Empire Energy Group Ltd

Update Report

Low-cost gas options are increasingly attractive

Energy

25 July 2023

Empire Energy Group Limited (ASX:EEG) is an oil and gas producer/developer, with onshore Northern Territory (NT) and US oil/gas production assets. EEG has the largest tenement position in the highly prospective Greater McArthur Basin, which includes the Beetaloo Sub-basin. As more evaluation data comes to hand, the economic case builds for NT gas as the strategic high-calorific gas option for east coast Australia's future domestic requirements; growing Gladstone LNG ullage; and as a potential supply source for Darwin's LNG export opportunities. We don't see the development opportunity as an 'either/or' outcome. In fact, commercial success at any scale has beneficial look-through impacts for all Beetaloo ventures …'a rising tide lifts all boats'. The business case for EEG at Carpentaria remains strongly bullish on positive testing results and reserves upgrades. Recent equity financings in the sector confirm our view of EEG as the low-cost, strongly-leveraged exposure to the transformational potential of the Beetaloo Basin. We believe EEG holds an early-mover advantage in the Carpentaria area where testing has delivered an IP30 gas rate of 3mmcfd/1,000m - the nominal commercial threshold - and has confirmed the high calorific/low CO_2 nature of the gas. That translates to lower gas requirements to support an initial development project with further optimisation to come. Upgraded Contingent Resources on EP-187 point to LNG-scale gas potential. EEG continues to represent a pure, independent and leveraged exposure to the NT gas opportunities; and is firmly on the development pathway. The way is clear for EEG to deliver a final investment decision (FID) and first gas over the next 18-months to two-years.

Business model

Empire Energy Group Limited (EEG), is an oil and gas development and production company, focused on maturing its portfolio of onshore, long-life oil and gas opportunities. The key asset is the substantial tenement holdings across the world-class McArthur-Beetaloo basins. The latest testing and evaluation data further underpins the commercial case in support of an early gas development option. In practical terms, we suggest the company can be considered to be in a pre-development phase, particularly with upgraded resource data, sufficient to underpin economic planning and an accelerated path to first gas.

Making the dollars stretch further

The capital requirements of alternative Beetaloo Basin exposures reinforces the low-capex nature of EEG and how well-advanced the company is, heading towards a target of FID by end-2023 and first gas in 2025. Recent testing results at Carpentaria confirm the IP30 commercial benchmark with further design optimisation to come. Notably EEG has been able to progress through to its current pre-development position on substantially lower in-ground capex, which also supports a high degree of confidence in the commercial potential. Testing has delivered material resource upgrades to LNG-scale gas potential in EP-187 and first EUR assumptions based on measurable data strengthening the economic case. FEED studies and environmental applications are underway for next phase work. We are increasingly confident of further material de-risking across the portfolio across the next 12 months.

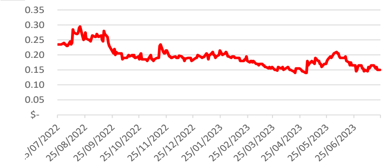
A valuation based on lower risk gas

We maintain our valuation, underpinned by testing data and materially a higher-contingent resources estimate which builds confidence in the economic and commercial case. With further re-rating events to come, a project sanction could be delivered by end 2023. We hold a base-case (mid-point) valuation of $911mn ($1.18/share) with an upside case to $1.54/share. The success case at Carpentaria continues to build and could deliver further valuation upside well in excess of our base case.

Share Details

ASX code	EEG
Share price (24-July)	$0.15
Market capitalisation	$116M
Shares on issue	773M
Net cash (at 30 Jun)	$8.3M
Free float	~49.5%

Share Performance (12 months)



Upside Case

- Next stage evaluation of Carpentaria-3H confirming viability of long lateral well design and commercial benefits of the 'soaking process'
- Further definition and acceleration of the early-production opportunity
- Securing a binding off-take agreement and/or partner to offset market perceptions of future equity dilution

Downside Case

- Capex inflation impacting project returns and potentially slowing progress to first gas
- Continuing financing reliance through equity issues on weaker field data resulting in excessive share dilution
- Slower progress through FEED and delays to the timing of FID, expected around end-2023.

Board of Directors

Alex Underwood	Managing Director / CEO
Peter Cleary	Chair
Dr John Warburton	Non-Executive Director
Louis Rozman	Non-Executive Director
Paul Fudge	Non-Executive Director

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***Analyst holds shares**

The Beetaloo Gas Race Is On – EEG Still Leading The Pack

The recent capital raising by Tamboran Resources (ASX:TBN) refocusses investor attention on the gas opportunities of the Beetaloo Basin and the race to first gas is on. In a currently infrastructure constrained province, there is a significant first mover advantage to be had **and we continue to believe EEG represents the best positioned opportunity with resources and commercial definition based on field actuals (data) and look through economics, as a lower cost and more strongly leveraged operator.**

Exhibit 1: Comparison data – more ticks in more boxes for EEG

Empire Energy		Tamboran Resources
The **key area of focus is compact**, encompassing four wells in ~10km radius of the Carpentaria-1 location ✓	**Well density**	At this stage we see the 'end points' of the TBN key focus area as being some 50km apart – fewer wells across a greater distance must imply higher risk, particularly as we consider the SS-1H well as representing 'early-stage' exploration
Recent upgrades ascribe 1C volumes of 304PJ and **2C volumes of 1,739PJ** from Netherland Sewell & Associates. *'Walk before you can run'…phased growth requires less supporting gas initially - prove only what's needed.* ✓	**Resources pertaining to development areas**	Targeting a 2C declaration of ~7,000PJ net (~17,000PJ gross) – more aerial extent but likely fewer and wider spread data points. *Scale gas is a must given the project ambition, but the cost and timing has to translate to higher risk.*
6.2 - 7.9 - 9.3PJ per well (on a P90-P50-P10 basis). Independently certified and **based on testing actuals at a $10/gj gas price.** ✓	**EUR**	~17-19PJ per well over a 20-year period at Tanumbirini (not the area of focus). Whilst independently certified, the estimate is based on a theoretical model *that we suggest comes with significant intrinsic risk.*
We understand **EEG is looking to utilise the McArthur River Pipeline** (15TJd expandable to 25TJd) on a first project basis. Concurrently we believe there are further **negotiations underway for access into the Northern Gas Pipeline** connecting into Mt Isa (90-106TJd capacity). ✓	**Pipeline options**	A term sheet signed with the APA Group to develop transmission pipelines to connect into the east coast gas market and the proposed NTLNG project in Darwin. A connection from Shenandoah South into the Amadeus pipeline is targeted for completion by 2025, ultimately to have 100TJd capacity. ✓ *The timing for the scale appears ambitious but it is a stake in the ground..*
FID on a first phase project of up to 25TJd is planned for end-2023. *A smaller but practical and deliverable ambition. Similarly to TBN, the gas resource opportunity is massive and eventually transformational value requires production at scale.* *An initial, small scale production phase delivers early cashflow and represents tangible proof of commerciality.* ✓	**Commercial case (scale →) (← phased)**	Need more gas resource to pursue LNG and other large-scale options. But greater output requires more gas certainty to support the business case as a buyer. Non-binding MOUs signed with bp and Shell for 4.4Mt pa (x 20 years) of LNG from proposed 6.6Mt pa NTLNG project. *This is ambitious at ~1,000TJd…and can that realistically be supported from an underfunded twelve months field campaign?*
The Carpentaria-3H well, with a 2,632m lateral completion and 40 frack stages is estimated to have a total cost of ~$27mn. The development well budget is **expected to be in the order of ~$20mn on a single well basis**. ✓	**Capital costs**	At this stage, well costs remain high. Based on the current and flagged financing ($131mn at the mid-point) to deliver the equivalent of three wells drilled and tested – a unit capex of nearly $45mn. We note this campaign will have maximum laterals completions of 1,000m, with up to 20 frack stages.
The Carpentaria-2H and -3H results support a high level of confidence in gas deliverability to support an end-2023 FID target. ✓	**Nominal timing**	FEED for the planned for NTLNG project is expected to be commence in 2024 to deliver binding sales agreements (SPAs) in 2025. *The timing looks tight.*
Hold tenements (EP-187) at 100%. ✓ *Lower capital costs make financing manageable, whilst high working interest provide financing alternative with the potential for look-through pricing premiums. We note that EEG tenements are not subject to additional private royalty imposts – lower royalties mean less dilution.*	**Working interest**	Hold EP-98 and -117 in a JV structure at a net interest of 38.75%, which is subject to an additional production royalty of 5.5% to Origin and 2.3% to other(s). *Selling further royalty imposts has been flagged as a financing option…it's a US model but potentially represents material and permanent top line dilution.*
Carpentaria well data indicates **CO_2 content of <1%.** Carpentaria is shallower and the sequence is 'over-pressured' ✓	**Other**	Tanumbirini and Amungee-2H well data indicate CO_2 content in the order of 3-4%. The Amungee location is nominally 'normally pressured'.

Source: (Various) Company data; *Analyst commentary*

More ticks in more boxes for EEG

It is worthwhile highlighting some comparisons between the current positions of the companies on the development pathway, particularly given the scale, scope and cost of the continuing TBN programmes, **in those areas where we believe EEG is ahead of the commercial curve**, particularly heading towards the critical FID around end-2023. Timing is everything.

- The Tamboran raise is 'short' with an additional financing event of $50-70mn requirement flagged for 1H24 in order to complete works associated with the testing and commercial evaluation of the Amungee-3H well (A-3H); and drilling of the Shenandoah North-1V well (SN-1V), which we see as critical to the delivery and certification of revised contingent resources.

  For EEG, the Carpentaria-3H and -4V wells underpinned the somewhat transformational upgrade attributable to EP-187.

  - **+217%** @ 1C – to 304PJ
  - **+270%** @ 2C – to 1,739PJ

  In that regard, **EEG is perhaps some 12 months ahead** on a comparative basis.

- **Empire has delivered the longest lateral completion in the Velkerri B play** to date (2,632m @ Carpentaria-3H). We note the Tanumbirini-2H and -3H wells (EP-161, TBN 25%) completed ~1,000m laterals of which only 600-660m have been stimulated but these results can at best only be broadly extrapolated in our view.
  Amungee-2H was completed with a horizontal section of 1,275m and was fracked (25 stages) over 1,020m. Interestingly and somewhat disappointingly, having applied US style methodology the flow back results have missed the mark and the well requires further work.

  In many respects, the works planned for the Amungee and Shenandoah areas could be considered higher risk (proof of concept) wells, **compared to the concentrated works completed by EEG in EP-187 around Carpentaria.**

  In fact, we would add that there has been no valid test of Velkerri B play in the EP-117 permit – Shenandoah South (SS-1H) will be the first and we see that makes as early-stage exploration. It appears as though the SS-1H well will be drilled as a 'twin' of Kyalla-117 (operated by Origin Energy) which did not intersect the Velkerri-B (considered the optimal, regional, primary target).

  With results from a frack and test of SS-1H only likely to be available in early-2024, we suggest the commercial evaluation lies again, some twelve months behind EEG and a success case will require more than testing from one well.

  We understand that the Beetaloo West-1 (BW-1) well is the nearest analogue to the proposed SS-1H which had a primary aim of *"…evaluating the unexplored southern Beetaloo Basin for source rock reservoirs and hybrid source rock-sand plays in the middle section of the Velkerri Formation ("middle Velkerri"; primary target) and Kyalla Formation (secondary target) where no current offset penetrations to the middle Velkerri exist".*

  Apart from well sampling there was no testing of the primary Velkerri section at this location.

  The Beetaloo West well lies ~35km to the SSW of Kyalla-117 (SS-1H site) which is a substantial step out distance and reinforces to us the higher risk nature of the well.

  With Shenandoah South being the primary focus of the TBN campaign and perhaps the cornerstone well for development planning we find it a little perplexing as to why the well has been designed only with a 1,000m lateral section (and perhaps an important aspect of commercial evaluation), when development wells are being nominally considered with 3,000m(+) horizontal completions.

  It feels like it is potentially a missed opportunity to defray perceived operational risks and we can only suggest this is likely a function of cash constraints rather than geology. Will a restricted lateral be sufficient to de-risk the commercial case?

- **EEG has a significant and obvious comparative capital advantage.** Using 01-Jan-2021 as a starting point, EEG has raised ~$70.5mn in equity financing to bring its Carpentaria project to its current pre-development position. Over the same period TBN has raised $263mn in equity with a further $131mn pending and some $55mn through asset and royalty sales, which may deliver a point of equivalence (assuming success) some 12 months hence.

  Adjusted for scale we suggest the financing data simply illustrates the capital cost differentiation and the stronger potential for further material dilution at the equity or revenue level (royalty imposts) associated with the Amungee-Shenandoah project as proposed.

  We also highlight that EEG has incurred all of its capital costs over the comparison period for its 100% working interests.

  Both companies have indicated the potential for material capital cost reductions as operational data and experience grows. **In some respect we have already seen this manifest at the margin for EEG** and await confirmation of capital and operational improvements through the current TBN campaign.

  As noted in the recent quarterly, EEG has a cash balance (30-Jun) of $23mn with undrawn debt facilities of $7.5mn. The company has indicated in its Quarterly Update that it *"…expects to receive a R&D Tax Offset of $15.3mn in cash once the (2022) tax return is processed."*

  We believe the company should have sufficient ready and available funds to proceed to the targeted FID point of end-2023 on a pilot project.

- EEG has yet to define its commercial ambitions in the same manner as TBN, which has announced non-binding MOUs with bp and Shell for up to 4.4Mt pa (x 20 years) from a proposed NTLNG project; and a binding GSA with ORG as part of its acquisition of their Beetaloo assets – for 100TJd for 10 years with an additional requirement to offer ORG 'at least' an additional 200TJd for 10 years.

  It could be argued that in this respect, Tamboran is more advanced and holds a nominally better-defined end-game. The alternate view is that by defining scale and specific project outcomes, this commits the company to specific outcomes currently unsupported by gas certainty.

  Should field data through its campaign be less than wholly definitive, the market 'discount' could be substantive.

  We would also add and suggest that for TBN, both bp and Shell, with APA as the pipeline developer are likely to want to see high(er) levels of gas certainty over a materially greater reserves base to provide sufficient risk margin to underpin a project (construction) sanction.

  We are not confident at this stage that the field campaign as proposed can deliver this certainty in the timeframe indicated.

We recognise the quantum of gas opportunity within the shale plays of the Beetaloo Basin and are confident that the play will evolve into a material (transformational) future supplier of gas into domestic (east coast) and export markets.

In this regard, we don't see the development opportunity as an 'either/or' outcome. In fact, commercial success at any scale has beneficial look-through impacts for all Beetaloo ventures…'a rising tide lifts all boats'.

We do continue to see EEG as the preferred exposure to the play – cheaper, more advanced towards first cash-flow, phased growth opportunities, more leveraged to the success case.

Importantly, on its likely capital and operating cost profile, the company can be considered as holding a unique advantage to market gas across a range of offtake terms and individual gas users.

Recapping the EEG outlook

What has been delivered?

- Confirmation of the critical commercial flow rates
- Material upgrades in contingent resources with – estimates of the EUR range based on flow rate testing data and the number of 'well locations' required to support the development of the gas resources.

We acknowledge that the data can still be considered to be somewhat preliminary in nature – the well design (including stimulation programmes) is not fully defined, the number of completed and tested wells is limited and the implied outputs from horizontal completions have been extrapolated.

But the error envelope around the data is shrinking and the commercial case is becoming more robust.

There's still more to come through 2023 –

- Return to testing at C-3H;
- Front End Engineering & Design ("FEED"): including engineering, economic modelling, preliminary costings for both capex and opex for an **early-stage development (up to 25 TJ/d) – with the potential to generate $110-137mn pa of sales revenue per annum in a $12-15/gj market;**
- Subsurface design planning (*finalising well and fracking designs*);
- Securing gas sales and transportation agreements (*discussions ongoing with multiple parties*);
- Financing for pilot (Macquarie Bank credit facility already in place);
- Obtain government approvals: NT Petroleum Production Licence;
- Negotiate Northern Land Council ("NLC") Production Agreement;
- FID on a first-stage project by end-2023

Timeline and activities outlined as per EEG Managing Director's AGM presentation (30-May)

Our NAV is largely unchanged - lower risk gas translates to more value

We maintain our valuation range for EEG at $1.02-1.54/share **with a mid-point (base case) of $1.18/share**, noting the closing share price of $0.15/share (24-Jul) represents an 85% discount to the low end of the NAV range and in isolation can be considered a risk weighting of ~89% to our assigned value of the 2C resources.

Exhibit 2: Lower risk gas with flow data – the value resides in EP-187

		Risked range (A$m)				
		Pr	Low	Mid	High	
Northern Territory						
EP-187						
Contingent Resources		30%	$720	$770	$938	2C volumes upgraded to 1,739PJ (from 637PJ) of which 1,364PJ (from 455PJ) are attributed to the immediate Carpentaria Block of which 50% are attributable to the mid-Velkerri B zone.
Prospective Resources		5%	$41	$103	$215	
US Onshore			$27	$38	$42	Lower on a weaker forward curve benchmark.
			$788	**$911**	**$1,195**	
Net cash/(debt)				$8		
Corporate				($9)		
TOTAL			**$787**	**$910**	**$1,194**	
Shares issued (mn)	773		$1.02	$1.18	$1.54	

Source: RaaS analysis; Risked ranges based on discretionary RaaS risk adjustments

Our valuation methodology weights the value primarily to EP-187 as the immediate area of clear economic and commercial interest – effectively ascribing zero value to the Prospective Resources across the remainder of the portfolio.

There is always an intrinsic value to prospectivity but given the focus of the company will be firmly across delivering a first project based on the Carpentaria potential, targeting end-2023 for an FID, the operating capacity of the company to adequately evaluate the remainder of the portfolio in a timely fashion is limited at this stage.

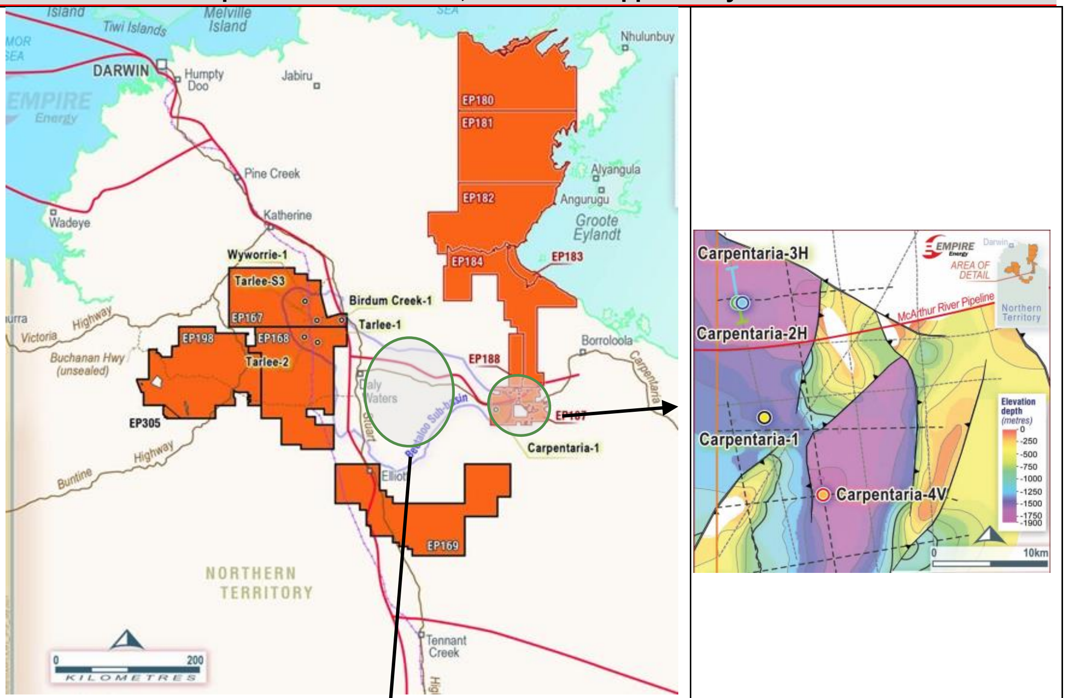
Research as a Service

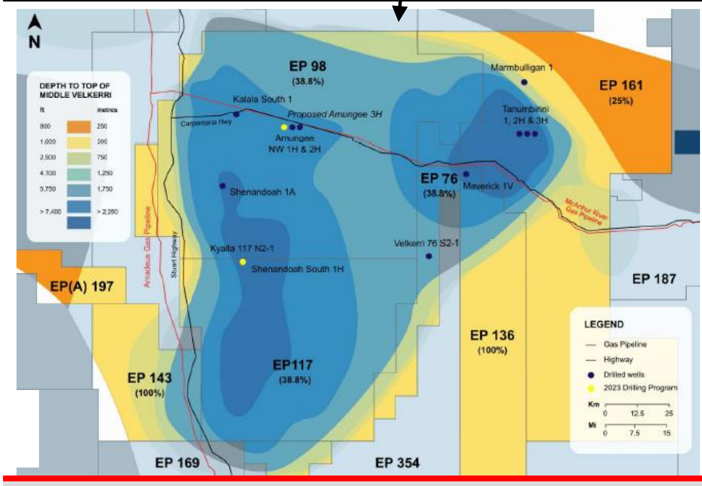
Ascribing even a token value to the potential given the magnitude of the nominal resource (41.6Tcf at 2U) can blur the immediate value opportunity unfolding at Carpentaria.

These 2U volumes are associated with the portfolio ex-EP 187 and ex-Pangaea tenements and represent longer-dated gas potential. The geological confidence level is relatively high on the look-through, but commercial realisation will require extensive drilling campaigns.

It's interesting to highlight as per commentary from the managing Director's AGM address (30-May), that the upgraded Contingent Resource estimate represents gas *"…to an LNG scale"*, which is an easier way to consider the context of the opportunity currently in front of EEG.

Exhibit 3: EP-187 represents a lower risk, deliverable opportunity





Fewer wells over a greater area must translate to higher risk on a comparative and absolute basis, particularly given no wells in the Amungee-Shenandoah area have or are planned to have lateral completions significantly greater than about 1,000m.

Source: Company data

Carpentaria Demonstrates The Beetaloo Basin Will Flow Gas

The Carpentaria data makes a bullish case from both the C-2H and -3H wells.

The published results pertain to the Carpentaria-2H (C-2H) well, which was tested in two stages with a pause for pressure build up and soaking in between.

- 51 days over 3Q22
- 76 days over 1Q-2Q23
- The gas composition remains consistent across the 21 frack stages –
  ~83% C_1, ~14% $C_{2\text{-}5+}$, <1% CO_2, ~2% other inerts – this is very low CO_2 and high calorific gas.

Without reported contribution data, we can only draw broad assumptions that future wells are likely to use either of, or a combination of hybrid and gel fracks only, given this is where the critical focus was put in the C-3H well and with a return to testing at C-3H (post soak) we would be surprised if the data is not at least similar to the C-2H estimates, if not better in comparative terms.

Carpentaria results are still underpinned by extrapolating the well performance to the nominal (3,000m) completion design and caution that up-scaling does not always deliver linear improvements akin to simple extrapolation, particularly where there can be geological variation, but uncertainty in the mathematical scale-up is somewhat offset by the likely material improvements that will be generated from optimising the frack style in any development case.

On that basis we are confident that the C-2H results do represent a realistic operational outlook.

A return to testing at the C-3H well will provide a more definitive model for well performance – the well has a longer lateral section, more fracks and fewer frack styles so will likely be a nominally better representation of what the end game can look like.

Although one well (or even two) does not represent an absolutely definitive economic case, we suggest the data at Carpentaria can be considered as strongly indicative and clearly at or close to the commercial threshold – we would also note that the current indicative flow rate hurdle (1mmcfd, per 1,000m of lateral on a IP30 basis), likely references a lower gas price and gj/mcf ratio.

We also highlight that the C-2H well was completed without production tubing and free-flowed through 4½" (114mm) casing. Empire has indicated that it is likely to move to 5½ " (140mm) tubing in a production scenario – a 50% increase in cross sectional pipe area. This is the model being trialled at Amungee by Tamboran based on its US analogue experience.

The positive side remains in that the data -

- **meets the current threshold flow rate**;
- there are **likely material design optimisations** to be delivered;
- **the calorific value adds operating margin** (less gas per energy unit);
- **it's very low CO_2** (0.9%) – so processing will be relatively easy and for that read inexpensive.

Research as a Service

Exhibit 4: Financial Summary

EMPIRE ENERGY GROUP LTD		EEG		
YEAR END		Dec		
NAV	A$mn	$1.18		
SHARE PRICE	A$cps	$0.15	priced as of close trading	24-Jul
MARKET CAP	A$mn	116		
ORDINARY SHARES	M	773		
OPTIONS	M	10		

nm = not meaningful
na = not applicable

COMMODITY ASSUMPTIONS		2021	2022	2023E	2024E
Realised oil price	US$/b	67.98	94.25	73.93	70.20
Realised gas price	US$/mcf	3.72	6.42	3.01	3.53
Exchange Rate	A$:US$	0.7514	0.6946	0.6745	0.6773

RATIO ANALYSIS		2021	2022	2023E	2024E
Shares Outstanding	M	612	773	773	873
EPS (pre sig items)	UScps	(2.41)	(0.86)	(0.54)	(0.41)
EPS	Acps	(2.41)	(0.86)	(0.54)	(0.41)
PER	x	na	na	na	na
OCFPS	Acps	(5.35)	9.50	32.29	1.38
CFR	x	na	na	na	na
DPS	Acps	na	na	na	na
Dividend Yield	%				
BVPS	Acps	23.8	24.9	24.7	22.9
Price/Book	x		0.6x	0.6x	0.7x
ROE	%		na	na	na
ROA	%		na	na	na
(Trailing) Debt/Cash	x				
Interest Cover	x				
Gross Profit/share	Acps	5.7	10.0	3.7	4.3
EBITDAX	A$M	3.0	6.8	3.8	4.5
EBITDAX Ratio	%				

EARNINGS	A$000s	2021	2022	2023E	2024E
Revenue		8,502	13,722	8,454	9,258
Cost of sales		(5,005)	(5,961)	(5,595)	(5,477)
Gross Profit		**3,497**	**7,762**	**2,859**	**3,781**
Other revenue					
Other income		1,606	259	297	300
Exploration written off					
Finance costs		(568)	(2,259)	(709)	(1,089)
Impairment		0	(2,705)	0	0
Other expenses		(14,332)	(13,526)	(6,867)	(7,223)
EBIT		(11,305)	1,222	(2,887)	(1,564)
Profit before tax		**(10,835)**	**(5,765)**	**(4,008)**	**(3,442)**
Taxes		(213)	(239)	(200)	(172)
NPAT Reported		**(11,048)**	**(6,003)**	**(4,208)**	**(3,614)**
Underlying Adjustments		0	0	0	0
NPAT Underlying		**(11,048)**	**(6,003)**	**(4,208)**	**(3,614)**

CASHFLOW	A$000s	2021	2022	2023E	2024E
Operational Cash Flow		**(7,044)**	**(9,305)**	**9,100**	**8,938**
Net Interest		(568)	(679)	(478)	(738)
Taxes Paid		(213)	(239)	(120)	(250)
Other					
Net Operating Cashflow		**(2,460)**	**5,100**	**16,835**	**817**
Exploration		(11,228)	(37,356)	(20,000)	(10,000)
PP&E		(250)	0	(250)	(500)
Petroleum Assets		(12,965)	0	0	0
Net Asset Sales/other		0	0	0	0
Net Investing Cashflow		**(24,443)**	**(37,586)**	**(20,350)**	**(10,500)**
Dividends Paid					
Net Debt Drawdown		(817)	(1,035)	(8,313)	(850)
Equity Issues/(Buyback)		39,359	29,412	0	19,000
Other					
Net Financing Cashflow		**38,542**	**28,377**	**(8,313)**	**18,150**
Net Change in Cash		**11,639**	**(4,109)**	**(11,828)**	**8,467**

BALANCE SHEET	A$000s	2,021	2,022	2023E	2024E
Cash & Equivalents		25,650	21,880	10,052	18,519
O&G Properties		34,900	36,612	57,008	67,508
PPE + ROU Assets		1,306	1,608	250	500
Total Assets		**158,823**	**197,650**	**195,172**	**214,469**
Debt		8,027	7,823	7,310	6,499
Total Liabilities		**49,502**	**64,043**	**66,531**	**79,083**
Total Net Assets/Equity		**109,320**	**133,608**	**128,641**	**135,386**
Net Cash/(Debt)		17,622	14,057	2,743	12,020
Gearing dn/(dn+e)					

NET PRODUCTION		2021	2022	2023E	2024E
Crude Oil	kb	2	2	2	2
Nat Gas	mmcf	1,676	1,727	1,727	1,640
TOTAL	**kboe**	**282**	**290**	**290**	**275**
Product Revenue	A$mn	8.5	13.7	8.5	9.3
Cash Costs	A$mn	(5.0)	(6.0)	(5.6)	(5.5)
Ave Price Realised	A$/boe	30.17	47.32	29.17	33.64
Cash Costs	A$/boe	(17.76)	(20.55)	(19.31)	(19.90)
Cash Margin		**12.41**	**26.76**	**9.87**	**13.74**

RESOURCES and RESERVES	Contingent Resources			Prospective Resources		
	1C	2C	3C	1U	2U	3U
Northern Territory						
EP 187						
Carpentaria				566	1,282	2,284
East Carpentaria				1,020	1,878	3,782
South Carpentaria				204	383	668
TOTAL PJ				**1,790**	**3,543**	**6,734**
Carpentaria						
Velkerri C	113	666	846			
Velkerri B	120	678	844			
Intra Velerri A/B		8	16			
Velkerri A/B		12	24			
TOTAL PJ	**233**	**1,364**	**1,730**			
Carpentaria East						
Velkerri C	35	185	871			
Velkerri B	36	190	906			
Intra Velerri A/B						
Velkerri A/B						
TOTAL PJ	**71**	**375**	**1,777**			
Aggregate PJ	**304**	**1,739**	**3,507**			
US Onshore						
Gas (bcf)	28	38	42			

EQUITY VALUATION	Risked Range			Low	Mid	High
A$mn	Low	Mid	High	A$/share		
Northern Territory						
EP-187						
Scenario Weighting	720	770	938	$0.93	$1.00	$1.21
Prospective Resources	41	103	215	$0.05	$0.13	$0.28
US Onshore						
Appalachian	27	38	42	$0.03	$0.05	$0.05
	788	**911**	**1,195**	**$1.02**	**$1.18**	**$1.55**
Net cash/(debt)		8				
Corporate costs		(9)				
TOTAL	**787**	**910**	**1,194**	**$1.02**	**$1.18**	**$1.54**
Shares on issue (mn)	773 mn					

Source: RaaS Advisory, company data

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: 6th May 2021

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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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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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.

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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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