

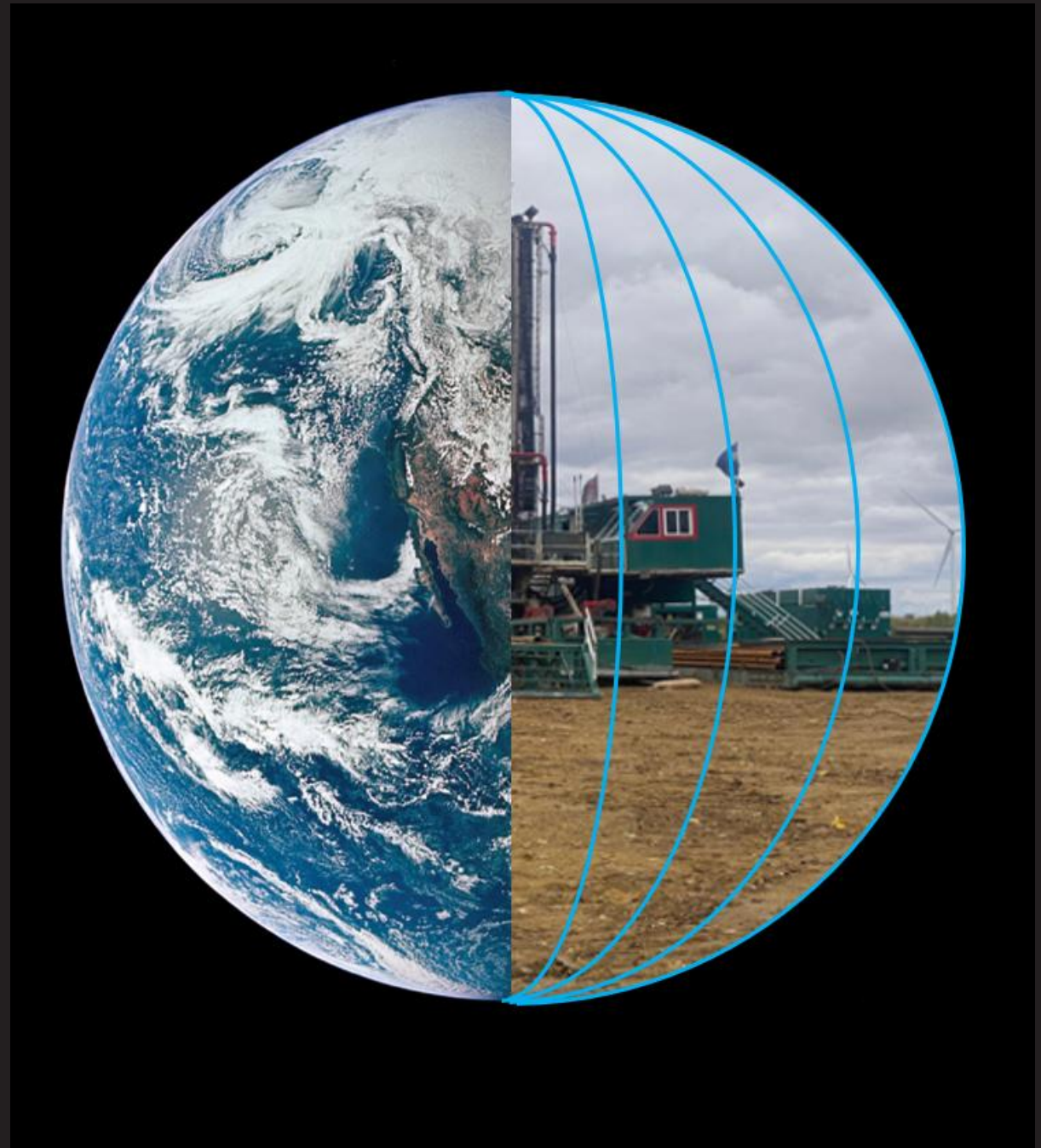
# MAIDEN DRILLING AT OUR NEMAHA PROJECT, USA

Exploring for natural hydrogen  
and helium in the United States.



HYTERRA

A WORLD OF OPPORTUNITY



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### Competent Person Statement Information

The resources estimate information and supporting documentation referred to in this announcement was reviewed by HyTerra’s Chief Technical Officer and Executive Director, Mr Avon McIntyre, who is a full-time employee of the Company. Mr McIntyre is a qualified oil and gas geologist with over 20 years of international experience. He has extensive experience of oil and gas exploration, appraisal, strategy development and reserve/resource estimation. Mr McIntyre has a BSc, MSc and PhD in geology from The University of Waikato, New Zealand and is a member of The Society of Petroleum Engineers (SPE). Mr McIntyre is qualified in accordance with the ASX Listing Rules and has consented to the form and context in which this statement appears.

# LET'S LIBERATE HYDROGEN

Our goal is to deliver the world's cheapest, cleanest, and most reliable hydrogen.

How we will get there.

- 01 Deliver a comprehensive exploration program.
- 02 Secure key partnerships & customers.
- 03 Demonstrate a commercial project.





# HYTERRA'S COMPELLING INVESTMENT CASE

- 01** Exploration for hydrogen and helium is near major industrial hubs in the Mid-West, USA.
- 02** Nemaha Project 12-month exploration program funded by Fortescue.
- 03** Stage one starts with twinning two wells with historical occurrences and a geophysics program.
- 04** Nemaha drilling program will be executed in a three-step process for each well.
- 05** Geneva Project well testing lab results show hydrogen up to 44% and helium up to 12.8%.
- 06** Led by a team with a global track record in onshore gas exploration and development.



# EXPLORING FOR HYDROGEN AND HELIUM ACROSS 72,500 ACRES NEAR MAJOR INDUSTRIAL HUBS.

- 10+ occurrences within the Nemaha region, some up to 92% hydrogen and 3% helium\*.
- Geneva Project well testing lab results show Hydrogen up to 44% and Helium up to 12.8%.
- Potential off-takers nearby include ammonia producers and petrochemical plants connected via existing transport infrastructure.

\*Guelard J, Beaumont V, Guyot F, Pillot D, Jezequel D, Ader M, et al. Natural H2 in Kansas: deep or shallow origin? *Geochem Geophys Geosyst* G3 2017; 18: Coveney, R. M. J., E. D. Goebel, E. J. Zeller, G. A. M. Dreschhoff, and E. E. Angino (1987), Serpentinization and origin of hydrogen gas in Kansas, *Am. Assoc. Pet. Geol. Bull.*, 71(1), 39–48. H<sub>2</sub> + He + N% reflects occurrences of published gas analyses recovered from the wellbore. Uncertainty remains on historic well operations, sampling techniques, and analyses. The values are considered up to a % of H<sub>2</sub> or He.

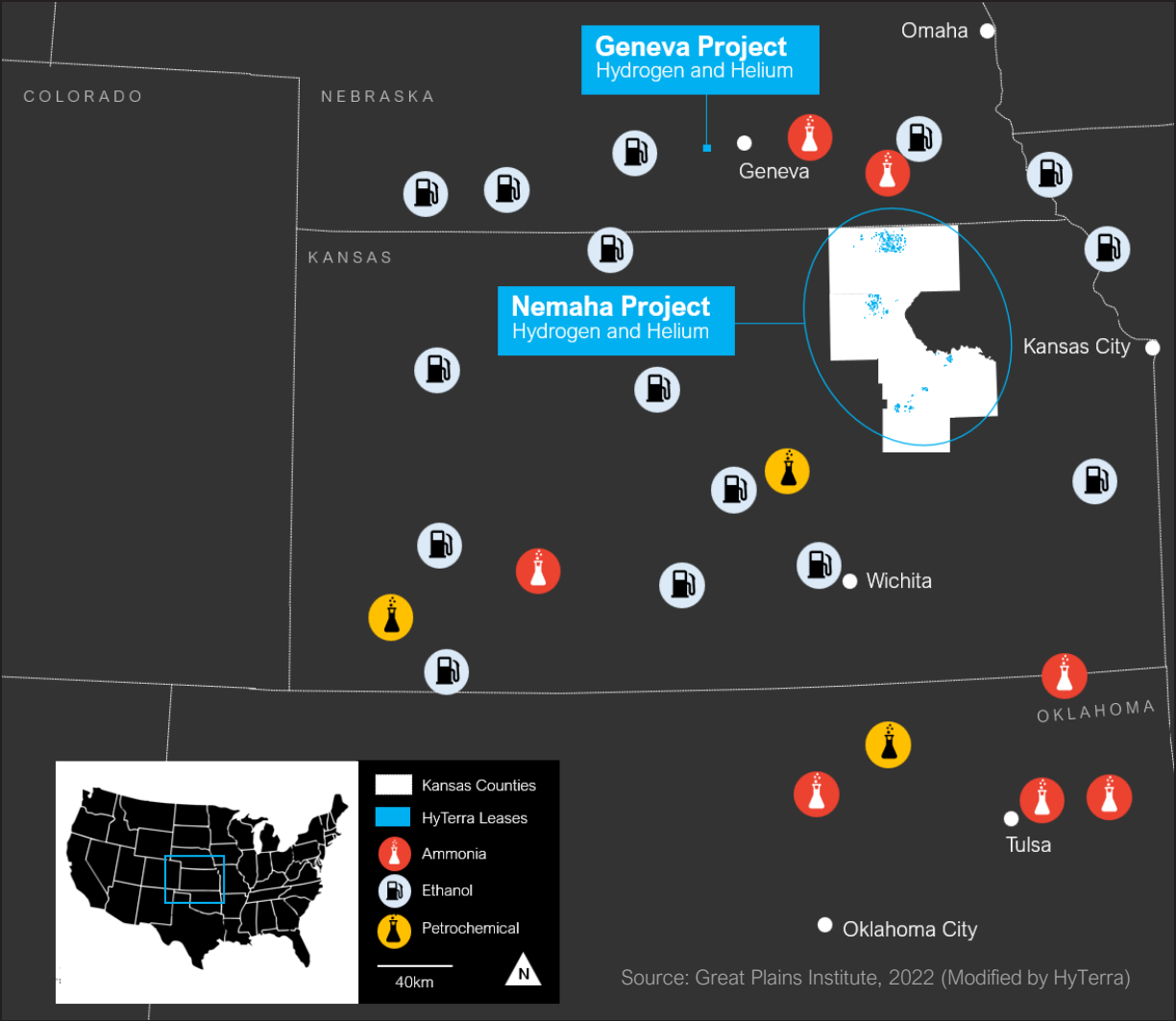
Unrisked Prospective Resources based on prior leasing position of 12,880 acres

Aggregated Net Recoverable Prospective Hydrogen Volumes (bcf)<sup>#</sup>

P90	P50	P10
49.0	105.5	251.7

Aggregated Net Recoverable Prospective Helium Volumes (bcf)<sup>#</sup>

P90	P50	P10
0.05	0.59	2.04



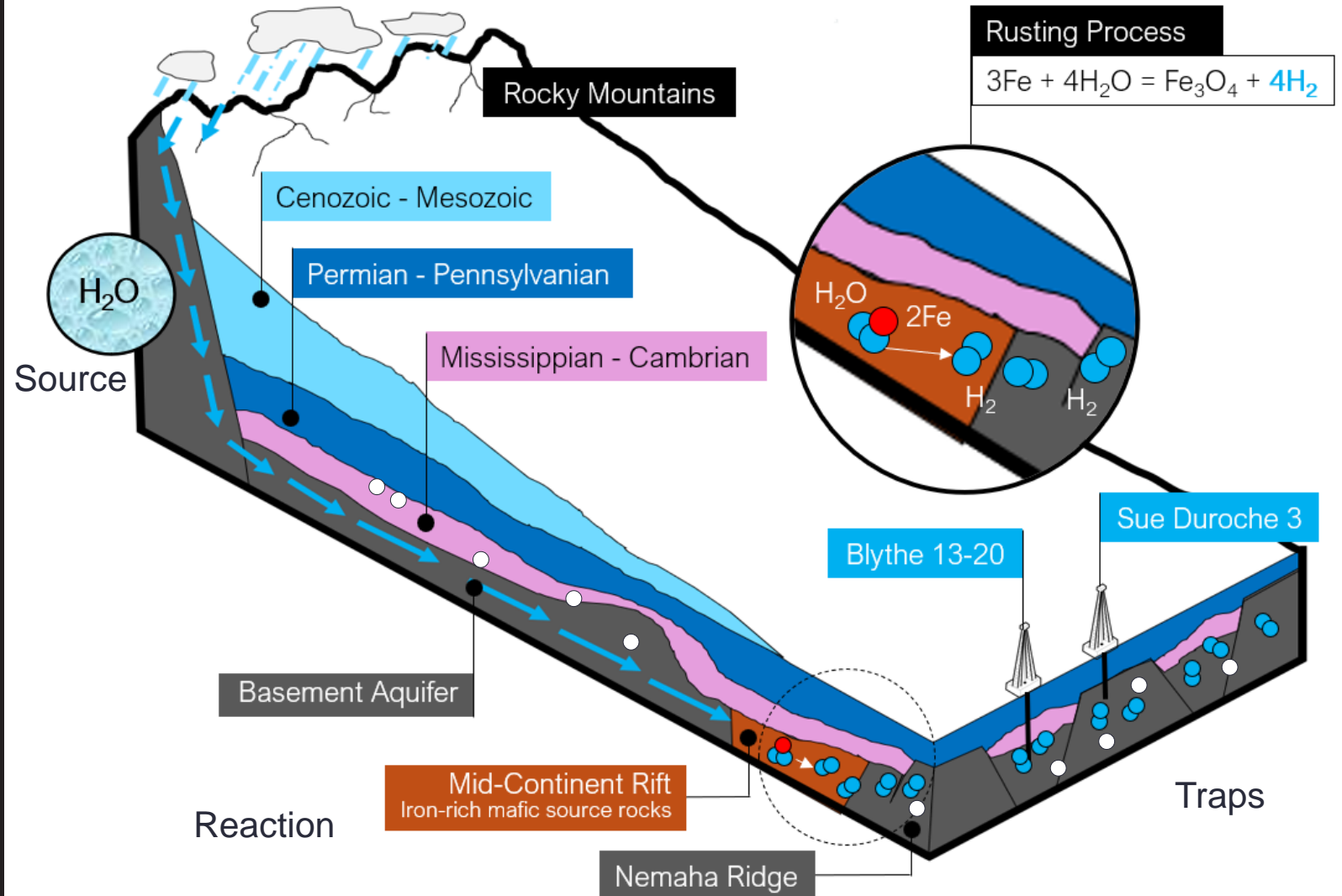
**#Cautionary Statement:** The estimated quantities of natural hydrogen and helium that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration, appraisal, and evaluation is required to determine the existence of a significant quantity of potentially recoverable natural hydrogen and helium. The Prospective Resource estimates are quoted on an unrisked basis and are aggregated arithmetically by category. Please refer to the ASX release dated 13 December 2023 and June 30<sup>th</sup> Quarterly Activities report for full details with respect to the Prospective Resource estimate, associated risking and Cautionary Statement.

# WHITE HYDROGEN MADE BY NATURE

Cleaner, greener, and cheaper to produce using conventional oil and gas techniques, white hydrogen could revolutionise industry and economies worldwide

#Water from the Rocky Mountains seeps underground and flows eastward across the helium enriched Hugoton Basin. When the water reaches the iron-rich mafic source rocks in Kansas (Mid-Continental Rift), the hydrogen is then split from this water. Then, the molecules migrate upwards into various traps along the Nemaha Ridge. Here, both hydrogen and helium occurrences were recovered in wellbores.

● White hydrogen and ○ helium is created naturally by the Earth#.

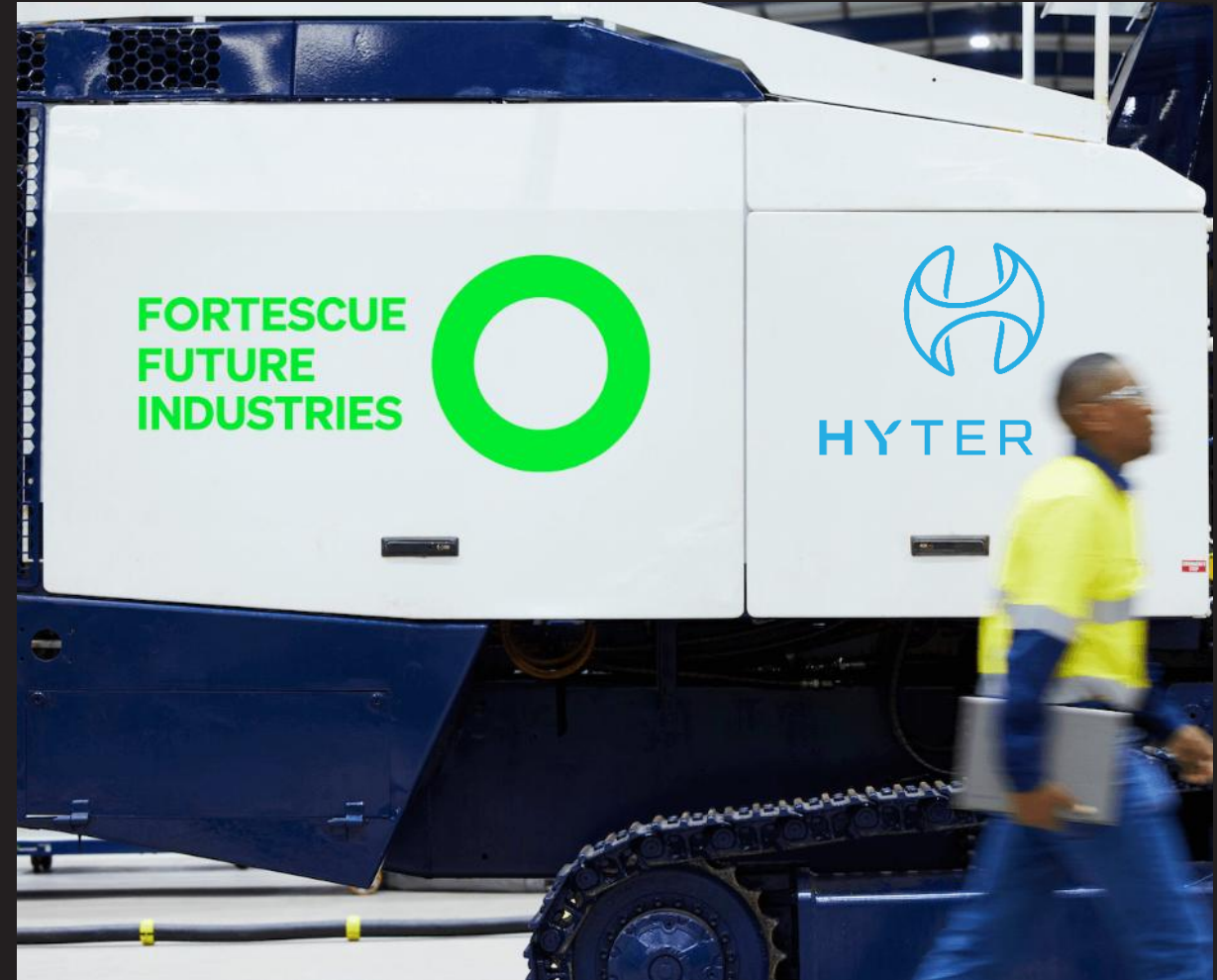




# NEMAHA EXPLORATION PROGRAM FUNDED BY FORTESCUE INVESTMENT.

Fortescue acquired a 39.66% strategic stake in HYT for A\$21.9 million in December 2024.

- Funding supports a 12-month exploration program, including continued leasing, advanced geophysical surveys, and additional exploration wells.
- Fortescue and HyTerra entered into a Strategic Alliance Agreement to progress the Nemaha Project and mutually explore new opportunities globally.



# PHASED EXPLORATION STRATEGY TO EVALUATE AND EXPAND DEVELOPMENT POTENTIAL

Strong news flow ahead with drilling results  
and rapid growth of hydrogen and helium  
resources.

## Leasing

June 2024 – Dec 2024

Building a competitive position



Build initial lease  
position

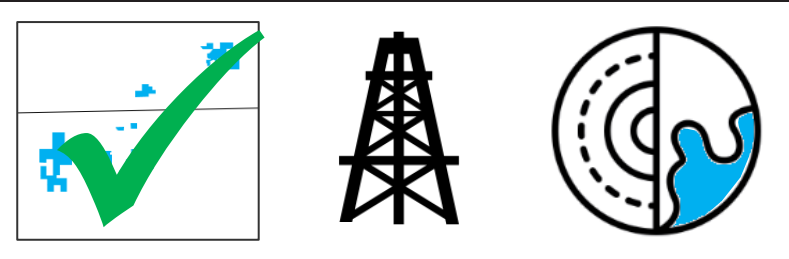
Secure drilling  
permits

Obtain funding

## Exploration Stage One

Jan 2025 – June 2025

Sampling gases and rock properties across priority areas



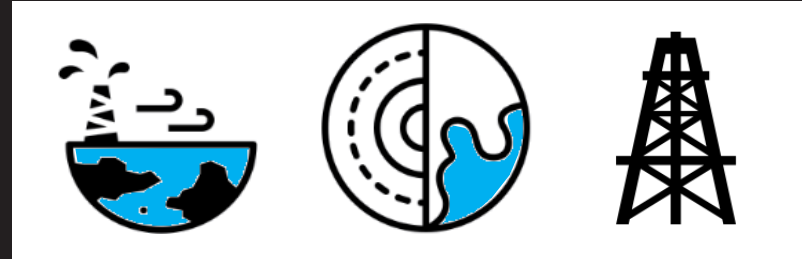
Infill leasing

Drilling

Geophysical  
survey (regional)

## Exploration Stage Two

July 2025 – Dec 2025+



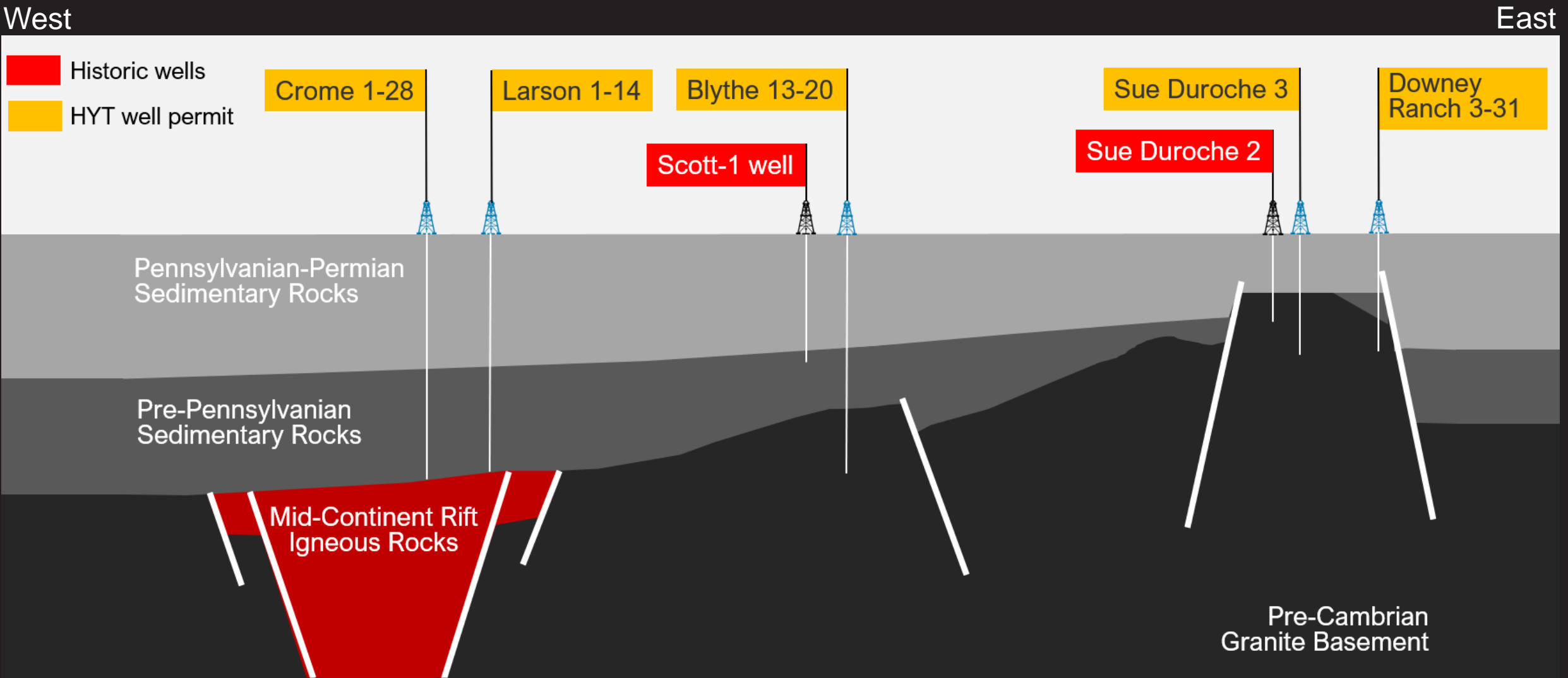
Analyze first  
well data

Geophysical  
survey (prospect)

Drilling



# WE HAVE A RANGE OF PLANNED SHALLOW TO DEEPER TARGETS



# WE START DRILLING TWO WELLS AT THE NEMAHA PROJECT IN APRIL.

The first well will be Sue Duroche 3 immediately followed by Blythe 13-20. A third well is optional following success.

Sue Duroche-2\*  
2009

Total depth  
1,441ft (440m)

Hydrogen  
<92%

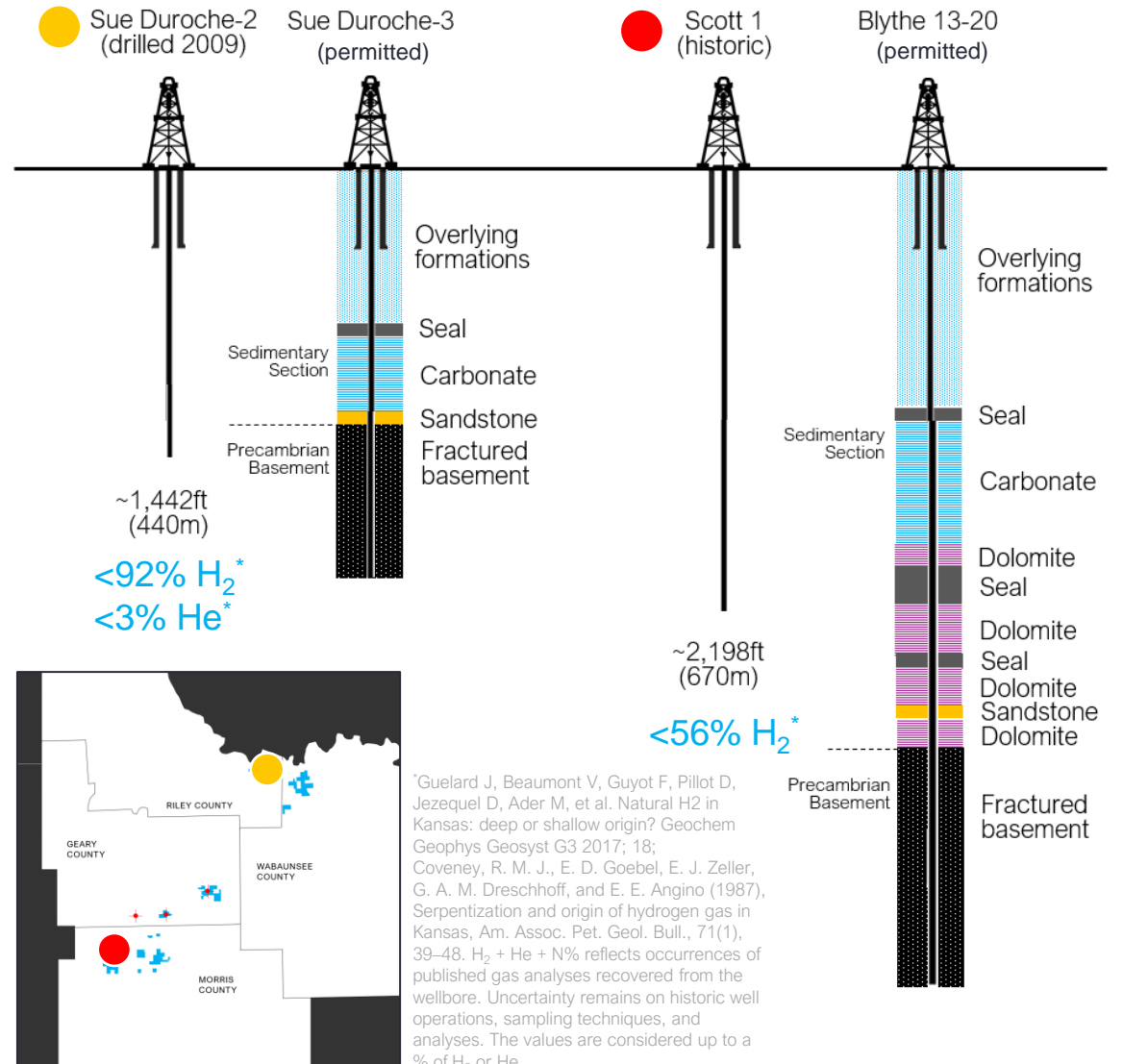
Helium  
<3%

Scott-1\*  
1982

Total depth  
2,198ft (670m)

Hydrogen  
<56%

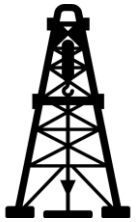
First two wells are planned to be drilled deeper than nearby wells with historic occurrences.\*



# NEMAHA PROJECT

## THREE STEP PROCESS FOR EACH WELL

### STEP 1



**Drill well**

Collect mud  
gas samples  
and cuttings

Run wireline  
logs

Make decision to cease and suspend  
or plug and abandon.

### STEP 2



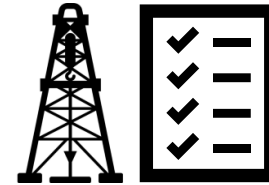
**Data  
gathering**

Monitor for  
pressure  
build up

Collect gas  
samples from  
surface

Make decision to move to next step or  
plug and abandon.

### STEP 3



**Well  
re-entry**

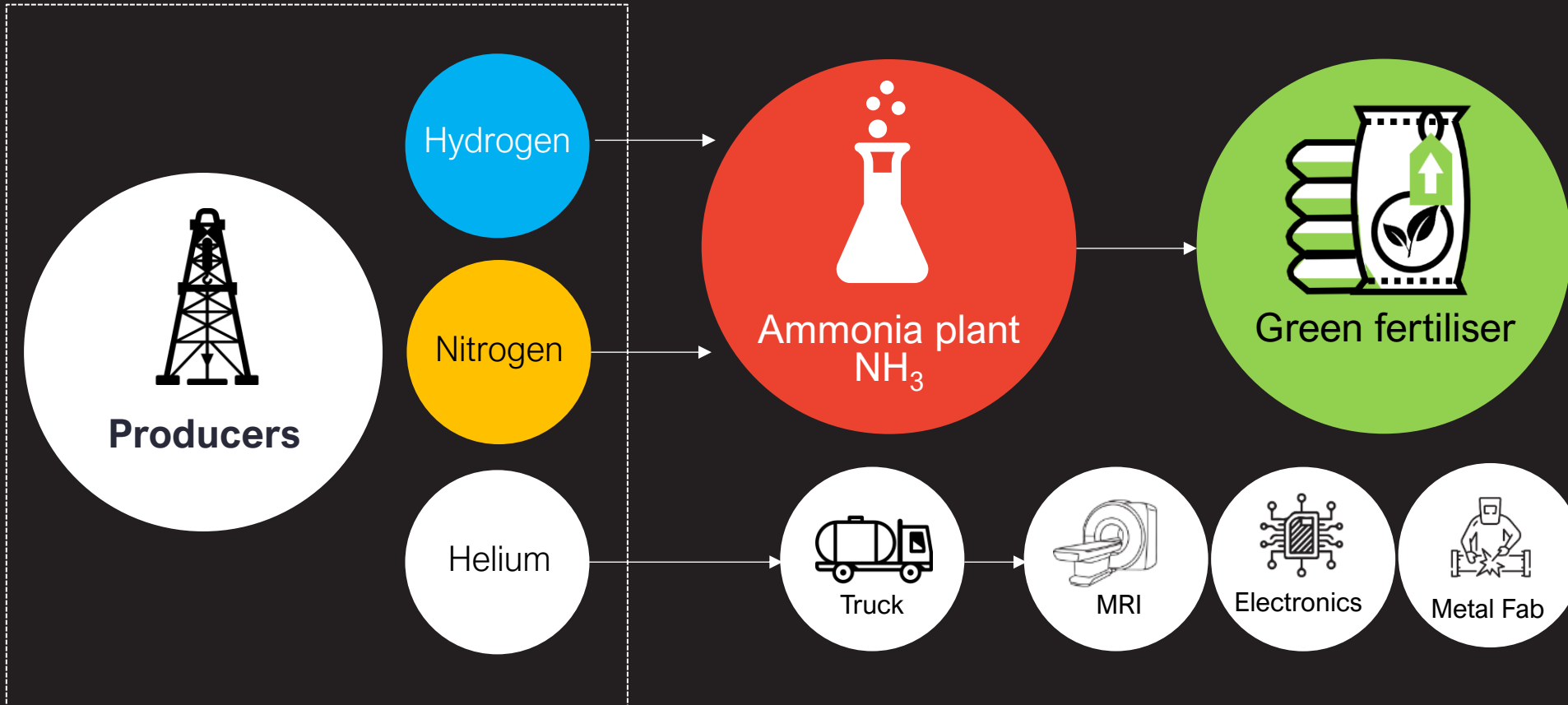
Extended well  
test for  
productivity

Make decision to move to appraisal  
and development or analyze and re-  
evaluate.



# HYDROGEN AND HELIUM VALUE CHAIN

Several local commercialisation  
pathways to develop.



2023 global ammonia market<sup>1</sup>

**~US\$80B**

2032 forecast of global ammonia market<sup>1</sup>

**~US\$120B**

2027 forecast of global helium market<sup>2</sup>

**~US\$6.5B**

<sup>1</sup><https://www.statista.com/statistics/1391399/global-ammonia-market-size/>

<sup>2</sup><https://www.statista.com/statistics/1411790/market-value-the-helium-industry-worldwide/>

# GENEVA PROJECT HOARTY NE3 GAS SAMPLES

Samples taken from the well head show helium up to 12.8% and hydrogen up to 44%.

Flow potential of this well cannot be fully determined with current data.

- HyTerra has a 16% interest (and the right to earn up to 51%) in a Joint Development Agreement with Natural Hydrogen Energy LLC (NH2E).
- Wildcat well drilled to 11,200ft (3,400m) by specifically targeting white hydrogen (Hoarty NE3) in Geneva, Nebraska.
- Isotube® gas samples were taken from the well head by NH2E and analysed by Isotech Laboratories in Illinois from both the 2022 swabbing and 2023 electric submersible pump (ESP) well testing programs.
- Given samples were taken at the well head, geological formations, rock types, and/or depths from which each of these gas samples are derived from is unknown.



# BOARD & MANAGEMENT

HyTerra's executive team has proven experience in developing gas projects around the world.



**Russell Brimage**

Non-Executive Chairman

Russell has over 40 years' experience in the upstream oil and gas industry, ranging from public listed oil & gas companies to the service industry – both onshore and offshore. He has served in the capacity of Operations Manager and CEO on several ASX listed entities since 1997. Currently he is a Non-Executive Director of Lion Energy (ASX: LIO).



**Benjamin Mee**

Executive Director

Benjamin has over 20 years' experience in international oil and gas with a successful track record in project delivery from exploration, through to appraisal, development and production both onshore and offshore in various global locations. Most recently he held the title of Exploration Manager Deepwater Africa for Shell, during which time significant petroleum discoveries were made.



**Dr. Avon McIntyre**

Executive Director & CTO

Avon has more than 20 years' experience in minerals and oil and gas exploration industries, with roles in government, service and operating companies. He worked for Shell in Australia and internationally in new ventures and new energies from 2008 to 2021, during which time he developed an interest in natural hydrogen and helium occurrences.



**Christine Nicolau**

Non-Executive Director

Ms Nicolau is Group Manager Corporate Portfolio Management focusing on driving governance, management and administration of Fortescue's interests via directorships across various Fortescue internal and external strategic growth subsidiaries. In her previous role of Metals General Manager LATAM, Ms Nicolau coordinated Fortescue's minerals business in Latin America, Ms Nicolau has been with Fortescue since 2010.



**Dr. Josh Whitcombe**

VP Development and Operations

Josh has extensive experience in early-stage exploration and appraisal projects across conventional and unconventional oil and gas and geological hydrogen. He commenced his career with Shell International and has experience in several overseas jurisdictions along with Australia.



# CORPORATE OVERVIEW

## Share price

A\$0.035

As at 28 March 2025  
52 week high \$0.059, low \$0.019

## Market capitalisation

A\$57.0m

## Enterprise Value

A\$37.8m

As at 28 March 2025

## Top 20 ownership

62.7%

As at 28 March 2025

## Share Registry

FMG	39.5%
Rest of T20	23.2%
Non T20	37.3%

## Shares on issue

1629.9m

As at 28 March 2025

## Cash

A\$20.4m

As at 31 December 2024

## Options and Performance Rights

787m

As at 28 March 2025

## Debt

Nil

As at 31 December 2024

## ASX Share price performance (\$A)

12 months to 28 March 2025





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# APPENDICES

- 
- A. Hydrogen is the world's wonder element
  - B. White hydrogen could have the lowest production costs and carbon emissions
- 





# HYDROGEN IS THE WORLD'S WONDER ELEMENT

Today, hydrogen is used to refine petrochemicals and produce ammonia and methanol.

Tomorrow, it will be a low-carbon fuel option for transportation, manufacturing, and used to generate electricity.

The demand for hydrogen reached an estimated 87 million tonnes per annum (Mtpa) in 2020 and is expected to grow as much as 580 Mtpa by 2050<sup>1</sup>

<sup>1</sup>Source: <https://www.mckinsey.com/industries/oil-and-gas/our-insights/global-energy-perspective-2023-hydrogen-outlook>

## Current uses of hydrogen

Petrochemicals and refining



Fertiliser/ammonia production



Methanol production



Food production



## Emerging uses of hydrogen

Transport



Power generation



Heat source alternatives



Steel and cement production



# WHITE HYDROGEN COULD HAVE THE LOWEST PRODUCTION COSTS AND CARBON EMISSIONS

## Grey Hydrogen

Made from natural gas.  
 $H_2$  separated from  $CH_4$ .  
Carbon emissions not captured.

○ ~9.0kg  $CO_2e$  per kg  $H_2$ <sup>#</sup>

## White Hydrogen

Naturally occurring, found in the subsurface.  
Hydrogen made underground.

○ <1.0kg  $CO_2e$  per kg  $H_2$ <sup>\*</sup>

## Blue Hydrogen

Made from natural gas.  
 $H_2$  separated from  $CH_4$ .  
Carbon emissions captured.

○ ~3.0kg  $CO_2e$  per kg  $H_2$ <sup>#</sup>

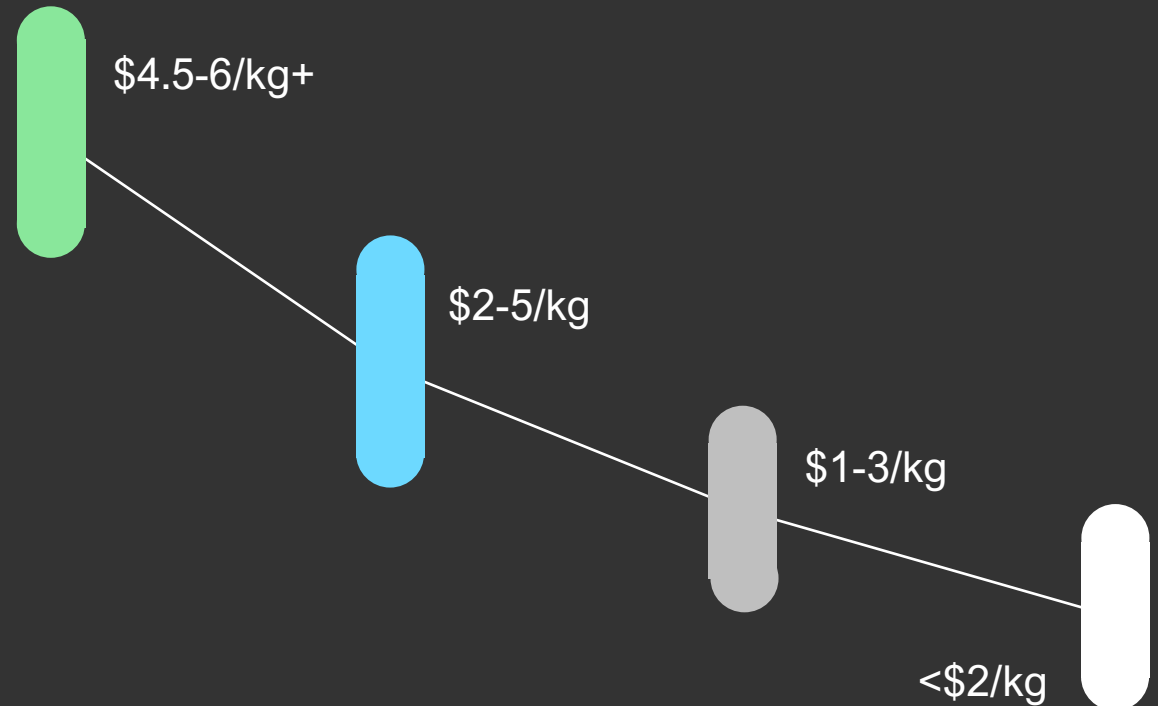
## Green Hydrogen

Made by using renewable energy to electrolyse water.  
 $H_2$  separated from  $H_2O$ .  
Production is expensive.

○ <1.0 kg  $CO_2e$  per kg  $H_2$ <sup>#</sup>

# Modified from <https://koloma.com/geologic-hydrogen/>. Values obtained from 2022 GREET Model. Carbon intensity of hydrogen production for natural hydrogen was calculated based on Brandt, A. Greenhouse Gas Intensity of Geologic Hydrogen Produced from Subsurface Deposits. 2023. EarthArXiv preprint. <https://doi.org/10.31223/X5HM1N>". Calculation maintained consistency with GREET methodology. <https://gh2.org/our-initiatives/gh2-green-hydrogen-standard#:~:text=Green%20hydrogen%20is%20hydrogen%20produced,a%2012%2Dmonth%20period>

## Hydrogen production cost ranges 2022-2023<sup>^</sup>, \$US



\*Geologic hydrogen (white) has a carbon intensity of 0.37 kg  $CO_2e$  per kilogram of hydrogen when including the embodied emissions of the well casing and hydrogen emissions, according to a published paper in Joule by Stanford's Dr. Adam Brandt.

<sup>^</sup> Numerous ranges of production costs exist due to changing variables such as, but not limited to, technology advancement, existing infrastructure, feedstock price etc

Source: Ranges sourced from BloombergNEF, IEA, Lazard, IRENA. 'At the dawn of a hydrogen era', Clota Varde Feb 2023,