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BY EMAIL

23 September 2022

Mr Michael Bridge
Listings Compliance, Sydney
20 Bridge Street
SYDNEY NSW 2000

BY EMAIL:
ListingsCompliance@perth.com.au

PILOT ENERGY LIMITED (ASX:PGY) – ASX GENERAL QUERY

Dear Mr Bridge

The Directors of Pilot Energy Limited (**Pilot** or **PGY**) respond to your general query letter dated 16 September 2022 (using the numbering in the general query letter) as follows:

1. **In respect of the Stage 1 Cash Flow Statement please provide details of the following, including where the information has been disclosed by PGY:**

   1.1 full details of the assumptions used to prepare and generate the Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029;

   1.2 the facts and circumstances that support Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029;

   1.3 the risks that the Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029 will not be achieved; and

   1.4 an explanation of how the Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029 was calculated.

   Pilot notes that:

   (a) the Stage 1 Cliff Head CCS project potential is informed by information presented in the results of the feasibility studies conducted by Pilot in relation to the Mid West Blue Hydrogen and Carbon Capture Storage opportunity (**Mid West Blue Feasibility**) and the Mid West Wind and Solar opportunity (**Mid West Renewables Feasibility**) (collectively, the **Mid West Feasibility Studies**), which were announced by Pilot on ASX on 28 March 2022 (**Part 1 FE Results**) and 7 June 2022 (**Part 2 FE Results**); and

   (b) the Stage 1 Cash Flow Statement of $50 – 60 million net cash flow by 2029 estimate is informed by analysis compiled for Pilot by Miro Capital based on the following key assumptions:

(i) *CO2 Injection Rate (CO2Tech analysis and qualifications set out in the Part 2 FE Results)* - Initial injection rate of 550,000 tonnes per annum from 2026 and following the investment of expansion capex an increased injection rate of 1.1 million tonnes per annum from 2029;

(ii) *CO2 storage service revenue* - calculated as CO2 Injection rate as set out above multiplied by Reputex ACCU forecast – Central Case (as at May 2022); and

(iii) *Operating Costs* - Operating cost estimate is based on current operating cost regime for oil production operations adjusted for CO2 Injection operations.

By way of example, these 3 components result in a real cash flow estimate by applying the following formula:

> **Net cash flow for the relevant period** = [CO_2 Injection volume (tonnes per annum) x forecast ACCU price ($/tonne)] – Operating Costs
> **Net cash flow estimate for 2029** = [1.1 million tonnes of CO_2 x $54/tonne] - $9 million of operating costs. This equates to $50.4 million of net cash flow for 2029
> **Net cash flow estimate for 2031** = [1.1 million tonnes of CO_2 multiplied by $61/tonne (the Reputex forecast ACCU price increased to $61/tonne)] - $9 million of operating costs. This equates to $58.1 million of net cash flow for 2031.

These cash flow estimates are qualified by statements highlighted in the attached marked up copies of the announcements the subject of this response letter.

The development of projects such as the Mid West Clean Energy Project involve a common set of risk categories such as commercial, technical and regulatory risks. Pilot has discussed these risk categories through the Part 1 FE Results, Part 2 FE Results and other corporate presentations.

The following are examples of the risk discussions and are not intended to be presented as an exhaustive list:

(a) Technical

(i) Part 1 FE Result Annexure A discusses typically CCS subsurface risks with further assessment required on the faults, traps validity and trap size.

(ii) Part 1 FE Result presents the CO2 storage resources classified in accordance with the SPE SRMS Guidelines for estimate CO2 storage resources including providing the range of estimates across 1C, 2C and 3C Contingent Resource categories and 1U, 2 U and 3 U prospective resource categories. These ranges highlight the range of potential outcomes.

(iii) Renewable Energy resources were mapped taking into account constraints which highlight the range of factors which can influence the renewable energy resource estimate. These included surface (access to land) constraints and technical limitations on performance (availability, performance etc).

(iv) Cost estimates are Class 5 assessments which are an industry standard at concept and feasibility stages.

(b) Commercial/Regulatory

(i) Across the information Pilot has provided to the market on the projects, regulatory approvals/engagement (for example ASX and NOPTA) is consistently presented as forming part of the near term work program and that progressing with the projects is subject to this engagement.

(ii) The estimates are noted as being subject to market influences and contingent upon matters outside the control of Pilot and therefore may not be realized in the future (for example refer to page 4 of the Part 2 FE Results).

2. In respect of the Stage 2 Revenue Potential Statement please provide details of the following, including where the information has been disclosed by PGY:

2.1 full details of the assumptions used to prepare and generate the Stage 2 Revenue Potential Statement;

2.2 the facts and circumstances that support Stage 2 Revenue Potential Statement;

2.3 the risks that the Stage 2 Revenue Potential Statement will not be achieved; and

2.4 an explanation of how the Stage 2 Revenue Potential Statement was calculated.

Pilot notes that:

(a) the Stage 2 Blue Hydrogen project potential is informed by information presented in the Part 1 FE Results and the Part 2 FE Results (as summarized in Figure 2 and the associated notes of Part 1 FE Results);

(b) in order to produce blue hydrogen the CO_2 generated by the production process must be captured and permanently stored. As such the level of blue hydrogen production for the Mid West Clean Energy Project is constrained by the volume of CO_2 storage available at the Cliff Head CCS project; and

(c) the key assumptions from the feasibility studies which informed the calculation of the Stage 2 Revenue Statement include:

(i) CO2 Injection Rate (CO2Tech analysis and qualifications set out in the Part 2 FE Results):

(A) Initial injection rate of 550,000 tonnes per annum from 2026; and

(B) following the investment of expansion capex, an increased injection rate of 1.1 million tonnes per annum from 2029; and

(ii) Blue hydrogen production volume (8 Rivers analysis set out in Part 1 FE Results which were constrained by the CO2 injection rate and resources per CO2Tech analysis set out in Part 1 FE Results and Part 2 FE Results):

(A) 8 Rivers identified two blue hydrogen 8RH2 facility configurations, being:

(I) Industrial Scale 43,000 tonnes per annum (produces approximately 445,000 tonnes per annum CO_2); or

(II) Utility Scale 85,000 tonnes per annum (produces approximately 1.4 million tonnes per annum CO_2);

(B) Industrial Scale CO_2 was selected for the Stage 2 assessment due to the volume of CO_2 storage estimated by CO2Tech at the Cliff Head CCS project, therefore the blue hydrogen volume was 43,000 tonnes per annum; and

(C) domestic low carbon (clean) hydrogen pricing estimates vary depending on the assumed end use. Early indicators are that the market price may range from $5 - 10kg.

Pilot also notes that:

(d) the Mid West Feasibility Studies included an assessment of the possible sources of domestic hydrogen demand which is expected to include demand which results from heavy vehicles switching from diesel internal combustion vehicles to fuel cell electric vehicles which consumed hydrogen;

(e) the Mid West Feasibility Studies included an assessment of possible hydrogen pricing for a range of vehicles with the breakeven hydrogen price range estimated at USD1.4/kg – USD 4/kg; and

(f) the CSIRO's National Hydrogen Roadmap[1] analysis indicates hydrogen being competitive at $7 – 9/kg for passenger vehicles and $5 – 6.25/kg for heavy vehicles.

Further, Pilot's internal analysis indicates that $6/kg is the equivalent of $1.70/kg petrol price. In order to demonstrate the revenue potential Pilot assumed a low carbon hydrogen price of $5/kg (as noted on Page 3 of the Part 1 FE Results). Accordingly, the *Stage 2 Revenue Potential was calculated* as follows:

43,000 tonnes per annum hydrogen X $5/kg = $215,000,000 potential revenue

These cash flow estimates are qualified by statements highlighted in the attached marked up copies of the announcements the subject of this response letter.

In addition, please refer to the notes above regarding the manner in which the inherent risk in the Project has been addressed in the announcements.

3. In respect of the Stage 3 Revenue Potential Statement please provide details of the following, including where the information has been disclosed by PGY:

3.1 full details of the assumptions used to prepare and generate the Stage 3 Revenue Potential Forecast;

3.2 the facts and circumstances that support Stage 3 Revenue Potential Statement;

[1] Bruce S, Temminghoff M, Hayward J, Schmidt E, Munnings C, Palfreyman D, Hartley P (2018) National Hydrogen Roadmap. CSIRO, Australia.

3.3 the risks that the Stage 3 Revenue Potential Statement will not be achieved; and

3.4 an explanation of how the Stage 3 Revenue Potential Statement was calculated.

Pilot notes that:

(a) the Stage 3 Ammonia project potential is informed by information presented in the Part 1 FE Results (as summarized in Figure 2 and the associated notes of Part 1 FE Results) and the Part 2 FE Results;

(b) a key input in the production of ammonia is hydrogen, therefore the volume of ammonia is constrained by the volume of blue hydrogen produced in stage 2 and the volume of hydrogen produced from the renewable energy that is integrated into Stage 3; and

(c) the key assumptions from the feasibility studies which informed the calculation of the Stage 2 Revenue Statement include:

(i) Hydrogen production: Pilot refers to the Stage 2 Revenue potential section above for the assumptions behind the volume of blue hydrogen and notes the following:

(A) One of the key outcomes of the feasibility studies was that the 8 Rivers 8RH2 hydrogen production facility requires a significant volume of oxygen. The standard plant configuration has this oxygen provided through the installation of energy intensive air separation equipment. Integrating renewables to produce the oxygen (and incremental hydrogen) through electrolysis, introduces several cost and operational efficiencies;

(B) The amount of green hydrogen is constrained by the generation capacity of the renewable energy capacity. The 8 Rivers study indicates that 130MW of renewables, when coupled with the excess power available from the 8RH2 facility, can produce 51 tonnes per day or ~ 18,000 tonnes per annum of hydrogen; and

(C) Pilot assumed a total of 220MW of renewable energy generation would be installed to provide Stage 3 with further operational flexibility. Therefore, the total hydrogen available for use in the production of Ammonia was assumed to be 43,000 (Stage 2) plus 18,000 (Stage 3 incremental) which equates to 61,000 tonnes per annum of total hydrogen production;

(ii) Ammonia production: The 8 Rivers Study assessed the production of 240,000 tonnes per annum of blue ammonia utilizing the 43,000 tonnes per annum of blue hydrogen. The further 18,000 tonnes per annum of hydrogen through the integration of renewables increases the total ammonia output to 345,000 tonnes per annum; and

(iii) Ammonia potential revenue: Existing worldwide ammonia consumption is currently in the order of 180 million tonnes per annum, of which a majority is produced from fossil fuels without any carbon capture. Of the 180 million tonnes, ~ 20 million tonnes are traded. Pilot also notes the following:

(A) for period 2011 - 2020 ammonia pricing has ranged from approximately USD200 – USD 700/tonne. However recent global factors have seen the pricing increase to well over USD1000/tonne. Pilot's assessment of the revenue potential was informed by both the long-term pricing and the key drivers behind the increasing price environment and the potential premium customers may pay to secure low to zero carbon ammonia;

(B) on balance, Pilot's estimate for the ammonia price was $700/tonne, resulting in a revenue potential of 345,000 tonnes per annum multiplied by $700/tonne equating to $242 million revenue; and

(C) the results Stage 3 Revenue Potential Statement were rounded down in the Part 1 FE Results from a calculated ammonia production volume of ~347,652 tonnes of ammonia. Using this value and $700/tonne results in $244 million revenue potential.

These cash flow estimates are qualified by statements highlighted in in the attached marked up copies of the announcements the subject of this response letter.

In addition, please refer to the notes above regarding the manner in which the inherent risk in the Project has been addressed in the announcements.

4. In respect of the Figure 1 Revenue Statements please provide details of the following, including where the information has been disclosed by PGY:

4.1 full details of the assumptions used to prepare and generate each of the revenue statements prospective in Figure 1, in particular the revenue statements in 2035 of $2.625 Billion for CCS and $6 Billion for Hydrogen.

4.2 the facts and circumstances that support each Figure 1 Revenue Statement

4.3 the risks that each Figure 1 Revenue Statement will not be achieved; and

4.4 an explanation of how each Figure 1 Revenue Statement was calculated.

Pilot notes that:

(a) figure 1 of the Part 1 FE Results provided a summary of the feasibility results on a 100% project basis. The same release included 46 pages of supporting material based on the feasibility reports prepared for Pilot by the various consultants. The Mid West Renewable Feasibility and Mid West Blue Feasibility studies each assessed the levelized pricing based on three development scenario's (first to market (small scale), mid scale and maximum hydrogen production); and

(b) the potential revenue assessments in Figure 1 are based on the information contained in the graphic for each project segment.

In relation to the potential revenue for CCS, the CCS feasibility study (as described in Annexure A of the Part 1 FE Results) included a contingent resource assessment of the CO_2 storage capacity in the WA 31-L area (Cliff Head oil project JV area -currently 21.25% Pilot owned) as well as a prospective resource assessment over the WA 481P area (100% Pilot owned).

As stated throughout the Part 1 FE Results when referred to, Pilot assumed a $40/tonne CO2 price. This price was informed by market price of ACCU's around the time of the announcement. Each of the CCS revenue potential calculations were based on the total assessed storage capacity multiplied by $40/tonne.

Figure 1 of the Part 1 FE Results refers to the following CCS resources:

(a) First to market/Small Scale - Cliff Head CCS 6.4 million tonnes: CO2tech assessed 6.4 million tonnes 2C Contingent Resources multiplied by $40/tonne equates to $256 million total potential revenue (rounded to $255 in Figure 1);

(b) Mid Scale - Cliff Head +Frankland CCS 9.5 million tonnes: CO2tech assessed Cliff Head 6.4 million tonnes (referred to above) plus Frankland (also referred to as central cluster) 3.08 million tonnes Best Prospective Resource. 9.5 million tonnes multiplied by $40/tonne equates to $380 million total potential revenue; and

(c) Maximum - Cliff Head+Frankland+Southern Cluster CCS: CO2tech assessed Cliff Head 6.4 million tonnes plus Frankland (also referred to central cluster) 3.08 million tonnes best prospective resource plus Southern cluster 56.2 million tonnes best prospective resource equates to 65.7 million tonnes (rounded to 66 Figure 1). 65.7 million tonnes multiplied by $40/tonne equates to $2627 million total potential revenue (rounded to $2625 in Figure 1)

In relation to the potential hydrogen revenue, the hydrogen potential revenue assessments referred to in Pilot's ASX announcements were based on the volume of hydrogen (or ammonia) production across the three key development scenarios as described above. Each of the stated volumes was multiplied by either:

(a) $5/kg (hydrogen); or

(b) $700/tonne (ammonia),

which were common pricing assumptions at the relevant time, as discussed above. Other information relating to these assessments include:

(a) Clean H2 Stage 1: 43,000 tonnes per annum hydrogen production multiplied by $5/kg equates to $215 million (refer Stage 2 blue hydrogen industrial scale discussion and the associated potential revenue calculation);

(b) Clean H2 expansion: 61,000 tonnes per annum hydrogen production (refer to Stage 3 hydrogen production discussion). 61,000 multiplied by $5/kg equates to $305 million;

(c) Clean Ammonia (Utility Scale): the details of 480,000 tonnes per annum are set out in Annexure C & D of the Part 1 FE Results. Pilot notes that:

    (i) 480,000 tonnes of ammonia requires approximately 85,000 tonnes of hydrogen which is the volume produced from the Utility scale 8RH2 facility developed by 8 Rivers; and

    (ii) the $335 million referred to in Figure 1 is calculated by multiplying 480,000 tonnes by $700/tonne;

(d) Max H2: Annexure B of Part 1 FE Results discusses the renewable energy feasibility study development strategies. These strategies were studied by the various consultants and estimated that for the Max H2 scenario a ~18GW renewable energy development in the Mid West region could produce 1.2 million tonnes per annum of hydrogen. The $6 billion figure referred to is calculated by multiplying 1.2 million tonnes by $5/kg.

These cash flow estimates are qualified by statements highlighted in in the attached marked up copies of the announcements the subject of this response letter.

In addition, please refer to the notes above regarding the manner in which the inherent risk in the Project has been addressed in the announcements.

5. For each of the cash flow and revenue statements referred to respectively in questions 1 to 4 above, please advise if PGY entered into any agreements, including forward sales contracts in support of these statements?

Pilot's market assessment is a continuing activity which is informed by market/price assessments provided by parties Pilot has engaged and discussions with potential suppliers of CO_2 (for permanent storage) and potential hydrogen/ammonia offtakers. For example, refer to the proposed ammonia supply option agreement Pilot recently announced as part of the 8 Rivers MoU arrangements.
In line with its obligations under Listing Rule 3.1, Pilot will provide further updates as these discussions mature and evolve into contractual arrangements.

6. For each of the cash flow and revenue statements referred to respectively in questions 1 to 4 above, please indicate where the directors of PGY have disclosed why they believe the information supporting each revenue statement is objectively reasonable? (see RG 170.41).

With reference to ASIC Regulatory Guide 170.41, as Pilot is an existing business, ASIC does not generally regard as necessary independent verification if there are reasonable grounds to make the statements. However, in relation to the cash flow and revenue statements referred to respectively in questions 1 to 4 above, the Directors of PGY note that all inputs for each component of the Project are based on the outcomes of the independently conducted Mid West Feasibility Studies by experts in their respective fields (as advised in the announcements the subject of this response letter) **–** Technip/Genesis, CO2 Tech, Energy Quest, Lautec, Green Fuels, Core Energy, 8 Rivers Capital, Reputex. On this basis, the Directors of PGY believe that, consistent with the policy of RG 170, there were reasonable grounds to make the statements in those cash flow and revenue statements as described in response to questions 1 to 4 above.

Pilot also refers to the Explanatory Memorandum to the Notice of Meeting (**EGM Notice**) that was issued on 21 July 2002 (and after the 28 March and 7 June ASX announcements). The EGM Notice clearly stated that the capital raising was undertaken to enable Pilot to pursue its business plan which "*is centred on leveraging its existing oil and gas assets into competitive clean energy projects*" and that the funds raised were to be used in undertaking activities in the development of its Mid West Clean Energy Project in Western Australia.

The EGM Notice identified a number of steps to enable a final investment decision (FID) to be taken on the Cliff Head CCS Project which included engagement with regulators to secure the necessary regulatory approvals; completion of project site selection and commencement of site acquisition; engagement with prospective parties for commercial CCS off-take and securing material foundation customers for the Cliff Head CCS Project; commencement of engagement with potential EPC contractors and selecting and documenting arrangements with a preferred EPCM Contractor; commencement of detailed Front-End Engineering & Design (FEED) and costings for CCS and Blue Hydrogen; and engagement with debt and equity providers wishing to finance the CCS and Blue Hydrogen Projects.

The resolution to approve the capital raising on 19 August 2022 was passed with 97.10% of shareholders voting in favour which clearly endorses the shareholders support for Pilot's business plan and the activities it is now seeking to undertake.

7. **Please confirm that PGY is complying with the Listing Rules and, in particular, Listing Rule 3.1.**

   Pilot confirms that it is complying with the Listing Rules and, in particular, Listing Rule 3.1.

8. **Please confirm that PGY's responses to the questions above have been authorised and approved in accordance with its published continuous disclosure policy or otherwise by its board or an officer of PGY with delegated authority from the board to respond to ASX on disclosure matters.**

   Pilot confirms that the responses to the questions above have been approved in accordance with Pilot's published continuous disclosure policy and by the Board.

Yours sincerely,

Cate Friedlander
Company Secretary
Pilot Energy Limited

Attachments: Copies of marked up ASX announcements

- 28 March 2022
- 7 June 2022
- 19 August 2022
- 7 September 2022

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Announcement to ASX 28 March 2022
ASX: PGY

Completion of Renewable Energy and Hydrogen Technology Feasibility Studies - confirms Mid West region viability to produce globally competitive clean hydrogen together with multi-staged development pathway

Highlights

- Mid West Integrated Renewables and Hydrogen Project Feasibility Studies completed
- Positive Feasibility Study results has Pilot in a strong position to develop clean energy projects to produce hydrogen and renewable energy on a globally competitive basis, leveraging existing operations in Mid West region
- Feasibility Studies also highlight the Mid West region can produce clean ammonia on a globally competitive /basis for export into emerging Asian clean energy markets
- Next steps for Pilot are to progress into the permitting and approvals process and front-end engineering and design (FEED) for a staged development of commercialising CCS and blue hydrogen leveraging 8 Rivers technology

Pilot Energy Limited (ASX: PGY) ("**Pilot**" or "**The Company**") is pleased to provide an update on its recently completed Mid West region Feasibility Studies.

Completion of Key Clean Energy Feasibility Studies

As outlined in the ASX release of 12 August 2021, Pilot announced the commencement of key studies to assess the feasibility and economics of, and to recommend the pathway for development for a large-scale clean hydrogen production project utilizing the Company's existing oil and gas production operations.

The transition to the production of clean hydrogen requires carbon capture and storage (CCS) and renewable power generation. Pilot is well positioned to play a significant role in the energy transition through harnessing the world-class CCS and Renewable resources of the Mid West region of Western Australia.

The Feasibility Studies for the Mid West Integrated Renewable Energy Project included the Mid West Blue Hydrogen and Carbon Capture and Storage study (**CCS and Blue H_2 Study**) focused on the Cliff Head Oil field, the Mid West Renewable Energy Study (**Renewables Study**), the 8 Rivers Blue Hydrogen Technology Study (**8 Rivers Study**) and the WA 481P CCS Study (**WA 481P CCS Study**) collectively the "Feasibility Studies").

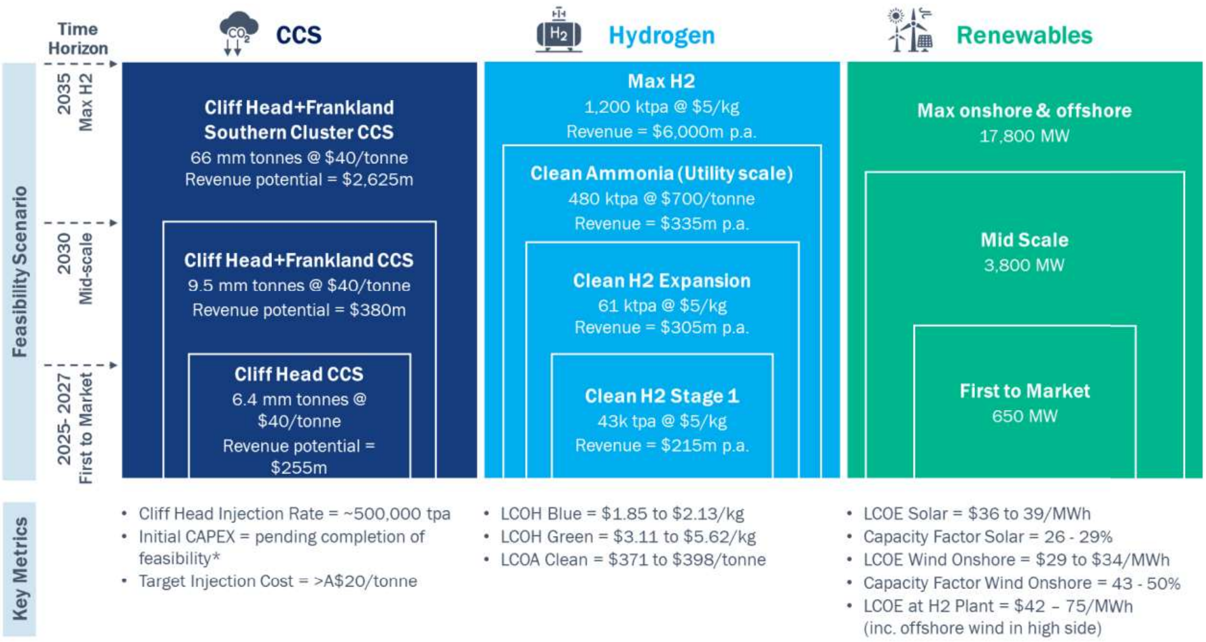
The Renewables Study and the 8 Rivers Study have been completed. The first stage of the WA 481P CCS Study has also completed providing an assessment of the CO_2 storage potential of Pilot's 100% owned WA-481P exploration permit with estimates of both the Contingent and Prospective CO_2 storage resource capacity within the permit. These estimates have been prepared in accordance with the SPE CO_2 Storage Resources Management System (SPE SRMS) Guidelines.

The Company is nearing completion of the CCS and Blue H_2 Study which is assessing the implementation of a CCS and Blue H_2 project centred on the Cliff Head Oil Field which is expected to be completed within the next several weeks. Pilot holds a 21.25% interest in the Cliff Head Oil Field through its 50% ownership of Triangle Energy (Operations) Pty Ltd, the operator of the Cliff Head Oil Field. This CCS and Blue H_2 Feasibility study is being jointly funded and contributed to by Pilot, APA Group (ASX: APA) and Warrego Energy (ASX: WGO).

Feasibility Study Results confirm viability of Mid West Clean Energy Projects

Each of these feasibility studies have confirmed the significant opportunity to develop a large-scale clean hydrogen production project integrating CCS and renewable energy generation to produce hydrogen and electricity for both domestic and export markets. Figure 1 provides a summary of the Feasibility Study results.

Figure 1 Feasibility Study Results Summary



*Refer to Annexure A for further details on the CCS and Blue H_2 Study. Gross (100%) CCS Resource

Pilot Energy Chairman Brad Lingo said: "Pilot is very excited about the results emanating from the feasibility studies. The results not only show how competitive an integrated clean energy project can be in Mid West Western Australia, but also outline a clear multi-stage development path starting with carbon capture and storage and building off this platform to produce clean power and hydrogen for the domestic market and ultimately moves into production of low-cost clean ammonia for export as the new clean fuel for Asian energy markets."

Mr. Lingo continued: "This staged development path is very much in the reach of the Company in terms of financial capacity and technical delivery taking advantage of the existing Cliff Head Oil Field infrastructure and operations. The Company is very focussed on delivering a First-to-Market CCS Project in the Mid West to anchor the further development of a Clean Hydrogen/ Ammonia and Renewable Energy Project."

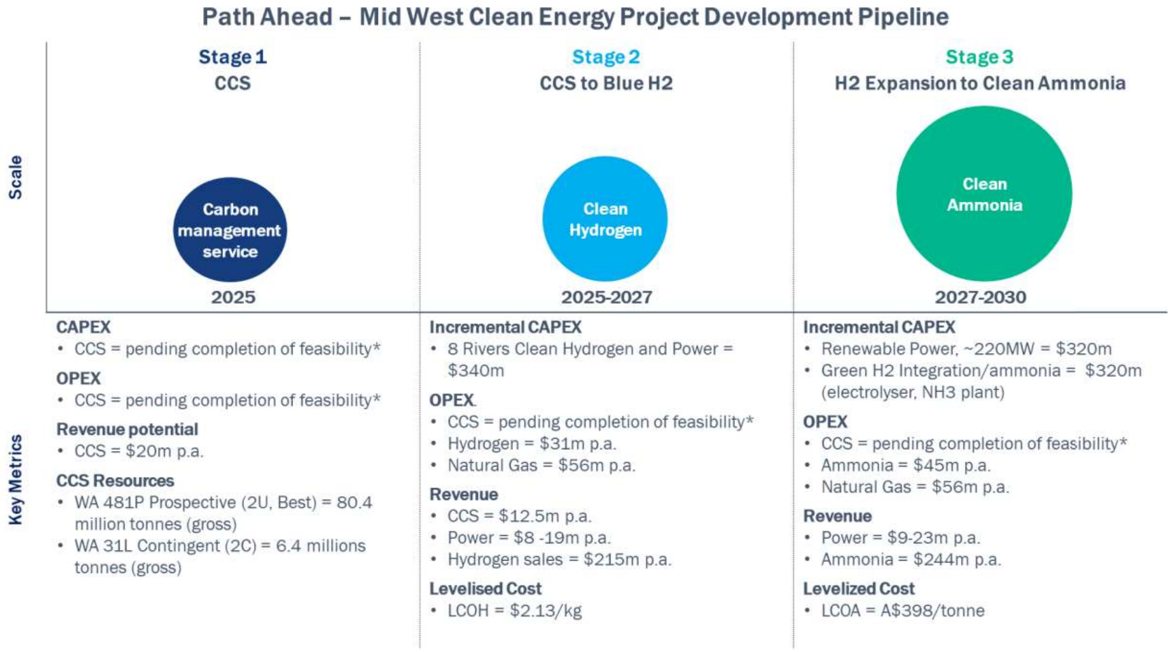
Mr. Lingo added: "We are very much focussed on engaging with NOPTA and the other relevant regulators to secure the necessary approvals to implement this project with an aim of having the first stage of the development pathway operational by 2025 and generating positive cash flow from these operations as well as delivering a material impact on carbon emissions in the Mid West."

Today's announcement of the completion of the Mid West region Feasibility Studies does not commit Pilot to proceeding beyond the feasibility stage of the Mid West Clean Energy Projects and any final decisions with respect to pursuing the recommended development path outlined below will be made at the relevant time, subject to commercial and financial considerations and following consultation with ASX.

Recommended Development Pathway - Mid West Clean Energy Projects

Based on the completed studies, a recommended development pathway for the projects under consideration is outlined in Figure 2 based on phased development over three stages:

Figure 2 Path ahead – Mid West Clean Energy Project Staged Development[1]



*Refer to Annexure A for further details on the CCS and Blue H_2 Study

[1] Analysis assumes $6.5/GJ Natural gas cost price; $40/tonne CO_2 revenue; $55 – 150MWh electricity revenue; $5/kg Hydrogen revenue; $700/tonne ammonia revenue

- **Stage 1 - Carbon Capture & Storage** - development of a carbon capture and storage operation to provide CCS services to third parties and to support the subsequent production of blue hydrogen and clean gas-fired power;

- **Stage 2 - Hydrogen Production –** development of a blue hydrogen generation project utilizing the 8 Rivers clean hydrogen technology ($^8RH_2$) and clean power technology to produce ~43,000 tpa of blue hydrogen with near zero emissions; and

- **Stage 3 - Renewables* and Green Hydrogen Project –** integration into the Mid West Blue Hydrogen Project of approximately 220 MW of renewable power generation from both wind and solar to produce a further 18,000 tpa of green hydrogen.

*Subject to re-compliance conditions imposed by ASX

Upon completion of the 3-stage development, the Studies confirm (with feasibility-stage level confidence) that the Company will be able to produce approximately 61,000 tpa of clean hydrogen to produce approximately 350,000 tpa of clean ammonia to supply into Asian clean ammonia export markets.

Next Steps

Following the completion of the WA-31L CCS Feasibility Study, the Company expects that the WA-31L Joint Venture will progress the regulatory process with the National Offshore Petroleum Titles Administrator (NOPTA) seeking the required approval to have the Cliff Head Oil Field reservoir declared a Greenhouse Gas Storage Formation.

Pilot and Triangle Energy (Global) Limited (ASX: TEG) (Triangle) have entered discussions with the objective of alignment on the future utilisation of the Cliff Head Facilities which would entail the Cliff Head Oil Field reservoir being declared an approved Greenhouse Gas Storage Formation. Subsequent to a declaration, the Company anticipates making an application to NOPTA for the grant of a Greenhouse Gas Injection Licence for the injection of approximately 500,000 tonnes per annum of CO_2 into the Cliff Head Oil Field reservoir for permanent sequestration. Receipt of this injection licence would enable the Company to commence the implementation of the CCS Project with the project anticipated to be operational by 2025. We are pleased to advise that Pilot and Triangle are in constructive and cooperative discussions regarding this development.

In progressing this development path, the Company will be focused on the following activities over the next 12-months for the Stage 1 CCS Project:

- **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 off-take;
- **EPCM Contractor –** Commence engagement with potential EPC contractors; and
- **Pre-FEED** - Commencing detailed preliminary Front-End Engineering & Design (pre-FEED) and detailed costings for the CCS and Clean Power and Hydrogen Projects

Completion of the development path over the next 12-months is aimed at securing all necessary regulatory approvals, securing commercial off-take arrangements and completing a full bankable feasibility study and FEED package to enable the Company to take a final investment decision (FID) for the Stage 1 Project.

Feasibility Study Results

Pilot has prepared summaries of the Feasibility Study results set out in the following Annexures to this announcement:

- Annexure A: Mid West CCS Resource Potential
- Annexure B: Mid West Renewable Energy Feasibility Study
- Annexure C: Mid West Hydrogen Potential
- Annexure D: 8 Rivers Blue Hydrogen and CO_2 Technology Study
- Annexure E: Hydrogen & Ammonia market updates

The summaries are structured to provide an overview of the studies with information presented on a summary and aggregate basis, where necessary, to protect the intellectual property and commercially sensitive nature of certain aspects of the studies.

ENDS

This announcement has been authorised for release to ASX by the Chairman Brad Lingo and Managing Director Tony Strasser.

Enquiries
Cate Friedlander, Company Secretary, email: cfriedlander@pilotenergy.com.au

About Pilot: Pilot is currently a junior oil and gas exploration and production company that is aggressively pursuing the diversification and transition to the development of integrated renewable energy, hydrogen, and carbon management projects by leveraging its existing oil and gas tenements and infrastructure to cornerstone these developments.

Pilot holds a 50% interest in the Operator of the Cliff Head Oil field and Cliff Head Infrastructure, (effectively a net 21.25% interest), 100% interests in WA-481-P and EP416/480 exploration permits, located offshore and onshore Western Australia, which form foundation assets for the potential development of clean energy projects in Western Australia.

Competent Person Statement:

This announcement contains information on CCS 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.

Annexure A: Mid West CCS resource and WA 481P CO_2 Storage resource study

Mid West CCS Resource Potential

Highlights

- The Cliff Head Oil Field production license (WA 31L) area has carbon capture and storage potential of 6.4 million tonnes of CO_2 (2C contingent resource, Gross) at a CO2 injection rate of 500,000 tonnes of CO_2 per annum

- The Cliff Head Oil Field production license area has an upside CO_2 storage capacity of approximately 15.8 million tonnes of CO_2 (3C contingent resource, Gross)

- The existing Cliff Head Oil Field offshore facilities, existing wells and pipelines are suitable for the implementation of a carbon sequestration operation

- The Greater Cliff Head Area extending into WA-481-P has approximately an additional 4.4 million tonnes (2C Contingent Resource, Gross) and 80.4 million tonnes of CO_2 storage capacity (Prospective Resource Best estimate, Gross).

- Australian Commonwealth Government has announced an express policy “prioritising carbon capture and storage”

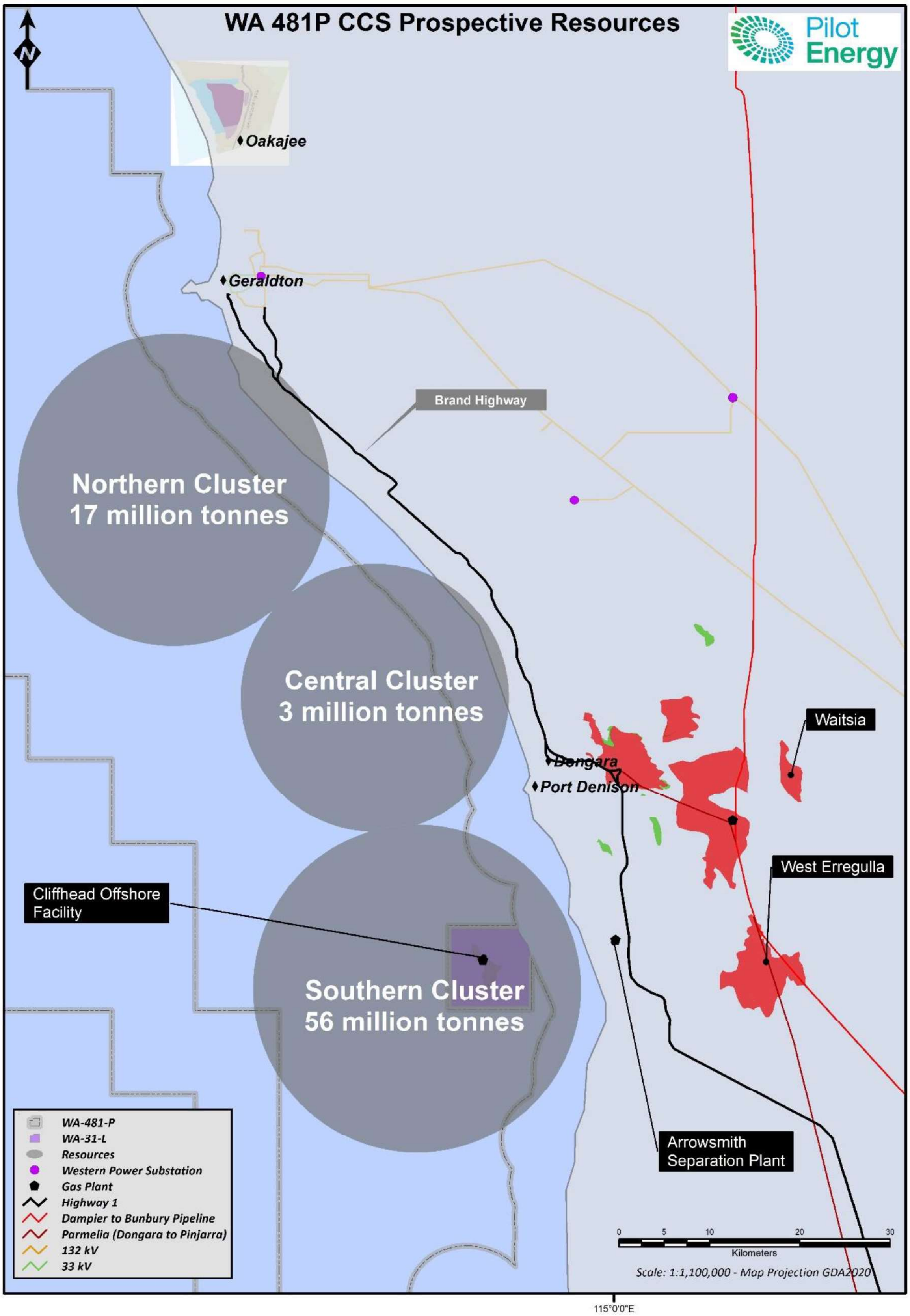
- Price of Australian Carbon Credit Units (ACCU) forecast to increase to over $40/tonne by 2026

The Company has undertaken a feasibility study of the carbon capture and storage potential of both the Cliff Head Oil Field production license (WA 31L) and the surrounding WA-481-P exploration license areas.

The feasibility study for the WA-481-P exploration license area has been completed and the study covering the Cliff Head Oil Field production license area is nearing completion. So far, the studies have confirmed the significant carbon capture and storage potential of both the Cliff Head production license and the WA-481-P exploration license areas (refer to Figure 3 and Table 1below) with a total 10.8 million tonnes 2C Contingent resources and best estimate Prospective resources of 80.4 million tonnes.

Subject to further assessment, these resources represent a potentially significant resource base for Pilot to develop its Carbon Management business providing CCS services to third parties and Pilot’s own blue hydrogen plants.

Figure 3 WA-481-P CCS Storage Prospective Resources[2]



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[2] Determined in accordance with SPE SRMS Guidelines for estimating CO_2 storage

Table 1- Greater Cliff Head & WA 481P CCS Storage
Contingent & Prospective Resources

Contingent Storage Resource (million tonnes)	1C	2C	3C
WA 481P (Pilot share, 100% basis)	2.8	4.4	7.2
WA 31L (100 % basis)	1.0	6.4	15.8
WA 31L (Pilot share, 21.25 % basis)	0.2	1.4	3.4
Prospective Storage Resource (million tonnes)	1U	2U	3U
WA 481P (Pilot share, 100% basis)	46.2	80.4	144.2

Notes

1. Determined in accordance with the SPE SRMS Guidelines for estimating CO_2 storage resources

Subject to the completion of the CCS and Blue H_2 Study, to date the study has also confirmed that the Cliff Head Oil Field reservoir can accommodate the injection of CO_2 at a rate of approximately 500,000 tonnes per annum utilizing the existing Cliff Head Oil Field offshore and onshore production facilities, wells and pipelines. A detailed review of the offshore and onshore production facilities, existing production and injection wells and the oil production and water injection pipeline is also being conducted. This review has confirmed that these production facilities are suitable for the implementation of a carbon sequestration operation. Further analysis in the next stage of the project will examine the specific actions required to repurpose the equipment for CCS operations.

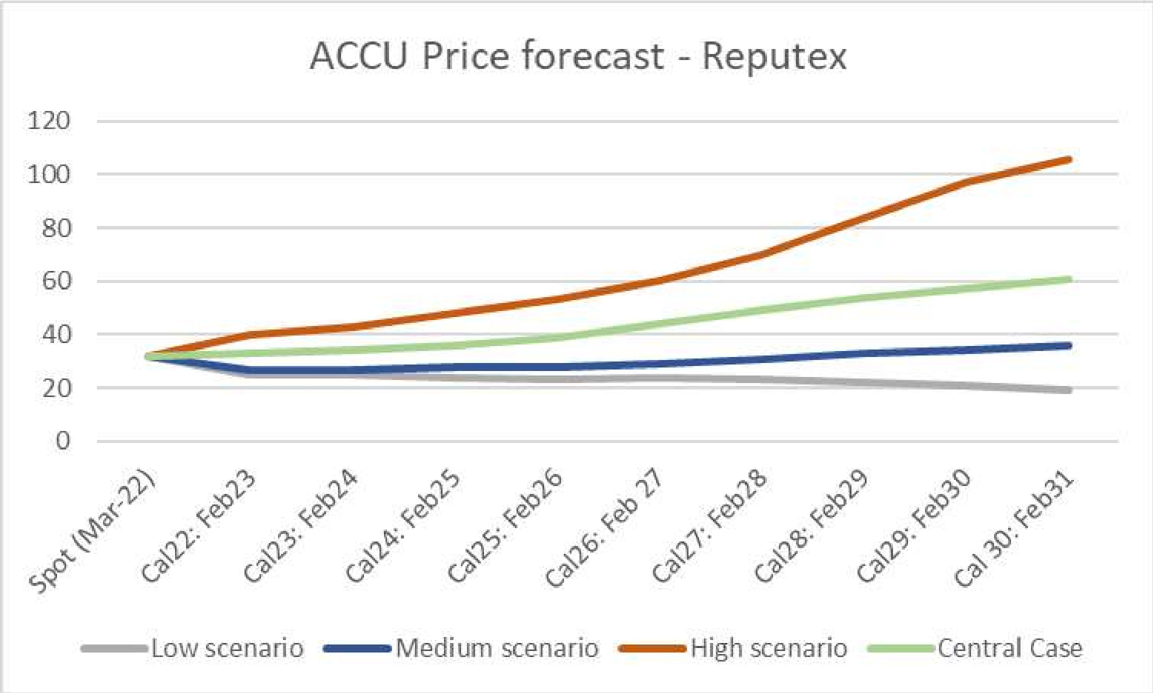
The Australian Commonwealth Government has announced a policy "prioritising carbon capture and storage technology and has identified carbon capture and storage as a priority low emissions technology under the Technology Investment Roadmap."[3]

To this end, the Australian Government is investing in enabling infrastructure for large-scale deployment of the technologies. "***CO_2 compression, transport and storage under $20 per tonne is a stretch goal of the roadmap***. ***CCS can also be used to produce clean hydrogen, another priority technology.*** [emphasis added]"[3]

In terms of the forward market outlook for long-term carbon price and supply and demand for carbon credits in Australia, the Company is utilizing the Reputex ACCU Forward Price Forecast set out in Figure 4.

[3] https://www.industry.gov.au/policies-and-initiatives/australias-climate-change-strategies/reducing-emissions-through-carbon-capture-use-and-storage#:~:text=Carbon%20capture%20and%20storage%20(CCS,scale%20deployment%20of%20the%20technologies.

Figure 4 Reputex ACCU Price Forecast



WA 481P CO_2 Storage resource study

Pilot engaged the consulting arm of CO2CRC[4], CO2Tech to undertake a regional assessment of the CO_2 storage capacity within Pilot Energy's exploration permit (EP) WA-481-P, which is located in the Abrolhos Sub-basin, offshore Perth Basin, Western Australia.

This initial study assessed the CO_2 storage potential at the Dongara Sandstone and Irwin River Coal Measures levels within Pilot Energy's audited 2017 portfolio of 23 leads and discoveries. This approached leverage existing data sets and internal knowledge across WA 481P based on historical oil and gas focused exploration efforts. However further potential exists beyond the known structures and at this stage the review has not accounted for the CO_2 storage potential in the shallower Cadda, Cattamarra, Eneabba, & Leseur aquifers, the deeper High Cliff Sandstone, and the (likely very large) storage capacity of deep, basin-centred sands. These targets are planned to be assessed in future studies which are expected to be progressed in parallel with progressing regulatory applications for the CCS resources identified in the current study.

[4] https://co2crc.com.au/

Figure 5 Composite seismic section: WA 481P CCS mechanisms

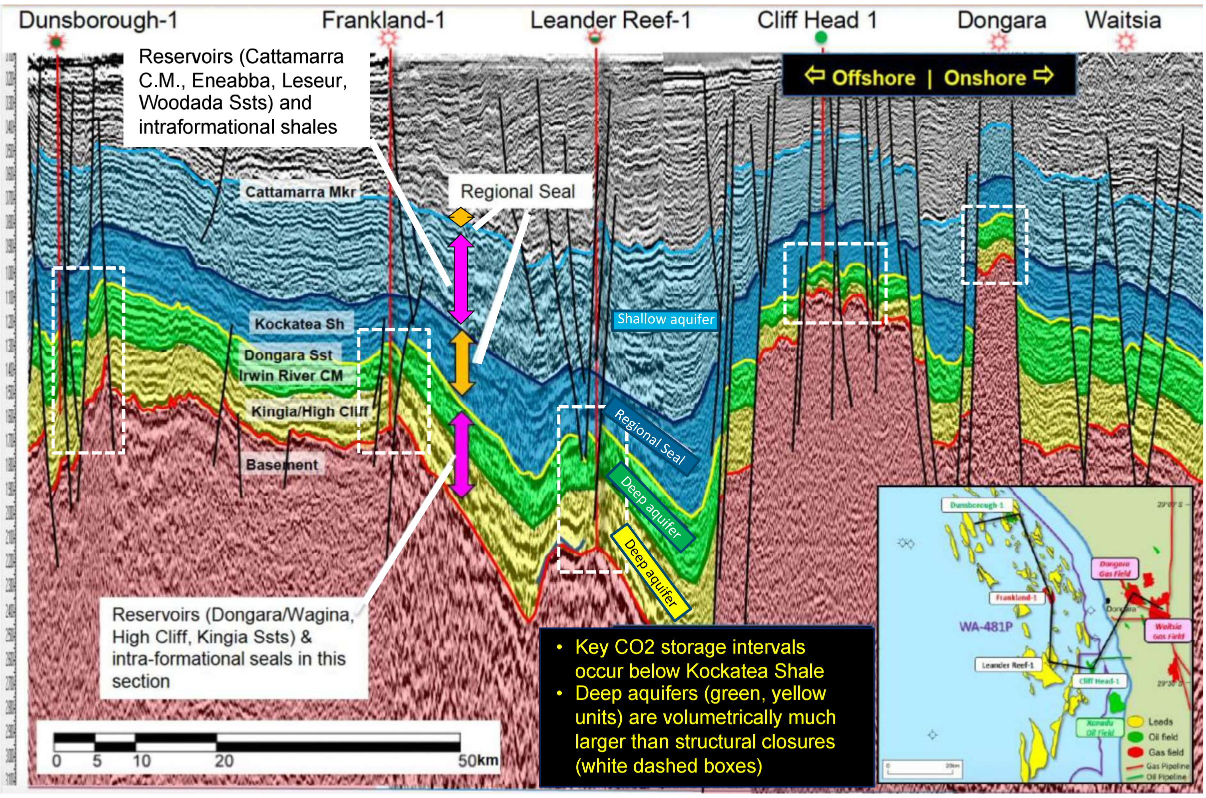


Figure 5 is a composite seismic section through selected wells in the northern Perth Basin, Western Australia. The prospective CO_2 storage intervals considered in this study occur in structural closures (white dashed boxes) in the Dongara Sst, Irwin River Coal Measures, and Kingia-High Cliff Sst (green and yellow stratigraphic units) beneath the Kockatea Shale (dark blue stratigraphic unit), a proven regional seal. Additional unquantified storage potential exists in deep, saline aquifers where the Dongara Sst, Irwin River Coal Measures, and Kingia-High Cliff Sst is not in structural closure.

The analysis assumed the structures associated with the leads and discoveries were hydrocarbon filled. Fault seal integrity was highlighted by the study as a risk relevant to the development of the initial CCS reservoirs identified in the study. Further assessment of the faults, trap validity and trap size will be assessed in the up-coming WA 481P 3D seismic campaign planned for 2023 and further studies will probabilistically model the portfolio outcomes, in order to further develop risked estimates of the storage potential.

Further assessment of the potential for large-scale storage within deep basinal settings, where aquifer trapping predominates and uncertainties in regard to fault seal integrity are ancillary was recommended by CO2Tech. Repurposing existing basin-scale migration models may provide the foundation for this further assessment.

These leads and discoveries contain an indicative storage capacity of approximately 85 million tonnes of CO_2, on a most likely (ML) basis. The low-to-high case range is 43-151 million tonnes of CO_2. The calculated storage potential for the 23 assessed leads and discoveries within WA-481-P are summarised in Table 2.

Table 2 WA 481P CCS Storage Contingent & Prospective Resources (100% Gross)

Contingent Storage Resource (million tonnes)	1C	2C	3C
WA 481P	2.8	4.4	7.2
Prospective Storage Resource (million tonnes)	1U	2U	3U
WA 481P	43.4	80.4	144.2

Notes
1. Determined in accordance with the SPE SRMS Guidelines for estimating CO_2 storage
2. Pilot holds a 100% interest in WA 481P

The storage leads and discoveries can be loosely grouped almost entirely (21 of 23) into three geographic clusters (from NNW to SSE), namely the Northern, Central and Southern Clusters (**Figure 6**).

Figure 6 Southern, Central and Northern Clusters of leads and the CCS storage potential associated with each cluster

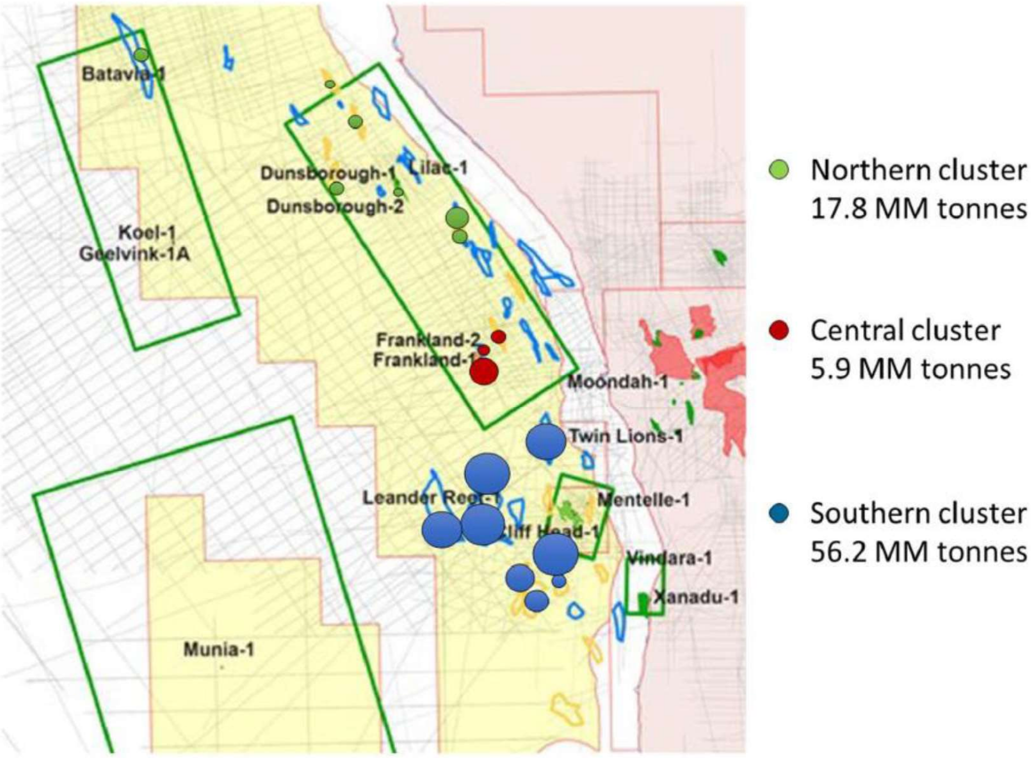


Figure 6 shows how the leads and structures within each of the clusters are situated in relation to a hypothetical series of three CCS project developments, with a development radius of 15 km from three central development locations.

21 of the 23 structures investigated fall logically into three geographic clusters, namely the Northern, Central and Southern Clusters. Of these clusters, the Southern Cluster is by far the most attractive, based upon the current limited study. It contains the largest (ML case) aggregate volume of 56.2 million tonnes of CO_2, the greatest number of leads (10) which are also often the largest of those investigated and occurs closest to the Cliff Head Field.

In the development of these volumetric capacities for CCS storage, the SPE-SRMS classification has been applied.

Southern Cluster

The Southern Cluster contains ten leads, all of which are in relatively close proximity to the Cliff Head Field. The aggregate estimated storage volume of these leads is 56.2 million tonnes CO_2. Moreover, six of the leads have an individual ML storage capacity of >5 million tonnes; two have an individual ML storage capacity of 2.5-5 million tonnes and two have an individual ML storage capacity of <2.5 million tonnes.

In summary, the Southern Cluster has easily the greatest calculated storage capacity (more than three times that of the next closest cluster, the Northern Cluster), the highest number of leads and it is situated near the Cliff Head Field producing asset. It is also considered likely, by analogy, that the effective Kockatea Shale-Dongara/IRCM storage pair is viable in this immediate region.

The Southern Cluster is easily the most attractive of the three clusters for a potential development hub for CO_2 storage, given current knowledge. It is favoured because of several factors, including the comparatively large CO_2 storage volumes of key leads (easily the largest of the three clusters), its close proximity to existing petroleum infrastructure at the Cliff Head Field, and importantly, the potential synergies between a potential future CO_2 development and the ongoing petroleum technical assessments and data acquisition programmes around the Cliff Head field.

Central Cluster

The Central Cluster consists of only three leads, with an aggregate estimated storage volume of 5.9 million tonnes CO_2. One has an individual ML storage capacity of 2.5-5 million tonnes and two have an individual ML storage capacity of <2.5 million tonnes. However, there are several unnamed leads shown on the map for which EURs were not provided, and so the storage capacity within this cluster may increase on completion of further assessment. Overall, however, the small number of audited leads, combined with the limited aggregate volume, makes this cluster the least attractive cluster for a CCS development.

Northern Cluster

Northern Cluster is centred near the sub-economic Dunsborough oil discovery and contains seven additional leads which have an ML aggregate estimated storage volume of 17.8 million tonnes CO_2. Three of the leads have individual ML storage capacity of 2.5-5 million tonnes; the other five leads have individual ML storage capacity of <2.5 million tonnes. No lead has an individual ML storage capacity of >5 million tonnes.

In summary, the Southern Cluster appears to represent a viable future development hub for CO_2 storage within WA-481-P, given current knowledge. It is favoured because of the comparatively large CO_2 storage volumes in its key leads (easily the largest of the three clusters), its close proximity to existing petroleum infrastructure at the Cliff Head Field, and importantly, the possible synergies between a potential future CO_2 development and the ongoing petroleum technical assessments and data acquisition programmes around the Cliff Head Field.

Annexure B: Mid West Renewable Energy Feasibility Study

Highlights

- Confirmed that the Greater Mid West region contains 18.7 GW of total technical renewables energy resource – onshore and offshore wind and solar – potential in three core development areas

- 15 large scale potential development sites identified across onshore and offshore renewable generation development areas. Solar LCOE from $36 - 39/MWh; Onshore Wind LCOE $29 – 34/MWh and Offshore wind of $199 – 214/MWh

- Identified renewable energy development strategies which can provide renewable power at an LCOE of $42 - 75/MWh with a combined capacity factor of 64 – 73% delivered to hydrogen production facilities at Arrowsmith or Oakajee. Deploying energy storage technologies is expected to improve these results

1. Overview of Renewable Energy Feasibility Study

Pilot engaged a team of internationally recognised consultants to assess the viability of developing the Mid West regions significant renewable resources and commercialising the resource initially through the production of hydrogen. The Consulting team and their respective focus areas are summarised out in Table 3.

Table 3 Renewables Study consultants and focus areas

.

Offshore and Onshore Wind, electricity transmission and port assessments	LAUTEC
Onshore Solar	GREEN FUEL DEVELOPMENT
Hydrogen Production and Feasibility Reporting	T.EN TECHNIP ENERGIES; GENESIS

The feasibility study consultants conducted an initial resource assessment of the renewable energy resources across the Mid West region. This review confirmed the pre-study assessment of the regions potential to host utility scale renewable energy projects.

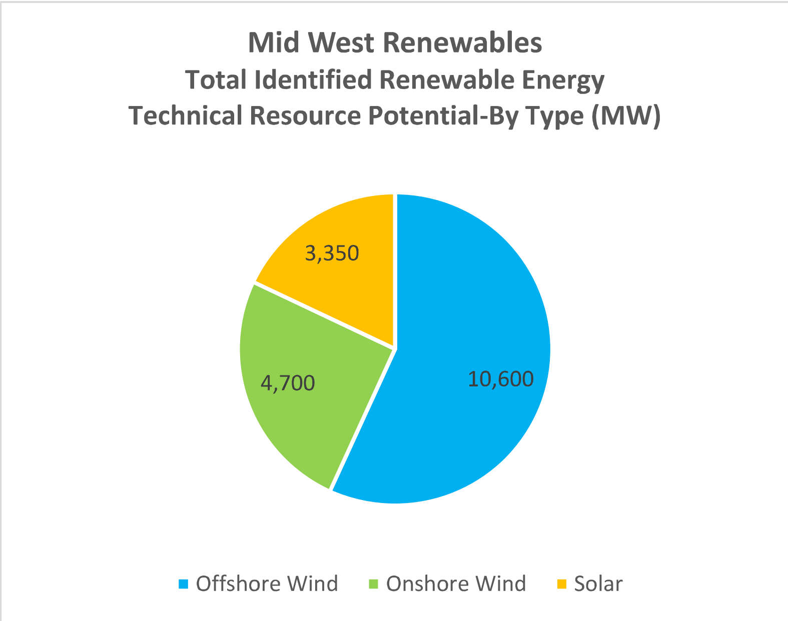
The onshore/offshore wind resource assessment confirmed the region as relatively free of constraints and offered conditions favourable for wind energy developments. Sophistic GIS mapping was deployed in the resource assessment to provide resource estimates which accounted for the following constraints (not an exhaustive list):

- Physical: marine traffic, water depths, onshore infrastructure, competing projects/resource developments, areas of small land holdings;
- Environmental: Marine and other onshore protection zones, contaminate sites, forest/bushland, existing land use and rainfed cropping; and
- Cultural heritage: Aboriginal heritage and communities, tourism

The next stage of any project will involve a further, more detailed assessment of the above constraints.

The feasibility study assessed the Renewable Energy resource potential across the Mid West region – in terms of onshore and offshore wind and onshore solar. The overall technical renewable energy resource potential identified was approximately 18.7 GW across all three resources (see Figure 7 below).

Figure 7 Mid West Renewable Resources by Type



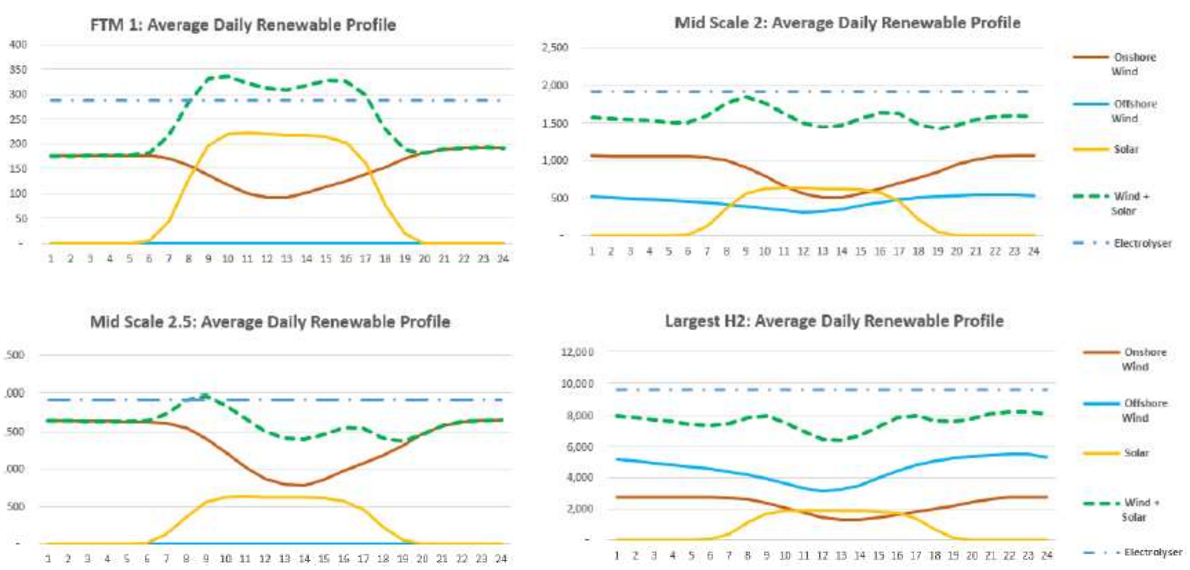
A key outcome of the study is the benefit of developing a portfolio of renewable energy resources which is clearly demonstrated by reviewing the capacity factors of resources. Portfolio capacity factors available across the identified renewable energy sites provides the ideal setting for the production of green hydrogen. High-capacity factor renewable energy delivered to a hydrogen plant maximises the hours per day an electrolyser can produce hydrogen. Further enhancement is possible through the integration of long and short duration energy storage systems.

Table 4 Renewable Energy capacity factors

Capacity factors (%)	First-to-Market scenario	Mid-Scale combined	Mid-Scale onshore	Maximum Generation
Solar	26	29	29	29
Onshore Wind	43	50	47	45
Offshore Wind	-	48	-	48
Portfolio Capacity Factor @ electrolyser	64	73	72	70

In addition to capacity factors, it is also of interest to compare the average diurnal energy profiles between wind and solar. The climate conditions prevalent within the region provide a complimentary daily balance between the wind and solar profiles. This is clearly shown in Figure 8 below which illustrates the average renewable power throughout the day as well as the nominal electrolyser capacity.

Figure 8 Renewable Energy average daily energy profiles



Pilot's study assessed the development of renewable energy projects across three strategies: First-to-market, Mid-Scale and Maximum Generation strategies. The assessment of these strategies assumed the renewable energy resources were commercialised through the production of hydrogen. During the study a 4th scenario was included as a sensitivity to assess the LCOH of a mid-scale project powered by onshore renewables. This scenario is presented throughout the Renewables Study and Hydrogen Potential Annexures and utilised the technical analysis prepared for the other strategies. A summary of the development scenarios is set out in Table 5 below.

Table 5 Feasibility Study Development Strategies

Strategy	H_2 Plant location	Project start	H_2 End use	Onshore Wind (MW)	Offshore Wind (MW)	Onshore Solar (MW)	H_2 capacity & volume
First to market	Arrowsmith	~2025/6	Mobility and industrial	300	-	350	290 MW 30 ktpa
Mid-Scale: Onshore	Oakajee	2035	Industrial	2,800	-	1,000	1900 MW 250 ktpa
Mid-Scale: Off/ Onshore	Oakajee	2035	Industrial	1,800	1,000	1,000	1,900 MW 260 ktpa
Max generation	Oakajee	2035	Industrial	4,700	10,100	3,000	9.5 GW 1,200 ktpa

2. *Offshore and Onshore Wind Resource Assessment*

The wind energy resources were assessed initially on the basis of the Maximum Technical Potential, which was further constrained through detailed assessments of the main sites ability to host wind turbines and transmission infrastructure. The following table summarises the breakdown of the total Maximum Technical potential wind resource of **15,100 MW.**

Table 6 Wind Energy Maximum Technical Potential resource estimate

	Offshore (limited to WA 481 P area)	**Onshore (located within reasonable transmission distance to Cliff Head and Oakajee**
Wind Resource	10,600 MW across 3 sites	4,700 MW across 4 sites

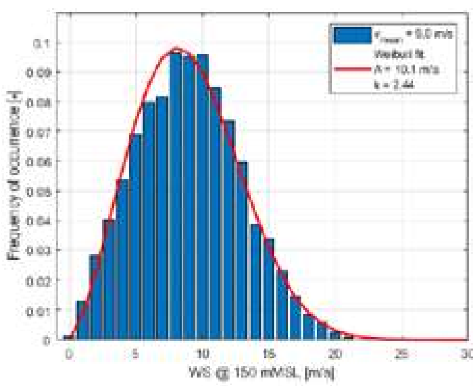
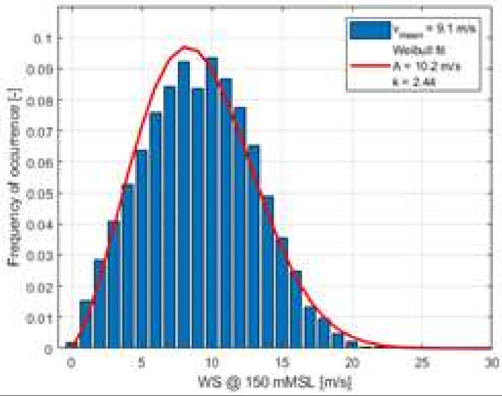
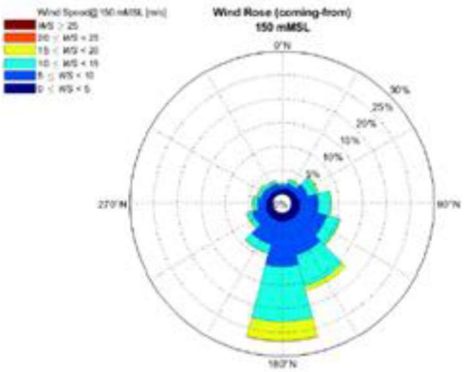
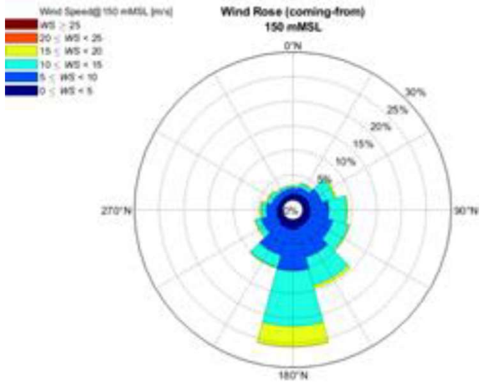
Across the onshore and offshore sites Lautec identified 13 potential development areas (accounting for the wind resource constraints).

Wind farm layouts were developed for four sites (assessed as being representative of the other sites) enabling levelized cost analysis based on wind resource simulations, level 5 capital and operating cost forecasts.

The following sections provide an overview of the key aspects of the offshore and onshore assessment.

Figure 9 provides an overview of the data from two of the key offshore sites identified in the study in the Northern and Central parts of the offshore area of interest.

Figure 9 Mid West Offshore wind energy resource overview

Site	Northern development site #1	Central development site #1
Wind Speed	Average: 9.0m/s	Average: 9.1m/s
P50 Long term distribution		
Wind Rose		

The offshore wind farm sites were analysed assuming the Vestas V236 15 MW turbine. When analysing the wind farm layout, the following constraints were applied:

- Buffer to site boundary*:* A 250 meter buffer to the site boundary has been implemented to ensure no blade flyover, as well as to allow reasonable space for installation vessels.
- Inter-turbine distance*:* Minimum 5x turbine diameter (5D) to minimize the turbulence and wake losses.

Several conceptual layouts *were* analysed and compared in order to assess the maximum capacity for the site and optimize the capacity factor.

For each scenario, an energy generation time-series was calculated for the period of one full year. Long term average wind conditions were determined based on 10 years of a high-fidelity mesoscale time series from Vortex and a single year, representative of the long-term average was selected for each site.

The gross capacity factors were determined based on the Vestas V236 15 MW turbine, correcting for hourly variations in air density.

Wake losses were modelled for various layout configurations, using the N.O Jensen model in a standard configuration. The long-term wind speed and direction distribution were extrapolated to individual Wind Turbine Generators (WTG) positions using the Global Wind Atlas data.

The additional energy losses (WTG availability, performance, temperature curtailment and electrical losses) were defined based on LAUTEC's and C2Wind's experience and knowledge of standard industry values. C2Wind were engaged by Lautec, within its arrangements with Pilot, to assist with the analysis.

The uncertainty of the preliminary energy production estimates can be reduced in the next stages of the project by incorporating onsite or near-site wind measurements in order to:

- refine the knowledge of site-specific WTG performance characteristics
- further optimize the wind turbine layout and wake loss modelling

The following table provides the spacing specifications and net capacity factors for the Northern Development site based on a 1GW and 2.5GW offshore wind farm configurations.

Table 7 Offshore Wind farm spacing and capacity factors

Layout	Northern Development site: 1GW	Northern Development site: 2.5GW
Turbine Spacing	2.7km x 2.1km	2.2km x 2.1km
Net Capacity factor (adjusted for losses)	45.2%	44.4%

Turbine spacing of 2.7 km x 2.1 km prioritizes the areas closest to the prospective connection point, as well as the highest wind speeds and results in a layout with the highest gross and net energy yield. Refer to

Figure 10 and Figure 11 for further details on the wind farm layouts assumed in the analysis.

Figure 10 Northern Development site: 1GW wind farm layouts options

2.7km x 2.1km Spacing – layout

3.7km x 3.3km Spacing – Alternative layout

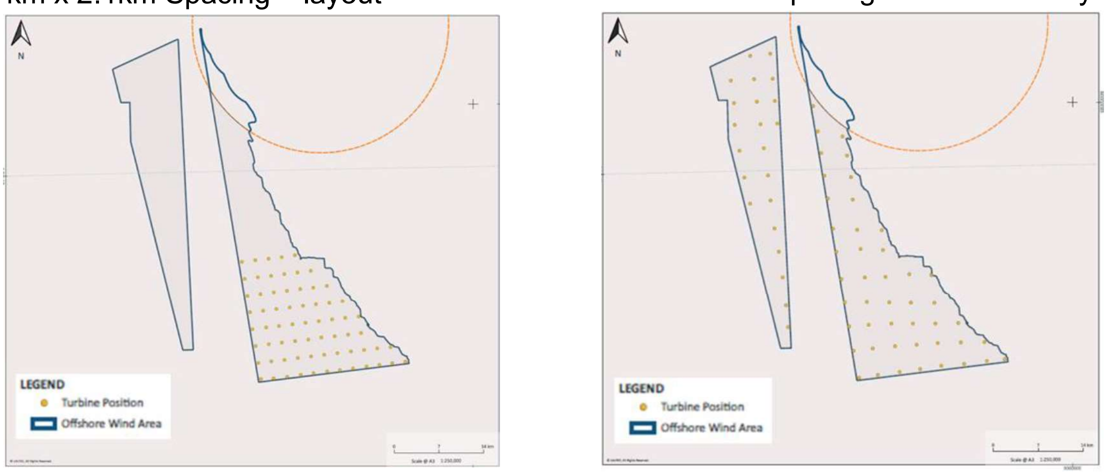


Figure 11 Northern Development site: 2.5GW wind farm layout

2.7 km x 2.1 km spacing

The following table provides a summary of the basis for the development of the capital and operating forecast for a 1 GW wind farm site which is located ~18km offshore. The values are primarily based on data from a large offshore wind farm of approximately 1 GW, which holds monopile foundations at 30-meter depths. Furthermore, the expenditure specified in the table below excludes connection cost to either grid or H_2 production facilities.

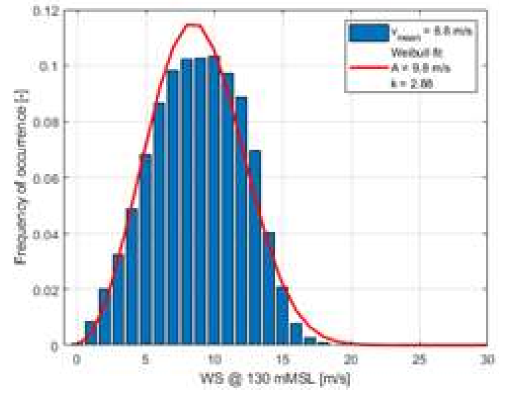
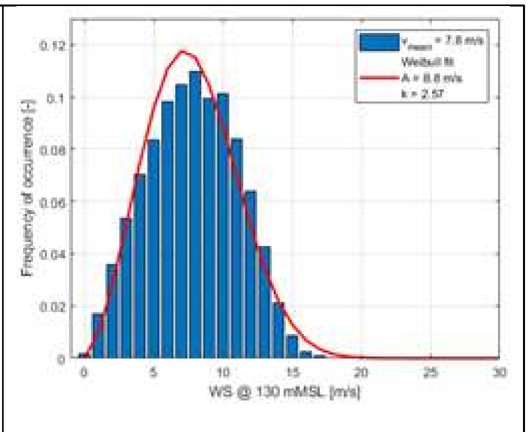
Table 8 Northern Development site: 1GW offshore wind project expenditures excluding H_2 connection costs

Total Capex	5,200,000	AUD/MW
Total Opex	180,000	AUD/MW/annum

Figure 12 provides an overview of the data from two onshore sites identified in the study in the Northern and Central parts of the area of interest.

Figure 12 Mid West Onshore Wind Energy Resource overview

Site	Northern development site #1	Central development site #1
Wind Speed	Average: 8.8m/s	Average: 7.8m/s

<table>
<tr><td>P50 Long term distribution</td><td>
</td><td>
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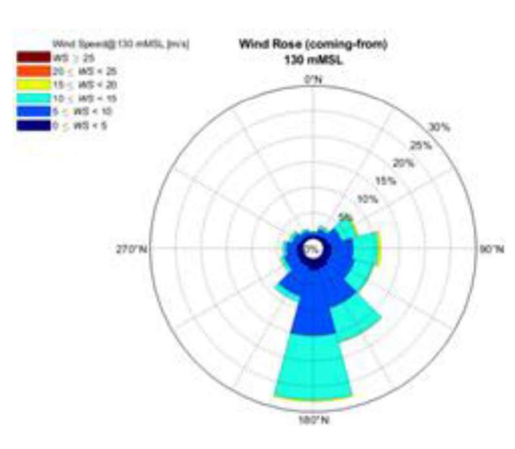
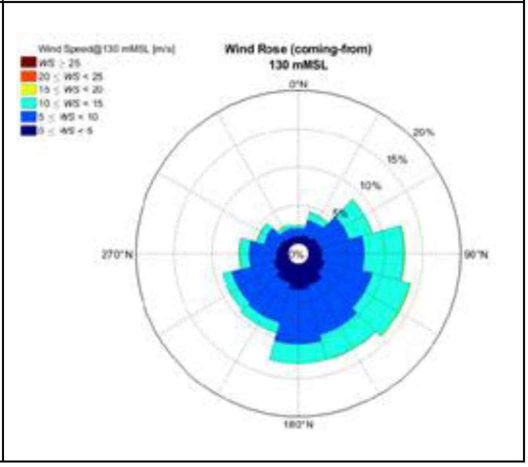
<tr><td>Wind Rose</td><td>
</td><td>
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</table>

The onshore wind farm sites were analysed assuming the Vestas V150 6 MW turbine. When analysing the wind farm layout, the following constraints were applied:

- An offset of 250 meters from existing roads, power line infrastructure and a minimum distance of 2km between the turbine and landowners.
- Inter-turbine distance: 5 rotor diameters abreast and 8 rotor diameters downwind
- Site specific considerations: existing land use and farming practices, visual impacts, turbine/substation access

Several conceptual layouts were analysed and compared in order to assess the maximum capacity for the site and optimize the capacity factor.

For each scenario, an energy generation time-series was calculated for the period of a full year. Long - term average wind conditions were determined based on 10 years of a high-fidelity mesoscale time series from Vortex and a single year, representative of the long-term average was selected for each site.

The gross capacity factors were determined based on the Vestas V150 6 MW turbine, correcting for hourly variations in air density.

Wake losses were not modelled at his stage due to the complexity of such analysis for onshore sites (unlike offshore sites, the onshore wake modelling needs to account for land cover and terrain topography). Rather, the wake loss was estimated based on wind power industry knowledge and assuming that wind turbine placement to optimize the wake loss will be possible during project development.

The additional energy losses (WTG availability, performance, temperature curtailment, and electrical losses) were defined based on experience and knowledge of standard industry values. The uncertainty of the preliminary energy production estimates shall be reduced in the next stages of the project by:

- wake loss modelling and further optimization of the wind turbine layout
- incorporating onsite or near-site wind measurements in order to refine the knowledge of site- specific WTG performance characteristics.

The sites were divided in WTGs clusters. An initial cluster size of 350 MW was utilized. The cluster size is indicative at this stage and will need to be refined in the next stage of analysis. Equal clusters are preferred to minimize the number of spare transformers to be carried.

Indicative locations of the collector substations were selected to minimize the reticulation system total lengths. Existing roads, property boundaries, vegetation dwellings and operation and maintenance activity also informed the locations.

A collector substation footprint is assumed to be 200 x 200 meters, while HV transmission requires a permanent corridor width between 30 to 65 meters depending on the voltage and technology selected (overhead or underground). Indicative locations of the main substations were selected to minimize the HV transmission total lengths.

The following table provides technical specifications and net capacity factors for a Northern development site of 1.8GW and a Central Development site of 1.3GW.

Table 9 Onshore Wind farm key technical specifications

Layout	Northern Development site: 1.8GW	Central Development site: 1.3GW
Number of turbines	300	217
Substations	2-3 x 33/330kV at Wind farm	1-2 x 33/330kV at Wind farm
Net Capacity factor	50.7%	44.6%

Refer to
Figure 13 for an example 300MW wind farm layout assumed in the analysis.

Figure 13 Central Development site: 300MW wind farm example layout

The following table provides a summary of the basis for the development of the capital and operating forecast for a wind farm site which is located within the area of interest. Furthermore, the expenditure specified in the table below excludes connection cost to either grid or H_2 production facilities.

Table 10 Northern Development site: 1GW onshore wind project expenditures excluding H_2 connection costs

Total Capex	1,700,000	AUD/MW
Total Opex	25,000	AUD/MW/annum

Lautec also completed an assessment of the project infrastructure requirements to deliver large scale energy projects and transmit energy to central locations for integration into hydrogen production facilities. This assessment considered existing grid infrastructure, new build transmission, local ports and the Australian supply chain.

The transmission infrastructure assessment considered the existing Mid West transmission network/SWIS and new build options. At this stage, the study has assumed the development of an independent/dedicated new build transmission infrastructure to aggregate the produced energy for each of the development scenarios. Although providing a potentially conservative basis for the study, the study recommends collaborating with Western Power to explore the possible synergy of a private network development which accounts for Western Powers long term transmission planning. A further opportunity to reduce the overall transmission costs includes the potential to develop the transmission infrastructure set up to enable third party access arrangements.

For the first to market scenario (300MW wind and 350MW solar) the study highlights some potential to connect to the existing infrastructure and possible network augmentations to expand the existing capacity. For the larger development scenarios, the SWIS may be able to provide some essential services to the isolated grid in the form of black start, minimum power required to feed all critical loads of the processing facility, and/or back up auxiliary power.

The Port and Harbors assessment considered the different requirements during the manufacturing and fabrication, constructure, assembly and operational phases of future projects. The port and harbor assessment identified 5 existing suitable port sites with different capabilities and hence different potential uses.

Furthermore, there are several proposed port facilities in the region under development. The most relevant being Oakajee Port – part of the Oakajee Strategic Industrial Area. The proposed facilities would be suitable for all aspects of the project, and since the location is ideal, it is recommended that the progress of the development of Oakajee Port is followed closely.

Each of the 5 existing ports are evaluated with respect to its features and proximity to the proposed sites. Smaller ports such as Geraldton can act to facilitate the day-to-day activities of operations and maintenance, while larger ports including Freemantle could host larger components, material laydown (staging) areas and potentially participate in assembly and fabrication of components for the farms. All other sites are included but are over 400 km's from the sites, however, often include large rural space with large potential for all activities involved with the construction and operations of an offshore wind farm. Furthermore, each port has the potential to act as the import harbor for components sourced from abroad (likely Asia, Europe and the United States) for both the onshore and offshore wind farms.

Table 11 Overview of existing ports

Port	Berths	Depths (m)	Approx. distance to WA 481P	Attributes
Geraldton	7	7.9-12.3	70	Proximity catering for O&M, material laydown area, and boutique operations.
Fremantle	19	6-14.7	352	General cargo port and 4th largest container port in Australia
Ashburton	1	7.8-7.9	1,400	Material Loadout facility, laydown area
Dampier	7	6.7-10	1,550	Iron ore export, heavy load out facility with large open space for utilization
Hedland	19	13.4-14.7	1,840	World largest bulk exporter, hence large size and capability.

To assist with understanding the timeframes and execution of large-scale renewable energy projects, Lautec undertook a supply chain assessment to identify the key onshore and offshore wind supply chain elements in Western Australia. The onshore wind industry is quite mature in Australia and will require less innovation as the methodology of execution is proven due to substantial experience in Australia. Hence, the assessment focused on the potential for local supply and the potential capability of Australian companies' capacity to enter the market in the short term and long term to service an offshore wind industry. The assessment also included an investigation into existing offshore oil and gas infrastructure and companies for the repurposing and/or employment in an offshore wind industry.

The main identified work packages required for offshore wind power that were assessed include project development, wind turbines, foundations, Balance of Plant, installation and commissioning and operations & maintenance. Refer to Table 12 through to

Table 15 for a summary of the assessment.

Table 12 Project Development supply chain

Element	EU Leading Companies	Possible Australian based suppliers/contractors
Wind resource assessment – Meteorological sensors	FT Technologies NRG Systems Riso Thies & Vector Instruments	Australian Radio Towers Vaisala
Oceanographic Assessment – sensors	Nortek Planet Ocean	GEOMACS AIMS CSIRO Horizon
Geophysical and geotechnical surveys	Nasco G-tec GEOxyz	Australia Government department of Geoscience Fugro Benthic Tek-Ocean Horizon Windpal Bhagwan
Consenting and planning	ERM Natural Power NIRAS Royal Haskoning	360 Environment AECOM Emerge Associates GHD Preston Consulting Bennelongia BMT Dalcon Environmental MBS Environmental Stantec Australia Strategen-JBS&G Talis Consultants

		Tecsol Australia ARUP
Design and engineering	Arup Atkins COWI DNV GL LIC energy Mott MacDonald OWEC Worley Ramboll	WSP AECOM GHD Worley

Table 13 Wind turbine supply chain

Element	EU Leading Companies	Possible Australian based suppliers/contractors
Wind turbines	Siemens Vestas GE Goldwind Ming Yang	Suzlon Goldwind Siemens Gamesa Vestas GE Ming Yang
Blades for offshore wind turbines	LM blades Euros SSP	Suzlon
Generators	ABB	Marand Precision Engineering
Towers	Ambau Welcon CS Wind	Keppel Prince Crisp Bros. & Haywards

Table 14 Foundation supply chain

Element	EU Leading Companies	Possible Australian based suppliers/contractors
Monopile foundations	Bladt EEW Steelwind Bilfinger SIF Smulders	Bluescope

Table 15 Balance of Plant supply chain

Element	EU Leading Companies	Possible Australian based suppliers/contractors
HVAC cables	Nexans Prysmian JDR cable NKT	Prysmian NKT
Offshore substation	Main suppliers of electrical equipment: Siemens ABB Alstom CG Power The support structure: Heerema Bladt Bilfinger Harland and Wolff Semco Maritime EU and Global Companies	Main suppliers of electrical equipment: Alstom Siemens the market

The supply chain assessment also considered the Installation, commissioning and operations & maintenance phases and identified the following resources may be available to support a future offshore wind industry:

- Turbine Installation Vessels: A2Sea's Sea Challenger and Sea Installer, Van Oord's Aeolus, Seajacks's Scylla and Swire Blue Ocean's Pacific Orca, Seaway 7 (2022).
- Foundation Installation Vessels: Existing vessels from Australia's extensive oil and gas industries could be transferred, while other vessels are also widely available in Asia and the Middle East. Three different types of vessels have been used to install foundations and they include:
    - Wind turbine installation vessels
    - Floating heavy lift vessels with advanced position holding capability (e.g. Seaway Heavy Lifting's Oleg Strashnov and Stanislav Yudin, Van Oord and several others with hold potential including Saipem 3000, and OSA's Samson & Goliath)
    - Sheer leg crane vessels (e.g. Taklift 7)
- Cable Installation Vessels: A range of vessels and barges have been utilized for offshore cable installation. Furthermore, the oil and gas and telecommunications cable installation experience in Australia can be easily transferred for the export and inter-array cable installation for offshore wind power.
- Offshore Substation Installation Vessels: Specialist heavy lift crane vessels are used due to the size and mass of offshore topsides. Oil and gas topsides installation experience in Australia can almost be directly transferred to offshore wind power.

- Crew Transfer Vessels: Leading European and Global Companies: Alnmaritec, Alicat, CWind and Damen. In Australia, existing yards and boat builders should be able to easily transition to build or retrofit existing vessels to convert them to Service Operation Vessels (SOVs) and Crew Transfer Vessels (CTV's) easily.
- Ports: Geraldton port is in proximity and is the likely choice for O&M port for the offshore wind farms.

3. *Solar Energy resource assessment*

Green Fuel Development (GFD) completed solar assessments focussed on two potential project sites in the Mid West region. The study also considered the grid connection requirements and a review of energy storage options.

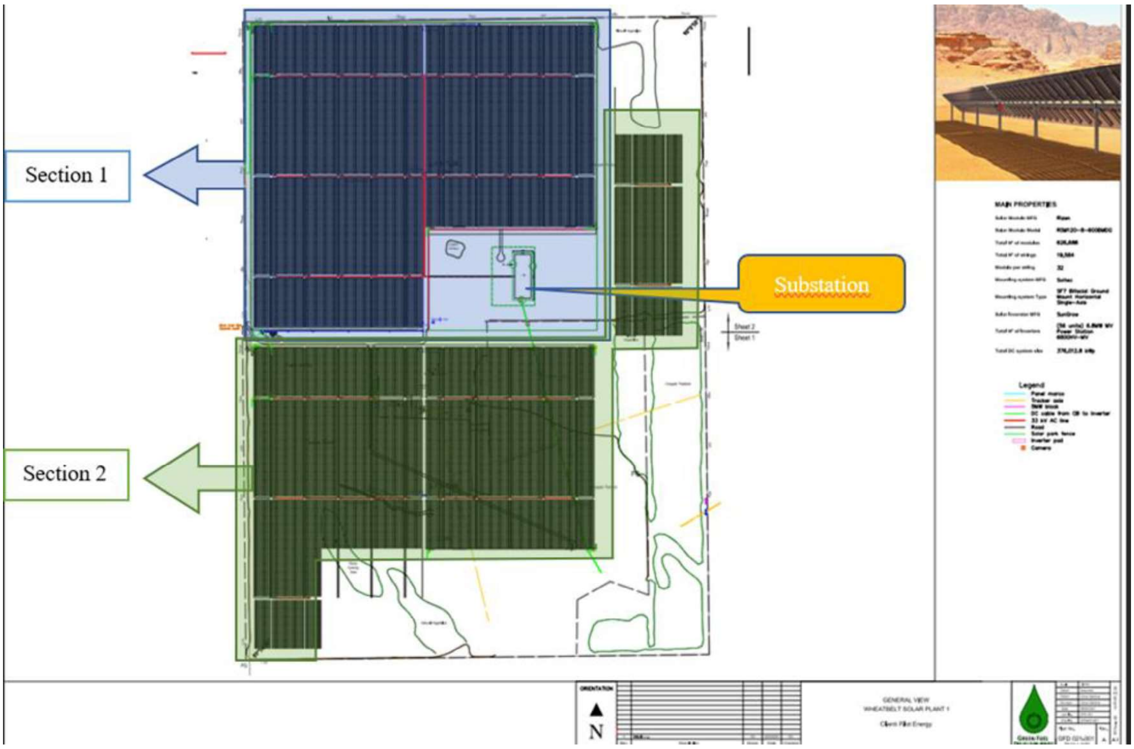
The historical predevelopment studies completed for one of the sites provided a basis for progressing the feasibility assessment with an aggregate potential solar resource of 3350MW. Due to its advanced nature, the study of site #1 (up to 350MW) included the following assessments

- Aboriginal Heritage studies
- Environmental studies
- Geotechnical assessment (ongoing)
- Solar resource yield assessments (PVsyst simulations)
- Land constraints
- Project design and plant layouts

Plant layouts were developed for the two sites enabling levelized cost analysis based on solar resource simulations, level 5 capital and operating cost forecasts. Refer to

Figure 14 for an overview of the proposed layout for site #1.

Figure 14 *Site #1 s*olar *farm* project layout



The Geotechnical assessment across the Site #1 area highlights a requirement to utilise different installation techniques across section 1 and section 2. The proposed configuration is based on a single axis tracking solution oriented North South to optimally track the sun. The relatively flat terrain across site #1 allows the design to utilise blocks of panels and trackers to be connected to a centralised string inventor and a mid voltage step-up transformer.

The following provides an overview of the key solar farm components and potential suppliers:

- Solar Panel from a Tier one manufacturer: for example Risen's bi-facial dual glass mono PERC module named Titan on 600Wp.
- Single-axis tracking system: Soltec SF7 bifacial ground mount horizontal tracker.

Centralized string inverter with mid-station transformer: SunGrow 6800HV-MV Power Station. All mid-station transformers are interconnected to each other in mid-voltage rings going to the substation.

The proposed solar farm design was based on 32 modules (0.6kWp) per string, 2 strings per tracker (two panels in portrait on each side of the tracker), 1 block design is composed of 192 tracker tables, 384 strings and 12,288 panels.

The proposed block layout is relatively simple, where the inverter station stands in the middle of the block, on the North of the inverter station with 16 columns composed of 6 trackers per column. The South part of the block is a mirror image of the Northern part.

Every 12 strings are interconnected into a DC combiner box before heading to the inverter station. There are 32 DC combiner boxes per central inverter station and a total of 51 central inverters and a mid-voltage step-up transformer. Offering a total install capacity of 376 MWp install capacity on-site and 346.8MVA capacity.Refer to Figure 15 and

Figure 16 for example single line drawing of the String and DC Box and DC combiner boxes for mid-voltage configurations.

Figure 15 Site #1 String and DC Box SLD

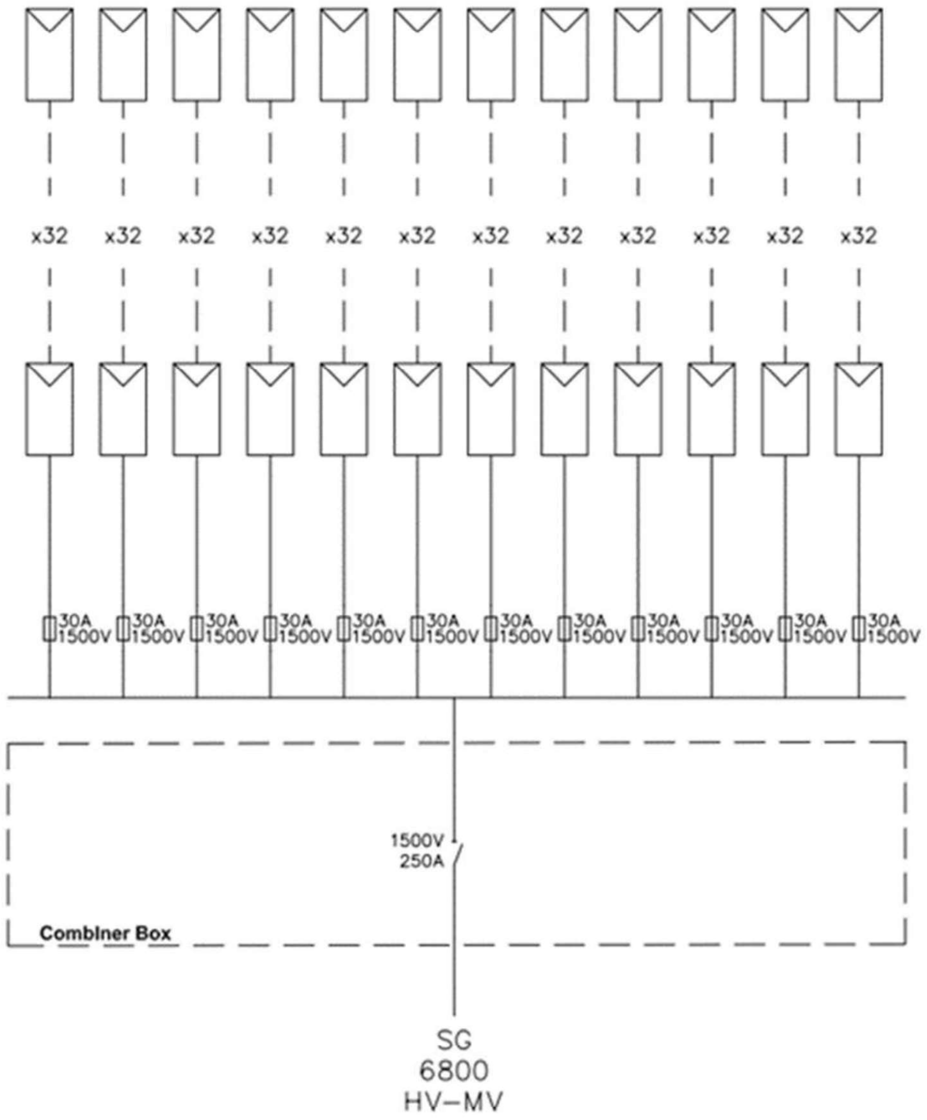
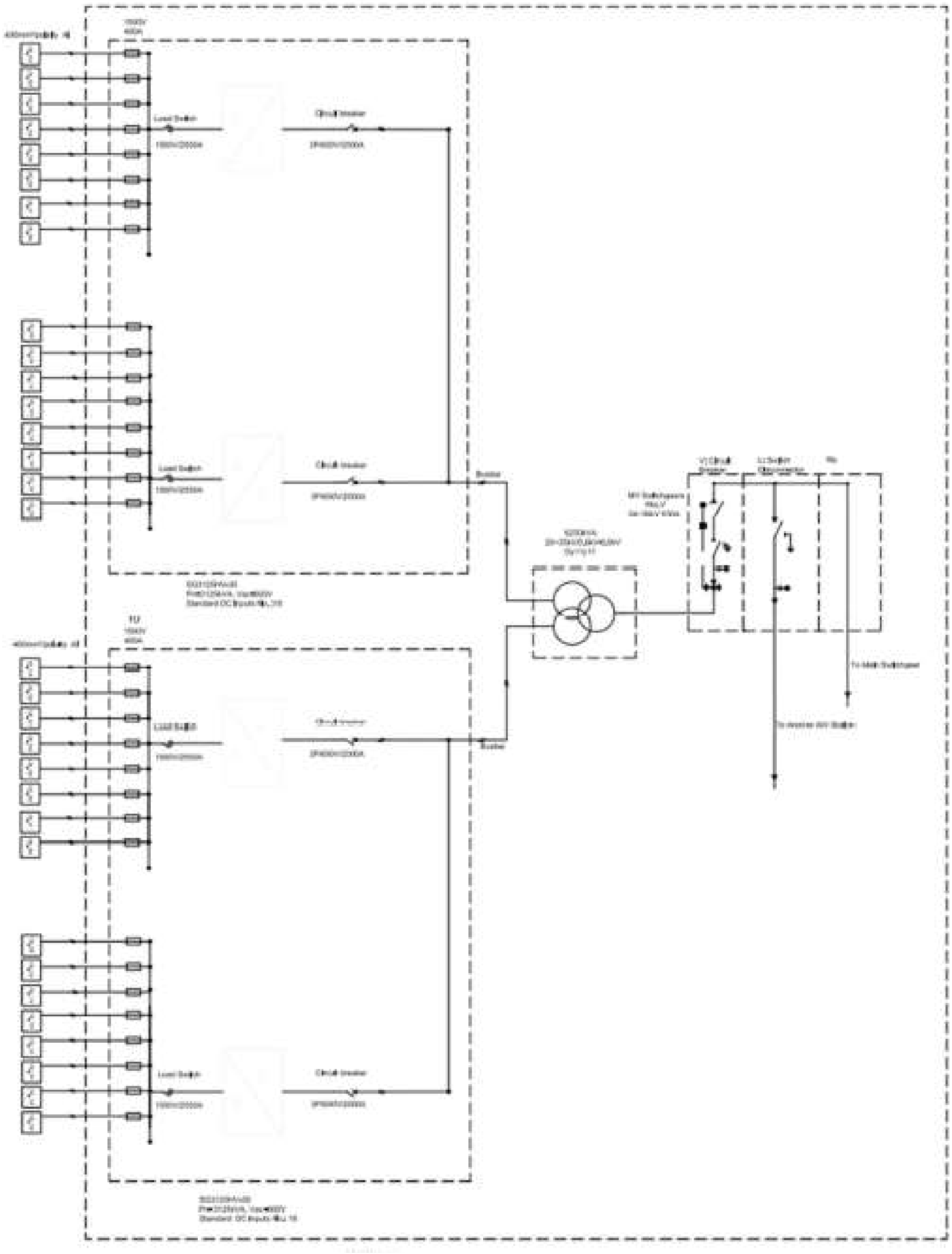


Figure 16 DC combiner boxes to mid-voltage SLD



The yield assessment of this site was conducted using PvSyst a world-class simulation tool to evaluate the yield of a solar field. The dataset is Meteonorm 7.1 using a Mid West location for the initial simulation, with the purchased specific data set from SolarGis for every year between 2006 and 2016 for the site location. There is also an on-site weather station which includes a pyranometer, a wind speed and humidity sensors.

Based on the site conditions the plant yields 2290 kWh/kwp before it reaches the substation. The overall performance ratio of the plant is 85% before the substation. The system was simulated using the backtracking option and detailed string positioning

The capital cost estimate for site #1 and site #2 are summarised in Table 16 covering the solar fields, mid-voltage substation and high voltage substation. The transmission requirements were captured in the Lautec report. Site #2 was assessed in a similar manner to site #1 and provides over 5000 hectares which has been identified as marginal agricultural land and well suited for the development of a large scale solar farm with a potential solar resource of ~ 3000MW.

Table 16 Site #1 and Site #2 Project Capex summary

Location	Cost (000'AUD)
Site #1	375,000
Site #2	3,000,000

4. Renewable Hydrogen production and project integration assessment 25 March

Genesis and Technip Energies were engaged to complete an assessment of the hydrogen market and study the production of hydrogen as a means to commercialise the regions significant renewable energy resources. In addition, Genesis managed the process to integrate the various feasibility study outputs into an assessment of each development strategies levelized cost of electricity and hydrogen.

The renewable hydrogen assessment considered the equipment directly associated with the production, purification and compression of green hydrogen and auxiliary/utilities, such as water purification, cooling systems and nitrogen generation.

The electrolysis process is simply the separation of hydrogen and oxygen atoms from a water molecule. The primary equipment required for a water electrolysis plant is a power transformer and rectifier, an electrolyser stack and a gas/liquid separation skid. This skid typically contains equipment such as circulation pumps, vessels, tanks and heat exchangers. Depending on the hydrogen quality, further purification may be required.

This project has been based on pressurised alkaline electrolyser technology, specifically equipment designed and constructed in China and the following 20MW configuration:

- 4 x 5MW transformers
- 4 x 5MW rectifiers
- 4 x 5MW electrolysers
- 1 x separation package (including liquid/gas separators, pump, heat exchangers, etc), sized for a 20MW of electrolysers.

The study noted that the electrolyser industry is developing and changing at a fast pace. Through the future stages of this project, technology selection should be considered based on current technology readiness anticipated for the development timeline.

The assessment considered a number of end users, the likely hydrogen quality specified in hydrogen purchase arrangements and hydrogen storage requirements. Hydrogen leaving the gas/lye separation skid is saturated with water and of a quality around 99% purity. For users that require specific purification requirements and/or dehydration, the hydrogen is passed through a purification skid. The hydrogen leaving the purification skid has a purity of >99.999% and a dewpoint of minus 70 C°. At this purity the hydrogen is suitable for liquefaction. For hydrogen fuels cells, a purity of 99.97% is required. Hydrogen use for industrial processes or pipeline blending will require a purity of ~98%. As the purification skid is capable of producing higher purity hydrogen than required for fuel cells, the purified hydrogen can be blended with dehydrated hydrogen to increase the fuel cell quality product.

Hydrogen storage is highlighted in the study as a key opportunity and an area for further assessment. Due to its low density, any significant hydrogen storage can produce very large storage requirements that will comprise a significant proportion of the total overall plant costs. Storage is required to provide a buffer for supply, owing to the intermittency of the hydrogen generation from renewables, and due to the periodic offtake of some supply chains. The preliminary storage capacities are given in Table 17.

Table 17 Hydrogen Storage Capacity

End use	Storage Capacity (tonnes)	
	First to Market strategy	Mid Scale
Industrial Hydrogen	100	600
Fuel Cell hydrogen	100	n/a

The fuel cell storage capacity is larger as the offtake is periodic whereas the industrial hydrogen is assumed to be a continuous supply. The storage basis should be reviewed when export routes and target markets are more defined. Storage assumptions assumed:

- Weekly offtakes for fuel cell grade hydrogen
- Fuel cell grade storage sized for 10 days production
- Continuous offtake for industrial grade hydrogen
- Industrial grade hydrogen storage sized for typical daily production

The hydrogen production assessment and capital cost estimates are summarised in Table 18, Table 19 and Table 20. The table’s present the analysis on the basis of the development strategies identified during the feasibility study.

The hydrogen production assessment incorporates results from the renewable energy resource assessments with Table 18 illustrating how the energy is transformed and utilised by the selected hydrogen plant. This analysis highlights that the majority of the power is utilised directly by the electrolyser stacks in the electrolysis of water to produce hydrogen at the stack outlet. The remaining energy powers utilities and/or is assumed to be spilled energy.

Table 18 Renewable energy production and electrolyser utilisation

Category	First to Market	Mid-scale offshore/onshore	Mid-scale Onshore only	Maximum Generation
Solar (MW)	350	1,000	1,000	3,000
Offshore wind (MW)	-	1,800	-	10,100
Onshore Wind (MW)	300	1,000	2,800	4,700
Total Generation (MW)	650	3,800	3,800	17,800
Total production (GWh)	2,000	13,500	13,000	66,500

Table 19 summarises the hydrogen production results for each development strategy. It is worth noting that:

- The Electrolyser operates at between 68-70% on average for all strategies. This is not surprising given the oversizing of the nominal renewable sizing to nominal plant capacity is approximately 180%-200% in most cases.
- Hydrogen production per MW installed capacity is relatively consistent across the strategies at between 107 Te/MW and 111 Te/MW installed capacity. This metric cannot be currently validated against reference projects due to the stage of market development, but is consistent with first principals estimation.

Table 19 Hydrogen production estimates

Category	First to Market	Mid-scale offshore/ onshore	Mid-scale Onshore only	Maximum' Generation
Renewables Production (GWh)	2,000	13,500	13,000	66,500
Electrolyser Actual Plant Size (MW)	288	1,920	1,920	9,600
Hydrogen Annual Output (ktpa)	30	260	250	1,200
Hydrogen Plant Average Utilisation	65%	75%	70%	70%

The Study introduced the Mid-scale onshore only scenario to assess the potential cost base of a mid-scale hydrogen project supplied exclusively by onshore renewables. The results indicate the benefits of a slightly more regular annual power production profile with less of a higher peak energy output in summer compared to winter. The LCOH analysis details further the benefit of incorporating the lower cost onshore wind resources assuming current technologies and costs.

Table 20 Hydrogen plant summary

(kAUD)	First to Market	Mid-scale	Maximum Generation
Total installed cost	935,000	4,000,000	11,000,000
Nominal H_2 production (ktpa)	30	260	1,200

The final aspect of the study involved an assessment of the levelized costs of electricity (LCOE) (based on the underlying Lautec and GFD reports) and the levelized cost of hydrogen (LCOH). The levelized cost analysis was based on the following formula and key assumptions (in addition to the consultant's forecasts of capital costs, operation costs and energy/hydrogen production).

- LCOE equation

$$\text{LCOE}\left({}^{\text{AUD}}/_{\text{MWh}}\right) = \frac{\text{NPV of (CAPEX+OPEX)}}{\text{NPV of MWh}}$$

- LCOH equation

$$\text{LCOH}\left({}^{\text{AUD}}/_{\text{kg } H_2}\right) = \frac{\text{NPV of (CAPEX+OPEX)}}{\text{NPV of kg } H_2}$$

- Key assumptions
    - Cost of Capital: real 4% (equivalent to 6% nominal)
    - Real ($2022) capital and operating cost forecast
    - To assist with comparing the LCOH across the development strategies with materially different delivery timeframe and allow comparison against current market commentary regarding hydrogen price expectations the LCOH and LCOE analysis is present on a real basis ($2022)
    - Technology learning rates, economies of scale, plant degradation & replacement (e.g Electrolyser stacks and invertors replaced every 10 years) have been incorporated into the analysis

<u>Project levelized cost of electricity</u>

The real levelized cost of electricity has been developed at a number of relevant points within the energy flow path for the study and these are presented in Table 21. The values identified are compared against representative ranges provided within CSIRO 2021 GenCost report.

The results indicate:

- Overall LCOE for the onshore solar and wind farms is very competitive and is at or below the lower bound CSIRO costs
- Strategies with offshore wind farms had the highest Hydrogen Plant "Farm Gate" delivery costs. This is attributable to the increased transmission costs and the early stage nature of the Australian offshore wind industry which has resulted in relatively high capital cost forecasts for offshore wind developments.

Lautec noted that although the LCOE at this early stage are on the high side of industry expectations, the following are forecast to assist with improving the project economics of offshore wind developments in Australian waters:

- Further development on an industry in Australia, which will drive cost significantly down due to greater interest from supply chain and resource availability locally;
- Further wind measurements to drive down the uncertainty on the mesoscale model, which generation profiles are based on;
- Development of concept transmission design and further wake modelling, which will help understand and optimize the losses on the system;
- Optimizing the transmission assets in relation to the final stages of the projects

Table 21 LCOE Summary of the Development strategies

	Units	CSIRO Gen Cost 21/22[5]	First to Market	Mid-Scale Offshore/ Onshore	Mid-Scale Onshore	Max Generation
Solar	AUD/MWh	44 - 65 (2021) 28 - 60 (2030)	39	36	36	36
Onshore Wind	AUD/MWh	44 - 57 (2021) 39 - 55 (2030)	34	29	29	31
Offshore Wind	AUD/MWh	N/A	N/A	214	N/A	199
Combined LCOE at H_2 plant	AUD/MWh	N/A	57	56	42	75

Project levelized cost of hydrogen

The real levelized cost of hydrogen is presented in Table 22

Table 22 LCOH summary

	Units	First to market	Mid-Scale Offshore/onshore	Mid-Scale Onshore	Maximum Generation
H_2 plant size	MW	288	1920	1920	9600
Total Generation	MW	650	3,800	3,800	17,800
Total LCOH	AUD/ H_2 kg	5.62	3.94	3.11	4.73

The results indicate:

- The lowest LCOH was determined for the 2 Mid-scale onshore scenario and is within the expected range of pricing for an optimal project.
- The current global estimate for the early 2030's is approximately USD 2 per kg which equates to approximately AUD 2.95. The global estimates typically exclude the cost of compression and storage (which are approximately 13% of the CAPEX for this case) and also exclude transmission aspects.
- Transmission costs are a significant aspect of the LCOH.

[5] Graham, Paul; Hayward, Jenny; Foster, James; Havas, Lisa. GenCost 2021-22: Consultation draft. CSIRO publications repository: CSIRO; 2021. https://doi.org/10.25919/k4xp-7n26

- The LCOH results indicate that the LCOH in 2025 will be significantly higher than the LCOH in 2035, due to expected increases in efficiency and lowering costs in future years as global production and technological advancements are available.

Annexure C Mid West Hydrogen potential

Highlights

- Renewables and 8 Rivers studies demonstrate the significant clean hydrogen opportunity in the Mid West
- 8 Rivers Study estimates 43,000 tpa of globally competitive blue hydrogen can be produced at a levelized \$2.13 per kg at plant gate utilising the Industrial scale $^8RH_2$ hydrogen technology
- Renewables Study estimates the levelized cost of delivering green hydrogen to key demand centres across the Mid West from \$3.11 per kg on a stand-alone basis utilizing only renewable power
- Low-cost blue hydrogen production can be used to produce approximately 240,000 tpa of globally competitive clean ammonia at a levelized cost of product of A\$398 per tonne and potentially as low as ~A\$371 per tonne by increasing facility size to approximately 480,000 tpa. Integrating renewables energy into the Industrial Scale $^8RH_2$ facility can increase ammonia production to at least approximately 345,000 tpa
- Clean ammonia produced from blue and green hydrogen is seen as an emerging low carbon energy source for use in key Asian energy markets capable of playing a key role in decarbonizing power generation, maritime shipping and heavy industry
- Extending the scope of the Studies, the Company will commence activities to pursue the production and the development of an integrated ammonia export project capable of initially supplying 240,000 to 345,000 tpa of clean ammonia into international markets

The Renewables Study and 8 Rivers study separately assessed the production of hydrogen leveraging the Mid West regions globally significant renewable energy and CCS resource. The results to date indicated that blue hydrogen can be supplied at key demand centres in the near term to stimulate the important transition to a hydrogen-based economy with green hydrogen production providing expansion over the medium to long term.

One of the key outcomes of the studies is the integration of renewable energy into the 8 Rivers technology potentially enabling near term production of green hydrogen with competitive economics. The 8 Rivers technologies require oxygen as a key process input and are typically designed with air separation units to deliver the required oxygen. 8 Rivers and Pilot have studied supplementing the energy intensive air separation equipment with electrolysis powered by renewable energy. Introducing electrolysis provides an amount of the required oxygen stream at the same time as producing green hydrogen depending on deployed capacity. This exciting outcome is discussed as a key component of Pilot's near term development plans.

The 8 Rivers Study indicates that the Company can produce clean hydrogen on a globally competitive basis. The development of an Industrial scale $^8RH_2$ Hydrogen Plant can produce clean hydrogen with capture of 98% CO_2 for $2.13/kg or USD1.50/kg. Further the 8 Rivers study indicates that an integrated ammonia development project (industrial scale) can deliver clean ammonia with near zero carbon emission ready for export at $398/tonne.

The results of the Renewables Study which includes the integration of the projects significant renewable energy resources into green hydrogen projects are summarised in Table 23.

Table 23 Renewables Study Summary of development strategies and levelized cost of hydrogen

Strategy	Project start	H_2 Plant location	Onshore Wind (MW)	Offshore Wind (MW)	Onshore Solar (MW)	H_2 plant capacity, volume	LCOH ($/Kg – real $2022)
First to market	~2025/6	Arrowsmith	300	-	350	288 MW 30ktpa	5.62
Mid-Scale – Onshore	2035	Oakajee	2,805	-	1,000	1,900 MW 250ktpa	3.11
Mid-Scale – Off/Onshore	2035	Oakajee	1,800	1,000	1,000	1,900 MW 260 ktpa	3.94
Max Generation	2035	Oakajee	4,700	10,000	3,000	9,600 MW 1,200 ktpa	4.73
Note: Levelized Cost of Hydrogen is presented on a $2022 basis and calculated on the basis of forecasts prepared by feasibility consultants assuming real cash flows ($2022) and a real cost of capital of 4% (equivalent to a 6% nominal cost of capital).							

The results of the feasibility studies provide further evidence in support of the WA Governments plans to locate a hydrogen hub in the Mid West region. The McGowan Government has committed to invest up to $117.5 million to attract Federal funding for renewable hydrogen hubs in the Pilbara and Mid West to drive Western Australia as a global clean energy powerhouse. Pilot was pleased to provide a letter of support to the WA Governments recent application for Federal funding under the Clean Hydrogen Industrial Hubs program[6].

[6] https://www.mediastatements.wa.gov.au/Pages/McGowan/2021/11/117-point-5-million-dollars-to-progress-two-renewable-hydrogen-hubs.aspx

Annexure D: 8 Rivers Blue Hydrogen and CO_2 Technology Study

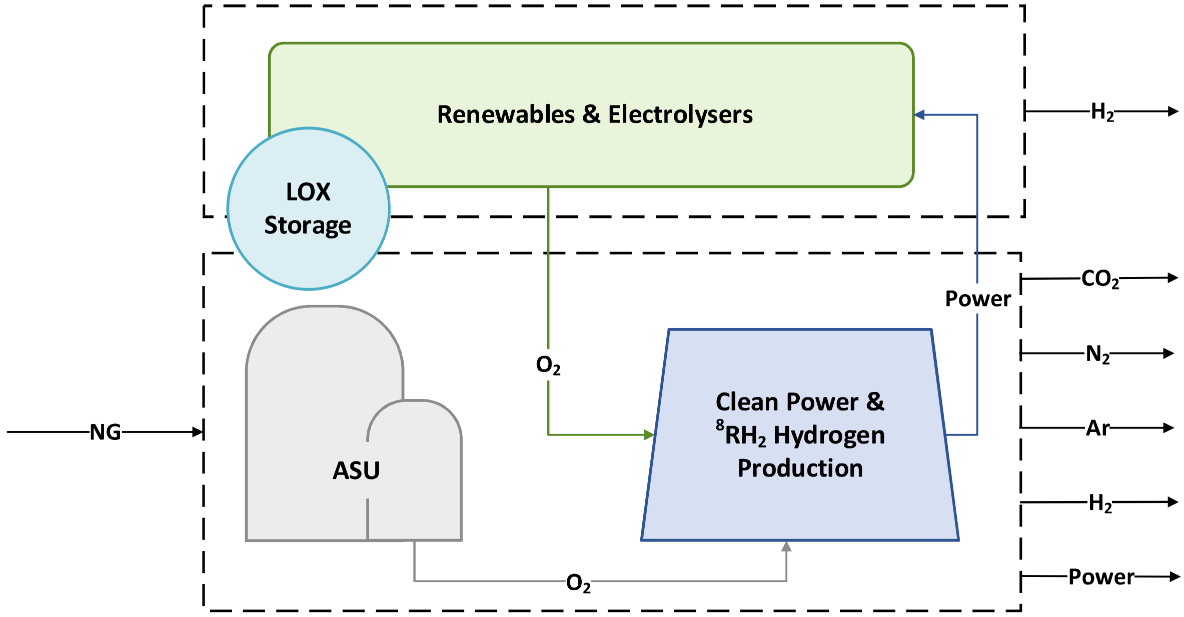
Pilot commissioned 8 Rivers Capital, LLC (8 Rivers) to carry out a Feasibility Study to support the evaluation of clean hydrogen production utilising 8 Rivers Hydrogen ($^8RH_2$) for blue hydrogen production, and as integrated with clean power and additional renewable energy sources and electrolysers, producing green hydrogen, in Western Australia.

Analysis of the renewable energy sources and electrolysers themselves was outside the scope of this study, however the potential benefits of integration with them have been investigated.

1. Technology Overview

8 Rivers' $^8RH_2$ technology emits virtually no CO_2 and generates hydrogen as its primary product. The $^8RH_2$ process is the ideal system for large-scale hydrogen production with CO_2 capture, boosting efficiency above that of steam methane reforming while enabling up to 99% capture rates (refer to Figure 17). The system uses oxygen-blown autothermal reforming to minimise external firing and atmospheric CO_2 venting. Additionally, a heat exchanger reformer is used in tandem to maximise the heat utilisation for hydrogen production. A low-energy, cryogenic CO_2 separation system is included which allows CO_2 capture from the high-pressure syngas loop while maximising H_2 recovery. This hydrogen may then be used as-is or processed further to produce ammonia.

Figure 17 $^8RH_2$ process overview



Using pure oxygen from an ASU or the electrolysers allows the $^8RH_2$ system to be operated at high pressures with a closed-loop configuration between the reforming reactors, increasing efficiency and inherently capturing produced CO_2. An oxy-fuel heater, instead of an air-fired heater, is used such that the flue gas is composed of only CO_2 and steam, which can be easily separated, without pollutants such as NOX. Essentially, having a pure oxygen input stream allows for the full decarbonisation of the hydrogen production process.

2. *Project and study Overview*

Project case studies considered in the 8 Rivers study looked at a fully integrated $^{8}RH_2$ clean hydrogen plant with clean power and renewables with electrolysers, along with stand-alone cases.

Additional scenarios also considered the integration of additional plant to produce ammonia, taking advantage of the already-existing market and the operational synergies (for example nitrogen production by the ASU).

On top of the basic $^{8}RH_2$ and ammonia production technology matrix, further analysis was conducted to ensure proportional CO_2 source and sink matching as well as to address varying commercial strategies based on unique local attributes. Project configurations are evaluated primarily according to the injection capacities of local sequestration opportunities; utility-scale, “full-size” deployments may be accommodated by large sequestration opportunities (e.g., the Lesueur formation in the South West) while industrial-scale deployments are scaled down to afford deployments in other regions such as the Mid West and to suit supplying hydrogen.

While sacrificing economies of scale, it is observed that, naturally, industrial-scale deployments require lower capital investment up front and may lend themselves, among others, to a fleet-building strategy over time as the emerging clean hydrogen market (and clean ammonia market) is established.

Three potential sites are assessed: Arrowsmith, Oakajee, and Kwinana/Rockingham.

3. *Performance Results*

Integration between $^{8}RH_2$ & clean power, renewables, and electrolysers has been analysed to assess the integration benefits between gas-fired carbon capture to electrolytic hydrogen production. Table 24 presents the increased hydrogen production capacity for a specific case selected by Pilot as having the highest interest.

Table 24 Hydrogen Production

Required LOX Storage	Electrolytic H_2 from Renewables	Electrolytic H_2 from gas with carbon capture	H_2 from $^{8}RH_2$	Total H_2 Production
tonnes	Tpd	tpd	tpd	tpd
141 (high-end min.)	37.7 (average)	11.6 (average)	116.9 (average)	166.2

4. *Financial Results*

The feasibility study includes a Class 5 assessment of the CAPEX, OPEX, by-product revenues, and levelized cost of production (LCOP, electricity and/or hydrogen and/or ammonia) for each configuration. The following table summarises the levelized cost of hydrogen/ammonia results for selected cases.

Table 25 LCOP Analysis Results

LCOP (AUD/kg)	100 MMSCFD H_2	50 MMSCFD H_2	1,360 TPD NH_3	680 TPD NH_3	680 TPD NH_3 with Oxygen Storage
H_2/NH_3	H_2	H_2	NH_3	NH_3	NH_3
Total	**1.85**	**2.13**	**0.371**	**0.422**	**0.398**

Key findings from the financial analysis of include:

- Under an industrial-scale [8]RH_2 Project configuration with a bolt-on ammonia train (680 TPD NH_3), the plant could produce clean ammonia at the plant gate at $422/tonne
- Under an industrial-scale configuration with a bolt-on ammonia train, and allowing for 50% of the oxygen required to be provided as a zero-cost by-product of separate electrolyser deployment, the cost of clean ammonia at plant gate reduces to $398/tonne.
- Economies of scale in the technology drive better economic performance. The industrial scale (50 mmscfd H_2 & 680 tpd NH_3) case economics, whilst still positive, are not as strong as those of the utility scale (100 mmscfd H_2 & 1360 tpd NH_3) cases.
- Typical unbated global ammonia costs range from $300 to $450. Whilst the analysis above is at plant gate, it suggests that ammonia produced from the technology could be competitive with unbated ammonia, let alone other sources of clean ammonia.

Annexure E - Hydrogen and Ammonia market update

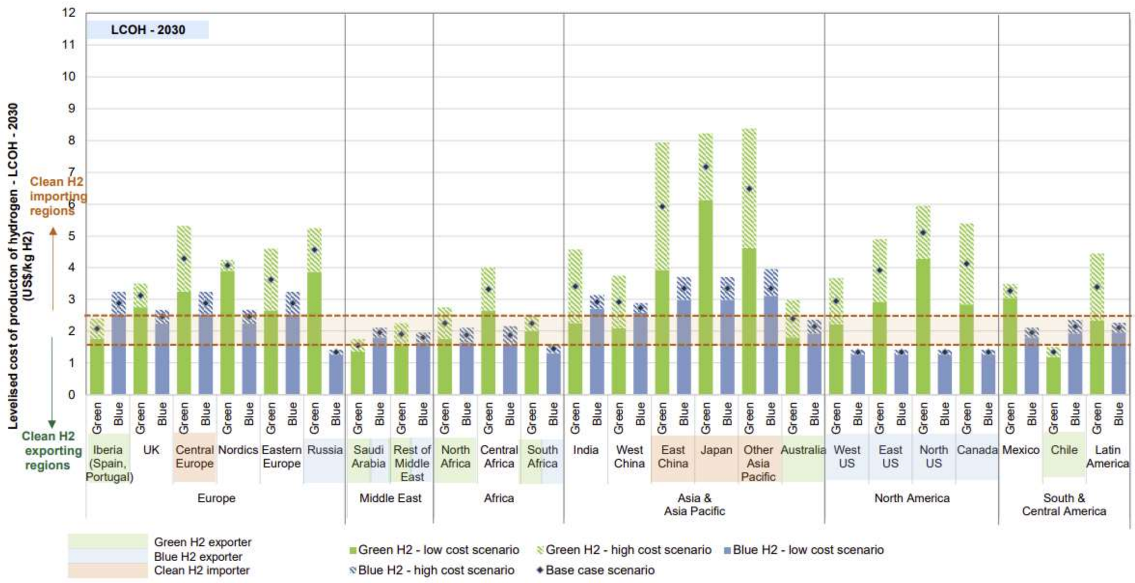
1. *Hydrogen market update - Renewables and 8 Rivers Study support further investment in developing Mid West hydrogen projects*

Global hydrogen of ~ 70 million tonnes per annum (2020 volume) is predominately met by grey hydrogen manufactured from the natural gas steam reformation process without carbon capture and emits ~ 600 million tonnes per annum of CO_2. The Australian domestic hydrogen market is around 0.65 million tonnes per annum of grey hydrogen. The production cost base on grey hydrogen in the domestic Western Australian market was estimated by Advisian's Australian Hydrogen Market Study[7] (May 2021) at $1.70/kg without accounting for the cost of CO_2 emissions.

Converting from grey to blue hydrogen requires carbon capture technology to be retrofitted to existing infrastructure. The complexity of a retrofit, in addition to the varied sources of emissions (flue gas from balance of plant and CO_2 from reformation process), may result in existing facilities being able to capture 90 - 95% of the associated emissions.

Goldman Sachs Carbonomics: The clean energy revolution report[8] of February 2022, forecast Global LCOH in 2030 with countries producing hydrogen below USD2/kg likely to emerge as clean hydrogen exporting regions.

Figure 18 Carbonomics Global Levelized cost of hydrogen in 2030



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[7] https://www.cefc.com.au/media/nhnhwlxu/australian-hydrogen-market-study.pdf

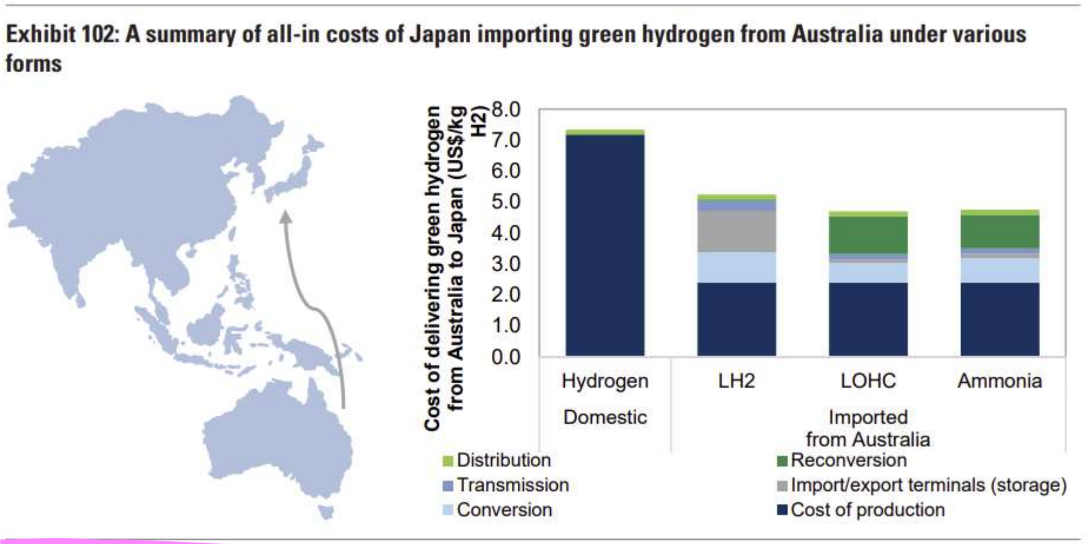
[8] https://www.goldmansachs.com/insights/pages/gs-research/carbonomics-the-clean-hydrogen-revolution/carbonomics-the-clean-hydrogen-revolution.pdf

The results of the Feasibility Studies confirm that the CCS and Renewable resources and Hydrogen Potential support cost competitive clean hydrogen being produced from the Mid West region of Western Australia. Comparing the Renewable and 8 Rivers Study's estimated LCOH ($3.11/kg to $1.85/kg (Utility Scale) respectively) to Goldman Sachs' global forecast highlights the near-term opportunity to develop cost competitive hydrogen projects in particular through the deployment of 8 Rivers technology.

2. Ammonia Market Update – 8 Rivers Study Points to Clean Ammonia

The 8 Rivers study indicates that an integrated ammonia development project can deliver ammonia ready for export at $398/tonne (industrial scale). Goldman Sachs estimates Australian ammonia will be competitive on a delivered basis assuming USD2 – 2.5/kg (A$2.9 – 3.6/kg) hydrogen input price with ammonia produced domestically in Japan (refer to Figure 19 used to estimate the Australian domestic H_2 price).

Figure 19 Goldman Sachs – Cost of Australian hydrogen delivered to Japan

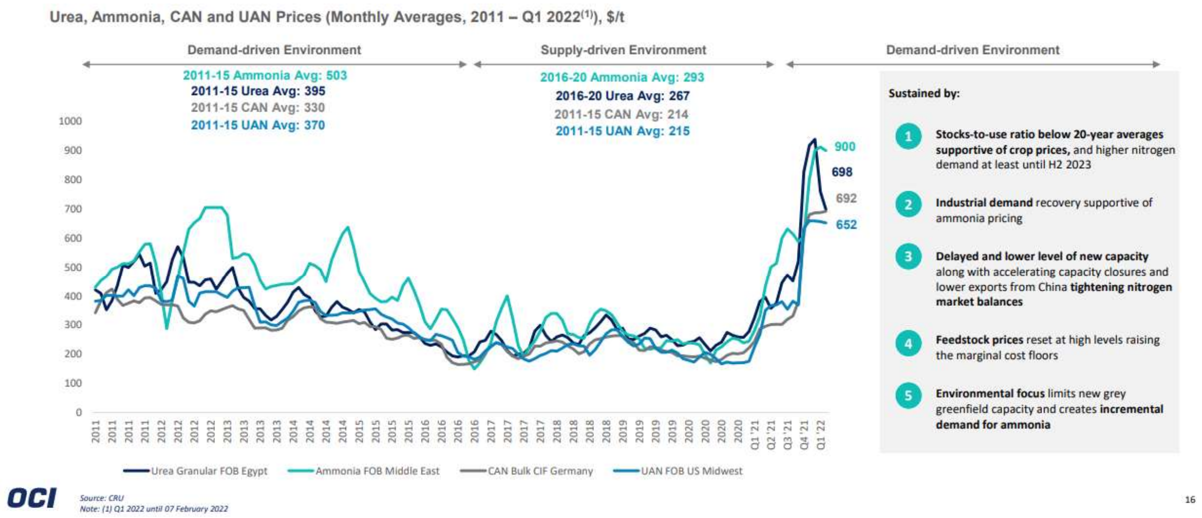


The $^{8}RH_2$ Blue Hydrogen system can produce clean ammonia at the plant gate for as low as $371/tonne at utility scale. This clean ammonia is competitive even against unabated ammonia, whose price fluctuates between $300-$450/tonne on the global market (noting that recently prices have been inflated);[9] in US Dollars, as depicted in

Figure 20 below, this is equivalent to USD210-315/tonne.

[9] Prospects, Challenges, and Trends in the Global Ammonia Market. Georgy Eliseev, HIS Markit, September 2019

Figure 20 Global Ammonia Market, OCI Presentation[10]



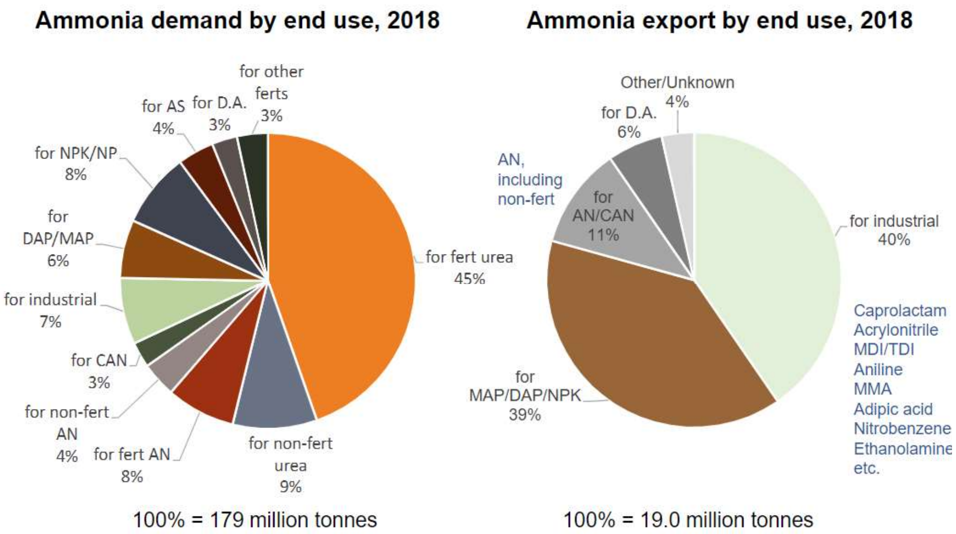
Bloomberg New Energy Finance has projected that ammonia from renewables is on a downward cost curve but still would only reach $650/tonne in 2030 and <$400/tonne in 2050.[11] The economic results of the 8 Rivers study show that producing clean ammonia in WA using the $^{8}RH_2$ system is competitive against the existing ammonia supply chain and that the process has low enough costs for its product to co-exist with ammonia produced from solar and wind, even with the falling cost of renewables and electrolysers. Such a project also produces dispatchable clean electricity which can balance solar and wind generation on the Australian power grid, thus providing electricity that is affordable, clean, and reliable.

Figure 21 Ammonia Demand[12]

[10] *OCI Full Year and Q4 2021 Results Presentation*

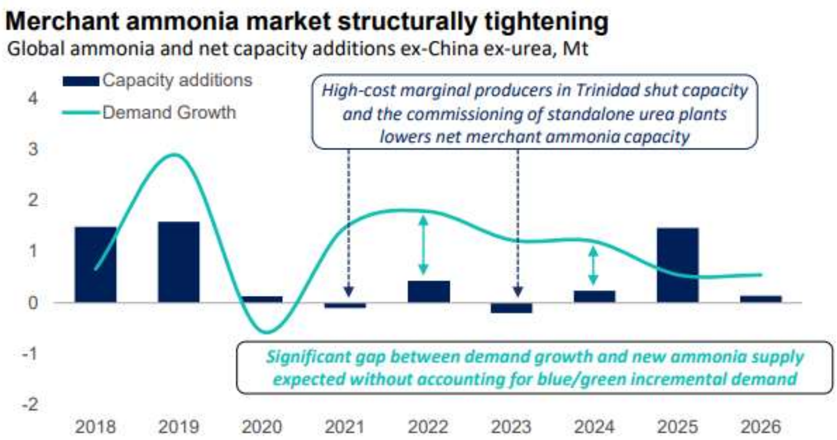
[11] Bloomberg NEF Hydrogen: Making Green Ammonia and Fertilizers. August 2019. (All numbers converted to AUD.)

[12] IHSMarkit GPCA Fertilizer Conference Presentation

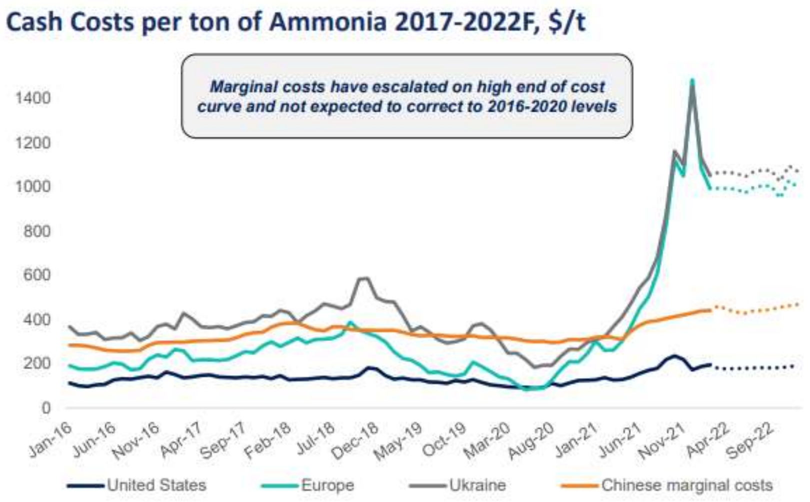


Even outside of decarbonisation, the market outlook for ammonia prices is positive, with continued demand growth and slowing capacity additions, combined with high fuel prices in Europe. Additionally, in 2021 Russia was the largest exporter of ammonia, which with tensions with Ukraine and potential Western sanctions potentially causing further instability or higher prices in the global ammonia market.[13]

Figure 22 Ammonia Market[14]



[13] Ukraine Crisis Highlights Russia Fertilizer Supply Risk - https://www.argusmedia.com/en/news/2304708-ukraine-crisis-highlights-russia-fertilizer-supply-risk
[14] OCI Full Year and Q4 2021 Results Presentation



Australia's ammonia trade flows are nearly net neutral, with current exports around $70 million of ammonia from the Yara Pilbara plant, and imports around $75 million of ammonia from Fremantle and two Eastern Australia ports.[15]

This analysis and the growing demand for ammonia as a clean energy source in Asian markets, evidence by JERA recent tender for an initial tranche of 500,000 tonnes per annum of clean ammonia[16] and its target of 50% co-firing of coal fired power stations by 2030[17], support Pilot's plans to accelerate the integrated ammonia project leveraging Pilots existing operational footprint.

Growing Clean Ammonia Global Market

Energy importers like coastal China, Japan, and Korea do not suddenly become energy self-sufficient by virtue of decarbonising. In fact, many of these countries have realised that the energy transition poses a threat to their energy security. Using Japan as an example, Japan has minimal natural energy resources such as oil, natural gas, and coal.[18] It had historically used a large share of nuclear power, but after Fukushima it reduced its nuclear power from 13% to just 3% of its share of energy in 2019. This has also propelled it to be one of the largest users of fossil resources and because of its lack of natural resources, it relies almost entirely on imports.

In 2019, Japan was the largest importer of LNG in the world, all of which came in through tankers as Japan has no international pipelines. Japan has potential to increase their renewable penetration, particularly when it comes to offshore wind,[19] but they otherwise face an uphill battle due to their mountainous geography, lack of photovoltaic power potential,[20]

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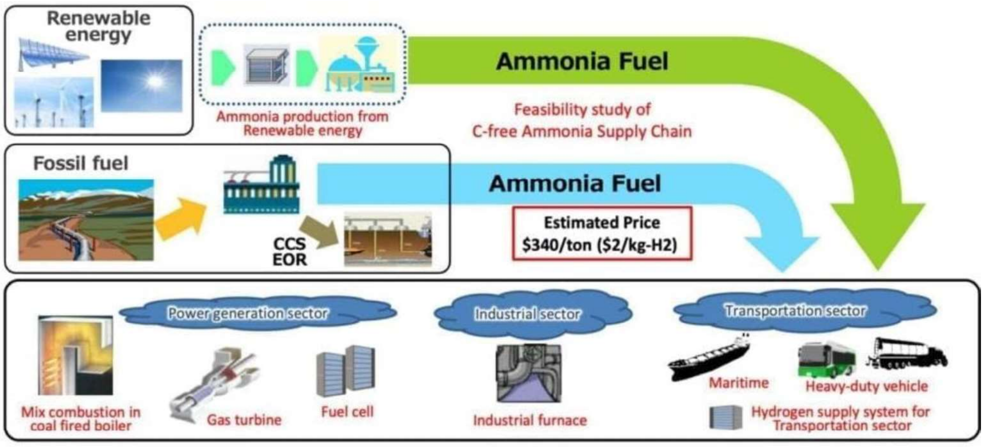
[15] Ammonia in Australia | OEC
[16] https://www.jera.co.jp/english/information/20220218_853
[17] https://www.ammoniaenergy.org/articles/jera-targets-50-ammonia-coal-co-firing-by-2030/
[18] Japan's Energy
[19] Global Offshore Wind Potential
[20] Solar Resource Maps of the World | Solargis

and disparate unstable power transmission network.[21] In addition, the geology in Japan makes local CO_2 storage difficult when compared to other regions.[22]

Countries like Japan, with minimal natural resources that rely heavily on imports, paired with suboptimal renewable potential, are intimately aware that they will have to include imported zero-carbon fuels in their future energy portfolio if they are going to be successful in reducing their emissions through the energy transition.[23] It is expected that they will shift their imports from coal and gas to hydrogen and ammonia.

New energy imports in the form of hydrogen and clean ammonia can still be combusted in existing (following modification) gas power plants (hydrogen) and coal power plants (ammonia) and can be used as fuel for transportation and industrial process heat. As such, Australia can transition from exporting hydrocarbons, to exporting clean hydrogen.

Figure 23 Japan's Green Ammonia Consortium Strategy



Japan is leading the market through demand creation and has been public about their plan to stop importing coal and to transition towards importing blue and green clean ammonia, announcing their first purchase of clean ammonia from gas produced by Saudi Arabia in September of 2020. Japan is targeting 3 million tonnes of clean ammonia import by 2030 and 30 million tonnes by 2050.[24]

JERA, Japan's biggest power company, announced that they will co-fire their coal plants on ammonia, aiming for 20% co-firing by 2035 and ramping up so that by 2050, all of their thermal power plants will run on 100% ammonia. Japan recently announced funding to demonstrate

[21] Potential of Renewable Energy in Japan
[22] Estimation of CO_2 Aquifer Storage Potential in Japan
[23] Japan Will Have to Tread a Unique Pathway to Net Zero, but It can Get There Through Innovation and Investment | IEA
[24] Japan's Road Map for Fuel Ammonia

50% ammonia-coal co-firing by 2030, as part of a larger ammonia fuel supply chain project with a $500 million budget.[25]

This is a case study for the use of ammonia to replace coal and decarbonise power. Some of the same Japanese coal plants currently importing Australian black coal will soon be on the market searching for clean and affordable ammonia from Australia to supplement and eventually replace those imports.

Ammonia can, similarly, be used directly as a zero-emission marine fuel. With 940 million tons of CO_2 emitted annually by maritime vessels, and with the International Maritime Organisation aiming for 70% carbon reduction by 2050, shipping represents a massive market for the direct use of clean ammonia produced in Australia.

Hydrogen itself is expected to be used directly to help decarbonise refining, industrial process heat, heavy duty trucking, home heating, and existing gas turbines. However, there is a strong case for ammonia to be the dominant transport mechanism for this hydrogen while it is being shipped globally due to its established supply chain and relative ease of handling compared to liquid hydrogen. This is demonstrated in the figures below, showing ammonia shipping costs in various scenarios.

Figure 24 Transportation Cost of Hydrogen and Hydrogen Carriers[26]

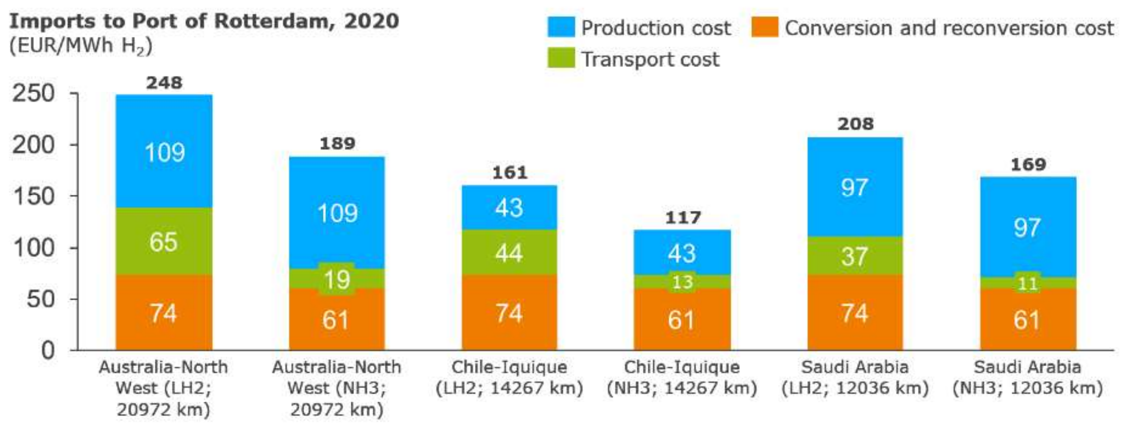
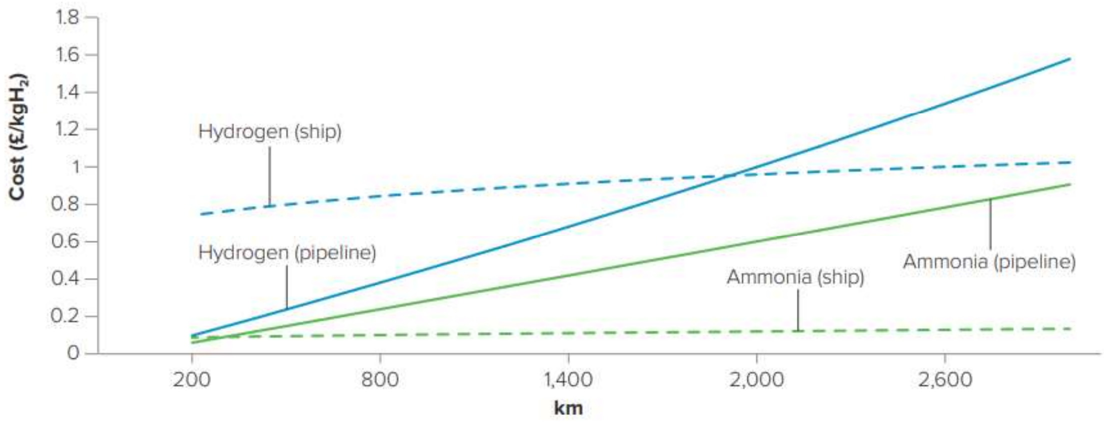


Figure 25 Cost Estimates for Transport of Energy as Hydrogen or Ammonia[27]

[25] Green Innovation Fund Project | NEDO

[26] Hydrogen Generation in Europe – Overview of Costs and Key Benefits

[27] *The Royal Society Green Ammonia Policy Briefing*



Note: Hydrogen transported via pipeline is gaseous and liquefied for shipping. Costs include both the transport and storage required; not the conversion, distribution or reconversion.

The 8 Rivers Study has indicated that given that importing nations like Japan and Korea often have limited fossil fuel reserves, limited renewables capacity, and limited carbon storage availability, ammonia is expected to be one of the most attractive decarbonisation alternatives; it sometimes may be the only pathway.

The global market has been signalling increased interest in ammonia from companies and countries who are including ammonia in their decarbonisation roadmaps through to the development of dedicated fuel ammonia conferences.[28] The IEA projects significant growth and demand for fuel ammonia as countries decarbonise with SE Asia being the critical market making Australia uniquely well situated to deliver this critical decarbonisation vector.[29]

[28] International Conference on Fuel Ammonia 2021

[29] The Role of Low-Carbon Fuels in the Clean Energy Transitions of the Power Sector

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ASX Announcement
7 June 2022

Mid West Clean Energy Project: Stage 1 Cliff Head CCS Update

Highlights

- Technical and engineering studies and cost estimates completed by Genesis Energies and CO2Tech demonstrate strong fundamentals and business case for Cliff Head CCS Project development;

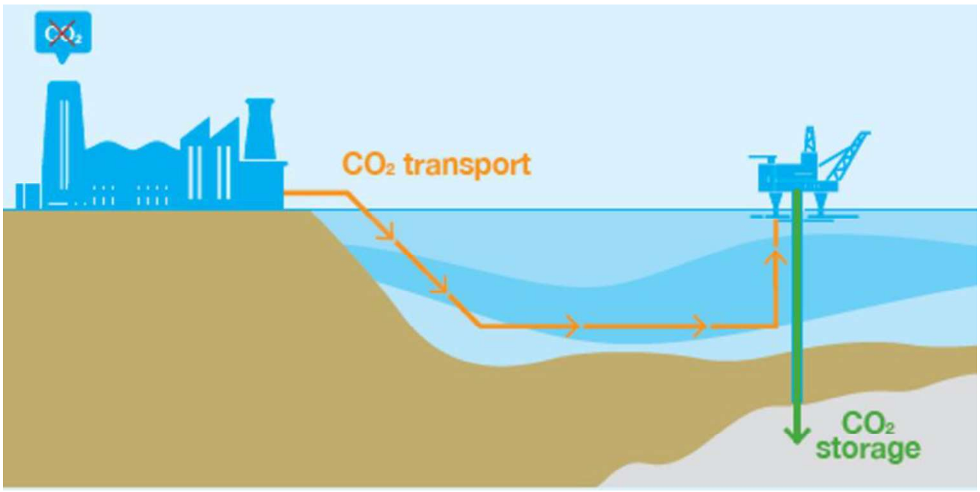
- Cliff Head CCS Project estimated to deliver gross project real pre-tax NPV of ~$110 to 210 million and project IRR of ~30 to 40%;

- Studies confirm Cliff Head CCS Project can safely and permanently provide up to 16 million tonnes of CO_2 storage with a CO_2 injection rate of up to 1.1 million tpa;

- Studies confirm the existing Cliff Head wells and facilities are suitable to be converted to CO_2 injection with minimal modifications; and

- Commonwealth and State of Western Australian regulatory approval process underway

Pilot Energy Limited (**ASX: PGY**) (**Pilot** or the **Company**) is pleased to provide an update on recently completed studies on the Cliff Head Carbon Capture and Storage project (**CCS Project**) - Stage 1 of the Mid West Clean Energy Project. The results from the technical studies and projects economics demonstrate the strong fundamentals which support the business case for the development of a near term CCS project in the Mid West.



Stage 1 of the Mid West Clean Energy Project involves the conversion of the Cliff Head oil field from oil production to a CCS project. Recent technical studies and economic analysis has confirmed the commercial viability of providing CCS services to the Mid West. The technical studies also indicate sufficient scale in the offshore permits held by Pilot to provide CCS services in parallel with permanently storing CO_2 produced during Stage 2 and Stage 3 of the Mid West Clean Energy Project.

CCS Resource Assessment

Technical studies completed by CO2Tech have confirmed the significant CO_2 storage potential of both the Cliff Head production license (WA 31-L) and the WA-481-P exploration license areas with a total 10.8 million tonnes 2C Contingent resources and best estimate Prospective resources of 80.4 million tonnes.

Table 1- Greater Cliff Head & WA 481P CCS Storage Contingent & Prospective Resources*

Contingent Storage Resource (million tonnes)	**1C**	**2C**	**3C**
WA 481P (100% basis)	2.8	4.4	7.2
WA 31L (100 % basis)	1.0	6.4	15.8
Prospective Storage Resource (million tonnes)	1U	2U	3U
WA 481P (100% basis)	46.2	80.4	144.2
*Determined in accordance with the SPE SRMS Guidelines for estimating CO2 storage resources			

Conversion of Project Infrastructure to CCS

Assessments completed by Genesis Energies and CO2Tech have considered the existing Cliff Head wells, pipelines and infrastructure and the necessary works required to augment and upgrade the infrastructure to facilitate CO_2 injection. These assessments have concluded that the Cliff Head wells, pipelines and infrastructure are suitable for conversion from oil production to CCS with minimal modifications.

The conversion of the current Cliff Head oil field production operation into a CCS operation will occur over three basic stages – Storage Reservoir Preparation, Facilities Conversion and CO_2 Injection Operations. Additionally, the initial CO_2 Injection Operations can also be expanded to both increase the CO_2 injection rate up to 1 mmtpa and overall storage capacity to 16 million tonnes.

The resulting capital works are summarised below across the key stages of developing the CCS Project (100% basis):

Storage Reservoir Preparation:

Prepare Cliff Head Oil Field for CO_2 injection.
Capex: $13 million
Timing: 2023 (Following Declaration of WA 31-L Greenhouse Gas Formation)
Duration: 36-48 months
Activities:

- Increase fluid handling capacity up to 60,000 bbls per day

Pre-CO_2 Injection Facilities Conversion:

Convert existing Cliff Head production wells and facilities to CCS operations

Capex: $110 million
Timing: Mid-2025
Duration: 6-months
Activities:

- Convert 5 existing wells to CO_2 injectors
- Brownfields upgrades to existing platform and pipeline

Commence CO2 Injection Operations

Commence CO_2 injection into Cliff Head CCS Project

Timing: 2026
Duration: ~15-years @ 550,000 tpa
Activities:

- Transport supercritical CO_2 to CHA via existing onshore/offshore 10" pipelines
- Inject supercritical CO_2 into reservoir through 5 existing wells

Increase CO_2 Injection Storage Capacity/Injection Rate

Increase storage capacity to up to 16Mt and injection rate to at least 1.1 mmtpa

Capex: $60 million
Duration: ~30-years @ 550,000 tpa / ~15-years @ 1.1 million tpa
Activities:

- Deepen two existing wells
- Drill and complete 1 new injection well

Indicative Key Metrics

Miro Capital is assisting Pilot to identify strategic and/or industry partners for the Mid West Clean Energy Project and has worked with Pilot's internal team to assess the project economics of Stage 1 Cliff Head CCS. The project economics assume the CCS business provides a CO_2 abatement service and have been assessed based on a 550,000 tpa and 1.1 million tpa injection rate scenarios.

100% Basis, Real A$ 2022	**Scenario #1 550,000 tpa**	**Scenario #2 1.1 million tpa**
Initial CCS Project capex	$110 million	$110 million
Timing	Mid-2025	Mid-2025
Storage Expansion capex	$60 million	$60 million
Timing	~2037	Mid-2028
CCS project opex	~$16/tonne	~$9/tonne
Project life	~30 years	~15 years
Project NPV (pre-tax 8%)	$110 million	$210 million
Project IRR	~30%	~40%

Note: *Any forward-looking statements (including projections) contained in the 'Indicate Key Metrics' are estimates only. The indicative estimates are based on inputs from the previously advised completed feasibility studies and internal assessment of operating expenditures. Such estimates are subject to market influences and contingent upon matters outside the control of Pilot Energy and therefore may not be realised in the future.*

Project Commercialisation and Funding

In parallel with the commencement of the regulatory approval process for the CCS Project, the Company is also commencing engagement with prospective third-party customers seeking near-term effective, high-quality carbon reduction solutions for their existing businesses. The Company has identified several large, long-term sources of industrial CO_2 emissions in very close proximity to the Project which are potential customers for the Project. The Company believes that such industrial customers will seek long-term arrangements to manage their existing and future CO_2 emissions thus supporting the long-term commercial utilisation of the Project. Additionally, the Company believes that these potential customers of the Project may also seek to secure equity participation in the Project as part of putting into place CCS contracts.

Concurrently with the commercialisation of the Project, the Company is also advancing plans to secure funding for the Project. The Company believes that the Project can be largely funded through a combination of long-term debt financing as well as direct equity investment in the Project through the introduction of direct project participation by Project customers or Project equity investors. In this regard, the Company is currently engaged in discussions with multiple Australian diversified industrial companies, energy producers and overseas investor groups to progress possible participation in the Project.

Given the low development and operational risk profile of the Project and the likely commercialisation of the Project through long-term contractual arrangements, the Company believes that the Project is likely to be significantly funded through infrastructure-style conventional long-term commercial bank debt financing. The net funding requirement for the CCS Project will be in the order of $70 million (100% project basis, ~$40M net to Pilot), after taking into account the net cashflow from oil production during the pre-injection phase. The majority of this funding will not be required until circa 2025. To this end, the Company has also engaged Bridge Street Capital Partners to assist the Company with the development of this funding strategy in conjunction with the commercialisation and partnering engagements being developed with Miro Capital and Reputex Energy.

Pilot Chairman, Brad Lingo commented "The Pilot team are extremely excited by the results of the technical and economic studies for the Cliff Head CCS Project. The studies demonstrate that the existing Cliff Head oil field production operation can be converted into an offshore carbon capture and storage project in a simple, straight-forward, low risk way and at a low cost."

Mr. Lingo continued "The project has very robust economics and delivers real, tangible and direct ability to reduce significant and growing CO_2 emissions in the Mid West region of Western Australia."

Mr. Lingo added "The project will provide a safe and permanent solution to make a material contribution to Australia meeting its greenhouse gas emissions reduction commitments."

ENDS

This announcement has been authorised for release to ASX by the Chairman, Brad Lingo and Managing Director, Tony Strasser.

Enquiries
Cate Friedlander, Company Secretary, email: cfriedlander@pilotenergy.com.au

About Pilot: Pilot is currently a junior oil and gas exploration and production company that is pursuing the diversification and transition to the development of carbon management projects, hydrogen and integrated renewable energy by leveraging its existing oil and gas tenements and infrastructure to cornerstone these developments.

Pilot holds a 21.25% interest in the Cliff Head Oil field and Cliff Head Infrastructure, material working interests in WA-481-P and EP416/480 exploration permits, located offshore and onshore Western Australia, which form foundation assets for the potential development of clean energy projects in Western Australia.

Competent Person Statement:

This announcement contains information on CCS 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.

Pilot Energy

Delivering Clean Energy for the Mid West

Chairman's General Meeting Presentation

19 August 2022

PILOT ENERGY LIMITED
ASX:PGY

Compliance statements

Pilot Energy

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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.

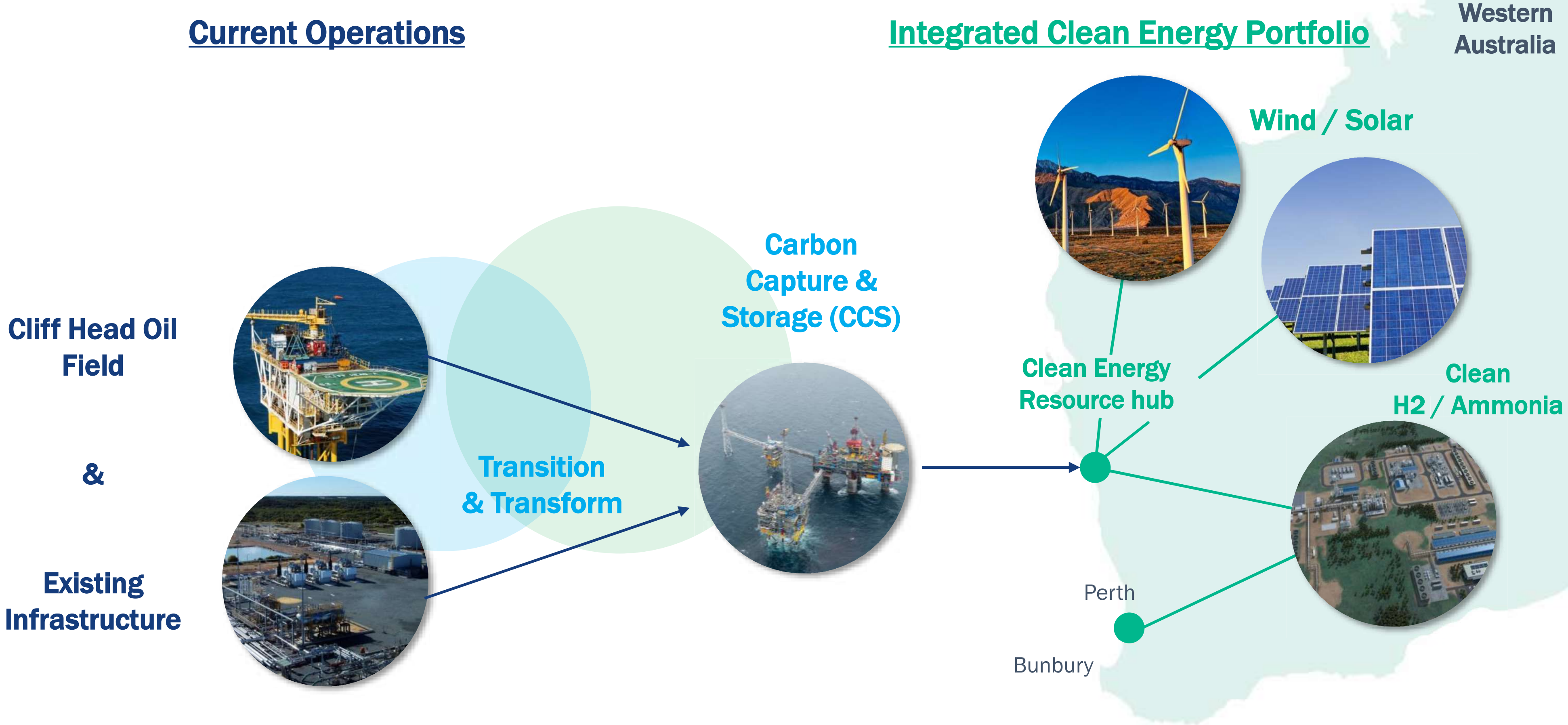
Authorisation
This presentation has been authorized by the Chairman and Managing Director on behalf of the Board of Directors of Pilot Energy Limited

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.

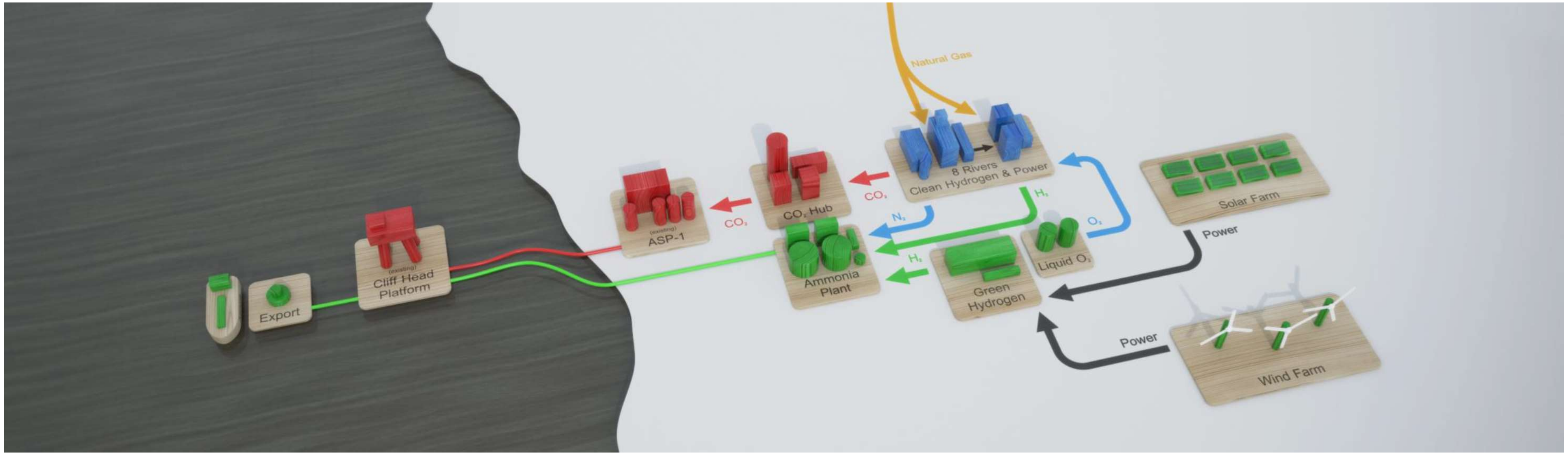
Vision

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



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 CO_2 storage in depleted offshore oil field
- Up to 1.1 million tpa CO_2 injection from 2025
- Targeting continuous CO_2 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*

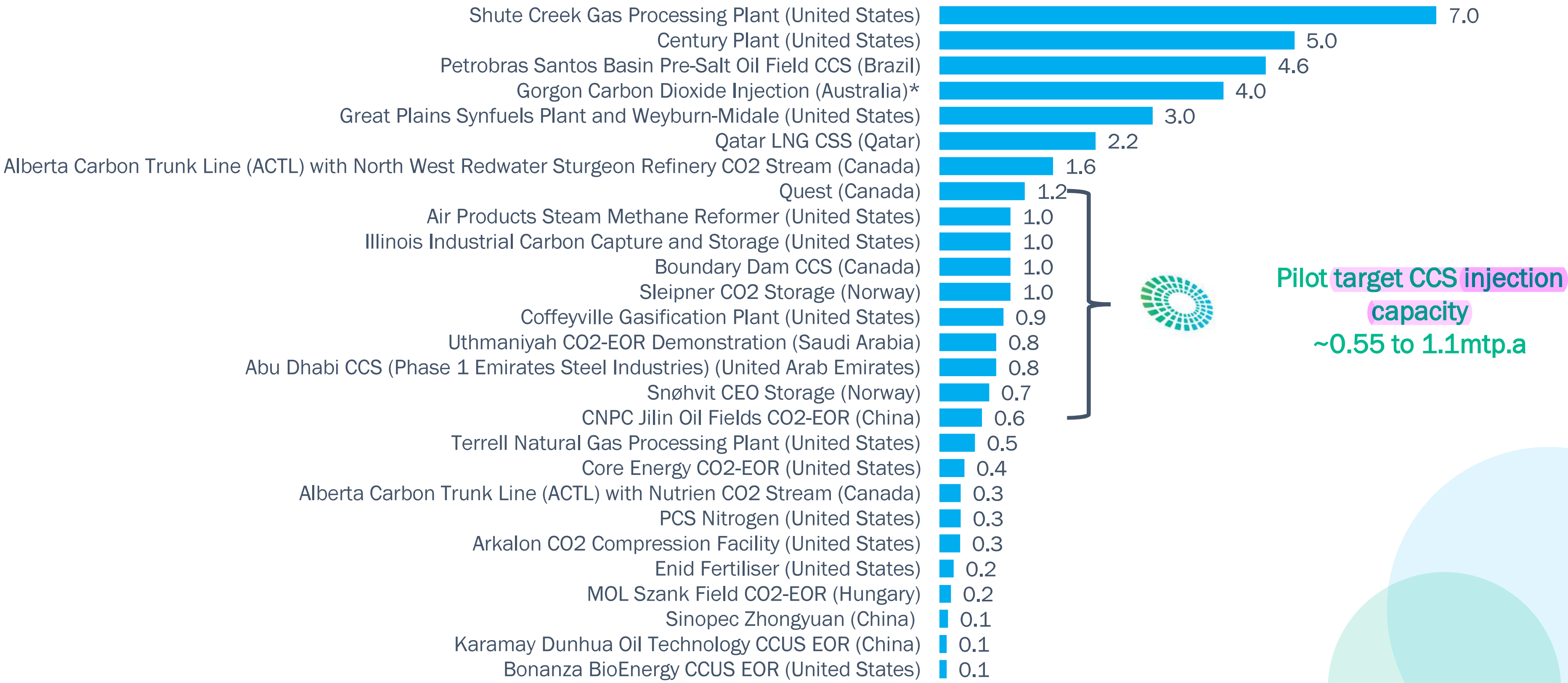
INVESTMENT HIGHLIGHTS

- ✓ 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

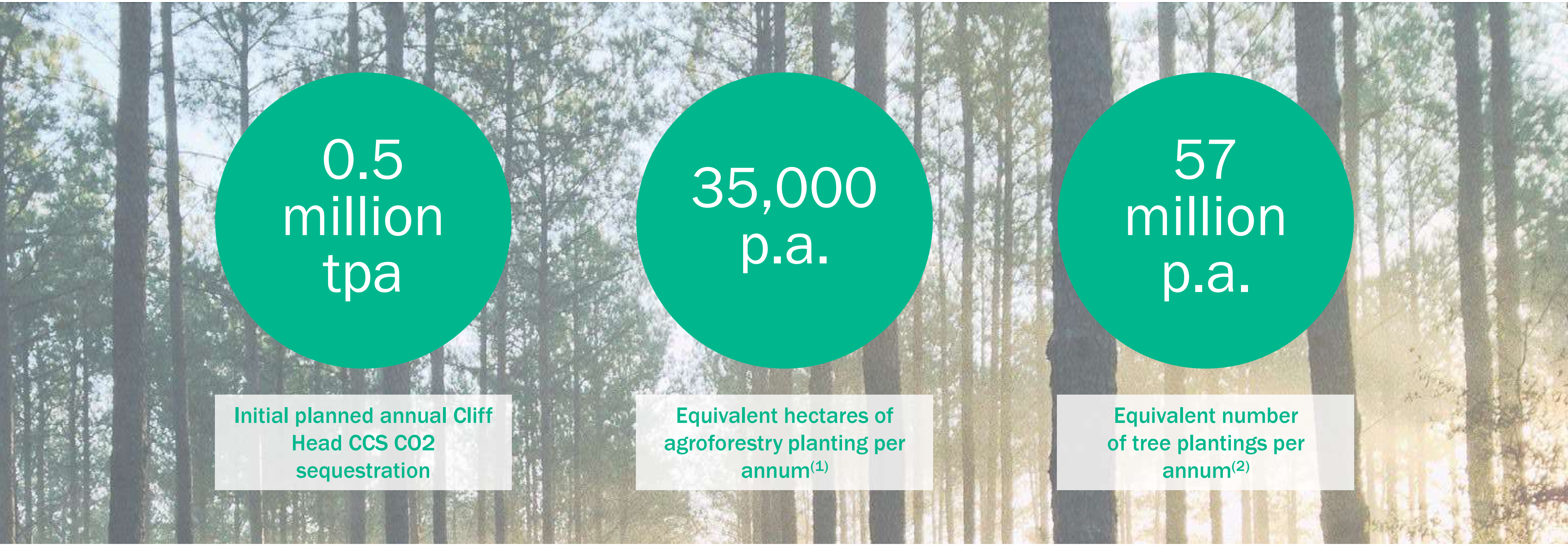
Cliff Head CCS is a Global Top 10 CO_2 Injection Capacity Project

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

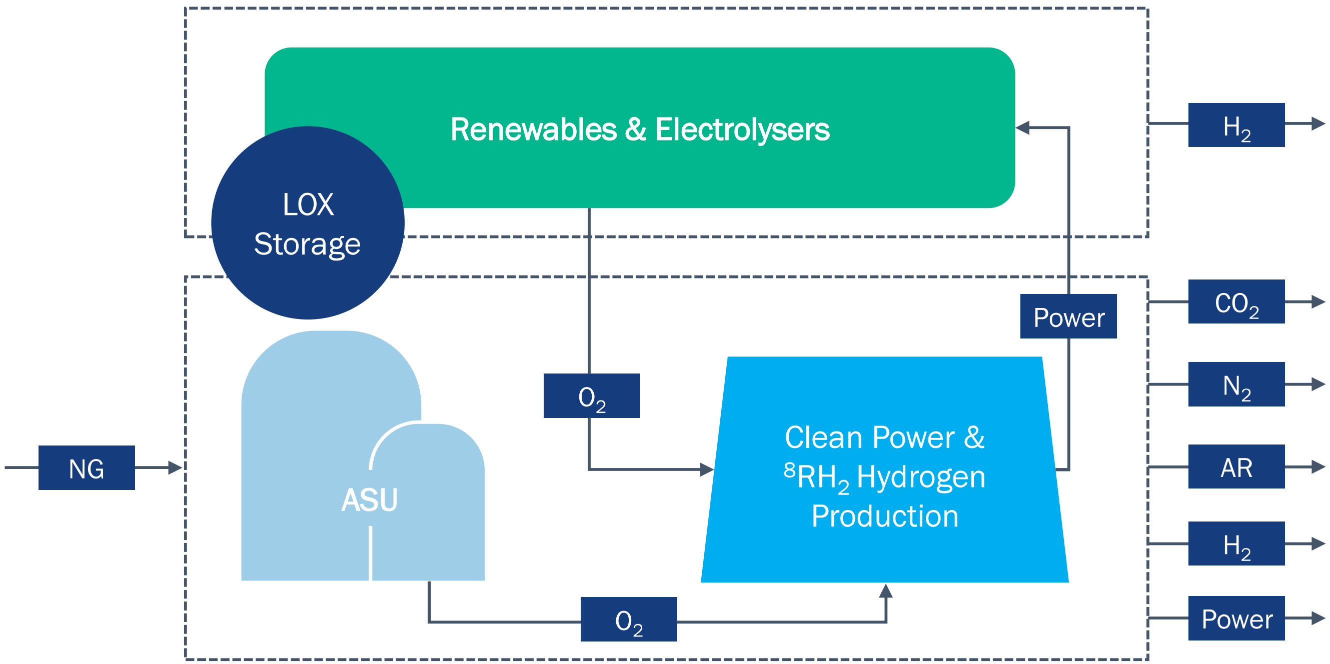


Sources

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



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

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

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 CO_2 emissions[2] through 98% of CO_2 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) technology[3] 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 locations[1]
- 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.
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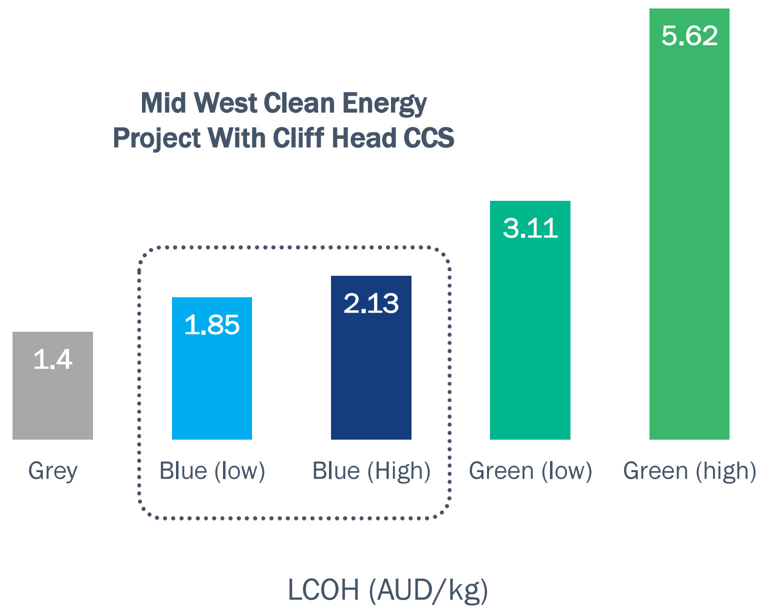
Levelized cost of hydrogen (LCOH) in the range of A$1.85 to A$2.13 leveraging the Cliff Head CCS



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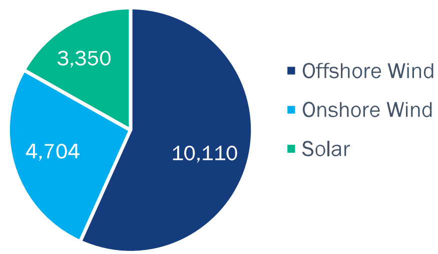
Mid West Renewables provides growth platform

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

Solar
- LCOE = $36-39/MWh
- Capacity Factor = 26-29%

Onshore Wind
- LCOE = $29-34/MWh
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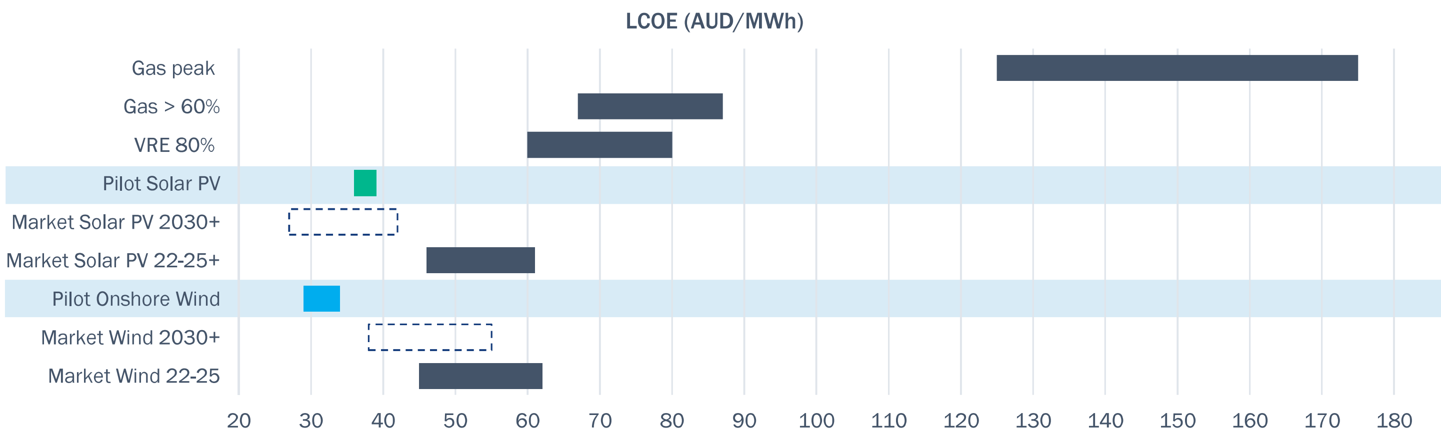

Stage III – Clean Ammonia Production

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

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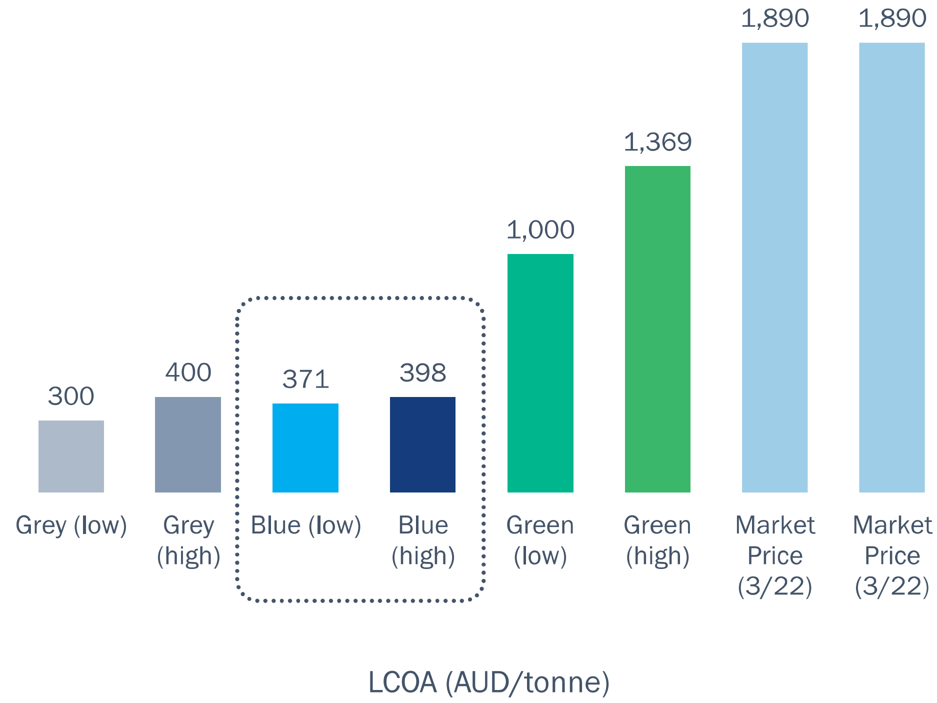

Mid West Clean Energy Project – bringing it all together

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- Hydrogen production integrated with Cliff Head CCS utilising 8 Rivers $^8RH_2$ technology
- Ability to accept CO_2 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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Pilot Energy Limited

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1/85 Elizabeth Street Paddington, NSW 2021
E: info@pilotenergy.com.au
www.pilotenergy.com.au

Announcement to ASX
ASX: PGY

7 September 2022

GOOD OIL & GAS ENERGY CONFERENCE PRESENTATION

Pilot Energy Limited (**ASX:PGY**) (**Pilot** or the **Company)** is pleased to advise that Mr Brad Lingo (Executive Chair) is presenting at the Good Oil and Gas Energy Conference in Perth today.

A copy of the presentation is attached to this announcement and the video referred to in the presentation can be found on the Company website.

ENDS

This announcement has been authorised for release to ASX by the Chairman, Brad Lingo and Managing Director, Tony Strasser.

Enquiries
Cate Friedlander, Company Secretary, email: cfriedlander@pilotenergy.com.au

About Pilot: Pilot is currently a junior oil and gas exploration and production company that is pursuing the diversification and transition to the development of carbon management projects, hydrogen and integrated renewable energy by leveraging its existing oil and gas tenements and infrastructure to cornerstone these developments.

Pilot holds a 21.25% interest in the Cliff Head Oil field and Cliff Head Infrastructure, material working interests in WA-481-P and EP416/480 exploration permits, located offshore and onshore Western Australia, which form foundation assets for the potential development of clean energy projects in Western Australia.

Pilot Energy

Delivering the Mid West Clean Energy Project

Through Cliff Head Carbon Capture & Storage

Good Oil Conference Presentation

7 September 2022

PILOT ENERGY LIMITED
ASX:PGY

Compliance statements

Pilot Energy

Disclaimer
This investor presentation has been prepared by Pilot Energy Limited ABN 86 115 229 984 (Pilot or the Company).
Any material used in this presentation is only an overview and summary of certain data selected by the management of Pilot. The presentation does not purport to contain all the information that a prospective investor may require in evaluating a possible investment in Pilot nor does it contain all the information which would be required in a disclosure document prepared in accordance with the requirements of the Corporations Act and should not be used in isolation as a basis to invest in Pilot. Recipients of this presentation must make their own independent investigations, consideration and evaluation of Pilot. Pilot recommends that potential investors consult their professional advisor/s as an investment in Pilot is considered to be speculative in nature.

This presentation contains "forward looking statements" concerning the financial condition, results of operations and business of Pilot. All statements other than statements of fact or aspirational statements, are or may be deemed to be "forward looking statements". Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", "outlook", and "guidance", or other similar words & may include, without limitation, statements regarding plans, strategies and objectives of management, future or anticipated production or construction commencement dates and expected costs, resources or reserves, exploration results or production outputs.

Assumptions and Forward Looking Statements
Forward looking statements are statements of future expectations that are based on management's current expectations and assumptions, known and unknown risks and uncertainties that could cause the actual results, performance or events to differ materially from those expressed or implied in these statements. These risks include, but are not limited to price fluctuations, actual demand, currency fluctuations, drilling and production results, commercialisation reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

Statements in this presentation are made only as of the date of this presentation unless otherwise stated & the information in this presentation remains subject to change without notice. Reliance should not be placed on information or opinions contained in this presentation. To the maximum extent permitted by law, Pilot disclaims any responsibility to inform any recipient of this presentation on any matter that subsequently comes to its notice which may affect any of the information contained in this document and presentation and undertakes no obligation to provide any additional or updated information whether as a result of new information, future events or results or otherwise.

No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in or derived from this presentation or any omission from this presentation or of any other written or oral information or opinions provided now or in the future to any person. To the maximum extent permitted by law, neither Pilot nor, any affiliates, related bodies corporate and their respective officers, directors, employees, advisors and agents (Relevant Parties), nor any other person, accepts any liability as to or in relation to the accuracy or completeness of the information, statements, opinions or matters (express or implied) arising out of, contained in or derived from this presentation or any omission from this presentation or of any other written or oral information or opinions provided now or in the future to any person

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.

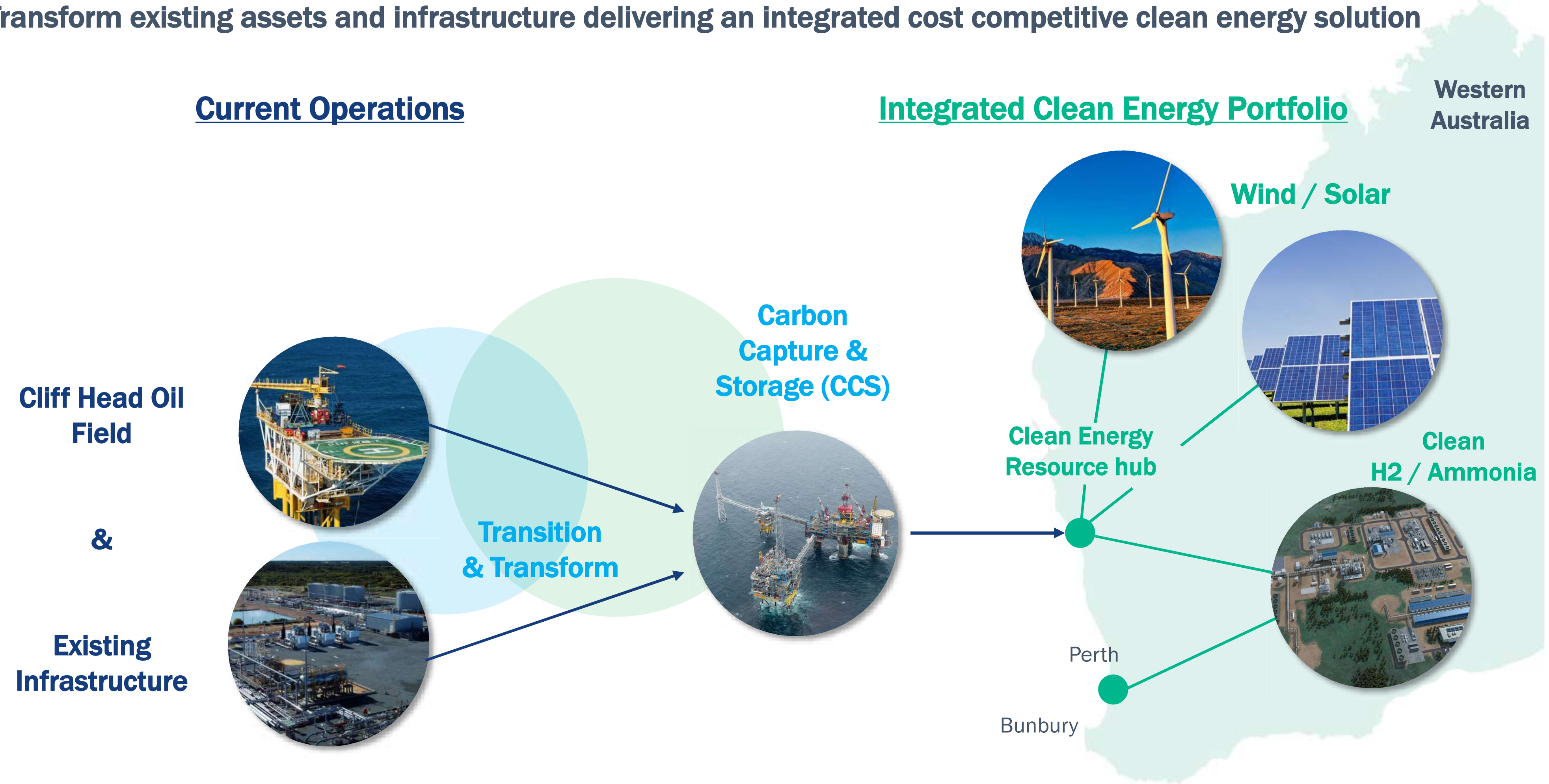
Key messages

Pilot Energy

- Pilot is *focussed on transitioning* existing oil & gas operations into clean, low cost energy production & supply
- Carbon capture & storage (CCS) is *proven, safe and effective* means of permanent reduction in GHG emissions
- Cliff Head Oil Field is highly suitable for *low cost, low risk conversion* into significant CCS operation
- Cliff Head CCS aims to provide over a 1mmtpa of *permanent CO_2 storage* continuing through 2050
- *CCS is key enabler* to delivering lowest cost clean Blue Hydrogen
- Blue Hydrogen is and will be *significantly cheaper than Green* for the foreseeable future
- Integrated Blue/Green Hydrogen production generates *significant efficiencies and material cost savings*
- Ability to provide CCS to Clean Hydrogen *ideal for producing Clean Ammonia-for-export* into APAC region
- Pilot's Mid West operations are *ideal location for integrated development* of CCS, Blue Hydrogen and Clean Ammonia
- Mid West Clean Energy Project aims to *produce lowest cost clean energy* from CCS through to Clean Ammonia

Vision

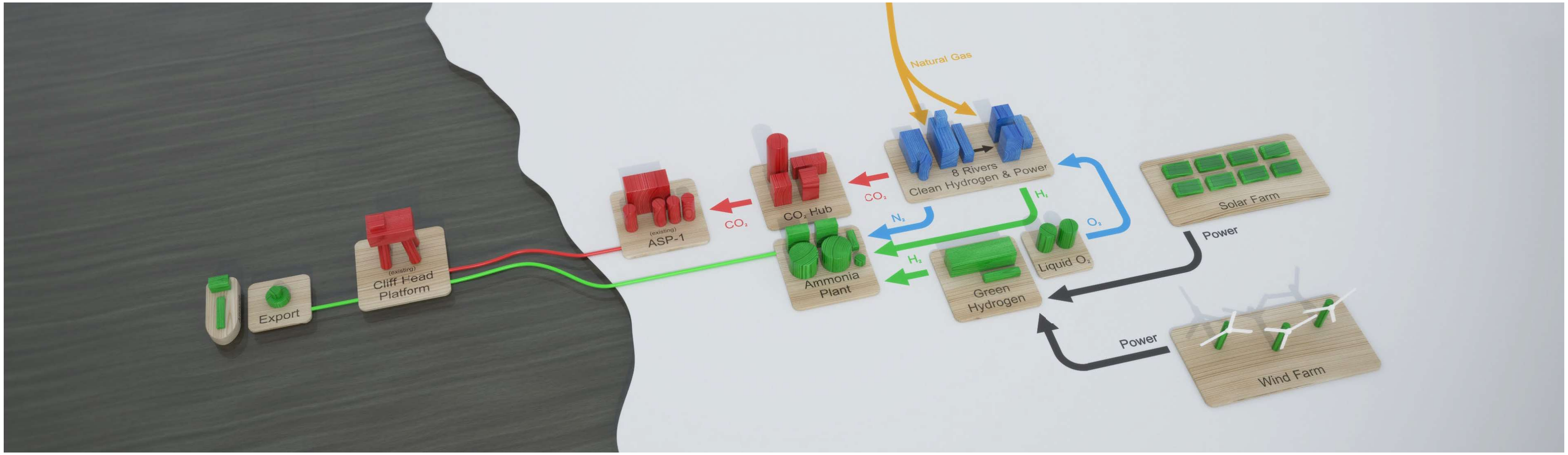
Transform existing assets and infrastructure delivering an integrated cost competitive clean energy solution



Mid West Clean Energy Project

Pilot Energy

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 CO_2 storage in depleted offshore oil field
- Up to 1.1 million tpa CO_2 injection from 2025
- Targeting continuous CO_2 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

Pilot Energy

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

Why CCS?

CCS essential to meeting GHG reduction targets and key enabler of lowest cost Clean Hydrogen and Ammonia

- **Proven** technology – 40 mmtpa now operating
- **Safe** – CO2 has been safely and reliably transported since 1972 with zero fatalities over its 50-year history
- **Permanent** - CO2 stored in appropriately selected and managed geological reservoirs is 99% likely to remain there for over 1,000 years
- **Commercial** – Used at an industrial scale use for over 50-years
- **Necessary** - IPCC found that it would be 138% more expensive to reach global climate goals without the deployment of CCS.
- **Key enabler** - of low cost Low Carbon Hydrogen & Ammonia – will accelerate build-out of hydrogen infrastructure required to reach net-zero
- **Essential for difficult industries** – CCS only option for decarbonising several non-energy sectors fundamental to modern society, such as cement, steel, chemical, and fertiliser production.

MYTH
CCS is unproven.

FACT
CCS technology has been in use for more than 50 years, and around 300 million tonnes of CO_2 have already been successfully captured and injected underground.

MYTH
CCS is unsafe.

FACT
The capture, transport, and storage of CO_2 is well regulated and empirically proven to be safe.

MYTH
CCS is too expensive.

FACT
The cost of CCS is quickly declining as the breadth of deployment increases and additional policy and financial incentives are made available.

MYTH
CCS only prolongs the life of fossil fuel industries and delays the world from reaching global climate goals.

FACT
CCS is a necessary tool for reducing the emissions of fossil fuels already in use and putting the world on a path to net-zero.

MYTH
There is not enough space to safely store all the CO_2 captured by CCS projects.

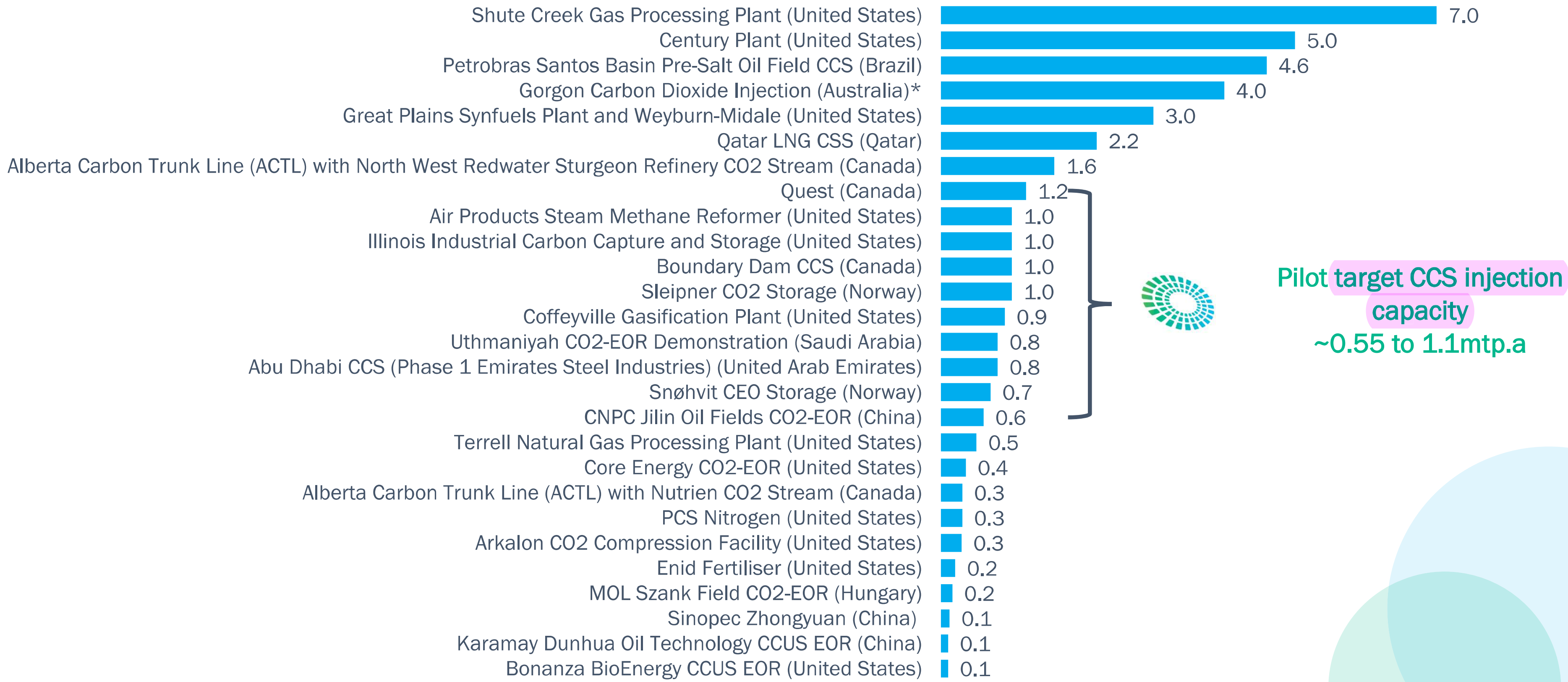
FACT
The world has more than enough capacity for CO_2.

MythBusters-Flyer_FINAL-5.pdf (globalccsinstitute.com)

Global CCS Facilities In Operation

Cliff Head CCS is a Global Top 10 CO_2 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 – Project Development Pathway

Pilot Energy

Clear staged process to develop Cliff Head CCS

	Storage Reservoir Preparation	Facility Conversion	CO_2 Injection Operations
Expected Outcomes	Prepare Cliff Head Oil Field reservoir for CO_2 injection • Creation of at least ~6 million tonnes of CO_2 storage capacity within WA-31L • Increased oil production	Conversion of all offshore and onshore facilities to commence CCS injection • Prepare Cliff Head wells and infrastructure for CO_2 injection • Install onshore CO_2 receiving facilities	Continuous CCS operations • Commence supercritical CO_2 injection at a rate of at least 550,000 tpa for at least 15-years
Permitting Requirements	Existing production license	GHG Declaration, CO_2 injection license & FDP	GHG Declaration, CO_2 injection license & FDP
Indicative Work Activities	• Increase fluids production • Install additional rental oil/water separation units • Install additional power unit on Cliff Head Platform • Re-commission onshore water disposal well	• Workovers 3 existing water injection wells and 2 production wells • Externally reinforce existing pipelines for CO_2 operation • Construct onshore CO_2 receiving facilities • No further drilling required to accommodate 550,000 tpa injection rate and 6Mt of CO_2 storage	• Transport supercritical CO_2 to CHA via existing onshore/offshore 10" pipelines • Inject supercritical CO_2 into reservoir through 5 existing wells • Deepen two existing wells + drill 1 new well to increase storage capacity to up to 16Mt and injection rate to at least 1.1 mmtpa
Timing	**CY Q1 2023**	**Late CY 2024-2025**	**CY 2026**
Duration	**36-48 months**	**6-12 months**	**20+ years**

Cliff Head CCS Social Impact

Pilot Energy

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)

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 CO_2 emissions[2] through 98% of CO_2 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) technology[3] which has been in commercial use for over 100-years

Cost competitive clean hydrogen

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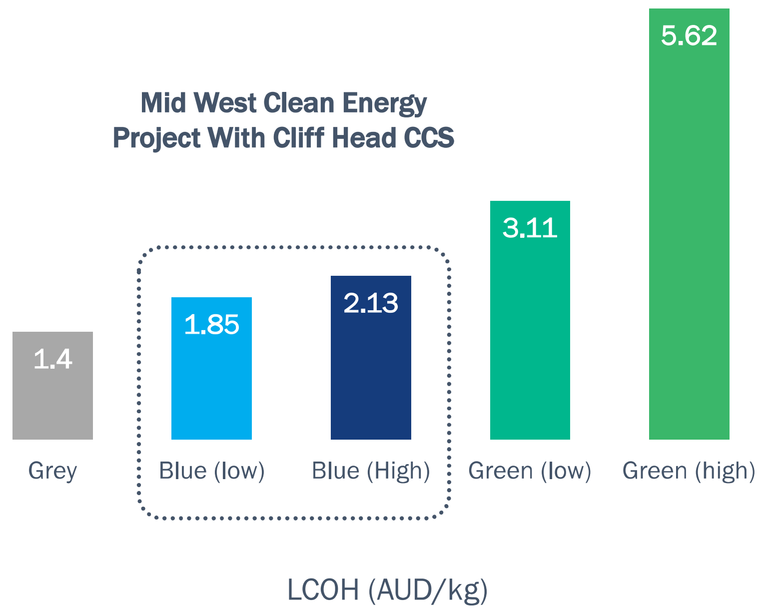

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Why Blue Hydrogen?

Blue hydrogen is both clean and will be cheaper for the foreseeable future

RECHARGE
Global news and intelligence for the Energy Transition

Equinor: 'Blue hydrogen will be cheaper than green for the next two decades — from Norway, at least'

'Customers don't care if it's green or blue', senior executive tells conference as Norwegian oil giant plans to export 2GW of blue H2 to the EU

The West Australian

Oil & Gas | Energy | Markets

WA now has 'lowest gas prices in developed world'

Sean Smith | The West Australian
Fri, 2 September 2022 4:44PM |

Sean Smith

ONS 2022 TRUST
29 AUG – 1 SEPT STAVANGER – NORWAY

Blue hydrogen

Made from natural gas with carbon capture and storage — will be cheaper to produce in Norway for another two decades before being undercut by green hydrogen produced with renewable energy, according to a senior executive at Equinor.

Session 3: Hydrogen and CCS – building new value chains for net zero

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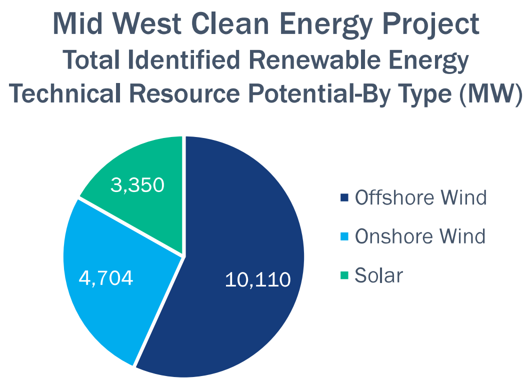

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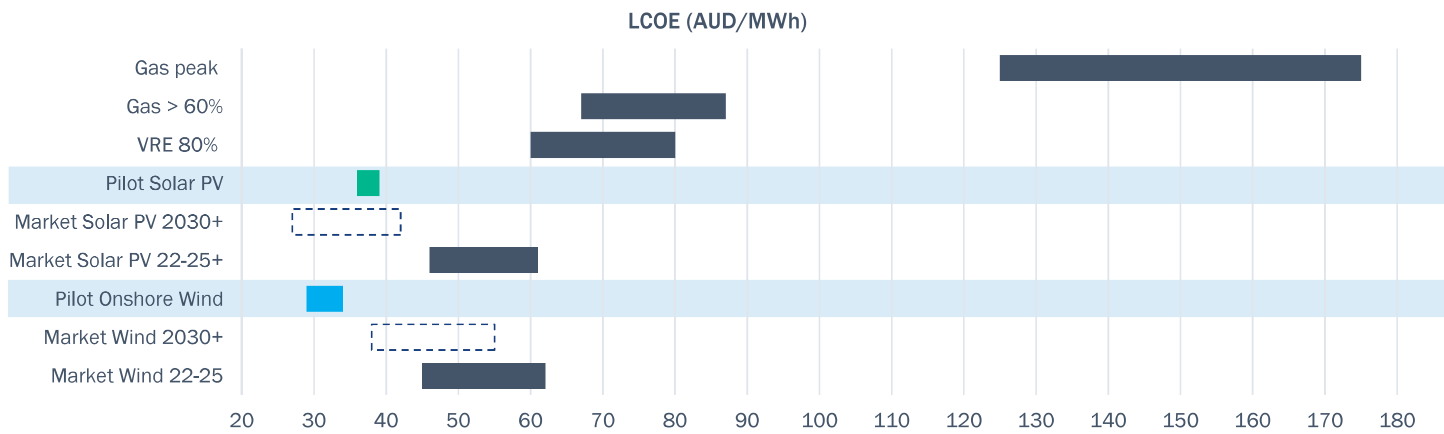
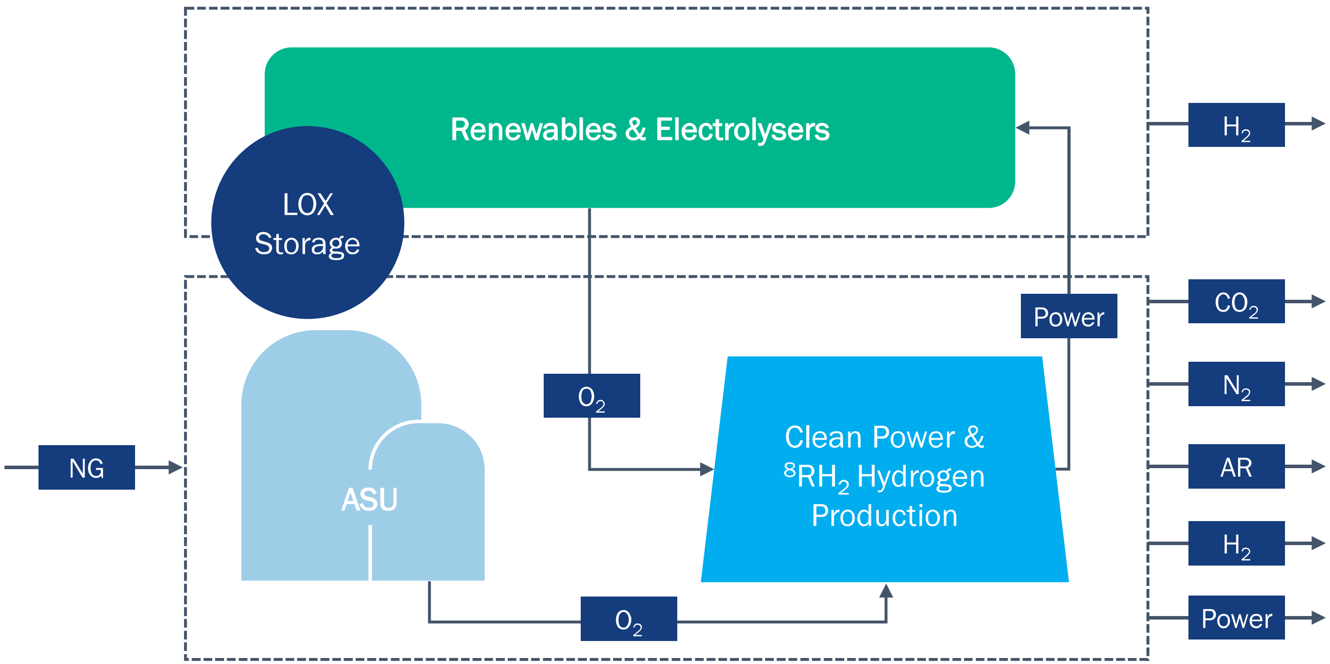


Enabling technology

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



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

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

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Pilot Energy

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Clean ammonia emerging as a cost competitive LNG replacement

Established market and supply chain

- Essential global commodity
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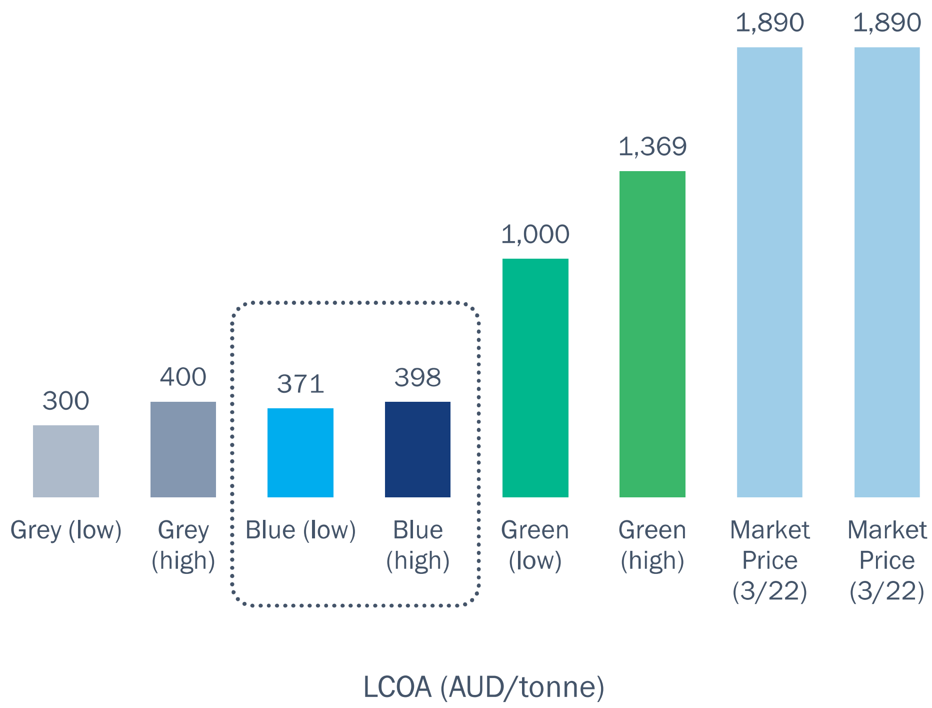

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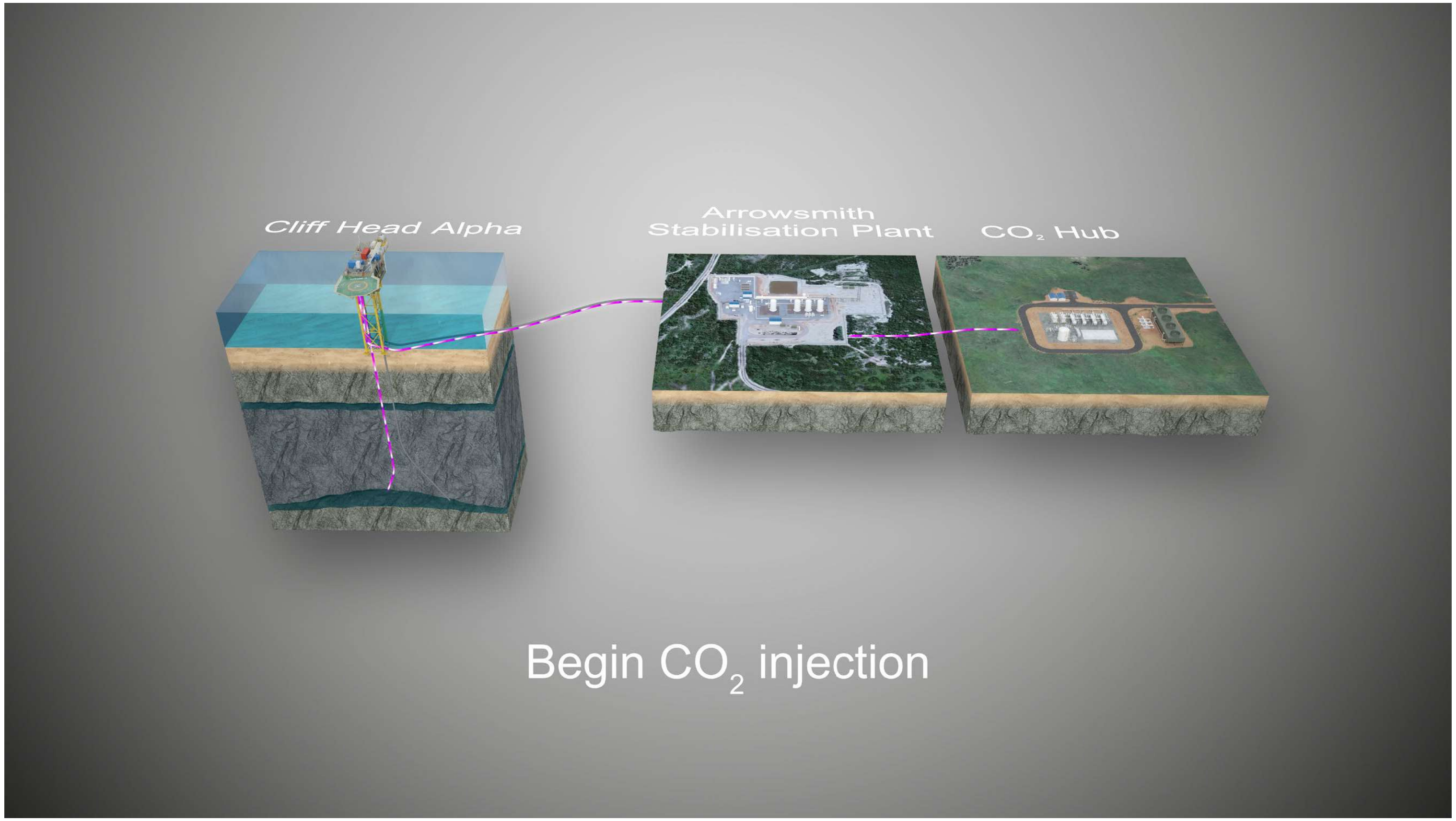
Cliff Head CCS Project Video



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Corporate

- Analyse & implement feasibility studies
- Engagement with prospective project partners

Project implementation

- Permitting
- Site Acquisition
- Commercial Offtake
- Pre-FEED for CCS and Blue Hydrogen; and
- Begin prospective EPCM Contractor engagement

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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- Blue Hydrogen is and will be *significantly cheaper than Green* for the foreseeable future
- Integrated Blue/Green Hydrogen production generates *significant efficiencies and material cost savings*
- Ability to provide CCS to Clean Hydrogen *ideal for producing Clean Ammonia-for-export* into APAC region
- Pilot's Mid West operations are *ideal location for integrated development* of CCS, Blue Hydrogen and Clean Ammonia
- Mid West Clean Energy Project aims to *produce lowest cost clean energy* through CCS through to Clean Ammonia

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16 September 2022

Ms Cate Friedlander
Pilot Energy Limited (PGY)

By email: cfriedlander@pilotenergy.com.au

Dear Ms Friedlander

Pilot Energy Limited ('PGY' or the 'Company'): General – Query Letter

ASX refers to the following:

A. PGY's announcement titled "Good Oil & Gas Conference Presentation" released on the ASX Market Announcements Platform ('MAP') on 7 September (the 'Announcement'), which included amongst other things the following disclosure:

   Slide 5

   Stage 1 - Carbon Capture & Storage Timing: 2025

   - *$50-$60 million net cash flow by 2029*

     *("**Stage 1 Cash Flow Statement**")*

   Stage 2 - Blue H2 Production Timing: 2025 - 2027

   - *Revenue potential of ~ $215 million*

     *("**Stage 2 Revenue Potential Statement**")*

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

   - *Revenue potential of ~ $244 million*

     *("**Stage 3 Revenue Potential Statement**")*

B. PGY's announcement titled "Chairman's General Meeting Presentation" released on MAP on 19 August 2022 disclosing amongst other things the Stage 1 Cash Flow, the Stage 2 Revenue Potential, and Stage 3 Revenue Potential Statements

C. PGY's announcement titled "Completion of Renewable Energy and Hydrogen Technology Feasibility Studies - confirms Mid-West region viability to produce globally competitive clean hydrogen together with multi-staged development pathway" released on MAP on 28 March 2022 disclosed amongst other things:

   Page 2 – Figure 1 Feasibility Study Results Summary

Time Horizon	CCS	Hydrogen	Renewables
2035 Max H2	Cliff Head + Frankland Southern Cluster CCS 66 mm tonnes@$40/tonne **Revenue potential = $2,625m**	Max H2 1,200 ktpa @$5/kg **Revenue = $6,000m p.a.** Clean Ammonia (Utility scale) 480 ktpa @ $700/tonne	Max onshore & offshore 17,800 MW

		Revenue = $335m p.a.	
2030 Mid-Scale	Cliff Head + Frankland CCS 9.5 mm tonnes @$40/tonne **Revenue potential = $380m**	Clean H2 Expansion 61 ktpa@ $5/kg **Revenue = $305m p.a.**	Mid Scale 3,800 MW
2025 – 2027 First to Market	Cliff head CCS 6.4 mm tonnes @$40/tonne **Revenue potential = $255m**	Clean H2 Stage 1 43k tpa @ $5/kg **Revenue = $215m p.a**	First to Market 650MW
	• Cliff Head Injection Rate = 500,000 tpa • Initial Capex = pending completion of feasibility • Target Injection Cost = >A$20/tonne	• LCOH Blue = $1.85 to $2.13/kg • LCOH Green = $3.11 to $5.62/kg • LCOA Clean = $371 to $398/tonne	• LCOE Solar = $36 to $39/MWh • Capacity Factor Solar = 26-29% • LCOE Wind Onshore = $29 to $34/MWh • Capacity Factor Wind Onshore = 43-50% • LCOE at H2 Plant = $42 - 75/Mwh (inc offshore wind in high side)

(Collectively referred to as the "**Figure 1 Revenue Statements**")

Page 3 – Figure 2 Path Ahead – Mid west Clean Energy project Staged Development

Stage 1 – CCS 2025 Revenue potential • CCS = $20m p.a	Stage 2 – CCS to Blue H2 2025 - 2027 Incremental Capex • 8 Rivers Clean Hydrogen and Power = $340m OPEX • CCS = Pending completion of feasibility • Hydrogen = $31m p.a. • Natural Gas = $56m p.a. Revenue • CCS = $12.5m p.a. • Power = $8 – 19m p.a. • Hydrogen sales = $215m p.a.	Stage 3 – H2 Expansion to Clean Ammonia – 2027 -2030 Incremental CAPEX • Renewable Power – 220MW= $320m • Green H2 Integration/ammonia =$320m (electrolyser, NH3 plant) OPEX • CCS = Pending completion of feasibility • Ammonia = $45m p.a. • Natural Gas = $56m p.a. Revenue • Power = $9 – 23m p.a.

		• Ammonia = $244m p.a.

D. Listing Rule 3.1, which requires a listed entity to immediately give ASX any information concerning it that a reasonable person would expect to have a material effect on the price or value of the entity's securities.

E. Listing Rule 3.1A, which sets out exceptions from the requirement to make immediate disclosure, provided that each of the following are satisfied.

"3.1A Listing rule 3.1 does not apply to particular information while each of the following is satisfied in relation to the information:

3.1A.1 One or more of the following applies:

- *It would be a breach of a law to disclose the information;*
- *The information concerns an incomplete proposal or negotiation;*
- *The information comprises matters of supposition or is insufficiently definite to warrant disclosure;*
- *The information is generated for the internal management purposes of the entity; or*
- *The information is a trade secret; and*

3.1A.2 The information is confidential and ASX has not formed the view that the information has ceased to be confidential; and

3.1A.3 A reasonable person would not expect the information to be disclosed."

F. ASX's policy position on the concept of "confidentiality", which is detailed in section 5.8 of Guidance Note 8 *Continuous Disclosure: Listing Rules 3.1 – 3.1B*. In particular, the Guidance Note states that:

"Whether information has the quality of being confidential is a question of fact, not one of the intention or desire of the listed entity. Accordingly, even though an entity may consider information to be confidential and its disclosure to be a breach of confidence, if it is in fact disclosed by those who know it, then it ceases to be confidential information for the purposes of this rule."

G. Section 7.10 of Guidance Note 8, which cautions listed entities against making market announcements with a view to "ramping up" the price of their securities and noting that where an announcement includes a revenue projection or other forward-looking statement, entities may be asked to identify the reasonable grounds on which that statement was made and any material assumptions or qualifications underpinning the statement.

H. ASIC *Regulatory Guide 170: Prospective financial information*, which includes the following guidance on prospective financial information:

a. RG 170.3 Our regulatory experience has identified inherent dangers in disclosing prospective financial information. Some examples include:

(a) issuers discounting, or not taking into account, the variable nature of matters that may influence, or be influenced by, future events. Our experience suggests that prospective financial information is, at best, only a crude indicator of likely achievable results; and

(b) the inherent potential to mislead by disclosing prospective financial information based on hypothetical circumstances or unrealistic assumptions.

RG 170.4 In addition, research has shown that: (a) the release of prospective financial information by management has a significant effect on share prices (indicating that buy/sell decisions are influenced by prospective financial information); (b) perceptions of the likely long-term rate of return are the dominant criteria for investors in selecting a managed investment scheme. For other investment products, the rate of return is seen as a determining factor in making a purchasing decision; and (c) longer time horizons reduce the accuracy of prospective financial information

b. *RG 170.11 - We believe the general test of whether prospective financial information must be disclosed is whether it is:*

   (a) relevant to its audience; and

   (b) reliable (i.e. there must be a reasonable basis for it: see GIO Australia Holdings Ltd v. AMP Insurance Investment Holdings Pty Ltd (1998) 29 ACSR 584).

c. *RG 170.17 - The making of a statement that contains prospective financial information (i.e. a forward looking statement) must have reasonable grounds or it will be taken to be misleading under s728(2) or769C of the Corporations Act. What are 'reasonable grounds' should be determined objectively in light of all of the circumstances at the time of the statement, so that a reasonable person would view as reasonable the grounds for the statement.*

d. *RG 170.18 - We consider that prospective financial information based on hypothetical assumptions (rather than reasonable grounds) is likely to be misleading and provide little information value to investors. In our view, prospective financial information without reasonable grounds is not material to investors, nor would an investor reasonably require it or reasonably expect to find it in a disclosure document or PDS.*

e. *RG 170.24 The making of a statement that contains prospective financial information must have reasonable grounds or it will be taken to be misleading: see RG 170.17–RG 170.19. To demonstrate reasonable grounds, an issuer must be able to point to:*

   (a) some facts or circumstances;

   (b) existing at the time of publication of the information in the disclosure document or PDS;

   (c) on which the issuer in fact relied;

   (d) which are objectively reasonable; and

   (e) which support the information.

f. *RG 170.28 Forward-sales contracts, leases or other contracts that lock in future expenses and revenue of a product/service and the amount of supply may suggest reasonable grounds for prospective financial information because the future revenue and expenses can be reasonably assured for the period of that contract or lease.*

g. *RG 170.29 However, the mere existence of an option in a contract or lease does not create an assumption that it will be exercised. Some further basis is needed. For sales contracts or leases that have a renewal option at the end of the initial term, prospective financial information should only extend to the end of the initial term unless there are reasonable grounds to believe that the option will be exercised. An example is where there is an option to renew a lease, and the lessor has had a long track record of exercising this option to renew the lease and there is nothing to indicate that this will change in the next period.*

h. *RG 170.30 Reasonable grounds for disclosing prospective financial information may exist when there is reliance upon an independent industry expert's report, which:*

(a) is included in or incorporated by reference into the document containing the prospective financial information;

(b) sets out the assumptions underlying that information; and

(c) makes a positive statement that both the prospective financial information and its assumptions are reasonable and the expert does not disclaim liability for the statement.

i. *RG 170.41 - We generally consider that prospective financial information for a period of more than two years may require independent or objectively verifiable sources of information to establish that there are reasonable grounds to provide it. However, for an existing business preparing a statement on estimates for up to two years, we will generally not regard as necessary independent verification if there otherwise appear to be reasonable grounds to make the statement. Directors should state why they believe the information is objectively reasonable. We may still take action on a statement on estimates for up to two years if we believe there are no reasonable grounds to provide it.*

j. *RG 170.42- The reasonable grounds requirement means that there should be a relevant factual foundation for the prospective financial information and that the information is not contrived.: see George v. Rockett (1990) 170 CLR 104 and Re Aldred & Dept of the Treasury (1994) 35 ALD 685.*

k. RG 170.44 Issuers of prospective financial information need to ensure that all material assumptions, including implied assumptions, are reasonable. For example, a disclosure document or PDS might say that 'on the basis of today's price and the yield confirmed by the expert, we expect for every share you hold, you will earn $100 per year by year 14'. Future market conditions have not been disclosed here, so an implied assumption has been made of no change in market conditions over the period of the prospective financial information. This may have an increasingly material impact on the figures the further into the future the prediction extends. If there were no reasonable grounds for that assumption, the statement would be misleading.

l. *RG 170.50 - The general principles in this regulatory guide also apply to advertising because of the interaction of s769C and 1041H.*

Section 769C states:

For the purposes of this Chapter, or of a proceeding under this Chapter, if:

(a) a person makes a representation with respect to any future matter (including the doing of, or refusing to do, any act); and

(b) the person does not have reasonable grounds for making the representation;

the representation is taken to be misleading.

Section 1041H states:

A person must not, in this jurisdiction, engage in conduct, in relation to a financial product or a financial service that is misleading or deceptive or is likely to mislead or deceive.

m. *RG 170.51 It follows that if there is advertising of prospective financial information without reasonable grounds, the advertisement will be misleading. It should be clear from any advertisement that these forward-looking statements are not guaranteed to occur.*

n. *RG 170.52 Principles in this guide may assist in other contexts where a person must have reasonable grounds for stating prospective financial information (e.g. takeovers or scheme documents: see s670A(2)). Whether or not there are reasonable grounds for prospective financial information in these* *contexts will need to be assessed on the particular facts of each case. However, the principles set out in this guide may provide some general guidance.*

o. *RG 170.59 - Investors should be given enough information to enable them to:*

(a) assess whether the prospective financial information is relevant and reliable (i.e. to form their own view about how reasonable the grounds are for making the statement); and

(b) identify with certainty the facts and circumstances that support prospective financial information, as well as being able to demonstrate that the information is reasonable.

p. *RG 170.60 We consider prospective financial information in a disclosure document or PDS should be accompanied by:*

(a) full details of the assumptions used to prepare the prospective financial information (see RG 170.61–RG 170.70);

(b) the time period covered by the prospective financial information (see RG 170.71–RG 170.74);

(c) the risks that the predictions in the prospective financial information will not be achieved (see RG 170.75–RG 170.77); and

(d) an explanation of how the prospective financial information was calculated and the reasons for any departures from accounting standards or industry standards that investors would reasonably expect to be followed (see RG 170.78–RG 170.83).

q. *RG 170.61 - A disclosure document or PDS must specifically disclose any assumptions used in compiling prospective financial information that materially affect the forecast outcome. The assumptions should be detailed and specific enough to enable the investor to work through all of the prospective financial information. This may require details about how returns are calculated during each year that the information covers. Among other things, assumptions about expenditures, revenues, inflation rates and other such variables should be clearly disclosed and highlighted if different assumptions have been used for different parts of the term that the prospective financial information covers.*

r. *RG 170.62 Investors must be able to assess:*

(a) the validity of the assumptions on which the prospective financial information is based;

(b) the likelihood of the assumptions actually occurring; and

(c) the effect on the prospective financial information if the assumptions vary.

s. *RG 170.63 - We expect a disclosure document or PDS to disclose material assumptions about:*

(a) specific future economic conditions; and

(b) particular circumstances affecting a company or financial product and the industries relevant to that company or financial product.

t. *RG 170.64 - Disclosure of the material assumptions allows an investor or adviser to make an informed assessment of an issuer's prospects, or a person as a retail client to make an informed decision whether to acquire the product.*

u. *RG 170.65 - An assessment of the impact of these assumptions on prospective financial information should also be included. However, a disclosure document or PDS does not have to:*

(a) state general assumptions, such as the absence of war or natural disasters, unless the forecast takes these events into account; or

(b) disclose assumptions that would not materially affect the prospective financial information.

v. *RG 170.66 - It is not sufficient to state the general nature of an assumption. Specific quantities or amounts should be set out. For example, it may not be sufficient to state that prospective financial information is based on an anticipated recovery in equity markets, without setting out the amount of the required recovery: see GIO Australia Holdings Ltd v. AMP Insurance Investment Holdings Pty Ltd(1998) 29 ACSR 584.*

w. *RG 170.67 - We consider that because the presence or absence of reasonable assumptions is a factor in any determination of whether an issuer has satisfied the relevant disclosure obligation, the basis for the assumptions underlying the prospective financial information should be stated in the disclosure document or PDS in order that an investor has some means of assessing that information: see Miba Pty Ltd v. Nescor Industries (1996) 141 ALR 525 and Wesfi Ltd v. Blend Investments Pty Ltd (1999) 31 ACSR69.RG 170.68 - Disclosure of the basis for prospective financial information may reduce the capacity of the information to mislead because such disclosure assists the assessment/decision of an investor or retail client.*

x. *RG 170.75 - Any disclosure document or PDS that contains prospective financial information must indicate what factors may lead to a significant difference between the prospective financial information and the actual results. The disclosure of these factors should be in an unambiguous and unequivocal form.*

y. *RG 170.76 The following risks relevant to prospective financial information should be disclosed:*

   (a) risks associated with a particular asset class for the financial product— for example, the volatility of share prices or the fact taxation deductions may be disallowed for scheme interests subject to a product ruling; and

   (b) risks specific to the proposed investment strategy—for example, the risks associated with particular investment plans or investing in emerging industries.

z. *RG 170.78 - Investors must be able to assess the reliability of prospective financial information. To do this, they should be able to assess whether the key assumptions are likely to occur. Therefore, a disclosure document or PDS must disclose material details about the enquiries and research undertaken and the process followed in preparing the information.*

aa. *RG 170.84 - Section 728(2) is not an exhaustive statement of when prospective financial information is misleading. The presentation, accompanying disclosures and terminology used in prospective financial information should also be considered. A statement that is literally true may at the same time be misleading and deceptive: see Hornsby Building Information Centre Pty Ltd v. Sydney Building Information Centre Ltd (1978) 140 CLR 216 at 228.*

bb. *RG 170.85 - If significant information is presented in a way that investors are likely to overlook, a disclosure document or PDS may be misleading: see Fraser v. NRMA Holdings Ltd (1995) 13 ACLC 132 and Pancontinental Mining Ltd v. Goldfields Ltd (1995) 16 ACSR 463. Therefore, a disclosure document or PDS must present the information needed to assess the reliability of prospective financial information in a way that clearly connects both types of information. This usually means that the information about assumptions, and other matters underlying prospective financial information, should be in the same part of the disclosure document or PDS as the prospective financial information itself.*

cc. *RG 170.86 We consider that prospective financial information and associated material should be disclosed:*

   (a) with its assumptions and limits prominently displayed immediately after the information, or in a way that ensures that an investor is made aware of the existence, nature and quantity or amount of the assumptions and limits at the time they read it;

(b) with the assumptions and limits displayed in a way which is not less prominent than the prospective financial information (i.e. when compared to the 'key' statement); and

(c) so that prominence is not given to a more favourable figure or fact in the forecast range if a range is cited.

A complete copy of the Regulatory Guide is available at:

https://asic.gov.au/media/1240943/rg170-010411.pdf

Request for information

Having regard to the above, ASX asks PGY to respond separately to each of the following questions and requests for information:

1. In respect of the Stage 1 Cash Flow Statement please provide details of the following, including where the information has been disclosed by PGY:

   1.1 full details of the assumptions used to prepare and generate the Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029;

   1.2 the facts and circumstances that support Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029;

   1.3 the risks that the Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029 will not be achieved; and

   1.4 an explanation of how the Stage 1 Cash Flow Statement of $50-$60 million net cash flow by 2029 was calculated.

2. In respect of the Stage 2 Revenue Potential Statement please provide details of the following, including where the information has been disclosed by PGY:

   2.1 full details of the assumptions used to prepare and generate the Stage 2 Revenue Potential Statement;

   2.2 the facts and circumstances that support Stage 2 Revenue Potential Statement;

   2.3 the risks that the Stage 2 Revenue Potential Statement will not be achieved; and

   2.4 an explanation of how the Stage 2 Revenue Potential Statement was calculated.

3. In respect of the Stage 3 Revenue Potential Statement please provide details of the following, including where the information has been disclosed by PGY:

   3.1 full details of the assumptions used to prepare and generate the Stage 3 Revenue Potential Forecast;

   3.2 the facts and circumstances that support Stage 3 Revenue Potential Statement;

   3.3 the risks that the Stage 3 Revenue Potential Statement will not be achieved; and

   3.4 an explanation of how the Stage 3 Revenue Potential Statement was calculated.

4. In respect of the Figure 1 Revenue Statements please provide details of the following, including where the information has been disclosed by PGY:

   4.1 full details of the assumptions used to prepare and generate each of the revenue statements prospective in Figure 1, in particular the revenue statements in 2035 of $2.625 Billion for CCS and $6 Billion for Hydrogen.

   4.2 the facts and circumstances that support each Figure 1 Revenue Statement;

4.3 the risks that each Figure 1 Revenue Statement will not be achieved; and

4.4 an explanation of how each Figure 1 Revenue Statement was calculated.

5. For each of the cash flow and revenue statements referred to respectively in questions 1 to 4 above, please advise if PGY entered into any agreements, including forward sales contracts in support of these statements?
6. For each of the cash flow and revenue statements referred to respectively in questions 1 to 4 above, please indicate where the directors of PGY have disclosed why they believe the information supporting each revenue statement is objectively reasonable? (see RG 170.41).
7. Please confirm that PGY is complying with the Listing Rules and, in particular, Listing Rule 3.1.
8. Please confirm that PGY's responses to the questions above have been authorised and approved in accordance with its published continuous disclosure policy or otherwise by its board or an officer of PGY with delegated authority from the board to respond to ASX on disclosure matters.

Once ASX has received and analysed the information above, it may deem it necessary to make further enquiries of PGY.

When and where to send your response

This request is made under Listing Rule 18.7. Your response is required as soon as reasonably possible and, in any event, by no later than **4.00 PM AWST Wednesday, 21 September 2022**. You should note that if the information requested by this letter is information required to be given to ASX under Listing Rule 3.1 and it does not fall within the exceptions mentioned in Listing Rule 3.1A, PGY's obligation is to disclose the information 'immediately'. This may require the information to be disclosed before the deadline set out in the previous paragraph and may require PGY to request a trading halt immediately.

Your response should be sent to ASX by e-mail at **ListingsCompliancePerth@asx.com.au**. It should not be sent directly to the ASX Market Announcements Office. This is to allow me to review your response to confirm that it is in a form appropriate for release to the market, before it is published on the ASX Market Announcements Platform.

Listing Rules 3.1 and 3.1A

In responding to this letter, you should have regard to PGY's obligations under Listing Rules 3.1 and 3.1A and also to Guidance Note 8 Continuous Disclosure: Listing Rules 3.1 – 3.1B. It should be noted that PGY's obligation to disclose information under Listing Rule 3.1 is not confined to, nor is it necessarily satisfied by, answering the questions set out in this letter.

Release of correspondence between ASX and entity

We reserve the right to release a copy of this letter, your reply and any other related correspondence between us to the market under listing rule 18.7A.

Questions

If you have any questions in relation to the above, please do not hesitate to contact the writer.

Yours sincerely

Michael Bridge
Manager, Listings Compliance