



# HEXAGON

Hexagon Energy Materials Ltd  
AGM Corporate  
Presentation

30 November 2023

# Hexagon's WAH<sub>2</sub> Project

## Low Emissions Ammonia

### From Australia to APAC

# Important Notices

## DISCLAIMER

The purpose of this presentation is to provide background information to assist in obtaining a general understanding of the Company's proposals and objectives. This presentation may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. This presentation is not to be considered as a recommendation by the Company or any of its subsidiaries, directors, officers, affiliates, associates or representatives that any person invest in its securities. It does not take into account the investment objectives, financial situation and particular needs of each potential investor. Investors should make and rely upon their own enquires and assessments before deciding to acquire or deal in the Company's securities. If you are unclear in relation to any matter or you have any questions, you should seek advice from an accountant or financial adviser.

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## Forward Looking Statements

Forward looking statements can generally be identified by the use of forward-looking words such as, 'expect', 'anticipate', 'likely', 'intend', 'should', 'could', 'may', 'predict', 'plan', 'propose', 'will', 'believe', 'forecast', 'estimate', 'target', 'outlook', 'guidance', 'potential' and other similar expressions within the meaning of securities laws of applicable jurisdictions.

There are forward looking statements in this document relating to the outcomes of the Pre-Feasibility Studies and ongoing work on the WAH<sub>2</sub> Project. Actual results and developments of projects and the market development may differ materially from those expressed or implied by these forward-looking statements. These, and all other forward-looking statements contained in this document are subject to uncertainties, risks and contingencies and other factors, including risk factors associated with the hydrogen business. It is believed that the expectations represented in the forward looking statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to price fluctuations, actual demand, currency fluctuations, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory changes, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

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## Gas Supply

Hexagon has not secured a long-term gas supply agreement. There is no guarantee that current discussions will convert into firm commitments to supply gas over the long term. It should be noted that the WAH<sub>2</sub> Project is contingent on securing long term gas supply in line with the assumed volumes, timing and price. If this cannot be achieved, there is a risk that the WAH<sub>2</sub> Project may be downgraded, deferred or may not go ahead.

## Financing

Hexagon has not secured funding for the WAH<sub>2</sub> Project and accordingly to achieve the range of outcomes required for Phase 1, Hexagon will need to secure between A\$405M and A\$567M in funding for the project (assuming farmout of 65% - 75% project, leaving Hexagon with a 25% - 35% project share). There is no certainty Hexagon will be able farm out the Project or to raise the amount of funding when required. It should also be noted that any raise may only be available on terms that may be dilutive to shareholders or otherwise affect the value of Hexagon's shares. If the proposed farm-out or funding cannot be achieved, there is a risk that the WAH<sub>2</sub> Project may be downgraded, deferred or may not go ahead.





# Hexagon Energy Materials Limited

ASX listed project developer (HXG)\*

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Competitive, low-emissions ammonia export project (WAH<sub>2</sub>), annual net CF A\$244 million (100% project)<sup>1</sup>

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Targeting substantial Asian coal co-firing market opportunity, ~US\$10 Bn pa market by 2035<sup>2</sup>

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Site secured & highly encouraging PFS completed

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FEED approaching – pathway to execute partner MOUs/Agreements

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**FID target 2025**

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\*HXG.ASX. Shares on issue 512,915,901. Market capitalisation \$5 million. nil debt, cash of \$1 million as at 30 September 2023.

<sup>1</sup>WAH2 Project Pre-Feasibility Study Updated Announcement (ASX: 2 August 2023); annual net CF estimate from 2028

<sup>2</sup>Low-emissions ammonia market opportunity expected to reach 20 MTPA in Japan by 2035 based on 20% ammonia co-firing of coal-fired fleet

# The opportunity – substitute ammonia for coal

Japan plans to prioritize low-emissions ammonia to meet its climate targets

## Ammonia for Coal

Electricity producers in North Asia are targeting to substitute ammonia for coal in their thermal power stations

### Current Coal Generation

1/3 of Japan's electricity needs are currently met from coal-fired generation<sup>1</sup>

### Emissions Target

Japan has committed to reduce greenhouse gas emissions by 46% in 2030<sup>2</sup>

### Govt Backing Co-Firing

Government and industry plan that by blending Ammonia with Coal, Japan can meet low-emissions with existing power plants

## Huge Demand Growth

Huge growth in market for low-emissions ammonia, expected to reach 20 MTPA<sup>3</sup> with a value of US\$10 Bn/yr<sup>4</sup> by 2035

# Japan's Ammonia criteria

Australia well-placed, Hexagon best-placed



**Low Emissions**

Less than 4.2 T CO<sub>2</sub>e /T H<sub>2</sub>e<sup>1</sup>, lower preferred and prioritized



**HEXAGON**

Detailed engineering work by Petrofac demonstrates **emissions intensity of 1.1 T CO<sub>2</sub>e /T H<sub>2</sub>e**, further improvement opportunities identified<sup>3</sup>

**Cost Competitive**

US\$500 – 600 /T NH<sub>3</sub><sup>2</sup> delivered in Japan

WAH<sub>2</sub> Project Base Case **cost of supply US\$552 /T NH<sub>3</sub>**. Target of < US\$500 /T NH<sub>3</sub> based on identified opportunities<sup>3</sup>

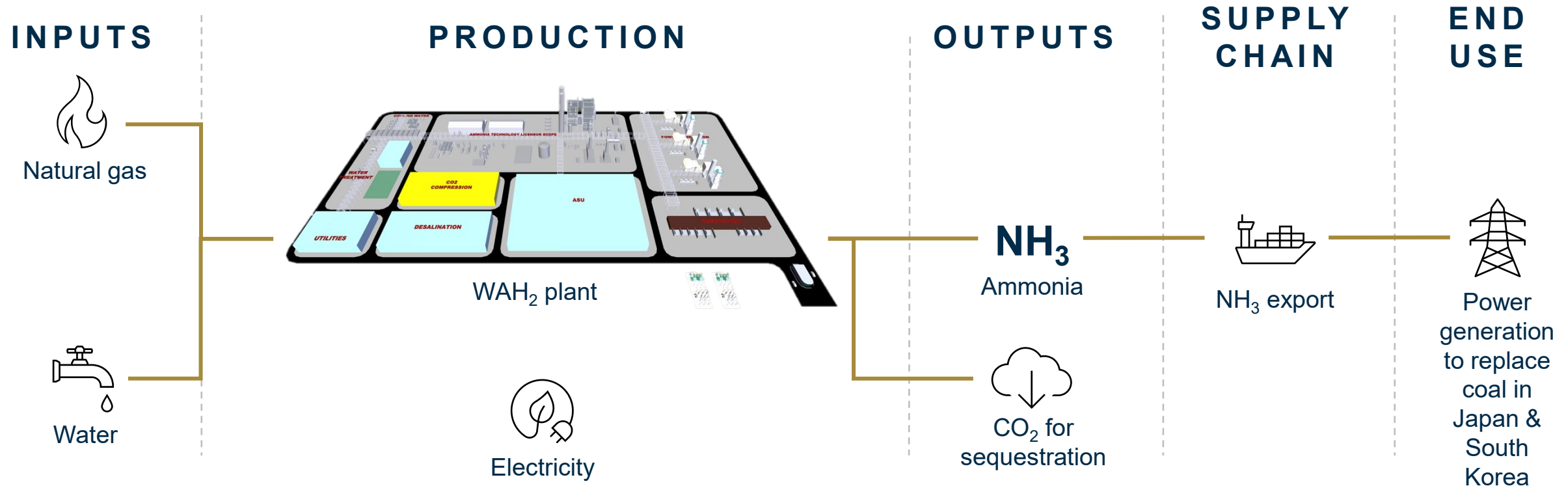
**Secure Supply**

From established and stable trading partner countries

Australia is an **established energy partner supplying 34% of Japan's energy imports**<sup>4</sup>. Decades-long collaboration to build and sustain stable LNG supply

# Project overview - Hexagon's WAH<sub>2</sub> export plant

Material volumes of low-emissions, cost competitive ammonia, target online before 2030



## WAH<sub>2</sub> PROJECT FEATURES<sup>1</sup>

Project life

25yr

Production technology

O<sub>2</sub> fired ATR

Production capacity

Ph1

600kTPA

Ph1 + Ph2

1200kTPA

Gross Project Capex

Ph1

A\$1.62B

Ph2

A\$1.29B

Emissions intensity

1.1kg CO<sub>2</sub>e / kg H<sub>2</sub>e

Note (1): WAH<sub>2</sub> Project Pre-Feasibility Study Updated Announcement (ASX: 2 August 2023)



# Project site - allocation of Maitland SIA site

Proximity enables lower cost access to required services and infrastructure



## Hexagon allocated 40 ha site in Maitland SIA

- Access to existing deep-water port, existing infrastructure corridors, multiple CCS options; adjacent to DBNGP<sup>2</sup>



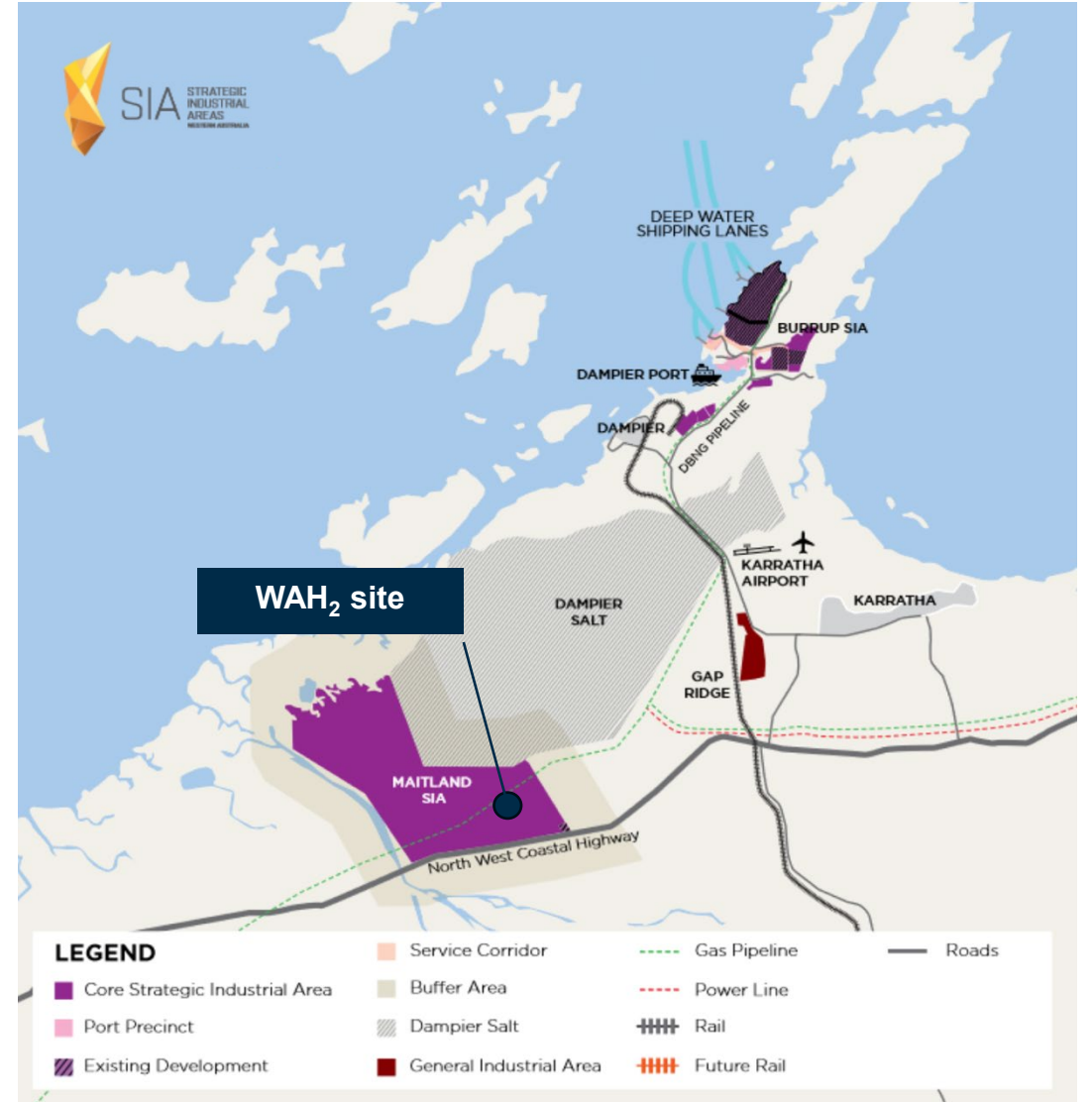
## Award of land to proponents of other projects creates significant opportunities to share infrastructure

- Water supply, power supply, CO<sub>2</sub> transmission, ammonia export



## Native Title approval provided by existing Burrup and Maitland Industrial Estates Agreement

- Indigenous Land Use Agreement required with Ngarluma Aboriginal Corporation





# WAH<sub>2</sub> Project is best-placed

Early mover project with competitive advantages related to tech. choice and secured site

> 140

**Australian Hydrogen Projects** More than 140 hydrogen-related projects have been announced in Australia

30

**Low-emissions Ammonia** Of these, only 30 are targeting low-emissions ammonia as the product

23

**Majority Electrolysis-based** Cost and schedule challenges (Proving technology at scale, supply chain constraints, cost of supply)

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**Based on gas reforming with CCS<sup>1</sup>** Others use coal, with emissions challenges; or biomass, unproven at scale

**WAH<sub>2</sub> is Unique** The only proposed gas-based project with access to an existing deep-water port and multiple, mature CCS projects nearby

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# Partnering with experienced industry players

HXG is seeking the fastest, lowest-cost, lowest-risk pathway to production

## Partners accelerate pathway to operation:

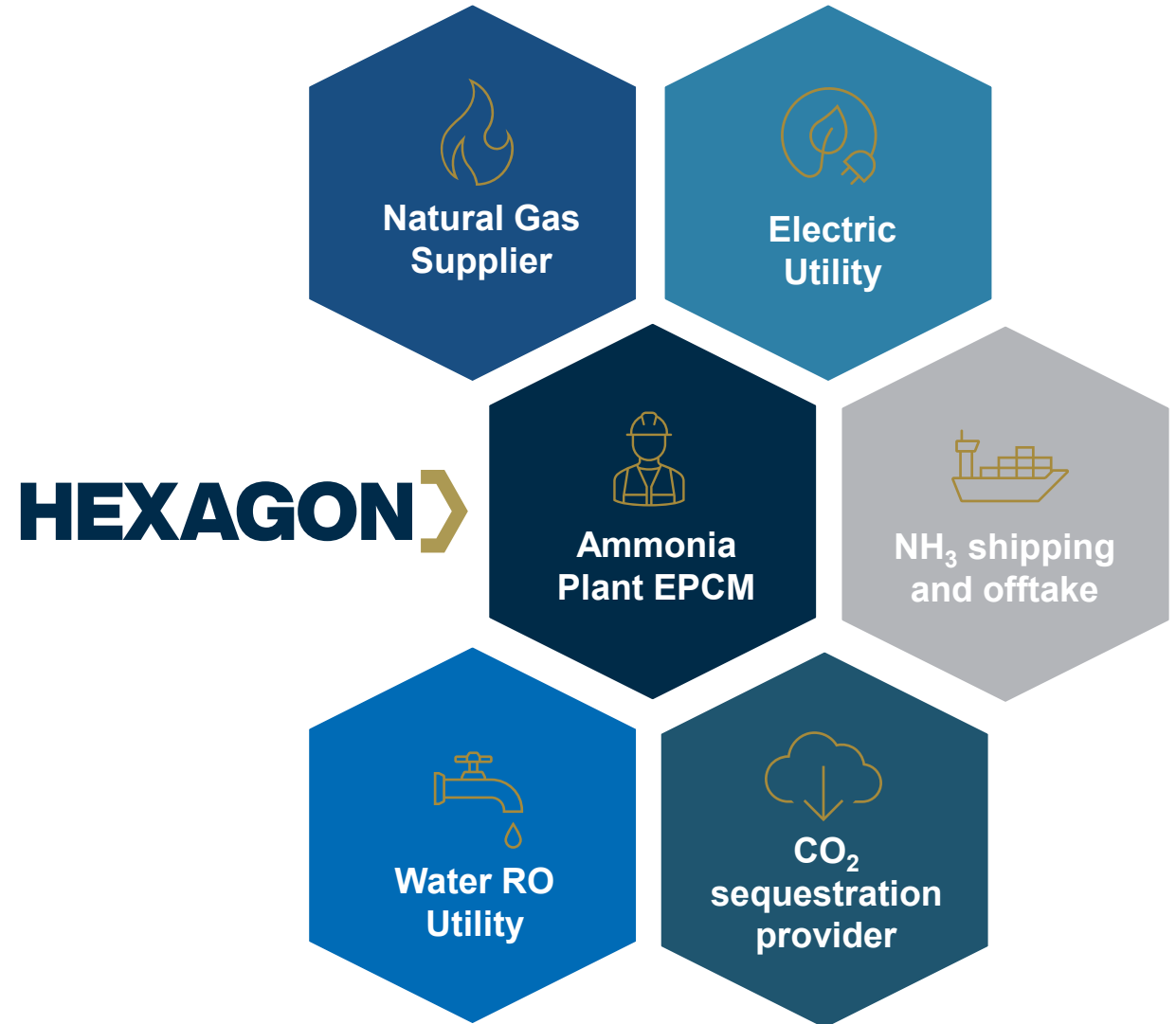
By partnering with existing industry players, Hexagon can de-risk technical issues and enable lower costs by using existing infrastructure

In this way a small company can build out a large project

## Key asset (site) already secured:

Ideally-located industrial land close to

- Gas supply
- CO<sub>2</sub> sequestration projects
- Water supply
- Existing port services
- Existing ammonia infrastructure



# Our team

Experienced team supplemented by strategic partners to secure way forward for WAH<sub>2</sub>

## Board of Directors



**Charles Whitfield**  
Chairman

CIO of Drumrock Capital  
Ex MD **Citibank & Deutsche Bank**  
Head of Strategic Equity  
Transactions



**Andrew Kirk**  
Commercial Director

Head of LNG for Power Co., Bangkok.  
Ex-17 years **Woodside** LNG Strategy  
Co-founder Green Hydrogen Asia,  
Malaysia



**Garry Plowright**  
Non-Exec Director

Land Access and Approvals  
Manager at **Pilbara Minerals**  
History in Mining law, regulatory  
process and mine development.



**Philipp Kin**  
Non-Exec Director

Career spanning investment  
banking (M&A, DCM and ECM)  
and energy research roles  
including Lead WA LNG Asset  
Economist at **Shell**

Wealth of experience in **developing**  
**projects and businesses** from inception  
to multi-billion-dollar enterprises

## Project Leadership Team



**Stephen Hall**  
CEO/ Project Leader

30 years-experience energy sector  
Ex-**Woodside Energy** VP Strategy,  
Power & New Markets  
Ex-VP North-West Shelf Development



**Reinhardt Matisons**  
Business Development

35 years commercial experience Energy  
sector. Ex-EVP Marketing, Trading &  
Shipping at **Woodside Energy** Ltd. Ex-  
Senior Consultant Poten & Partners



**Neil Theobald**  
Business Development

Snr Adviser Asia Natural Gas & Energy Asscn  
Senior Advisor to **McKinsey & Co.**  
Ex-**Chevron** VP Global LNG, Gas & Trading  
Ex-Non-Exec Chair North-West Shelf Gas



**Liz Sully**  
Regulatory Approvals

25 years regulatory approvals  
experience in energy sector  
Ex-**Santos & Woodside** Regulatory  
Approvals Specialist

Combined experience over 80 years with focus on  
**technical and commercial development of**  
**projects in joint venture with Japanese corporates**

## Industry partners

**Petrofac** 

**Engineering and  
construction specialists**

**TOPSOE**

**Ammonia Process  
specialists**

World class technical advisors to  
provide **detailed technical and  
costing analysis**

# Pathway to first production

Preserving shareholder value by staged approach



## PRE-FEED

- Target completion Q2 2024
- Current funding
- Self-fund; any capital raise would occur post first strategic MoU announcement
- Prior to FEED, farm down 65-75% of project ownership



## FEED

- Target completion Q2 2025
- Total expenditure ~\$12-15 M
- Self fund remaining \$3-5 M (25%-35% Hexagon share)
- Raise finance to fund the project through to FID



## PH1 BUILD & COMMISSION

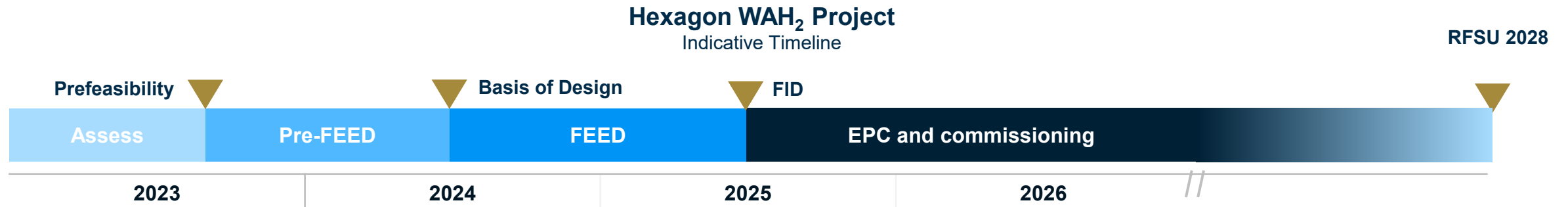
- Target completion 2028
- Total expenditure ~\$1,620 M
- HXG share funded 60:40 debt/project finance to equity (\$162-228 M equity)
- Ph2 considered post Ph1 with free cashflow generation

By breaking the path to production into discreet steps and bringing in partners at key steps, HXG can leverage its team and capital



# Timeline - significant milestones approaching

MoUs with counterparties next step for WAH<sub>2</sub> Project value realisation



Award of land

Complete Pre-Feasibility Study



MoUs for energy supply, gas supply, CO<sub>2</sub> sequestration, ammonia offtake



Conditional<sup>1</sup> Agreements for energy supply, gas supply, CO<sub>2</sub> sequestration, ammonia offtake



Initial Project Structuring and Participation Agreements



Financing Agreements



Unconditional Agreements for energy supply, gas supply, CO<sub>2</sub> sequestration, ammonia offtake

Note: (1) Conditions precedent include WAH<sub>2</sub> Project FID

# Compelling proposition

**FEED on WAH<sub>2</sub> the next key milestone, pathway to Project partnerships**

## Early mover in substantial market

Hexagon is a front runner in accessing a high growth, government backed market

## Advantaged project making significant progress

Secured project site with access to key existing infrastructure and inputs

## Near-term catalysts

Multiple near-term milestones expected to be catalysts for revaluation

## Attractive returns

Accessing government and subsidized funding would leverage shareholder payoffs

## Growth upside

Ongoing growth profile through WAH2 Phase 2 and additional project opportunities<sup>1</sup>



# Hexagon's Graphite and Mineral Assets



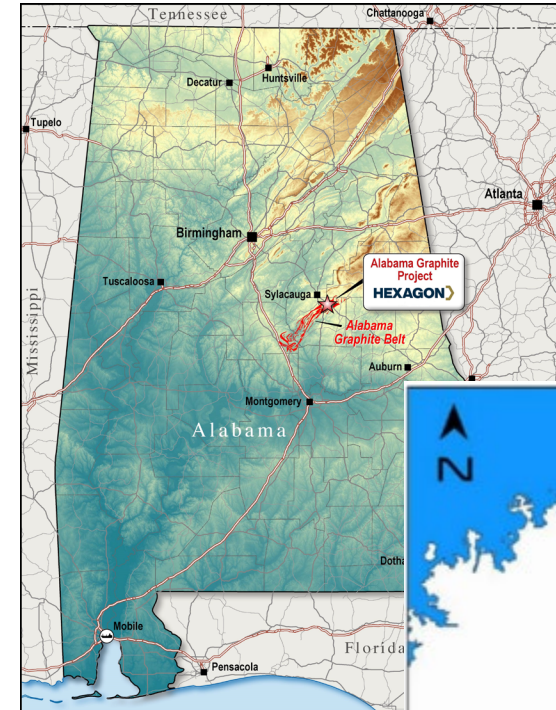


# Graphite Assets

## Progress continues with our Graphite JV partners in USA and Australia

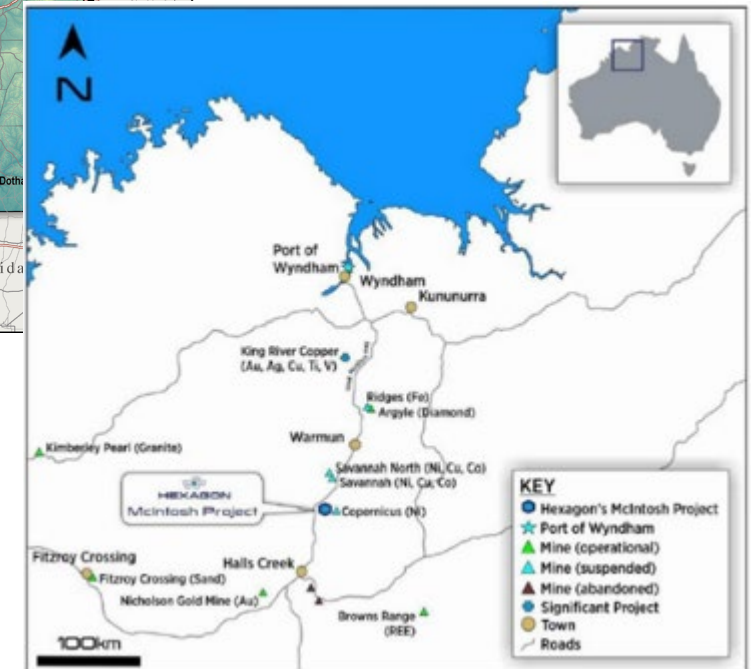
### Ceylon Project JV with South Star Graphite

- Second DDH drilling campaign and completed 15 holes program for a total of 1998 meters. Results due November
- NI43-101 PEA scheduled for completion by end of March 2024
- JV partner has spent U\$1.56M as of Q3, 2023 and budgeted approximately U\$650 for PEA.



### McIntosh Project JV with Green Critical Minerals

- 2023 Drilling campaign completed 15 holes program for a total of 1998 meters. Results due November 2023
- Second stage payment A\$200k received Nov 2023
- JV partner has stated estimated spend A\$2.5M as of Q4 2023.



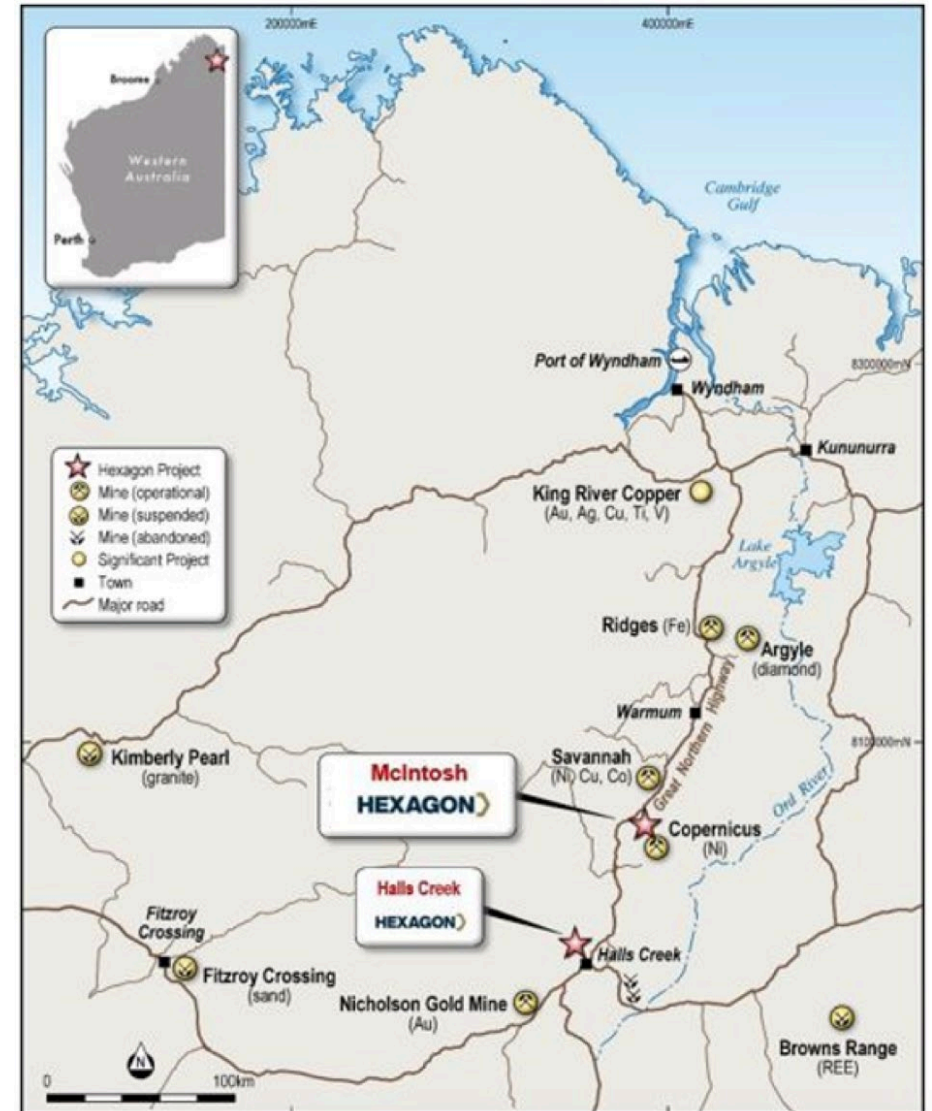


# Hexagon's other Mineral Assets

## McIntosh and Halls Creek mineral tenements

### McIntosh and Halls Creek JV discussions in progress

- Further product test work currently being undertaken
- Review of results and data updated with PGE and Base metals potential identified
- Demonstrates strong potential for both tenements for key critical minerals
- New data room assembled and Investment Memoranda
- Strategic co-development discussions progressing and options being compared.



# HEXAGON

**FOR FURTHER INFORMATION**  
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This announcement has been authorised for release to the ASX by the Board of Hexagon Energy Materials Ltd.