



Leading the clean energy transition

Investor Presentation

November 2021

PILOT ENERGY LIMITED
ASX:PGY



Pilot – leading the clean energy transition

Leveraging existing oil and gas assets along with established infrastructure to develop competitive clean energy projects

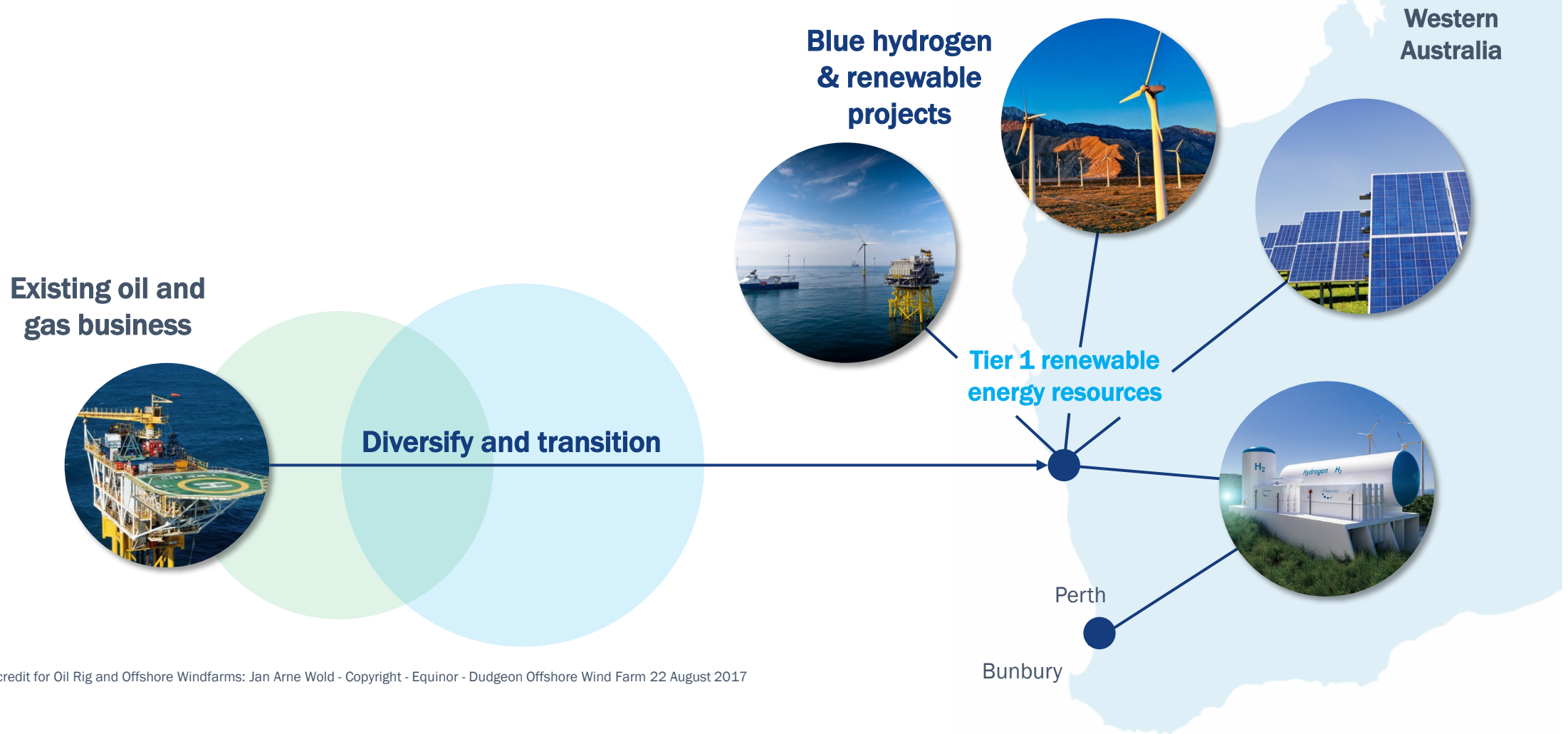


Image credit for Oil Rig and Offshore Windfarms: Jan Arne Wold - Copyright - Equinor - Dudgeon Offshore Wind Farm 22 August 2017

Pilot at a Glance



ASX Code: PGY

Capital Structure

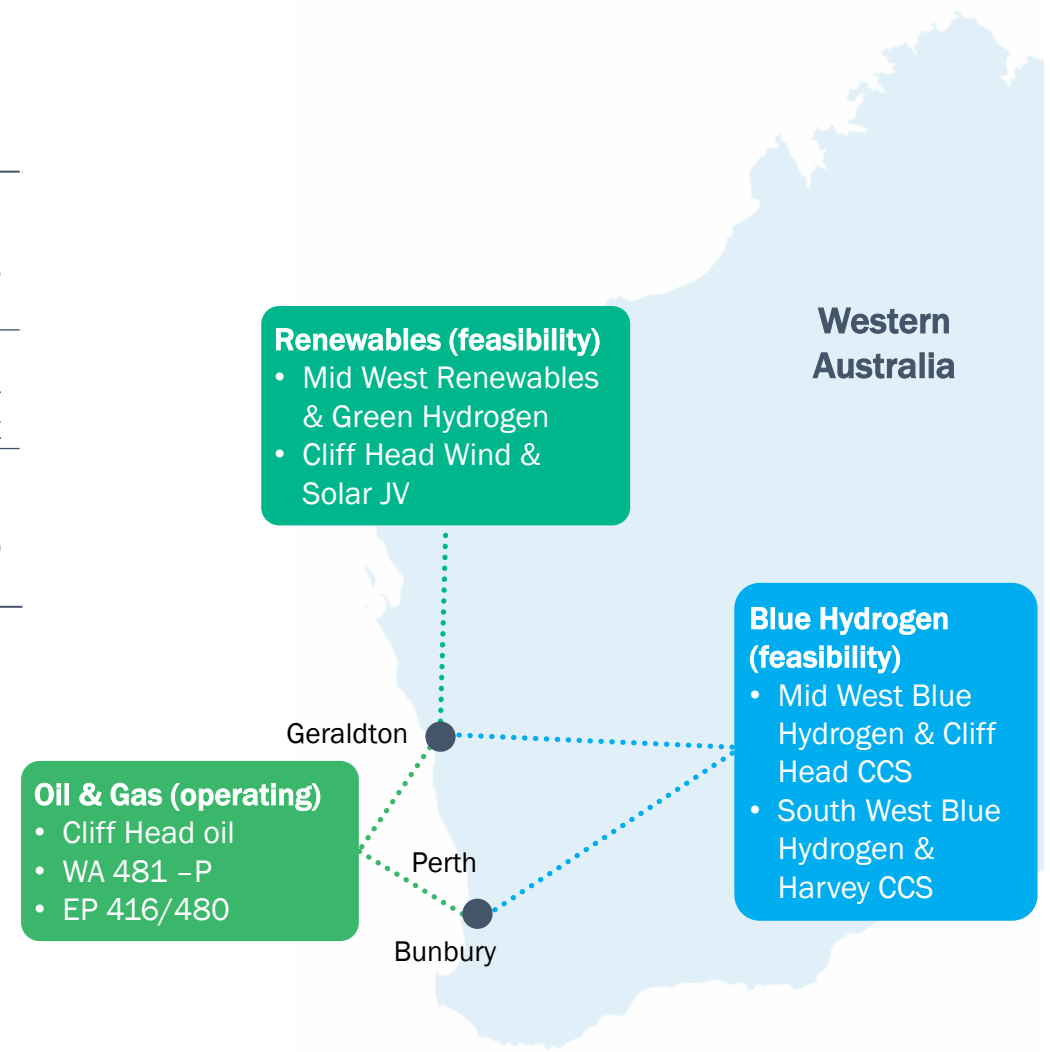
• Issued shares	501.6 million
• PGY share price	~\$0.06
• Market Capitalisation	~\$30 million

Oil & Gas Reserves & Resources (Existing)

• Proved & Probable Reserves ¹	-
• 2C Contingent Resources ^{1,2}	~3,800,000 BOE

Blue Hydrogen & Renewables Projects (Under feasibility evaluation)

• Wind/Solar Power (MW)	1,300+
• Hydrogen (kg/day)	Up to 250,000
• CCS/CCUS (tonnes per annum)	Up to 1.3 million



1. Approximately 300,000boe associated with the Cliff Head project remains under review and may be reclassified as reserves subject to the finalisation of new oil offtake arrangements

2. Refer to PGY ASX announcement 23 April 2021 titled "Resources Update" and refer to Independent Technical Specialist Report Pilot Energy Ltd - Australian Exploration Assets January 2021 (28 May 2021 General meeting Notice of Meeting: Independent Expert Report

Pilot's Competitive Advantage



Material holdings with recognised world-class natural resources (oil & gas, blue hydrogen and renewables)



Ownership in key energy licenses & infrastructure



Leveraging existing oil & gas assets into potential world-class competitive clean energy projects



Proven and experienced Board and Management team

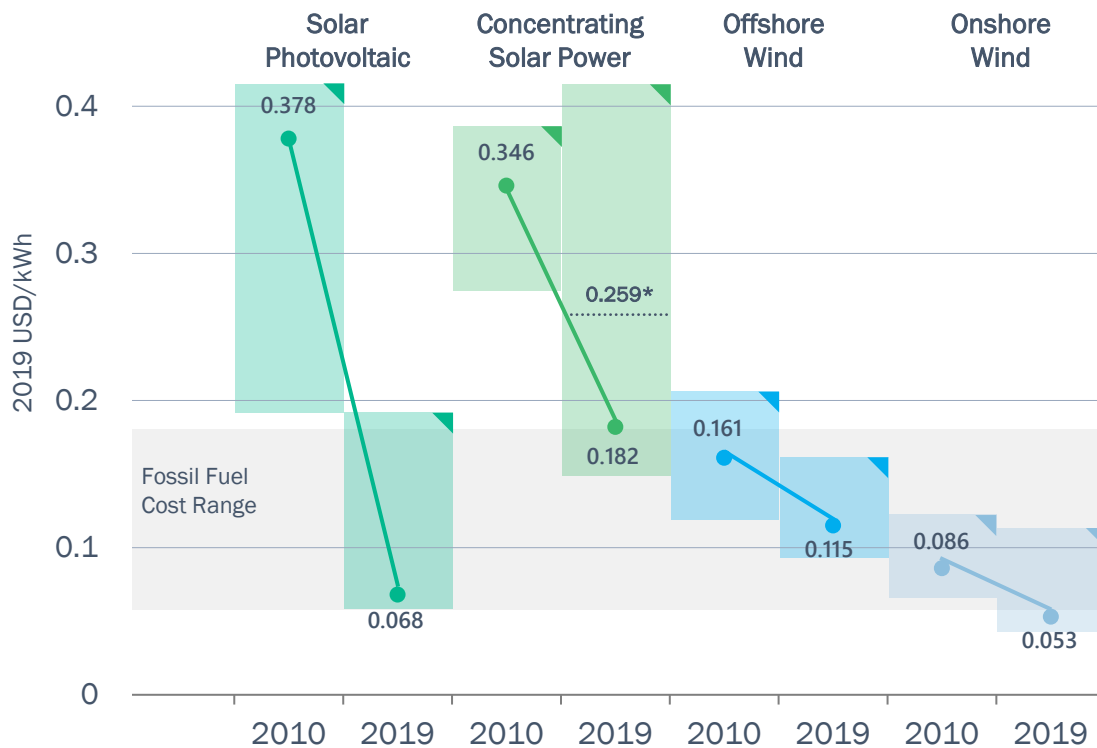


Well capitalised to progress the transition

The Case for Renewables

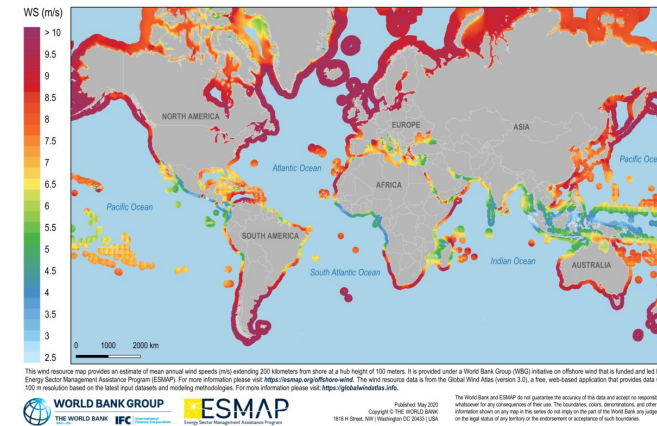
Technology has dramatically reduced solar & wind power costs in last decade below fossil fuel alternatives

Global weighted average levelized cost of electricity from utility-scale renewable power generation technologies, 2010 and 2019

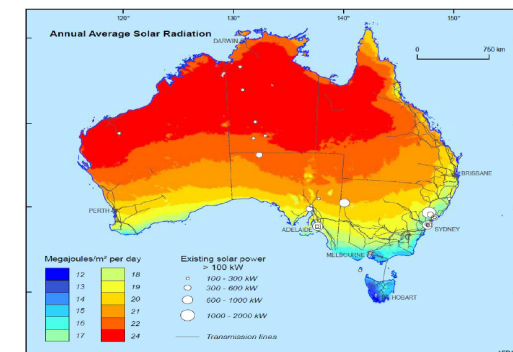


* Note for CSP, the dashed bar in 2019 shows the weighted average value including projects in Israel
 Source: IRENA – “Renewable Power Generation Costs in 2019”, June 2020 Report

Mid West Region - one of the world's best renewable energy jurisdictions



Australia's Renewable Resources: Solar



Map of Australia showing the annual average solar radiation and areas of existing solar power greater than 100 kW and up to 2000 Kw.

Source: Geoscience Australia and ABARE (2010) *Australian Energy Resource Assessment*.

Energy Transition Development Strategy

CY2020 – June 21



Utilizing Existing Pilot Footprint

Progress project feasibility works/ studies to provide a project for partnering

CY2021



Leverage Existing Knowledge Base

Pilot database is the foundation for dedicated studies serving dual purpose for upstream & renewables to streamline project feasibility & approvals

CY2022



Feasibility to Permitting

Once preliminary feasibility results established, pursue permitting & regulatory approvals in parallel with bankable feasibility

CY2023



Large Range of Potential Partners

Macquarie, Fortescue, CIP, BP, Woodside, Total, Equinor, Shell & Eni – all are pursuing renewables, hydrogen and/or carbon management

Mid West Renewable Resource Zone – All the Right Stuff

Premium Renewable Resource Precinct



Renewable resources – Coastal Mid West is one of Australia’s highest rated renewable energy resource regions for both wind & solar as assessed by Geoscience Australia

Government strategic focus – WA Government committed to developing the Mid West major industrial area and renewable resource zone into a global renewable energy and hydrogen hub

Renewable energy demand – Mid West renewables resource and hydrogen resource potential attracting interest of major international and local companies pursuing renewable energy projects. Pilot uniquely placed with existing assets and infrastructure

Established Infrastructure



Grid connected – Served by Western Power’s South West Integrated System 330 kV transmission lines

Pipeline connected – Access to DBNGP & Parmelia Gas Pipelines provide potential pathways to market for hydrogen

Ports, road & rail – Mid West region endowed with established infrastructure

Clear Hydrogen Development Pathway



Blue hydrogen – Combination of existing Perth Basin gas supplies, low cost renewable energy and existing suitable CCS/CCUS assets can support first-mover, lowest cost blue hydrogen supply chain

Green hydrogen – Abundant low cost renewable energy & abundant H₂O in combination with blue hydrogen provides foundation for development of competitive & clean hydrogen supply chain

Green iron & steel – Combine low cost blue/green hydrogen supply with World-class Mid West magnetite iron production provides opportunity for globally cost-competitive green iron & steel

Integrating Infrastructure, Renewables and Carbon Management to Deliver Competitive Clean Energy

Mid-West Region has multiple potential offshore wind development sites

- Cliff Head Wind & Solar Project JV* formed with Triangle Energy to assess feasibility of developing combined wind and solar project at Cliff Head Oil Field
- Cliff Head facilities provide potential anchor point for offshore wind farm
- Cliff Head Oil Field/Infrastructure provides unique position
- Only offshore oil & gas infrastructure along the Mid West Region coastline
- Opportunity to simplify/streamline feasibility/development
- Maximize use of existing infrastructure, easements, operations, studies & data
- Combining offshore wind & existing operations creates potential new value
- Potential to share/reduce costs and defer abandonment liabilities
- Cliff Head reservoir also provides an attractive potential foundation asset for carbon management business
- Access to a proven mature reservoir is fundamental to the near term supply of lowest cost clean hydrogen

* Subject to completion of WA-481P sale



Source: www.iconeng.com.au




Blue Hydrogen and CCS Feasibility Study

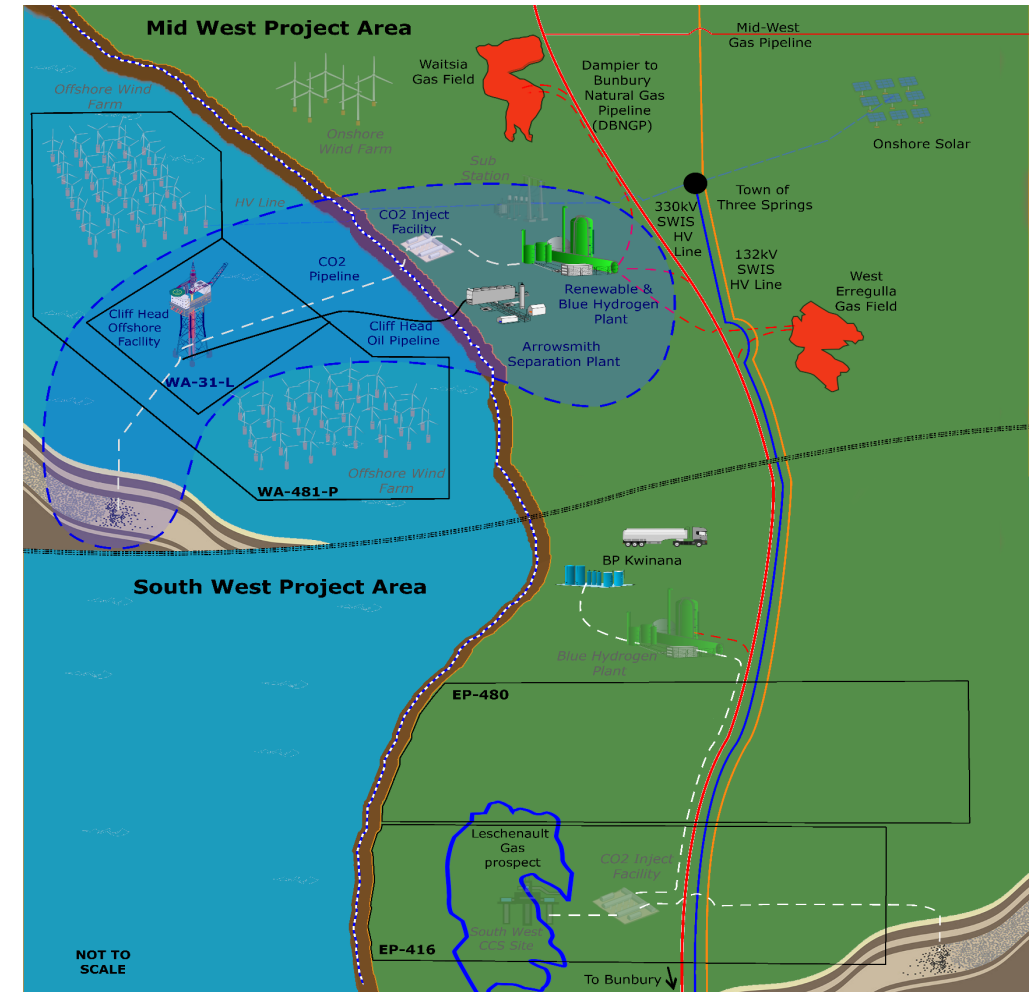
Consortium formed to progress feasibility study with key consultants:



Blue Hydrogen projects: require expertise and collaboration from across the energy industry with the following consortium established to represent the key components for the project.

Objective: Consortium members to work with key consultants to provide sector expertise and participate in and jointly fund the Feasibility Study with a focus on Blue Hydrogen technology, regional CCS potential, hydrogen markets, project infrastructure and commercialisation. Feasibility study to be complete Q1 CY22.

Key Components	Consortium
Infrastructure	
Natural Gas Supply	
Carbon Management	



Why blue hydrogen?

The clean and cost competitive advantage

Lowest cost

- In the majority of locations, blue hydrogen will be the lowest-cost clean hydrogen production option¹
- \$1.40 to \$2.40/kg compared to \$2.30 to \$7.70/kg for green hydrogen with dedicated renewables²
- At A\$6.00/kg hydrogen is cost competitive with petrol/diesel for transport at A\$1.70/litre

Clean with direct/integrated carbon capture and storage

- Established steam reforming technologies capture in excess of 90% of CO₂ produced³
- Producing 40,000 tpa of blue hydrogen with CCS expected to eliminate 475,000 tpa of CO₂ emissions⁴

Proven and well established, scalable technologies

- 98% of current hydrogen produced through steam reformation⁵
- Hydrogen production from steam reforming technology has been in commercial use for over 100-years
- Blue hydrogen production with CCS has been in commercial operation since 1982

Deliverable now to facilitate the development of hydrogen supply chain

- Provides a clean, cost competitive energy option
- Facilitates, accelerates commercial transition to green hydrogen based on Mid West renewable energy

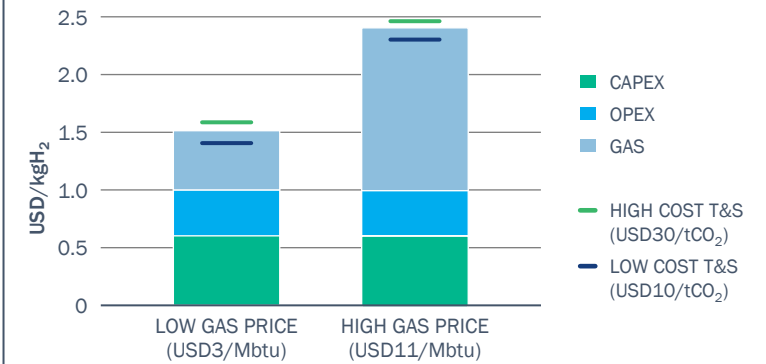
Sources

1. Global CCS Institute Blue Hydrogen Report April 2021. Figure 6 (RHS of slide) taken from the same report.
2. Hydrogen production cost estimates in US dollars as published by CSIRO 2018, IRENA 2019, IEA 2020, Hydrogen Council 2020 and Global CCS Institute Blue Hydrogen Report April 2021
3. CE Delft Feasibility Study into blue hydrogen July 2018
4. 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
5. Global CCS Institute 2021
6. Initial feasibility review performed by RISC Advisory on Cliff Head

Blue Hydrogen and CCS Project Summary

- H₂ production = ~ 40,000+ tpa
- CO₂ capture = ~500,000 tpa⁶
- CO₂ capture rate = 95%+
- CO₂ capture cost = A\$16/tonne CO₂
- CO₂ capture cost – A\$0.20/kg H₂
- Unit natural gas per H₂ kg = 0.14 GJ/kg H₂
- Annual natural gas usage = ~5.6 PJa
- Unit electricity usage per H₂ kg = 1.2-3.4 kwh/kg H₂

Components of cost of production of H₂ from natural gas⁵
Adapted from (IEA 2019)



Stacked bars assume CO₂ transport and storage cost of USD20/tCO₂.
High and low T&S cost sensitivities assume 8kgCO₂ captured per kg of H₂ produced.

Cliff Head Offshore Wind “Demonstrator” Project

Following completion of feasibility studies development conceptual for Cliff Head Oil Field demonstrator wind farm project

- Conceptual “demonstrator” wind farm development at Cliff Head Oil Field
- Based on successful Beatrice Demonstrator Wind Farm development
- Connect 3-6 wind turbines back to Cliff Head Platform generating up to 60 MW
- Wind turbines installation in WA State Waters
- Utilize patented gravity base structures development by Perth-based marine design & construction firm
- Conceptual development is subject to:
 - Feasibility study completion,
 - Joint venture and regulatory approvals and
 - ASX re-compliance*

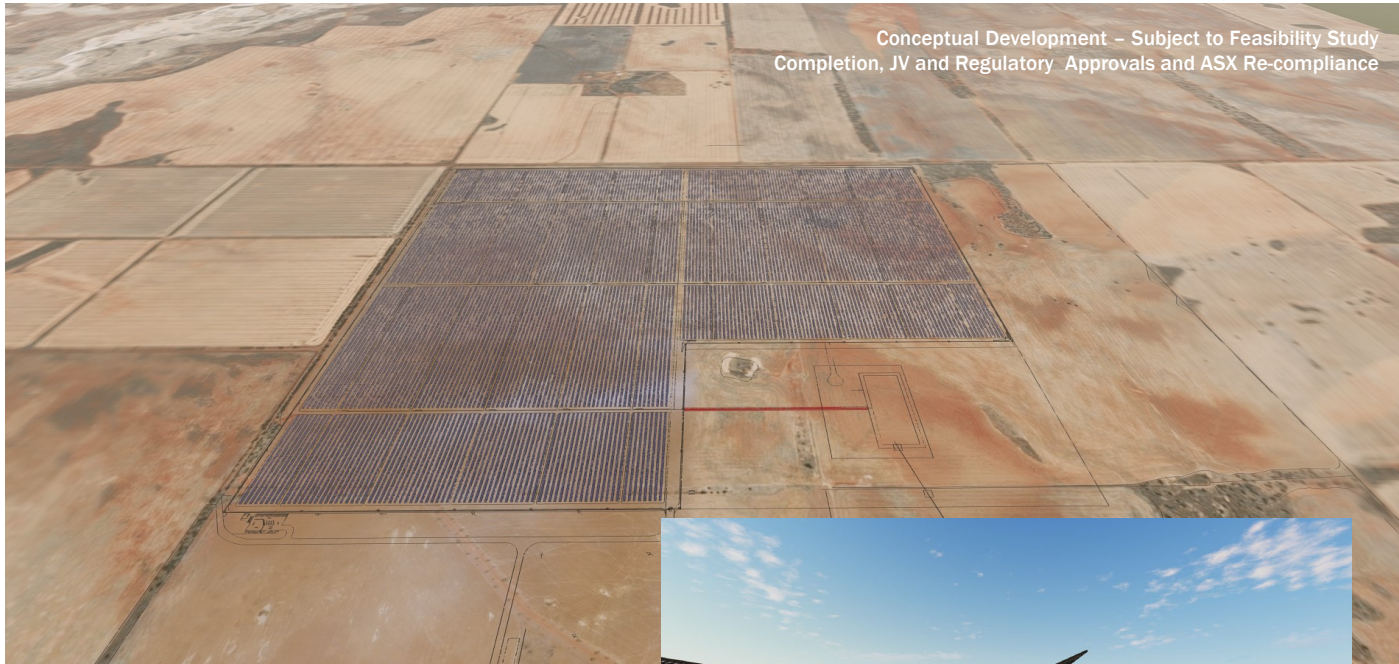


* For further details see Compliance slide 2

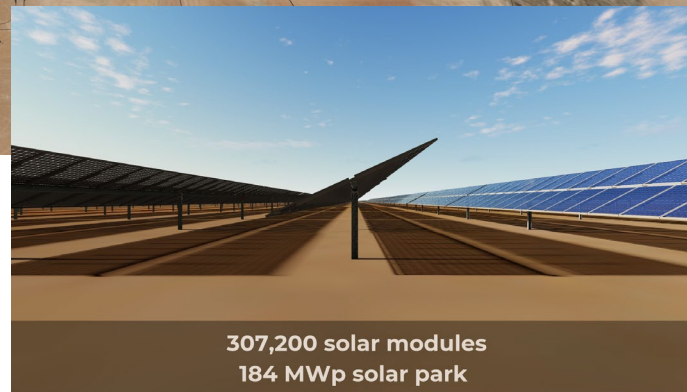
Mid West Solar Project – Bringing Wind & Solar together



Onshore operational footprint also provides opportunity for integrated wind and solar development



Conceptual Development – Subject to Feasibility Study Completion, JV and Regulatory Approvals and ASX Re-compliance



307,200 solar modules
184 MWp solar park

Onshore solar as a key component of the Mid West Integrated Renewables Project

- Mid West Region also has rich World-class solar resource
- PV solar is now becoming one of the lowest cost renewable energy sources
- Complementary diurnal nature of offshore wind and onshore solar
- Combining both renewable resources aims to deliver lowest cost clean energy
- Subject to feasibility study results, onshore solar could be executed in next 24-36 months
- Conceptual solar development project is subject to:
 - Feasibility study completion
 - Joint venture and regulatory approvals and
 - ASX re-compliance*

* For further details see Compliance slide 2

Multiple Commercialisation Pathways

The Cliff Head infrastructure may enable the fast-track development and commercialisation pathway for the development of the Mid West Integrated Renewables Project

Mid West Renewables Project

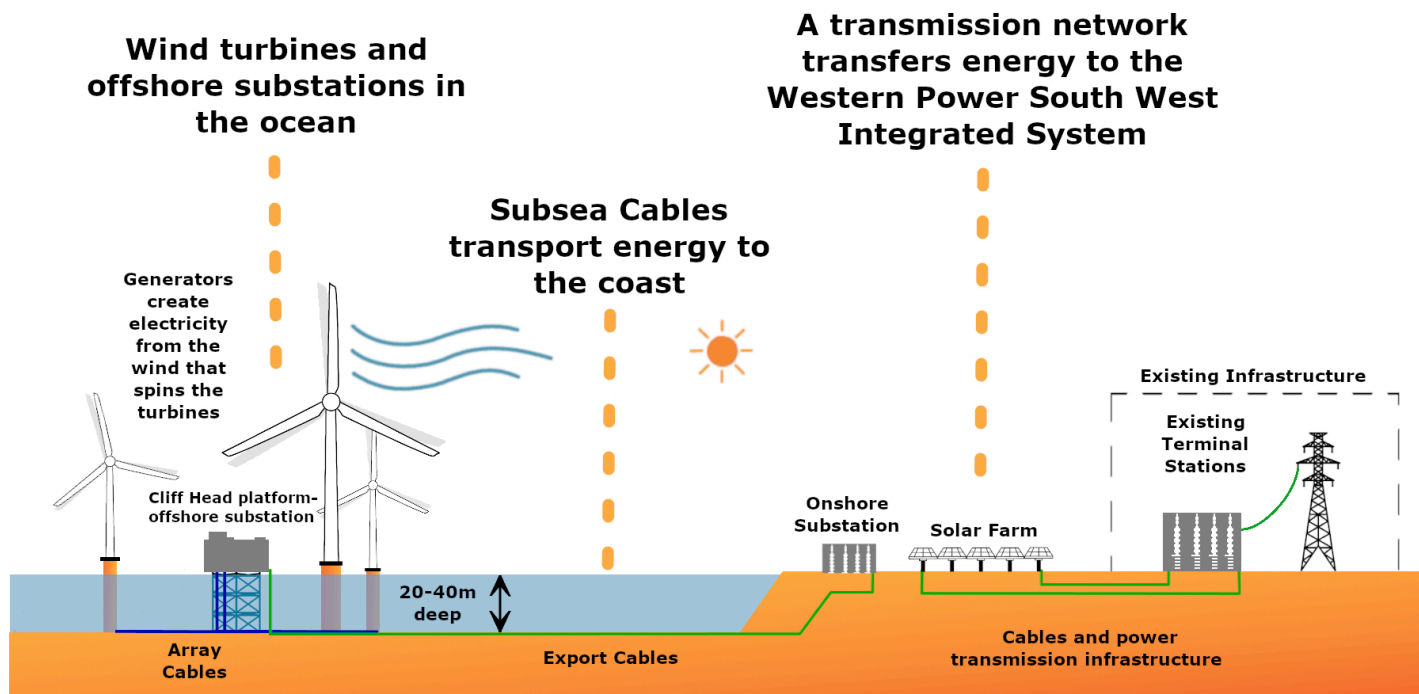
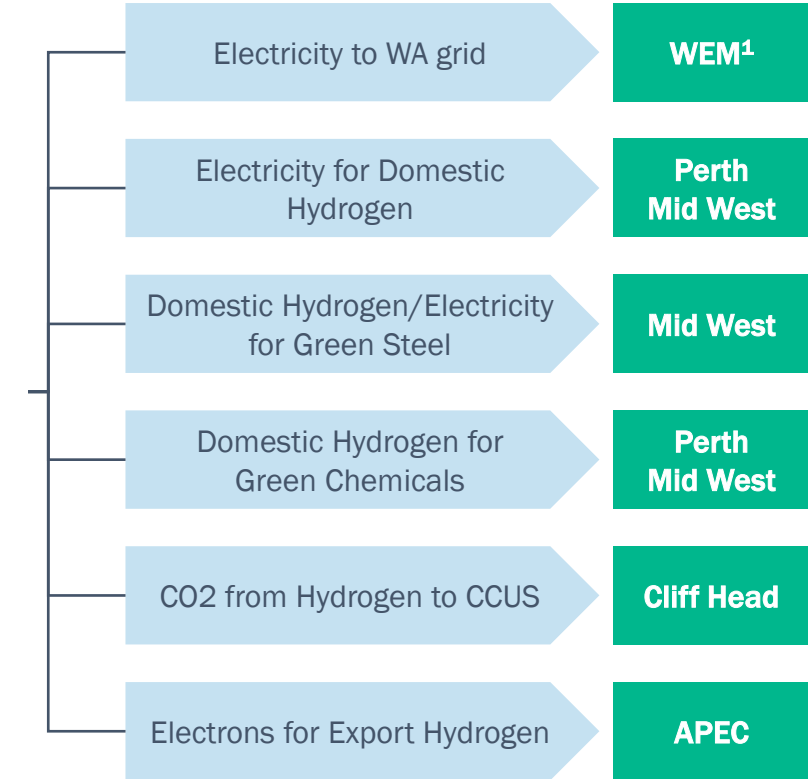


Diagram not to scale



1. <https://aemo.com.au/en/energy-systems/electricity/wholesale-electricity-market-wem>: The Wholesale Electricity Market (WEM) supplies electricity to the south-west of Western Australia via the South West Interconnected System (SWIS)

2. Pilot owns (via its 100% subsidiary Royal Energy P/L) a 50% interest in Triangle Energy (Operations) Pty Ltd, which is the operator of the Cliff Head joint venture. Triangle Energy (Operations) Pty Ltd holds a 42.5% registered interest in the Cliff Head project tenements and infrastructure, therefore providing Pilot with an effective 21.25% interest.

Compliance Statements



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Competent Persons Statement

This announcement contains information on conventional petroleum 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.

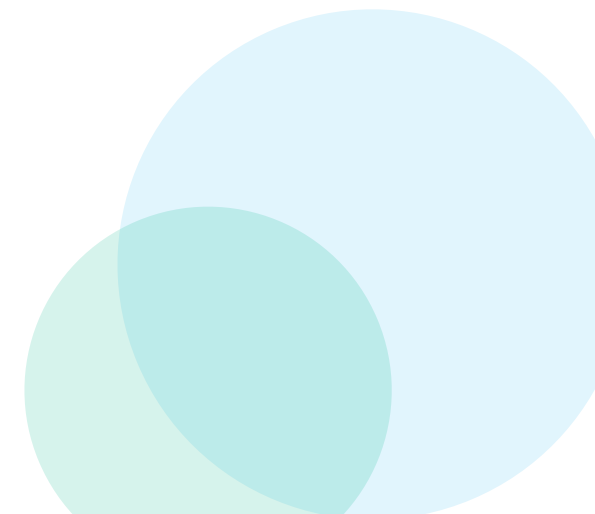
Authorisation

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.



Hydrogen Key Facts

Fossil fuels and Hydrogen Energy comparison (<https://rmi.org/run-on-less-with-hydrogen-fuel-cells/>)

- Diesel = 45.5 MJ/kg (12 - 14 kWh/kg)
- Petrol = 45.8 MJ/kg (12kWh/kg)
- Hydrogen = 120MJ/kg (33.3kWh/kg)
- Natural Gas = 42-55MJ/kg (11.7 to 15.3kWh/kg)
- *1 kg Hydrogen equivalent to 2.6 kg petrol/diesel or 3.5 litres petrol/diesel*

Hydrogen Fuel Cell EV bus vs diesel (<https://www.fch.europa.eu/sites/default/files/selection.pdf>)

- Average 12 metre FCEV bus consumes 9.0 kg H₂/ 100km (equivalent energy to 25.6 kg diesel / 100 km)
- Average 12 metre diesel bus consumes 34.8 kg diesel / 100 km

Other Hydrogen facts

- Fuel Cell EV Light vehicles expect typical compressed Hydrogen tank to hold 5KG which provides ~500km range
- Electrolysis process consumes 55kWh per 1 kg of renewable hydrogen
- ~15l raw water to produce 1kg hydrogen
- Water is the only by-product produce when driving a vehicle powered by a hydrogen fuel cell
- 130 - 160 standard cubic feet of natural gas produces 1 kg hydrogen through steam methane reforming
- Global demand for pure hydrogen is around 70 Mt per year, mostly for oil refining and chemical production. Hydrogen currently is predominately produced from natural gas and coal, and associated CO₂ emissions are significant



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