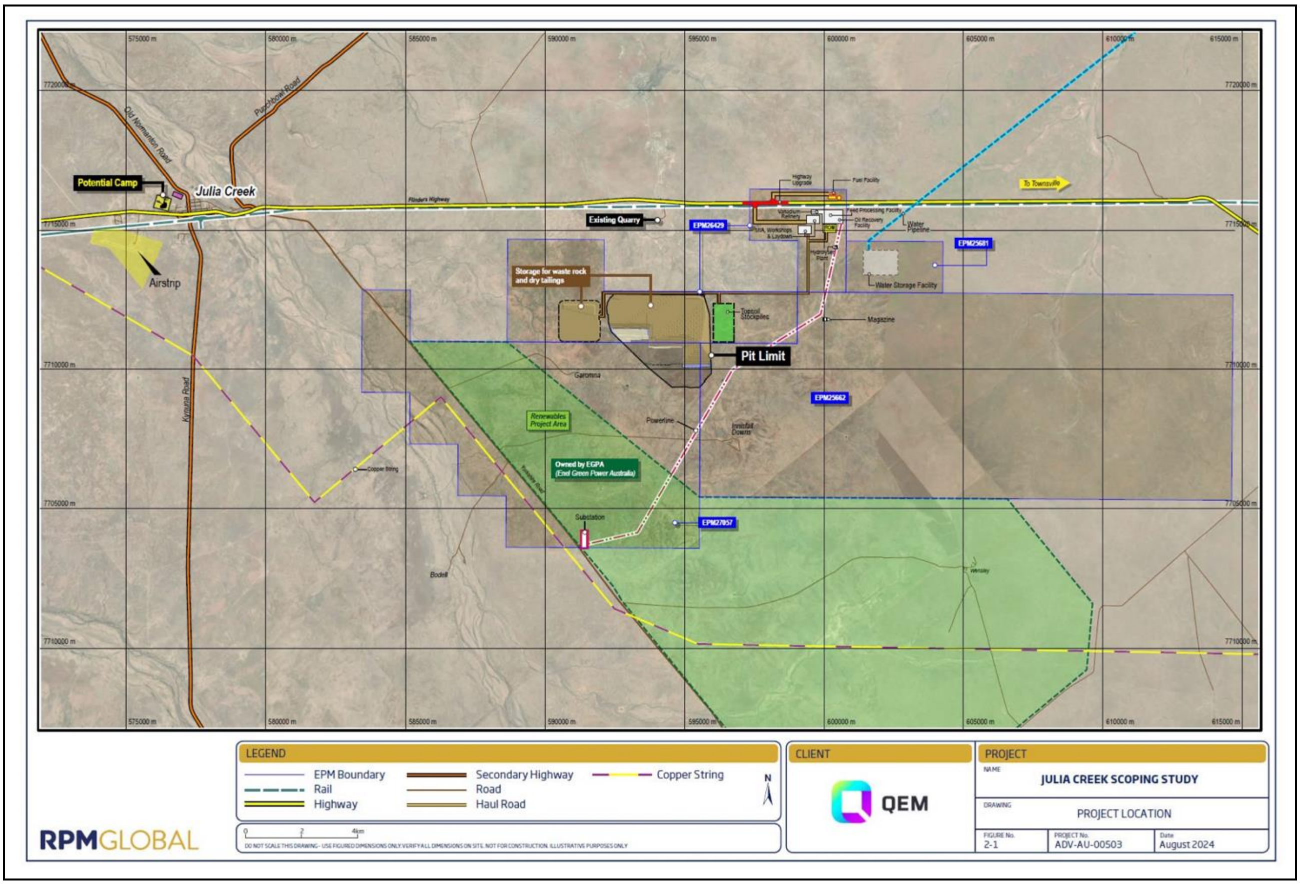
JCVEP covers a large vanadium resource with oil shale potential, contained within the same ore body. The deposit has a long history, having been first identified in the early 1970s, and originally developed as an oil shale project. It has subsequently been proposed whenever oil prices are high. QEM pegged its ground around 2014 and began by looking at the project as a potential vanadium mine. By the time of the IPO in 2018, the decision was made to develop both commodities to respond to the increasing vanadium demand for flow batteries and the substantial growth in transport fuels such as diesel and aviation fuel, improving the baseline economics.

The project lies close to all major and necessary infrastructure. It is intersected by the Flinders Highway, the road which runs from Mt Isa to Townsville, and the Great Northern Railway, the 1067 mm gauge line which connects Mt Isa with the Port of Townsville (Figure 2). The easement for CopperString 2032, an 840 km high-voltage transmission line that will connect Mt Isa to the National Energy Grid for the first time when it is commissioned around 2030, is just 3 km to the south of QEM's tenement. The CopperString line to JCVEP is Stage 2 of the roll out and expected to reach there in 2029 (Figure 3).

Figure 2: Location of JCVEP

Source: Company

Figure 3: JCVEP's General Arrangement



Source: Company

QEM's work with the JCVEP

Initial exploration was completed in 2015 with a large JORC inferred resource target identified. Positive metallurgy showed the project was potentially viable using known processes for vanadium extraction. The first Scoping Study was completed in 2016, for vanadium only. The company listed in 2018, by which time it had grown its JORC Resource by 35% for 1,700 million tonnes with high-grade target zones at up to 0.74% vanadium. A further upgrade came in 2019 to 2,760Mt with an average grade of 0.3% - a 62% upgrade. In that year, the company received positive results from preliminary testing for oil extraction, and the company undertook a testing program in 2020 for vanadium and oil extraction optimisation. In 2024, the company derived the most recent update of its JORC Resource and released a Scoping Study.

JCVEP's JORC Resource and Economics

The current JORC 2012 resource is 2,867 million tonnes at 0.31% V205 (vanadium pentoxide) along with a maiden 1C oil shale resource of 6.3 million barrels.

The current JORC 2012 resource, which last updated in March 2024, is 2,867 million tonnes at 0.31% V205, that is, vanadium pentoxide[4] (461 million tonnes indicated, 2,406 million tonnes inferred) along with a maiden SPE-PRMS[5] 1C oil shale resource of 6.3 million barrels (Figure 4). The 2C oil shale resource was 94 million barrels and the 3C estimate was 654 million barrels (Figure 5). The vanadium and the oil shale lie within the early Cretaceous Toolebuc Formation, a sedimentary unit increasingly recognised for elevated vanadium potential, with the vanadium and oil shale hosted by, and co-located within, this Formation.

Figure 4: Mineral Resource Estimate for JCVEP

Resource Class	Strata Unit	Mass (Mt)	Average Thickness (m)	In situ Density (gm/cc)	V2O5 (wt %)
Indicated	CQLA	167	3.17	2.4	0.24
	CQLB	128	2.58	2.28	0.30
	OSU	81	1.92	1.95	0.31
	OSL	84	2.02	1.95	0.32
	Sum	**461**		**2.20**	**0.28**
Inferred	CQLA	697	2.46	2.42	0.23
	CQLB	826	3.13	2.23	0.39
	OSU	432	1.84	1.97	0.31
	OSL	451	1.95	1.95	0.29
	Total	**2,406**		**2.18**	**0.31**
	TOTAL	**2,870**		**2.19**	**0.31**

Source: JCVEP Scoping Study, August 2024, p.5

[4] Another term for describing 'vanadium oxide'. It is a powder that is the most common source of vanadium.
[5] SPE-PRMS stands for Society of Petroleum Engineers - Petroleum Resources Management System. This is a standardised framework for managing petroleum resources, including classification, definitions, and guidelines for evaluating and reporting oil and gas reserves and resources.

Figure 5: Oil Resource Estimate for JCVEP

Resource Class	Strata Unit	Mass (Mt)	Average Thickness (m)	Total Moisture (wt%)	Oil Yield (L/t)	Oil Yield (LTOM)	MMbbls (in situ PIIP)	MMbbls Recoverable
3C Contingent	CQLB	903	2.5	6.8	53.1	55	254	228
	OSU	621	1.8	6.8	75.9	79	248	223
	OSL	609	1.9	6.8	70.7	76.7	224	202
2C Contingent	CQLB	107	2.1	2.8	50.9	52.3	33	29
	OSU	76	1.9	13.3	78.7	81.4	36	32
	OSL	81	2	11.8	74.8	76.7	36	33
1C Contingent	CQLB	7	1.9	2.8	49.0	49.6	1.9	1.8
	OSU	5	1.9	13.3	77.2	78.7	2.5	2.2
	OSL	6	2.1	11.6	74.6	76.2	2.6	2.3

Source: JCVEP Scoping Study, August 2024, p.5

The Study placed a Net Present Value on the project of A$1.1bn post tax at an 8% discount rate, after A$791m in capital costs. The IRR is 16.3% and the payback period five years.

The most recent Scoping Study, completed in August 2024, envisaged an operation around 10,600 tonnes of V2O5 and 313 million litres of transport fuel (such as low sulphur diesel) p.a. for 30 years. The Study placed a Net Present Value on the project of A$1.1bn post tax at an 8% discount rate, after A$791m in capital costs. The IRR is 16.3% and the payback period five years. Significantly, the mineralisation in this Study is sourced from one open pit, with potential for a further 100 years of resource available within the current tenement boundary. The study used a V2O5 price of US$11.56 per pound and a diesel sell price of A$1.20 per litre (excluding excise and GST). It is QEM's intention to pursue further downstream opportunities by becoming a producer of the electrolyte for the VFB systems, which attracts a greater premium and could further enhance project economics (Figure 6, Figure 7 and Figure 8).

Figure 6: Results of the August 2024 Scoping Study (operations)

Metric	Unit	Result
ROM Ore Production Rate	Mt (dry)	5.1
ROM Ore Production Rate	Mt (wet)	5.3
Annual production (vanadium)	Tonnes	10,571
Annual production (fuel)[6]	M Litres	313
Average transport fuel sold[7]	Bbl/day	5,500
Opex (vanadium)	$US/lb	5.80
Opex (fuel)	$AU/L	0.59
Pre-production capex	$A	$1,096m

[6] 7% of this will be provided free-issue to the mining contractor to undertake the mining work
[7] Exclusive of the '7%' noted above

Sustaining capex	$A	$591m
Total capex (LOM)	$A	$1,694m
Plant feed quantities	dmt	148.4M
Strip ratio		5:1

Source: JCVEP Scoping Study, August 2024,

Figure 7: Results of the August 2024 Scoping Study (returns)

Metric	Unit	Result
Post-Tax NPV (8% discount rate)	AUD	$1,106m
Payback Period	Years	5
IRR	%	16.3
ROM	Mt (dry)	5.1
Projected revenue LOM (vanadium)	$A	$11.5b
Projected revenue LOM (fuel)	$A	$10.1b

Source: JCVEP Scoping Study, August 2024

Figure 8: Results of the August 2024 Scoping Study (assumptions)

Metric	Unit	Result
Sensitivity	% (+/-)	15
Discount rate to cash flows	%	8
Vanadium pentoxide selling price	A$/L	1.20
Transport fuel selling price	$US/lb	11.56
Mine Life	Years	30

Source: JCVEP Scoping Study, August 2024,

How JCVEP will operate

Overview of the flowsheet

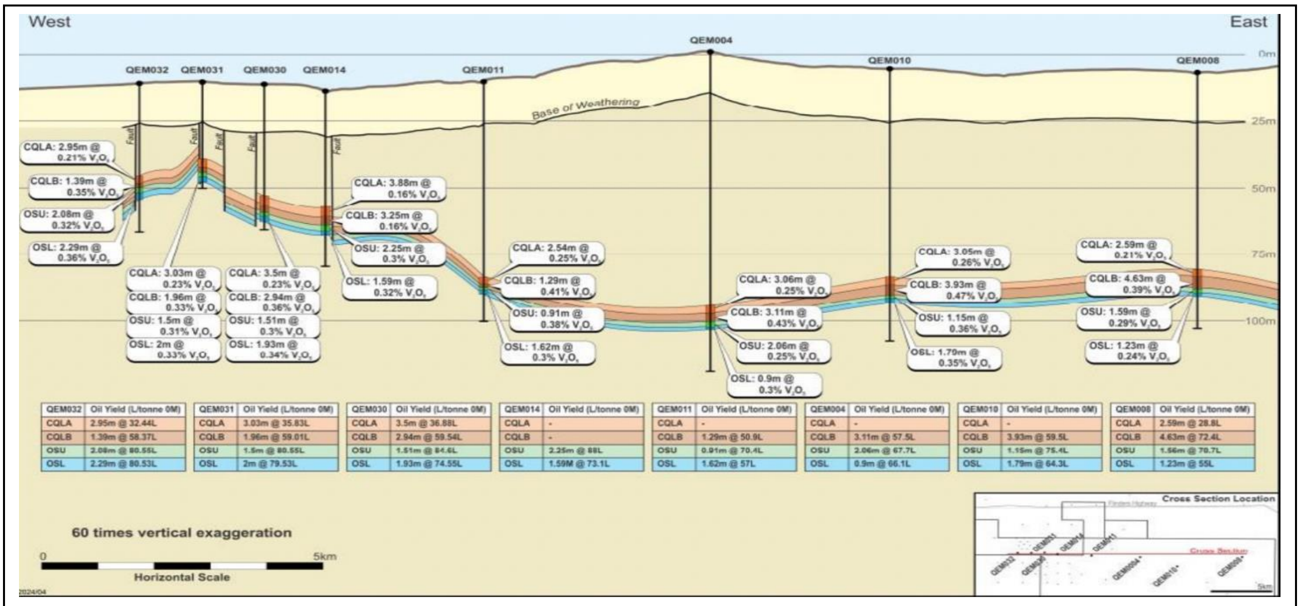
The flow sheet involves three steps. The first involves clays and kerogen rich feed being produced via beneficiation, and the other 2 steps involve vanadium and oil being produced respectively.

The flow sheet (outlined in Appendix II) is straightforward, with three stages. The first (beneficiation) involves ore being mined, then separated from limestone and further beneficiated via traditional methods such as screening, grinding, floatation. The beneficiation stage of the flowsheet produces two feeds: vanadium-bearing clays and kerogen rich feed. From there the kerogen concentrate goes to an oil recovery facility and the vanadium bearing clays go to a vanadium refining facility.

To produce vanadium pentoxide, a calcite reverse flotation is used to obtain a V2O5-rich clay from which pure vanadium can be produced via sulphuric acid leach. For oil, froth flotation will be used for kerogen recovery from vanadium ore, after which raw oil taken from the kerogen is hydrogenated and then hydrotreated to produce transport fuel. The hydrogenation and hydrotreating steps use hydrogen donor solvent produced from green hydrogen. A hydrolyser plant, powered by an adjacent solar and wind farm, will be on-site for this purpose.

JCVEP is potentially easy to mine as an open cut pit with a maximum depth of 65 metres. The resource is very close to surface (see Figure 9), so QEM intends to pursue development of a standard open cut mining method. Preliminary extraction studies have shown up to 3 times vanadium content increase through simple beneficiation. Detailed studies are currently underway in the UK and Australia to further optimise feed beneficiation and extraction of both vanadium and hydrocarbons.

Figure 9: JCVEP's resource is close to the surface



Source: Company

Test work has shown extraction efficiencies reaching over 92% recovery of vanadium pentoxide post-oil extraction.

Extraction of the vanadium and oil shale is feasible. In July 2020 QEM reported that it had been able to achieve significant oil extraction rates of up to 181 kg per tonne by the addition of a particular solvent[8]. A month later favourable test work results related to vanadium were reported, where extraction efficiencies reached over 92% recovery of V2O5, post oil extraction

The JCVEP has reached the pilot stage, with a bench-scale plant having been commissioned in May 2022 to allow extraction technologies to be evaluated at larger scale. The pilot plant is located at the Melbourne headquarters of HRL Technology Group. In August 2022 QEM was able to report vanadium extraction efficiencies of 71.5% on shale ash leached by acid for four hours, while high oil yields in the order of 180% of a Modified Fischer Assay were made possible with the use of an innovative hydrogen donor solvent. Even better numbers came in in September 2022, December 2022 and February 2023, where vanadium extraction efficiencies reached 92%.

QEM may also produce vanadium from waste streams. In February 2024 QEM announced that, in collaboration with the Sustainable Minerals Institute at the University of Queensland, it had been able to produce high purity (i.e. >99.9%) V205 from an industrial waste stream. This followed earlier announcements regarding the sourcing of spent catalysts, which are waste

[8] See applicable ASX announcements on applicable dates, particularly 21 July 2020, 11 August 2020, 27 September 2022, 6 December 2022 and 28 February 2023.

streams from Incitec Pivot's Mount Isa Sulphuric Acid Plant (June 2023), and from Sun Metals's acid plant at its Townsville Zinc Refinery (March 2023). By April 2024 the recoveries were 99.93%. This is the level of purity is required to produce VRB electrolyte.

Infrastructure for the JCVEP

The JCVEP will be powered entirely by renewables, with solar and wind power to be used for the processing facilities and to generate green hydrogen.

The JCVEP will be powered entirely by renewables, with solar and wind power, backed up by BESS to be used for the processing facilities and to generate green hydrogen, which, in turn, will be used in the hydrotreating of the raw oil to produce a final product. It is anticipated that 97GWh per annum will be needed, with the feed preparation facility accounting for the greatest share of this.

In 2021, QEM began the design of a 1 GW renewables project and in 2022 engaged GHD Ltd to conduct a Pre-Feasibility Study, which indicated the viability for a large-scale renewables project, including long duration energy storage (LDES). In July 2023, the company announced that it had a shortlist of non-binding, indicative bids for a project to be located adjacent to QEM's main project area at Julia Creek. QEM announced in January 2024 that the winning bidder for this project was Enel Green Power (Australia) Pty Ltd (now known as Potentia Energy), a joint venture comprised of Enel Green Power (BIT: ENEL) the Italian renewable energy giant and INPEX (TSE: 1605), the Japanese oil and gas conglomerate. This transaction was completed in March 2024 and QEM will hold the option to sign a Power Purchase Agreement for at least ten years with competitive terms. It is important to note that these ambitions are contingent on successful and on-schedule completion of the State-owned CopperString 2032 transmission line, which started early construction in July 2024. It will run directly south of QEM's tenement.

A new intersection on the Flinders Highway will need to be constructed for the mine. It will include turn-out lanes, acceleration and deceleration lanes, and waiting lanes. A site access road will provide access from the highway to the mine site and processing facility. There is also a nearby rail line and a new siding is assumed to be built be external organisations.

QEM will also build administration and mine support areas close to operations. Processing areas will contain the oil recovery facility, vanadium refining facility, feed preparation facility, incoming feed conveyors, and loading and unloading areas.

Water necessary for the project will be harvested from the Flinders River of up to 5,000ML annually, supported by an offsite water storage dam equivalent to 2 years water demand. The net water demand after recycling is anticipated to be 2,120ML/pa.

QEM will need ~588 staff for the project once Julia Creek has entered production consisting of 309 mining, 106 processing, 133 infrastructure and 40 administrative personnel. The company has allowed for 214 beds in the permanent workers camp for external workers, but an allowance for 400 additional rooms has been made, notwithstanding an assumption that 35% of staff will live locally and not require company provided-accomodation.

Why JCVEP will be important

When in production JCVEP can become a major supplier of vanadium and liquid fuel which are important commodities for Australia but are not particularly abundant. Australia has few deposits of vanadium and is mostly reliant on imports for liquid fuel. If QEM's vision for JCVEP can be realised, it can become an important supplier of one of the most important (and versatile) critical minerals on Earth. JCVEP can also play its part in resolving the persistent problem of fuel security that Australia has faced. In this section, we will address both vanadium and liquid fuel in turn.

Vanadium is a critical and versatile metal

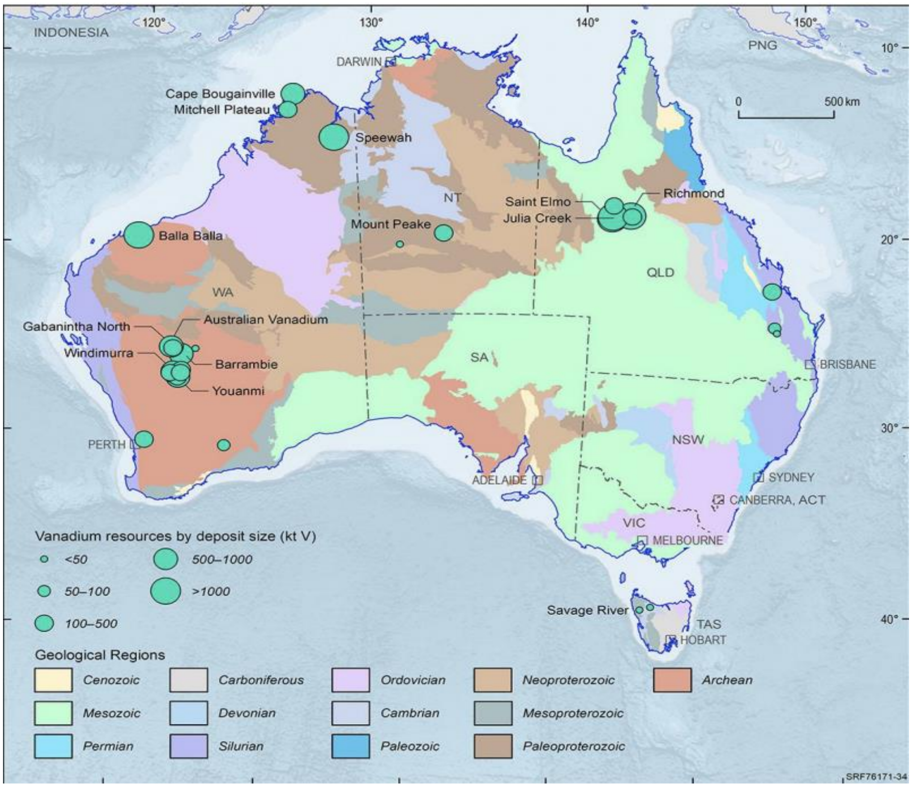
Vanadium is a Critical Mineral, and arguably the world's most versatile.

Vanadium is classed as a Critical Mineral and is a valuable commodity – arguably the world's most versatile. It is named after the Norse goddess of beauty, Vanadis, because it produces beautifully coloured compounds. Once upon a time vanadium, atomic number 23, was just one part of 'ferrovanadium', an additive in steel manufacture. It is still rarely found in isolation but can be found in over 60 minerals as a trace element in a wide variety of rock and mineral types including magnetite, bauxite, sandstone coal and even oil shale as is the case with Julia Creek.

Vanadium has unique physical and chemical properties that make it unique, including a high melting point of 1910 degrees, excellent weatherability, and malleability. Hence, adding just a little bit of vanadium into steel gives it significant shock- and corrosion-resistant properties that otherwise would be 'weaker'. There is a general Rule of thumb that 0.2 kgs of vanadium doubles the strength of 1 tonne of steel.

For all these reasons, vanadium is recognised as a critical mineral by many governments around the world, including Australia, the US, Japan and the EU. As noted above, the Queensland State government designated the entire Julia Creek/Richmond area as a Critical Minerals Zone because of the amount of vanadium in the ground – there are seven known projects there at various stages of development, but none are operating mines (yet) (Figure 10). Geoscience Australia estimates 8,100kt of Economic Demonstrated Resources (EDR) and 2,948kt of Vanadium Ore Reserves.

Figure 10: Australia's vanadium deposits



Source: Geoscience Australia

70% of the world's vanadium supply comes from China and Russia. The balance comes from South Africa, Brazil, United States, India and Vietnam. If Australia can realise the potential of its vanadium resources, it could play a significant part in the development of a new Western-centred supply chain for vanadium. Frankly, it is staggering that a country with 31% of undeveloped global reserves (as Australia does) could have *no* domestic production whatsoever.

Vanadium demand and end markets

In 2025, it is estimated that vanadium global production will be $2.36bn, and the IMF believes demand will surge 8-fold over the following 25 years.

In 2025, it is estimated that vanadium global production will be $2.36bn, and the IMF believes demand will surge 8-fold over the following 25 years, due to the acceleration of the energy transition. In 2022, 118,500 MTV (Metric Tonne Unit of Vanadium) was produced. The most important markets are as follows.

- **Steel alloys.** Vanadium is generally not consumed as a pure product but, in around 90% of cases according to Vanitec, as part of a steel alloy where the vanadium is added to provide strength. Such alloys are used in countless industrial applications including construction, automotive, aerospace, rail, shipping, tools and drill bits.
- Vanadium can also be used in **batteries** – particularly Vanadium Redox Flow Batteries (VFBs). Redox is short for 'reduction/oxidation'. A redox flow battery involves liquid electrolyte solutions flowing through a series of electrochemical cells during charge and discharge. Reduction and oxidation are simply the chemical reactions that charge or discharge the

electrons that give us electricity. Currently only 4% of vanadium demand comes from VFBs, but this is expected to increase as power grids replace fossil fuel power plants. It is estimated that that proportion will increase to 25% by 2040. Vanitec estimates there are ~300 large scale VFB projects worldwide under construction or operational. Project developers in Australia include Yadlamalka Energy, Cellcube and North Harbour Clean Energy. The WA government has promised to build a 50MW, 10 hour project around the mining town of Kalgoorlie.

- Vanadium can also be of good use in **chemicals**. Chemical applications can include catalysts, dyes, phosphors, ceramic pigments, in producing superconducting magnets as well as sulfuric acid production.
- Beyond the use in batteries, vanadium can also be used as a material for **automotive manufacturing**. This can give vehicles improved sag resistance, and reduced weight, adding to the energy efficiency of the vehicle. Henry Ford was the first to use vanadium commercially in the Model T.
- **Smart glass windows**. These prevent thermal radiation from escaping, and thus prevent heat loss during the winter, and avoiding infrared radiation from the sun from entering the building.

Batteries with vanadium in the electrolytes are more powerful

A battery with vanadium in the electrolytes produces 78% less CO2, and 99% of it can be recycled.

VFBs store energy in a non-flammable, liquid electrolyte and do not degrade with repeated use. Make a battery with vanadium in the electrolytes (substances that allow electrical current to pass between the cathode and anode of the battery), and the battery produces 78% less CO2 cradle to grave than a typical lithium battery and 99% of a VFB can be recycled (Figure 11). Moreover, it can be discharged and recharged more than 100,000 times without any loss of performance, which beats lithium hands down. Unlike lithium, that same battery can scale up to whatever size is wanted simply by adding bigger tanks of electrolyte. It can then release the power whatever pace you need, unlike conventional batteries, where greater storage generally means greater power.

VFBs are described as Long Duration Energy Storage systems (LDES) making them perfectly suited for use in the grid, such as for load levelling and time shifting as well as off grid applications. Certain renewable sources such as wind and solar can be intermittent – abundant at certain times, lacking at others – and batteries can play a part in storing the energy for use at optimal times of the day. In Queensland alone an estimated 24 GWh's of long duration energy storge solutions will be required to support the renewable energy roll out currently underway. Approximately 10,000 tonnes of high purity V2O5 is required for each 1 GWh of storage.

Figure 11: Vanadium vs Lithium

Source: Company

With 91% of Australia's fuel imported, there is a need for more domestic sources.

Liquid Fuel

It goes without saying that liquid fuel is important, particularly for transport that makes up around three-quarters of demand. What some may not realise is that Australia relies *almost entirely* on imports to meet domestic demand for fuel. With the closing of at least five Australian refineries closing over the last decade (leaving just Ampol's Lytton refinery and Viva's Geelong refinery), 91% of fuel is imported. This has happened at the same time fuel consumption has grown across Australia. This is particularly true Queensland which has seen a growth in demand, with 180% growth over the last decade[9].

Moreover, most of the fuel imported is crude and condensate, and needs to be refined. Australia does have access to the US Strategic Petroleum Reserve in the event of an emergency, but it would take 3 weeks for oil held in those reserves to get to Australia. Some may claim the rise of electric passenger vehicles could reduce the need for fuel, but this still leaves the needs for diesel and aviation fuel unaddressed (any 'green alternatives' here are realistically multiple decades away).

If QEM can realise the potential of Julia Creek, it can address the demand and contribute towards Australia's fuel security. One curious part of the project is that 7% of transport fuel being produced by QEM will be free-issued to mining contractors to undertake the work. We think this shows that QEM could reduce its reliance on outside sources of fuel, that would otherwise be brought from the East Coast, and still sell the remaining 93% of its fuel production within the region.

[9] Data from Australian Petroleum Statistics and from a 2022 report from the Australia Institute 'Addressing Australia's Liquid Fuel Security'.

Government support for JCVEP

JCVEP has significant political support, particularly from the Queensland State Government.

For all the reasons above, JCVEP has significant political support, particularly from the Queensland State Government. It has designated the entire Julia Creek/Richmond area as a Critical Minerals Zone. Such areas, mostly in north-west Queensland, are designated where critical minerals projects are co-located in a regional area in collaboration with the community, First Nations peoples and industry.

Other actions the Queensland state government has taken to support Julia Creek and the vanadium industry include:

- Providing $570m in funding for clean energy jobs in battery technologies and manufacturing, as part of Queensland's Battery Energy Industry Strategy,
- Establishing a $100m Critical Minerals and Battery Technology Fund to support new projects,
- Designating JCVEP as a 'Coordinated Project' under the State Development and Public Works Organisation Act 1971. This action, by the Office of the Coordinator General (OCG), not only recognises the project's significance, but also establishes the environmental approvals processes, including an Environmental Impact Statement (EIS), which could be assessed and decided through the Joint Queensland and Commonwealth Government Bilateral Agreement.
- $70m in funding for the Queensland Resources Common User Facility QRCUF) in Townsville. This facility is being constructed for use by vanadium proponents to test flow sheets at demonstration scale.
- The potential award of the Collaborative Development Grant to further optimise the vanadium extraction flowsheet as well as develop the design philosophy of QEM's electrolyte plant.

Federal Government initiatives that could help the project include a series of 2024-25 Budget inclusions such as:

- A 10% production tax credit totalling $7bn over a decade for all 31 critical minerals to drive critical minerals processing in Australia,
- $10.2m for pre-feasibility studies to develop critical mineral common-user processing facilities to enhance Australia's capacity to process critical minerals, sovereign capability and economic resilience,
- $5.8m for a critical minerals trade enhancement initiative,
- $1m for a pilot education program to strengthen the capabilities of Australia's critical minerals sector to detect, prevent and mitigate foreign interference.

The project will create 600 jobs during construction period of 2 years and 588 permanent jobs during operational phase. This is assuming as well that there is no further exploration that may increase the resource and potentially extend the project's life. But this is a step that the Scoping Study has recommended, noting there is potential for further ore at satellite pits, particularly at the north and east of the main pit[10].

[10] Pages 7 and 27 of August 2024 Scoping Study.

JCVEP has a solid ESG angle

QEM has great potential appeal for ESG-minded investors. Vanadium is less emissions intensive than other sources of energy, and QEM's processes and production will be powered via renewable energy. There are also other ESG initiatives, including:

- Local community investments such as sponsoring Julia Creek's Dirt N Dust Festival, local races and campdrafts.
- Ongoing environmental baseline surveys and assessments.
- The offsetting of unavoidable emissions through verified carbon credits.

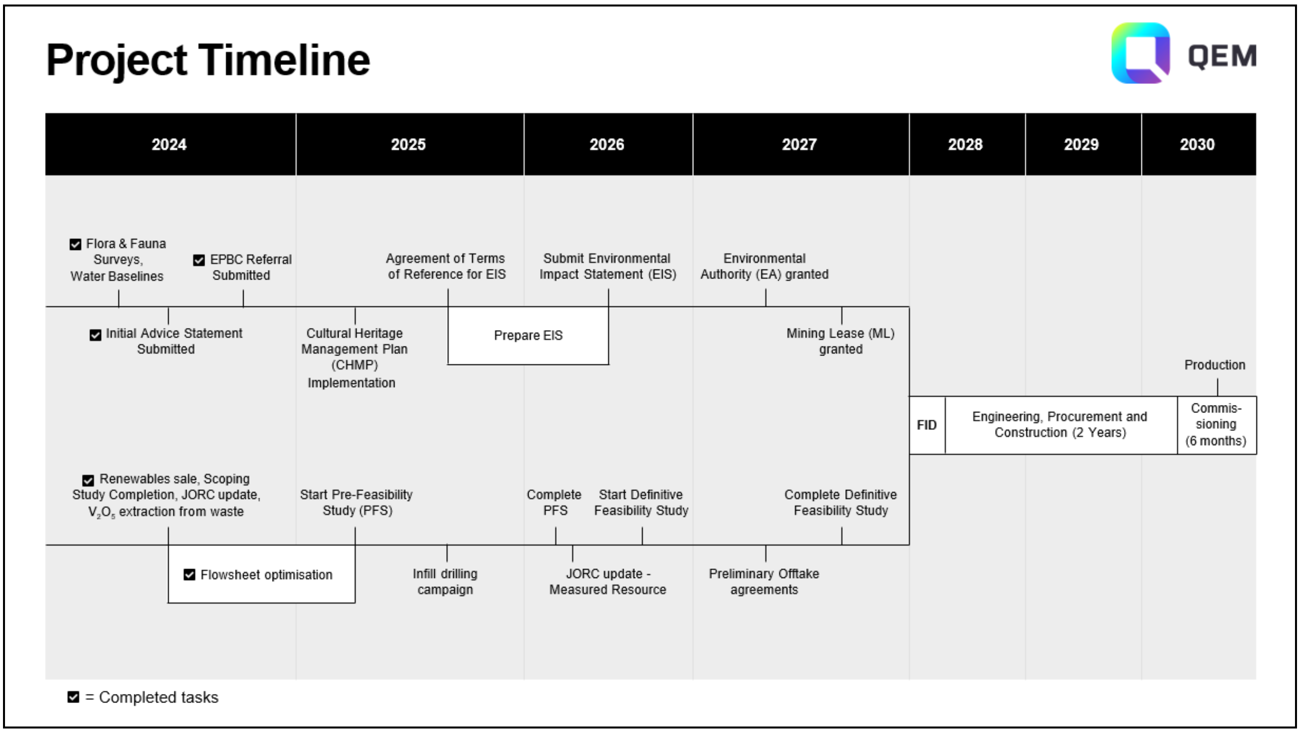
The company monitors and discloses its ESG progress and initiatives via Socialsuite's ESG Go platform. It is understood that there is no Native Title recorded on or near the project site. Notwithstanding, a Cultural Heritage Management Plan is being developed as part of the Environmental Impact Statement (EIS).

The next steps

A PFS will begin in 2025, followed by a BFS, and FID by around 2027. Production is anticipated to commence in 2029.

A Pre-Feasibility Study (PFS) will begin in 2025, followed by a Bankable Feasibility Study (BFS), and Final Investment Decision (FID) by around 2027. Production is anticipated to commence in 2029. Figure 12 shows the most important steps.

Figure 12: Timeline for Julia Creek's development



Source: Company

JCVEP covers a large vanadium resource with oil shale potential, contained within the same ore body.

The Scoping Study recommended several actions to be undertaken as part of the Pre-Feasibility Study. The most important (and most likely to create shareholder value) were:

- Further exploration to upgrade resource confidence levels (inferred to indicated and indicated to measured) and
- Further processing test work to support the flow sheets and confirm the metallurgical behaviour of the ores during the various processing stages based on representative ore samples and blends.

The study also recommended further technical work take place including:

- Exploring alternative processing technologies like pyrolysis, gasification, and combustion to reduce technology risk,
- Investigate carbon capture and utilisation technologies to manage carbon emissions and create additional revenue streams,
- Implementing borehole infrastructure to support the operation when creek flows don't produce adequate water for site requirements,
- Considering co-disposal of waste rock with dry tailings to the right potential approach to tailings management, and
- Engineering studies to finalise process design criteria; mass, water and heat balances; the impact of recycling solutions; and equipment selection and sizing to support the development of capital and operating costs.

Finally, the company will also need to undertake an Environmental Impact Statement (EIS) under Queensland's State Development and Public Works Organisation Act 1971. QEM has invested in the collection of long lead baseline environmental data and test work associated with the ecology, surface water, groundwater and waste characterisation; and these will help the company's cause. One potential challenge could be the potential occurrence of the Julia Creek Dunnart (*Sminthopsis douglasi*), a threatened species under the Environment Protection and Biodiversity Conservation Act 1999.

Peers

At a market capitalisation of barely over $10m on a fully diluted basis, QEM is inexpensive compared to other vanadium project developers. We think Richmond Vanadium is the most relevant to QEM.

Richmond Vanadium Technologies (ASX: RVT) is named after its Richmond Project in Northwest Queensland, close to the town of Julia Creek. It has a Bankable Feasibility Study underway, due for completion some time in 2025 – at which point it will make a Final Investment Decision. The company claims its current Global Mineral Resources is the largest of its kind with 1.8Bt @ 0.36% for 6.65Mt vanadium at an 0.3% cut-off. There is an Ore Reserve Estimate of 459Mt @ 0.49% for 2.25Mt. As of 31 January 2024, RVT traded at a market capitalisation of $45.4m, only 7.4% of the project's A$613m NPV.

Critical Minerals Group (ASX:CMG) also has a project in the vicinity of Julia Creek – the Lindfield project which is a 295km^2 tenement. It has a JORC 2012 Mineralised Resource Estimate of 713Mt at 0.32% vanadium, 3.4% aluminium oxide and 130g/t molybdenum, over 68% of which is in the Indicated category. The Scoping Study for the project has a $510m NPV and 17% IRR.

Neometals (ASX: NMT) Barrambie Project is both a vanadium and titanium project. It has 280.1Mt at 9.18% titanium and 0.44% vanadium. It could also be prospective for gold with historic production in the surrounding Greenstone Belt. NMT is currently assessing its options for the development of the project, although its present focus is on a lithium battery recycling business it is building in Germany. NMT is capitalised at just over $56m.

Australian Vanadium (ASX: AVL) has the Australian Vanadium Project, which lies in the Murchison Province of Western Australia. AVL's focus is on VFB technology to provide energy storage. The project is at the Feasibility Study stage. AVL trades at $145.1m.

Vecco Group is an unlisted company developing the Vecco Critical Minerals Project which is 70km north of Julia Greek. The ~800m project is intended to produce up to 8,000 tpa of vanadium, 4,000tpa of high purity alumina and 690 tpa of molybdenum over 17 years[11]. Construction is planned to commence in 2025.

QEM's management

The company's current board and leadership composition is as follows (Figure 13):

Figure 13: QEM's leadership composition

Board of Directors	
Name and Designation	**Profile**
Tim Wall Chairman	Mr Wall is a highly experienced company director and executive across energy, infrastructure, transport and resources sectors, with a strong leadership track record at multiple ASX 100 companies. His impressive list of recent achievements includes driving a strategic shift in manufacturing while President of Global Manufacturing and Corporate HSE for Incitec Pivot. He also delivered highly successful operational outcomes while occupying senior managerial positions at Caltex Australia and BP Australia. Mr Wall currently serves as a Senior Advisor – Oil and Gas at management consultant dss+ and as a Director for energy consultant TJW Energy, with specific expertise in hydrogen and ammonia manufacturing, storage and transportation, and energy storage technologies. Mr Wall brings strong ESG credentials to the QEM Board, exemplified by his four-year board tenure on the not-for-profit National Association of Women in Operations.
Gavin Loyden Managing Director	Mr. Loyden is the Founder and Managing Director of QEM Limited, having identified and acquired the significant dual commodity resource at Julia Creek. As such, Mr Loyden is responsible for QEM's capitalisation, exploration program and development of QEM's flagship Vanadium and Energy Project. Prior to founding QEM, Mr Loyden assisted a range of companies from early stage development through to international stock market listings. He has over a decade of experience in the mining industry and extensive experience in the structuring of capital raising proposals for both private and public companies, executive selection, and Corporate Governance. Mr Loyden is a member of the Australian Institute of Company Directors.

[11] https://www.statedevelopment.qld.gov.au/coordinator-general/assessments-and-approvals/coordinated-projects/current-projects/vecco-critical-minerals-project

Daniel Harris Non-Executive Director	Mr Harris is an accomplished mining executive with 45+ years in all aspects of the resources sector and has held executive roles in companies located in Russia, South Africa, USA and Australia. Graduating from the University of Nevada with a Bachelor of Science and Chemical Engineering, he has developed a specialisation in vanadium. He currently holds directorships in Australian Vanadium Limited (ASX: AVL), RedHawk Mining (ASX: RHK) and GSA Environmental Limited in the United Kingdom. Previous roles include interim CEO and Managing Director at Atlas Iron; Chief Executive & Operating Officer at Atlantic; Vice President & Head of Vanadium Assets at Evraz Group; Managing Director at Vametco Alloys; General Manager of Vanadium Operations at Strategic Minerals Corp. As a vanadium industry veteran, Mr Harris brings a wealth of experience to QEM and is an invaluable asset to the Company in the exploration and development of its JCVEP.

Source: Company

Our valuation of QEM & Julia Creek

If QEM can progress the project into production, we anticipate there is significant potential for the creation of shareholder value.

Peer comparison

We think that once QEM has a Preliminary Feasibility Study out, the company could trade at ~7.4% of the NPV. Using our NPV, this equates to A$0.30 per share.

We think that once the company has a Preliminary Feasibility Study out and is completing a Definitive/Bankable Feasibility Study, it could trade at 7.4% of the NPV of the PFS as Richmond Vanadium Technology is[12]. At present, QEM is trading at just 1.43% of its projects' NPV as adjudicated by the August 2024 scoping study. A 7.4% NPV would equate to a market capitalisation of $82.1m and $0.43 per share under the current number of diluted shares on issue (Figure 14). Under our NPV of the project (as outlined below), this would be A$0.30 per share. Of course, it is plausible that the NPV in later studies could change.

Figure 14: NPV calculation

Valuation	Pitt Street	Scoping Study
Project NPV (A$m)	761.8	1,106
%	7.4%	7.4%
Enterprise Value (A$m)	**56.5**	**82.1**
Share outstanding (Diluted)	190.8	190.8
Implied price (A$ cents)	**0.30**	**0.43**
Current price (A$ cents)	0.062	0.062
Upside (%)	378%	594%

Estimate: Pitt Street Research

[12] RVT's project NPV is A$613m and its market capitalisation is $45.5m.

Our NPV of the project

We ascribe an NPV of A$761.8m – a lower figure than the Scoping Study for a number of reasons, most importantly project financing.

We have done our own modelling of Julia Creek and have ascribed an NPV to the project of A$761.8m. This is a discount to the NPV generated by QEM's Scoping Study and is for several reasons including:

- **That we have specifically modelled production to begin from FY30**, when the company anticipates entering production. This increases the impact of discounting to the cash flows even with the same rate,
- **The anticipated capex** (both upfront and sustaining which amount to over $1.5bn),
- **The impact of depreciation** on the cash flows as we modelled it (equally spread over the life of the project); and most importantly,
- **Project financing and repayment of debt**. We assume the capex is funded 50-50 by debt and equity and that it is repaid gradually across Years 3-9 (principal and interest, with $100m for the first five of those years and the remaining balance in a lump sum in the final year). We assumed a 4% pre-tax interest rate with 3% post-tax.

Even though our NPV is a discount to the Scoping Study, this still represents significant upside from the current market capitalisation which is little over $12m on a fully diluted basis. The NPV is also 24% higher than Richmond Vanadium's project.

The NPV would represent $3.99 per share under the current number of shares on issue, but this shouldn't be taken literally given significant dilution will eventuate.

Under the current number of shares on issue, a market capitalisation of $761.8m would be $3.99 per share compared to the current share price of $0.062 per share. Of course, the $3.99 per share figure should not be taken literally because there will be significant equity dilution required to fund the project unless the company relied exclusively or almost exclusively (i.e. over 80% on debt financing), and we can only speculate on the exact financing mix the company will choose. Regardless of the mix of debt-equity, the price funding is raised at will play a significant part in shareholder dilution.

The assumptions we used are otherwise unchanged from the Scoping Study which are as follows:

- **Mine life.** The use of a 30-year mine life with a ramp up to 52% of capacity in Year 1, 66% of capacity in Year 2 followed by full capacity in Years 3-30 and consistent production over that time.
- **Production model.** We anticipated 5.1dmt of Vanadium sold at A$78/t and for 313m litres of fuel per annum at A$1.20 per share. We anticipated operating costs on a per A$/dmt basis in line with the scoping study assumptions.
- **Capex.** We assumed $1,096m in start-up capex, including a 20% contingency. We then assumed sustaining capex of A$598m, spread equally across the remainder of the life of the project which amounts to just under A$19.9m per year.
- **Opex.** We adopted the assumptions shown in Figure 15.
- **Corporate tax.** We assumed a 30% rate. Royalties payable to the state government were included in operating expenditure.
- **Discount rate.** We use 8% in line with the Scoping Study. One could argue that this is too small a rate for a listed company at the stage QEM is at, but a company relying on a proportion of its financing for debt will have a lower cost of capital than companies relying on exclusively equity for a variety of reasons including that interest is tax-deductible and that there are more inputs into the equity component of discount rates.

We acknowledge that our NPV is highly sensitive to the discount rate, and we accordingly have put a sensitivity table below (Figure 16).

Figure 15: Project financial inputs

Cost & margin assumptions		
Metrics	**Units**	**Value**
Mining	A$dmt Feed	25.64
Processing	A$dmt Feed	42.3
Tailings Handling	A$dmt Feed	3
Overheads	A$dmt Feed	4.21
Transport	A$dmt Feed	0.25
Mine Closure	A$dmt Feed	0.2
Royalty	A$dmt Feed	3.79
Contingency @ 5%	A$dmt Feed	4.0
Total operating cost	**A$dmt Feed**	**83**
Average Vanadium selling price	A$dmt Feed	78.0
Fuel selling price	A$dmt Feed	68.5
Total average selling price	A$dmt Feed	146.4
Margin	A$dmt Feed	**63.1**
Capex		
Oil recovery	A$m	*242*
Feed preparation	A$m	*249*
Vanadium refining	A$m	*114*
Processing Infrastructure	A$m	*27*
Infrastructure	A$m	*318*
Contingency (20%)	A$m	146
Total start-up capex	**A$m**	**1096**
Sustaining capex	A$m	598
Total capex	**A$m**	**1694**

Source: Pitt Street Research

Figure 16: Sensitivity analysis of NPV calculation (A$m)

		Pricing Premium/(Discount) [13]						
		-15%	-10%	-5%	0%	5%	10%	15%
Discount Rate	5%	(866.6)	(154.9)	614.8	1,382.4	2,138.6	2,894.9	3,646.5.
	6%	(879.6)	(234.0)	452.0	1,135.9	1,808.7	2,481.5	3,149.7
	7%	(891.8)	(297.1)	318.3	931.8	1,534.3	2,136.8	2,734.7
	8%	(903.0)	(347.4)	208.2	**761.8**	1,304.7	1,847.6	2,385.9
	9%	(912.6)	(387.4)	117.1	619.6	1,111.6	1,603.6	2,091.0
	10%	(920.0)	(419.1)	41.4	500.0	948.3	1,396.5	1,840.3
	11%	(924.6)	(444.2)	(21.7)	398.9	809.4	1,219.9	1,625.9

Estimates: Pitt Street Research

[13] This is a flat percentage premium or discount to commodity pricing across all years of the project

Risks

We see the following key risks to our investment thesis:

- **Economic sensitivity risk**: The project's viability is subject to certain variables including the vanadium sale price (as we showed above), fuel prices and opex. Fluctuations as little as +/- 15% can have a significant impact, even if the project's NPV stats positive (Figure 17 – from the company's own estimates).

Figure 17: Outline of Julia Creek

Variable	Lower %	Upper %	Lower NPV (AUD million)	Upper NPV (AUD million)
Sale Price	85%	115%	343	1,847
Opex	115%	85%	462	1,732
Plant Recovery	95%	105%	837	1,356
Capital	115%	85%	909	1,285
Diesel for Mining Operations[a]	125%	75%	1,097	1,097

Source: Company

- **Regulatory risk.** QEM's ability to get Julia Creek into production is contingent on regulators providing all necessary approvals within timeframes anticipated. Any delays to this will stretch the company's timeline to get into production and hinder investor confidence. Without all necessary approvals, it is not getting into production
- **Finance risk.** The company will need significant capex (A$791m) just to get into production. Obtaining finance on favourable terms, if at all, could be a challenge for the company.
- **Development risk**. There is the risk that the project may be delayed for several reasons, both within the company's control and out of its control. One example of the latter is the CopperString 2032 transmission line – the company's renewable energy for the project will depend on successful completion of this line.
- **Inflation risk**: There is the risk that cost blow-outs could result in more finance being needed for the project. Investors need only look at Liontown Resources (ASX:LTR) to see the impact that cost blow outs can have on a resources developer.
- **Key personnel risk**: There is the risk the company may lose key personnel and be unable to replace them and/or their contribution to the business.

Glossary

Beneficiation – Where valuable materials are separated from waste materials, to improve the quality of a raw material.

Coordinated Project – A status given to a minerals project in Queensland meaning it requires a rigorous impact assessment involving whole-of-government coordination.

Critical Minerals Zone - Such areas, mostly in north-west Queensland, are designated where critical minerals projects are co-located in a regional area in collaboration with the community, First Nations peoples and industry

Gigawatt hours (GWh) – a unit of energy representing 1bn watt hours and is equivalent to 1m kilowatt hours.

Economically Demonstrated Resources (EDR) – A measure of resources likely to be profitable[14] to extract or produce under certain investment assumptions.

Environmental Impact Statement -

Ferrovanadium – A material containing 40-50% vanadium produced by recovering vanadium from titanium-bearing magnetite ore. It is used as a strengthener for steels.

Green hydrogen – Hydrogen produced by the electrolysis of water, using renewable electricity.

Hydrocarbons – Organic compounds made up of only carbon and hydrogen. They are the principal constituents of petroleum and natural gas.

In-situ – Meaning in the original place.

Kerogen – A complex, waxy mixture of hydrocarbon compounds that is the primary organic component of oil shale.

Mbbl – One thousand barrels of oil.

MMbbl – One million barrels of oil

Mineral Resources – The concentration of a material of economic interest in or on the Earth's crust.

Modified Fischer Assay – A type of laboratory test that determines the potential oil yield from oil shale.

Metric Tonne Unit of Vanadium (MTV) – A unit of weight of vanadium equal to 1,000kg of 2,204.6 pounds.

Net Present Value (NPV) – The difference between the present value of cash inflows and the present value of cash outflows over a certain time period.

Ore Reserve – The parts of a Mineral Resource that can be economically mined.

Purity – The process of removing impurities from minerals to create a pure form.

Vanadium Pentoxide/Vanadium Oxide – An inorganic compound in powder form that goes into the industrial processes that use vanadium generally.

Vanadium Flow Battery (VFB)/Vanadium Redox Battery (VRB) – A rechargeable flow battery that uses vanadium.

[14] The ABS uses 'assumed with reasonable certainty to be profitable'.

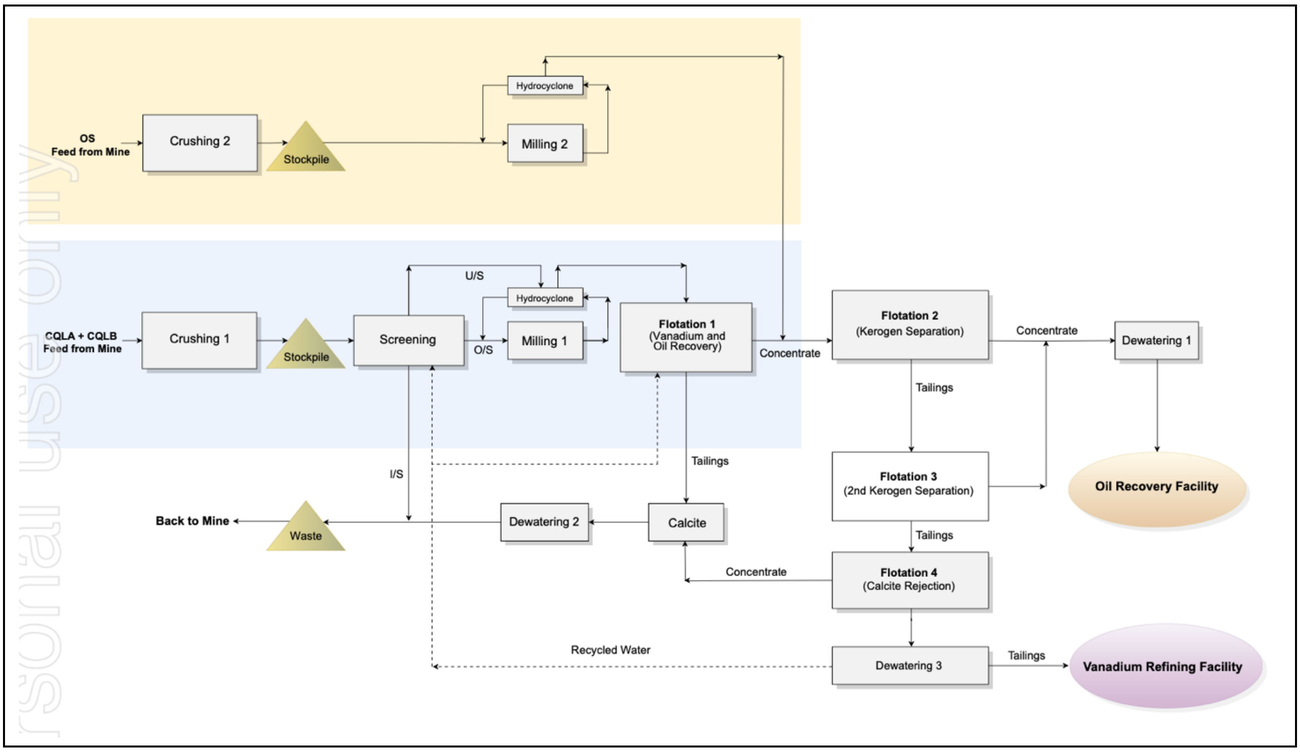
Appendix I – Capital Structure

Security Class	Number	% of total
Ordinary shares	190,833,688	85.0%
Options		
Expiring 1-May-2025 (ex. $0.20)	250,000	0.1%
Expiring 12-Aug-2025 (ex $0.345)	5,600,000	2.5%
Expiring 1-Mar-2026 (ex. $0.20)	500,000	0.2%
Expiring 30-Sep-2026	20,769,014	9.2%
Expiring 1-Oct-2027 (ex. $0.14)	1,000,000	0.4%
Expiring 31-Jul-28 (ex $0.14)	1,500,000	0.7%
Performance rights	4,125,000	1.8%
Total	**224,577,702**	

Source: Appendix 2A – 22 November 2024[15]

Appendix II – Julia Creek flow sheets

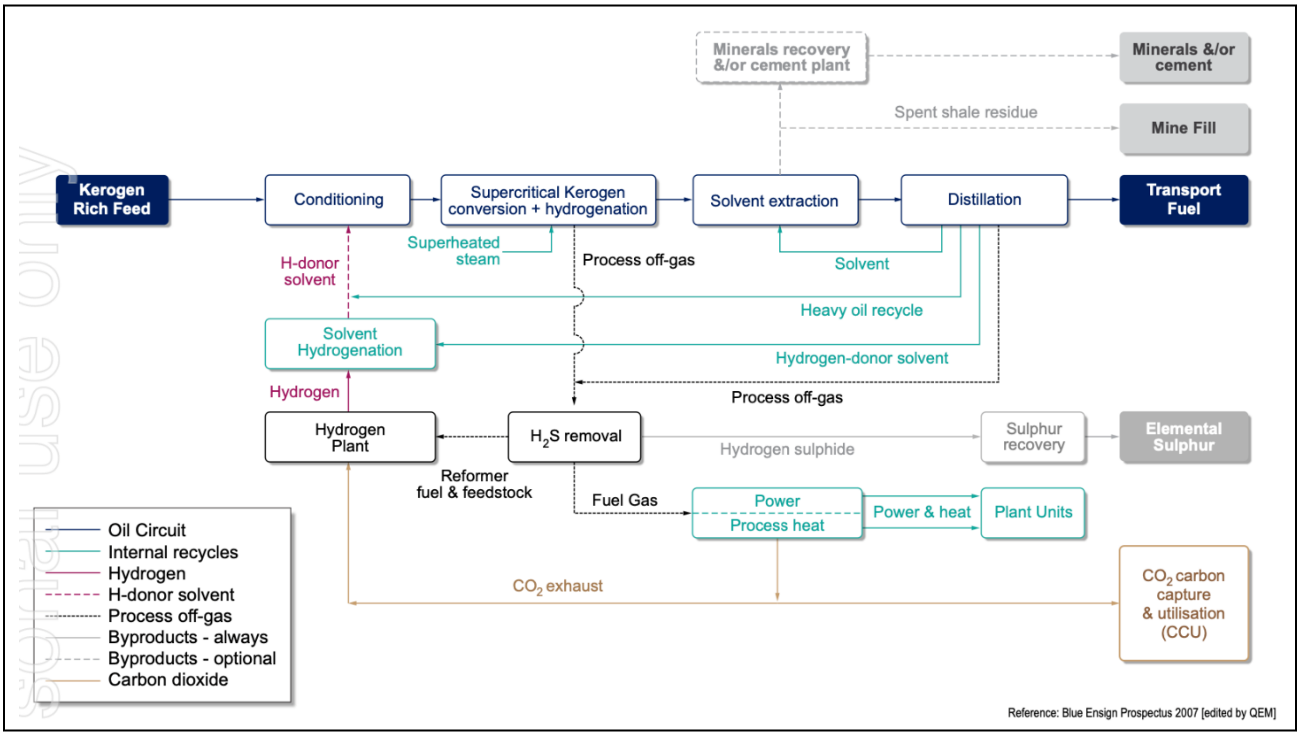
Figure 18: Feed preparation Facility flowsheets



Source: Company

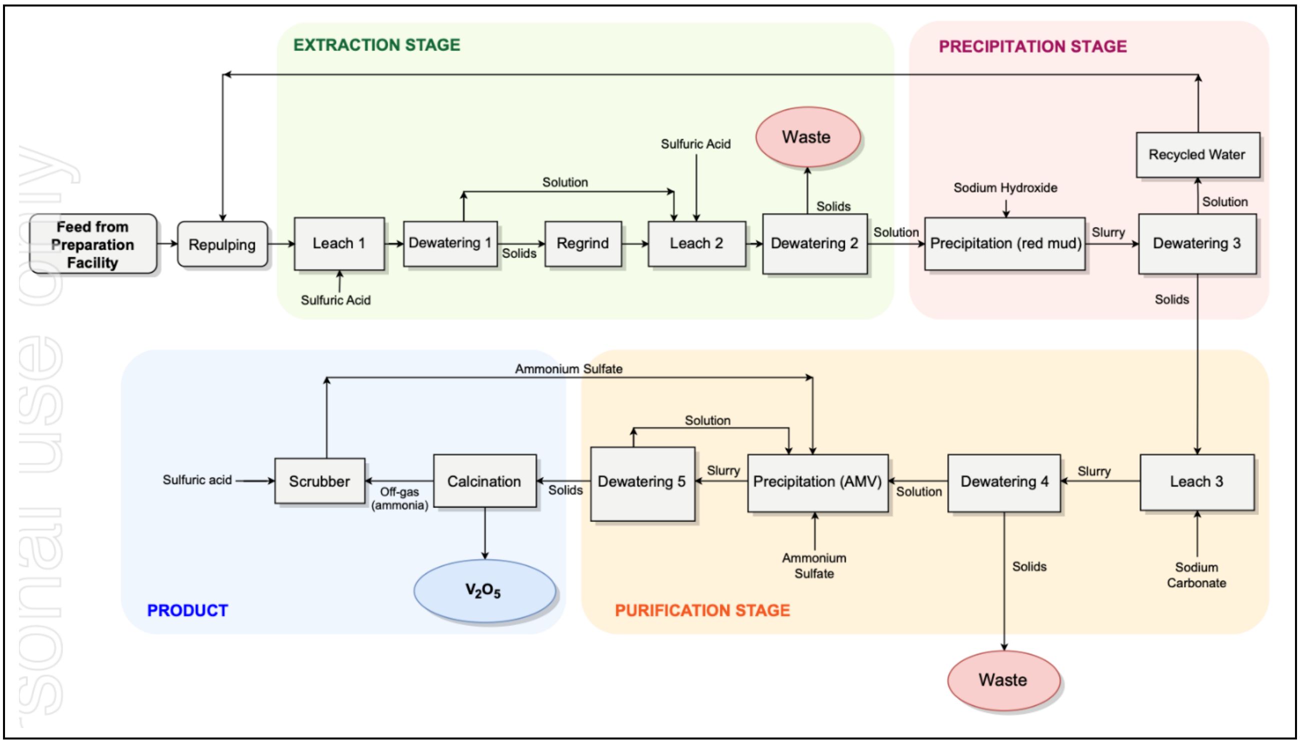
[15] https://cdn-api.markitdigital.com/apiman-gateway/ASX/asx-research/1.0/file/2924-02884675-6A1239137

Figure 19: Oil Recovery facility flowsheet



Source: Company

Figure 20: Vanadium Refining facility flowsheet



Source: Company

Appendix III – Analysts' Qualifications

Stuart Roberts, lead analyst on this report, has been an equities analyst since 2002.

- Stuart obtained a Master of Applied Finance and Investment from the Securities Institute of Australia in 2002. Previously, from the Securities Institute of Australia, he obtained a Certificate of Financial Markets (1994) and a Graduate Diploma in Finance and Investment (1999).
- Stuart joined Southern Cross Equities as an equities analyst in April 2001. From February 2002 to July 2013, his research speciality at Southern Cross Equities and its acquirer, Bell Potter Securities, was Healthcare and Biotechnology. During this time, he covered a variety of established healthcare companies, such as CSL, Cochlear and Resmed, as well as numerous emerging companies. Stuart was a Healthcare and Biotechnology analyst at Baillieu Holst from October 2013 to January 2015.
- After 15 months over 2015–2016 doing Investor Relations for two ASX-listed cancer drug developers, Stuart founded NDF Research in May 2016 to provide issuer-sponsored equity research on ASX-listed Life Sciences companies.
- In July 2016, with Marc Kennis, Stuart co-founded Pitt Street Research Pty Ltd, which provides issuer-sponsored research on ASX-listed companies across the entire market, including Life Sciences companies.
- Since 2018, Stuart has led Pitt Street Research's Resources Sector franchise, spearheading research on both mining and energy companies.

Nick Sundich is an equities research analyst at Pitt Street Research.

- Nick obtained a Bachelor of Commerce/Bachelor of Arts from the University of Sydney in 2018. He has also completed the CFA Investment Foundations program.
- He joined Pitt Street Research in January 2022. Previously he worked for over three years as a financial journalist at Stockhead.
- While at university, he worked for a handful of corporate advisory firms

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