



2 December 2024 ASX Announcement

Resource Rising Stars Summer Series Conferences

Gold Hydrogen Limited (**ASX: GHY**) is pleased to advise that Managing Director Neil McDonald will be presenting at the *Resources Rising Stars Summer Series Conferences*, which are being held in Sydney on Tuesday 3 December 2024, and in Melbourne on Thursday 5 December 2024.

The presentations are being hosted at the following venues in each city:

SYDNEY, TUESDAY 3 DECEMBER:

The Four Seasons Hotel, 199 George Street, The Rocks, Sydney

Time: 8.40am – 5.15pm (AEDT)

MELBOURNE, THURSDAY 5 DECEMBER:

Sofitel on Collins, 25 Collins Street, Melbourne

Time: 8.55am – 5.30pm (AEDT)

Investors and shareholders who are interested in attending these events can register by clicking [here](#).

The Melbourne Conference will also be livestreamed. To watch the conference livestream, please register here:

https://www.bigmarker.com/series/rrs-2024-summer-series/series_summit

It is recommended that online investors pre-register prior to the commencement of the presentation.

A recording of the presentation will be sent to all registered attendees shortly after the conclusion of the presentation via the online conference platform, and an edited version will be released on the Company's website and other platforms after the event.

A copy of the Company's presentation to be delivered at these forums is attached.



About Gold Hydrogen

Gold Hydrogen is focused on the discovery and development of world class Natural Hydrogen and Helium gases in a potentially extensive province in South Australia. This region has recently had its Natural Hydrogen and Helium potential confirmed by the Company via its maiden drilling campaign. The domestic and global demand for Hydrogen and Helium, combined with new exploration techniques and experienced personnel, provides Gold Hydrogen with an extraordinary opportunity to define and ultimately develop a new Natural Hydrogen and Helium gas province.

The combined permit area of the Gold Hydrogen group is approximately 77,292km². Gold Hydrogen holds one granted exploration license (the Ramsay Project - PEL 687) and one application area, whilst its two 100% owned subsidiary companies (White Hydrogen Australia and Byrock Resources) hold an additional seven (7) applications for Natural Hydrogen and Helium exploration within South Australia. Gold Hydrogen is also the preferred applicant for four (4) gas storage exploration licenses applications (GSELA) covering an area of 8,107km² within the Yorke Peninsula portion of PEL 687 in South Australia. These storage licence applications are in addition to the granted exploration licence and application licences.

The group's permit areas are characterised by low population densities, cooperative stakeholders and aspects of the natural environment suited to the exploration and development of a future Natural Hydrogen and Helium gas province. Gold Hydrogen places considerable importance on close liaison with landholders, traditional owners and all other stakeholders, and this approach has led to the grant of its key tenement PEL 687 in South Australia. The Company intends to continue to invest in these efforts.

Further Information

Further information on the Gold Hydrogen group, its projects, and its Board and Management can be found on the Company's website (www.goldhydrogen.com.au). Gold Hydrogen also has accounts on LinkedIn and Twitter (@GHY ASX), and copies of market releases will be emailed to all interested parties who register via info@goldhydrogen.com.au

This announcement has been authorised for release by the Company Secretary.

For Company Enquiries Contact:

Neil McDonald – Managing Director
nmcdonald@goldhydrogen.com.au
+61 7 3521 8038

Karl Schlobohm – Company Secretary / CFO
kschlobohm@goldhydrogen.com.au
+61 7 3521 8038

For Media Enquiries Contact:

Matthew Doman – Crestview Strategy
matthew.doman@crestviewstrategy.com
+61 421 888 858



Gold Hydrogen

**Committed to Developing Naturally
Occurring Hydrogen and Helium in
Australia**

**The Gold Standard
in Green Energy**

Important Notice & Disclaimer

This presentation is not a prospectus, disclosure document or offering document under Australian law or under any other law. It is for informational purposes only. This document does not constitute, and should not be construed as, an offer to issue or sell or a solicitation of an offer or invitation to subscribe for, buy or sell securities in Gold Hydrogen Limited ABN 74 647 468 899 (Gold Hydrogen).

Any material used in this presentation is only an overview and summary of certain data selected by the management of Gold Hydrogen. The presentation does not purport to contain all the information that a prospective investor may require in evaluating a possible investment in Gold Hydrogen nor does it contain all the information which would be required in a disclosure document prepared in accordance with the requirements of the Corporations Act and should not be used in isolation as a basis to invest in Gold Hydrogen. The information contained in this presentation is not investment or financial product advice and has been prepared as general information only, without consideration for your particular investment objectives, financial situation or particular needs. Recipients of this presentation must make their own independent investigations, consideration, and evaluation of Gold Hydrogen. Gold Hydrogen recommends that potential investors consult their professional advisor/s as an investment in Gold Hydrogen is considered to be speculative in nature. Statements in this presentation are made only as of the date of this presentation unless otherwise stated and the information in this presentation remains subject to change without notice. Reliance should not be placed on information or opinions contained in this presentation.

To the maximum extent permitted by law, Gold Hydrogen disclaims any responsibility to inform any recipient of this presentation on any matter that subsequently comes to its notice which may affect any of the information contained in this document and presentation and undertakes no obligation to provide any additional or updated information whether as a result of new information, future events or results or otherwise.

To the maximum extent permitted by law, no representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in or derived from this presentation or any omission from this presentation or of any other written or oral information or opinions provided now or in the future to any person.

To the maximum extent permitted by law, neither Gold Hydrogen nor, any affiliates, related bodies corporate and their respective officers, directors, employees, advisors and agents (Relevant Parties), nor any other person, accepts any liability as to or in relation to the accuracy or completeness of the information, statements, opinions or matters (express or implied) arising out of, contained in or derived from this presentation or any omission from this presentation or of any other written or oral information or opinions provided now or in the future to any person.

This presentation includes information regarding the past performance of Gold Hydrogen. Recipients of this presentation should be aware that past performance should not be relied upon as being indicative of future performance.

This presentation contains statistics, data and other information pertaining to Gold Hydrogen's business and operations. Recipients of this presentation should note that industry and market data and statistics are

inherently predictive and subject to uncertainty and not necessarily reflective of actual industry or market conditions. There is no assurance that any of the estimates or projections in this presentation will be achieved. Gold Hydrogen has not independently verified, and cannot give any assurances to the accuracy or completeness of, this market and industry data or the underlying assumptions used in generating this market and industry data.

This presentation contains "forward looking statements" concerning the financial condition, results of operations and business of Gold Hydrogen. All statements other than statements of fact or aspirational statements, are or may be deemed to be "forward looking statements". Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", "outlook", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, future or anticipated production or construction commencement dates and expected costs, resources or reserves, exploration results or production outputs. Forward looking statements are statements of future expectations that are based on management's current expectations and assumptions and known and unknown risks and uncertainties that could cause the actual results, performance, or events to differ materially from those expressed or implied in these statements. These risks include, but are not limited to price fluctuations, actual demand, currency fluctuations, drilling and production results, commercialization, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal, and regulatory developments, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals, and cost estimates. More detail on the risks relevant to Gold Hydrogen's business and operations is set out in Risks section of this presentation.

Prospective Resource Statements

The Prospective Resource Statements for Natural Hydrogen and for Helium have been included in presentation under the approval of Mr Billy Hadi Subrata, Chief Engineer for Gold Hydrogen, who is a Qualified Petroleum Reserves and Resources Evaluator. Mr Hadi Subrata confirms that, as at the date of this announcement, there is no change to information or additional information, since the effective dates, that would materially change the estimates of prospective resources quoted.

QPRRE Statement – Natural Hydrogen

The Prospective Resource Statement for Natural Hydrogen in this presentation is based on, and fairly represents, information and supporting documentation prepared by independent consultants "Teof Rodrigues & Associates" with an effective date of 30 September 2021, and which forms part of the Company's Replacement Prospectus dated 29 November 2022. The Prospective Resource Statement, together with all relevant notes, also appears in the Company's ASX releases of 13 January 2023 and 30 October 2024.

QPRRE Statement - Helium

The Prospective Resource Statement for Helium in this announcement is based on, and fairly represents, information and supporting documentation prepared by independent consultants "Teof Rodrigues & Associates" with an effective date of 21 February 2024, and which was announced by the Company on that date (as well as 30 October 2024) together with the accompanying assumptions and notes.

Executive Summary – Natural Hydrogen and Helium

Title over certified Prospective Resources

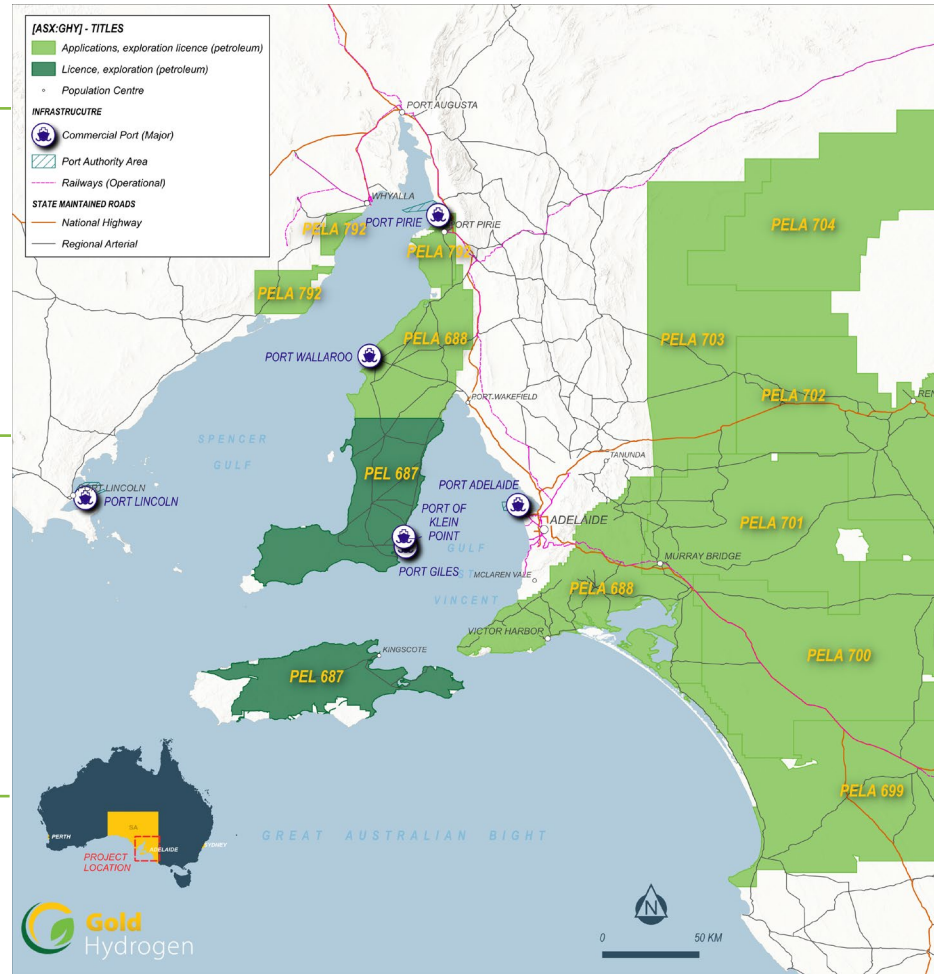
1.3 billion kg of natural Hydrogen¹
41 Bcf of Helium¹
 (with a mean of 96 Bcf)

Ramsay Project 100% owned

7,820 km²
plus a further **69,472 km²** under
exclusive application

High purity gas sample levels²

95.8% Hydrogen
Up to 36.9% Helium
Helium-3 Detected in Samples



Engagements to date with leading global experts and contractors

CSIRO, Schlumberger, Total Seismic,
Xcalibur, Savanna Energy Services

Commercial and environmental competitive advantages

Natural hydrogen provides **cost and emission advantages** over other production sources

A number of global gas projects are **commercial with much lower concentrations** of helium (<1% helium as a by-product)

Hydrogen and Helium to date in PEL687

Extensive regional play across 7,400 km² permit area

H₂

Extracted from fluid inclusions in **35 of 46** rock chips from historical wells

He

Extracted from fluid inclusions in **29 of 46** rock chips from historical wells

H₂

Hydrogen from historical wells

1921
83% H₂
290m

1931
90% H₂
507m

Ramsay Oil Bore 1

Ramsay 2

Ramsay 1

2023-2024
95.8% H₂
17.5% He

2023-2024
73% H₂
36.9% He

Note: Ramsay 1 & 2 drilling and well test sample results are air-corrected. Results are in a range up to these values. Refer ASX releases of 31 October 2023 to 19 December 2023, 2 August 2024 and 17 October 2024.

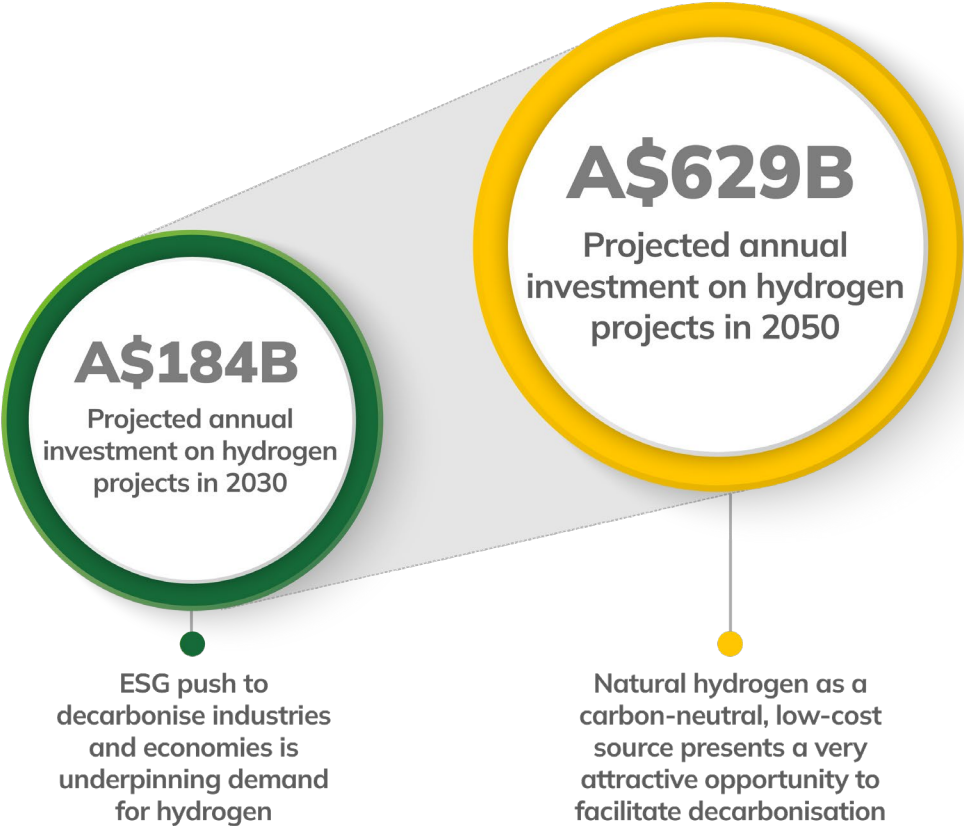


Industry Overview

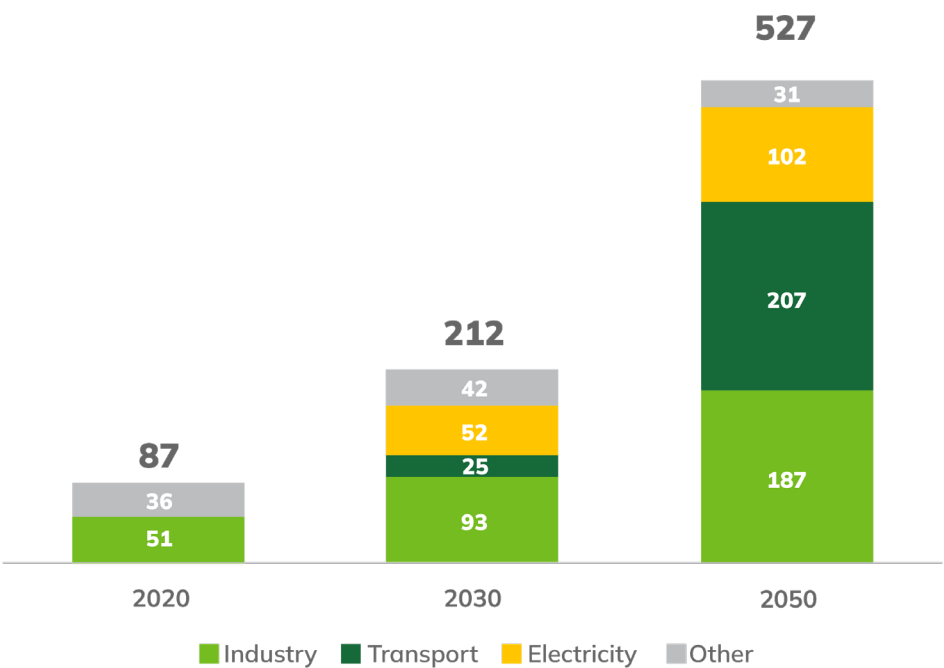


Global Hydrogen Forecast

Substantial investment laying the foundation for Hydrogen use



Global Hydrogen Demand by Sector, Net Zero Emissions Target Scenario (Mt)



Source: International Energy Agency, Oct-2021 1. Other includes buildings, agriculture and refineries

Source: Frost & Sullivan Report - Page 29 of Gold Hydrogen Prospectus

Types of Hydrogen Production

Today, ~95% of all hydrogen produced is from natural gas

Naturally occurring Hydrogen offers significant cost and / or carbon advantages relative to other Hydrogen production (manufacturing) processes

Gold Hydrogen is exploring for 'gold' or 'white' (natural) Hydrogen

Gold / White
(natural)

		Grey	Black/Brown	Blue	Green
Energy source	Natural hydrogen	Natural gas	Coal	Natural gas / coal	Renewables / biomass
Environmental impact	Low	High	Very High	Low	Low
No thermal process	✓	✗	✗	✗	✗
Production cost (A\$/kg) ^{1,2}	\$1.00	\$5.60	\$6.20-\$6.40	\$10.20-\$10.30	P: \$6.40-\$25.50 A: \$4.70-\$23.20
Cost comparable to existing power generation ³	✓	✗	✗	✗	✗

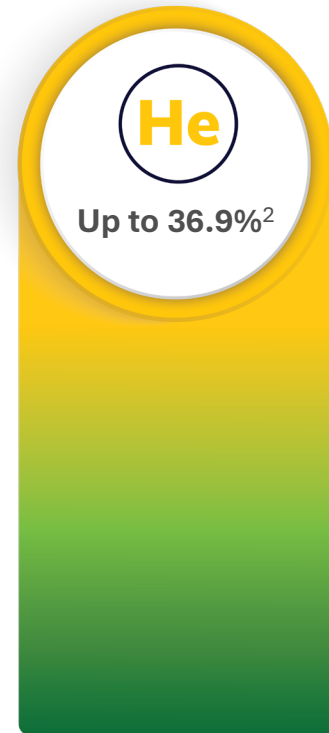
Source: Frost and Sullivan, Sep-2022 (Refer Gold Hydrogen Replacement Prospectus dated 29 November 2022)

1. Source: Christophe Rigollet¹, Alain Prinzhofer^{2,3}, Natural Hydrogen: A New Source of Carbon-Free and Renewable Energy That Can Compete With Hydrocarbons, First Break, Volume 40, Issue 10, Oct 2022, p. 78 – 84 DOI: <https://doi.org/10.3997/1365-2397.fb2022087>; "The Bourakébougou field, in Mali, represents the first natural hydrogen deposit studied both scientifically and industrially. It gives us information on its renewability, on the natural flows involved and therefore on its sustainable exploitation. It is possible to estimate that the cost of operating hydrogen would be less than \$1/kg, which is significantly cheaper than any manufactured hydrogen, whether green, grey, or blue. Equivalent work is in progress in other continents, in order to be able to compare our knowledge of this Malian field with other fields in the world, which will make it possible to better ensure the industrial and societal interest of R&D for this new field." Available on the Gold Hydrogen website.

2. P = Polymer electrolyte membrane electrolysis. A = Alkaline Electrolysis. Gold Hydrogen cost is an estimate

3. For industrial buyers, a hydrogen offtake price of €3 (\$4.50) per kg would be required to incentivise hydrogen production over power generation

Key Drivers for Helium



The global wholesale helium market is expected to grow from an estimated **US\$5bn in 2023** to over **US\$8bn in 2030¹**



HEALTHCARE



AEROSTATICS



INDUSTRIAL USES



ELECTRONICS &
SEMICONDUCTORS

There are commercial global gas projects with significantly lower helium concentrations (>1%)

Indicatively pricing is currently approximately **USD400-500 per Mcf** (thousand cubic feet)
(Source: Kornbluth Helium Consulting)



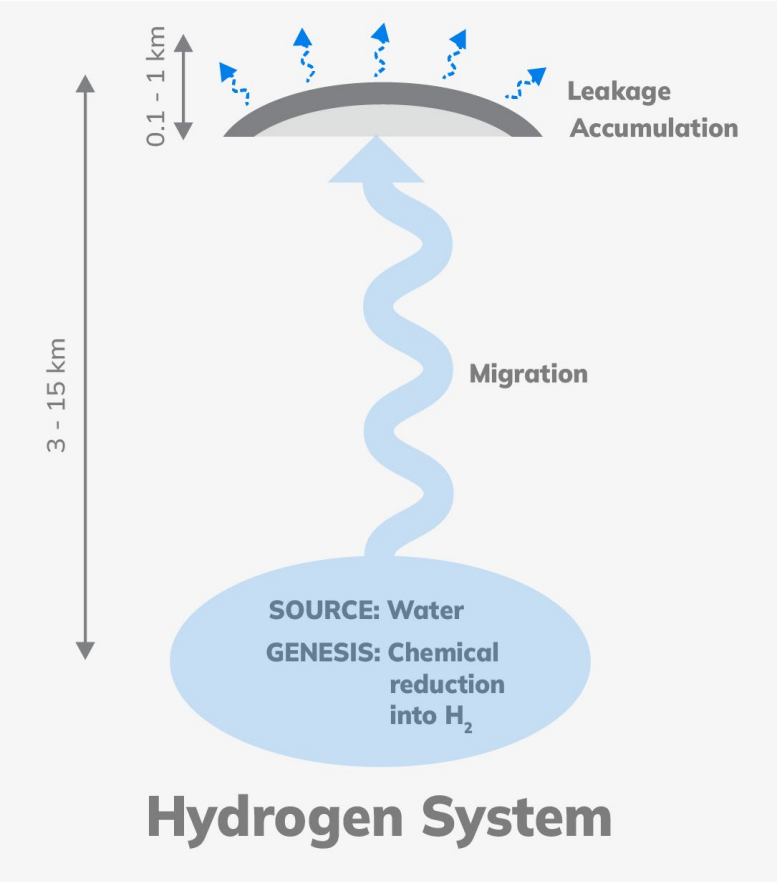
Results



Key Success Factors Exploration

Ramsay Project ticks the boxes in respect of the key attributes for the formation and accumulation of Natural Hydrogen and Helium

Key Success Factor		Results of Exploration Activities
Source & Generation	Via hydrolysis and / or radiolysis reactions in old rocks	The presence of Natural Hydrogen at up to 95.8% purity and Helium at up to 36.9% purity (both air-corrected) has been confirmed at the Ramsay Project location via mud gas measurements, MDT samples and exploration well testing. Results are air-corrected. Refer ASX releases of 27 May 2024, 2 August 2024 and 17 October 2024.
Seals & Traps	Required to enable accumulations of naturally formed hydrogen	The presence of retained Natural Hydrogen and Helium indicates that the stratigraphy includes valid seals and traps at the location of the Ramsay Project.
Structure	Major structural boundaries in an extensional geological regime where natural fractures exist	The airborne gravity and magnetic geophysical survey and the FMI (image log) data from the wells supports the interpretation that the Ramsay Project is located in a structurally favourable position for a large scale Natural Hydrogen and Helium accumulation.
Reservoir	To be commercial, a reservoir of adequate volume, accessibility, flow rate and quality is required	The FMI data from the wells and results of the stage 1 testing has demonstrated that the fractured limestones, dolomites and basement acts as suitable reservoir for accumulating extractable Natural Hydrogen and Helium.



Source: SPE Hydrogen Section, online. November 2, 2023 (Ref: Prinzhofer, 2021)

Gold Hydrogen Prospective Resources (Using PRMS guidelines)

Certified Prospective Hydrogen Resources, existing occurrences and drill ready hydrogen prospects (calculated volume not determined)

Unrisked Prospective Hydrogen Resources, PEL 687			
SPE-PRMS Sub-Class Category	Low Estimate (kTonnes)	Best Estimate (kTonnes)	High Estimate (kTonnes)
Prospect	165	1135	8050
Lead	42	178	770
Total	207	1313	8820

Certified Prospective Helium Resources, Ramsay Field (PEL 687 Yorke Peninsula)

Unrisked Prospective Helium Resources, PEL 687			
SPE-PRMS Sub-Class Category	Low Estimate (Bscf)	Best Estimate (Bscf)	High Estimate (Bscf)
Prospect Ramsay Fault Block	2	8	38
Prospect South of Ramsay Fault Block	5	33	205
Total	7	41	243

See ASX releases of 13 January 2023 and 30 October 2024 (Hydrogen) and 21 February 2024 and 30 October 2024 (Helium) for full details and notes

NOTE - All estimates are unrisked and aggregated arithmetically by category, hence caution that the aggregate low estimate maybe a conservative estimate and the aggregate high estimate maybe very optimistic estimate due to the portfolio effects of arithmetic summation. The estimated quantities of hydrogen and / or helium that may potentially be recovered by the application of future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery (Pg), risk of development (Pd) and risk of commercialization (Pc). Further exploration, appraisal and evaluation is required to determine the existence of a significant quantity of potentially recoverable hydrogen and / or helium.

Well Testing Program – Objectives



Primary Objective – Obtain gas samples for international analysis

Achieved

Secondary Objective – Extract gases to surface, including in formation fluid

Achieved

Conduct both open hole (R1) and isolated zone (R2) testing

Achieved

Analyse samples for purity and isotopic composition

Achieved

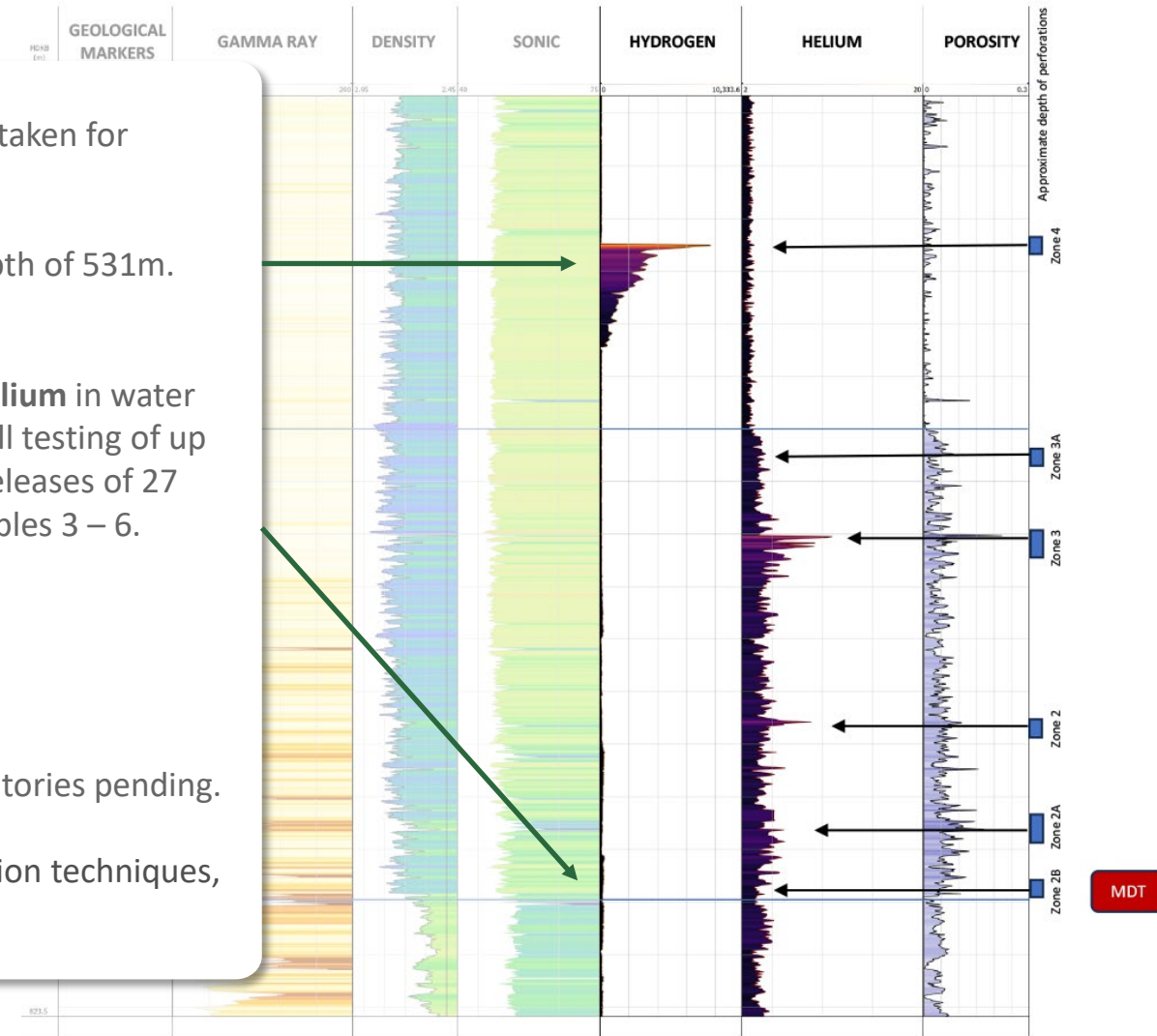
Facilitate initial Pilot Project planning and design:

- Hydrogen to energy
- Helium bottling plant

**Initial
discussions**

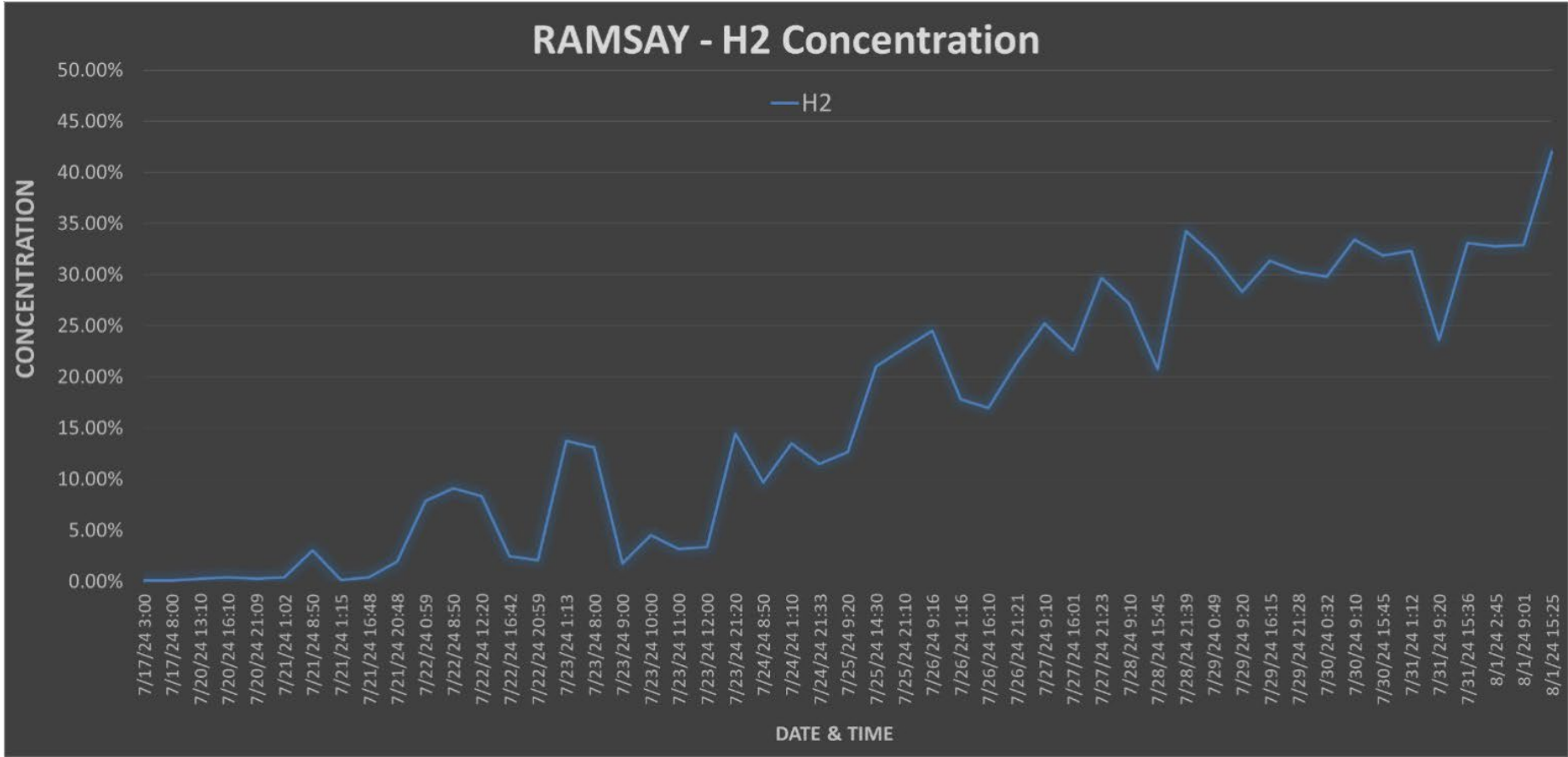
Exploration Well Testing Program – Sample Purity Results

- Gas successfully flowed to surface, numerous zones identified, and samples taken for analysis.
- Air-corrected **hydrogen** result of 95.8% confirmed for Ramsay 2 well at a depth of 531m. Refer ASX release of 27 May 2024 for full details. Refer also Table 6.
- **Helium** MDT result of 17.5% confirmed for Ramsay 2, as well as dissolved **helium** in water reported at 20% - 25% purity, and laboratory helium sample results from well testing of up to 36.9%. All results have been corrected for air contamination. Refer ASX releases of 27 May 2024, 2 August 2024 and 17 October 2024 for full details. Refer also Tables 3 – 6.
- 180m thick **helium** pay zone identified.
- Permeability of structures and proximity to pay zones confirmed.
- A number of results for hydrogen and helium from specialist overseas laboratories pending.
- Key learnings designed to assist with future well design, drilling and production techniques, and will ultimately assist with pilot plant concept design.



Stage 2 Well Testing – Ramsay 2 Hydrogen Concentrations Over Time

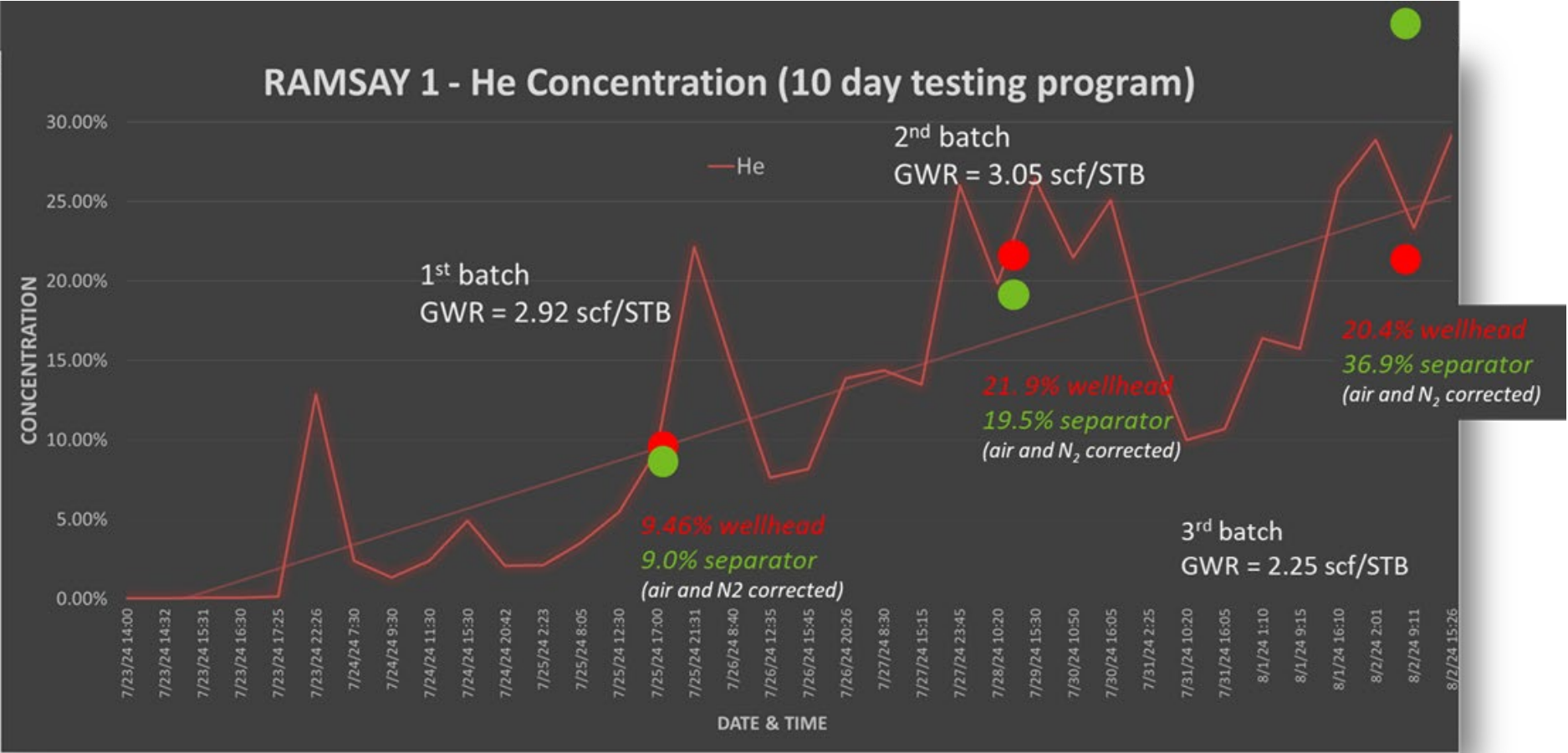
Stage 2 well testing at depth 200m to 350m (zones 7 & 8) showed Hydrogen concentrations increased over time as the well was dewatered (refer ASX release of 2 August 2024)



Note: gas samples from the annulus at the wellhead. Concentrations are corrected for air and nitrogen

Stage 2 Well Testing – Ramsay 1 Helium Concentrations Over Time

Stage 2 well testing of the open Helium zone in Ramsay 1 showed Helium concentrations increased over time as the well was dewatered (refer ASX release of 17 October 2024)



Results measured at the gas separator; air and nitrogen corrected

Exploration Well Testing Program – Isotopic Analysis Results

- **Helium-3** detected by independent international laboratory testing of Ramsay Helium samples.
- Levels of Helium-3 have been confirmed up to the magnitude of 901 ppt (atmospheric Helium-3 is 7.2 ppt).
- The isotopic analysis results from samples tested suggest up to 3.47ppb Helium-3 within a 36.9% Helium sample.
- Helium-3 is extremely rare and valuable, with current prices of approx USD18.7 million per Kg.
- Nuclear fusion and quantum computing are emerging future markets for Helim-3.
- A single 1 GW fusion plant could require up to 100 kg of Helium-3 annually, representing a potential market worth \$1.4 billion per 1 GW fusion plant.
- Extracting and separating Helium-3 from Helium-4 as part of a natural gas project could be a viable alternative to Lunar-based mining for Helium-3.
- Refer ASX release of 30 October 2024 for full details, together with further reading about Helium-3.
- Refer Tables 1 and 2 for technical details.



Next Steps



Key Success Factors Exploration & Appraisal – Work Program Next Steps

Further appraisal activities are focused on establishing the commerciality of the Ramsay Project

Key Success Factor		Results from exploration activities since IPO
Hydrogen Flow Rate and Composition	Establish sustained flow rate to surface of hydrogen and associated gas components	Exploration well testing was designed to establish a potential flow of hydrogen and associated fluids from the hydrogen-bearing reservoir units to surface and measure the uncontaminated composition of the produced gas.
Size of the Hydrogen and Helium Accumulations	Determine the likely lateral extent of the hydrogen and helium accumulations	The Ramsay 2D seismic survey conducted in mid 2024 was designed to establish the lateral extent of the hydrogen and helium-bearing stratigraphic units and determine the large-scale trapping geometry of the accumulations at the Ramsay Project location.
Helium Extraction Rate	Establish the sustained extraction rate for the helium	Exploration well testing was designed to establish potential flows of helium and associated fluids from the helium-bearing reservoir to determine the uncontaminated gas composition and the helium extraction rate from the produced products.
Development Sweet Spot	Determine the likely development sweet spot for hydrogen and helium extraction	The next wells to be drilled being planned for Q2 2025 are designed to confirm the hydrogen and helium development sweet spots, established from the integration of the Ramsay 2D seismic data and results from the results and learnings from the Ramsay 1 and Ramsay 2 exploration wells.



Key Team



Key Management



Neil McDonald

Founder & Managing Director

Neil McDonald, with over 20 years of experience in the energy and minerals sectors across Australia, has worked on major exploration projects from greenfield to early development. He is a graduate of the Australian Institute of Company Directors.



Josh Whitcombe

Chief Operating Officer

Dr. Josh Whitcombe, a Chartered Chemical Engineer and RPEQ, has over 20 years of Oil and Gas experience. He has held senior roles with Australian gas producers, worked offshore with Shell International, and has expertise in greenfield exploration and brownfield operations, focusing on technical challenges, HSE, and community outcomes.



Frank Glass

Chief Exploration Adviser

Frank Glass is a respected geologist with over 30 years of experience in oil, gas, and natural hydrogen exploration, including a decade with Shell. He holds a Master's in Structural Geology from the University of Amsterdam and memberships in the Petroleum Exploration Society of Australia and the European Association of Geoscientists and Engineers.



Billy Hadi Subrata

Chief Technical Officer

Billy Hadi Subrata is an experienced petroleum and reservoir engineer with 20 years of expertise in exploration, development, and energy transition. He has significant skills in reservoir simulation, field appraisal, reserves estimation, and project management, and has been a key figure at Gold Hydrogen since its inception in 2021. Billy is a Qualified Petroleum Reserves and Resources Evaluator and a member of SPE and Engineers Australia.



Julien Bourdet

Geological Advisor

Julien Bourdet is a geological advisor to Gold Hydrogen. He worked for 16 years at CSIRO conducting research aiming at evaluating geological fluid and diagenesis and delivered petrological and fluid inclusion consulting. He has extensive contributions in the field of oil and gas exploration and development and on the natural hydrogen systems. He earned his PhD at the University of Lorraine in France.

Board of Directors



Neil McDonald

Founder & Managing Director

Neil McDonald, with over 20 years of experience in the energy and minerals sectors across Australia, has worked on major exploration projects from greenfield to early development. He is a graduate of the Australian Institute of Company Directors.



Alexander Downer

Independent
Non-Executive Chair

Alexander Downer, a prominent Australian politician and diplomat, has held top roles including Leader of the Liberal Party and Minister for Foreign Affairs. Before politics, he was an executive director at the Australian Chamber of Commerce. He currently serves on boards like Hakluyt & Company and Yellow Cake Plc, and writes for the AFR, holding the Companion of the Order of Australia title.



Katherine Barnett

Independent
Non-Executive Director

Katherine Barnett, a Chartered Accountant with 25+ years of experience, is a partner at Olvera Advisors in Sydney. She specializes in financial transactions, sustainable growth, and value optimization, with recent work in renewable energy, retail, property, and construction. She is a Fellow of CAANZ and ARITA and a member of the Australian Institute of Company Directors.



Roger Cressey

Executive Director
Commercial Operations

Roger Cressey has over 35 years of experience in the resource industry, mainly in gas exploration and production. He has held CEO, COO, and other executive roles in Australia (Queensland and NT), PNG, Indonesia, and Uganda. Roger excels in managing multi-disciplinary teams, strategy development, and stakeholder engagement.



Karl Schlobohm

Company Secretary & CFO

Karl Schlobohm, a Chartered Accountant and Fellow of the Governance Institute of Australia, has over 30 years of experience across various industries. He is a Non-Executive Director of the Australian Shareholders Association and has held multiple executive roles with listed companies on the ASX, LSE, AIM, and TSX in the natural resources sector.



Technical Tables

Technical Tables – ASX Listing Rule 5.30 (Refer also ASX Release of 30 October 2024)

Table 1: Summary of Helium-4 (⁴He) and Helium-3 (³He) Results (Oxford University) in Ramsay 2

Name:	Ramsay 2					
Location	UTM zone 53 GDA2020					
X	747,707.85					
Y	6149385.46					
Permit	PEL687					
Entity holders	Gold Hydrogen 100%					
Zones tested	Zone 1_sample 11	Zone 2-3_sample 19	Zone 4_sample 32	Zone 5_sample 46	Zone 6_sample 62	Zone 7_sample 79
Resources	Hydrogen-Helium	Helium	Hydrogen	Hydrogen	Hydrogen	Hydrogen
Formation	Basement	Kulpara Fm	Kulpara Fm	Parara Limestone	Parara Limestone	Parara Limestone
Gross thickness and net pay thickness	>200m Gross	180m Gross	155m Gross	406m Gross	406m Gross	406m Gross
Geological rock type	Basement	Dolomite	Limestone	Limestone	Limestone	Limestone
Depth of the zones tested	1002 mMD	712mMD	530 mMD	384 mMD	343 mMD	289 mMD
Type of test	Noble gas abundance and isotopic quantification					
Phase recovered	Gas	Gas	Gas	Gas	Gas	Gas
[⁴ He], ccSTP/ccSTP ³ He/ ⁴ He R/Ra ³ He ppt	1.44E-07	6.52E-04	4.21E-08	5.54E-07	3.05E-08	1.59E-07
	3.23E-07	9.26E-09	1.72E-06	6.84E-08	1.55E-06	7.57E-07
	0.23	0.0066	1.2306	0.0489	1.11	0.5408
	0.05	6.04	0.07	0.04	0.05	0.12
Flow rates, choke size, volumes recovered	TBA					
Fracture stimulation	Yes	None	Yes	None	None	Yes
Material non-hydrocarbons	N ₂ , H ₂ , He, CO ₂	N ₂ , H ₂ , He, CO ₂	N ₂ , H ₂ , He, CO ₂	N ₂ , H ₂ , He, CO ₂	N ₂ , H ₂ , CO, CO ₂	N ₂ , H ₂ , He, CO ₂

Table 2: Summary Table of Helium-4 (⁴He) and Helium-3 (³He) results (Oxford University) in Ramsay 1

Name:	Ramsay 1		
Location	UTM zone 53 GDA2020		
X	748,208.07		
Y	6149545.7		
Permit	PEL687		
Entity holders	Gold Hydrogen 100%		
Zones tested	Zone 1_sample 8	Zone 2-3_sample 109451	Zone 2-3_sample 109477
Resources	Hydrogen-Helium	Helium	Helium
Formation	Basement	Kulpara Fm	Kulpara Fm
Gross thickness and net pay thickness	>200m Gross	180m Gross	180m Gross
Geological rock type	Basement	Dolomite	Dolomite
Depth of the zones tested	970 mMD	900 mMD	900 mMD
Type of test	Noble gas abundance and isotopic quantification		
Phase recovered	Gas	Gas	Gas
[⁴ He], ccSTP/ccSTP ³ He/ ⁴ He R/Ra ³ He ppt	3.42E-04	5.34E-02	9.59E-02
	9.65E-09	9.31E-09	9.39E-09
	0.0069	0.0067	0.0067
	3.30	497.39	900.51
Flow rates, choke size, volumes recovered	TBA		
Fracture stimulation	None	None	None
Material non-hydrocarbons	N ₂ , H ₂ , He, CO ₂	N ₂ , H ₂ , He, CO ₂	N ₂ , H ₂ , He, CO ₂

Technical Tables – ASX Listing Rule 5.30

Table 3: Sample Analysis from Ramsay 2 Well Testing for Helium (as released 17 October 2024)

Name:	Ramsay 2		
Location (UTM zone 53 GDA2020)			
X	747,707.85		
Y	6149385.46		
Permit	PEL687		
Entity holder(s)	Gold Hydrogen 100%		
Zones tested	1 (MDT)	2	3
Resources	Helium with minor Hydrogen	Helium with minor Hydrogen	Helium with minor Hydrogen
Formation	Kulpara Dolomite	Kulpara Dolomite	Kulpara Dolomite
Gross thickness and net pay thickness	180m Gross	180m Gross	180m Gross
Geological rock type	Dolomite	Dolomite	Dolomite
Depth of the zones tested	778mMD	712mMD	642mMD
Type of test	Pressure test - commingled zone test for few hours follow by overnight build up	Pressure test - commingled zone test for few hours follow by overnight build up	Pressure test - commingled zone test for few hours follow by overnight build up
Phase recovered	Water	Water	Water
Corrected H2 and He concentration in gas recovered from downhole sample	17.52% He	17.9% He	12.6% He
Flow rates, choke size, volumes recovered	Refer to Stage 2 well test	Refer to Stage 2 well test	Refer to Stage 2 well test
Fracture stimulation	None	None	None
Material non hydrocarbons	Nitrogen, Hydrogen	Nitrogen, Hydrogen	Nitrogen, Hydrogen

Table 4: Sample Analysis Table – Ramsay 1 Well – Stage 2 - Helium (as released 17 October 2024)

Name:	Ramsay 1
Location (UTM zone 53 GDA2020)	
X	748,208.07
Y	6149545.7
Permit	PEL687
Entity holders	Gold Hydrogen 100%
Zones tested	Zone 2 and 3
Resources	Helium
Formation	<u>Kulpara Dolomite</u>
Gross thickness and net pay thickness	180m Gross
Geological rock type	Dolomite
Depth of the zones tested	900 <u>mMD</u>
Type of test	Commingled pressure test
Phase recovered	Water
Corrected H2 and He concentration in gas recovered from downhole sample	36.9% He
Flow rates, choke size, volumes recovered	1 <u>Mscf</u> /day gas constraint by pump capacity and flow intermittently with water; choke size 20/64 inch; volumes recovered 0.55 <u>Mscf</u>
Fracture stimulation	None
Material <u>non hydrocarbons</u>	Nitrogen, Hydrogen

Technical Tables – ASX Listing Rule 5.30

Table 5: Summary of Preliminary Results on Additional Helium Samples (as released 2 August 2024)

Name:	Ramsay 2		
Location (UTM zone 53 GDA2020)			
X	747,707.85		
Y	6149385.46		
Permit	PEL687		
Entity holders	Gold Hydrogen 100%		
Zones tested	Zone 1	Zone 2 and 3	Zone 7 and 8
Resources	Helium	Helium	Hydrogen
Formation	Granite Basement	<u>Kulpara Dolomite</u>	Parara Limestone
Gross thickness and net pay thickness	>200m Gross	180m Gross	406m Gross
Geological rock type	Granite	Dolomite	Limestone
Depth of the zones tested	1002mMD	712 <u>mMD</u>	197mMD and 289mMD
Type of test	Pressure test	Commingled pressure test	Commingled pressure test
Phase recovered	Gas/Water	Gas/Water	Gas/Water
Corrected H2 and He concentration in gas recovered from downhole sample	20% to 25% He	20% to 25% He	42% H2 (still increasing)
Flow rates, choke size, volumes recovered	TBA		
Fracture stimulation	None	None	None
Material <u>non hydrocarbons</u>	Nitrogen, Hydrogen	Nitrogen, Hydrogen	Nitrogen, Helium

Table 6 - Summary Table of Ramsay 2 Stage 1 Testing

Name:	Ramsay 2	
Location (UTM zone 53 GDA2020)		
X	747,761.61	
Y	6149371.41	
Permit	PEL687	
Entity holders	Gold Hydrogen 100%	
Zones tested	MDT zone, Zone 2 and 3	Zone 4 to 8
Resources	Helium	Hydrogen
Formation	<u>Kulpara Dolomite</u>	<u>Kulpara/Parara Limestone</u>
Gross thickness and net pay thickness	180m Gross	406m Gross
Geological rock type	Dolomite	Limestone
Depth of the zones tested	612m, 642m, 712m, 754m, and 777.5mMD	197m, 289m, 346.5m, 385m, and 531mMD
Type of test	Commingled test on zone 2 and 3 for few hours followed by overnight build up	Pressure test on single zone for few hours followed by overnight build up
Phase recovered	Gas/Water	Gas/Water
Corrected H2 and He concentration in gas recovered from downhole sample	Up to 17.5% He	Up to 95.8% H2
Flow rates, choke size, volumes recovered	TBA in next extended flow test in Q2/Q3 2024	
Fracture stimulation	None	None
Material <u>non hydrocarbons</u>	Nitrogen, Hydrogen	Nitrogen, Helium



Neil McDonald

Managing Director

nmcdonald@goldhydrogen.com.au
+ 61 7 3521 8038

Roger Cressey

Executive Director

rcressey@goldhydrogen.com.au
+ 61 7 3521 8038

Karl Schlobohm

CFO / Company Secretary

kschlobohm@goldhydrogen.com.au
+ 61 7 3521 8038