

### Feasibility results drive the economic case

Pilot Energy Ltd (ASX:PGY) is a junior oil and gas exploration company, transitioning towards the new industry paradigm – clean energy. With feasibility studies largely completed the economic case is becoming clearer and the value opportunities tangible. Broad capital and operating assumptions confirm a valid economic pathway with next steps including various regulatory approvals and declarations. The process is well progressed for the blowdown of the remaining Cliff Head oil reserves and conversion to a carbon capture and storage project by 2025...providing a clear and strategic first mover advantage for the delivery of low-cost, clean, blue hydrogen and ammonia for large-scale export. By adding wind and solar power generation opportunities, the company plans to close the loop as an integrated clean energy provider. Whilst the renewables plays remain early stage, the value proposition is crystallising. There is a portfolio of potential, likely worth more than the sum of the parts and the remainder of 2022, in particular, could deliver a material re-rating on the expectation of a success case outcome.

#### Business model

Pilot Energy is a junior oil and gas company transitioning to a sustainable clean energy play with a portfolio of potential development opportunities. The current strategy is to pursue the transformational growth potential of its renewables and carbon capture options through its Mid-West (and South-West) projects, now in a definition phase, underpinning an integrated clean hydrogen and ammonia generation platform. The company is well positioned to leverage its acreage and infrastructure base to deliver a project with diversified revenue streams. Financing for the initial phase could be provided through the accelerated production of its remaining crude oil reserves and the initial CCS phase. We would also highlight the partnering potential to prove third party capital.

#### Conceptual to actual is underway

The completion of feasibility studies for the integrated CCS to Hydrogen Technology projects confirms the economic potential of the company's ambitious and potentially transformative development opportunities. Around mid-2022, PGY anticipates lodging an application for the grant of a Greenhouse Gas Injection Licence for 500kt CO<sub>2</sub> pa commencing in 2025, which will represent a major step forward on the development pathway and make PGY an early-mover in the carbon capture and storage space. We would highlight that early mover projects can generate excess returns, particularly in this case where the blow-down of the remaining Cliff Head oil reserves would accelerate cash flow in a strong oil price environment. There is potential for a material de-risking across the portfolio on the delivery of operating approvals on increasing oil production rates over the remainder of CY22. Success cases should also provide the platform for financing and partnering.

#### Higher definition on projects is crystallising the value outlook

Outlining capex and operating margins even if only broadly adds more grist to our assumptions and lowers the risk range on values, despite the early-phase nature of the projects. We add that early-phase projects are subject to potentially significant change through the evaluation and construction processes so attributing values remains a subjective exercise, particularly when timing and financing are somewhat uncertain. We assign a risked valuation of \$134mn (26cps) to the portfolio against a reference share price of 2.0cps. Material progress on blowing-down the oil reserves and CCS approvals should further de-risk and underpin our NAV over 2022. Our current value should be considered within that context and with the commensurate risk overlay.

### Renewable Energy

8<sup>th</sup> June 2022

#### Share Details

ASX code	PGY
Share price (7-Jun)	\$0.02
Market capitalisation	\$10.1M
Shares on issue	504.4M
Net cash at 31-Mar-2022	\$3M
Free float	~51.4%

#### Share Performance (12 months)



#### Upside Case

- Delivery of required approvals and declarations underpinning the carbon capture options and de-risking the commercial case for the South-West projects.
- Continuing rises in commodity prices (oil).
- Above expectation production rates at Cliff Head driving strong net operating cashflows.

#### Downside Case

- Delays in the approvals processes slowing progress on CCS and renewable energy development options.
- Weaker oil cash flows resulting in potentially dilutive equity financing requirements.
- Commodity (oil) prices retrace pre-pandemic levels.

#### Board of Directors

Brad Lingo	Executive Chairman
Tony Strasser	Managing Director/CEO
Bruce Gordon	Non-Executive Director
Daniel Chen	Non-Executive Director

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## A Step Further Down The Development Path

With the completion of significant proportions of the Mid-west feasibility studies, PGY is moving a big step closer to converting concept to reality. The transition to the end game, the production of clean hydrogen (and eventually clean and green ammonia) is clearly underway and making progress.

Initial results include broad costings/operating assumptions (refer [Exhibit 2](#)) which support the economic case and highlight the transformational opportunity. We are now in a position to rebase the NAV on tangibles guidance, particularly as the Stage 1 could be delivered comparatively rapidly.

The integrated project strategy is looking more like a realistic outcome rather than simply conceptual with material progress likely over next 12 months across all aspects of the project – CCS to renewables to hydrogen (H<sub>2</sub>) and eventually ammonia (NH<sub>3</sub>).

We caution that it is still all early-stage and at the higher end of the risk spectrum, but with important de-risking and re-rating opportunities to come.

The feasibility studies for the Mid-west integrated Renewable Energy project included –

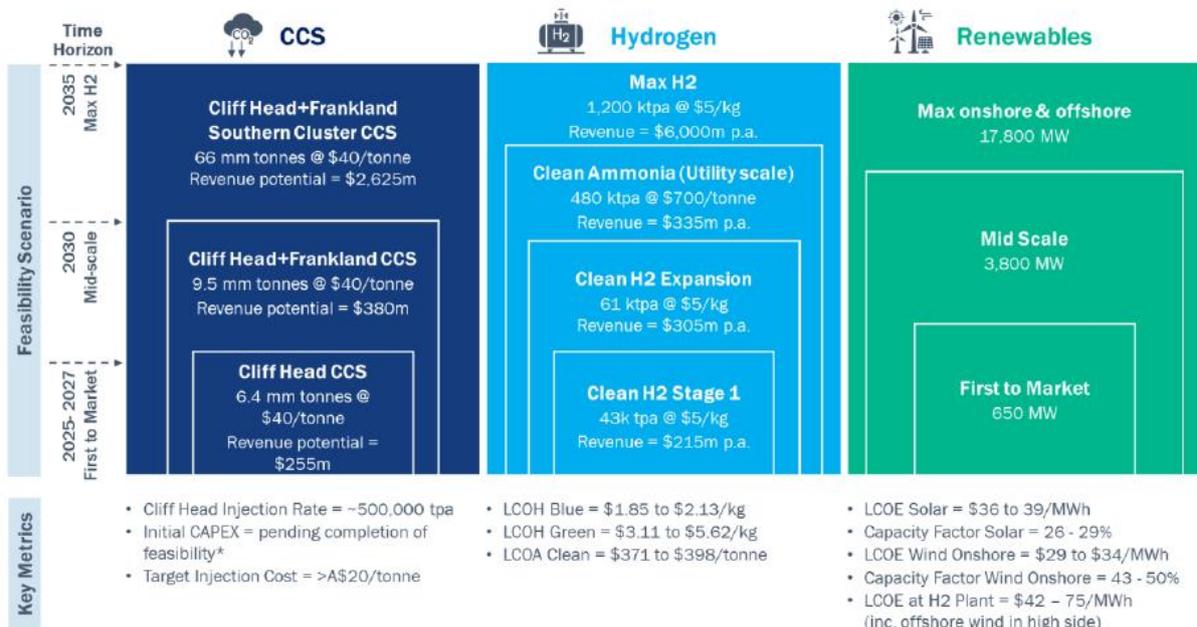
### Exhibit 1: Status of individual feasibility studies – full completion is expected by mid-2022

Study		
Mid-west CCS and Blue H2	Completed, assessing the “...implementation of a CCS and Blue H2 project centred on the Cliff Head Oil Field”. This is jointly funded by PGY, APA Group (APA.ASX) and Warrego Energy (WGO.ASX). A resource assessment of the CO2 storage potential of the Cliff Head field (WA-31L licence) has been finalised.	
WA-481P CCS	First stage completed which includes – “...an assessment of the CO2 storage potential of the permit (PGY 100%) with estimates of the Contingent and Prospective storage capacity”.	
	As announced on 26-Apr, PGY and Triangle Energy (TEG.ASX) announced they had reached a binding agreement on a restructure of working interests for the CH oil JV and CCS project.	
Upon completion of milestones	PGY Interests	TEG Interests.
CH oil and CCS projects	57.5% - with Operatorship	42.5% - retained as Technical Operator
Mid-west renewables		Completed
8 Rivers Blue Hydrogen technology		Completed

Source: Company data

We note the company is currently undertaking a separate study on its South-west CCS project.

### Exhibit 2: Feasibility Study results summary...the operating margins look robust on these assumptions



Source: Company data

The critical first step is to close the project loop by progressing the CCS component of the integrated project and that initially requires an application to NOPTA for “...the declaration of a greenhouse gas storage formation under the Offshore Petroleum and Greenhouse Storage Act (2006)”.

The Cliff Oil Field is the only existing petroleum production operation in federal waters between the NW Shelf and the South Australian-Victorian Border and by definition the only operation at present with the capacity to convert converting into a viable CCS project under specific federal regulatory guidelines.

The declaration would essentially represent a formal approval and recognition that the reservoirs currently being exploited for Cliff Head oil production have the design integrity to act as a long-term CO<sub>2</sub> storage unit.

Upon receipt of the declaration, the CH CCS project would be an early mover development in the capture and storage space...early mover projects can generate excess returns.

In an ASX announcement dated 19-May, management indicated it has formally commenced the application and approvals processes; and is undertaking project financing and partnering arrangements.

As indicated by the company, the key near term milestones associated with the CCS development will be the granting of the Cliff Head CCS Greenhouse Gas Injection Licence by the relevant regulators and the CH-CCS Final Investment Decision both anticipated to occur by late 2023.

## It’s Now About Unlocking The Value Inherent In The Assets

With broad financial assumptions we can ascribe a more tangible value to the PGY base E&P business and clean energy opportunities.

We value the Cliff Head oil project using company guidance on capex, production rates and reserves adjusted for our discretionary probability weighting (1-risk %). Our probability weighting is subject to change as the company progresses the accelerated production strategy as a precursor to the CCS phase. While crude oil prices are strong, the forward curves suggest there is downside risk versus current spot rates.

We model the CCS and first phase of hydrogen production based on company guidance, 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 apply resultant unit metrics for the potential expansion cases, also probability weighted.

### Exhibit 3: PGY NAV – quant makes a difference...supporting higher confidence levels

		Pr	A\$m	A\$/share	
Cliff Head CCS	57.5%	75%	\$51	\$0.10	Risk weighted against operating margin guidance and estimates
Mid-West Wind & Solar	100%	25%	\$23	\$0.05	Risk weighted against guidance
Mid-West Hydrogen	100%	25%	\$19	\$0.04	
South-West Project	50%	5%	\$11	\$0.02	...excludes attribution to the Tcf scale Leschenault gas prospect as high risk exploration
Cliff Head Oil & Exploration	57.5%		\$30	\$0.07	Based on forward curve oil price and exchange rate assumptions (1-Apr); and production guidance
			<b>\$134</b>	<b>\$0.27</b>	
<b>Cash</b>			\$2		At 31-Mar
<b>Corporate</b>			(\$3)		
<b>TOTAL</b>			<b>\$134</b>	<b>\$0.26</b>	Rounding adjustments
Shares issued (mn)	504				

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.

We would highlight the risked value attributable to the Cliff Head oil play of 7cps on a stand-alone basis against the reference share price (2.0cps 7-Jun) where success on the accelerated production strategy can deliver operational and capital support for the CCS project.

The immediate commercial opportunities associated with the oil and CCS projects is transformational to the current share price on an ex-clean energy basis.

## The Cliff Head Story - From Oil Production To Carbon Storage.

Management has a clearly defined three stage process, underpinning the conversion of the current Cliff Head oil production project into a carbon storage facility.

**Exhibit 4: A three stage pathway to deliver CCS**

	Storage Reservoir Preparation	Pre-CO <sub>2</sub> Injection	CO <sub>2</sub> Injection
<b>Operation</b>	Final oil production	Facility Conversion & Installation	CO <sub>2</sub> Injection
<b>Objective</b>	Prepare Cliff Head oil field reservoir for CO <sub>2</sub> injection	<ul style="list-style-type: none"> <li>Prepare Cliff Head wells for CO<sub>2</sub> injection</li> <li>Install onshore CO<sub>2</sub> aggregation/receiving facilities</li> </ul>	Commence supercritical CO <sub>2</sub> injection at a continuous rate of at least 500,000 tpa for at least 15-years
<b>Timing</b>	CY Q1 2023	Late CY 2024-2025	CY 2026
<b>Duration</b>	36-48 months	6-12 months	20+ years
<b>Permitting</b>	Existing production license	GHG Declaration + CO <sub>2</sub> injection license	GHG Declaration + CO <sub>2</sub> injection license
<b>Work Activities</b>	<ul style="list-style-type: none"> <li>Increase production to up to 70,000 BWPd from existing wells</li> <li>Install additional rental oil/water separation units</li> <li>Install additional 200 kW power unit module on CHA</li> <li>Re-commission water disposal well at ASP</li> </ul>	<ul style="list-style-type: none"> <li>Workovers 3 existing water injection wells and 2 production wells</li> <li>Externally reinforce existing pipelines for CO<sub>2</sub> operation</li> <li>Construct onshore CO<sub>2</sub> aggregation, transport and receiving facilities</li> <li>No further drilling required to accommodate 500,000 tpa injection rate and 6Mt of CO<sub>2</sub> storage</li> </ul>	<ul style="list-style-type: none"> <li>Transport supercritical CO<sub>2</sub> to CHA via existing onshore/offshore 10" pipelines</li> <li>Inject supercritical CO<sub>2</sub> into reservoir through 5 existing wells</li> <li>Deepen remaining existing wells + drill 1 new well to increase storage capacity to up to 16Mt and injection rate to at least 1 mtpa</li> </ul>
<b>Expected Outcomes</b>	Creation of 6+ million tonnes of CO <sub>2</sub> storage capacity with expected additional oil production generating significant free cash flow	Completion of a conversion of all offshore and onshore facilities necessary to commence CCS injection operations	Commence continuous CCS injection operations

Source: Company data

The process for moving Cliff Head into an 'infrastructure' phase would necessitate accelerated production of the remaining crude oil reserves providing a 'windfall gain' per se versus the natural late-life production of the field – the pre-CO<sub>2</sub> injection phase.

Management has identified a window to maximise crude oil output before the projected start-up of CCS operations from 2025.

### Cliff Head will deliver more than just storage - the oil play

Gross reported reserves at Cliff Head are estimated at ~1Mb (31-Mar) with current production rates somewhat constrained by the fluid handling capacity of the Arrowsmith plant, which stands at ~30kbpd - as the water cut increases, the net oil recovery must by definition reduce, particularly as the field is undergoing secondary recovery through water injection.

Through 2Q22, CH was producing ~13kbpd of total fluid with net crude oil of 648bpd (gross).

**Exhibit 5: CH adjusted (estimated) reserves (100% basis)\***

Contingent Resources (Mb)	1C	2C	3C
WA-31L	0.341	1.033	1.555
WA-481P	3.3	6.0	9.8
Contingent Resources (Bcf)	1U	2U	3U
WA-481P	29.4	41.6	58.9

Source: Company data; \* After allowing for gross production of 0.247Mb for period 01/04/21 to 31/03/22

A critical component of the accelerated recovery strategy is to address the fluid handling bottle-neck and increase the throughput to some 60-70kbpd via the installation of an additional 30-40kbpd of oil water separation units (refer [Exhibit 4](#)).

We understand the existing wells are capable of producing ~120kbpd...so no new well work will be required but the platform will require the power supply to be upgraded for extraction/injection in both the drawdown and CCS phases. Note that it takes more energy to inject than to withdraw - *if drawing fluid at higher rates, then pressure support will require at least a 1:1 reinjection we suggest.*

Produced water will be disposed of through injection via the existing water disposal well that is licensed for such use in the Arrowsmith Onshore Production Facility, but management has indicated there may also be the opportunity to sell produced water to the Mid-West Water Corporation given the project proximity to high-intensity wheatbelt farming operations.

We understand the power module and separation units are likely to be sourced on a rental basis. The additional equipment is likely only to be required for the first 24-months of the blow-down.

With the impending closure of the Kwinana refinery, the JV has (mostly) concluded a new path to market using the facilities at the Arrowsmith Stabilisation Plant for accumulation and storage, with trucking through to Geraldton and shipping to BP Singapore Pte Limited.

The new path will require the upgrading and refurbishment of existing tank storage, for a capacity of ~30kb and at an estimated gross cost of A\$2.5mn.

We note that the CH JV anticipates the crude inventory at Kwinana around end-April at ~140kb, with receipts deliverable in June. Assuming a sale price of US\$100/b, this would deliver some US\$14mn in gross revenue to the JV (noted as c.US\$3-4mn net to PGY under pre-restructure interests).

The blow-down of the remaining reserves is expected to take around 36-48 months on the assumption that the field is fully depleted in a practical sense completes before commencing the CO<sub>2</sub> injection phase. Management has indicated though, that it would be possible to undertake both activities concurrently, as is standard practice in enhanced recovery projects. As such our modelling assumptions should be considered as a base case.

Although it remains a projection at this stage, Pilot's CCS subsurface technical consultant CO2Tech, has estimated the oil recovery phase will operate with an oil production cut of not less than approximately 5%.

Broad guidance suggests –

- Crude recovery of around 1.4Mb;
- an initial production rate of 2,000bd; and
- an annual average production rate over the first 24-months of ~1,250bd.

Importantly the pre-injection phase can be executed under the terms of the current production licence, requiring only an updating of the Cliff Head Oil Field production plan with NOPTA.

At oil prices of ~US\$100/b, management guidance suggests Cliff Head could potentially generate ~A\$174mn in new oil sales and under the new oil sales arrangements generate ~A\$18mn pa of free cash flow to PGY after covering all operating costs, taxes, royalties and oil sales costs - net to PGY over the first 24-months of ~A\$36mn on a 57.5% working interest basis.

We have calibrated our modelling under the company assumptions and applied RaaS commodity prices based on the forward curves as at 1-Apr.

**Exhibit 6: Forward curve assumption show oil price backwardation**

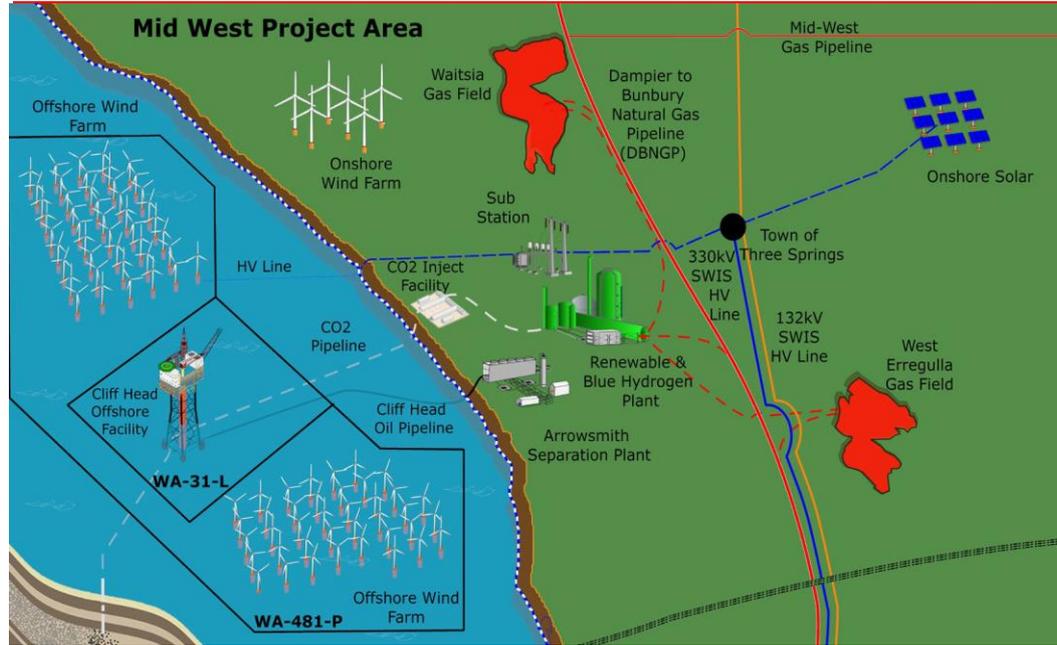
	FY23	FY24	FY25	FY26
Brent Oil (US\$/b)	93.14	85.44	80.27	77.15
AUD:USD	0.7503	0.7491	0.7396	0.7303

Source: investing.com (as of 1-Apr)

Using lower oil price assumptions, we calculate net cashflow to PGY over the 24 months to end FY24 to be ~A\$27mn and gross revenue of ~A\$152mn...the economic case remains compelling.

We highlight the risk to both the RaaS and management assumptions from forward curves in backwardation and oil price volatility, which has increased significantly since the beginning of the Ukraine crisis. Oil prices are likely to be subject to potential significant change over the forecast period.

**Exhibit 7: Assets and infrastructure – proximity lowers capex and drives higher margins**



Source: Company data

## Cliff Head Carbon Capture & Storage (CH-CCS) - PGY Holds A Strategic First Mover Advantage.

The Cliff Head Oil Field is located in Commonwealth Waters under federal jurisdiction. Unlike WA regulations where there is no legislation currently in place enabling carbon capture and storage, under federal mandates there is an established regulatory pathway for converting late-stage oil production operations into a long-term, medium scale CCS operation.

As previously highlighted but worth repeating, the Cliff Head Oil Field is the only existing petroleum production operation in federal waters between the NW Shelf and the South Australian-Victorian border and by definition is the only operation at present with the capacity to convert into a viable CCS project

The feasibility study has already determined that Cliff Head with its associated wells and infrastructure are suitable for a CCS project.

Analysis of WA-481P and WA-31L confirm the permits hold storage potential of 10.8Mt at 2C with a best estimate (2U) prospective potential of 80.4Mt on a 100% basis, within the reservoirs currently being exploited for oil production.

### Exhibit 8: Storage resources based on existing oil reservoirs should be low risk

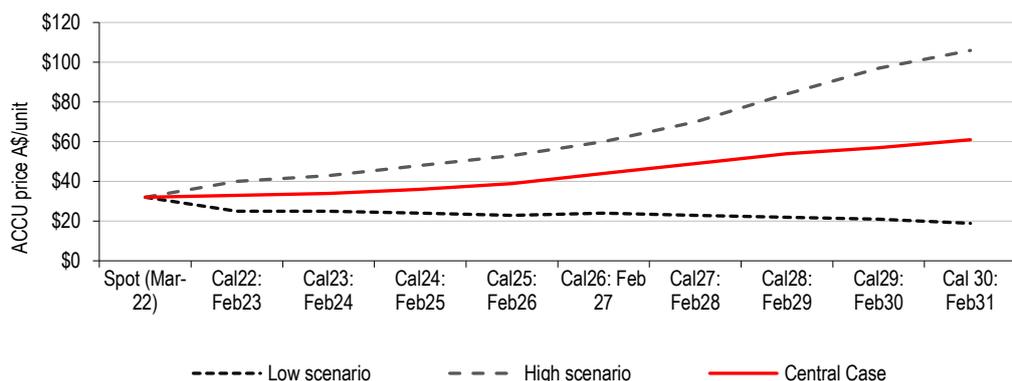
Contingent Storage Resource (Mt)	1C	2C	3C
WA-481P	2.8	4.4	7.2
WA-31L	1.0	6.4	15.8
	<b>3.8</b>	<b>10.8</b>	<b>23.0</b>
Prospective Storage Resource (Mt)	1U	2U	3U
WA-481P	46.2	80.4	144.2

Source: CO2Tech – principal feasibility consultant for CCS

The CH-CCS Project is forecast to inject at a flat annual rate of 500kt pa for 13 years (which aligns with the 2C storage potential of the Cliff Head field (WA-31L) on a stand-alone basis.

The company highlights Reputex forecasts for Australian Carbon Capture units (ACCUs) in 2025-2026 in the range of A\$40/t (Central Case) to A\$53/t (High Case) growing to A\$61/t (Central Case) to A\$106/t (High Case) by 2030. Extrapolating, based on these price estimates projects that the CH-CCS Project could generate revenue of A\$20-26.5mn growing to A\$30.5-53mn on an annual basis.

### Exhibit 9: ACCU forecast to 2031 demonstrating the range of potential outcomes



Source: Reputex data

We note that these estimates bear the same error margins as any commodity forecasts, but in the absence of alternate views and a transparent market, appear reasonable on an initial basis.

As we understand it, the business model for the CH-CCS Project includes a revenue stream in two parts –

- **Fixed Storage Fee** - a per tonne charge calculated we assume, on a required return on capital, on a similar structure to 'disposal' infrastructure; and an
- **ACCU Fee**: linked to market value of carbon credits.

Initially the ACCUs would reside with the third party sequestering the CO<sub>2</sub>, although with PGY looking to manufacture **blue** H<sub>2</sub>, predicated on a natural gas feed, at some point the company will also generate credit units in its own right. The split revenue stream provides PGY with a natural hedge against the potential volatility of ACCUs whilst retaining the capacity to benefit from the forecast upside in unit pricing.

**High-level modelling on the cost guidance provided suggests a project breakeven ACCU price of ~ \$30/t.**

It's worthwhile considering the implications and potential impacts of the recent change in Federal Government on demand and pricing of ACCUs.

We note the bounce in the price of ACCUs immediately after the election result, reported as being around 18%, on the expectation of tighter emissions rules to come. The closing price on 23-May was \$35.50/t.

Analysing the implications, Reputex suggested it was far from certain demand for ACCUs would grow significantly with –

*“...the local market facing a number of challenges that could impact medium-term price development”,* including the development of alternate (industrial) carbon-credit mechanisms and an anticipated surplus of ACCUs from recent projects.

<https://www.reputex.com/research-insights/insights-election-2022-market-impacts-and-where-to-next-for-the-alps-safeguard-mechanism>

Although the political environment for setting somewhat more aggressive carbon reduction targets is now in place, the economics (in terms of unit prices) remains unclear but likely to be see risk to the upside, we think.

The look-through from guidance indicates the capex to start-up of the CH-CCS Project injection phase could be low with the project only requiring five of the existing eight Cliff Head wells to deliver the projected 500kt pa target. The project capex would be allocated against well work-overs (for example, removing any down hole pumps) and compression (for injection). We estimate capex may only be in the order of \$20-30mn but note this remains to be confirmed as the final cost and engineering analysis continues.

As the production rate from the field drops from the expected peak (60-70kbd total fluid), individual wells would be worked over and reset for CO<sub>2</sub> injection. These costs would be sequenced and staggered with the capex considered to be incremental compared to the cost of drilling new wells. Modelling and guidance have well workovers commencing in say, late 2024 and most likely to be funded out of the crude oil cash flow (naturally dependent on realised oil prices over the period).

Working guidance points to a CCS injection cost below A\$20/t, which would deliver very strong operating margins based on the ACCU indicated prices.

Using these estimates to represent a base-case, we note the project would have intrinsic expansion potential based on the well redundancy and storage capacity upside (**Exhibit 8**).

The WA-31L license area covering the Cliff Head Oil Field has CCS potential beyond the 500kt pa injection rate currently supported by the 2C volumetrics. Management has indicated that the injection rate could be increased up to >1,000kt pa by proving the 3C potential of 15.8Mt by accessing additional capacity in the deeper High Cliff Sandstone Formation underlying the oil field.

Drilling of an additional well could be accommodated from the available slots on the Cliff Head A Platform.

This 'growth option' could generate annual revenue of A\$40mn (1Mt pa @ A\$40/t), a doubling of the base case up to A\$106mn pa on the high case by 2030.

**On a broad outlook, we suggest the Cliff Head oil to CCS pathway is a realistic opportunity**, that certainly in the current oil price environment could be largely self-funding or requiring only low equity contributions from a capex perspective.

## Clean Energy – Hydrogen And Renewables

We have focussed most directly on the oil enhancement and CCS aspects of the integrated strategy, specifically as they are the foundation point for all options that follow. Without the delivery of these projects, the generation of clean energy (blue into green hydrogen and ammonia) becomes more speculative and ill defined. On that basis, we carry a heavily risk weighted attribution within our valuation and highlight that as the oil and CCS aspects progress, the risk factors across the integrated strategy will unwind.

We have outlined the cases for renewable energy and hydrogen manufacture previously, particularly in our scoping and update reports (14/12/20 and 3/11/21) and the premise has not materially changed.

We refresh our commentary -

The **Mid-West Clean Energy Project** provides –

- A material exposure to world class wind and solar energy resources, along the coastal mid-west of WA, acknowledged as “...one of the highest rated renewable energy regions” by Geoscience Australia;
- The leverage provided by surrounding infrastructure comprising an extensive integrated power grid (330kV transmission lines), access to the Dampier-Bunbury and Parmelia gas pipelines with established port, rail and road systems; and
- The capacity to leverage existing offshore oil and gas infrastructure and production

...delivering a ‘...clear hydrogen development pathway’.

The establishment and integration of a hydrogen production plant initially utilising the natural gas resources within the hub (blue hydrogen as a precursor to green) provides multiple ways to market and multiple revenue streams.

These revenue streams now also include the potential for the manufacture of green ammonia.

### Exhibit 10: Pathway to clean energy – a three stage path from CCS and to green ammonia

<ul style="list-style-type: none"> <li>• Targeting commencement of CCS operation by CY2025</li> <li>• Delivery of CCS operation provides foundation for production of Blue H2</li> <li>• 8 Rivers Clean Hydrogen &amp; Power provides technology to deliver low cost Blue H2 @ LCOH = \$2.13/kg</li> <li>• Targeting Blue H2 production in 2025-2027 time frame</li> <li>• Focussed on project expansion through Renewables &amp; Hydrogen Integration</li> <li>• Study results point to potential to be a substantial clean ammonia producer</li> </ul>	<p><b>Stage 2</b> CCS to Blue H2</p>  <p><b>Clean Hydrogen</b></p> <p>2025-2027</p>	<p><b>Stage 3</b> H2 Expansion to Clean Ammonia</p>  <p><b>Clean Ammonia</b></p> <p>2027-2030</p>
	<p><b>Incremental CAPEX</b></p> <ul style="list-style-type: none"> <li>• 8 Rivers Clean Hydrogen and Power = \$340m</li> </ul> <p><b>OPEX</b></p> <ul style="list-style-type: none"> <li>• CCS = pending completion of feasibility*</li> <li>• Hydrogen = \$31m p.a.</li> <li>• Natural Gas = \$56m p.a.</li> </ul> <p><b>Revenue</b></p> <ul style="list-style-type: none"> <li>• CCS = \$12.5m p.a.</li> <li>• Power = \$8.19m p.a.</li> <li>• Hydrogen sales = \$215m p.a.</li> </ul> <p><b>Levelised Cost</b></p> <ul style="list-style-type: none"> <li>• LCOH = \$2.13/kg</li> </ul>	<p><b>Incremental CAPEX</b></p> <ul style="list-style-type: none"> <li>• Renewable Power, ~220MW = \$320m</li> <li>• Green H2 Integration/ammonia = \$320m (electrolyser, NH3 plant)</li> </ul> <p><b>OPEX</b></p> <ul style="list-style-type: none"> <li>• CCS = pending completion of feasibility*</li> <li>• Ammonia = \$45m p.a.</li> <li>• Natural Gas = \$56m p.a.</li> </ul> <p><b>Revenue</b></p> <ul style="list-style-type: none"> <li>• Power = \$9.23m p.a.</li> <li>• Ammonia = \$244m p.a.</li> </ul> <p><b>Levelized Cost</b></p> <ul style="list-style-type: none"> <li>• LCOA = A\$398/tonne</li> </ul>

Source: Company data

There have been numerous published evaluations over 2021 focussing on the growth potential of a global hydrogen market as the natural pathway of the transition away from fossil fuel-based energy generation.

We don't propose analysing or debating the basic premise...the transition is underway. However, we would highlight that the timing and costs associated with establishing a global hydrogen market remain uncertain, particularly in the current economic operating environment.

The establishment of green energy as the end game is broadly acknowledged. We see the soundest and most optimal way to get there as starting with **blue** H<sub>2</sub> as the foundation point for **green** H<sub>2</sub> (and NH<sub>3</sub>) production (**Exhibit 10**).

The projects that can leverage existing infrastructure via gas pipeline and supply, with carbon storage can reduce the initial costs of a transition to hydrogen...**this is the Pilot Energy model**.

The completed studies are based on the 8 Rivers Clean Power & Hydrogen Technology and point to the potential to deliver a levelised cost of hydrogen (LCOH) of around ~\$2/kg.

Determining how cost competitive that price will be is difficult at this stage as the world is transitioning towards cleaner energy sources and the demand supply dynamics over the medium-to-long term are very uncertain.

We append commentary from *chemanalyst.com* on the APAC market for the quarter ended Dec-2021, as a current guide:

*"The price of hydrogen was accelerating in the Asian market during 4Q21 owing to intensified natural gas prices. Nat gas price hikes eventually lead to higher upstream production costs, compounded by trade restrictions and higher freight charges. Increased demand also supported the upward trend in prices which were calculated at US\$4.72/kg (ex-Mumbai) in the Indian market by the end of the quarter."*

We note commentary from Wood Mackenzie study (7/12/21) suggesting "...many countries will be able to produce green hydrogen below \$2/kg", noting this estimate **is dependent on a reduction in the price of electrolyzers by 35-50% by 2025**.

We have noted that in the set of market studies published through 2021, the consensus assumptions indicate that the production costs of **green** H<sub>2</sub> are forecast to trend down at a possibly accelerated rate compared to early IEA (International Energy Agency) modelling (a US\$1.50/kg price by 2030) would suggest.

As alluded to previously, we must now consider all of these projections with reference to how the operating environment has changed in the 12-15months since many of these studies were published:

- Raw material costs have risen;
- Energy (especially natural gas prices for **blue** H<sub>2</sub>) are significantly higher;
- Inflation is rampant;
- Supply chains remain constrained;
- Central governments have accrued massive national debts likely leading less spending on subsidies, grants and infrastructure support; and
- Supportive legislation is still lacking in many countries (noting the issues with regulatory approvals in Australia)

We are not in a position to assess how deliverable this quantum cost reduction is or the risk range around these assumptions, however, **delivering a LCOH of ~\$2/kg should be strongly cost competitive in our opinion**.

The company has set ambitious targets for project delivery:

- CCS by 2025,
- CCS to **blue** H<sub>2</sub> (2025-2027),
- H<sub>2</sub> expansion to **green** ammonia (2027-2030)

...so, benchmarking on progress will be clear and evident, providing significant de-risking/rerating events particularly over the next 12-18months.

### Exhibit 10: Financial Summary

#### PILOT ENERGY PGY

YEAR END	SEP	
NAV	A\$	\$0.26
SHARE PRICE	A\$	\$0.02 cot 7-Jun
MARKET CAP	A\$M	10
ORDINARY SHARES	M	504
OPTIONS	M	88 Unlisted exercisable at \$0.033-0.066

nm = not meaningful  
na = not applicable

COMMODITY ASSUMPTIONS		FY20A	FY21A	FY22E	FY23E
Brent Oil Price	US\$/b	40.68	42.16	54.69	95.59
Exchange rate		0.7226	0.7170	0.7339	0.7518
Hedged Oil Price	A\$/b				
Realised Gas Price	A\$/gj				
Realised Oil Price	A\$/b	56.30	58.79	74.52	127.15

RATIO ANALYSIS		FY20A	FY21A	FY22E	FY23E
Shares Outstanding	M	106	502	504	504
EPS (pre sig items)	Acps	(0.8)	(0.6)	(0.2)	(0.2)
EPS (post sig items)	Acps	(0.8)	(0.6)	(0.2)	(0.2)
PER (pre sig items)	x	na	nm	nm	nm
OCFPS	Acps	na	(0.6)	(0.2)	(0.1)
CFR	x	nm	na	na	na
DPS	Acps				
Dividend Yield	%				
BVPS	Acps	0.2	2.4	2.4	2.2
Price/Book	x	30.0x	0.8x	0.8x	0.9x
ROE	%	79%	na	na	na
ROA	%	na	na	na	na
(Trailing) Debt/Cash	x				
Interest Cover	x				
Gross Profit/share	Acps	na	na	na	na
EBITDAX	A\$M	356	313	863	1,238
EBITDAX Ratio	%				

EARNINGS	A\$000s	FY20A	FY21A	FY22E	FY23E
Revenue					
Cost of sales		(569)	(3,256)	(1,971)	(1,943)
<b>Gross Profit</b>		<b>(569)</b>	<b>(3,256)</b>	<b>(1,971)</b>	<b>(1,943)</b>
Other revenue		356	313	863	1,238
Other income					
Exploration written off		(669)	0	(50)	(50)
Finance costs					
Impairment					
Other expenses		(0)	0	(25)	(100)
<b>EBIT</b>		<b>(882)</b>	<b>(2,943)</b>	<b>(1,183)</b>	<b>(855)</b>
<b>Profit before tax</b>		<b>(889)</b>	<b>(2,943)</b>	<b>(1,156)</b>	<b>(838)</b>
Taxes		0			
<b>NPAT Reported</b>		<b>(889)</b>	<b>(2,943)</b>	<b>(1,156)</b>	<b>(838)</b>
Underlying Adjustments					
<b>NPAT Underlying</b>		<b>(889)</b>	<b>(2,943)</b>	<b>(1,156)</b>	<b>(838)</b>

CASHFLOW	A\$000s	FY20A	FY21A	FY22E	FY23E
<b>Operational Cash Flow</b>		<b>114</b>	<b>(3,184)</b>	<b>(1,088)</b>	<b>(685)</b>
Net Interest		0	(5)	27	17
Taxes Paid					
Other					
<b>Net Operating Cashflow</b>		<b>114</b>	<b>(3,189)</b>	<b>(1,061)</b>	<b>(668)</b>
Exploration/Development		(338)	(915)	(250)	(500)
Capex			0	(215)	(215)
Investments					
Net Asset Sales/other					
<b>Net Investing Cashflow</b>		<b>(338)</b>	<b>(915)</b>	<b>(465)</b>	<b>(715)</b>
Dividends Paid					
Net Debt Drawdown		0			
Equity Issues/(Buyback)		100	10,295		
Other					
<b>Net Financing Cashflow</b>		<b>143</b>	<b>9,611</b>	<b>0</b>	<b>0</b>
<b>Net Change in Cash</b>		<b>(81)</b>	<b>5,448</b>	<b>(2,076)</b>	<b>(2,133)</b>

BALANCE SHEET	A\$000s	FY20A	FY21A	FY22E	FY23E
Cash & Equivalents		7	5,455	3,379	1,246
PP&E & Dev-Expl		75	3	2,050	3,082
Investments		0	212	4,650	4,650
<b>Total Assets</b>		<b>159</b>	<b>11,993</b>	<b>12,073</b>	<b>10,895</b>
Debt					
<b>Total Liabilities</b>		<b>1,280</b>	<b>920</b>	<b>390</b>	<b>250</b>
<b>Total Net Assets/Equity</b>		<b>(1,121)</b>	<b>11,072</b>	<b>11,683</b>	<b>10,645</b>
Net Cash/(Debt)		7	5,455	3,379	1,246

PRODUCTION		FY20A	FY21A	FY22E	FY23E
Cliff Head	Oil kb		66	62	63
<b>TOTAL</b>	<b>kb</b>		<b>66</b>	<b>62</b>	<b>63</b>

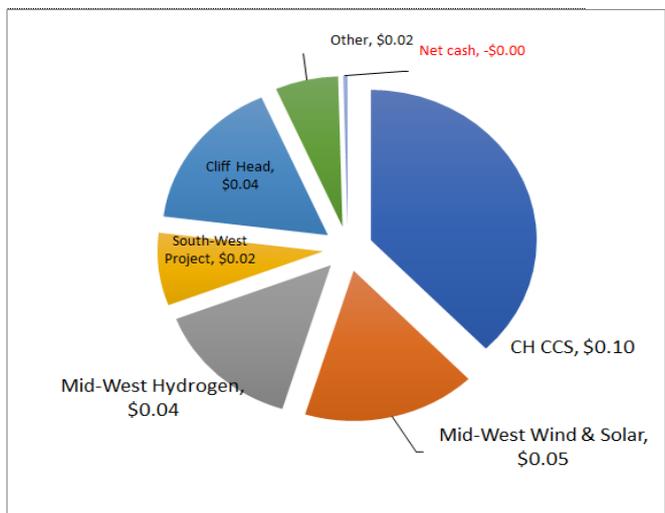
Sales Volumes				
Product Revenue	A\$m			
Ave Price Realised	A\$/boe			
Cash Costs	A\$/boe			
Cash Margin				

RESERVES & RESOURCES		as of 30/06/2021		
Reserves		Oil		
	Mb	2P	1C	2C
Cliff Head		0.3		
SE Nose			0.1	0.2
West High				0.2
Other Prospects				0.4
<b>TOTAL</b>	<b>0.3</b>	<b>0.1</b>	<b>0.8</b>	<b>0.7</b>

Prospective Resources		Low	Best	High
Mentelle Updip			1.2	
Other			0.8	
<b>TOTAL</b>	<b>1.9</b>			

EQUITY VALUATION	Interest	Pr	A\$M	Acps
<i>Renewables and Carbon Capture</i>				
CH CCS	58%	75%	\$51	\$0.10
Mid-West Wind & Solar	100%	25%	\$23	\$0.05
Mid-West Hydrogen	100%	25%	\$19	\$0.04
South-West Project	50%	5%	\$11	\$0.02
<i>O&amp;G Upstream</i>				
Cliff Head	58%	100%	\$22	\$0.04
Other Discoveries	58%	25%	\$4	\$0.01
Exploration			\$4	\$0.01
<b>Net Cash/(debt)</b>			<b>\$134</b>	<b>\$0.27</b>
Corporate costs			-\$3	-\$0.01
<b>TOTAL</b>			<b>\$134</b>	<b>\$0.26</b>
<b>Cash Producing Assets</b>				<b>\$0.04</b>



Source: RaaS Advisory; Priced at 2.0cps



# 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: 6<sup>th</sup> May 2021



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

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Website: [www.afca.org.au](http://www.afca.org.au); Email: [info@afca.org.au](mailto:info@afca.org.au); Telephone: 1800931678 (free call)

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

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