

17 October 2023

## **GREENVALE TO ACQUIRE HIGH-QUALITY AND HIGH-GRADE HELIUM AND HYDROGEN OPPORTUNITY IN CENTRAL AUSTRALIA**

*Farm-in deal over Amadeus Basin permits represents an exciting diversification opportunity in a rapidly growing industry leveraged to the global energy transition*

### **Highlights:**

- Farm-in agreement with Mosman Oil and Gas Ltd to acquire a 75% interest in the EP 145 Permit in the Amadeus Basin in Central Australia. The proposed transaction is subject to Ministerial Consent and Government approval for the transfer of the rights as an Operator.
- EP 145 hosts an existing Prospective Resource Estimate, with a “Best Estimate” of 440 Billion cubic feet (“Bcf”) Total Gas, including 26.4 Bcf of Helium and 26.4 Bcf of Hydrogen.
- Preliminary technical analysis indicates the tenement hosts favourable geology for helium production, with similar characteristics to other producing helium wells in the Amadeus Basin.
- The Amadeus Basin has a long history of hydrocarbon production and has the potential to become a world-class province for helium and hydrogen, with some of the highest concentrations of helium globally and confirmed hydrogen accumulations.
- Acquisition provides an exciting opportunity to target the rapidly expanding helium market, which is experiencing significant long-term supply shortfalls.
- Proximity to critical gas infrastructure provides a near-term commercialisation pathway, with potential to be rapidly advanced alongside Greenvale’s flagship Alpha Torbanite Project in Queensland.
- Transaction terms is a cash payment of \$160,000 for a 75% interest and with the Company to fund 100% of the seismic and well work programme.
- Greenvale is to be the Operator of the project. The Project is to be administered under an Operating Committee, which Greenvale will control.

#### **REGISTERED OFFICE:**

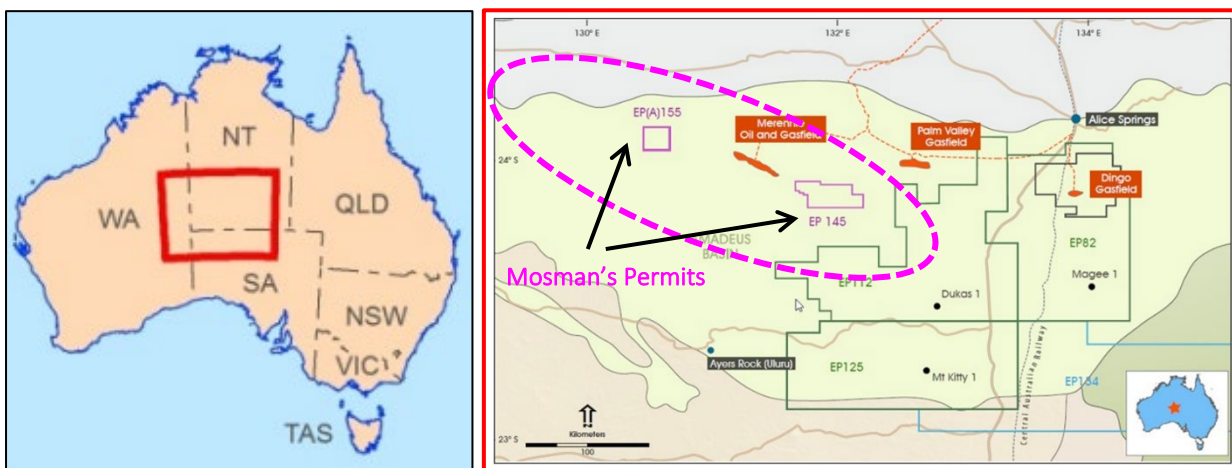
Level 5, Suite 6 189 Kent Street, Sydney, New South Wales 2000 | GPO Box 2733, Sydney NSW 2001  
+61 2 8046 2799 | [admin@greenvaleenergy.com.au](mailto:admin@greenvaleenergy.com.au) | [www.greenvaleenergy.com.au](http://www.greenvaleenergy.com.au)

ABN 54 000 743 555

Greenvale Energy Limited (ASX: **GRV**, "**Greenvale**" or "**the Company**") is pleased to advise that its wholly owned subsidiary Greenvale Gold Pty Ltd (**Greenvale Gold**) has executed a Farm-in Agreement with Mosman Oil and Gas Ltd (AIM: **MSMN**, "**Mosman**") to acquire a potentially ultra-high-grade helium, hydrogen and hydrocarbon opportunity in the Amadeus Basin in Central Australia. The agreement is subject to Ministerial Consent for the transfer of 75% interest to Greenvale Gold and Northern Territory government approval to assign the Operator rights to Greenvale Gold,

Under the terms of the agreement, Greenvale Gold will acquire 75% interest in EP 145 permit in the Northern Territory which is 100% owned by Trident Energy Pty Ltd, which is a wholly subsidiary company of Mosman Oil & Gas. Mosman reported a Prospective Resource Estimate for EP 145 on 24 October 2022 which included a "Best Estimate" (applying the SPE PRMS standard) of 440 Billion cubic feet ("Bcf") Total Gas, including 26.4 Bcf of Helium and 26.4 Bcf of Hydrogen.

The Amadeus Basin has a long history of hydrocarbon production in the Palaeozoic and late Proterozoic succession. Helium and hydrogen production have been proven through exploration drilling, with some of the highest concentrations of helium globally – highlighting its potential to become a world-class province for helium and hydrogen.



*Figure 1 – Location of Mosman Permits in the Amadeus Basin*

The EP 145 permit sits within recognised play fairways for helium and hydrogen and contains proven hydrocarbon discoveries. The permit lies on-trend with the producing Mereenie oil & gas field and is optimally located for helium, hydrogen and hydrocarbons.

Successful helium wells are located along the margins of the Amadeus Basin at Mt Kitty-1 and Magee-1, with existing gas pipeline infrastructure to Darwin and the Australian East Coast, providing an opportunity for rapid development and commercialisation.

A preliminary technical evaluation for EP 145 commissioned by Mosman in 2022 and undertaken by Geognostics Australia Pty Ltd identified favourable scenarios for all three essential play elements related to viable helium and hydrogen plays. These components are also present in the Mount Kitty-1 and Magee-1 wells. The key findings of the Technical Report included<sup>1</sup>:

1. Identified favourable scenarios for all three essential play elements related to viable helium and hydrogen plays including:
  - (a) Basement composition as a source of helium;
  - (b) Basement structure and connectivity via faults systems to support entrapment and / or migration of deeply-sourced gases (hydrogen and helium); and
  - (c) Possible seal facies above basement
2. EP 145 is underlain by felsic-intermediate granites, a known source of helium in the basin.
3. EP 145 contains the West Walker anticline with traps at multiple levels and migration pathways.
4. The Gillen Formation evaporites interlayered with thin salt could be present and could act as viable seals.

---

<sup>1</sup> See Mosman Oil and Gas announcement 24 October 2022: “EP 145 Prospective Resource Estimate for Helium and Hydrogen”.

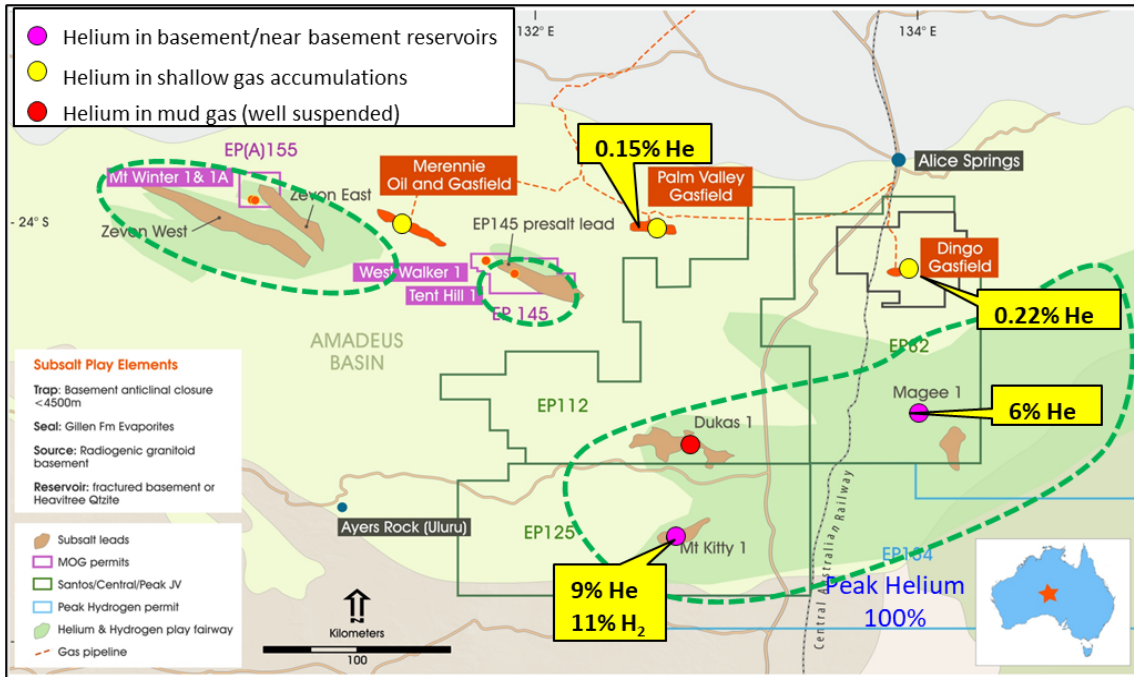


Figure 2 – Helium play fairway map, Amadeus Basin

Since 2006, the helium market has experienced periods of severe supply shortages, with strong forecast demand growth and very few new sources of supply in the pipeline. The EP 145 acquisition provides an exciting opportunity for Greenvale to target the rapidly expanding helium market, with global helium demand currently estimated to be around 6Bcf per annum and expected to increase to 8.5Bcf by 2030.

## Helium

Helium is an inert gas that has the lowest cooling temperature of any element, making it invaluable for medical, manufacturing and scientific applications. Helium is used in medical diagnostic equipment including magnetic resonance imaging (MRI) machines, nuclear magnetic resonance (NMR) spectrometers and is used to cool nuclear reactors. Due to its unreactive nature, helium provides a protective atmosphere for making fibre optics, semiconductors and in arc welding.

Other uses include in rocket propulsion, meteorology (for instrument carrying balloons), refrigeration and cryogenic research.

### **Natural Hydrogen**

Natural hydrogen in the Earth's subsurface provides an alternative, clean, carbon free fuel which can be extracted for commercial use. Unlike the hydrogen produced via water electrolysis, natural hydrogen requires no additional energy input from either fossil fuels (coal/natural gas) or renewables.

### **Agreement Terms**

The completion date is subject to the above approvals, where under the terms of the farm-in agreement, Greenvale Gold will earn a 75% working interest in EP 145 by:

- pay to Trident Energy within 5 business days of the Completion date upfront cash payment of \$160,000
- On completion fund the Permit Year 3 Work Program including acquisition of seismic data by August 2024; and
- funding the drilling of one well to be drilled before August 2025.

The cost of seismic data acquisition is estimated to be circa \$2 million. On completion Greenvale Gold will commence the work on the seismic data acquisition. Greenvale has the right to terminate the Farmin Agreement, should any of the conditions precedent not have been satisfied on or before 31 January 2024.

The cost of drilling the well will depend on a range of factors including the depth, final location and well design, with these factors subject to the seismic results, joint venture discussions and NT government approval. This work is expected to be completed in the first of acquisition.

In the second operation and based on the results of from the seismic work, Greenvale Gold is to undertake to drill the well at an expected cost of \$5.5 million. Any costs over \$5.5 million are to be split between Greenvale and Mosman on a 75:25 basis.

Greenvale will take over Operatorship of the EP 145 permit under a Joint Operating Agreement (JOA). A summary of the key terms of the JOA are set out in Appendix 1. All decisions under the JOA are to be made by the Operating Committee. It will be noted from Appendix 1 that a majority for decisions made under the Operating Committee require a majority of one or more persons who has a 70% ownership interest.

**Management Comment**

Greenvale's CEO, Mark Turner, commented: *"This agreement provides an exciting opportunity for Greenvale to test for helium, hydrogen and hydrocarbon potential in the Amadeus Basin, which is known to host some of the highest concentrations of helium globally as well as confirmed accumulations of hydrogen.*

*"Importantly, the EP 145 permit already has an existing high-quality Prospective Resource Estimate in place – including a Best Estimate of 440Bcf of Total Gas – providing an outstanding platform from which to progress our initial exploration programs.*

*"With a global shortage of helium supply and continued growth in demand, EP 145 represents an exciting new addition to Greenvale's asset portfolio and we look forward to getting underway with seismic data collection in the near future."*

**Authorised for release:**

This announcement has been approved by the Board of Greenvale for release.

**For further details, contact:**

Mark Turner  
CEO  
Mobile: 0459 519 999

**Media Inquiries:**

Nicholas Read  
Read Corporate  
Nicholas@readcorporate.com.au  
Mobile: 0419 929 046

**Qualified Person's Statement**

The information contained in this announcement has been reviewed and approved by Andy Carroll, Technical Director for Mosman, who has over 35 years of relevant experience in the oil industry. Mr. Carroll is a member of the Society of Petroleum Engineers.

**Summary of key terms of the Joint Operating Agreement****Rights and Duties of Operator**

- (a) Greenvale Gold is to be the Operator (Operator) and shall have all of the rights, functions and duties of Operator under the Permit and shall have exclusive charge of and shall conduct all Joint Operations. As the Operator, Greenvale may employ independent contractors and agents (which independent contractors and agents in the Joint Operations.
- (b) in the conduct of Joint Operations Operator shall:
1. perform Joint Operations in accordance with the provisions of the Permit, the Laws / Regulations, this Agreement, and the decisions of the Operating Committee not in conflict with this Agreement;
  2. exercise due care with respect to the receipt, payment and accounting of funds in accordance with good and prudent practices as are generally followed by the international petroleum industry under similar circumstances;
  3. perform the duties for the Operating Committee and prepare and submit to the Operating Committee proposed Work Programs and Budgets;
  4. acquire all permits, consents, approvals, and surface or other rights that may be required for or in connection with the conduct of Joint Operations;
  5. pay to the Government for the Joint Account, within the periods and in the manner prescribed by the Permit and the Laws / Regulations, all periodic payments, royalties, taxes, fees and other payments pertaining to Joint;
  6. carry out the obligations of Operator pursuant to the Permit, including preparing and furnishing such reports, records and information as may be required pursuant to the Permit;
  7. have, in accordance with any decisions of the Operating Committee, the exclusive right and obligation to represent the Parties in all dealings with the Government with respect to matters arising under the Permit and Joint Operations;

## **Personnel**

The Operator shall engage or retain only such employees, contractors, consultants and agents as are reasonably necessary to conduct Joint Operations. The Operator shall determine the number of employees, contractors, consultants and agents, the selection of such persons, their hours of work, and the compensation to be paid to all such persons in connection with Joint Operations.

## **Resignation**

Greenvale can resign as the Operator with 60 days notice.

## **Removal**

Removal can occur in the case of insolvency or where parties who have a more than 50% Participating Interest can vote to remove the Operator.

## **Operating Committee**

The business is to be overseen and managed by an Operating Committee. Greenvale and Trident are to have one member each on the Operating Committee.

The Operating Committee is to have the power and duty to authorise the Joint Operations,

Decisions are to be based on a vote of 1 or more parties who have collectively 70% of the voting of the Participating Interests.

Work Programs set by the Operator are to be approved by 31 March of each financial year.

## **Transfer and Pre-emptive rights**

Pre-emptive -rights to exist for the transfer of any interest.

A change of control also needs to be approved.