Research as a Service

# Pilot Energy Ltd

**Scoping Paper**

## Sometimes it pays to be long winded

Energy

**16 December 2020**

**Pilot Energy Ltd is a junior oil and gas exploration company that is embracing a bold new ventures programme. To that end the company is evaluating the potential growth opportunities in renewable energy by submitting an Expression of Interest (proposal) to the WA Government under its Oakajee Strategic Industrial Renewable Hydrogen programme, to develop the Cliff Head & Mid-West Wind and Solar Project (CH-MWWSP) leveraging and complimenting material working interests in the Cliff Head oil production facilities and WA-481-P offshore WA. Pilot is looking over the horizon, identifying that a renewable energy project could support an interconnected development strategy with multiple commercial outcomes. There is a portfolio of potential, likely worth more than the sum of the parts especially leveraging its acreage and infrastructure assets. The submission is due by 24-December.**

### Scope

This report has been commissioned by Pilot Energy to present investors with an analysis of the opportunities emerging for the company over the next 12 months. The company will be pursuing growth opportunities within its core E&P business, particularly the Cliff Head production enhancement campaign, but also via the CH-MWWSP with the submission of an EOI by 24-Dec. The oil and gas business is high-risk by definition and the transition to a renewable model is transformational but potentially long-dated at this stage.

### Business model

Pilot Energy is a junior oil and gas company holding a production interest in the offshore Cliff Head Oil Field with expansion options; and an accompanying exploration portfolio in the North Perth Basin. The company is looking to leverage its acreage and infrastructure base to underpin a strategic blue-print for expansion into the renewable energy space and the diversified revenue streams that could emerge. Future oil production could service upstream exploration and appraisal commitments. Financing for the renewable opportunities could be provided partly through partnering.

### Scenario analysis

Our analysis and review of Pilot Energy's opportunities **assumes the merger with Royal Energy will be approved** by shareholders at the scheduled EGM. We have evaluated the PGY portfolio against a range of risk factors based on our assessment of the operating environment accounting for commodity prices, location, phase of exploration, timing and scale of work programmes; and the probability of success associated with the CH-MWWSP submission. However, we note our current assumptions are subject to potentially significant adjustment as growth opportunities become better defined over time.

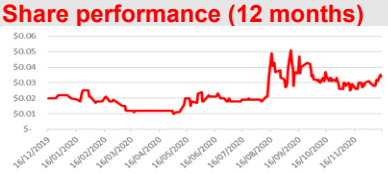
### Valuation of $17m (4.9cps)

Valuing early phase exploration and even production growth assets is a subjective exercise, particularly when work programmes and financing are uncertain. We set our base asset value against risk-weighted development scenarios applying where appropriate, discretionary probability weightings to pricing, volume and success factors, which we believe are reasonable given the commercial operating environment and available data. We assign a risked valuation of $17m (4.9cps) to the upstream assets against a **reference share price of 3.4cps. We cannot directly ascribe** any value to the CH-MWWSP in particular or to a greater renewables opportunity at this stage, noting any nominal value at this point resides in the IP associated with the feasibility study. However, it's worth commenting that an integrated renewables development **could deliver an equity value of $90mn through >$1.7Bn** across the life cycle, on a 1.1GW project alone. We add that power generation would be only one component of a what would likely be an multi=stream project opportunity.

#### Share details

| | |
|---|---|
| ASX Code | PGY |
| Share price (15 Dec) | $0.034 |
| Market Capitalisation | $7.4M |
| Shares on issue | 218M |
| Net cash (est) at 10 Dec 2020 | $4M |
| Free float | ~51.4% |

#### Share performance (12 months)




#### Upside Case

- Above model production rates at Cliff Head delivering strong net operating cashflow
- Recovery in commodity (oil) prices
- Derisking the CH-MWWSP proposal through partnering and better defining the greater renewable power opportunities (hydrogen and commercial $CO_2$).

#### Downside Case

- Cliff Head underperforms, generating the risk of earlier than expected abandonment
- Commodity (oil) prices retracing historical lows.
- No material progress on renewable energy development options over the next 12 months

#### Board of Directors

| | |
|---|---|
| Brad Lingo | Executive Chairman |
| Michael Lonergan | Non-Executive Director |
| Daniel Chen | Non-Executive Director |

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# Pilot Energy Limited – Embracing the new energy paradigm

**Pilot Energy limited (PGY.AX) has been listed on the ASX since 2012, changing its name and ticker to the current designation in Aug-2015. The company holds an upstream portfolio of production and early stage exploration assets in the mid-west of WA. Whilst the E&P portfolio provides growth opportunities it's not the transformational investment driver. The company is looking to transition into the renewable energy space, leveraging its advantageous position through WA-481-P and infrastructure facilities at Cliff Head into a multi optioned development portfolio. To that end the company is well advanced on a feasibility study (the Cliff Head & Mid-West Wind and Solar Project – CH-MWWSP) to underpin a submission to the WA State Government seeking Expressions of Interest to develop a major integrated renewable project with hydrogen manufacture in the mid-west. The submission is due 24-December. The opportunity is conceptual at this stage but up- and mid-stream assets provides PGY with a significant opportunity to pursue an integrated development with multiple commercial outcomes. This is not simply a power generation play, in our view.**

**Exhibit 1: PGY NAV – there's upside in the base business**

| | | Pr | A$mn | A$/share | |
|---|---|---|---|---|---|
| Cliff Head | 21.25% | 100% | $4 | $0.013 | Using commodity price assumptions as outlined in 'Risks' section |
| Cliff Head Contingent Resources | 21.25% | 50% | $5 | $0.014 | Risked weighted against existing operating margins |
| Other Discoveries | 100% | 5% | $3 | $0.010 | |
| Exploration | various | | $4 | $0.010 | Nominal only |
| Other – VEN shares | | | $0 | $0.001 | 5mn shares at 6.1cps |
| | | | **$16** | **$0.046** | |
| **Cash** | | | $4 | $0.012 | Estimated as at 15-Dec |
| **Corporate** | | | ($3) | ($0.010) | |
| **TOTAL** | | | **$17** | **$0.049** | |
| Shares issued (mn) | 351 | | | | Share base forward adjusted for the current equity issues, anticipated shareholder approval of the Royal Energy merger and second tranche of WA481P acquisition |

Source: RaaS analysis; Risked values based on look through Probabilities of Success (POS) for drilling and weighted by a RaaS risk overlay. Weightings at RaaS' discretion.

## Risk adjusted asset valuation at $17mn…the upside is blowing in the wind

We value the PGY base E&P business using estimated unit values on reserves and; contingent and prospective resources adjusted for our discretionary probability weighting (1-risk %), to derive a gross portfolio worth. Probability weightings are subject to change as the company delivers the next drilling results and variations in operating conditions.

Where possible we model development outcomes based on broad guidance and historical precedents but note these are adjusted and overlain by a RaaS risk outlook reflecting our views of the technical and commercial uncertainties associated with delivering the projects as modelled.

**We have not included a valuation of the CH-MWWSP proposal** at this time but have highlighted based on our application of the Deloitte EV/MW transaction metrics for offshore wind farms, **upon success** the project could be worth $90mn to >$1.7Bn (unrisked) progressing through the natural project life-cycle of a 1,092MW wind-based power generation project only. We add that the CH-MWWSP represents only one option within a broader and deeper renewables opportunity centred on the WA481P permit.

Our nominal valuation range of the renewable energy project set should be considered as a minimum at this stage.

## A quick SWOT – The answer is blowing in the wind

As typical for small resources companies – offsetting strengths and weaknesses, opportunities and threats. The base business provides an investment platform, but the opportunity set lies in the renewables options.

**Exhibit 2: SWOT Analysis and Comments**

| Strengths | Comments |
|---|---|
| An infrastructure advantage for the Mid-West Wind and Solar Project (CH-MWWSP) application | The **optionality provided by the Cliff Head production platform** and pipeline easement (shore crossing) could deliver a capex advantage of up to $150mn (perhaps more). |
| Offshore acreage (WA-481-P) provides **multiple offshore development points** | If successful**, the CH-MWWSP could be replicated** across the existing acreage footprint with potentially an easier and quicker approval process. |
| There is '**multi-project'** potential that can be leveraged from a wind-solar development. | **The renewable opportunity is not just about 'electrons'**, with hydrogen production and commercial $CO_2$ opportunities including production enhancement at Cliff Head. |
| Cliff Head production and production growth opportunities…there is a 'P' to this E&P | **Production supports the base business** and avoids the need for significant 'stay-in-business' financing. |
| The 'E' in E&P | Any new discoveries will lie within an infrastructure network making economic thresholds low with short-lead times to first product. |
| Assets located in close proximity to infrastructure-hubs. | Access to plants and pipelines **with ullage** enhances success case economics for the E&P business |
| **Weaknesses** | **Comments** |
| The relatively low-level nature of renewables penetration into downstream industries. | Constraints on offtake, uncertain pricing outcomes, constraints on 'scale', the need for export markets**, being an early mover can also mean higher cost-lower margin outcomes**. |
| In the absence of equity capital, the company is cash flow constrained…financing is always an issue for smaller companies | Not unusual for small-cap energy stocks. The availability of capital **can be a significant impediment to progressing and delivering growth projects** potentially leading to 'cheap' dilution at the equity or asset level. |
| The 'E' in E&P | Exploration can be a capital-intensive game, although the outgoings should be low through the medium term.<br>All exploration comes with intrinsically high risk with no guarantee of success and there's a relatively narrow window of production life remaining at Cliff Head. |
| The CH-MWWSP project is only an EOI submission at this stage with no guarantee of a successful award | Without 'something' of this nature in the offing, the portfolio **lacks a transformational opportunity**. |
| There is production growth opportunity but without the CH-MWWSP there's little to differentiate from peers in an E&P sense | …and **PGY is not the leveraged exposure** to Cliff Head as a production and growth asset. |
| **Opportunities** | **Comments** |
| Success at the CH-MWWSP **can be replicated within the existing footprint.** | **Expansion provides partnering opportunities**…it's likely the development roll-out won't stop at 'one'.' |
| Acceleration of the development of renewables | **Renewables work better with gas**…and the North Perth Basin is a significant gas and infrastructure hub. |
| Bigger companies with bigger balance sheets looking for a short-cut. | Upstream companies jumping on the renewables train as adjuncts to their existing business models **could see PGY as an attractive partner**. |
| **Threats** | **Comments** |
| Abandonment costs at Cliff Head | Should the CH-MWWSP not proceed, the Cliff Head oil predevelopment could move into an abandonment phase well before 2030 triggering potential capital costs of around $10mn by our estimate. |
| Rush to market – there are bigger companies with bigger balance sheets | It's not a band-wagon yet, but many upstream companies are jumping on the renewables train, either as a significant change to business or as part of an emissions offset strategy…**PGY could simply be 'outbid'** |
| Bigger companies with bigger balance sheets looking for a short-cut. | **How far can PGY drive the value** proposition that is the CH-MWWSP Project before (potentially) being bought or selling out? |
| Persisting or returning CoVid-19 restrictions | The virus is not gone! Restrictions on travel and the supply chain can flow through to project delivery |

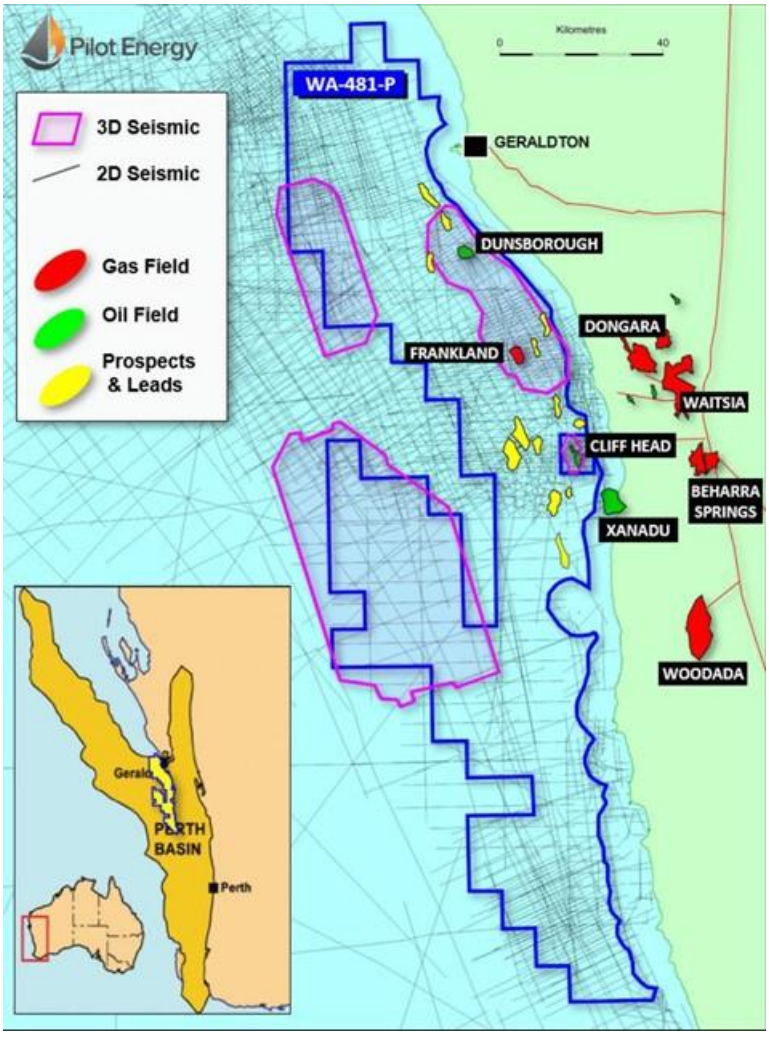
Source: RaaS analysis

## Evaluating an anchor project – the Mid-West Wind and Solar Project

Pilot Energy is a conventional upstream exploration company pursuing an energy transition strategy based on integrating gas supply with downstream commercial options through the production of blue hydrogen and commercial usage of CO2 at a minimum to support the potential for enhanced oil recovery (EOR) at Cliff Head.

As the material point of differentiation, the company has commenced a detailed feasibility study evaluating the development of an integrated offshore wind/onshore wind and solar project ("Cliff Head & Mid-West Wind and Solar Project" – CH-MWWSP) within the parameters of the WA State Government initiative seeking expressions of Interest for development of up to 1.5GW of renewable electricity and hydrogen generation.

**Exhibit 3: The areal extent of WA-481-P also holds conventional exploration opportunities…two bites from one asset**




Source: Company data

Anchoring the strategy, the company is looking to leverage the existing offshore infrastructure assets of the Cliff Head oil project, both the offshore platform and connecting pipeline, as a pivotal development point, providing we think, a significant (c.$150mn) capital and operational advantage over competing submissions.

Pilot has been putting the puzzle pieces together – undertaking a merger with the unlisted entity Royal Energy to secure:

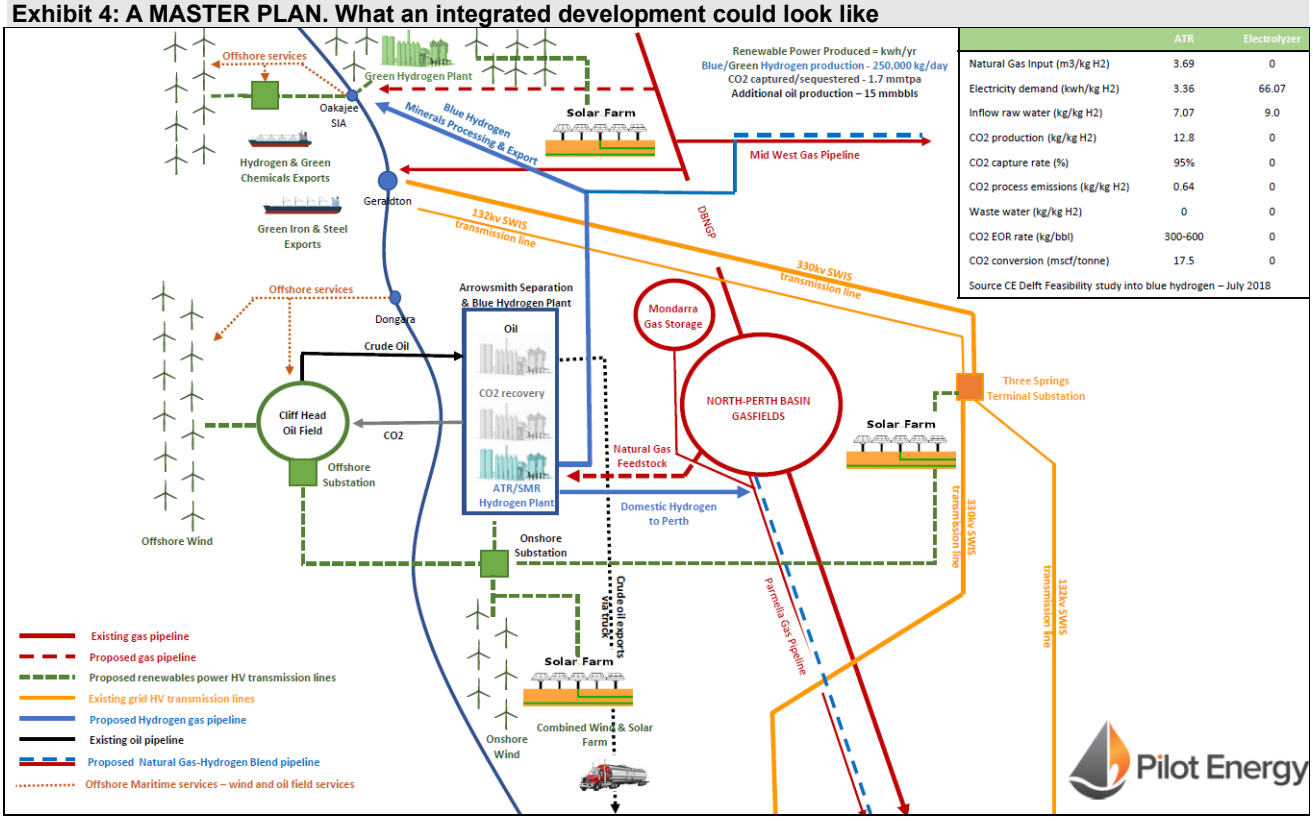
- a 21.25% economic interest in the Cliff Head Oil Field JV and associated infrastructure;

- operational control of Cliff Head Oil Field JV through 50% ownership of the Cliff Head Oil JV operator; and
- acquiring an additional 40% interest in WA-481-P. Noting the interest is subject to a farmout proposal to Triangle Energy (ASX.TEG) after which a JV agreement would see PGY holding 21.25% of the permit.

Acquiring a significant interest in Cliff Head and WA-481-P provides a base for Pilot to drive its strategy of energy consolidation and put the company in a leading position to "…integrate three critical platforms essential to the successful delivery of the energy transition."

ASX release 25-Sep

**Exhibit 4: A MASTER PLAN. What an integrated development could look like**




| | ATR | Electrolyzer |
|---|---|---|
| Natural Gas Input (m3/kg H2) | 3.69 | 0 |
| Electricity demand (kwh/kg H2) | 3.36 | 66.07 |
| Inflow raw water (kg/kg H2) | 7.07 | 9.0 |
| CO2 production (kg/kg H2) | 12.8 | 0 |
| CO2 capture rate (%) | 95% | 0 |
| CO2 process emissions (kg/kg H2) | 0.64 | 0 |
| Waste water (kg/kg H2) | 0 | 0 |
| CO2 EOR rate (kg/bbl) | 300-600 | 0 |
| CO2 conversion (mscf/tonne) | 17.5 | 0 |

Source CE Delft Feasibility study into blue hydrogen – July 2018

Source: Company data

We would add that the renewables opportunity is not limited to the CW-MWWSP option. **The WA-481-P footprint is extensive enough and sufficiently exposed to a high-quality wind resource to support multiple projects.** We base our analysis on the CW-MWWSP as the most immediate opportunity.

The potential to combine a sustaining, high quality offshore wind resource and manufacturing opportunity with existing offshore and onshore infrastructure and if necessary, support from existing, large-scale gas production operations underpins the company's project premise and strategy. The proposal is supported by a tangible pathway to commercialisation.

Pilot Energy is not breaking new ground per se as there are global, operating analogues underpinning the evaluation and BP is also considering an option for a 1.5GW, wind and solar project in WA – but PGY is up at the forefront of the process in Australia and in that regard holds a strong early mover advantage in our view.

As part of the feasibility study, PGY will also be investigating the potential for the establishment and integration of a hydrogen production plant using the natural gas resources within the hub. An integrated project provides multiple ways to market and multiple revenue streams…as an electricity (power) provider, a hydrogen seller and with commercial potential from the CO2 stream formed as a natural product of the hydrogen process (**Exh 4**).

The prevailing COVID vaccine roll-out has highlighted the tightness in the global, industrial $CO_2$ market (used as a refrigerant and in drink manufacture) and although outside of the scope of the feasibility study we'd suggest there is the potential to sell the gas on a commercial basis.

Additionally, $CO_2$ is also used in the upstream oil industry to enhance oil recovery from late stage operations, noting that the Cliff Head Oil Field may benefit significantly from this process.

We caution that the feasibility study will focus on the renewable generation and hydrogen manufacture aspects and any additional options are somewhat conjectural, but it's worth highlighting that from **'one can come many'** – success can lead to multiple development options dependent on the relationship economics.

We assess the risks and uncertainties associated with the hydrogen manufacturing option in Appendix 2 but would just add a rider here that cost-effective methods of bulk hydrogen production must be developed for it to truly be seen as a competitive fuel option. However, given the pace of technology change in the renewables sector and push for lower carbon options, we would not be surprised if market options and product penetration accelerates faster than expected.

The Expression of Interest round is targeting foreign and national developers with the potential and expertise to get involved in the commercial production of green hydrogen as a 'value add'. The WA Government has indicated it's looking for hydrogen producers and consumers to submit proposals, which also provides the option for joint or complimentary proposals.

**Pilot anticipates spending approximately $1.2mn on the feasibility study to support its EOI which is due to be submitted by 24-Dec-2020**

At this stage, there is no date for a Government decision and we would expect there will likely be requests for additional data and clarifications during the review and assessment process.

**BP assessing wind and solar project in WA**

In May-2020, it was reported that BP was assessing the feasibility of constructing a 1.5GW wind and solar project in WA conditional on the basis that the government was committed to a commercial development of a renewable hydrogen production facility, with an eye to the export market.

The company is actively canvassing wind and solar options in the area around Geraldton.

The significance of the BP interest is the focus on the opportunities of renewable hydrogen replacing fossil fuel alternatives and the potential to supply manufacturing and industries like steel making at scale.

The BP project in W.A. will be pointed towards the production of ammonia, which is cheaper to store than hydrogen, with an existing large-scale supply chain in place servicing the agriculture industry.

*"The feasibility study will look at issues such as the export potential, grid connections and the need, if any, of new transmission links, the siting of wind and solar, and the technology costs. Combining wind and solar is likely to deliver a capacity factor of around 70% according to studies, although any hydrogen and ammonia production can be timed for when the sun shines and the wind blows."*

Source: https://reneweconomy.com.au

## Putting the pieces together

We live in a new energy paradigm – there is more pressure and focus on the traditional models of energy supply and companies must adapt.

Driven by an increasing need to address climate change issues related to carbon emissions, renewable energy alternatives are now firmly set on the societal agenda as evidenced by recent publications and initiatives from the Federal Government and in this specific case, the WA State Government.

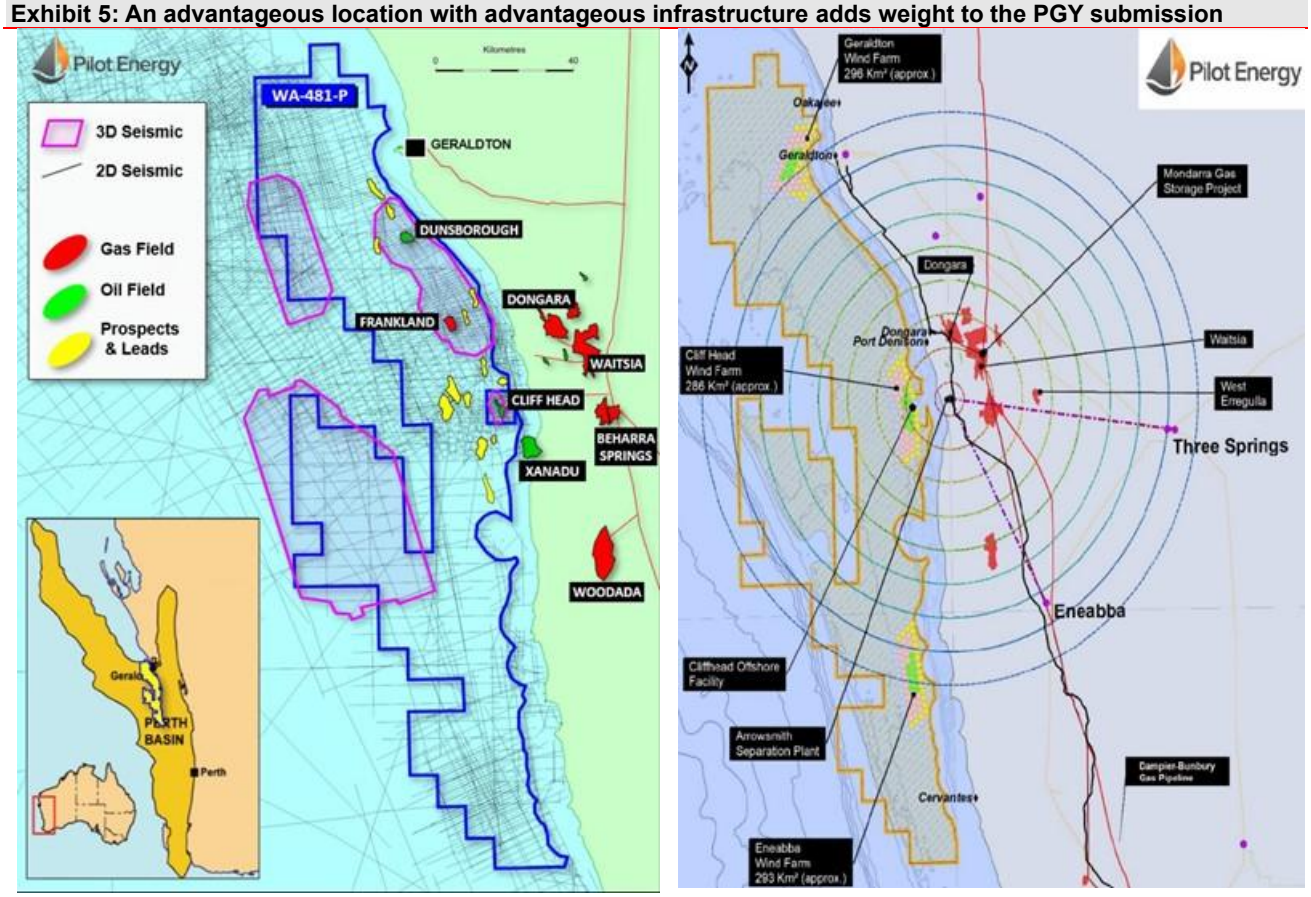
### The Mid-West Wind and Solar Project…a transformational opportunity

On 18-Sep, the West Australia government invited industry to submit expressions of interest to develop a 1.5GW renewable energy, hydrogen hub in the Oakajee Strategic Industrial Area, north of Geraldton some 435km from Perth. The government has indicated the hub could host up to 1.25GW of wind power and up to 270MW of large-scale solar generation.

The mid-west region of W.A. already hosts numerous wind and solar farms; and is recognised for its world-class wind and solar energy potential as outlined in numerous studies.

*'IEA Offshore Wind Outlook Report 2019' and 'Prospective Hydrogen Production regions of Australia'*
https://d28rz98at9flks.cloudfront.net
https://databank.worldbank.org/reports.aspx
https://www.ga.gov.au/scientific-topics/energy/resources/other-renewable-energy-resources/wind-energy

**Exhibit 5: An advantageous location with advantageous infrastructure adds weight to the PGY submission**




Source: Company data

The generation concept being assessed for the project is to develop a major offshore wind farm within the boundaries of WA-481-P and to integrate this with an onshore solar farm to generate a large-scale source of (potentially) low cost green energy as a base load supply.

The working model for the purposes of the study is for a 4-stage development, to generate up to 1.1GW of offshore wind power that should maximise the potential of the offshore component of the project.

We note PGY has identified three potential areas within WA-481-P which would be suitable, although the high-grade opportunity leverages the Cliff Head offshore infrastructure.

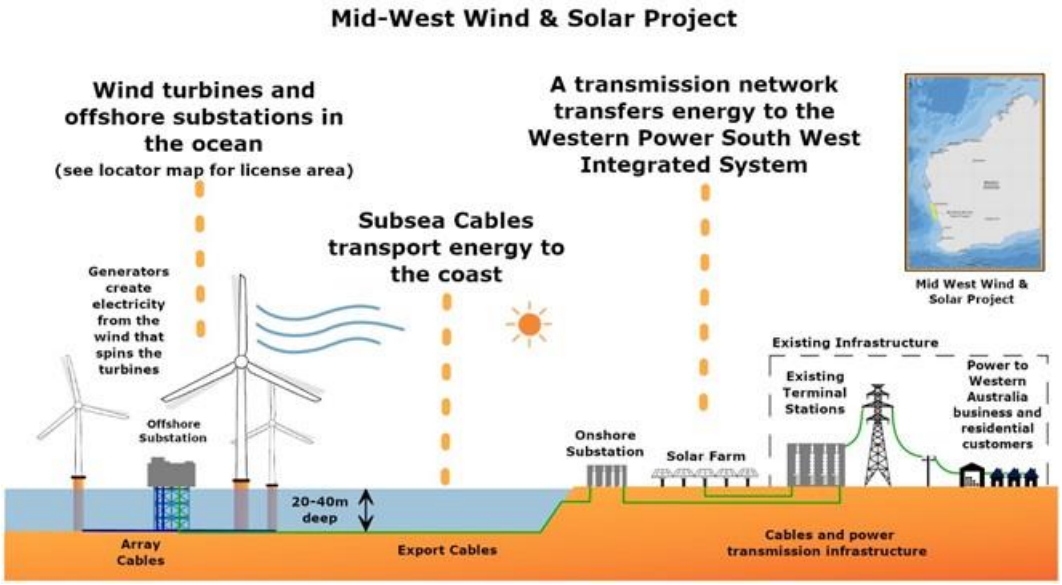
The graphics in **Exh-5 and -7** show wind-turbine opportunities at the three points within the permit:

- the Central Project Area directly overlying the Cliff Head facilities;
- the Geraldton Project Area at the northerly reach of WA-481-P and;
- the Eneabba Project Area at the southerly margin of the permit.

It is envisioned that each area could comprise up to seventy-eight (78), 14MW wind turbines located at least 14km offshore and in water depths of between 20-40m, within the confines of WA-481-P. In essence, the renewables opportunity doesn't begin and end with the Cliff Head area.

**Exh-4 and -6** puts the project design in context – linking the offshore phase into the onshore solar farm phase and thence into the existing transmission network.

**Exhibit 6: A simple schematic – tying the offshore and onshore together**




Source: Company data (not to scale)

The mid-west region of WA has been identified as an area with some of the best solar and wind resources in the world. We focus mostly on the wind generation aspects of the plan which is expected to deliver the majority of the power supply.

Commercially available offshore wind turbines are currently designed to operate most efficiently at wind speeds of greater than 6m/s, the Global Wind Atlas (www.globalwindatlas.com) indicates the average wind speeds in the area of interest (coastal mid-west WA) at over 8m/s, based on annual averages.

We note the International Energy Agency (IEA) in its comprehensive study on global offshore wind to date has also highlighted that Australia has some of the best wind resources in the world.

*"Meso-scale maps show that Australia's greatest wind potential lies in the coastal regions of western, south-western, southern and south-eastern Australia with high wind resources (wind speeds above 7.5m/s)."*

We have highlighted the development and operational advantage PGY holds through the capacity to leverage the renewables opportunity using the current Cliff Head offshore infrastructure, which is also a critical finding of the IEA study which suggests:

*"…synergies between offshore wind and offshore oil and gas activities provide new market opportunities"* through sharing *"…technologies and elements of the supply chains".*

The study suggests that *"…about 40% of the full lifetime costs of an offshore wind project, including construction and maintenance, have significant synergies with the offshore oil and gas sector."*

On a greenfields basis, the obvious synergies include the industry experience in the construction of the foundations, subsea structures and platforms for offshore wind often in difficult operating environments (deep and turbulent water, storm prone areas).

On a practical level, management has indicated that utilising the Cliff Head infrastructure as an anchor point could deliver a capital saving in the order of $150mn.

### Renewables work best with gas

The wind doesn't always blow at the required rate, although in coastal areas that is a rarity and the sun doesn't always shine. In our view, an energy storage component (battery) or peaking plant (gas fired) will likely be required to support base load supply and smooth the vagaries of the elements.

The WA Government has indicated it is open to supporting a renewable power project with gas leveraging the pre-existing infrastructure but will also consider energy storage options (e.g. battery technology or other forms).

From this perspective, the CH-MWWSP is ideally located with major gas transmission pipelines in proximity **(Dampier-Bunbury and Parmelia pipelines)** and new, major gas discoveries in development – securing gas is unlikely to be an issue.

Hydrogen production adds value to power generation

Hydrogen manufacture is the emerging product in the move away from fossil fuels. Although there are a number of natural applications for H2 as a transport and generation fuel; and particularly as a source of energy in high-temperature processes (steel, cement and refining sectors), the penetration of the gas on a global basis is small and concentrated.

To put the size of the hydrogen market in context and as a comparison in value terms only, projections as to growth of the industry range from US$165Bn pa by 2027 to US215Bn pa by 2024 on a CAGR basis of 4.3-6%, versus the current size of the global oil industry at US$10.6Tr pa (72.6Mbd at US$40/b – Nov-2020).

However, there is rising demand for cleaner fuels with increasing government regulations for desulphurisation of transport fuels which is expected to fuel market growth. Hydrogen is an effective energy carrier and which is anticipated to significantly increase penetration into newer markets and end uses.

As an important component of the PGY feasibility studies, a hydrogen production facility would provide a critical link between generation and additional (other than H2) end markets.

Any commentary on the potential of the hydrogen component of the proposed development should be read in conjunction with the discussion in Appendix 2 and p.24, particularly noting the areas of risk and commercial uncertainties at this early stage.

Carbon dioxide can add revenue, not just cost

The company has indicated the hydrogen plant will likely be 'blue' using the ATR/SMR process with natural gas a feed stock and generating CO2 as an additional end product. To complete the 'blue' loop, the carbon has to be sequestered or used. PGY will likely have to address this issue within its feasibility study and we can see a couple of obvious commercial uses for the output.

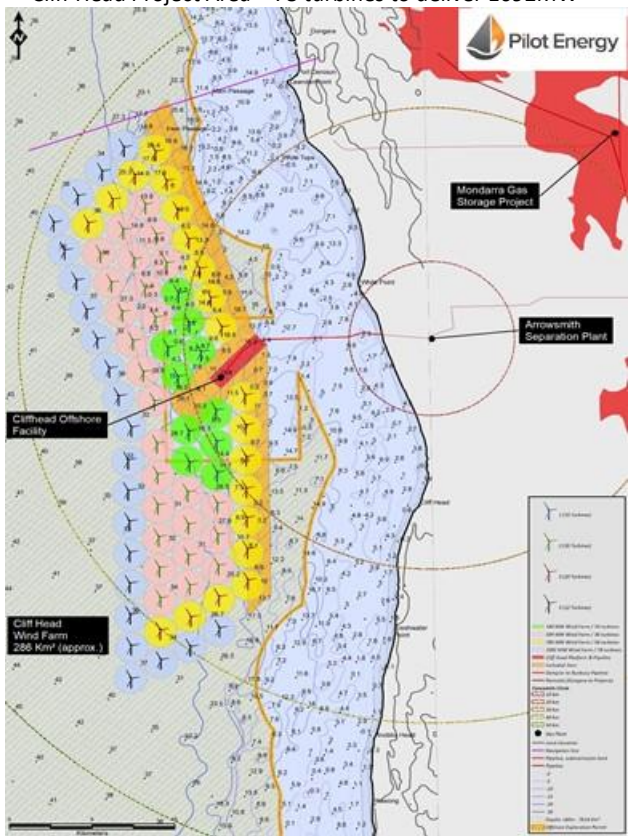
The most directly economic potential we can see is the use of CO2waste in a closed loop Enhanced Oil Recovery Project (EOR) at Cliff Head.

CO2-EOR is a commonly used oil industry process to increase production rates and recoveries from what would otherwise become by-passed and remnant oil volumes. The successful application of an EOR project at Cliff Head could deliver significant recoverable upside to the current remining (gross) reserves of 1.44Mb.

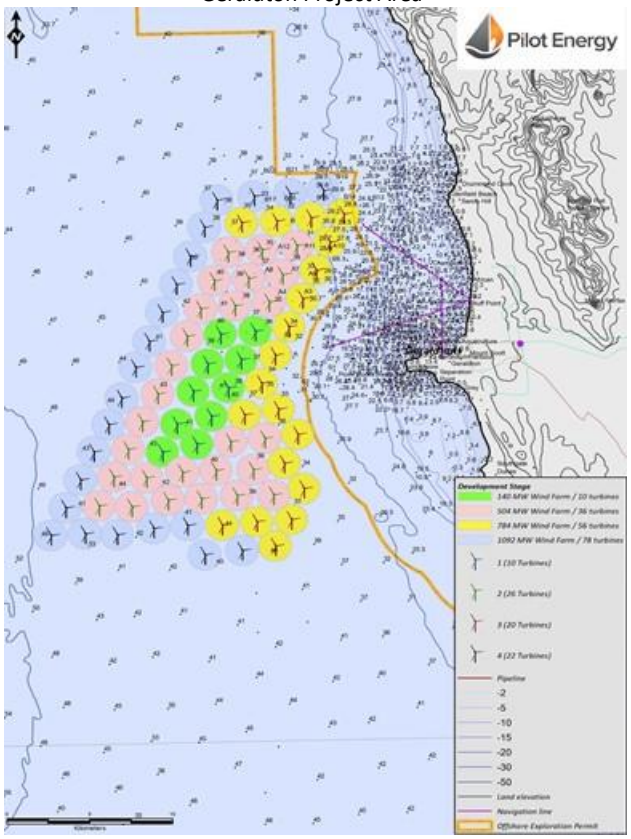
We suggest there's also potential for the addition of a commercial scale (150tpa plus) plant to generate industrial use CO2, to an expanded, integrated project. The processing is simple and the market is there, noting the proposal being evaluated by Vintage Energy (VEN.ASX) and Supagas Pty Ltd to establish a commercial plant in the onshore Otway Basin.

**Exhibit 7: The scope for wind generated power is not limited to the Cliff Head Project area…there are growth options of identical scope and size**

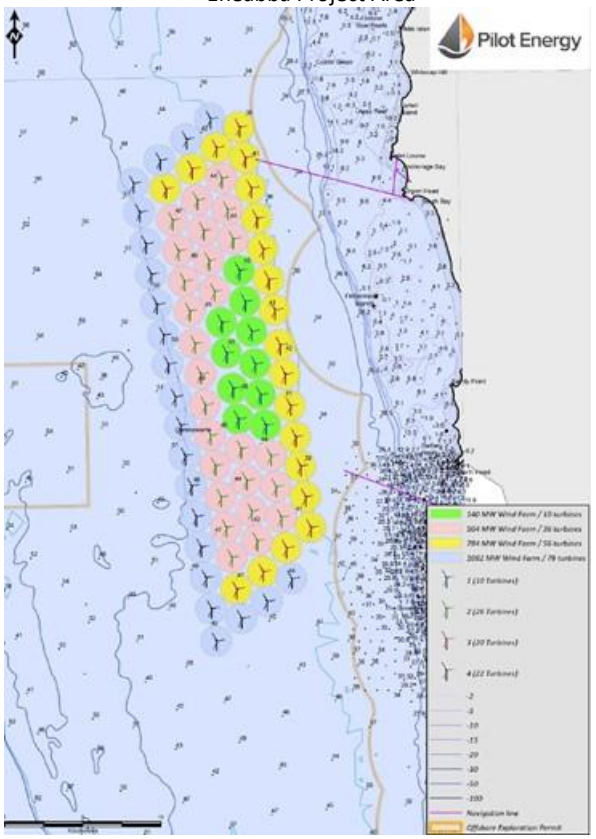
Cliff Head Project Area – 78 turbines to deliver 1092MW




Geraldton Project Area




Eneabba Project Area




Source: Company data (refer ASX release 4-September)

## Merging the opportunities

Pilot has agreed to align its interests in the offshore Perth Basin upstream assets and the CH-MWWSP with the operator of the Cliff Head JV (Triangle Energy) given the commonality of assets and logical operating efficiencies.

After the round-robin of capex carries, PGY will effectively end up some $300k better off.

On an operational level, in the upstream, the smoothing of working interests between the Cliff Head PLs and surrounding exploration acreage make next phase developments simple, without the need for separate access, processing or unitisation agreements.

The entry of TEG into the CH-MWWSP also aligns the entire opportunity set with common partners across the respective areas of interest and what should be seamless agreements with respect to growth options and infrastructure use.

**Exhibit 7: Aligning interests should drive upstream and renewables options more efficiently**

| Asset/Interests | PGY | TEG | PGY | TEG | Consideration |
|---|---|---|---|---|---|
| | Before | | After | | |
| Cliff Head Production | 21.25% | 78.75% | 21.25% | 78.75% | |
| WA-481-P | 100% | | 21.25% | 78.75% | PGY to receive $300k in back costs and full carry through the remaining three-year work programme and commitments – estimated at up to $1.22mn |
| | | | | | Net carry to PGY ~$260k |
| Wind-Solar Project | 100% | | 80% | 20% | PGY to fully carry the cost of the feasibility study of the CH-WWSP to submission – estimated at $1.2mn |
| | | | | | Net carry to TEG ~$240k |

Source: Company data; * After shareholder ratification of Royal Energy merger

## What could the Cliff Head & Mid-West Wind and Solar Project be worth?

Valuing the CH-MWWSP Project as an integrated opportunity is too difficult at this stage, particularly given the as yet still conceptual nature of the feasibility study, which at the submission stage remains a conceptual work with the potential for significant changes through the evaluation process we suggest. We would also highlight the significant uncertainty around the economics of a hydrogen play, more so in the specifics rather than holistically.

In terms of its value to PGY now…it's simply intellectual property which may have some intrinsic tangible value through the acreage and infrastructure footprint, but nothing significant as yet. There's no indication of what the timing on the licensing may be, let alone construction and completion. As indicated previously we'd be surprised if there weren't revisions/adjustments/reconfigurations/changes to a final project, so any capital and economic assumptions would likely have a significant associated margin of error.

We suggest there is the potential for an integrated project to be pursued independently of the State Government initiative, so not being the preferred tenderer does not preclude PGY from working alone or in combination with other ventures or projects…the Cliff Head infrastructure represents an attractive capital saving carrot to put before other parties, as does the opportunity to hang commercial CO2 options off any hydrogen project.

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So how do we assign the value potential to this proposal? The easiest way is to look at the project as a sum of the parts and try to assign some quantum of economic price on a segment basis, noting that in an integrated project, the end point is often greater than the sum of the parts.

Where would attribute the highest confidence estimate, is to a 'going concern' offshore wind project as a base case noting the potential for 'multiple' Cliff Head sized expansion options and downstream manufacturing which would add upside opportunity to the base case on a longer dated basis.

We use a Deloitte study – *"A market approach for valuing offshore wind farm assets"* (Aug-2017) as the cornerstone to assigning a potential value to the wind generation segment. The methodology and application of the study to the PGY feasibility analysis, is included in Appendix 3.

We suggest the **base equity value** of the CH-MWWSP, assuming the Pilot Energy feasibility study leads to the award of development opportunity **will range between $90mn (in the FEED stage) to >$1.7Bn (as a completed and installed offshore wind project of 1,092MW).**

This value range should be viewed within the context of the parameters of the study and represents an option value of the project potential, not the value of the opportunity 'now'.

Valuing the hydrogen option is somewhat fraught, with no real domestic hydrogen market, no defined export market data and no indication of the size of the proposed hydrogen plant (output) at this stage.

There are significant numbers of published theoretical and business case studies on hydrogen production all looking at various plants within a restricted set of commercial assumptions. On balance the articles and studies support the economics of H2 generation citing blue H2 as more economically advantageous then green H2.

**Exhibit 9: Indicative economic ranges demonstrate that hydrogen opportunities will have very project specific returns**

| Study | | Cost of manufacture A$/mcfe | w CCS add-on | Plant cost of construction A$mn | w CCS add-on | Output Capacity Bcfe pa | Fixed Cost A$mn pa | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | base | max |
| Platts | 2020 | $3.43 | $4.79 | | | | | |
| IEAGHG | 2017 | $5.97 | $6.64 - 7.60 | $360 | $425-585 | 27.4 | $12.4 | $16.0 |
| 'Roadmap' | 2018 | | $2.14 - 2.74 | | | 73.00 | | |

Source: various analytical reports, conversions to mcfe and Bcfe using RaaS estimates

Platts Online Article: 'Cost, logistics off blue hydrogen market advantages over green alternative' [Robinson, J. 19/03/20]
IEAGHG Technical report 2017-02: 'Techno-economic evaluation of SMR based, stand-alone (merchant) hydrogen plant with CCS' [Feb-2017]
Air Liquide technical report: 'Auto-thermal reforming (ATR) – Syngas generation'
Geoscience Australia Record 2019/15; eCat 130930: 'Prospective hydrogen regions of Australia', [Feitz, A. et al]
CSIRO: 'National hydrogen roadmap', [Bruce, S. et al 2018]
Norwegian University of Science & Technology (NTNU): 'Concepts for large scale hydrogen production', [Jakobsen, D., Atland, V. Jun-2016]
Oxford institute for Energy Studies – OIES Paper No. NG 159: Blue hydrogen as an enabler for green hydrogen - the case for Germany', [Dickel, R]
National Renewable Energy Laboratory – Technical Report NREL/TP-5600-51995: 'Blending hydrogen into natural gas pipeline networks: A review of key issues' [Mar-2013]

At this point there is insufficient definition with respect to the proposed hydrogen plant in the PGY proposal except to suggest that in broad terms, as part of an integrated project, hydrogen could be generated at cost effective and certainly cost comparative rates to natural gas. In that regard as a replacement for or as a complimentary energy source, the economics should be sufficient to deliver a required rate of return.

It's worthwhile nominating some of the areas required to better define the absolute value of any hydrogen project.

- the received price of $H_2$ as the revenue stream,
- transfer cost of the electricity supply,
- cost and volume of natural gas as a feedstock,
- size of proposed plant, although the 'Roadmap' study suggests a plant must be built at scale (>500tpd) which equates to a minimum volume output of approximately 73Bcfe pa and that's a large-scale plant in absolute terms,
- the cost of the CCS option in the WA context

- ...and the market opportunity - local or transported - domestic or export, additional infrastructure requirements (port or pipeline or both) and timing

Although the references studies and articles do highlight the large number of unknowns, we believe the roll out of $H_2$ plants and 'merchant' facilities will likely be higher and faster than current forecasts. It is though, still an industry in its infancy.

Of the $CO_2$ options, the most beneficial to PGY would be using the gas for production and recovery enhancement at Cliff Head, where the nominal oil-initially-in-place estimate is around 40Mb and expected recovery in the order of 17Mb (production to date plus remaining 2P volumes), or about 42.5%.

The recovery enhancement process is well understood technically and commercially within the industry and has been proven to deliver tangible and significant economic benefits in c.95% of cases. Not all late-stage oil fields are suitable for the application of the technique and the economics are often driven by the availability of $CO_2$ at the right price and volume. In this case, gas sourced from an adjacent plant at an effective transfer price only, should strongly support the business case.

$CO_2$ EOR operations are closed loop, so require an initial volume to achieve the minimum miscible pressure (MMP) at which the mobility of the oil is improved and the target subsurface pressure to underpin increased oil flow rates.

As more oil is brought to the surface the $CO_2$ is captured and reinjected with top up gas equivalent to the volume of oil produced. For this project, capital costs should be relatively low and operating margins on 'new' oil relatively high.

It's too early to estimate the amount of additional oil that could be recovered but operating margins could run at over-50% in our view and that could be conservative.

In the absence of more definition across the project components, we feel most comfortable assigning a valuation range to the wind-generation aspects of the development and reiterate that range at between **$90mn (in the FEED stage) to >$1.7Bn (as a completed and installed offshore wind project of 1,092MW) with upside from solar generated power, hydrogen manufacture and sales; and commercial $CO_2$ options.**

Note this estimate is calculated on a 100% basis and should be considered against the current capitalisation of the company at around A$6mn.

## Pilot is a conventional E&P as well

Whilst the proposed integrated renewables project provides a transformational opportunity, the company also has conventional exploration options focussed on the onshore and offshore north Perth Basin.

### The 'P' is Cliff Head (PGY 21.25%)

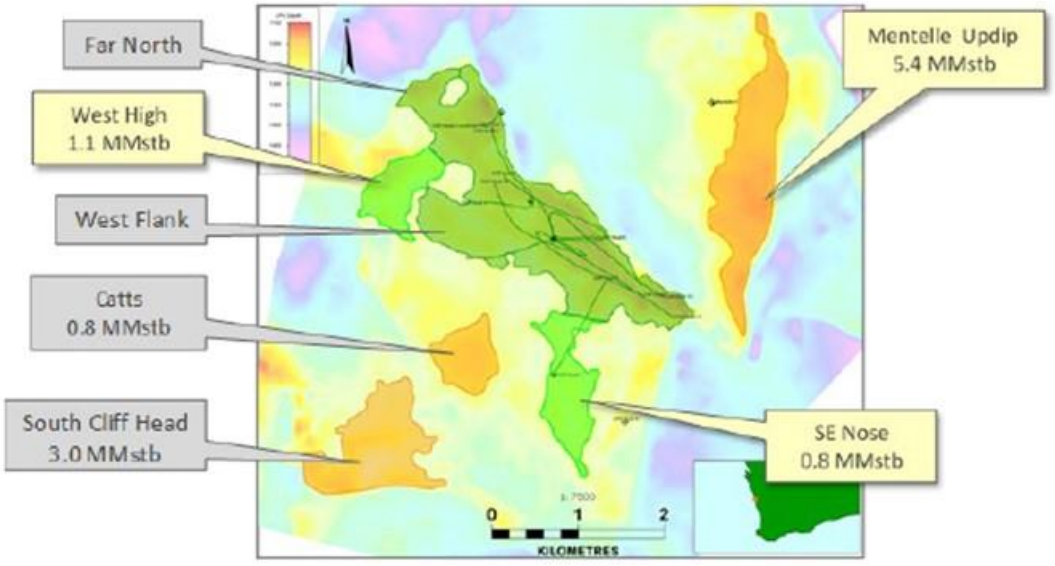
The proposed merger with Royal Energy provides the company with a **21.25% interest in the Cliff Head Oil Field**, which is located in the offshore Perth Basin about 270km north of Perth and 12km offshore in approximately 15-20m water depth. The production platform is connected to the onshore Arrowsmith Stabilisation Plant by twin 14km production and injection pipelines.

Cliff Head was the first commercial oil discovery developed in the offshore Perth Basin. The development cost of the field was A$327m with first oil production commencing in May 2006. To-date the field has produced over 15Mb.

Gross oil production for FY19 was approximately in the range of 700-800bpd. The field is coming towards the end of its productive life but is expected to continue operating until such time that the CH-MWWSP could enter a construction phase, should PGY be successful in its application.

After a fairly rigorous review of operating costs, the JV has brought the operating breakeven price of the project down to ~US$23-24/b based on the most recently quarterly data.

**Exhibit 10: Chasing upside – three targets for the 'Asset Life Extension Programme'**




Source: Triangle Energy

The JV is chasing field life and has high-graded three priority drilling targets which can be drilled and developed (on success) through vacant slots on the platform. New discoveries can be brought into production rapidly, extending Cliff Head asset life out to 2030 or beyond.

Should the field life be extended it would be expected that an additional 0.7 Mb, currently sitting at 2C could be added to the reserves base.

Detailed well planning continues with the JV targeting a start to the drilling campaign during 1H 2022, although we see that timing as fluid and dependent on more certainty around the oil price outlook in the short-term.

Any and all drilling targets carry intrinsic risk but the JV considers the portfolio and particularly the three high-graded prospects to be relatively low risk drilling options given the low reserves threshold required to support a commercial development.

**Cliff Head holds gross remaining 2P volumes of 1.44Mb** (Triangle Energy estimate at 30-Jun) with net volumes of ~305kb which equates to a remaining field life of ~6 years based on the current R:P ratio, FY20 production numbers (277kb) and RaaS commodity price forecasts.

**Exhibit 11: Near field potential in the Cliff Head prospect inventory (PGY 21.25%)**

**Contingent Resources**

| Mb | 1C | 2C Gross | 3C | 1C | 2C Net | 3C | |
|---|---|---|---|---|---|---|---|
| **SE Nose** | **0.50** | **1.01** | **2.07** | **0.11** | **0.21** | **0.44** | Success in these two prospects has the potential to more than double 2P volumes |
| **West High** | | **0.95** | **2.27** | | **0.20** | **0.48** | |
| West Flank | | 0.79 | 1.14 | | 0.17 | 0.24 | |
| Far North | | 0.41 | | | 0.09 | | |
| East Horst K Sand | | 0.36 | | | 0.08 | | |
| CH11 Block | | 0.06 | 0.69 | | 0.01 | 0.15 | |
| **TOTAL** | **0.50** | **3.58** | **6.17** | **0.11** | **0.76** | **1.31** | The portfolio is significant |

**Prospective Resources**

| Mb | Low | Best Gross | High | Low | Best Net | High | |
|---|---|---|---|---|---|---|---|
| **Mentelle Updip** | **1.98** | **5.15** | **9.18** | **0.42** | **1.09** | **1.95** | The Mentelle-1 well was drilled by Roc Oil in a downdip location and recovered oil |
| Catts | 0.35 | 0.77 | 1.42 | | 0.16 | 0.30 | |
| Southern Extension | | 0.54 | 1.14 | | 0.11 | 0.24 | |
| South Cliff Head | | 3.00 | | | 0.64 | | |
| **TOTAL** | **2.33** | **9.46** | **11.74** | **0.42** | **2.01** | **2.49** | |

Source: Triangle Energy data. Resources are reported in accordance with the SPE-PRMS (2018) guidelines.

Given the cost reduction initiatives completed to date and planned through to end-2020, we estimate a per barrel NPV margin based on RaaS commodity price assumptions of $13.00.

**Applying that against the remaining 2P and risked adjusted 2C volumes we are comfortable assigning a net value to Cliff Head of ~$9mn ($0.027/share).**

The Cliff Head operator, Triangle Energy has indicated that it has initiated a farmout campaign on behalf of the Cliff Head Joint Venture, to participate in the drilling of the West High, SE Nose and Mentelle Up-dip prospects.

We note the announcement made by BP Australia on 30-Oct of its intention to close its Kwinana Refinery, which is the delivery point for Cliff Head crude oil under a supply agreement. BP has advised it will continue operating the refinery during the planning process for conversion to an import terminal.

In terms of the potential impact for the Cliff Head operations, we believe the JV has a firm agreement with BP for processing and envisage that operations will not be impacted whilst alternate arrangements are pursued much in line with evaluations conducted by the JV previously.

**The operator has indicated that as a result of the BP decision the reserves and resources estimates pertaining to Cliff head are under review, which must now be considered a risk to the assumptions and carrying values contained in this report.**

We would add that on balance we are confident an alternate economic arrangement can be found and there will be no material change to the production profile or field life of the project. We have left our valuation assumptions unchanged at this time.

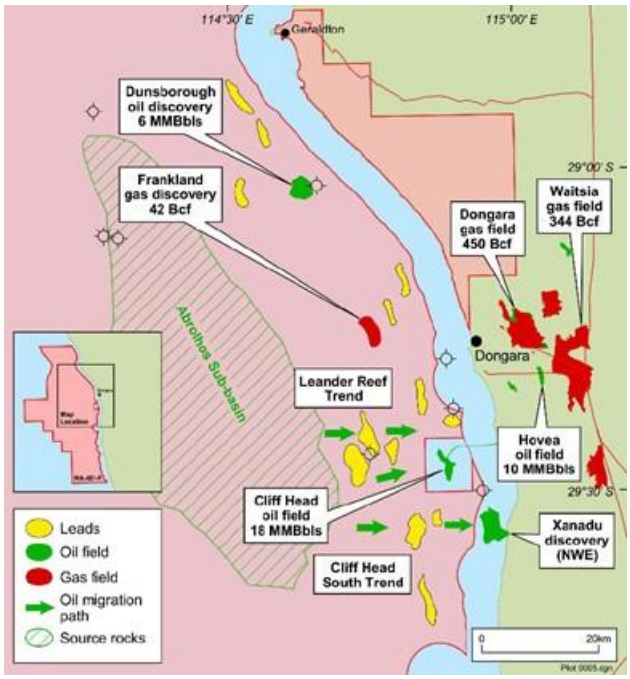
We have highlighted in generic terms the potential for Cliff Head to benefit from $CO_2$ EOR operations independently of drilling the adjacent, high-value prospects - although we are unable to quantify that at this stage.

Our value of Cliff Head with upside should be considered a minimum base case at this stage.

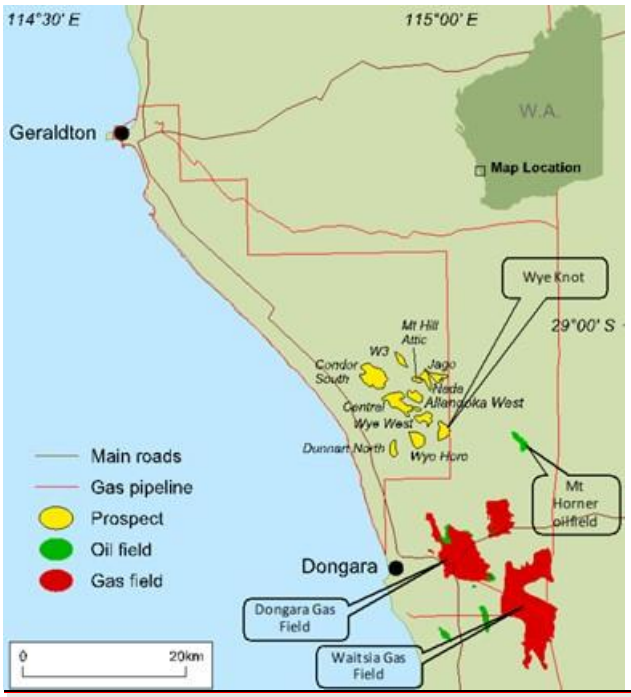
## There is ‘E’ for growth

There are targets to chase based on working hydrocarbon models and encouraging seismic data. Activity may be slow until the commodity outlook is more certain, but there’s opportunities of scale to pursue.

**Exhibit 12: WA-481-P is a prospective exploration opportunity in its own right**




Note – Waitsia reserves have been updated since the date of the schematic




**WA-481-P (PGY 100% - subject to shareholder approval)**

In addition to the significance that WA-481-P has to the proposed CH-MWWSP, it is also an exploration permit with a number of highly regarded drilling targets in proximity to potentially analogue projects.

Oil and gas are proven within the permit, through the sub-commercial Frankland (gas) and Dunsborough (oil) discoveries with ascribed Contingent Resource volumes of up to 59Bcf gas and 9.8Mb oil, respectively.

The permit is extensively covered by a large 2D and 3D seismic data set. Reprocessing and reinterpretation of the data confirms an inventory of thirteen structural prospects across four distinct areas, but particularly close to the Cliff Head and Xanadu oil fields.

The Xanadu and Cliff Head oils in the Dongara/Wagina sandstones are considered to be analogous and on a major oil migration pathway. In broad terms this lifts the probability of proximal structures also being oil-filled.

Individual prospects offer potential for up to 78Mb of oil, with three prospects substantially de-risked by prior discoveries.

**EP-437 (PGY 13.06%)**

Preparations are underway for the drilling of the Wye Knot-1 exploration well, which is required to commence by 28 May 2021.

The Wye Knot prospect is part of a cluster of opportunities with stacked objectives at the Kingia and High Cliff levels.

The Wye Knot oil prospect is located down-dip from the Wye-1 gas discovery, which tested gas from two good quality reservoirs at 4.4mmcf and 2.5mmcf per day respectively. Live oil shows during drilling suggest the reservoirs were originally oil-filled with the oil spilled down-dip by gas migration into the crest of the structure.

This ‘dual-charge’ geological model is evident elsewhere in the basin, most notably at the Dongara gas field, where oil was produced at an initial rate of 800bpd.

Success at Wye Knot-1 could be commercialised rapidly into the Mt Horner facilities and would naturally de-risk the remaining portfolio…success should not be an only child.

The Wye Knot Prospect has an ascribed gross Prospective Resource potential of 1.4Mb (net 0.18Mb) as a ‘best’ estimate.

Source: All schematics - Company data

**EPs-416 and 480 (PGY 60%)**

The JV has applied for and been granted suspension and extension applications for these permits due to difficulties in accessing the land for work purposes. It’s likely, as a geographical area with high-density agriculture, that timely evaluation and exploration of these permits will be difficult for some time.

## Financials – Cliff Head production helps the outlook

The financials reflect a small company with a late stage oil production project, so the earnings per se will be a direct function of realised commodity prices. We account for Cliff Head revenue and costs on a **Share of Equity Profit/(Loss)** basis (an EBITDA proxy) unless reported otherwise.

The forecast points to modest NPAT outcomes, which within the margin of error suggests a 'breakeven' outlook for the base business.

**Exhibit 13: Summary profit/loss results (reporting currency AUD, balance date 30-Sep)**

| P&L | FY20a | FY21e | FY22e | In A$000's |
|---|---|---|---|---|
| **Production (kb)** | | **66** | **62** | In abstract only. We model PGY accounts as reporting Cliff Head as a **Share of Equity Profit/(loss)** rather than as detailed line items |
| **Other Revenue** | **356** | **880** | **878** | **Net return from Cliff Head and JV recoveries** |
| Corporate costs | (554) | (650) | (680) | |
| Other income/expenses | (691) | (85) | (85) | Inc. net interest and other non-cash costs (exploration/impairments/DD&A) |
| **Proforma EBIT** | **(889)** | **145** | **112** | |
| Tax | | | | |
| **NPAT** | **(889)** | **145** | **112** | |
| EPS (cps) | (0.84) | 0.04 | 0.03 | |

Source: RaaS analysis; FY21+ estimates based on the merged PGY-Royal entity

The balance sheet has been strengthened through the merger with the production interests and shareholding in Vintage Energy, returning from the negative equity position of FY19. The recent capital raising has delivered a comfortable working capital base. We capitalise the projected costs associated with the CH-MWWSP through FY20-FY21 and note PGY expenses exploration costs as incurred.

**Exhibit 14: Summary Balance Sheet – production assets and cash provide a working capital base**

| FINANCIAL POSITION | FY20a | FY21e | FY22e | In A$000's |
|---|---|---|---|---|
| Cash & Equivalents | 7 | 2,943 | 2,675 | The recent capital raise and deal with Triangle Energy supports the company through FY22-FY23 on forecast in ground expenditures |
| PP&E/Development assets | | 1,500 | 2,250 | Includes capitalised costs related to CH-MWWSP |
| Investments | | 4,830 | 4.700 | Includes VEN shares and production assets |
| **Total Assets** | **159** | **9,488** | **9,625** | |
| Debt | | | | |
| **Total Liabilities** | **1,314** | **1,000** | **1,025** | |
| **Total Net Assets/Equity** | **(1,155)** | **8,488** | **8,600** | |
| **Net Cash/(Debt)** | **7** | **2,943** | **2,675** | |

Source: RaaS analysis; FY21+ estimates based on the merged PGY-Royal entity

Historically, financing has been secured through equity issues and in the absence of large-scale developments progressing, the base business will continue to be funded through net cash flows from Cliff Head production and working capital.

We have indicated that the financials will be dependent on the production guidance as provided and realised oil prices as modelled, which are subject to change – noting it wouldn't take a significant shift to the downside to see cash outgoings higher than forecast. We understand the exploration and other permit commitments will be low over the next two years.

On balance we cannot suggest that PGY will not seek additional financing through the equity market in the future.

The game changer of course, is the financing that would arise should the CH-MWWSP proposal be successful although the nature of the project (quasi-annuity style output and cashflows) would likely lend itself to a high level of gearing and of course, PGY would continue to hold the option of financing through partnering.

**Exhibit 15: Summary cashflow statement**

| CASHFLOW | FY20e | FY21e | FY22e | In A$000's |
|---|---|---|---|---|
| **Operational Cash Flow** | **114** | **230** | **182** | |
| Net Interest | | | 15 | On higher cash balances |
| **Net Operating Cashflow** | **114** | **230** | **197** | |
| O&G assets/Exploration | (338) | (515) | (465) | We expect exploration outgoings to be low through the forecast period with the majority of expenditure related to the CH-MWWSP |
| Evaluation studies | | (1,200) | | |
| **Net Investing Cashflow** | **(338)** | **(1,715)** | **(465)** | |
| Equity Issues (after costs) | 100 | 4,420 | | Includes cash from Royal Energy merger |
| Debt movements | 43 | | | |
| **Net Financing Cashflow** | **143** | **4,420** | **0** | |
| **Net Change in Cash** | **143** | **2,936** | **(268)** | |
| Closing Cash | 7 | 2.943 | 2.675 | |

Source: RaaS analysis; FY21+ estimates based on the merged PGY-Royal entity

## A Capital Raise

On 23-Sep, PGY announced it was undertaking a $2.5mn capital raising placement to fund the costs of the CH-MWWSP feasibility study, cover the Cliff Head Extension programme capex and other permit commitments and for general working capital.

**Exhibit 16: Raising money for growth projects**

| Sources and Uses of Funds | | | |
|---|---|---|---|
| **Sources of funds** | | **Uses of Funds** | |
| Equity Placement | $2.5m | Wind and Solar Project Feasibility | $1.2m |
| Royal Cash/ Equivalents | $1.4m | Cliff Head Project Extension Capex | $1.0m |
| | | Pilot permit work program commitments | $0.5m |
| | | Corporate costs & working capital | $1.2m |
| **Total Sources** | **$3.9m** | **Total Uses** | **$3.9m** |

Source: Company data

The placement will be undertaken in two tranches:

1. Raising A$525,000 via the issue of 15,909,091 shares at $0.033/share and 7,954,545 unlisted options on a one for two basis. This tranche settled on 30-Sep.
2. Raising A$1,975,000 via the issue of 59,848,485 shares at $0.033/share and unlisted 29,924,242 options on a one-for-two basis.

The issue of the Tranche 2 shares and options and the Tranche 1 options is subject to the approval of Pilot shareholders at an extraordinary meeting of shareholders.

The options will have an exercise price of $0.066 and expiry date of two years from their date of issue.

In addition, PGY will also be offering a Share Purchase Plan (SPP) on the same terms as the placement. Any funds received from the SPP will be in addition to the cash assumptions we carry. We calculate our per share metrics based on a starting base as reported to the ASX on 1-Oct, adjusted up for shareholdings to be approved at the EGM as noted above.

## A risk assessment

The most critical factor in determining and delivering any project is, in our view the prevailing commodity price outlook, whether that be oil and gas, electricity or hydrogen pricing. We note the increasing penetration of renewables into the WA electricity supply mix and the issues that can generate for domestic gas supply and pricing. In crude oil terms we see little risk overall in demand terms but would highlight the global drivers of reference crude oil price benchmarks and wide variation in forecast outcomes, particularly in the short-term (2021).

Rather than a comprehensive assessment of all operating risks, we highlight a few key areas that we consider the most critical for the company and investors over the next 12-24 months.

### Commodity prices and market commentary

It is beyond the scope of this report to enter into a detailed discussion of the dynamics of the oil and gas markets, except to highlight the strong variability in short-term oil price forecasts, with prices ranging for key oil price benchmarks (eg WTI and Brent).

**Exhibit 17: Commodity price outlook – we use a forward curve approach**

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WTI | 38.86 | 42.21 | 43.57 | 44.34 | 45.07 | 45.96 | 47.12 | 48.31 | 49.47 | 50.63 | 51.48 | 60.74 | **70** |
| Brent | 44.27 | 44.36 | 46.58 | 48.09 | 49.27 | 50.42 | 51.50 | 52.66 | 57.12 | 61.59 | 66.06 | 70.53 | **75** |
| AUD | 0.6953 | 0.7166 | 0.7165 | 0.7158 | 0.7149 | 0.7141 | 0.7321 | **0.75** | | | | | |

Source: RaaS estimates;

We use a forward curve approach, renewing the price deck on a quarterly basis out to the end of the curve and extrapolating to our long-term assumptions, which we set as the required price to justify new investment and development across the cycle.

Given the number of active participants in the forward commodity (and currency) markets on a daily basis as evidenced by the number of transactions, we consider the forward curve as a default proxy for market consensus and sentiment; and more likely to be reflective of investment valuations.

Crude oil prices have been highly variable across 2020 and impacted by the COVID related economic slowdown, OPEC production cuts, the marginal commercial nature of US onshore operations, massive reductions in industry reinvestment capital, economic sentiment and numerous other factors of major and marginal significance.

Industry majors are divided on the outlook for demand and prices.

*"…producers such as Britain's BP, Italy's Eni, France's Total and Royal Dutch Shell have been hastening preparations for a future that needs less oil and gas, renewing commitments to diversifying, sparing clean-energy investments from budget cuts and bringing forward projections for when they expect oil consumption to peak and decline."*

Source: Sydney Morning Herald (1-Aug-2020)

This refocus of the business model is also being driven by greater investor pressure pushing for more climate beneficial outcomes and government decarbonisation policies.

**Exhibit 18: Industry oil price forecasts – no consensus**

| Brent Crude (US$/b) | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|
| **Shell** | **$35** | **$40** | **$50** | | | |
| BP | | $55 | | | | $55 |
| **Exxon** | | | **$50 to 55** | | | |
| Origin Energy | | $40 | | | | $61 |
| **Woodside Petroleum** | **$35** | **$44** | | | | **$65** |
| Total | $35 | $40 | $50 | $60 | | |

Source: Company data;

Other industry participants refute the idea of that oil and gas demand may have peaked and assert that energy demand is growing not shrinking, that renewables lack scale and the fundamentals of their business have not changed - that there will be no permanent demand destruction.

At a minimum we expect persisting oil price volatility through 2021 as global economies grapple with continuing COVID related economic issues.

### WA Gas

According to the last published (Dec-2019) AEMO WA Gas Statement of Opportunities report, gas demand was forecast to grow at an average annual rate of 1.2% as a base case driven by forecast growth in the mining and minerals processing sectors on strong global demand for battery-related commodities.

As reported, six committed projects are expected to add 60TJd domestic demand by 2023.

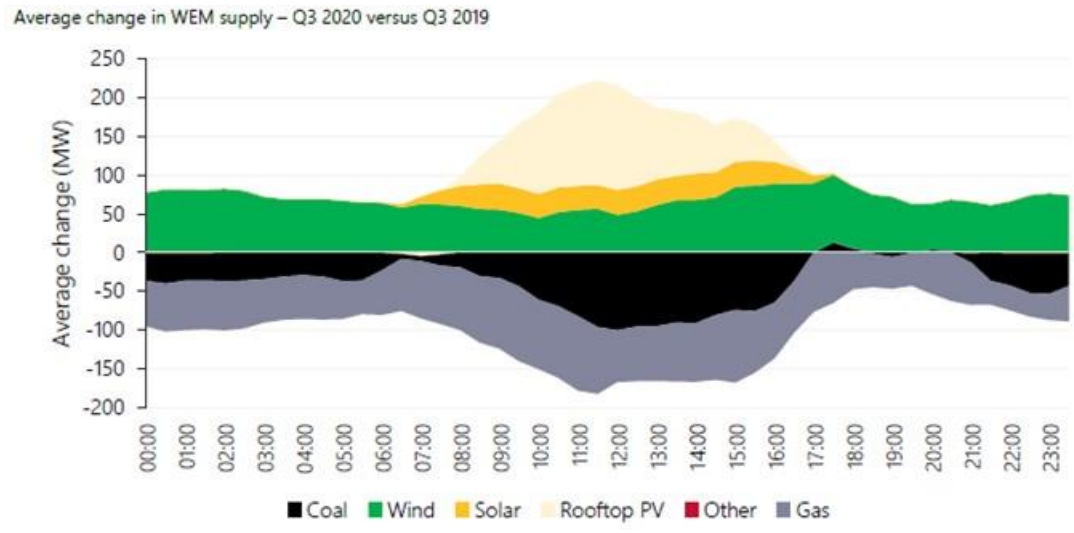
The closure of two units at the coal-fired Muja C power station (in Oct-2022 and Oct-2024) will be somewhat offset by growing renewable generation capacity that is expected to commence over 2020-21. The closures are also likely to increase gas demand for electricity generation in the South West interconnected system in that period.

The development plans of new gas discoveries in the north Perth Basin (Waitsia, Beharra Springs Deep, West Erregulla) will likely offset the decline of existing domestic gas supplies although the decline of current gas sources feeding LNG projects and marginal economics of offshore gas alternatives, suggest there's strong potential for a domestic gas squeeze that could see local prices on the rise from 2022 onwards…good for gas producers but negative for users particularly as feedstock or peaking power generation.

## Power prices and market commentary

It is beyond the scope of this report to enter into a detailed discussion of the changing dynamics of the Australian energy industry, particularly the move away from coal fired electricity generation and towards renewables, except to highlight the increasing number of proposals for wind and solar farms; and growing level of public support.

**Exhibit 19: WA electricity supply…more renewable contribution**




Source: AEMO data (Quarterly Energy Dynamics Q3 2020);

We note the changing dynamic of the mix of electricity supply across WA, particularly rooftop solar.

The changing profiles of coal-fired and gas-powered generation are largely driven by growing levels of grid-scale wind and solar in the south-west and increasing generation from distributed (roof-top) solar, which is reducing network demand throughout the middle of the day.

The key risk determines the stability of the supply system as the proportion of supply from renewables increases - it's the instability (reliability) of supply that determines peaking and balancing power prices.

As the technology becomes more reliable and the penetration of renewable generation increases, we'd expect system availability and power prices to become more predictable and from that perspective less risky.

The combination with energy storage, either through batteries or hydrogen, or back up from gas fired generation should provide significant back-stop and less volatility (risk) to supply for industrial purposes in what should be a lower priced market.

## Technology and operating risks are real

Offshore wind developments do come with a number of technical and operational challenges that could impede the growth rate although these need to be assessed in an holistic rather than project specific sense.

Of critical importance is the establishment of efficient supply and support chains, where technologies and methodologies from the offshore oil and gas industry could become a crucial piece of the solution.

Offshore wind farms are areally extensive with more facilities than corresponding oil and gas production operations, requiring intrinsically more service, support and construction vessels. This also means higher base operating and maintenance costs.

PGY's proposal will benefit from the high level of offshore service and support expertise in the area but would/will require a major expansion of capacity and capability should the project proceed.

The success of offshore wind is also dependent on developing onshore grid infrastructure, not just to handle the existing proposals but with expansion capacity that can be added quickly and in much the same way as for LNG projects, this could mean a significant pre-investment in facilities.

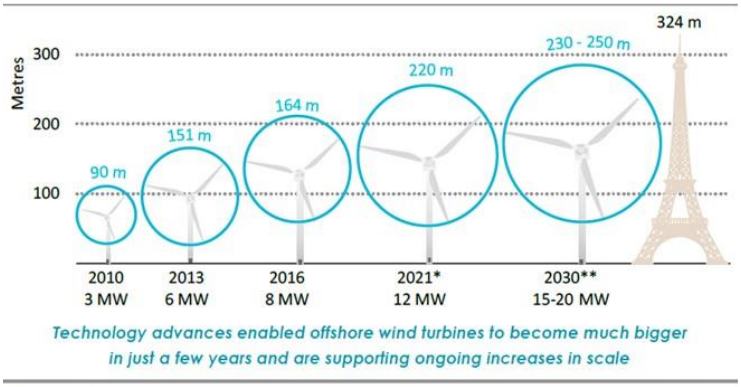
Whom is the driver and ultimately responsible for developing the transmission component of the project, the developers or transmission system operators? Any development should likely support the long-term vision for offshore wind and so pass to the system operators, but this could add a layer of 'uncontrollables' to the project timing and in the absence of other users, impose a higher 'tariff' charge for transmission in the early term of operations – private system operators will want to make a return.

Without appropriate grid expansion, there is also a real risk that a significant proportion of generated power is not utilised and growth options are constrained.

Wind turbine technology innovation has led to rapid increases in turbine size (tip height and sweep area) which has raised the maximum output.

For example, the tip height of commercially available turbines was ~100m in 2010 increasing to over 200m in 2016, increasing the output capacity to 8MW (from 3MW). The sweep area consequently increased by 230% allowing more wind to be captured per turbine.

**Exhibit 20: WA-481-P is a prospective exploration opportunity in its own right**




* Announced expected year of commercial deployments. ** Further technology improvements through to 2030 could see bigger turbines sizes of 15-20 MW.

Notes: Illustration is drawn to scale. Figures in blue indicate the diameter of the swept area.

It's interesting to note that the PGY feasibility study is predicated on 14MW turbines, which as suggested in the IEA wind report 2019, is a size that was only expected to be in commercial use from around 2030.

The GE Haliade-X 12 MW is now commercially available as is the Siemens SG 14-222 DD with a capacity of up to 15MW.

We only comment on this to highlight the speed of technological change and the potential for the next generation of turbine capacity to be commercially available, perhaps within the assessment period of PGY's feasibility study ahead of any award. This is the issue of the 'Wait Calculation'.

Source: All schematics - Company data

Although nominally applied to space travel, the **Wait Calculation** represents a solution to the dilemma stating that during the millennia-long trip to another star system, humanity would easily find ways to increase travel speed to the extent that new expeditions, leaving later would arrive much earlier.

…we apply the principle to the rate of technological change for offshore wind turbines, which supports our earlier contention that the characteristics of the feasibility remain subject to potentially significant adjustments well ahead of the declaration of the preferred licensee.

There are numerous uncertainties associated with establishing a hydrogen plant, certainly within the context of the PGY feasibility study, some of which have been outlined previously on p.13-14. We reference articles and studies as annotated on p.13.

The Platts Report (Mar-2020) as previously referenced highlighted the costs of transport, storage and distribution as 'unknowns' and buyer specific that could impact the rate of growth/rollout/take up of H2 on an holistic basis, citing specifically that in California the per mile cost of H2 as a transport fuel is ~55% higher than the gasoline equivalent based on 2017 vehicle technology.

The IEA GHG Technical Report (2017) highlighted the early stage nature of the H2 industry citing *"...only three sites around the world have demonstrated the integration*" of H2 production with CO2 capture and storage.

The studies and articles look at hydrogen production on a stand-alone basis, somewhat ignoring the transport mechanisms needed to connect projects to end markets – pipelines, trucking, shipping and the infrastructure required to convert hydrogen to a readily transportable form – liquefaction or conversion to ammonia.

Where addressed, existing gas pipelines appear limited to a maximum of 20% by volume (comingled) which would also require separation at the other end noting that there would be transmission losses. Additionally, transport of hydrogen as ammonia (NH4) would necessitate the buyer factoring in the cost of reforming at the delivery point.

The 2018 National Hydrogen Roadmap cites:

*"Barriers to market activity activation stem from the lack of infrastructure to support end applications and/or the cost of H2 supply when compared to other energy carriers (storage) and feedstock."*

## Government Regulations and Legislation

There is currently no offshore wind farm regulation legislation for project developments in federal waters.

Through early 2020, the Federal Government ran a consultation process regarding the potential legislation of new regulatory powers for offshore wind farms in Australia.

*"The intention of the regulatory regime is to ensure the development of offshore wind farms occurs in suitable areas, ensuring the continued use of the oceans for necessary maritime navigation and remains compatible with measures under environmental protection and biodiversity laws."*

The proposed regulatory process would consist of a two separate stages:

1. **Declaration of Offshore Energy Site**: The Energy Minister would be required to make a formal declaration of the suitability of an offshore site for a wind farm after assessing the following conditions-

   *"…(to) identify and prevent potential conflicts in competing interests, and set conditions before a project could progress, such as key stakeholders and consultation requirements, constraints on types of activities, as well as other conditions the Minister considers appropriate".*

2. **Application for a commercial development**: On success a commercial licence would grant exclusive access to a region for an offshore wind development for an initial period of 30-years.

   Projects would likely be required to pay a bond against abandonment and decommissioning costs. Decommissioning bonds could be expected to equal the amount it would cost government to decommission all infrastructure should the licence holder fail to meet its decommissioning obligations.

The Minister would also have powers to grant a permit for the construction of transmission infrastructure, that would allow electricity generated by an offshore wind farm to be sent back to the mainland.

The government proposes to use the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), to serve as the federal regulator of offshore wind developments.

Legislation could be enacted by 2022.

It's unlikely then that any project would be in a position to enter detailed feasibility (FEED) activities before then.

The absence of formal regulatory legislation has been cited as a significant reason behind the lack of progress on the massive 'Star of the South' wind farm proposal.

The 'Star of the South' project is slated to be developed 10-25km offshore Victoria, near Port Albert, would spread over 570km$^2$ and consist of 250 turbines costing some $8Bn.

But we understand the project proponents have not received approval to commence the exploration phase of the project, which would not involve any construction but consist of sea bed analysis and marine studies.

## A change in business - PGY no longer an E&P?

As indicated by management upon advice receive from the ASX:

*"Proceeding beyond the feasibility study stage of the CH-MWWSP 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."*

We highlight the potential for the change of business, not so much an operational risk but as an unknown in terms of an investment overlay and how the company may be priced and valued in the future – utility (annuity) multiples vs E&P multiples.

## Geology…still an area of significant risk and uncertainty in E&P terms

On a generic basis, exploration plays come with a high inherent risk, even allowing for adjacent discoveries and developments. Whilst the target zones and parameters of any prospect can be outlined with confidence, especially when defined by 3D seismic, pre-drill analysis is a probabilistic exercise and drilling even within an existing field cannot be predicted with certainty – geology just doesn't work that way.

Even the near field exploration prospects and those with contingent resource volumes contain significant inherent risk.

It should be noted that geology can also surprise on the upside – reservoir parameters and flow results can exceed expectations with positive implications for reserves and capital costs but all of this needs to be determined through exploration and appraisal success.

## Financing

At this stage, the proposed CH-MWWSP will be held 80% by PGY (pending the finalisation of the farmout to Triangle Energy – refer p11) and even with the capital offsets provided through utilising the existing infrastructure, the initial capital requirement will likely be high, so financing becomes a distinct risk in supporting a project like this.

As an infrastructure play, the capacity for debt financing on the project is strong and taking a line through other infrastructure projects (pipelines, toll roads for example), could support a high gearing level. We suggest 80-90% would not be unrealistic, as a major source of financing.

In addition, we would not expect PGY to progress through the project life-cycle at 80%, seeking partners for the project on an holistic or partial basis – for instance at the hydrogen plant or transmission distribution level.

At this stage we are still uncertain as to the capital cost across the project and how that could be phased. For example, a staged development of the offshore power generation could provide early cashflow to support later development costs.

In the E&P sense, assets come with work and expenditure permit commitments and whilst the company has managed to defer expenditure due to industry wide COVID constraints, at some point wells need to be drilled and seismic needs to be shot. The addition of Cliff Head oil production could deliver supporting operating cash, but that will also be dependent on field performance and realised commodity prices.

Future recourse to equity capital markets for financing cannot be discounted.

## Board and management

The composition of small company boards and management teams are perhaps more critical than for larger companies as the impact of seemingly incremental decisions can have a magnified impact on the growth and valuation of the company. When the merger of Pilot Energy and Royal Energy is approved, the composition of the board will likely change to reflect the modification to the operational outlook and strategy of the company, particularly with respect to the CH-MWWSP proposal, with less specific need for geological and exploration expertise and to strengthen of the skills sets required in areas like project management and maritime logistics.

Subject to the merger being approved and Board changes being implemented we review the current Board of PGY as below.

**Brad Lingo, Executive Chairman**

Brad was appointed to the role of Executive Chairman on 23-May bringing to the position over 30 years of experience across a wide range of industry roles, including business development, new ventures, mergers and acquisitions and corporate finance.

Mr Lingo has been in the oil and gas industry, since 1993, commencing as VP and Head of Business Development for Tenneco Energy but most notably as Managing Director and CEO of Drillsearch Energy Ltd for 6 years, where the company played a lead role in the technical unlocking of the now prolific Western Flank plays. During his time at Drillsearch, the market capitalisation of the company increased from ~$40m to ~ $800m.

He is also currently the Chief Executive Officer of Armour Energy being appointed on 15-June, 2020.

**In the role of Executive Chairman, Mr. Lingo will specifically focus on driving the Company's strategy on the Mid West Wind and Solar Project.**

**Mr Michael Lonergan, Non-Executive Director**

Michael is a petroleum geophysicist with over 30 years of domestic and international oil and gas exploration and production experience. He has held senior technical and project management roles during his career, having worked for Delhi Petroleum, Oil Company of Australia, Origin Energy, Rohol-Aufsuchungs Aktiengesellschaft, Mosaic Oil, AGL, Pangaea Resources and Denison Gas.

**Daniel Chen, Non-Executive Director**

Mr Chen was appointed to the Board on 16-Sep.

Daniel has over 17 years of business, project management and leadership experience predominantly in the port, maritime and logistics industries, with a successful track record in maintaining and improving Business Performance Management systems, including process design and optimisation.

As a project manager he has had development responsibility for the world's first fully automated container terminal and unique experience in working with multiple global supply chain providers to reengineer operations process for efficiency improvement; part of the creation of the largest vessel network in the history of container shipping.

## Top 20

The company's shareholding register is retail dominant, which given the liquidity and capitalisation is to be expected and certainly not unusual. Should the company be nominated as the licensee for the development of a major industrial scale power generation project, the company would most certainly become attractive to wholesale funds.

The transition towards long-term, institutional investors with stronger financing capacity, would be necessary for supporting the capital requirements for a major and transformational project development.

**Exhibit 21: Top 20 Shareholders holding ~74% of the issued capital (ordinary shares) – As of 24-Nov, 2020**

| Holder | | # Shares | % |
|---|---|---|---|
| 1. West Energy Pty Ltd | | 21,458,332 | 17.015 |
| 2. Walkerindo Nustama Mandiri | | 15,894,128 | 12.603 |
| 3. GS Energy Pty Ltd | | 14,814,940 | 11.747 |
| 4. Billion Power Capital Investment Limited | | 7,407,600 | 5.874 |
| 5. Giant Rainbow Investments Limited | | 5,465,740 | 4.334 |
| 6. DVAC Holding Pty Ltd | <Chen and Wang Family A/C> | 5,000,000 | 3.965 |
| 7. Key Perth Basin Investments Pty Ltd | | 4,276,703 | 3.391 |
| 8. Sunpex International Pty Ltd | <Wong Family A/C> | 3,703,740 | 2.937 |
| 9. Pine Street Pty Ltd | <Pine Street Super Fund A/C> | 3,192,994 | 2.532 |
| 10. Mr Thomas Fritz Ensmann | | 1,980,000 | 1.570 |
| 11. Mr Peter Fabian Hellings & Mrs Jacqueline Kim Gun Hellings | <Box Super Fund A/C> | 1,900,000 | 1.507 |
| 12. Yucaja Pty Ltd | <The Yoegiar Family A/C> | 1,777,792 | 1.410 |
| 13. Sergent Holdings Pty Ltd | <Sergent Family S/F A/C> | 1,300,321 | 1.031 |
| 14. Mr Ross Di Bartolo | | 1,001,762 | 0.794 |
| 15. BNP Paribas Nominees Pty Ltd | <IB AU Noms Retail Client DRP> | 882,600 | 0.700 |
| 16. Melinda Louise Patton Pty Ltd | <Topaz Super Fund A/C> | 734,491 | 0.582 |
| 17. Mr Williams David Copland & Mrs Susan Mary Copland | <David Copland Super Fund A/C> | 702,041 | 0.557 |
| 18. Mr Matthew Webber | | 674,316 | 0.535 |
| 19. Petra Coates Pty Ltd Mr Shadi Sayadi | <Macondo A/C>David Copland | 669,000 | 0.530 |
| 20. Mr Mark Andrew Tkocz | | 574,160 | 0.455 |
| | | **93,410,660** | **74.068** |

Source: Company data

# Appendix 1 – Piecing together the CH-MWWSP

PGY plans to integrate its offshore wind proposal with its existing infrastructure footprint across the Cliff Head offshore oil production facilities and associated pipelines. To this end PGY is undertaking a merger with Royal Energy.

## Merging with Royal Energy

Pilot Energy Limited has entered into a definitive share sale deed to acquire 100% of the shares of Royal Energy Pty. Ltd, an unlisted Australian oil company for 143,939,394 Pilot shares, subject to shareholder approval to be sought at an EGM.

Through the acquisition Pilot will own a 21.25% economic interest in Cliff Head Oil Field JV and associated infrastructure and joint operational control of Cliff Head Oil Field JV, through Royal Energy's 50% ownership of Triangle Energy (Operations) Pty. Ltd which holds a direct 42.5% interest in the Cliff Head JV.

Royal Energy's other assets also include approximately $1.4mn in cash and a holding of 5,208,488 shares in Vintage Energy Limited (VEN.ASX) valued at $0.37mn (closing price 19-Oct).

## Consolidating WA-481-P

Pilot Energy has acquired the 40% of WA-481-P held by Key Petroleum, moving to 100% ownership of one of the largest offshore exploration permits in WA, covering 130 graticular blocks and extending from north of Oakajee, Western Australia to south of Cervantes. The acquisition is subject to requisite administrative and shareholder approvals.

WA-481-P is considered to access one of the highest quality offshore wind resources in all of Australia. As announced by the company (ASX release 4-Sep), the permit provides the cornerstone area covering the proposed Pilot Energy wind and solar projects currently the subject of a feasibility study on the development of the Mid-West Wind & Solar Project.

*"…the consolidation of the ownership of WA-481-P is highly complementary to the Company's Mid-West Wind and Solar Project and the new corporate strategy to focus on gas, storage and renewables. The high-quality offshore wind resource, the existing offshore facilities and onshore electricity and gas infrastructure; and the very large conventional gas discoveries in the North Perth Basin point to the potential to combine all these elements into the development of a World class renewables and low carbon energy and resource precinct.*

Subject to shareholder approval, Pilot Energy will acquire the 40% interest in WA-481-P in return for issuing to Key Petroleum, 21mn shares – in two tranches.

An initial tranche of 4.3mn shares to be issued upon entering into definitive transaction documents (noted as achieved on 1-Oct) and a further 16.7mn shares upon receiving shareholder approval at an extraordinary general meeting of shareholders to be called following the execution of definitive transaction documents and expected in early Nov.

We would also direct readers back to page 11 for details of the company's partnering agreement with Triangle Energy, which will reduce PGYs working interest in the permit to 21.25%, aligning with the interests across the Cliff Head production assets.

Research as a Service

## Appendix 2 – Making 'H' (in reality $H_2$)

We firstly need to make the distinction between **'green'** hydrogen **(G-$H_2$)** - generated using renewable energy sources without no carbon emissions – and **'blue'** hydrogen **(B-$H_2$)** generated using a natural gas feedstock with carbon capture and storage.

At the moment, **blue** is cheaper than **green**...and as with all energy products, which direction a company decides to follow ultimately comes down to cost.

As part of its CH-MWWSP submission, PGY will be assessing the feasibility of a **blue** hydrogen option.

**Blue** hydrogen is made from natural gas using either the

- Steam Methane Reforming (SMR) process, or the;
- Autothermal Reactor (ATR) process.

SMR is the most common method for producing hydrogen at large industrial scales, relying on natural gas ($CH_4$) reacting with steam to produce hydrogen ($H_2$) and carbon monoxide (CO). The CO can be treated further to generate more hydrogen and carbon dioxide ($CO_2$).

**Steam Methane Reforming Reactions**

$CH_4 + H_2O$ (+heat) → $CO + 3H_2$ // $CO + H_2O$ (+heat) → $CO_2 + H_2$

The ATR process uses oxygen, steam and in some cases carbon dioxide, in a reaction with natural gas to form raw syngas ($CO/H_2$).

**ATR Reaction, using steam**

$4CH_4 + O_2 + 2H_2O$ → $10H_2 + 4CO$

A key difference between SMR and ATR is that SMR does not use oxygen and uses a lower 'steam to carbon' ratio (S:C) in the reformer feed resulting in lower volumes of $H_2$.

A critical advantage of the ATR process though, is that it doesn't require external heat input…the heat of reaction is provided by the internal combustion of part of the hydrocarbon feed with all of the $O_2$. The ATR technology is especially beneficial where low cost $O_2$ is available.

To be classed as **blue** hydrogen, $CO_2$ must captured and sequestered or sold.

The price of **B-$H_2$** is strongly impacted by natural gas prices but an additional critical commercial driver is the cost of carbon capture and storage (CCS).

In Europe it is estimated that price of CCS is in the range of €50-70/t of $CO_2$. At an exchange rate of A$1:€0.6, that would equate to ~A$83-115/t.

On a scaled up and standardised basis the process of CCS in **B-$H_2$** plants is likely to come down, but at this stage remains somewhat of an unknown in terms of plant operating costs.

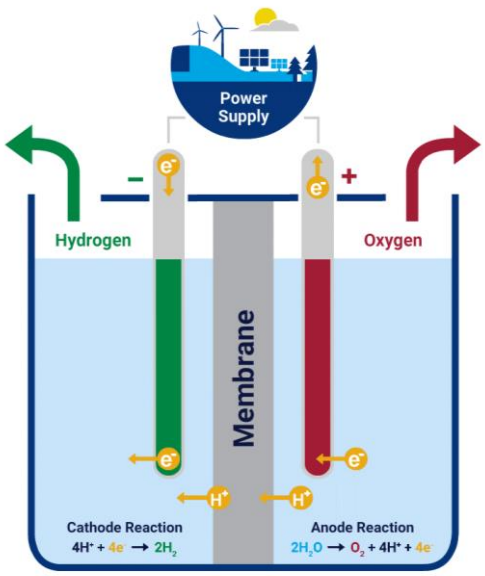
**Green hydrogen** is produced by water electrolysis. This process consists of running electricity through an aqueous electrolytic solution over a solid catalyst material. The ensuing reaction produces hydrogen, but the entire process uses a lot of energy and (historically) costly resources like platinum.

The process, when combined with renewable power generation, produces very few emissions, but the critical cost component is the reaction catalyst limiting the commercial scale of plants.

A report by Wood Mackenzie (Jan-2020) highlights that **G-$H_2$** is expensive compared to the production of hydrogen from natural gas. According to their estimates, **G-$H_2$** can be competitive with 'gas' based hydrogen in Australia and Europe at *"…sub-US$30/MWh electricity prices".*

The report cited current, wind and solar PPA (power purchase agreement) prices ranging from *"…$53 to $153/MWh in those markets"* but in their view Australian **G-$H_2$** can become cost competitive versus **B-$H_2$**, likely out to (or perhaps, in our view) before 2030.

**Exhibit 22: Green hydrogen is 'no emission' but large scale-commercial production is still some time away**




We would also highlight recent work reported by the Nantang Technical University (Singapore) on alternate, low-cost hydrogen catalysts called spinel oxides that could theoretically reduce energy loss in the electrolytic chemical reaction.

*"The research led by NTU Singapore has made two significant advances which help to reveal how spinel oxides work. Firstly, they have unravelled, at the atomic scale, how spinel oxides work to speed up water electrolysis. Secondly, the team used machine learning combined with their newfound understanding to select new spinel oxides that increased catalytic activity and, in turn, made water electrolysis more efficient.*

*Enter spinel oxides, with their low cost and abundant availability, which present a potential viable alternative to drive down costs and increase efficiency. However, these spinel oxides must be designed with the right parameters, such as the type of transition metal in the spinel oxide, to increase catalytic activity."*

https://reneweconomy.com.au/scientists-break-bottleneck-in-hydrogen-electrolysis-technology-56726

Source: Wood Mackenzie

Estimates of the growth of the hydrogen market vary from US$165Bn pa by 2027 to US215Bn pa by 2024 on a CAGR basis of 4.3-6%, on a revenue basis.

Uptake is expected to be strongest in the Asia Pacific, leading the regional market share. New developments in North America and specifically China, India, Japan and South Korea are expected to underpin growth rates in the hydrogen market over the next 10 years.

Technology advancement in production and distribution of hydrogen should drive the demand for hydrogen on an economic basis – development and production costs are likely to fall demand increases and economies of scale impact.

If the global LNG market can be used as an analogue – standard train sizes have increased from c.1Mtpa to around 7Mt ('off the shelf'), the technology is now being fitted to floating liquefaction platforms enabling smaller gas fields to be produced in situ and the market has grown from 'stand-still' pre-1969 to c.425Bn m3 in 2018 (around 310Mtpa), driven by energy demand for cleaner burning fuels and gas as a manufacturing feedstock.

## Appendix 3 – Assigning a value to a concept

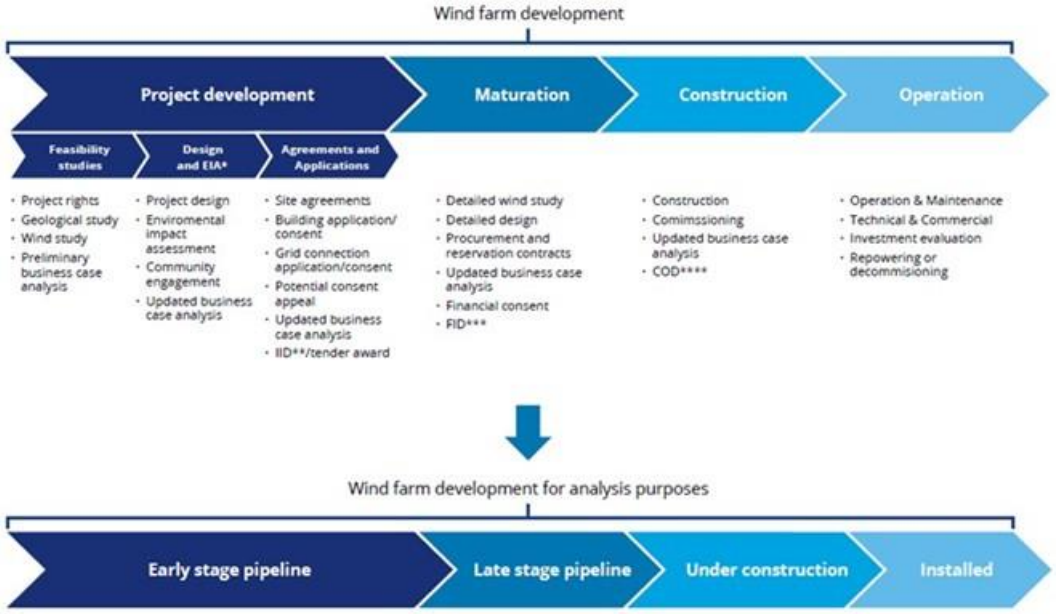
We base our assessment of the potential base case value of the CH-MWWSP on a Deloitte study dayted August-2017 ("*A market approach for valuing wind farm assets*") which uses transactional data to assign EV/MW multiples to the various life cycle stages of offshore wind projects, using **multiple regression analyses of transaction multiples**.

There are constraints to the study, not just limited to the relatively small data set (45 transactions), but including comparisons across competing technologies and vintages of technologies; and geographical differences in terms of markets, prices and subsidies.

Deloitte's ascribe the 'explanatory power' of their model as 91%, so in that respect it carries a high confidence level particularly given the early stage development of the industry.

For the purpose of assigning values, the life cycle of an offshore wind project is considered in four separate stages with different EV multiples, naturally increasing as a project moves towards completion and operation. Interestingly, the Deloitte study concludes that *"…investors in wind farm assets do not assign any significant value to capacity in an early stage pipeline."*

**Exhibit 23: 'Value' stages over the construction life-cycle.**




Source: Deloitte data. * Environment Impact Assessment, ** Initial Investment Decision,*** Final Investment Decision, **** Commissioning Date.

The analysis calculates the EV/MW multiples as:

- €4.7mn per MW for **Installed** capacity,
- €1.9mn per MW for capacity **Under construction,**
- €0.25mn (*RaaS adjusted*) per MW for **Late Stage** capacity and;
- no significant value to capacity classed as **Early Stage**.

For the purposes of assigning opportunity values to the PGY situation, we would equate 'Early Stage' to being nominated as the preferred licencee and a pre-FEED definition or scope of project; and 'Late Stage' as being FEED up to FID.

We also assume the construction of the project along the phases as defined in **Exh-6** for the Cliff Head locations…

| Phase -1 | Phase-2 | Phase-3 | Phase-4 | Aggregate |
|---|---|---|---|---|
| 10 turbines/**140MW** | 26 turbines/**364MW** | 20 turbines/**200MW** | 22 turbines/**308MW** | 78 turbines/**1,092MW** |

...assigning different values to each phase over the construction period.

**Exhibit 24: Assessing the base case value assigns $90-1,700mn on an equity basis through the construction cycle**

| Assessing the valuation potential of the CH-MWWSP project Using Deloitte's 'market approach' | | | | | PGY's 4 stage rollout | |
|---|---|---|---|---|---|---|
| **Stage** | **Concept** | **Early** | **Late** | **Construction** | **Aggregate Installed** | **TOTAL** |
| MW | 1,092 | | | | | **1,092** |
| | 952 | 140 | | | | **1,092** |
| | 588 | 364 | 140 | | | **1,092** |
| | 308 | 280 | 364 | 140 | | **1,092** |
| | | 308 | 280 | 364 | 140 | **1,092** |
| | | | 308 | 280 | 504 | **1,092** |
| | | | | 308 | 784 | **1,092** |
| | | | | | 1,092 | **1,092** |
| **EV/MW multiples – mn/MW** | | | | | | |
| **€** | | **0.05** | **0.25** | **1.9** | **4.7** | |
| **A$** | | **0.08** | **0.4** | **3.2** | **7.8** | |
| | | $0 | $0 | $0 | $0 | **$0** |
| | | $12 | $0 | $0 | $0 | **$12** |
| | | $30 | $58 | $0 | $0 | **$89** |
| | | $23 | $152 | $443 | $0 | **$618** |
| | | $26 | $117 | $1,153 | $1,097 | **$2,392** |
| | | $0 | $128 | $887 | $3,948 | **$4,963** |
| | | $0 | $0 | $975 | $6,141 | **$7,117** |
| | | $0 | $0 | $0 | $8,554 | **$8,554** |
| **Running 'EV' through the cycle** | | **$91** | **$455** | **$3,458** | **$8,554** | |
| Debt level | | 0% | 20% | 70% | 80% | |
| 'Equity' Value | | $91 | $364 | $1,037 | $1,711 | |

Source: RaaS calculations

The equity value range is intended to be indicative only, ascribing little to nothing at the concept stage and around A$90mn at 'award' which intuitively feels right from an order of magnitude perspective. Significant work would still need to be under taken in terms of financing and defining the project.

As a base case we also feel comfortable at or around these values noting potential upside from capital savings (through the Cliff Head infrastructure) and defining what form the downstream value-add (hydrogen production) could take.

## Exhibit 25: Financial Summary

| PILOT ENERGY | | PGY | |
|---|---|---|---|
| YEAR END | | SEP | |
| NAV | A$ | $0.049 | |
| SHARE PRICE | A$ | $0.034 | cot 15-Dec |
| MARKET CAP | A$M | 12 | |
| ORDINARY SHARES | M | 351 | est. post Royal Energy acquisition |
| OPTIONS | M | 38 | Unlisted exerciseable at $0.066 |

nm = not meaningful
na = not applicable

| COMMODITY ASSUMPTIONS | | FY19A | FY20A | FY21E | FY22E |
|---|---|---|---|---|---|
| Brent Oil Price | US$/b | | 40.68 | 42.16 | 46.58 |
| Exchange rate | | | 0.7226 | 0.7170 | 0.7166 |
| Hedged Oil Price | A$/b | | | | |
| Realised Gas Price | A$/gj | | | | |
| Realised Oil Price | A$/b | | 56.30 | 58.79 | 65.00 |

| RATIO ANALYSIS | | FY19A | FY20A | FY21E | FY22E |
|---|---|---|---|---|---|
| Shares Outstanding | M | 79 | 106 | 351 | 351 |
| EPS (pre sig items) | Acps | (0.8) | (0.8) | 0.0 | 0.0 |
| EPS (post sig items) | Acps | (0.8) | (0.8) | 0.0 | 0.0 |
| PER (pre sig items) | x | na | na | nm | nm |
| OCFPS | Acps | na | na | 65.7 | 52.1 |
| CFR | x | nm | nm | 0.1x | 0.1x |
| DPS | Acps | | | | |
| Dividend Yield | % | | | | |
| BVPS | Acps | nm | 0.2 | 2.7 | 2.7 |
| Price/Book | x | nm | 22.7x | 1.3x | 1.2x |
| ROE | % | nm | 79% | 2% | 1% |
| ROA | % | nm | -559% | 2% | 1% |
| (Trailing) Debt/Cash | x | | | | |
| Interest Cover | x | | | | |
| Gross Profit/share | Acps | na | na | na | na |
| EBITDAX | A$M | 322 | 356 | 880 | 863 |
| EBITDAX Ratio | % | | | | |

| EARNINGS | A$000s | FY19A | FY20A | FY21E | FY22E |
|---|---|---|---|---|---|
| Revenue | | | | | |
| Cost of sales | | (538) | (569) | (660) | (690) |
| **Gross Profit** | | **(538)** | **(569)** | **(660)** | **(690)** |
| Other revenue | | 322 | 356 | 863 | 1,238 |
| Other income | | | | | |
| Exploration written off | | (430) | (669) | (50) | (50) |
| Finance costs | | (4) | | | |
| Impairment | | | | | |
| Other expenses | | (11) | (0) | (25) | (25) |
| EBIT | | (662) | (882) | 145 | 98 |
| **Profit before tax** | | **(662)** | **(889)** | **145** | **112** |
| Taxes | | | 0 | | |
| **NPAT Reported** | | **(662)** | **(889)** | **145** | **112** |
| Underlying Adjustments | | | | | |
| **NPAT Underlying** | | **(662)** | **(889)** | **145** | **112** |

| CASHFLOW | A$000s | FY19A | FY20A | FY21E | FY22E |
|---|---|---|---|---|---|
| **Operational Cash Flow** | | **(279)** | **114** | **230** | **183** |
| Net Interest | | 2 | 0 | 0 | 15 |
| Taxes Paid | | | | | |
| Other | | | | | |
| **Net Operating Cashflow** | | **(278)** | **114** | **230** | **197** |
| Exploration/Development | | (536) | (338) | (1,500) | (250) |
| Capex | | | | (215) | (215) |
| Investments | | | | | |
| Net Asset Sales/other | | | | | |
| **Net Investing Cashflow** | | **(536)** | **(338)** | **(1,715)** | **(465)** |
| Dividends Paid | | | | | |
| Net Debt Drawdown | | | 0 | | |
| Equity Issues/(Buyback) | | 300 | 100 | 4,420 | |
| Other | | | | | |
| **Net Financing Cashflow** | | **300** | **143** | **4,420** | **0** |
| **Net Change in Cash** | | **(513)** | **(81)** | **2,936** | **(268)** |

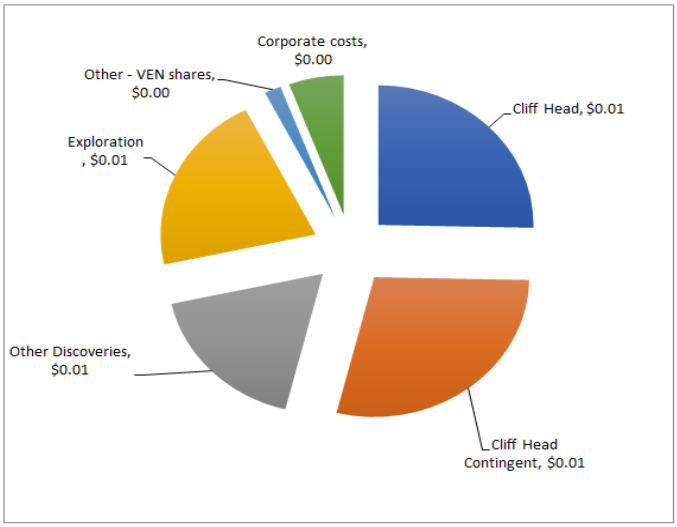
| BALANCE SHEET | A$000s | FY19A | FY20A | FY21E | FY22E |
|---|---|---|---|---|---|
| Cash & Equivalents | | 89 | 7 | 2,943 | 2,675 |
| PP&E & Dev-Expl | | | 75 | 1,500 | 2,050 |
| Investments | | | 0 | 4,650 | 4,650 |
| **Total Assets** | | **118** | **159** | **9,488** | **9,625** |
| Debt | | | | | |
| **Total Liabilities** | | **760** | **1,280** | **150** | **200** |
| **Total Net Assets/Equity** | | **(642)** | **(1,121)** | **9,338** | **9,425** |
| Net Cash/(Debt) | | 89 | 7 | 2,943 | 2,675 |

| PRODUCTION | | | FY19A | FY20A | FY21E | FY22E |
|---|---|---|---|---|---|---|
| Cliff Head | Oil | kb | | | 66 | 62 |
| | | | | | | |
| **TOTAL** | | **kb** | | | **66** | **62** |
| Sales Volumes | | | | | | |
| | | | | | | |
| Product Revenue | | A$mn | | | | |
| Ave Price Realised | | A$/boe | | | | |
| Cash Costs | | A$/boe | | | | |
| Cash Margin | | | | | | |

| RESERVES & RESOURCES | | | as of 30/06/2020 |
|---|---|---|---|
| **Reserves** | | **Oil** | |
| | Mb | 2P | 1C | 2C | 3C |
| Cliff Head | | 0.3 | | | |
| SE Nose | | | 0.1 | 0.2 | 0.4 |
| West High | | | | 0.2 | 0.5 |
| Other Prospects | | | | 0.4 | 0.4 |
| TOTAL | | 0.3 | 0.1 | 0.8 | 1.3 |

| Prospective Resources | | | | |
|---|---|---|---|---|
| | Mb | Low | Best | High |
| Mentelle Updip | | 0.4 | 1.1 | 2.0 |
| Other | | | 0.9 | 0.5 |
| | | | | |
| TOTAL | | 0.4 | 2.0 | 2.5 |

| EQUITY VALUATION | | | | |
|---|---|---|---|---|
| | Interest | Pr | A$M | Acps |
| Cliff Head | 21% | 100% | $4 | $0.01 |
| Cliff Head Contingent | 21% | 50% | $5 | $0.01 |
| Other Discoveries | | | $3 | $0.01 |
| Exploration | | | $4 | $0.01 |
| Other - VEN shares | | | $0 | $0.00 |
| | | | **$16** | **$0.05** | |
| Net Cash/(debt) | | | $4 | $0.01 |
| Corporate costs | | | -$3 | -$0.01 | **P/NAV** |
| **TOTAL** | | | **$17** | **$0.05** | 0.70 |
| **Cash Producing Assets** | | | | **$0.01** | |




Source: RaaS Advisory (Priced intra-day trading 15-Dec at 3.4cps)

# FINANCIAL SERVICES GUIDE

RaaS Advisory Pty Ltd

ABN 99 614 783 363

Corporate Authorised Representative, number 1248415

of

BR SECURITIES AUSTRALIA PTY LTD

ABN 92 168 734 530

AFSL 456663

Effective Date: 26th November 2018

**About Us**

BR Securities Australia Pty Ltd (BR) is the holder of Australian Financial Services License ("AFSL") number 456663. RaaS Advisory Pty Ltd (RaaS) is an Authorised Representative (number 1248415) of BR.

This Financial Service Guide (FSG) is designed to assist you in deciding whether to use RaaS's services and includes such things as

- who we are
- our services
- how we transact with you
- how we are paid, and
- complaint processes

Contact Details, BR and RaaS

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P: +61 414 354712

E: finola.burke@raasgroup.com

RaaS is the entity providing the authorised AFSL services to you as a retail or wholesale client.

**What Financial Services are we authorised to provide?** RaaS is authorised to

- provide general advice to retail and wholesale clients in relation to
  - Securities
- deal on behalf of retail and wholesale clients in relation to
  - Securities

The distribution of this FSG by RaaS is authorized by BR.

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Please note that any advice given by RaaS is general advice, as the information or advice given will not take into account your particular objectives, financial situation or needs. You should, before acting on the advice, consider the appropriateness of the advice, having regard to your objectives, financial situation and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Prospectus, Product Disclosure Statement or like instrument. As we only provide general advice we will not be providing a Statement of Advice. We will provide you with recommendations on securities

**Our dealing service**

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**Complaints**

If you have a complaint about our service you should contact your representative and tell them about your complaint. The representative will follow BR's internal dispute resolution policy, which includes sending you a copy of the policy when required to. If you aren't satisfied with an outcome, you may contact AFCA, see below.

BR is a member of the Australian Financial Complaints Authority (AFCA). AFCA provide fair and independent financial services complaint resolution that is free to consumers.

Website: www.afca.org.au; Email: info@afca.org.au; Telephone: 1800931678 (free call)

In writing to: Australian Financial Complaints Authority, GPO Box 3, Melbourne, VIC, 3001.

**Professional Indemnity Insurance**

BR has in place Professional Indemnity Insurance which satisfies the requirements for compensation under s912B of the Corporations Act and that covers our authorized representatives.

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