



Delivering Clean Energy for the Mid West

Chairman's General Meeting Presentation

19 August 2022

PILOT ENERGY LIMITED
ASX:PGY



Compliance statements



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Competent Persons Statement

This announcement contains information on conventional petroleum and carbon storage resources which is based on and fairly represents information and supporting documentation reviewed by Dr Xingjin Wang, a Petroleum Engineer with over 30 years’ experience and a Master in Petroleum Engineering from the University of New South Wales and a PhD in applied Geology from the University of New South Wales. Dr Wang is an active member of the SPE and PESA and is qualified in accordance with ASX listing rule 5.1. He is a former Director of Pilot Energy Ltd and has consented to the inclusion of this information in the form and context to which it appears.

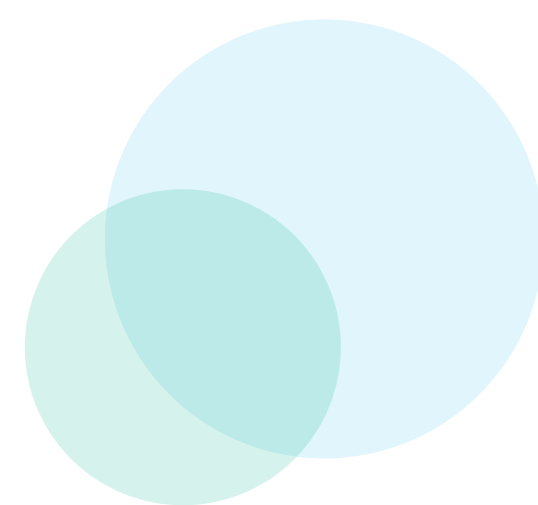
Authorisation

This presentation has been authorized by the Chairman and Managing Director on behalf of the Board of Directors of Pilot Energy Limited

Mid West WSP Feasibility Study Reporting Conditions

Pilot has agreed the following conditions with the ASX in relation to the Mid West WSP feasibility study:

1. The Company must continue to spend funds on its existing and proposed oil and gas projects.
2. The Company must disclose in each quarterly activities report until September 2022, the proportion of expenditure incurred in relation to exploration and evaluation on the oil and gas projects and the Mid West Wind and Solar Project.
3. The Company must disclose as separate line items in each quarterly activities report until September 2022, expenditure incurred in relation to exploration and evaluation on the oil and gas projects and the Mid West Wind and Solar Project.
4. Proceeding beyond the feasibility study stage of the Project (or incurring expenditure in excess of the budgeted feasibility expenditure in relation to the Project) constitutes a change in the nature and scale of the Company’s activities in terms of Listing Rule 11.1 and as such the Company will be required to comply with all of the requirements of Chapters 1 and 2 of the Listing Rules before it proceeds beyond the feasibility study or incurs expenditures in excess of the budgeted feasibility expenditure on the Project.



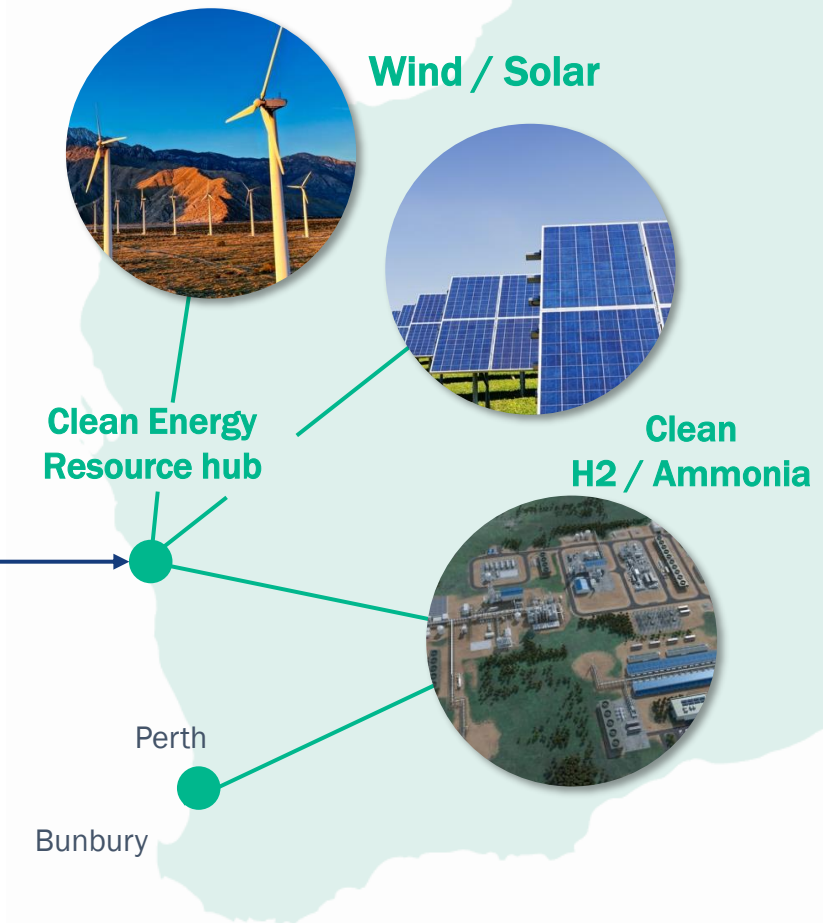
Vision

Transform existing assets and infrastructure delivering an integrated cost competitive clean energy solution

Current Operations

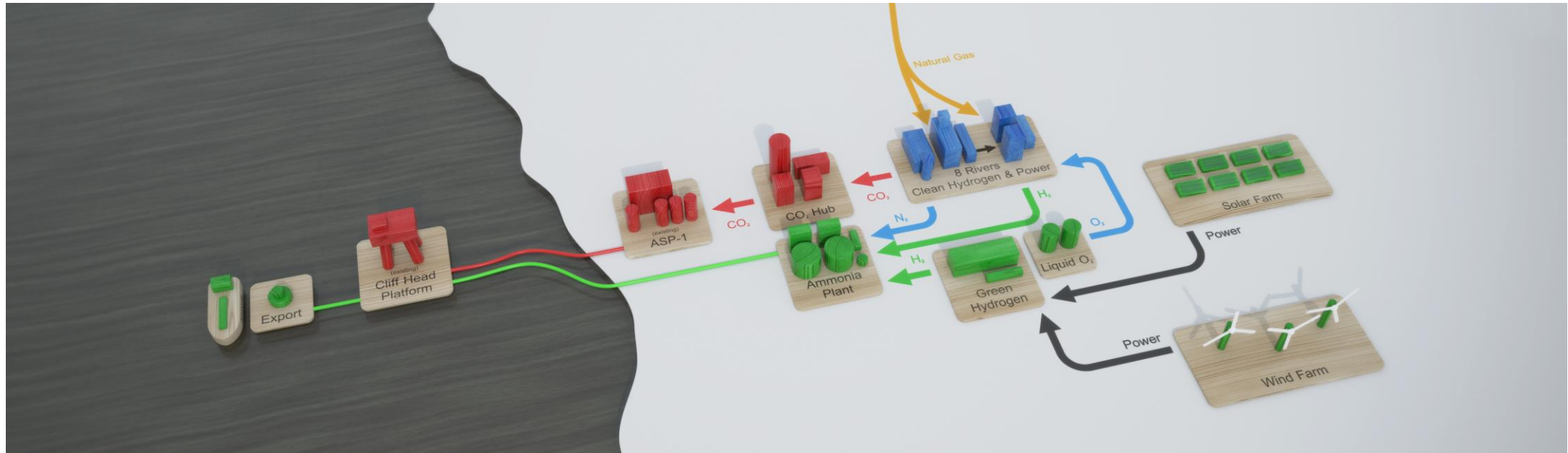


Integrated Clean Energy Portfolio



Mid West Clean Energy Project

Staged development of blue hydrogen and ammonia production starting with CCS



Stage 1 – Carbon Capture & Storage Timing: ~2025

- Conversion of Cliff Head Offshore oil field to CCS
- Permanent CO₂ storage in depleted offshore oil field
- Up to 1.1 million tpa CO₂ injection from 2025
- Targeting continuous CO₂ injection through 2050
- \$50 - 60 million net cash flow by 2029

Stage 2 - Blue H2 Production Timing: 2025 - 2027

- Blue H2 Production facility utilizing Cliff Head CCS
- Initial Blue H2 production of ~43,000 tpa
- Expand Blue H2 production to 85,000 tpa
- Targeting H2 sales @ A\$5/kg at LCOH of ~A\$2/kg
- Revenue potential of ~ \$215 million

Stage 3 H2 Expansion to Export Ammonia Timing: 2027 - 2030

- Integrate ~250MW renewables to produce ~18,000 tpa Green H2
- Combined Blue/Green H2 to feed Clean Ammonia plant
- Targeting Clean Ammonia-for export of ~345,000 tpa
- Revenue potential of ~ \$244 million
- Targeting Clean Ammonia LCOA of A\$400/tonne
- Expand Clean Ammonia production up to 1 million tpa

Cliff Head CCS – Project Overview



Key enabler of low cost clean hydrogen and ammonia production for the Mid West Clean Energy Project

- Stage I of the Mid West Clean Energy Project is the development of a carbon capture and storage project located on the Mid West Coast located 270km north of Perth
- Project will include onshore carbon capture/aggregation facilities and offshore CO₂ injection facilities providing permanent CO₂ storage
- Brownfield development leveraging Pilot's existing Cliff Head Oil Field onshore/offshore facilities
- Focused on delivering an initial project that can deliver a CCS injection price of less than A\$20/tonne of CO₂
- Substantial opportunity providing the foundation for development of clean hydrogen and ammonia production

Key Metrics	
CCS Storage Capacity (mt) ¹	6.4 (2C), 15.8 (3C)
Throughput (Mtpa)	0.55 – 1.1
No. of CO ₂ injection wells	5-8

1. 2C resource estimates in accordance with the SPE SRMS Guidelines for estimating CO₂ storage resources

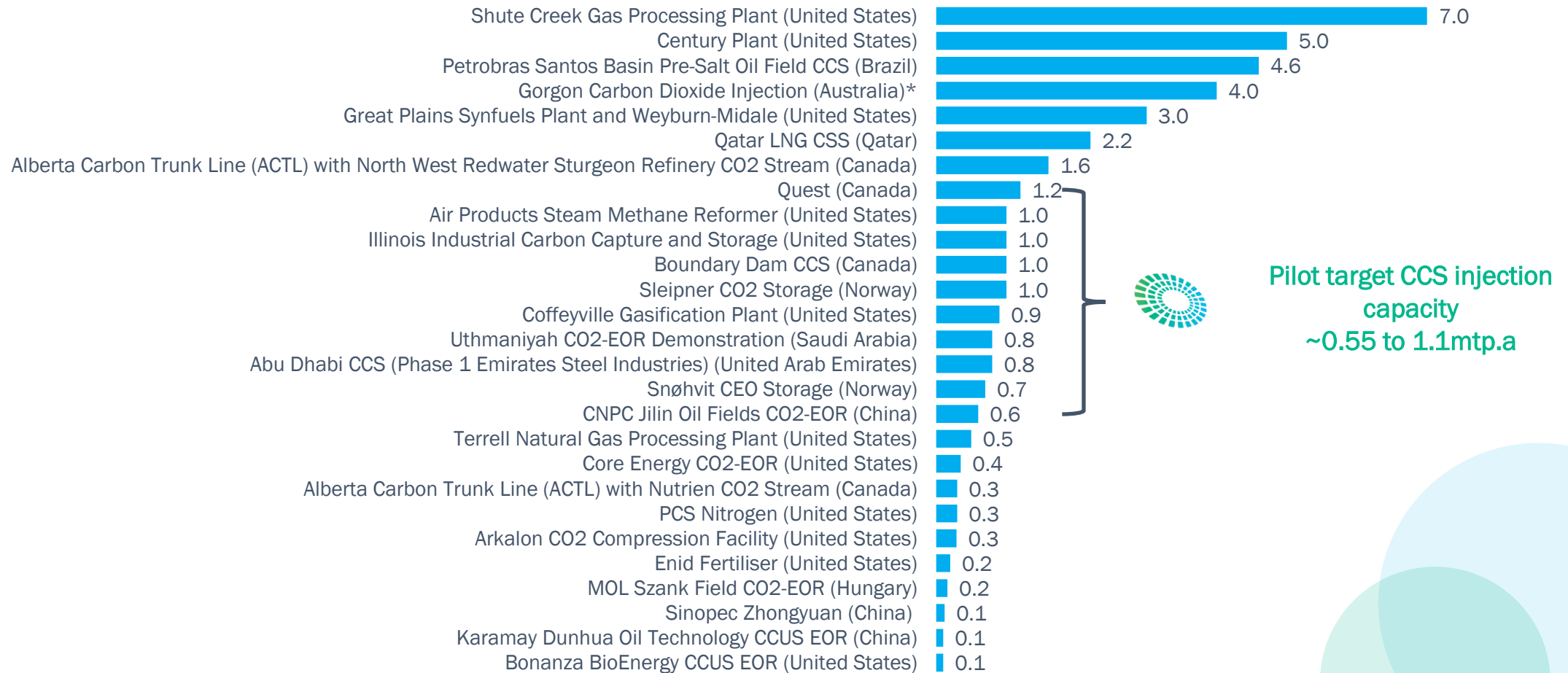
INVESTMENT HIGHLIGHTS

- ✓ Ready end-of-life offshore reservoir in WA Mid West with Commonwealth regulatory pathway to CCS
- ✓ Proximity to ready accessible market with up to ~1.0 million tpa of easy-to-capture CO₂ emissions sources identified within 40km of Cliff Head CCS
- ✓ Minimal risk and capex requirements due to straight-forward adaptive re-use of existing plant, pipelines, wells, platform and reservoir for CCS
- ✓ Organically funded via increased end-of-life oil production required for reservoir preparation
- ✓ Near-term term delivery with anticipated CCS start-up by 2025/26

Global CCS Facilities In Operation

Cliff Head CCS is a Global Top 10 CO₂ Injection Capacity Project

Carbon Dioxide Capture Capacity in million metric tons per year, 2021



www.statista.com/statistics/1108355/largest-carbon-capture-and-storage-projects-worldwide-capacity/

Cliff Head CCS Social Impact

0.5
million
tpa

Initial planned annual Cliff
Head CCS CO₂
sequestration

35,000
p.a.

Equivalent hectares of
agroforestry planting per
annum⁽¹⁾

57
million
p.a.

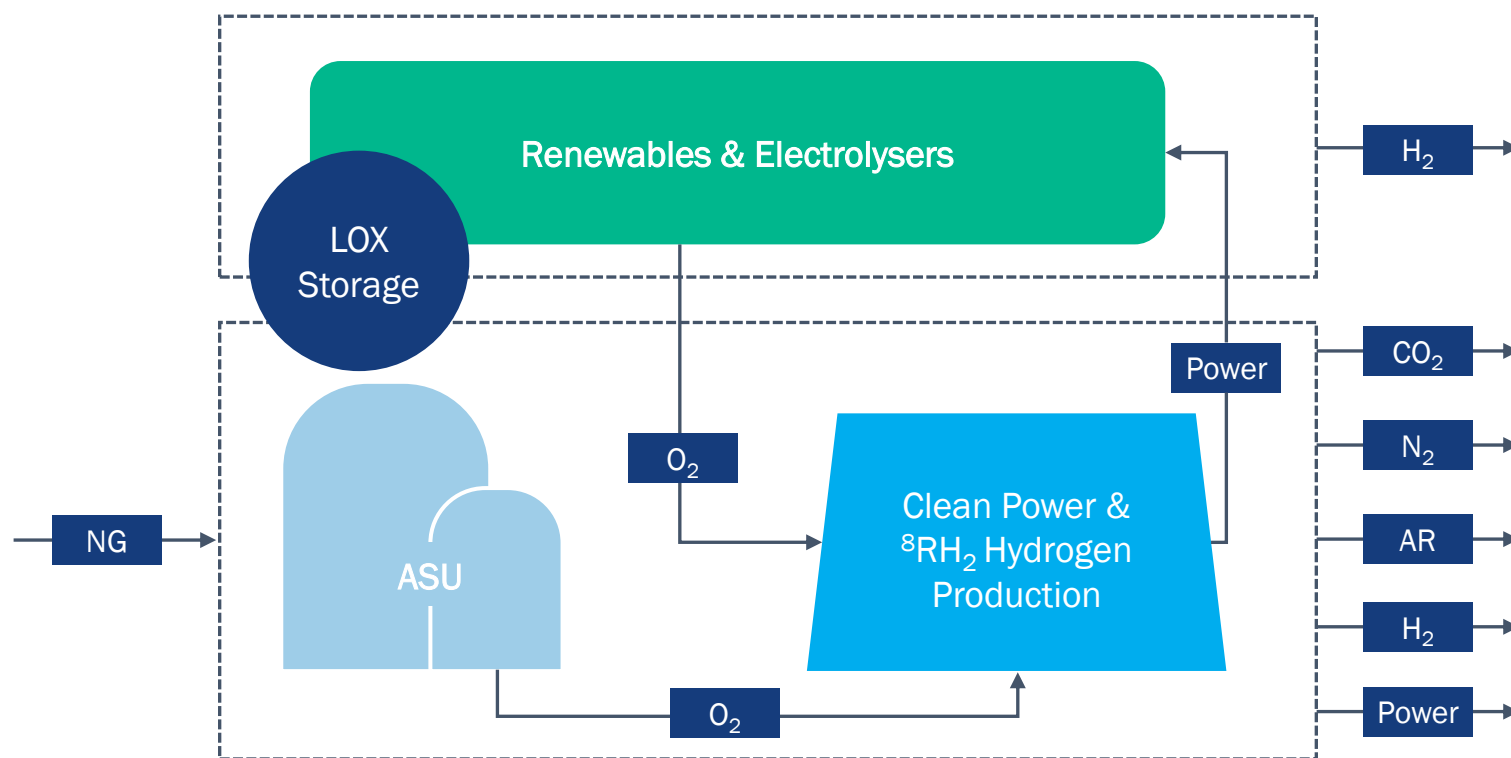
Equivalent number
of tree plantings per
annum⁽²⁾

Sources

1. Source: The FLR Carbon Storage Calculator applies data from the Global Removals Database developed by Winrock International under funding from the International Union for Conservation of Nature (IUCN), later published in Bernal et al. "Global Carbon Dioxide Removal Rates from Forest Landscape Restoration Activities." Carbon Balance and Management, vol. 13, no. 1, 2018, doi:10.1186/s13021-018-0110-8
2. Source: average 1,600 trees per hectare (NHS Forest)

Enabling technology

Unique opportunity to integrate CCS, hydrogen, ammonia and renewables using proprietary 8 Rivers technology



8 Rivers 8RH_2 technology

- Proven technology which is currently deployed at scale
- High hydrogen production efficiency while requiring minimal capital costs compared to over conventional power cycles
- Minimal water consumption

A unique opportunity

- Blue Hydrogen only possible with Cliff Head CCS
- Integration with Mid West Renewables (see next slide) with 8 Rivers Technology delivers operational and cost synergies across both Blue and Green Hydrogen production
- Delivers compelling hydrogen solution with clear cost advantage

CCS and Mid West Renewables can be integrated through 8 Rivers technology to deliver clean cost-competitive power, hydrogen and ammonia

Stage II – Blue Hydrogen

Cliff Head CCS will enable cost competitive industrial scale blue hydrogen production

Blue hydrogen production with direct/integrated Cliff Head CCS

- Feasibility studies indicate production capacity of 43,000 tpa of blue hydrogen
- Avoid 445,000 tpa of CO₂ emissions² through 98% of CO₂ capture using established technologies

Proven and well established, scalable technologies

- Blue hydrogen production has been in commercial operation since 1982
- 98% of current hydrogen production utilises steam reformation (SMR) technology³ which has been in commercial use for over 100-years

Cost competitive clean hydrogen

- Blue hydrogen expected to be the lowest-cost clean production option in majority of locations¹
- A\$6.00/kg hydrogen is cost competitive with petrol/diesel for transport at A\$1.70/litre

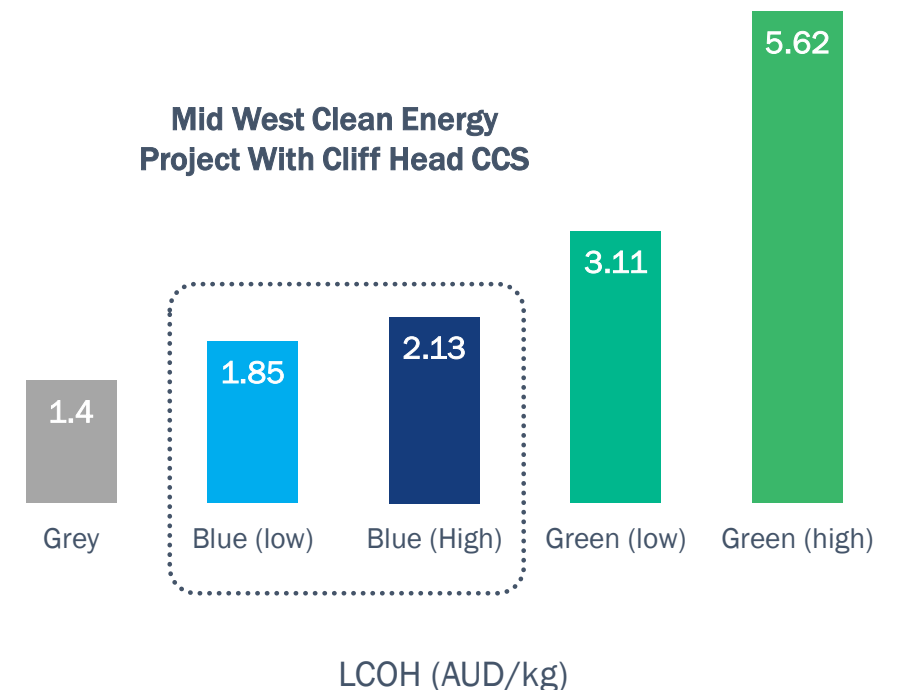
Near-term delivery to facilitate clean hydrogen and ammonia production

- Facilitates, accelerates transition to green hydrogen using Mid West Renewables

Sources

1. Global CCS Institute Blue Hydrogen Report April 2021. Figure 6 (RHS of slide) taken from the same report.
2. CE Delft Feasibility Study into blue hydrogen July 2018 estimates that blue hydrogen production with 95% direct/integrated carbon capture and storage will produce 0.64/kg of CO₂ process emissions per kg of hydrogen produced resulting in total annual CO₂ process emissions of ~25.6 kTonnes of CO₂
3. Global CCS Institute 2021.

Levelized cost of hydrogen (LCOH) in the range of A\$1.85 to A\$2.13 leveraging the Cliff Head CCS



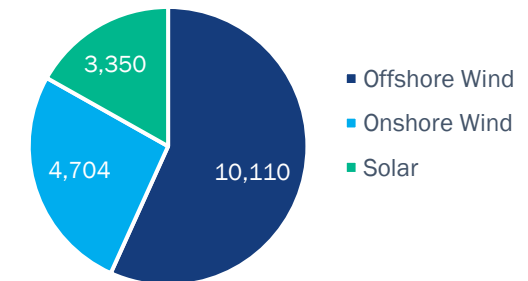
Sources: SP Global, Cost, logistics offer "blue" hydrogen market advantages over "green" alternative 19 March 2020 and Pilot Feasibility Study ASX release 28 March 2022

Mid West Renewables provides growth platform

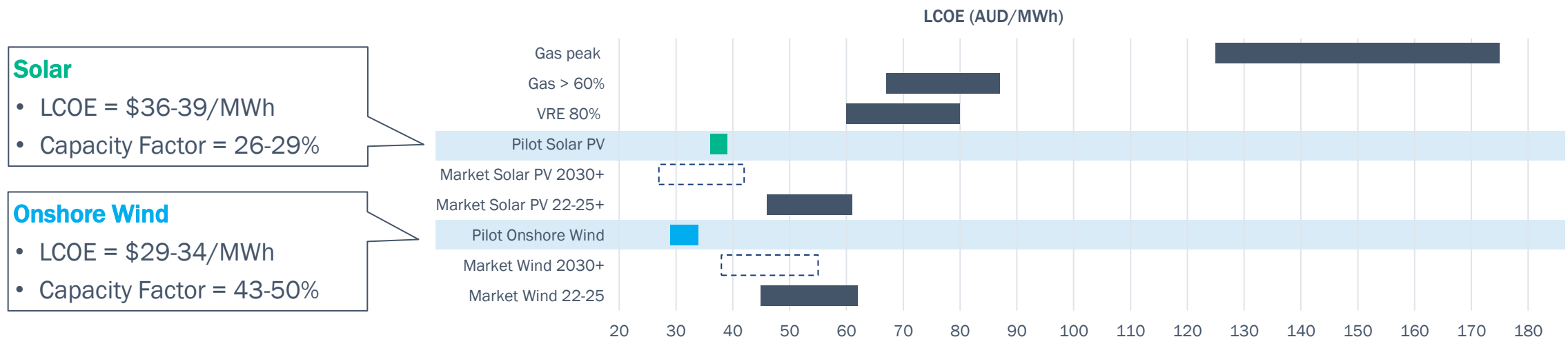
Large cost-competitive renewable energy resources identified in the vicinity of the Mid West Clean Energy Project

- Over 18 GW of renewable resource potential in the area identified from feasibility studies
- Renewable resources include onshore wind, offshore wind and solar
- Identified onshore wind and solar projects have competitive LCOE compared to prevalent energy generation options (CSIRO 2021 GenCost Report results)
- Feasibility studies have identified suitable locations for further investigation and development
- Renewable energy development to deliver power supply integrates into Mid West Clean Energy project and provides runway for significant expansion

Mid West Clean Energy Project
Total Identified Renewable Energy
Technical Resource Potential-By Type (MW)



Mid West Renewable Energy Projects Feasibility Study Results on a LCOE Comparison to CSIRO 2021 GenCost Report



Stage III – Clean Ammonia Production

Ammonia from blue hydrogen is both a low cost and clean energy source and supply vector for hydrogen

Clean ammonia emerging as a cost competitive LNG replacement

Established market and supply chain

- Essential global commodity
- One of the most demanded industrial chemicals
- Well established, large-scale production and supply chain

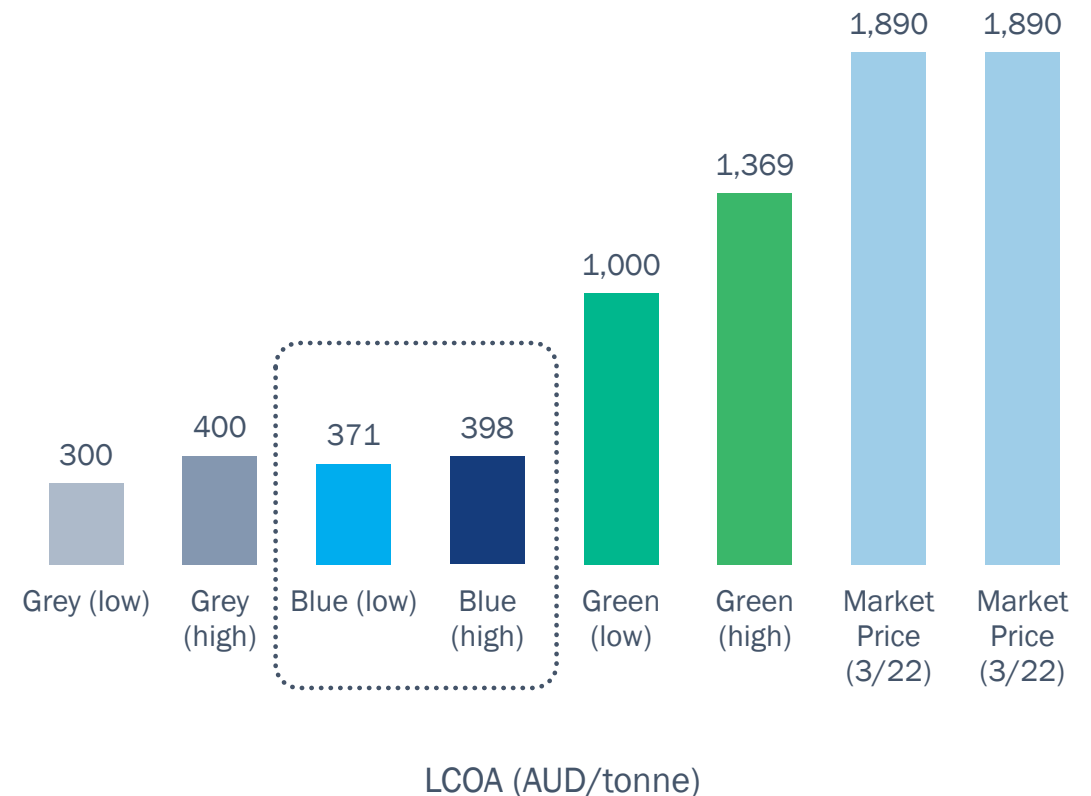
Excellent solution for transport and supply of hydrogen

- Excellent “vector” for transport/supply of H₂
- Lowest cost form of hydrogen transport and supply
- Easily stored in simple, inexpensive pressure vessels
- Transportation and distribution simpler and cheaper than H₂ delivery

Clean CO₂-free energy source

- Proven CO₂-free fuel
- Either blue or green H₂ can be used produce clean ammonia
- Can significantly reduce CO₂ emissions for power generation
- APAC power companies already seeking large clean ammonia supplies to displace coal

Levelized cost of ammonia (LCOA) in the range of A\$370 to A\$400 per tonne, leveraging CCS and renewables



Mid West Clean Energy Project – bringing it all together



Stage II Blue Hydrogen

- Hydrogen production integrated with Cliff Head CCS utilising 8 Rivers ⁸RH₂ technology
- Ability to accept CO₂ rich raw gas with ≥97% direct carbon capture of CO₂ already at pipeline pressure
- ~ 25–85 TJ/d natural gas demand identified
- Expected hydrogen production of 43,000–85,000 tpa

Stage III Clean Ammonia

- Expansion of hydrogen production to 60,000–195,000 tpa
- Production of 345,000 – 1.1 million tpa of cost competitive clean ammonia for export
- Powered by 250–700 MW of integrated renewable energy generation

Key next steps

Over the next 12-months Pilot (as operator) together with JV Partner Triangle Energy will be focused on the activities to deliver the Cliff Head CCS Project



Corporate

- Analyse & implement feasibility studies
- Commence engagement with prospective project partners



Project implementation

- Permitting – Engaging with regulators to secure the necessary regulatory approvals;
- Site Acquisition – Completing project site selection and commencing site acquisition;
- Commercial Offtake – Engaging with prospective parties for commercial CCS off-take;
- EPCM Contractor – Commence engagement with potential EPC contractors; and
- Pre-FEED – Commence detailed Front-End Engineering & Design (pre-FEED) and costings for CCS and Blue Hydrogen



Next 12-months aimed at securing all necessary regulatory approvals, securing commercial off-take arrangements and completing a full bankable feasibility study and FEED to enable final investment decision (FID) for the Cliff Head CCS Project.

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