QEM

Advancing the Julia Creek Project

AGM Presentation | November 26, 2021

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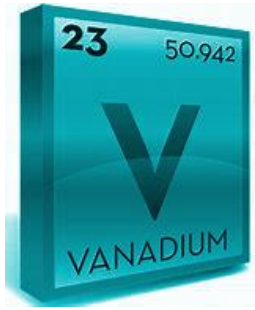
Competent Persons and Qualified Estimator Statements
The information in this announcement that relates to exploration results, mineral resource and contingent resource estimates for the Company's Julia Creek Project was first reported by the Company in its IPO prospectus dated 20 August 2018 and supplementary 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



Right Project at The Right Time

The catalyst to help unleash the inherent potential wealth of the NWMP and beyond

Vanadium

QEM aims to become a leading supplier of high-quality vanadium pentoxide in Australia

Dual Commodity Deposit

Julia Creek in North Queensland allows production of both Vanadium (a Critical Mineral) and high-quality transportation fuels including Hydrogen

Transport Fuels + Hydrogen

QEM aims to provide innovative and environmentally friendly solutions that are important to our energy future

Team & Corporate

Led by a team of highly successful and invested mining professionals, with proven track record of mine development

John Foley — **Chairman**

Extensive experience as current Chairman of Precious Metal Resources Limited (ASX: PMR), Citigold Corporation Limited (ASX: CTO) and Carbon Credit Corporation (C3).

Gavin Loyden — **Managing Director**

Company Founder, having identified and acquired the significant dual commodity resource at Julia Creek. Responsible for QEM's early capitalisation, initial exploration program and initial scoping study.

John Henderson — **Non-Executive Director**

Over 40 years experience in major and mega project development, including executive roles with oil and mining multinationals such as BHP and Rio Tinto, as well as mid-tier and startup energy companies.

Daniel Harris — **Non-Executive Director**

Mining executive with 40 years resources sector experience. Current independent Director at Australian Vanadium (ASX:AVL), former exec at Atlantic (ASX: ATI) and Atlas Iron (ASX: AGO). Director of US Vanadium LLC.

David Fitch — **Non-Executive Director**

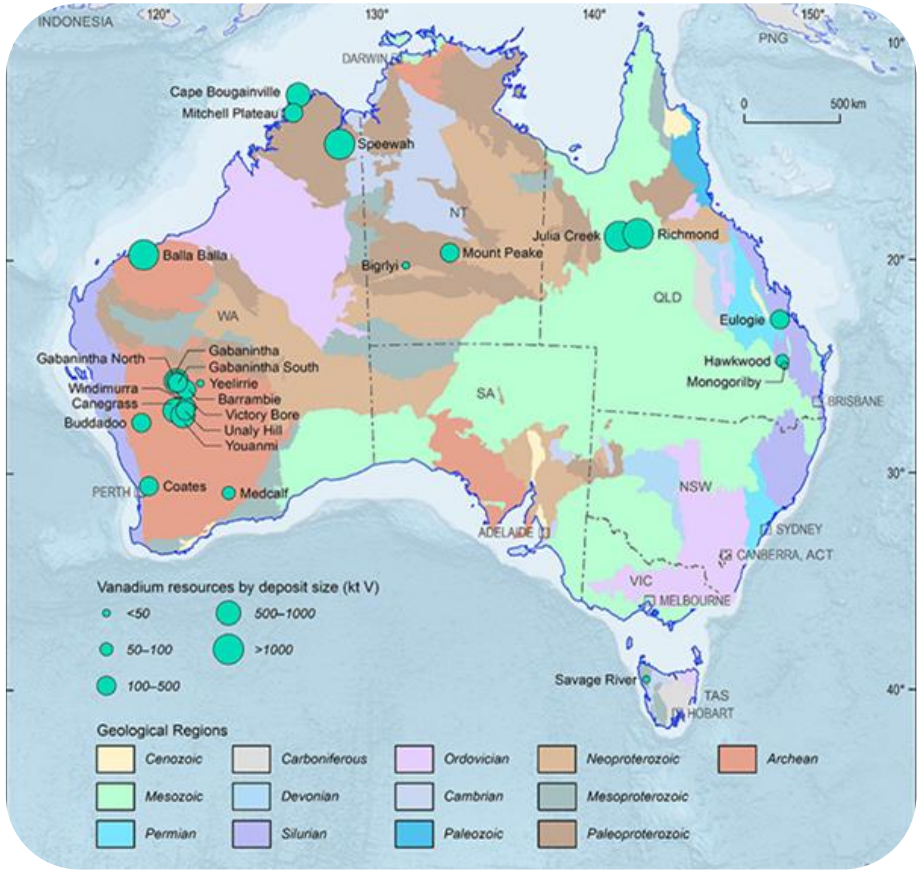
Experienced in strategic planning, commercial negotiations and operations. Former COO & major shareholder of the Fitch Group and currently a director of BioCentral Laboratories. David is the largest shareholder of QEM.

ASX Symbol: QEM	
Shares on Issue	113.4 million
Market Cap (25 November 2021)	$22.7m
Share Price (25 November 2021)	$0.200
Cash (as at 30 September 2021)	$2.46m

Major Shareholders	
David Fitch (Non-Executive Director)	28.1%
Gavin Loyden (Managing Director)	18.2%

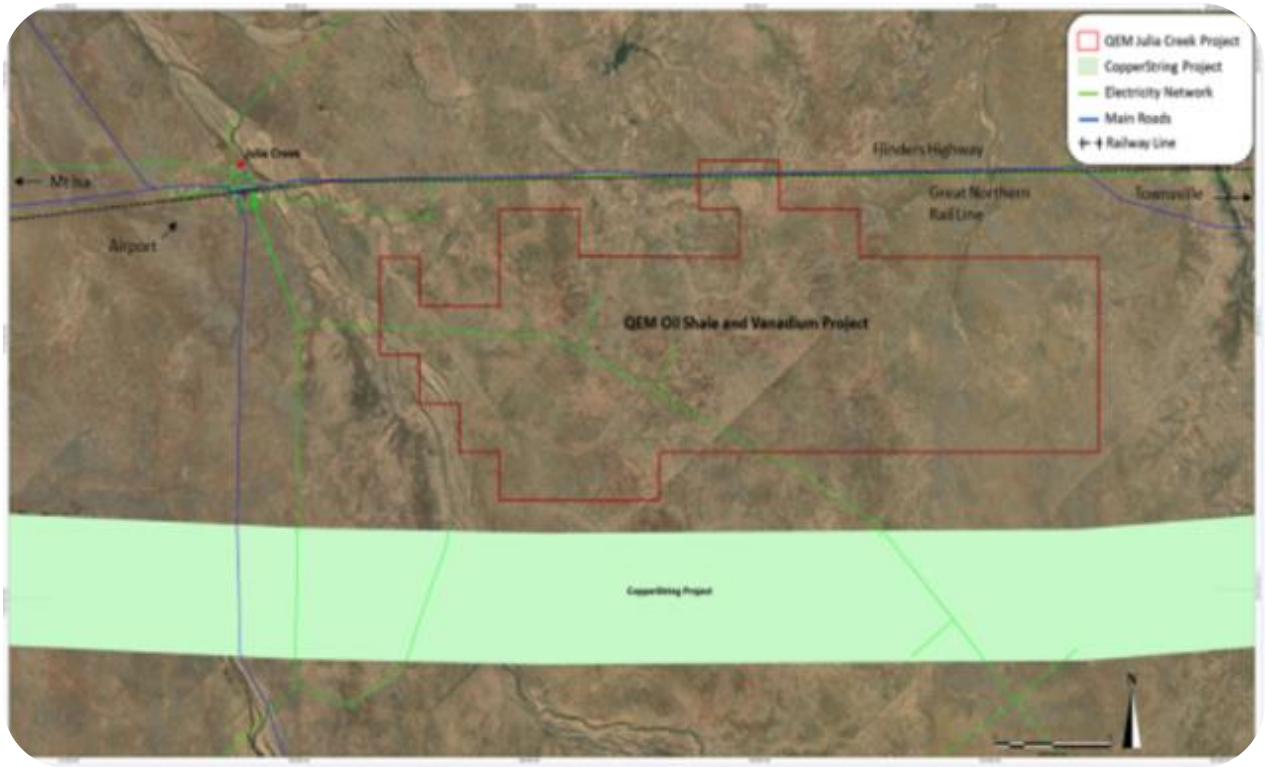
Julia Creek Project Location

100% owned Exploration Tenements Covering 249.6km² in the Julia Creek Area, North-Western Queensland



Source: Geoscience Australia - Vanadium https://www.ga.gov.au/scientific-topics/minerals/mineral-resources-and-advice/australian-resource-reviews/vanadium#heading-6

- **Tier-1 location** within the **North-West Minerals Province (NWMP)** an area containing over **$680b of known resource value.**
- Established infrastructure and services, including direct road and rail access to the Port of Townsville (600 km) and Mount Isa to the west (250 km).
- **Copper String 2.0** to immediate south (3 kms)



Julia Creek Project

Opportunity for a World-Class Vanadium & Oil Shale Project, with associated Hydrogen Production

Unique dual commodities exposure of oil and vanadium pentoxide (V_2O_5)

Staged development strategy to de-risk project

Shallow-Low strip ratio allows for standard open cut mining method

Test work to date shows up to 200% yield achievable for oil extraction; 90% extraction rate for V_2O_5; Bench scale pilot plant under construction

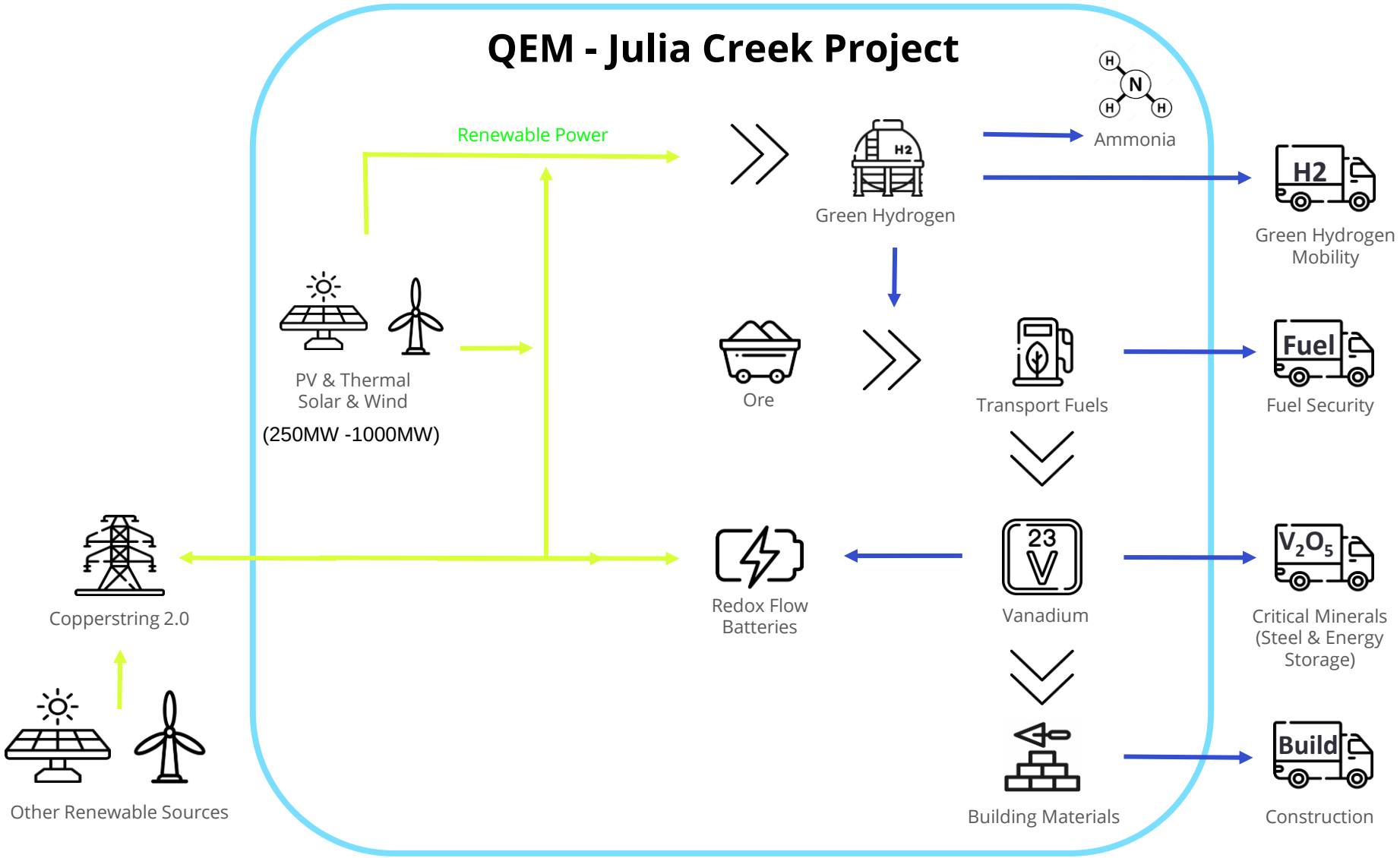
Vanadium defined as Critical Mineral by Australian, US & EU Governments

Globally significant JORC (2012) Indicated + Inferred Resource 2,760 Mt @ 0.30% V_2O_5

783 MMBL's of oil in the 3C category

Renewable power and hydrogen to be directly applied to oil and vanadium production and to meet growing demand by government and industry

Project Concept Design



Exploration Update

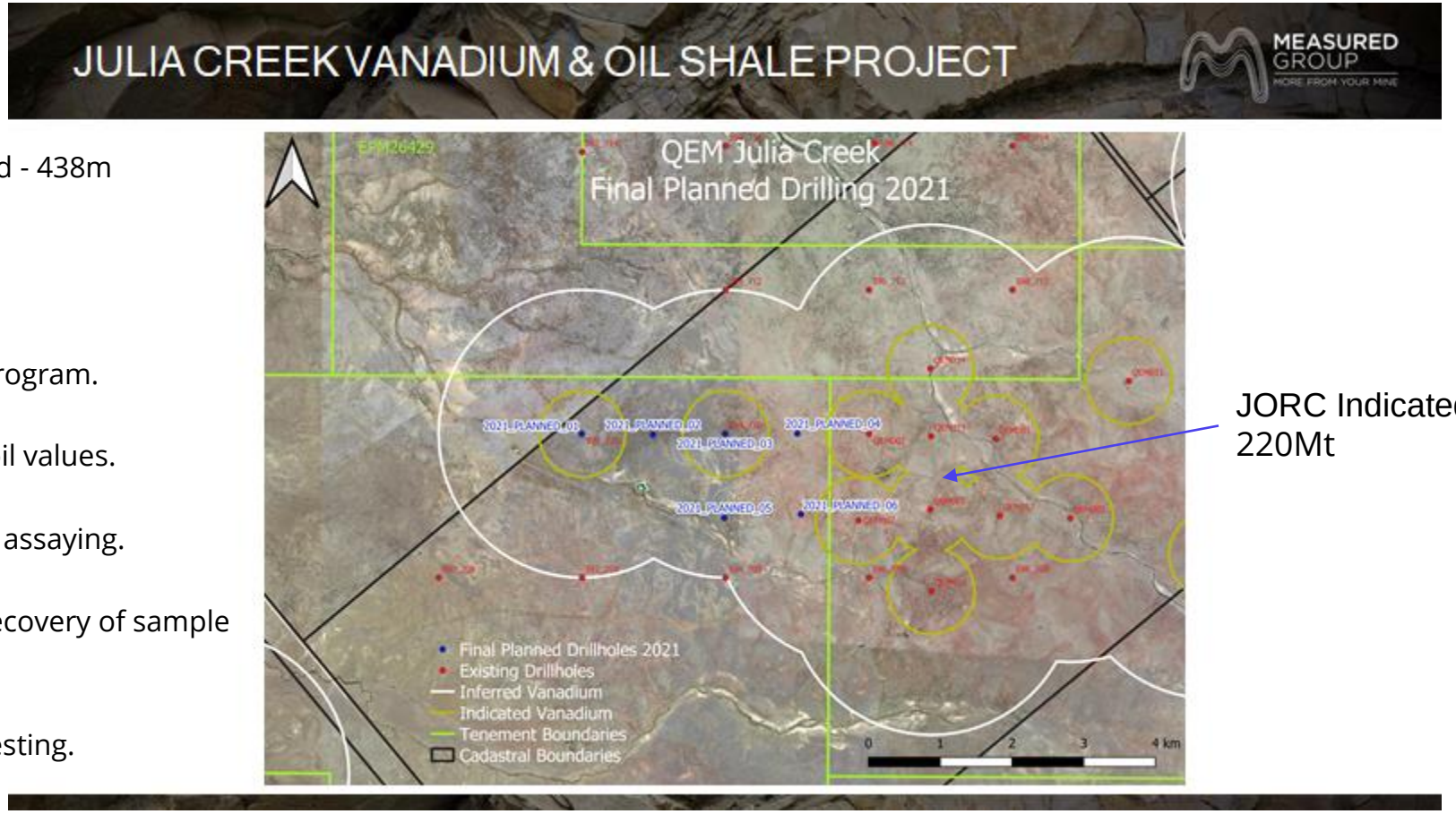
Further drilling completed November 2021

Nov 2021 Exploration program:

- Six-hole drilling campaign completed - 438m

Program Goals:

- Increase resource confidence.
- Core sample collection for testing program.
- Targeting area of predicted higher oil values.
- Core samples sent to Mitra Labs for assaying.
- 4C Core drilling used to maximise recovery of sample material for pilot plant test work.
- Expect to recover 1100kg core for testing.



Pilot Plant Update

Bench scale pilot plant under construction

- Bench scale pilot plant to enable QEM to optimise oil and vanadium recovery, conduct petrology evaluation and gain greater understanding of the Company's internal hydrogen requirements.
- The hazard and operability (HAZOP) study on the bench-scale oil and vanadium pilot plant was successfully completed in July 2021 at the Melbourne headquarters of HRL Technology Group Pty Ltd, where the pilot plant will be installed and operated.
- Final design was completed and approved by ASME-U in India and Germany.
- **QEM remains on target to commence operational activity at the bench-scale pilot plant during 1H FY22.**
- The pilot plant is being built by specialist manufacturer AMAR and will validate QEM's proprietary extraction process ahead of a commercial demonstration plant.

Environmental Update

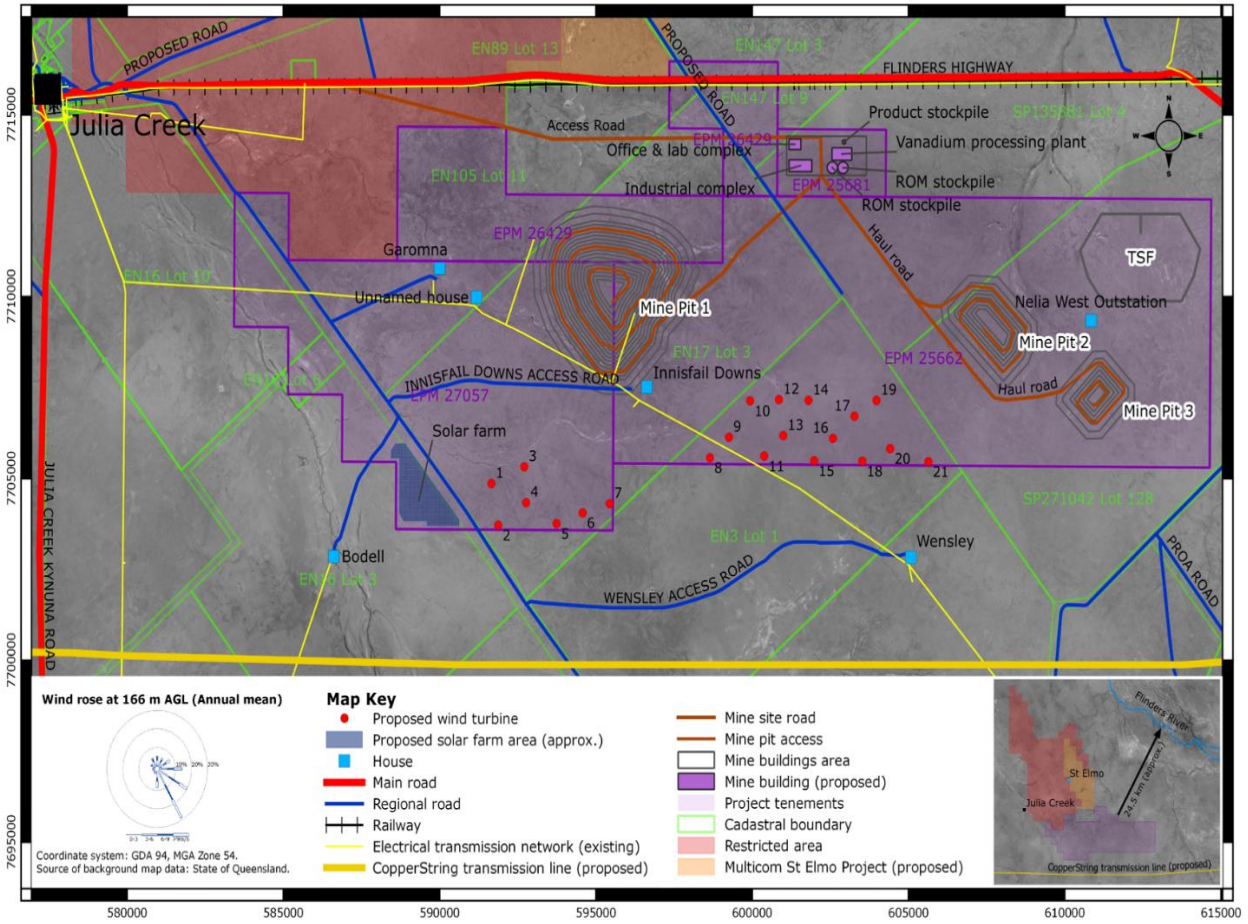
EPIC Environmental begins engagement

- EPIC's engagement will include; development of an Environmental Impact Statement, undertaking extensive technical studies at Julia Creek, coordinating environmental approval applications and establishing a Progressive Rehabilitation and Closure Plan.
- Assistance with Major Project status application (Federal) and Prescribed Project status (State) being sought through the Qld Coordinator Generals Office.
- Baseline enviro studies to commence: 12-month air quality, groundwater and surface water monitoring program and terrestrial ecology studies.
- 12 water bores will be drilled on-site at the conclusion of the wet season March/April 2022, as part of the early works program.
- Cultural heritage survey to begin 2022.

Renewable Power Update

“Situated in the best co-located wind and solar resources in Eastern Australia” - AEMO

- Preliminary assessment focuses on mapping and modelling of a 250 MW hybrid solar/wind layout.
- Further desktop preliminary assessments on 500MW and 1GW scenarios underway.
- Met Mast: GHD has been engaged to procure a 12-month on-site wind and solar monitoring station.
- Alternative renewables being examined -Solar Thermal & Geothermal.
- Connection enquiry sent and received to CopperString 2.0 for import/export into NEM.

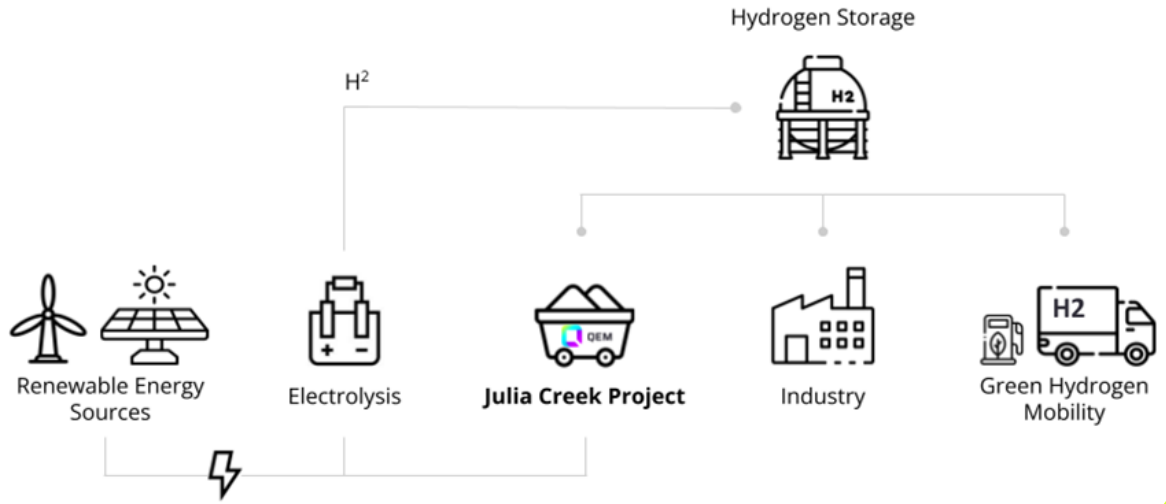


Hydrogen Update

Hydrogen - for oil upgrading and a lower emissions future

- **Project Infrastructure:** Green Hydrogen could be produced and used on-site to upgrade produced raw oil into usable transport fuels, such as low sulphur diesel.
- Excess production could potentially create a hydrogen hub for the North-West Minerals Province (NWMP).
- Potential benefits for regional communities, industry and heavy transport in the region.
- Significant support being shown by Governments to progress hydrogen projects in Queensland.
- Andrew Forrest and the Queensland Government's recently announced $1 billion electrolyser manufacturing plant in Gladstone will be the largest in the world and highlights the significant investment into the hydrogen industry.

Julia Creek Project Renewable Energy and Green Hydrogen Strategy



Community Update

Julia Creek- McKinley Shire Council meeting

- Directors Gavin Loyden and John Henderson, along with Joanne Bergamin, met with most sitting members of the McKinley Shire Council in Julia Creek on 16/11/21 to discuss the project activity and update the Council on progress being made on the project.
- Project detail very well received, and the Council is very supportive of new mineral project development in the region.
- Potential benefits to the wider community discussed, such as regional and local employment potential, future community amenity and regional development.
- Council will be regularly updated as progress milestones are achieved.

Vanadium Uses

Vanadium - The Versatile Element

Improves Steel Tensile Strength
Most widely used alloy to strengthen steel (HSLA.) in construction, automotive, aerospace, rail, shipping, tools, drilling and more.

Lowers CO_2 emissions
In steel-Lowers CO_2 emissions by 185 million metric tons annually -Texas A&M University

Supports Fuel Efficiency
High strength-to-weight ratio makes vanadium a critical component in the automotive industries. 85% of vehicles by 2025. Henry Ford first used in Model – T.

Durability & Weather Resistance
Vanadium alloys are naturally durable to extreme temperature and corrosion, making it irreplaceable in the aerospace industry. Suitable for hydrogen storage & pipes (reduces failure due to hydrogen embrittlement).

Chemical & Catalysts
Catalysts, 'Smart Glass', sulphuric acid production, ceramics, dyes, cathodes for lithium batteries.

Renewable Energy Storage
Vanadium Redox Flow Batteries (VRFB) are the preferred solution for large scale energy storage globally. Produces 78% less CO_2 than Li-B - Cradle-to-gate, with recycling and renewables.

Renewable Energy Storage

Building a Renewable Future with Vanadium Redox Flow Batteries

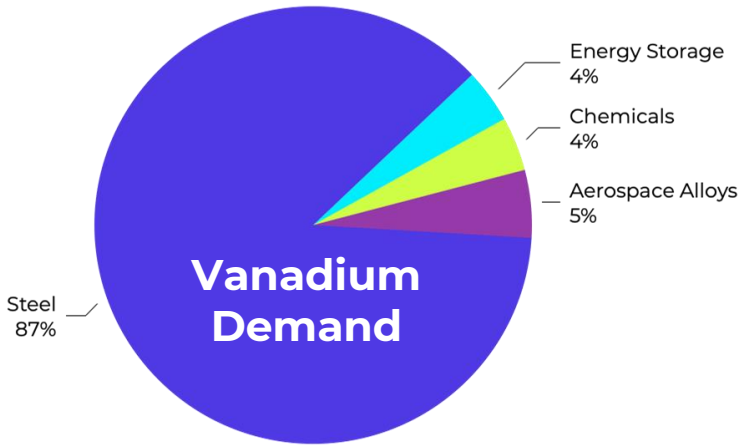
	Vanadium	Lithium
Number of Cycles (Lifespan)	100,000+ (20-30 yrs)	3000-10,000 (5-7 yrs)
Low Self-discharge (stays charged)	✓	✗
Low Environmental Footprint	✓	✗
Highly Expandable	✓	✗
Generates Low Levels of Heat	✓	✗
Charges & Discharges Simultaneously	✓	✗
Can Release Energy Instantaneously	✓	✗
Suitable for Connection to Power Grid	✓	✗ (Without Inverters)
Small Footprint	✗	✓
CAN BE COMPLETELY RECYCLED	✓	✗

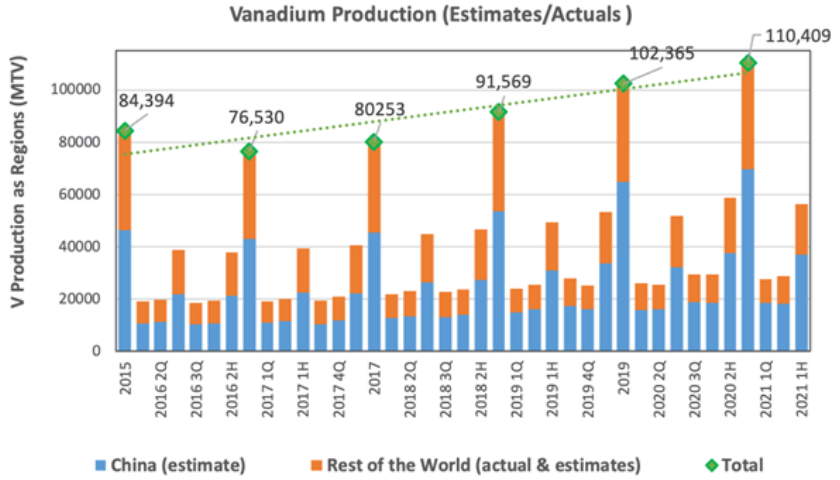
Source: https://www.energyandcapital.com/articles/the-best-thing-since-lithium/1531
Mining Journal June 2018

Vanadium Market

Set for growth

- Global Production 2020 ~**110,409 MTV** or approximately 197,000tpa V_2O_5
- Market is expected to reach $2.36 Billion in 2025 at a **CAGR of 10.2%**
- Vanadium was added to the **'US & Australian Strategic Metals List'** in 2018
- Demand for VRFB is expected to equate to **~23% of vanadium market by 2030, currently only <3%**
- Australia holds approximately ~**20%** of undeveloped global reserves- no domestic production at present





V_2O_5 Vanadium Pentoxide Flake 98% Price USD / lb

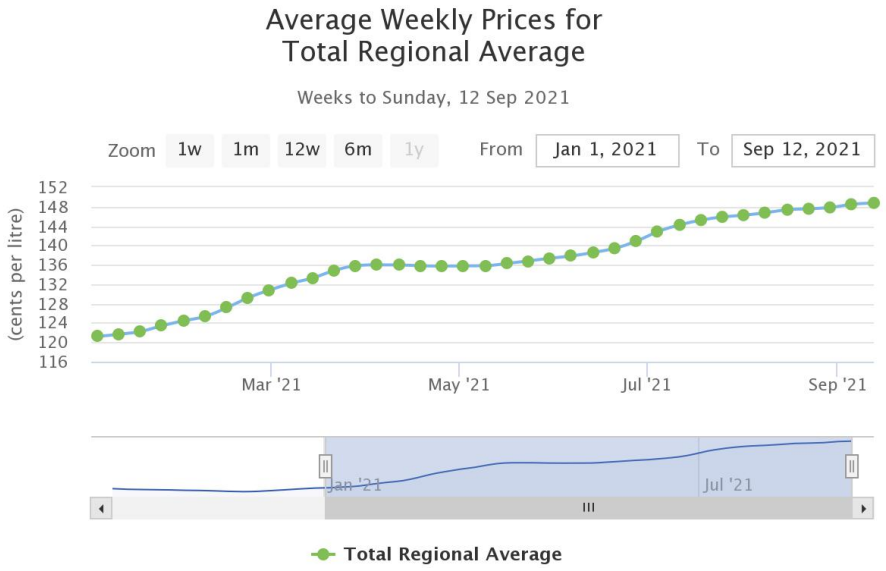
Europe : US$7.60/lb ▼(-1.30%)
Nov 5, 2021

Production Graph Source: Vanitec http://vanitec.org/vanadium/production-consumption

Oil Market

Looming Energy Crisis

- Globally, nations are dealing with a severe rise in energy prices. Demand is high and supply is tight.
- In the last 12 months, Australia lost half of its remaining oil refineries, with just two remaining which has **left our fuel supply vulnerable to crisis**.
- A dramatic rebound in the global economy has seen demand and price for oil skyrocket, with **prices above US$80bbl,** reaching 7-year highs.
- There are now fears that due to Australia's energy mix, reliant on mostly oil and gas, prices are starting to increase. Already a $0.27 increase to September 2021.



CL:NMX - Crude Oil Price

Source: NASDAQ https://www.nasdaq.com/market-activity/commodities/cl:nmx

NG:NMX - Natural Gas Price

Source: NASDAQ https://www.nasdaq.com/market-activity/commodities/ng%3Anmx

Fuel Resilience

COVID-19 demonstrates supply chain risks

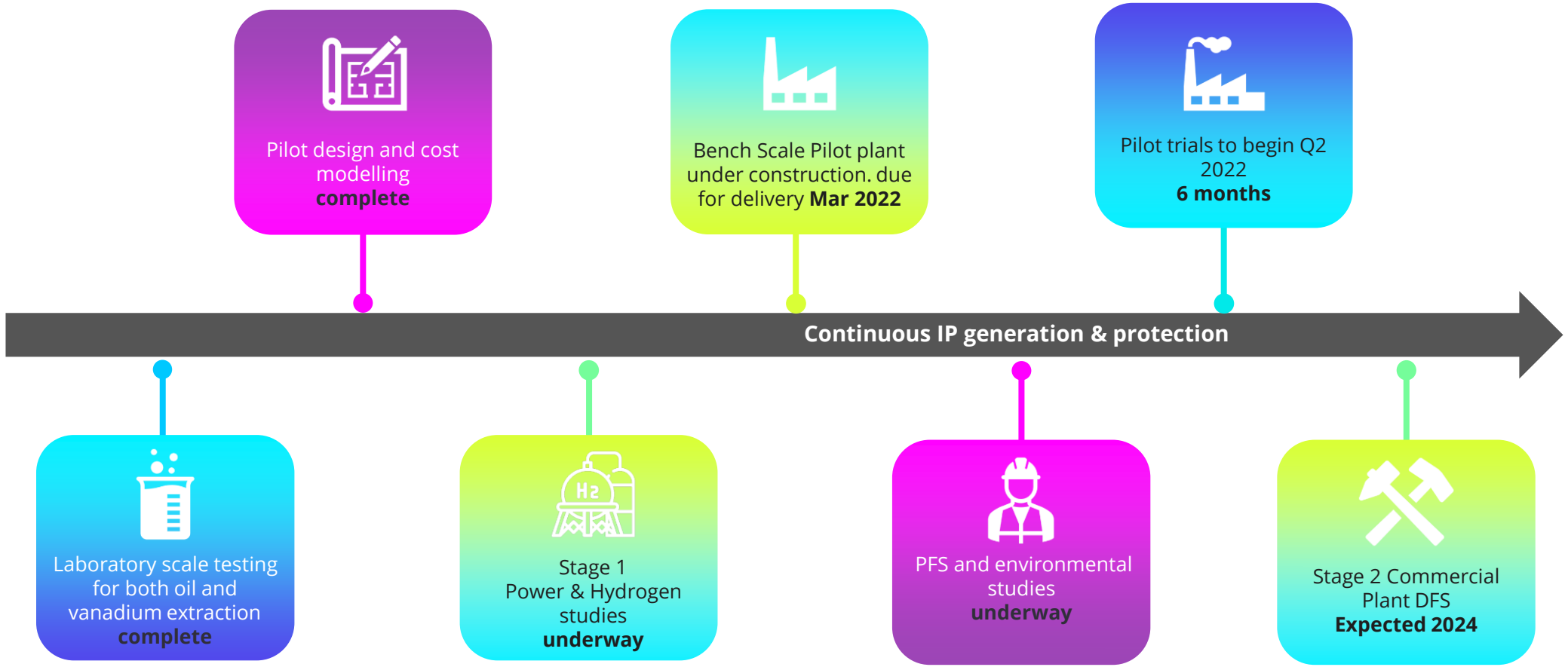
- Australia is an island nation that lacks resilience, depending heavily on imported fuel
- Australia's obligation as a member of the International Energy Agency (IEA):

Required	Actual
- At least **90 days** of supply - Not held since 2012 - Current stockpile is critically low	- **30 days of petrol for automobiles** - **20 days of diesel** - **20 days of aviation fuel** (Australian Petroleum Statistics 2020)

- Dependency on transport fuel imports has grown from **~60%** in 2000 to over **93%** today adding around **$30B** to Australia's trade deficit in 2020
- COVID-19 has further exposed Australia's lack of resilience in this area
- **QEM considers this an opportunity!**

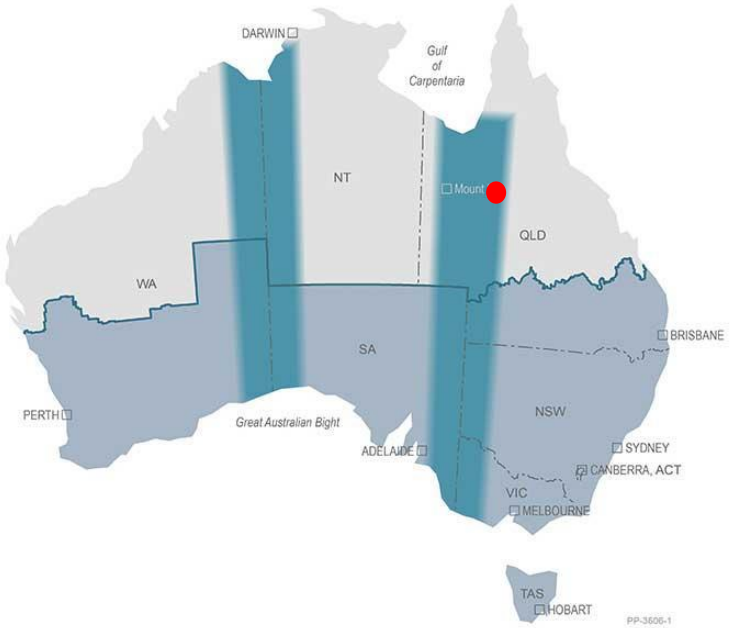
Development Strategy

Carefully planned development strategy implemented to prove commerciality and reduce risk



Supportive Policy Environment

Well Aligned with Government Policy and Financing Agencies



Federal Government Resource Development Corridors

● ***Julia Creek located in key corridor***

- **Critical Minerals Facilitation Office**
- **Fed Govt Eastern Resource Corridor**
- **Queensland Hydrogen Industry Strategy**
- **Queensland Major Projects Facilitation**
- **Queensland Dept of State Development**
- **$1.5 Billion CopperString 2.0 project**

Strong Government support for Critical Minerals - Vanadium

- Queensland State and Federal Government, in collaboration with the Townsville City Council is supporting Queensland vanadium producers with **$15m** in direct funding for a multi-user, commercial demonstration plant to be built in Townsville, beginning 2022.

Greater Fuel Resilience Needed

- Domestic sources of fuel are few, and local stocks are very low
- Julia Creek has the potential to contribute to local fuel supply needs, including Hydrogen, for Transport, Agri, Mining & Defence

QEM's Commitment to ESG

Environmental

- Low carbon footprint
- Utilises renewable energy sources
- Target products such as V_2O_5 & hydrogen to support emission reduction targets

Social

- Supports local community – engagement, Indigenous relations, long-term jobs, training, youth programs, sport
- Encourages employees to volunteer and fundraise (St Vinnies CEO Sleepout, St Vincent de Paul Society, Endeavour Foundation)

Governance

- Dedicated to corporate transparency
- Critical minerals- traceability and provenance. Ethically sourced.
- Supports women in top leadership roles, both in QEM and in the resources industry (WIMARQ GC sponsor)
- Management aligned with shareholders

Contact

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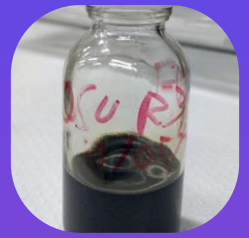


Appendix – A

Julia Creek Resource

Julia Creek Resource Overview

Table 1: Summary of JORC Mineral Resource Estimate

Total										
Resource Class	**Strat.Unit**	**Mass (Mt)**	**Average Thickness (m)**	**Insitu Density (gm/cc)**	**V2O5 (wt%)**	**Cu (ppm)**	**Mo (ppm)**	**Ni (ppm)**	**Zn (ppm)**	**Al (ppm)**
Indicated	CQLA	73	3.16	2.27	0.25	155	138	123	780	4752
	CQLB	67	2.97	2.24	0.28	182	168	142	890	5706
	OSU	40	1.94	2.08	0.33	223	153	191	1087	55317
	OSL	38	1.87	2.11	0.32	199	149	184	1015	55009
Inferred	CQLA	687	2.57	2.28	0.23	154	139	121	819	2854
	CQLB	874	3.33	2.15	0.38	220	221	201	1184	5323
	OSU	504	2.01	2.11	0.30	232	147	188	1148	62477
	OSL	481	1.98	2.13	0.29	212	134	171	1058	60316
Total		**2,760**		**2.18**	**0.30**	**201**	**166**	**170**	**1043**	**26100**

Note:
1. The estimate uses a minimum cut-off of 0.2% V_2O_5 for the oil shale units, and minimum cut-off of 0.15% V_2O_5 for the Coquina units.
2. The total resource tonnage reported is rounded to reflect the relative uncertainty in the estimate categories and component horizons may not sum correctly.

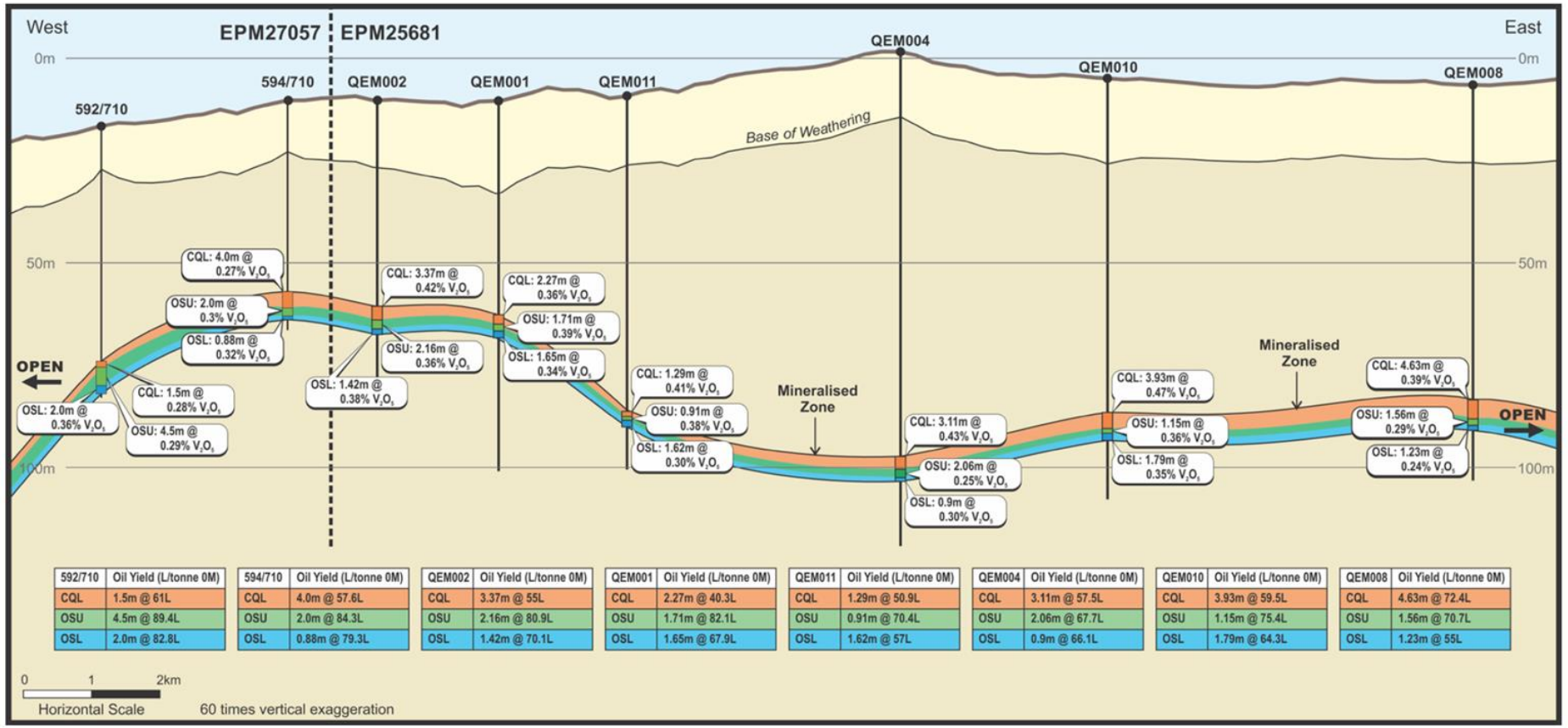
Table 2: Summary of SPE-PRMS Oil Resource

Total					
Strat.Unit	**Mass (Mt)**	**Average Thickness (m)**	**Oil Yield (L/tonne)**	**MMBarrels (insitu-PIIP)**	**MMBarrels 3C**
CQL	1,701	5.93	44	446	401
OSU	544	2.01	72	231	208
OSL	518	1.97	63	193	174
TOTAL	**2,760**		**53**	**870**	**783**

Note:
1. The total resource tonnage reported is rounded to reflect the relative uncertainty in the estimate and component horizons may not sum correctly.

Julia Creek Oil Yield

Cross Section the Julia Creek Oil Deposit



592/710	Oil Yield (L/tonne 0M)
CQL	1.5m @ 61L
OSU	4.5m @ 89.4L
OSL	2.0m @ 82.8L

594/710	Oil Yield (L/tonne 0M)
CQL	4.0m @ 57.6L
OSU	2.0m @ 84.3L
OSL	0.88m @ 79.3L

QEM002	Oil Yield (L/tonne 0M)
CQL	3.37m @ 55L
OSU	2.16m @ 80.9L
OSL	1.42m @ 70.1L

QEM001	Oil Yield (L/tonne 0M)
CQL	2.27m @ 40.3L
OSU	1.71m @ 82.1L
OSL	1.65m @ 67.9L

QEM011	Oil Yield (L/tonne 0M)
CQL	1.29m @ 50.9L
OSU	0.91m @ 70.4L
OSL	1.62m @ 57L

QEM004	Oil Yield (L/tonne 0M)
CQL	3.11m @ 57.5L
OSU	2.06m @ 67.7L
OSL	0.9m @ 66.1L

QEM010	Oil Yield (L/tonne 0M)
CQL	3.93m @ 59.5L
OSU	1.15m @ 75.4L
OSL	1.79m @ 64.3L

QEM008	Oil Yield (L/tonne 0M)
CQL	4.63m @ 72.4L
OSU	1.56m @ 70.7L
OSL	1.23m @ 55L

Source: Measured Group

The estimation methodology used is deterministic. The estimation is based on grids constructed for unit structure, thickness and oil grade parameters

Appendix – B

Government Policy Support

Government Funding Bodies

Government Backing Policy Aims with Funding Support

- In Sept 2021, the **Australian Government** established the **$2B Critical Minerals Facility**.
- **Northern Australian Infrastructure Facility (NAIF) $2.47B** for infrastructure development.
- **Resources Technology and Critical Minerals Processing National Manufacturing Priority Roadmap $1.5B** in funding for critical minerals processing development.
- **ARENA's Advancing Renewables Program** for projects which optimise the transition to renewable electricity, commercialise clean hydrogen & support the transition to low emissions metals
- **The Clean Energy Innovation Fund (CEFC) $200m** in early-stage clean technology companies.
- **Queensland Hydrogen Industry Strategy $19m** in funding for hydrogen projects in the state, particularly in regional areas, with additional $5m announced recently to support feasibility studies.
- **Resources Community Infrastructure Fund $100m** established by QLD Government.
- **Exploring for the Future $10m** expansion of the Government's program-focussed on new economy minerals such as vanadium.
- **Queensland's Strategic Blueprint for North West Minerals Province (NWMP) $39m** over 4yrs.

QEM

Australian Government | export finance australia

Australian Government | NAIF Northern Australia Infrastructure Facility

Australian Government Australian Renewable Energy Agency ARENA

cefc

QUEENSLAND GOVERNMENT

North West Minerals Province

Government Backing: NAIF

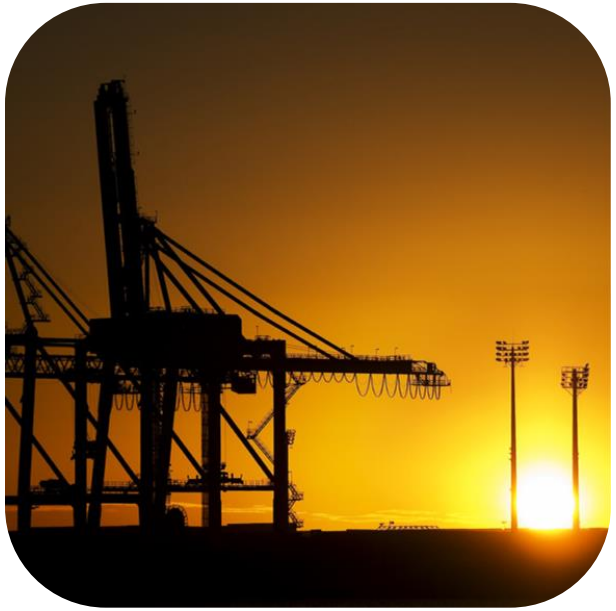
Julia Creek within Northern Australian Infrastructure Facility coverage

NAIF is a Commonwealth Government agency established to facilitate economic growth by lending to infrastructure projects and businesses in northern Australia and helping to catalyse private sector investment.

NAIF is a $5 billion development financier that provides loans to infrastructure projects in the Northern Territory, Queensland and Western Australia, in the last financial year, NAIF has made 11 Investment Decisions worth more than $1.4billion

A key focus of any financing is to drive public benefit, economic and population growth and Indigenous involvement in northern Australia.

NAIF can lend up to 100% of the debt and has a higher tolerance for the unique risks of investing in northern Australia including but not limited to, distance, remoteness and climate.



Export Finance Australia

In September 2021, the Australian Government established the $2 billion Critical Minerals Facility, which is managed by Export Finance Australia. This facility is for projects that are aligned with the Australian Government's Critical Minerals Strategy and are otherwise in Australia's national interest.

Export Finance Australia works alongside other Commonwealth financing bodies where mandates overlap. For critical minerals this can include working with the Clean Energy Finance Corporation and the Northern Australia Infrastructure Facility.

Government Backing: ARENA

ARENA fund has laid out Hydrogen project funding guidelines

ARENA Supports R&D in renewable hydrogen production, storage and use for energy, with the aim of delivering longer-term cost reductions and efficiency gains through innovative, disruptive technology developments.

- Feasibility studies for projects involving 100+ MW electrolysers
- Commercial-scale deployments involving 10-40+ MW electrolysers focused on industries and applications with large potential demand for hydrogen (e.g., ammonia production, power to gas, etc.) to drive the commercialisation of key component technologies
- Demonstration-scale projects involving 1-10 MW electrolysers demonstrating new applications such as transport or remote area power systems with onsite hydrogen production and fuel cells/turbines replacing diesel generation, to drive the commercialisation for key component technologies
- Projects or activities that support the implementation of the National Hydrogen Strategy
- Projects that demonstrate or address issues with the use of hydrogen in industrial processes currently using fossil fuels (e.g., hydrogen as a fuel in boilers, kilns or other process heating applications, hydrogen as a reducing agent in steel manufacture)
- Subject to positive outcomes in financial and regulatory studies, QEM intends to seek financial support from the ARENA fund

Australian Government
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ARENA

- Source ARENA website