

Hexagon's WAH₂ Project

Low Emissions Ammonia

From Australia to APAC

21 November 2023

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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 WAH₂ 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 WAH₂ Project may be downgraded, deferred or may not go ahead.

Financing

Hexagon has not secured funding for the WAH₂ 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 WAH₂ Project may be downgraded, deferred or may not go ahead.



Hexagon Energy Materials Limited

ASX listed project developer (HXG)*

Competitive, low-emissions ammonia export project (WAH₂), annual net CF A\$244 million (100% project)¹

Targeting substantial Asian coal co-firing market opportunity, ~US\$10 Bn pa market by 2035²

Site secured & highly encouraging PFS completed

FEED approaching – pathway to execute partner MOUs/Agreements

FID target 2025

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

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

²Low-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 generation¹

Emissions Target

Japan has committed to reduce greenhouse gas emissions by 46% in 2030²

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 MTPA³ with a value of US\$10 Bn/yr⁴ by 2035

Japan's Ammonia criteria

Australia well-placed, Hexagon best-placed



Low Emissions

Less than 4.2 T CO₂e /T H₂e¹, lower preferred and prioritized



HEXAGON

Detailed engineering work by Petrofac demonstrates **emissions intensity of 1.1 T CO₂e /T H₂e**, further improvement opportunities identified³

Cost Competitive

US\$500 – 600 /T NH₃² delivered in Japan

WAH₂ Project Base Case **cost of supply US\$552 /T NH₃**. Target of < US\$500 /T NH₃ based on identified opportunities³

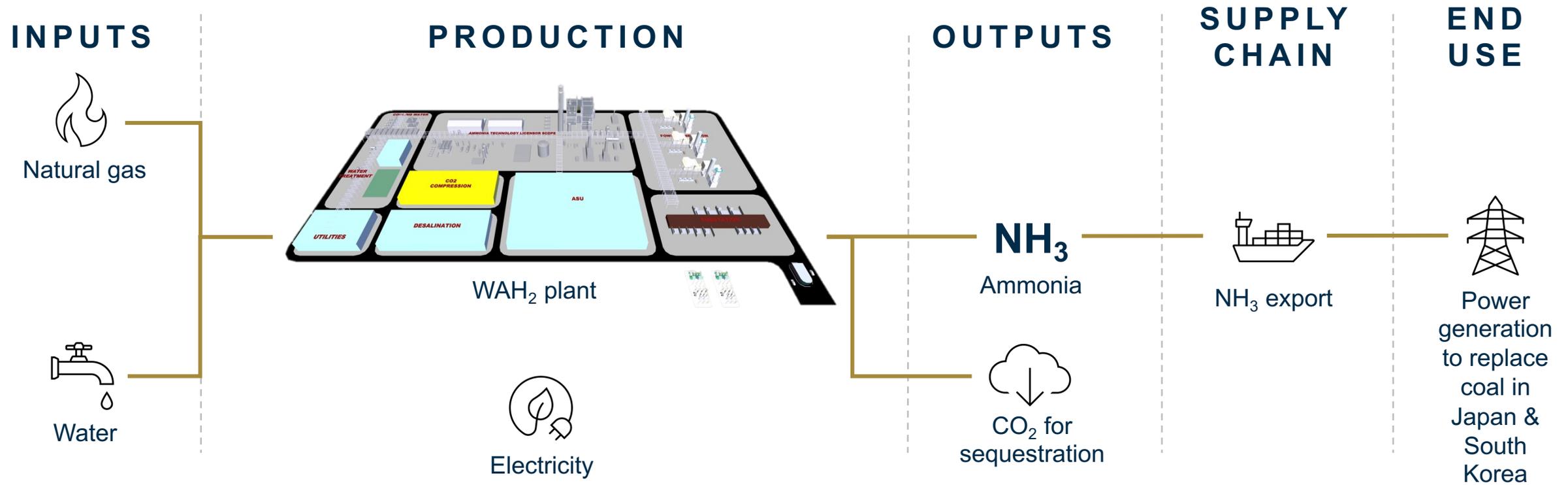
Secure Supply

From established and stable trading partner countries

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

Project overview - Hexagon's WAH₂ export plant

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



WAH₂ PROJECT FEATURES¹

Project life

25yr

Production technology

O₂ fired ATR

Production capacity

Ph1	Ph1 + Ph2
600kTPA	1200kTPA

Gross Project Capex

Ph1	Ph2
A\$1.62B	A\$1.29B

Emissions intensity

1.1kg CO₂e / kg H₂e

Note (1); WAH₂ 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 DBNGP²



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

- Water supply, power supply, CO₂ transmission, ammonia export



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

- Indigenous Land Use Agreement required with Ngarluma Aboriginal Corporation



Note: (1) Strategic Industrial Area; (2) Dampier to Bunbury Natural Gas Pipeline
Source: Image - DevelopmentWA

WAH₂ 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)

5

Based on gas reforming with CCS¹ Others use coal, with emissions challenges; or biomass, unproven at scale

WAH₂ is Unique The only proposed gas-based project with access to an existing deep-water port and multiple, mature CCS projects nearby

1

Source: Hexagon analysis of publicly available information; Note (1) carbon capture and storage

Partnering with experienced industry players

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

Partners accelerate pathway to operation:

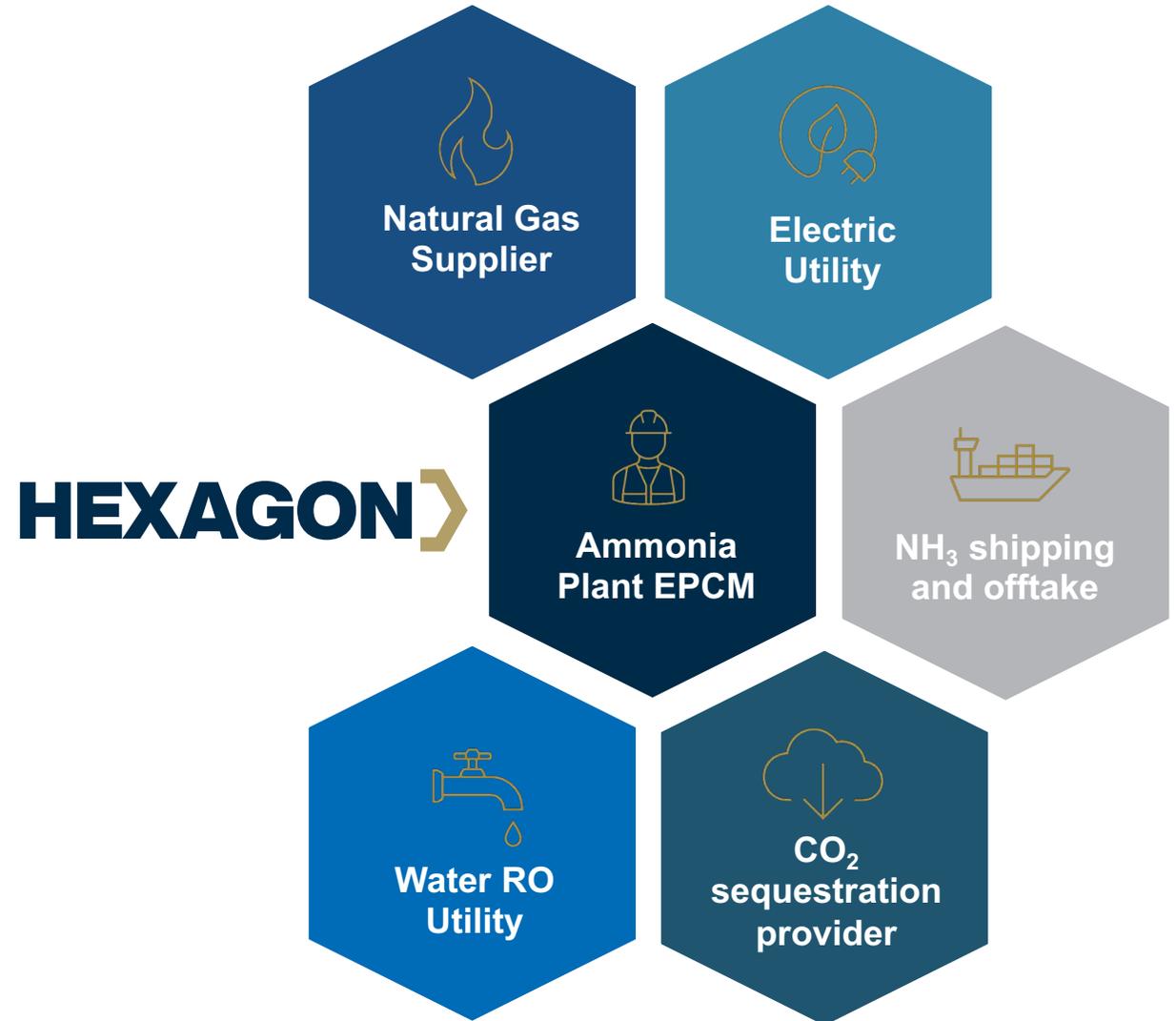
By partnering with existing industry players, Hexagon can de-risk technical issues and enable lower costs by using existing infrastructure

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
- CO₂ sequestration projects
- Water supply
- Existing port services
- Existing ammonia infrastructure



Our team

Experienced team supplemented by strategic partners to secure way forward for WAH₂

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



Engineering and construction specialists



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 WAH₂ Project value realisation



Note: (1) Conditions precedent include WAH₂ Project FID

Compelling proposition

FEED on WAH₂ 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 opportunities¹

Questions?

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WAH₂ – practical support for the energy transition



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Fuelling the Future

Low Emissions Ammonia
From Australia to APAC

FOR FURTHER INFORMATION, please contact:

Stephen Hall

stephenh@hxgenenergymaterials.com.au

hxgenenergymaterials.com.au