

2Q20 activities move the dial to “drill-ready”

Empire Energy Group Limited (ASX:EEG) is a junior oil and gas producer and explorer with onshore NT and US oil & gas assets. EEG holds the largest acreage position (>14.5m acres) in the highly prospective, potentially global-scale NT McArthur-Beetaloo basins. The province is fast developing as a gas-rich (and potentially liquids-rich) key bolster for east coast Australia’s future energy needs and Darwin’s expanding LNG export terminals, amid strong policy support from both the Northern Territory (NT) and Federal governments. The Beetaloo Sub-basin alone is considered to contain recoverable unconventional shale dry gas volumes of over 100 Tcf, with liquids upside. EEG also owns conventional gas/oil assets in the US Appalachia, 80%-hedged with floor prices at US\$2.50/mcf for 2020. Recent 2D seismic results enabled a 22% upgrade of EEG’s NT P50 prospective resources to 13.5 Tcf gas (vs 11 Tcf previously). Crystallising EEG’s longer-term potential rests on successful drilling and production testing. EEG aims to begin a ~45-day vertical drill program to ~2900m, late Q3 2020, with its COVID-19 safe-work plan cleared by local authorities. Results are expected by November. We believe this upcoming A\$7-8m drill program can be comfortably funded from current cash.

Business model

Empire Energy Group (EEG) is a junior oil & gas producer/exploration company, focused on maturing its portfolio of onshore, long-life oil and gas fields. The company is the 2nd largest conventional gas producer in the US NY State and has held substantial exploration acreage (14.5m acres) in Australia’s Northern Territory McArthur-Beetaloo basin since 2010. Given the region’s high prospectivity, success from future drilling works may generate cashflows within 36-48 months, assuming links and upgrades to existing pipeline infrastructure are delivered in parallel. COVID-19 disruptions delay, rather than dent, the opportunity.

2Q20 quarterly takeaways – vertically funded; drill-ready

EEG’s 2Q20 activities & ~A\$9.9m gross cash holdings came in line with expectations. Management progressed its NT resource estimate (P50 13.5 Tcf) & became “drill-ready” for its upcoming EP187 Carpentaria-1 vertical well appraisal program, designed to confirm the presence, hydrocarbon content & extent of the Beetaloo’s Velkerri/Kyalla Shales, while successfully navigating COVID-19 challenges to health & safety protocols. EEG’s US Appalachia business continues to run lean, is 80%-hedged at US\$2.50/mcf; has debt covenant waivers until and including year-end and gained a US\$0.55m forgivable Paycheck Protection Program loan in 2Q. Key upcoming events include: a) EP187 drilling commencement; b) 26 September option expiration (36.2m @ A\$0.30); c) November drill results d) Carpentaria-1 vertical hydraulic fracturing approvals; & d) landowner access approvals on other tenements. Robust results from EEG’s 20/21 drill programs could evolve its P50 13.46 Tcf resource estimate into a 2C contingent resource, positioning EEG to attract strong funding partners. Positive read-throughs from Beetaloo neighbour activities (eg Origin/ Santos) are also likely to inject value.

Valuation

We assign a base case valuation of \$153m or \$0.58/share using the RaaS 3Q FY20 commodity price deck. Our valuation includes a 10% risk weighting to development risk expectations until the outcome of 22 August Northern Territory elections is known. EEG has several event drivers over the next 6-12 months which we view hold potential to generate a sizeable uplift in NAV.

Historical earnings and RaaS Advisory estimates

Year end	Revenue (US\$m)	Gross Profit (US\$m)	NPAT reported (US\$m)	OCFPS (AUD cps)	EPS Adj (AUD cps)	Price/Book (x)
12/18a	6.6*	1.9	(5.3)	(0.15)	(1.41)	25.0
12/19a	5.4	1.2	(12.0)	(4.12)	(9.29)	4.1
12/20e	4.7	1.4	(3.3)	1.32	(1.95)	4.1
12/21e	4.4	1.1	(3.7)	2.82	(2.22)	5.0

Source: Company data, RaaS estimates for FY20e & FY21e *restated for asset sale

Energy exploration & production

10 August 2020

Share details

ASX Code	EEG
Share price	\$0.31
Market Capitalisation	\$82.5M
Shares on issue	263.3M
Net cash	(US\$0.14M)
Gross cash	~US\$7.1M

Share performance (12 months)



Upside Case

- EEG’s Carpentaria-1 drill program confirms the Beetaloo Velkerri/Kyalla shales extend into EP187; holding both gas & liquids
- Further McArthur-Beetaloo work programs generate significant commercial outcomes
- EEG drilling success generates high-value LT strategic partnership(s) & funding options

Downside Case

- McArthur-Beetaloo EP 187 drilling proves unsuccessful, negatively impacting remaining NT permits (EP180-188) values
- Equity issue financing becomes highly dilutive to future share capital growth
- Reinstatement of a fracking ban in the NT

Board of Directors

Alex Underwood	Managing Director/CEO
Paul Espie AO	Non-Executive Chairman
John Gerahty	Non-Executive Director
Dr John Warburton	Non-Executive Director
Peter Cleary	Non-Executive Director

Company contacts

Alex Underwood (MD/CEO)	+61 2 9251 1846 info@empiregp.net
-------------------------	--------------------------------------

RaaS Advisory contacts

Melinda Moore*	+44 7500 227593 melinda.moore@raasgroup.com
Finola Burke	+61 414 354 712 finola.burke@raasgroup.com

*The analyst holds shares

Empire Energy Group – 2Q20 activities “move the dial”

EEG reported its June 2020 quarterly update, **in line with expectations**, which included successfully navigating COVID-19 health and safety conditions across two jurisdictions, the US Appalachia and Australia’s Northern Territory, as the company continues its strategic investment pivot from US conventional gas and oil production towards exploring the gas and liquids upside on its huge 14.5m acre tenement position in the Northern Territory’s highly prospective McArthur-Beetaloo basin, the largest position held by any company in the region. EEG is also the only independent ASX-listed junior explorer with exposure to both the Beetaloo and McArthur Basins.

Looking Ahead:

In coming months, we will be looking out for the following critical investment drivers:

- a) **Late Q3 2020:** Commencement of the Carpentaria-1 45-day drilling program;
- b) **Late September:** The expiration of a significant parcel of unlisted options on 26 September (36.2m @ A\$0.30), which could raise a total of A\$10.87m if they remain in the money to fund part of next year’s hydraulic drilling programs;
- c) **Mid-November:** Robust results from the Carpentaria-1 well which could further evolve its P50 11 Tcf resource estimate;
- d) **TBA:** NT Environment Management Plan approval for vertical hydraulic fracturing of the Carpentaria-1 well;
- e) **Ongoing:** Landowner agreement to access EEG tenement holdings (EP180, 181, 182, 183 and 188) for hydrocarbon exploration purposes; and
- f) **Ongoing:** Positive read-throughs from Beetaloo neighbour exploration and corporate activities (eg Origin/ Santos).

Looking back:

In its 2Q 2020 activities update, EEG highlights the significant progress being made on a number of fronts to improve the value of its Northern Territory assets, all continuing despite COVID-19 concerns as a weighty backdrop:

- a) The company-initiated site preparation works for the first vertical well to be drilled on EP187, named Carpentaria-1, which lies in the 40k acre-Beetaloo prospective southern portion. The well will be drilled to a planned depth of ~2,900m over a 45-day campaign. Preparation works included:
 - (i) finalising the location for well-spudding;
 - (ii) initiating site preparations;
 - (iii) selecting a preferred drilling contractor to drill, case, well-head and suspend the well, allowing for re-entry to vertically fracture stimulate, flow test and complete a multi-staged horizontal well bore after the wet season in 2021;
 - (iv) ordering long-lead vertical drilling items such as the well head and drill pipe; and
 - (v) gaining approval from the NT Chief Medical Officer for its COVID-19 Management Plan.

Of note, EEG’s Carpentaria-1 will be only the second well drilled in the Beetaloo Sub-Basin since the lifting of the fracking moratorium in 2018, after Origin Energy’s Kyalla-117 horizontal well.

Carpentaria-1’s upcoming drill program aims to assess and prove the extension, depth and thickness of the Kyalla & Velkerri productive target shale areas on EEG’s EP187 tenement, as well as understand the rock properties, hydrocarbon content, formation permeability and reservoir pressure of the Shales, with the aim of further upgrading the hydrocarbon resource estimates. Results from a 231-line kilometre 2D seismic survey conducted by EEG during 4Q 2019 had delineated 2 prospective Beetaloo Sub-basin portions on the southern part of its EP187 tenement. One portion is ~40,000 acres (~160km² - ~30,000 football ovals), while the other extends ~25,000 acres (~100km²). These findings now need to be confirmed by drilling.

EEG's Well Operations Management Plan for Carpentaria-1 is now under review with engineers from the Northern Territory Department of Primary Industries and Resources. Data acquisition from the well will include an extensive suite of wireline log data, large diameter rotary sidewall cores; and Diagnostic Fracture Integrity Testing to assist planning the next stage hydraulic fracturing program parameters to target.

- b) EEG also published a 22% upgrade to its Northern Territory P50 resource estimate to 13.46 Tcf, which was independently assessed by US-based Netherland, Sewell & Associates. EEG's Velkerri Shale formation P50 resource estimate rose from 1.2Tcf gas to 2.3Tcf gas, up 96.2%. Its Kyalla Shale formation came in with a maiden P50 resource estimate of 72 Bcf gas (14m boe), while its Barney Creek Shale formation P50 was reassessed, increasing from 8.7Tcf to 11Tcf gas (+27.1%).

Exhibit 1: EEG's McArthur Basin Prospective Resource upgrade										
BEFORE		P90	P50	P10	AFTER		P90	P50	P10	Delta
Northern Territory Gas					Northern Territory Gas					
					Lower Kyalla	Bcf	24	72	161	n/a
Barney Creek	Bcf	3,304	8,699	20,172	Barney Creek	Bcf	1,633	11,053	45,380	27.1%
Velkerri	Bcf	383	1,192	3,086	Velkerri	Bcf	1,283	2,339	4,751	96.2%
Wollogorang*	Bcf	524	1,185	2,371						
TOTAL		4,211	11,076	25,629	TOTAL		2,940	13,464	50,292	21.6%

Source: Company data; Netherland, Sewell & Associates Inc. *Wollogorang was not included in the Netherland Sewell study

- c) Over the past 6 months, EEG has continued to build out its Board and management expertise, with the appointment of Peter Cleary as a non-executive director (late-May) and Dr Alex Bruce as Chief Geoscientist (March) to lead EEG's technical analytic capabilities. Peter has previously worked in a range of LNG & pipeline gas commercial, strategy and corporate development roles, with Mitsubishi, Santos and BP (including serving as President of the NW Shelf LNG marketing JV). With his Doctorate earned from Uni of NSW in Reservoir Characterisation, Alex's most recent role was with New Hope's Bridgeport Energy.
- d) Although due to COVID-19 health and safety concerns, no direct progress was made with local landowners, EEG aims to continue prioritising negotiations to gain regional land access clearance on its remaining Northern Territory permits, including EP180, 181, 182, 183 and 188, subject to health and safety protocols being in place. Access rights will add significant value to the tenements and improve negotiations with potential future funding partners. The NT Border opened on 17 July for interstate travellers who are not from identified COVID-19 hotspots.
- e) EEG gained a US\$0.55m forgivable Paycheck Protection Program (PPP) loan for its US operations during the 2nd Quarter, as part of the US Coronavirus Aid, Relief and Economic Security Act designed to retain staff. The Company has been fortunate to experience no confirmed cases of the virus among its workforce and remained cleared to continue operating its New York State and Pennsylvania Appalachia onshore conventional energy assets throughout the COVID-19 shutdowns, as an "**essential service**".

Financials – looking at June 2020 and beyond

EEG concluded the June 2020 quarter with a gross cash balance of US\$7.1m (A\$9.9m), US\$0.15m above its 1Q 2020 cash balance of US\$6.9m, primarily expanding due to the addition of the US PPP forgivable loan of US\$552,600 and FX movements.

Exhibit 2: EEG's cash position in AUD and USD terms		
	AUD (m)	USD (m) *
Gross Cash	9.92	7.09
Debt*	10.12	7.23
Net Cash	-0.20	-0.14

Source: Company data; assumes USD-AUD exchange rate of 1:1.40; *all USD debt (MacBank & PPP)

Empire's outstanding US-denominated debt facility with Macquarie Bank matures on September 2024 and is secured against EEG's conventional onshore Appalachian gas assets, carrying an interest rate of US LIBOR + 650bps. Annual loan repayments amount to US\$550,000 (US\$137,500 per quarter). Earlier in the year, EEG secured a waiver of existing financial covenants for all quarterly tests until and including 31 December 2020. The debt balance as the end of the June quarter amounted to \$6.675m, with no repayments made during the quarter.

Looking ahead, we consider EEG holds adequate cash reserves to fund its 2020 Carpentaria-1 vertical drilling plans in the Beetaloo Sub-basin for the upcoming 12-months. We estimate well and appraisal costs are likely to range A\$7m, while Australian corporate overheads are running at ~A\$2.5m per annum. We note that our funding assumptions allow for a small upward revision to costs, to take account of additional health and safety travel and operational protocols.

Future funding sources

As discussed in previous reports, we believe EEG has a number of future potential funding sources, including:

- a) A Farm-Out partnership
- b) Additional equity raising
- c) An asset sale of EEG's US Appalachian conventional gas/oil assets across Pennsylvania and New York State, where the company is the second-largest regional gas supplier.
- d) The exercise of unlisted options. EEG has ~55.22m unlisted options exercisable at share prices of A\$0.30, \$0.32 and \$0.60 over various periods through until 30 December 2022.

Exhibit 3: EEG unlisted option details				
Date	Option Class	Issued No	Exercise price A\$	Gross Cash Value A\$
26/09/2020	Unlisted	36,218,754	0.30	10,865,626
26/10/2020	Unlisted	600,000	0.30	180,000
30/12/2021	Unlisted	1,300,000	0.30	390,000
30/12/2021	Unlisted	300,000	0.30	90,000
30/12/2021	Unlisted	300,000	0.30	90,000
31/12/2021	Unlisted	12,000,000	0.32	3,840,000
30/12/2022	Unlisted	1,700,000	0.30	510,000
30/12/2022	Unlisted	2,800,000	0.60	1,680,000

Source: Company data

Appalachia cashflows linked to natural gas outlook

EEG's Appalachian conventional gas production business is running marginally below cash flow break-even levels at prevailing US Henry Hub gas prices. During the June 2020 quarter, the business generated US\$1.12m (1Q: US\$1.43m) revenues, while total staff, production, development, interest and tax costs across Australia and the US amounted to ~US\$1.95m (1Q: ~US\$1.7m), generating an operating loss of US\$0.7m for the quarter (1Q: loss of US\$0.32m).

During the June quarter, the Appalachian gas margins were further squeezed compared to 1Q as the full brunt of COVID-19 and warmer weather struck in unison. EEG's total net US Appalachian gas output reached 383,514 Mcf, falling from 403,704 Mcf in the first quarter. Pre-hedged realised prices amounted to US\$1.58/Mcfe (1Q: US\$2.08/Mcfe), while post-hedge prices reached US\$2.33/Mcfe (1Q: US\$2.69/Mcfe), compared to lifting costs of US\$1.29/Mcfe (1Q: US\$1.20/Mcfe). We take heart for 3Q that both spot and forward curve prices have risen from recent multi-decade lows, due to improving economic conditions for both domestic and export use.

EEG's gas hedging risk management program extends until end-2023, providing additional downside protection for the US Appalachian operations. The hedges have all been set at a floor price of \$2.50/mmBtu, with premia of up to US\$0.41/mmBtu to be paid.

Exhibit 4: EEG US Gas production hedging (2020-2023)

Period	Volume mmbtu/month	Hedge Type	Strike Price US\$/mmbtu	Premium US\$/mmbtu
Jul 20 to Dec 20	120,000	Put Options	\$2.50	\$0.23
Jan 21 to Dec 21	25,000	Put Options	\$2.50	\$0.23
Jan 21 to Dec 21	25,000	Put Options	\$2.50	\$0.37
Jan 21 to Dec 21	25,000	Put Options	\$2.50	\$0.41
Jan 22 to Dec 22	25,000	Put Options	\$2.50	\$0.35
Jan 22 to Dec 22	50,000	Put Options	\$2.50	\$0.41
Jan 23 to Dec 23	25,000	Put Options	\$2.50	\$0.41

Source: Company data

US Gas Outlook

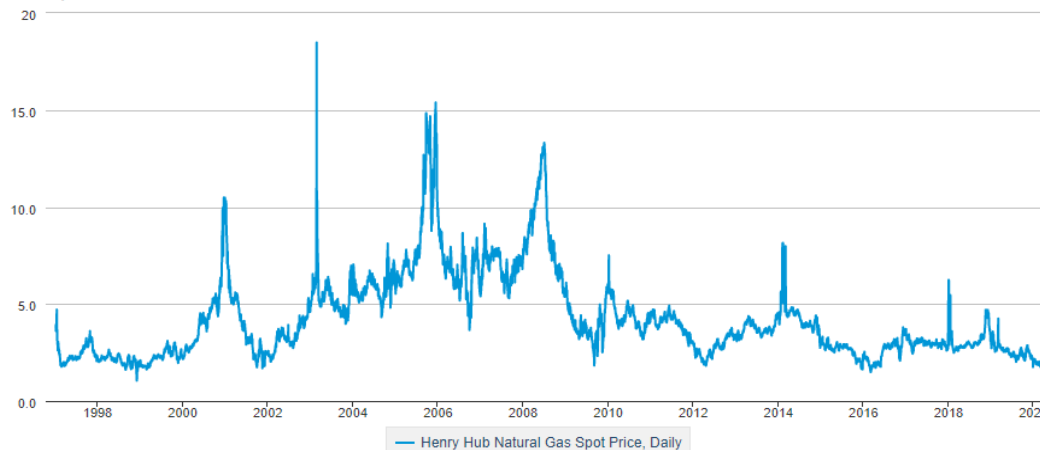
After averaging 25-year lows of US\$1.91/mmBtu during the March quarter, Henry Hub prices dropped a further ~US\$20c during the June quarter to average US\$1.70/mmBtu due to COVID-19 related falls in commercial and industrial gas consumption and “goldilocks” weather conditions, requiring less residential consumption. July began to experience more favourable terms, with prices averaging US\$1.76/mmBtu.

Although the US EIA expects 2020 US gas use to drop by 3.4 Bcf/day y/y, led by a 1.6 Bcf/d drop in industrial usage, the forecaster nonetheless has a bullish outlook, predicting prices to rally above US\$2.90/mmBtu by December 2020 due to falling output and replacement drilling rates. The Henry Hub forward curve seems to concur, with 4Q prices recently trending upwards, to US\$2.91/mmBtu for December 2020. This will certainly improve EEG’s Appalachia returns, just in time for covenant renegotiations with its commercial bankers.

Exhibit 5: Henry Hub gas prices (USD/mmBtu)

Henry Hub Natural Gas Spot Price, Daily

Dollars per Million Btu



Source: EIA data

Beetaloo near-neighbour activities help validate world class hydrocarbon significance

In early April, **Origin** announced the purchase of an additional 7.5% of its JV partnership with Falcon Oil & Gas, lifting its total stake to 77.5%, for effective consideration of A\$25m. In addition, Origin agreed to significantly expand the total investment cap on the Stage II and Stage III work programs from A\$113.3m to A\$263.8m, an increase of A\$150.5m or 133%. With this latest deal, Origin is valuing its JV tenements and all completed works to date at a net A\$333m.

Origin is hopeful the Velkerri and Kyalla hydrocarbon plays may be stacked, as well as contain both gas and liquid potential, which would substantially improve project returns. Origin may restart its Kyalla work program during 2H 2020, while deferring its Velkerri-76 work program until 2Q next year.

Exhibit 6: Beetaloo sub-basin: planned Regional Hydrocarbon Exploration

Company	Activity Scheduled	Timeline
EEG	EP187 Carpentaria-1 vertical drill program ~2900m (Kyalla & Velkerri shale appraisal)	2H 2020
Origin-Falcon JV	EP 117 Kyalla 117 N2 1H ST2 extended horizontal production flow test continuance - targeting liquids rich gas fairway. 4Q19: announced C3,C4,C5 & elevated gas shows & total Kyalla thickness of 900m	2H 2020
Origin-Falcon JV	EP76 Velkerri 76 S2 eastern flank drill, HFS, test - targeting shale liquids rich gas (15-60 bbl/MMscf) - awaits NT EMP approval	1H 2021
Santos-Tamboran JV	EP 161 Tanumbirini-1 extended flow test completion 1Q20: gas discovery & maiden resource from "above-expected" flow test results of 1.2mmscf/d	1H 2021
Santos-Tamboran JV	EP 161 Tanumbirini-2 horizontal drilling, fracture stimulation and flow testing	2021
Santos-Tamboran JV	EP161 Inacumba-1 horizontal drilling, fracture stimulation and flow testing	2021
Santos - Armour Energy	South Nicholson 2D seismic tests	2021
Hancock Prospecting	2D seismic program awaits NT EMP submission (subject to landholder approval)	2021
Pangaea Resources	Activities await NT EMP submission (potential sale to Tamboran Resources under consideration)	2021

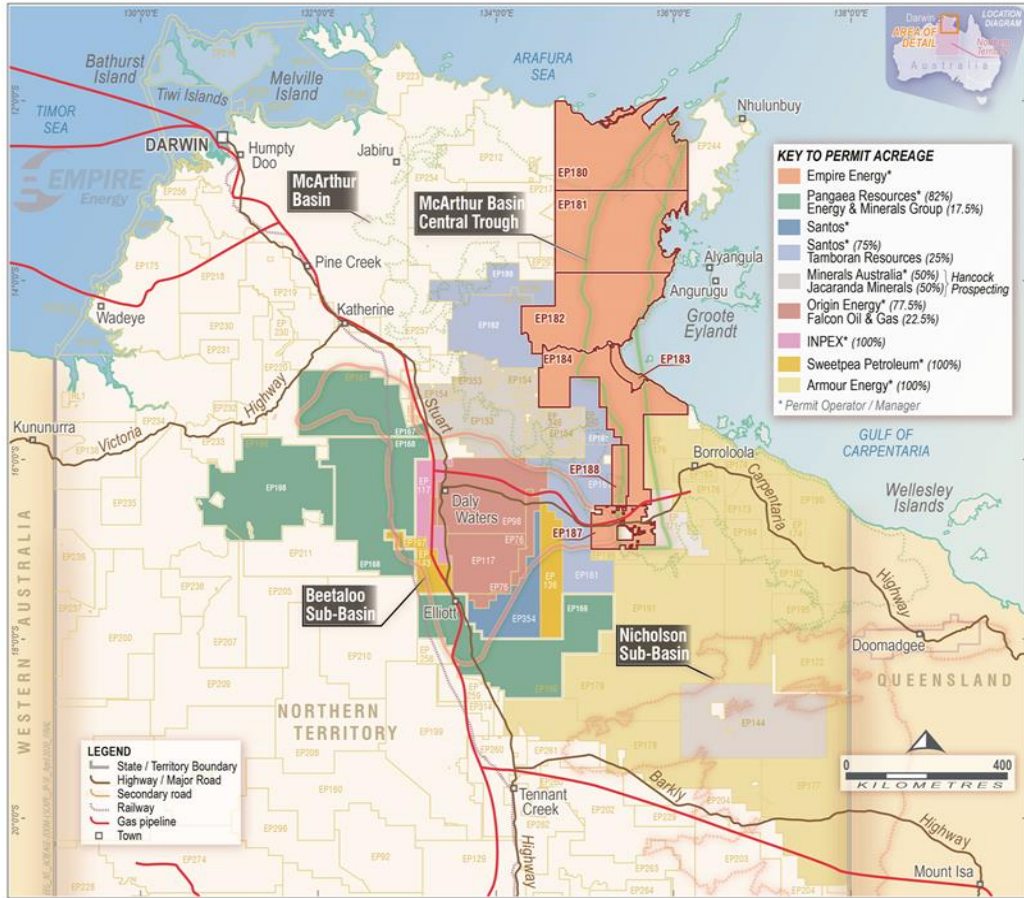
Source: Company data; NT Department of Primary Industry and Resources

During the quarterly, **Santos** announced a maiden 2C prospective resource of 22mm boe (~130PJ or 170Bcf gross), after making a gas discovery and finding "better-than-expected" flow test rates of >1.2mmscf/day from the vertical hydraulic fracture stimulation of its EP161 Tanumbirini-1 well. All work for 2020 has been deferred until 2021 due to COVID-19.

Santos also looks set to expand its exposure to the Beetaloo. At the end of January 2020, the company was provisionally granted a new (100%-owned) permit, EP354, located on the southern side of existing Beetaloo Basin exploration activities, squeezed to the south of Origin's EP76 permit; to the north of Pangaea's EP 169 permit and to the west of Sweetpea's EP136 permit.

Interestingly, in another example of high expectations for the region's prospectivity, according to an Australian Financial Review (AFR) Street-Talk article dated 21.07.20, Tamboran Resources, which already owns a 25% stake in the Beetaloo Sub-Basin's EP161 (Santos 75%), is hoping to raise \$30-50m in pre-IPO funding to purchase fellow Beetaloo tenement holders, Pangaea Resources (82.5% holder of EP167/EP168/EP169/EP198/EP305; Energy & Minerals Group 17.5%) for \$19m, alongside Sweetpea Petroleum (EP136/EP143/EP197 under application) for an unspecified sum, before raising a further \$165m via IPO to fund future appraisal works on the expanded Beetaloo portfolio. The AFR article suggests Tamboran (chaired by Patrick Elliott, founder of Eastern Star Gas, and with Dick Stoneburner, Petrohawk Energy Corp founder, as a director) hopes to develop 5 Tcf of proven-probable reserves and produce 36 PJ annually.

Exhibit 7: McArthur-Beetaloo regional tenement holdings: EEG and neighbours



Source: Company data

Exhibit 7: Financial Summary

EMPIRE ENERGY GROUP LTD		EEG					
YEAR END		Dec					
NAV	A\$mn	\$0.58					
SHARE PRICE	A\$cps	0.31	Last price 7-Aug				
MARKET CAP	A\$mn	81.4					
ORDINARY SHARES	M	263					
OPTIONS	M	54					
COMMODITY ASSUMPTIONS		2018	2019	2020E	2021E		
Realised oil price	US\$/b	59.86	59.76	37.60	40.60		
Realised gas price	US\$/mcf	3.24	2.72	2.27	2.61		
Exchange Rate	A\$:US\$	0.7452	0.6958	0.6822	0.6894		
EARNINGS		US\$000s	2018	2019	2020E	2021E	
Revenue			6,593	5,397	4,280	4,846	
Cost of sales			(4,723)	(4,189)	(3,305)	(3,325)	
Gross Profit			1,870	1,208	975	1,522	
Other revenue							
Other income			2,192	155	200	200	
Exploration written off			0	0	0	0	
Finance costs			(801)	(637)	0	0	
Impairment			0	(6,512)	0	0	
Other expenses			(8,399)	(6,052)	(4,950)	(4,985)	
Profit before tax			(5,138)	(11,838)	(3,775)	(3,263)	
Taxes			(115)	(135)	0	0	
NPAT Reported			(5,254)	(11,973)	(3,775)	(3,263)	
Loss on discontinued operations			(10,714)	(4,102)	0	0	
NPAT Underlying			(15,968)	(16,075)	(3,775)	(3,263)	
CASHFLOW		US\$000s	2018	2019	2020E	2021E	
Operational Cash Flow			2,828	1,267	117	412	
Net Interest			(2,974)	(1,885)	0	0	
Taxes Paid							
Other			(115)	(135)	(30)	(30)	
Net Operating Cashflow			(261)	(753)	87	382	
Exploration			0	0	(1,364)	(4,137)	
PP&E			(49)	0	0	0	
Petroleum Assets			(168)	(1,848)	0	0	
Net Asset Sales/other			359	20,008	(337)	(632)	
Net Investing Cashflow			(120)	17,407	(1,614)	(4,387)	
Dividends Paid			0	0	0	0	
Net Debt Drawdown			(7,878)	(18,497)	(1,238)	(550)	
Equity Issues/(Buyback)			11,677	8,037	7,751	393	
Other			0	0	0	0	
Net Financing Cashflow			3,785	(10,693)	6,514	(157)	
Net Change in Cash			3,404	5,961	4,987	(4,161)	
BALANCE SHEET		US\$000s	2018	2019	2020E	2021E	
Cash & Equivalents			4,157	9,882	14,869	10,708	
PP&E & Development			31,241	26,633	25,782	30,368	
Exploration			0	141	127	114	
Other Assets			28,673	2,993	953	1,539	
Total Assets			64,071	39,650	41,731	42,730	
Debt			24,369	6,481	5,243	4,693	
Other Liabilities			18,332	19,504	20,846	25,212	
Total Liabilities			42,701	25,985	26,090	29,905	
Net Assets/Shareholders Equity			21,370	13,665	15,641	12,824	
Net Cash/(Debt)			(20,211)	3,401	9,626	6,015	
Gearing dn/(dn+e)			-33%				
nm = not meaningful na = not applicable							
NET PRODUCTION			2018	2019	2020E	2021E	
Crude Oil	kb		127	89	3	3	
Nat Gas	mmcf		1,834	1,778	1,748	1,731	
TOTAL	kboe		432	385	294	291	
Product Revenue	A\$mn		14.0	10.3	4.1	4.7	
Cash Costs	A\$mn		(5.1)	(4.4)	(2.4)	(2.4)	
Ave Price Realised	A\$/boe		32.49	26.84	14.02	16.11	
Cash Costs	A\$/boe		(11.84)	(11.54)	(8.00)	(8.10)	
Cash Margin			20.65	15.29	6.02	8.01	
RESOURCES and RESERVES		Prospective Resources					
			P90	P50	P10		
Northern Territory							
Gas							
Lower Kyalla Fm	Bcf		24	72	161		
Barney Creek Fm	Bcf		1,633	11,053	45,380		
Velkerri Fm	Bcf		1,283	2,339	4,751		
Wollogorang Fm*	Bcf		524	1,185	2,371		
TOTAL			3,464	14,649	52,663		
Oil*							
Barney Creek Fm	Mb		66	174	403		
Velkerri Fm	Mb		8	24	62		
Wollogorang Fm	Mb		10	24	47		
TOTAL			84	222	512		
*Netherland, Sewell & Associates did not update the Wollogorang or Oil resource estimates							
			1P	2P	3P		
US							
Gas	Bcf		24.3	34.4	38.2		
EQUITY VALUATION		Risked Range (In A\$M)			Risked Range Per Share (A\$)		
NT		Low	Mid	High	Low	Mid	High
Gas		\$67	\$93	\$201	\$0.26	\$0.36	\$0.77
Oil		\$36	\$50	\$108	\$0.14	\$0.19	\$0.41
US Onshore							
Appalachian		\$5	\$10	\$15	\$0.02	\$0.04	\$0.06
		\$108	\$153	\$324	\$0.41	\$0.58	\$1.23
Net cash/(debt)		\$5	\$5	\$5			
Corporate costs		(\$5)	(\$5)	(\$5)			
TOTAL		\$108	\$153	\$324	\$0.41	\$0.58	\$1.23
RATIO ANALYSIS			2018	2019	2020E	2021E	
Shares Outstanding	M		2313	263	300	302	
EPS (pre sig items)	UScps		(1.05)	(6.46)	(1.26)	(1.08)	
EPS	Acps		(1.41)	(9.29)	(1.84)	(1.57)	
PER	x		na	na	na	na	
OCFPS	Acps		(0.15)	(4.12)	0.43	1.83	
CFR	x		na	na	na	na	
DPS	Acps						
Dividend Yield	%						
BVPS	Acps		1.2	7.5	7.6	6.2	
Price/Book	x		25.0x	4.1x	4.1x	5.0x	
ROE	%				na	na	
ROA	%				na	na	
(Trailing) Debt/Cash	x						
Interest Cover	x						
Gross Profit/share	Acps			6.6	4.8	7.3	
EBITDAX	ASM		2.3	0.6	(2.3)	(1.8)	

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: 26th November 2018

About Us

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

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

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

Contact Details, BR and RaaS

BR Head Office: Level 14, 344 Queen Street, Brisbane, QLD, 4000

RaaS. 20 Halls Road Arcadia, NSW 2159

P: +61 414 354712

E: finola.burke@raasgroup.com

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

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

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

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

Our general advice service

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

Our dealing service

RaaS can arrange for you to invest in securities issued under a prospectus by firstly sending you the offer document and then assisting you fill out the application form if needed.

How are we paid?

RaaS earns fees for producing research reports. Sometimes these fees are from companies for producing research reports and/or a financial model. When the fee is derived from a company, this is clearly highlighted on the front page of the report and in the disclaimers and disclosures section of the report.

We may also receive a fee for our dealing service, from the company issuing the securities.

Associations and Relationships

BR, RaaS, its directors and related parties have no associations or relationships with any product issuers other than when advising retail clients to invest in managed funds when the managers of these funds may also be clients of BR. RaaS's representatives may from time to time deal in or otherwise have a financial interest in financial products recommended to you but any material ownership will be disclosed to you when relevant advice is provided.

Complaints

If you have a complaint about our service you should contact your representative and tell them about your complaint. The representative will follow BR's internal dispute resolution policy, which includes sending you a copy of the policy when required to. If you aren't satisfied with an outcome, you may contact AFCA, see below. BR is a member of the Australian Financial Complaints Authority (AFCA). AFCA provide fair and independent financial services complaint resolution that is free to consumers.

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

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

Professional Indemnity Insurance

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

DISCLAIMERS and DISCLOSURES

This report has been commissioned by Empire Energy Group Ltd prepared and issued by RaaS Advisory Pty Ltd. RaaS Advisory has been paid a fee to prepare this report. RaaS Advisory's principals, employees and associates may hold shares in companies that are covered and, if so, this will be clearly stated on the front page of each report. This research is issued in Australia by RaaS Advisory and any access to it should be read in conjunction with the Financial Services Guide on the preceding two pages. All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable. Opinions contained in this report represent those of the principals of RaaS Advisory at the time of publication. RaaS Advisory provides this financial advice as an honest and reasonable opinion held at a point in time about an investment's risk profile and merit and the information is provided by the RaaS Advisory in good faith. The views of the adviser(s) do not necessarily reflect the views of the AFS Licensee. RaaS Advisory has no obligation to update the opinion unless RaaS Advisory is currently contracted to provide such an updated opinion. RaaS Advisory does not warrant the accuracy of any information it sources from others. All statements as to future matters are not guaranteed to be accurate and any statements as to past performance do not represent future performance.

Assessment of risk can be subjective. Portfolios of equity investments need to be well diversified and the risk appropriate for the investor. Equity investments in listed or unlisted companies yet to achieve a profit or with an equity value less than \$50 million should collectively be a small component of a balanced portfolio, with smaller individual investment sizes than otherwise. Investors are responsible for their own investment decisions, unless a contract stipulates otherwise. RaaS Advisory does not stand behind the capital value or performance of any investment. Subject to any terms implied by law and which cannot be excluded, RaaS Advisory shall not be liable for any errors, omissions, defects or misrepresentations in the information (including by reasons of negligence, negligent misstatement or otherwise) or for any loss or damage (whether direct or indirect) suffered by persons who use or rely on the information. If any law prohibits the exclusion of such liability, RaaS Advisory limits its liability to the re-supply of the Information, provided that such limitation is permitted by law and is fair and reasonable. Copyright 2020 RaaS Advisory Pty Ltd (A.B.N. 99 614 783 363). All rights reserved.