

## Ready to power on

Pilot Energy Ltd is a junior oil and gas exploration company that is transitioning to face the new industry paradigm – renewable energy. The company has commenced feasibility studies over its renewable and carbon capture options, the Mid-West and South-West projects. Pilot is looking to develop an integrated wind and solar power generation with hydrogen manufacture by leveraging its oil production infrastructure and tenements, with multiple commercial outcomes. The company has existing oil production with growth potential and a Tcf scale gas play coincident with its South-West Project area. Although the renewables plays are early-stage, the value proposition is beginning to materialise. There is a portfolio of potential, likely worth more than the sum of the parts especially leveraging its acreage and infrastructure assets. The next 6-12 months could deliver material re-rating outcomes in the success case.

### Business model

Pilot Energy is a junior oil and gas company with a portfolio of emerging opportunities. The critical focus of management will be to pursue its transformational growth opportunities in the renewables and carbon capture space through its Mid-West and South-West project proposals, which are currently undergoing feasibility studies. The company is looking to leverage its acreage and infrastructure base to underpin a strategic blue-print for expansion into the renewable energy and carbon capture space and the diversified revenue streams that could emerge. Financing for the renewable and other downstream opportunities could be provided partly through partnering.

### Adding pieces to the portfolio

The opportunity set is growing with PGY adding a South-West carbon capture option, whilst securing a farminee to drill its Tcf scale Leschenault gas prospect – that will be a two for one shot with ‘success’ options independent of the well result. The South-West Project would complement the company’s Mid-West renewables strategy adding more diversification to the portfolio and importantly providing investors with exposure across a range of ‘new energy’ options on success. The recent equity capital raising, with the farmout deal and Cliff Head work programme carry, underpins working capital requirements over the next 12 months.

### Renewables options are early stage but value is crystallising

Valuing early phase projects and project proposals is a subjective exercise, particularly when timing, work programmes and financing are somewhat uncertain. We set our base-case asset value against risk-weighted development scenarios and transactional analyses, applying where appropriate, discretionary probability weightings to success factors. The market is now pricing renewables options and we have adjusted our carrying value to reflect these opportunities within the PGY asset base. We assign a risk weighted valuation of \$137m (27.2cps – refer Exh. 1) to the portfolio against a **reference share price of 6.6cps**. We note the renewables and carbon capture options are as yet still early-stage and subject to significant change through the feasibility and evaluation process. Our attributed value should be considered within that context and with the commensurate risk overlay. It’s worth highlighting that a successful, integrated renewables development **could deliver an equity value of >2.3Bn** across the life cycle, on a 1.5GW project with associated hydrogen manufacture on the basis of our assumptions and reference valuation methodology.

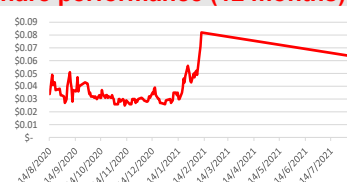
## Energy

16 August 2021

### Share details

ASX Code	PGY
Share price (13-Aug)	\$0.066
Market Capitalisation	\$31.5M
Shares on issue	499M
Net cash (est) at 30 Sep 2021	\$8M
Free float	~51.4%

### Share performance (12 months)



### Upside Case

- Materially de-risking the commercial cases for the Mid-West and South-West renewable and CCS projects through finalisation of the Feasibility Studies and securing suitable partners and further defining the greater renewable power opportunities (hydrogen and commercial CO<sub>2</sub>)
- Further recovery in commodity (oil) prices
- Above model production rates at Cliff Head delivering strong net operating cashflow).

### Downside Case

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

### 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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## Pilot Energy Limited – Funded to charge forward

Pilot Energy Limited (PGY.AX) has been listed on the ASX since 2012. The company holds an upstream portfolio of production and early-stage exploration assets in the mid-west and south-west of WA. Whilst the E&P portfolio provides growth opportunities it's not the transformational investment driver. With the successful completion of an \$8mn capital raising, PGY has relisted and is ready to push the accelerator on its suite of renewable project opportunities. Since the release of our Scoping Report [Dec-2020], the portfolio has expanded and now includes a material carbon capture option to complement its Mid-West renewables project proposal. A listing suspension has not meant a suspension of activity and PGY has a clear and defined development strategy with feasibility studies well underway. Commercial definition (including financing) is still to be delivered but we are drawn to the transformational potential of the project potential. In the last six months, the renewables investment landscape has significantly changed with at least 20 new project proposals emerging at scales up to 50Gw. The opportunity is moving beyond the purely conceptual should now be considered as more strongly based in a new reality. Our confidence levels in the PGY proposals are supported by the quality of the principal contractors conducting the due diligence (Technip, Lautec, Green Fuel Development, 8 Rivers Capital and RISC)...a success case outcome should be considered as underpinned by high quality, arms-length validation. The company's mid-stream assets provide a significant capital benefit in the pursuit of an integrated development with multiple commercial outcomes. This is not simply a power generation play, in our view.

### Exhibit 1: The investment proposition lies in the 'renewables' opportunities

		Pr	A\$mn	A\$/share	
<i>Renewables and carbon capture</i>					
Cliff Head Wind and Solar Project	80%	50%	\$101	\$0.203	Using Deloitte's methodology as outlined
South-West Project	50%*	5%	\$10	\$0.021	Based on the lower of the two success case options (gas discovery/CCS proposal)
<i>Oil and Gas Upstream</i>					
Cliff Head (CH)	21.25%	100%	\$6	\$0.011	Using commodity price assumptions as outlined in 'Risks' section
CH Contingent Resources	21.25%	50%	\$6	\$0.013	Risk weighted against existing operating margins
Other Discoveries	100%	5%	\$4	\$0.007	
Exploration	various		\$4	\$0.008	Nominal only
			<b>\$131</b>	<b>\$0.262</b>	
Cash			\$8	\$0.016	Estimated as at 30-Sep
Corporate			(\$3)	(\$0.006)	
<b>TOTAL</b>			<b>\$136</b>	<b>\$0.272</b>	
Shares issued (mn)	499				Share base forward adjusted for the current equity issues and anticipated shareholder approval of the second tranche issue

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

\* Assuming completion of farmout to AET.

### Risk adjusted NAV at \$137mn...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 highlight the inclusion of PGY's renewables plays in our NAV. We deem these options as being more tangible than at the time of our Scoping Report, previously assessing the proposals as being at a very early and conceptual stage.

The Cliff Head - Mid-West Wind and Solar Project ('Mid-West project') submission has been submitted to the WA State Government and a feasibility study is being progressed independently of the government initiative.

Unlike traditional oil and gas projects (per se), the company's renewable options are not subject to resource definition (ie exploration success) – these are engineering and market opportunity plays.

The resource potential has been highlighted by numerous studies from the 2010 Geoscience Australia and ABARE Australian Energy Resource Assessment through to the Blue Economy Cooperative Research Centre's recent report on the Offshore Wind Potential for Australia

(<https://blueeconomycrc.com.au/projects/offshore-wind-potential-australia/>). BP and Arena also recently release the results of a study focused on the Mid West region of WA which further confirmed the regions potential to host large scale renewables delivering energy into green ammonia and green hydrogen production (<https://arena.gov.au/knowledge-bank/geri-renewable-hydrogen-and-ammonia-feasibility-study/>)

Importantly, the market is now beginning to 'price' green options, although given the somewhat intangible nature of many of the proposals, ascribed values should be considered as subjective in terms of assumptions and risk weightings, subject to significant change through the forecast period.

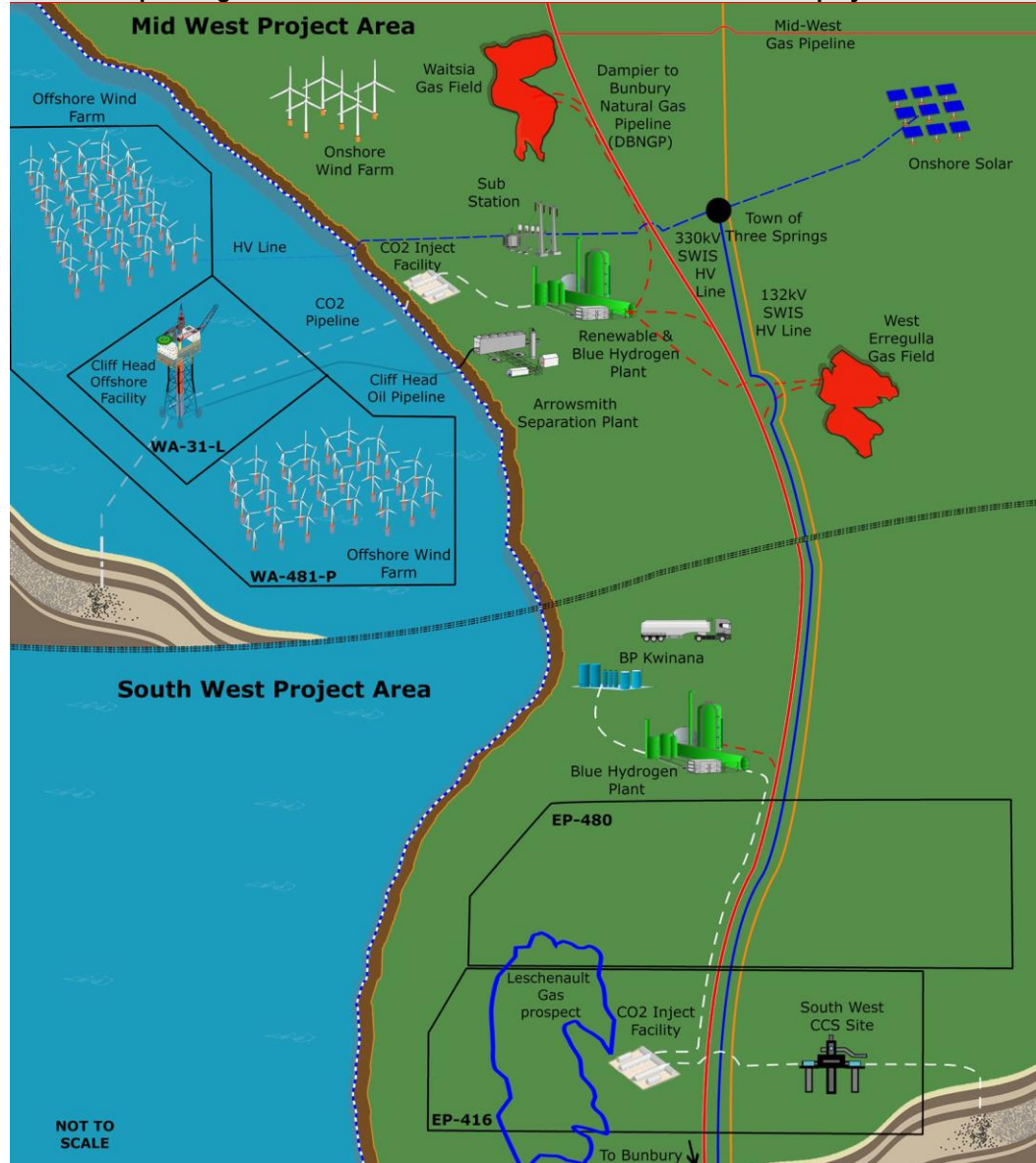
## More pieces for the puzzle

It's worth reiterating some of our previous commentary –

*"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 and the increasing number of proposals being announced encompassing a wide scale spectrum, renewable energy alternatives are now firmly set on the societal agenda as evidenced by initiatives at both the Federal State levels.

**Exhibit 2: Spanning the ends of the Perth Basin – more than a one-shot play**



Source: Company data (not to scale)

## The Mid-West/South-West Project opportunities – no longer a one-shot play

In our Scoping Report, we have previously outlined the strategy and development plans for the Mid-West Project, leveraging the company's existing licences and infrastructure to pursue an integrated power generation and hydrogen production outcome. 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.

In a similar fashion, PGY is now proposing to repurpose its EP-416 and -480 tenements to support a South-West, carbon capture project. The high-density, agricultural land use of these permits makes conventional oil and gas activity somewhat problematic but CCSU could be pursued with a significantly smaller operational footprint.

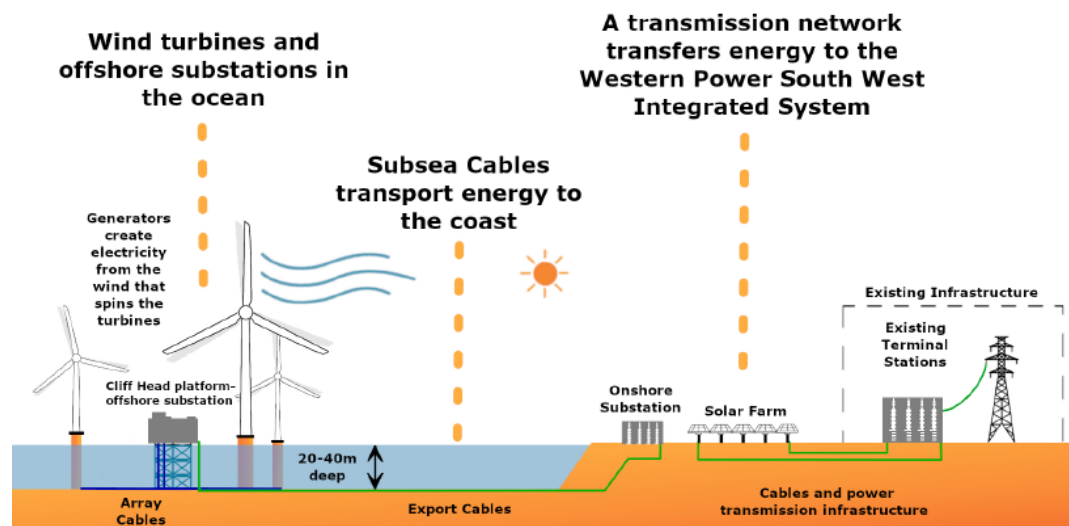
### The Mid-West Project – a brief review

The company is well advanced in conducting a detailed feasibility study for the development of an integrated offshore wind/onshore wind and solar project (Mid-West Project). The WA State Government Oakajee Strategic Industrial initiative for the development of up to 1.5GW of renewable electricity and hydrogen generation is a key potential market for Pilot.

We highlight the renewables opportunity is not limited to the State Government requirements in that **the operating footprint is big enough and sufficiently exposed to a high-quality wind resource to support multiple projects.**

We note 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 gas operations underpins the project premise and strategy”.

#### Exhibit 3: A simple schematic – tying the offshore and onshore together



Source: Company data (not to scale)

**We suggest the proposal is supported by a tangible pathway to commercialisation.**

PGY is also 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 associated CO<sub>2</sub> stream.

### Renewables come with ‘stand-alone’ risk – gas back up can be a good idea

It’s a fact...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 ‘as required’. 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.

There are practical limitations to the battery option, particularly at the scale being proposed by PGY and required by the WA Government, which has indicated it is open to supporting a renewable power project with gas leveraging the pre-existing infrastructure. The 8 Rivers Capital Blue Hydrogen and CO<sub>2</sub> technology study could provide a unique solution through the combination of CCS at Cliff Head with a zero emission gas fired power station.



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 bolt-on value to power generation

We have previously commented -

*“Hydrogen manufacture is the emerging product in the move away from fossil fuels. Although there are a number of natural applications for H<sub>2</sub> 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 US\$215Bn pa by 2034 on a CAGR basis of 4.3-6%, versus the current size of the global oil industry at an estimated **US\$2.3Tr pa (97.1Mbd at US\$65/b – Aug-2021)**.

Source: statista.com, oilprice.com, worldometers.info/oil

There is rising demand for cleaner fuels with increasing government regulations for desulphurisation of transport fuels which is expected to support market growth for hydrogen as merchant facilities are rolled out. Hydrogen is an effective energy carrier and 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 H<sub>2</sub>) end markets.

### Exhibit 4: Power generation to support hydrogen production (blue to green)

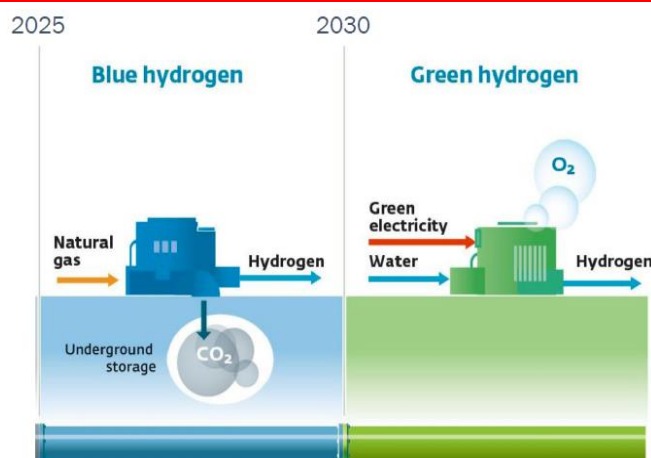
Low-cost industrial scale renewable energy – wind & solar

Readily available natural gas feedstock for blue hydrogen leveraging existing infrastructure and Perth Basin gas discoveries. Hydrogen produced with natural gas utilising low-cost conventional SMR/ATR technology with full CCS

Existing readily accessible, established CCS/CCUS site at Cliff Head. Preliminary estimates indicate 500,000tpa capacity and highly attractive \$16/tonne CO<sub>2</sub> storage cost

South-West Hub CCS Project under-appraisal for sequestration of 800,000+ tpa of CO<sub>2</sub> within PGY petroleum tenures<sup>1</sup>

Existing Commonwealth regulatory framework allowing CCUS/CCS in offshore Commonwealth waters – Cliff Head.



Source: All schematics - Company data

Production of hydrogen (any colour) at scale must be underpinned by a large-scale source of ‘cheap’ energy, whether that be gas (**for blue**) or renewables (**for green**). Pilot is in the position to contemplate both options, commencing along the **blue** pathway, transitioning to **green** as the development of its wind and solar projects provide scale and base load cost reductions.

Any commentary on the potential of the hydrogen component of the proposed development should be read in conjunction with the discussion in Appendix 1 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, initially be **blue** using a natural gas feed stock and generating CO<sub>2</sub> as a by-product. To complete the **blue** loop, the carbon will need to be sequestered or used.

PGY is addressing this issue by evaluating some obvious commercial uses for the output -

- in a closed loop Enhanced Oil Recovery Project (EOR) at Cliff Head and/or;
- the potential of a commercial scale (150tpa plus) plant to generate industrial use CO<sub>2</sub>, to an expanded, integrated project in a similar fashion to that being evaluated by Vintage Energy (VEN.ASX) and Supagas Pty Ltd in the onshore Otway Basin.

### Aligning the assets

To better optimise the Cliff Head infrastructure and associated offshore tenements, Pilot has completed an alignment of interests in the upstream assets and the Cliff Head Wind and Solar Project with the operator of the Cliff Head JV (Triangle Energy – TEG.ASX).

The entry of TEG into the Cliff Head Wind and Solar Project 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 5: 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%	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
WA-481-P	100%		21.25%	78.75%	
Cliff Head Wind-Solar Project	100%		80%	20%	PGY to fully carry the cost of the feasibility study of the CH-WWSP to submission Net carry to TEG ~\$240k

Source: Company data

### What could the Mid-West Project be worth?

We have been here before and can only reiterate the difficulties associated with ascribing a valuation range to this proposal, given the current early-stage nature and potential uncertainties in the commercial market for offtake and pricing in particular. We would also add the potential for significant project changes through the feasibility process...assumptions made today may have limited long-term validity.

We have chosen to valuing the Mid-West Project on a sum of the parts methodology, assigning some quantum of economic price on a segmental basis, noting that in an integrated project, the end point is often greater than the sum of the individual components.

Where we could 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 have previously used Deloitte studies – “A market approach for valuing offshore wind farm assets (Aug-2017)” and “A market approach for valuing solar PV farm assets (Apr-2016)” as the cornerstone to assigning a potential value to the power generation segments. The methodology and application of the study to the PGY valuation on offshore wind can be referenced in our Scoping Report.

Both studies use transactional data to assign EV/MW multiples to the various life cycle stages of offshore wind projects. There are constraints to the study from the limited data sets, to transactions across competing and differing vintages of technologies; and variations in regional commercial attributes. However, Deloitte's ascribe the 'explanatory power' of their models at >90%, so in that respect the conclusions carry a high confidence level particularly given the early-stage development of the industry.

The study considers the life cycle of both offshore wind and solar projects across four separate stages with different EV multiples, naturally increasing as a project moves towards completion and operation.

For the purposes of assigning opportunity values to the PGY situation, we would equate a base case valuation to Deloitte's company's 'Late-Stage' category – effectively in a feasibility (pre-FEED) process.

Valuing a bolt-on hydrogen option is somewhat conjectural, with no significant domestic hydrogen market, no defining export market data and only a broad indication of the size of the proposed hydrogen plant at 250tpd (subject to confirmation).

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 H<sub>2</sub> generation citing **blue H<sub>2</sub>** as more economically advantageous than **green H<sub>2</sub>** in the current operating environment.

We would add that this is still an evolving industrial segment and the commercial opportunities will continue to be limited by the consumption end of the market and particularly the roll out of 'merchant' facilities. Although, in broad terms, as part of an integrated project, hydrogen could likely 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. However, we suggest the economics around a 250tpd production option may remain opaque for some time.

**Exhibit 6: Indicative economic ranges demonstrate that hydrogen opportunities will have very project specific returns**

Study		Cost of manufacture	w CCS add-on	Plant cost of construction	w CCS add-on	Output Capacity	Fixed Cost	
		A\$/mcfe		A\$m		Bcfe pa	A\$m 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]

Considering the as yet still high level of uncertainty associated with the **blue H<sub>2</sub>** option, we assign only a nominal value to the project of only \$10-30mn as representing an early-stage proposal.

The manufacture of **blue H<sub>2</sub>** using a natural gas feedstock, generates CO<sub>2</sub> as a by-product...and the proposal will need to address this issue either through sequestration or enhanced oil recovery at Cliff Head. The Cliff Head Oil Field has a nominal oil-initially-in-place (OIIP) estimate of around 40Mb with an expected ultimate recovery in the order of 17Mb (production to date plus remaining 2P volumes), or about 42.5%.

The Cliff Head operations are already set up for a CO<sub>2</sub> reinjection option with bi-directional wells currently used for water injection.

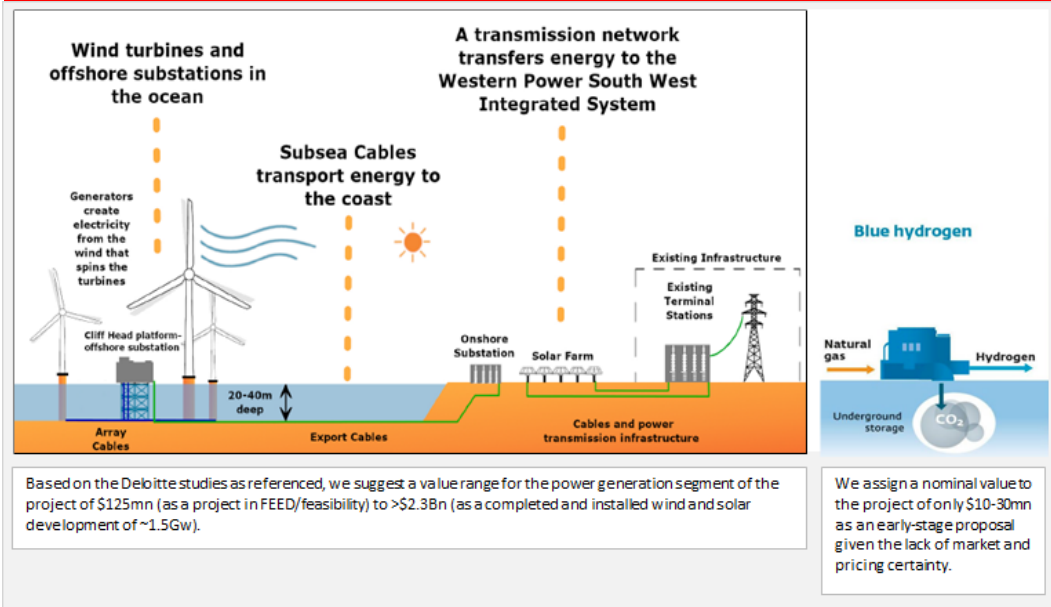
It's too early to estimate the amount of additional oil that could be recovered should this option be undertaken but operating margins on additional, incremental barrels could run at over-50% in our view and that could be conservative.

**We assign a risked' equity value range of \$101mn to the Mid-West project, reflecting the current stage of progress and weighted to the early stage end of the nominal range.**

Based on the Deloitte's metrics the offshore wind aspect of the proposal could be valued at \$125mn (in the FEED stage) to >\$2.3Bn (as a completed and installed project of 1.5Gw) on an unrisks basis. 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 necessarily the value of the opportunity 'now'. Note this estimate is calculated on a 100% basis and should be considered against the current capitalisation of the company at around A\$32mn.



#### Exhibit 7: Value in the upstream and downstream



Source: Company data; RaaS commentary

### The South-West Project – lateral thinking drives a multi-purpose model

The South-West Project will encompass the company's EP-416 and -480 tenements (PGY 100%). There is a conventional, upstream oil and gas exploration opportunity that can also underpin a Carbon Capture and Storage (CCS) play.

PGY plans to address both options through the drilling of the Leschenault Prospect –

- as a gas target with a Prospective Resource potential of 725-1,595Bcf (best to high estimate)

This is a massive gas opportunity and potentially transformational in its own right. However, we'd rate the risk overlay here as very high (on a gas discovery basis) given the incomplete nature of the 2D seismic coverage, poor well density and lack of any analogue success (compared to the North Perth Basin).

In order to offset this risk, PGY has agreed farmin terms with Advanced Energy Transition Ltd (AET) to "...fully fund the drilling of one well" to earn a 50% interest in the Leschenault prospect.

Drilling operations are anticipated to commence in the next 12 months at an anticipated cost of ~\$5mn.

- as a potential CCS project underpinned by the WA Government South-West Carbon Capture and Storage initiative.

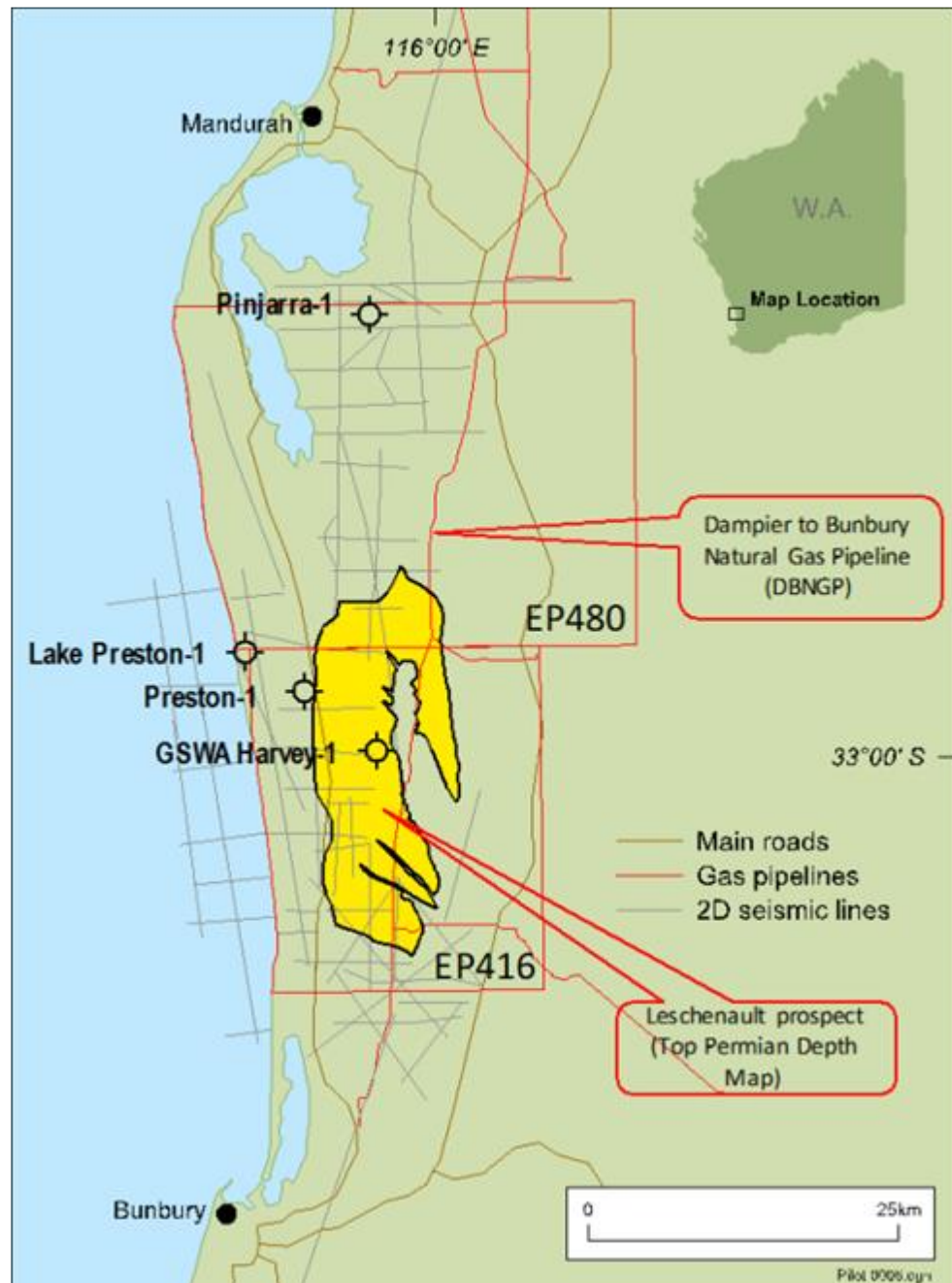
Drilling works conducted by the Department of Mines, Industry Regulation and Safety (DMIRS) have confirmed a base case CCS option of 24Mt CO<sub>2</sub> at a rate of up to 800kt pa over 30 years. As highlighted in **Exh. 2**, the PGY tenements are ideally situated with respect to the proposed BP hydrogen plant at Kwinana and along exiting pipeline easements.

We would highlight also -

- PGY is currently the only party with a right to drill in this region
- It's a two-shot operation, a gas discovery if successful, a usable CCS well is 'unsuccessful'

**We assign an equity value range of \$10-20mn based on a gas discovery and CCS project using a nominal \$16/t unit revenue.** This is a risk range assuming a 5% pre-drill probability gas success case.

**Exhibit 8: Leschenault is a large, transformational gas play – with CCS optionality**



Source: Company data; RaaS commentary

**Pilot has a conventional project at Cliff Head as well**

The proposed integrated renewables projects provide the transformational opportunity, but we note the company also has conventional exploration and production growth options focussed on the onshore and offshore north Perth Basin at Cliff Head. The critical aspect of the Cliff Head asset is the leverage the tenements and infrastructure provide to the integrated renewables proposals though there is an earnings growth project to chase.

### There is 'P' at Cliff Head (PGY 21.25%)

Post the merger with Royal Energy provides the company now holds 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.

We have evaluated the Cliff Head plays within our Scoping Report so we will only briefly reiterate the growth potential and optionality here.

#### Exhibit 9: WA-481-P Minimum work programme (gross cost)

Year	Permit Year Starts	Permit Year Ends	Minimum Work Requirements	Indicative Expenditure \$A
1-3	13/08/2020	12/08/2023	2000 km 2D PSDM reprocessing	200,000
			Geological and geophysical studies	150,000
			350 km <sup>2</sup> new 3D seismic acquisition and PSDM processing	5,000,000
			200 km new 3D seismic acquisition and PSDM processing	400,000
4	13/08/2023	12/08/2024	Geological and geophysical studies	150,000
			Well planning	300,000
5	13/08/2024	12/08/2025	Drill one exploration well	15,000,000

Source: Triangle Energy

The JV is well progressed in planning for a three well drilling campaign, which on success could provide a c.3,000bopd (gross) addition to current production. Successful wells can be tied back and developed through vacant slots on the platform. New discoveries can be brought into production rapidly, extending Cliff Head asset life out to 2030 or beyond.

Any and all drilling targets carry intrinsic risk but we understand the JV considers the portfolio and particularly the three target prospects, at West High, SE Nose and Mentelle Up-dip, to be relatively low risk drilling options given the low reserves threshold required to support a commercial development.

**Against our estimated remaining reserves and and risked adjusted 2C volumes we are comfortable assigning a net value to Cliff Head of ~\$12mn.**

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

#### Exhibit 10: Well planning and farmout campaign has commenced



Source: Triangle Energy

## A raising supports a relisting

As part of the conditions for relisting, Pilot Energy has successfully completed a two-tranche, \$8mn equity raising to provide working capital to continue and progress activity across the asset portfolio as per **Exh. 11**.

The placement was conducted at an issue price of \$0.06/share, representing a 26.8% discount to the last closing price of \$0.082 per Share (10 February 2021).

### Exhibit 11: Funded for progress

Funding Uses (\$M)	\$9.0	Funding Sources (\$M)	\$9.0
<b>Oil and Gas</b>	<b>\$3.2</b>	<b>Cash &amp; liquid assets @ Royal Completion (2.06.2021)</b>	<b>\$0.7</b>
Exploration tenement work program	\$1.2	WA - 481 P sale to Triangle	\$0.3
Cliff Head	\$2.0	June 2021 Placement	\$8.0
<b>Blue Hydrogen</b>	<b>\$2.4</b>		
Cliff Head Feasibility	\$0.6		
South West Feasibility	\$0.5		
Blue H2/Co2 capture technology study	\$1.1		
Regional CCS study	\$0.2		
<b>Renewables</b>	<b>\$1.0</b>		
Mid West WSP Feasibility	\$0.8		
Offshore Wind baseline study	\$0.2		
<b>Corporate</b>	<b>\$2.4</b>		
Corporate expenses /working capital	\$1.5		
ASX – Mid West reporting condition Chapter 11 costs	\$0.4		
Capital raise costs	\$0.5		

Source: Company data

## Appendix 1 – Revisiting the ‘H’ story (in reality H<sub>2</sub>)

It’s worth revisiting the hydrogen manufacture process, particularly given the number of proposals being tabled across all states and competing project claims.

We precis from our Scoping Report -

*We firstly need to make the distinction between ‘green’ hydrogen- generated using renewable energy sources without no carbon emissions – and ‘blue’ hydrogen 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.*

*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<sub>4</sub>) reacting with steam to produce hydrogen (H<sub>2</sub>) and carbon monoxide (CO). The CO can be treated further to generate more hydrogen and carbon dioxide (CO<sub>2</sub>).*

*The ATR process uses oxygen, steam and in some cases carbon dioxide, in a reaction with natural gas to form raw syngas (CO/H<sub>2</sub>).*

*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<sub>2</sub>.*

*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<sub>2</sub>. The ATR technology is especially beneficial where low cost O<sub>2</sub> is available.*

*To be classed as blue hydrogen, CO<sub>2</sub> must be captured and sequestered or sold.*

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

*On a scaled up and standardised basis the process of CCS in blue hydrogen 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 catalyst. The ensuing reaction produces hydrogen, but the entire process uses a significantly amount 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 green hydrogen is expensive compared to the production of hydrogen from natural gas. According to their estimates, green hydrogen 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 green hydrogen can become cost competitive versus blue hydrogen, likely out to (or perhaps, in our view) before 2030.*

*Estimates of the growth of the hydrogen market vary from US\$165Bn pa by 2027 to US\$215Bn pa by 2024 on a CAGR of 4.3-6%, on a revenue basis.*

*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 as demand increases and economies of scale impact.*

## Exhibit 12: Financial Summary

### PILOT ENERGY PGY

YEAR END	SEP
NAV	A\$ \$0.272
SHARE PRICE	A\$ \$0.066
MARKET CAP	A\$M 33
ORDINARY SHARES	M 499
OPTIONS	M 65

cot 13-Aug

est. post Royal Energy acquisition

Unlisted exercisable at \$0.033-0.066

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	499	499
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	46.1	36.6
CFR	x	nm	nm	0.1x	0.2x
DPS	Acps				
Dividend Yield	%				
BVPS	Acps	nm	0.2	1.6	3.0
Price/Book	x	nm	44.0x	4.2x	2.2x
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)	(700)
Gross Profit		(538)	(569)	(660)	(700)
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	88
Profit before tax		(662)	(889)	145	94
Taxes			0		
NPAT Reported		(662)	(889)	145	94
Underlying Adjustments					
NPAT Underlying		(662)	(889)	145	94

CASHFLOW	A\$000s	FY19A	FY20A	FY21E	FY22E
Operational Cash Flow		(279)	114	230	183
Net Interest		2	0	0	7
Taxes Paid					
Other					
Net Operating Cashflow		(278)	114	230	189
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	2,813	
Other					
Net Financing Cashflow		300	143	2,813	6,815
Net Change in Cash		(513)	(81)	1,329	6,539

BALANCE SHEET	A\$000s	FY19A	FY20A	FY21E	FY22E
Cash & Equivalents		89	7	1,336	7,876
PP&E & Dev-Expl			75	1,500	2,050
Investments			0	4,650	4,650
Total Assets		118	159	7,881	14,826
Debt					
Total Liabilities		760	1,280	150	200
Total Net Assets/Equity		(642)	(1,121)	7,731	14,626
Net Cash/(Debt)		89	7	1,336	7,876

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 & 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	Oil			
	Mb	Low	Best	High
Mentelle Updip		0.4	1.1	2.0
Other			0.9	0.5
TOTAL	0.4	2.0	2.5	

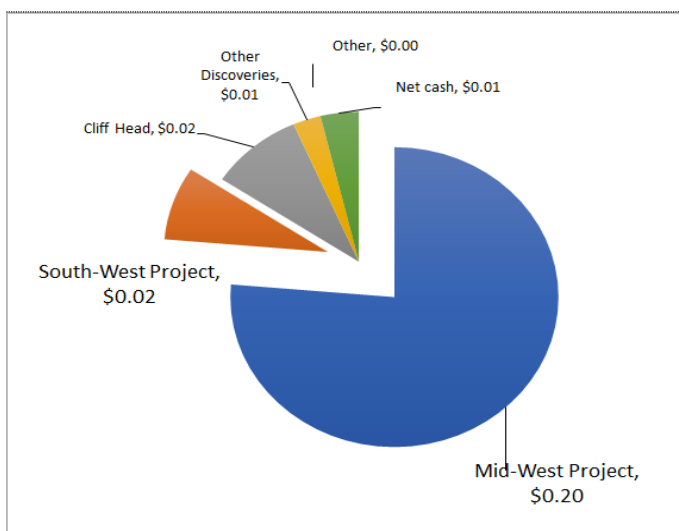
### EQUITY VALUATION

	Interest	Pr	A\$M	Acps
Renewables and Carbon Capture				
Mid-West Project	80%	75%	\$101	\$0.20
South-West Project	50%	5%	\$11	\$0.02
O&G Upstream				
Cliff Head	21%	100%	\$6	\$0.01
Cliff Head Contingent	21%	50%	\$6	\$0.01
Other Discoveries			\$4	\$0.01
Exploration			\$4	\$0.00
			\$131	\$0.26
Net Cash/(debt)			\$8	\$0.02
Corporate costs			-\$3	-\$0.01

P/NAV

TOTAL	\$136	\$0.27	0.24
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Cash Producing Assets \$0.01



Source: RaaS Advisory



# 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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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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E: [finola.burke@raasgroup.com](mailto:finola.burke@raasgroup.com)

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

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

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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](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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