

Company-making Beetaloo deal gains shareholder thumbs-up

Empire Energy Group Limited (ASX:EEG) is a junior oil and gas producer/explorer, with onshore Northern Territory (NT) and US oil/gas assets. EEG has the largest tenement position (28.9m acres) in the highly prospective Greater McArthur Basin, which includes the Beetaloo Sub-basin. The material uplift in EEG's 2C/2U gas/liquids resource base, after the shareholder-approved 100% buyout of the Pangaea-EMG JV Beetaloo Sub-Basin acreage for ~\$57m (@30cps), lifts stated 2C Contingent Resources to 199Bcf gas/3.5mmbbls liquids, with significant upside potential. The NT energy basins are fast developing as gas-liquids rich strategic bolsters for east coast Australia's future energy needs, and potential supply for Darwin's expanding LNG export terminals, amid strong policy/funding support from Territory and Federal governments. EEG recently lodged a gas Discovery Notice from its EP187 Carpentaria-1 well, after yielding an instantaneous peak flow rate of >1.6 mmscf/day from the stacked Velkerri target shales. EEG has also been awarded Federal grant approval, up to \$21m (3.4cps), supporting 3 horizontal appraisal wells (25% total costs, including seismic) to advance Beetaloo Sub-Basin commercial evaluations.

Business model

Empire Energy Group (EEG) is a junior oil and gas producer/exploration company, focused on maturing its onshore portfolio of long-life oil and gas fields. The company is the 2nd largest conventional gas producer in the US NY State and holds substantial exploration acreage in the McArthur Basin, Beetaloo Sub-basin, considered world-class. EEG is looking to demonstrate commercial gas flow rates to underpin reserves bookings and support early development opportunities. Ongoing success may see first cash flows within 24-36 months (RaaS estimate), assisted by liquids "credits", assuming existing pipeline infrastructure links and upgrades are delivered in parallel; supported by generous Federal government "Beetaloo Strategic Basin Plan" funding of up to \$21m (3.4cps).

2Q21's strategic successes build Beetaloo reserve momentum

Complementing the array of materially significant events during 2Q21, (Pangaea-EMG acquisition; Carpentaria-1 gas discovery; and \$21m in Federal grants), EEG's 2Q21 financial results came in-line with expectations. The net \$35.38m equity injection was the most notable uplift, principally supporting the Pangaea-EMG Beetaloo tenement purchase and Beetaloo commercial validation drilling programs, while \$0.53m borrowings were repaid to Macquarie, with certain covenants removed from the remaining \$8.3m debt. 2Q cash boosted to ~\$41.9m, with a ~\$10.7m payment due out to meet the Pangaea-EMG cash terms and transaction costs, once government approvals are finalised. EEG's 2Q operating revenues reached \$1.5m, while operating losses were \$1.67m and exploration costs \$2.65m. EEG is now focused on: a) analysis of gas samples taken from Carpentaria-1 to determine gas/liquids composition and the proportionate contribution from each open Velkerri shale target interval (A, Intra A-B, B and C); b) securing further EP187 appraisal program approvals for a 2nd round of infill 2D seismic to further delineate the resource and horizontal drilling on up to 7 well-pad sites (including Carpentaria-1); c) completing extended vertical flow testing on Carpentaria-1; and d) gaining NT and landowner access approvals for a return to the field in the Pangaea tenements targeting Contingent Resources upgrades to fast track the path to commercialisation.

Valuation is \$622m, equating to \$1.04/share

Our forecasts have lifted slightly due to the AUD depreciation against the USD and this has resulted in a small increase in our valuation. The range for EEG is now \$400m-\$738m (previously \$385m-\$728m) equating to \$0.64-\$1.19/share, with \$622m or \$1.04/share being the mid-point. With several event drivers emerging over the next 6-12 months, there is the potential for further uplifts to the valuation.

Historical earnings and RaaS Advisory estimates

Year end	Revenue (A\$m)	Gross Profit (A\$m)	NPAT reported (A\$m)	OCFPS (AUD cps)	EPS Adj (AUD cps)	Price/Book (x)
12/19a	7.8	1.7	(17.3)	0.69	(9.31)	1.6
12/20a	6.5	1.2	(7.7)	(0.61)	(2.73)	1.6
12/21e	7.5	2.8	(4.4)	(0.19)	(0.70)	1.6
12/22e	7.6	2.8	(3.7)	0.09	(0.59)	1.6

Source: Company data, RaaS estimates for FY21e and FY22e

Energy exploration & production

9th August 2021

Share details

ASX Code	EEG
Share price	\$0.285
Market Capitalisation	\$170M
Shares on issue	597M
Net cash (post acqn)	~\$20.0M
Gross cash (post acqn)	~\$28.4M

Share performance (12 months)



Upside Case

- EEG's EP187 Velkerri shale work programs generate substantial Beetaloo energy (gas/liquids) business case
- Further McArthur-Beetaloo work programs generate significant commercial outcomes
- EEG drilling success generates high-value LT strategic partnership(s) & funding options

Downside Case

- Beetaloo flow rates prove uncommercial, negatively impacting permit values
- Equity issue financing becomes highly dilutive to future share capital growth
- Fracking success in NT/Qld pushes onshore energy prices to sub-economic levels.

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

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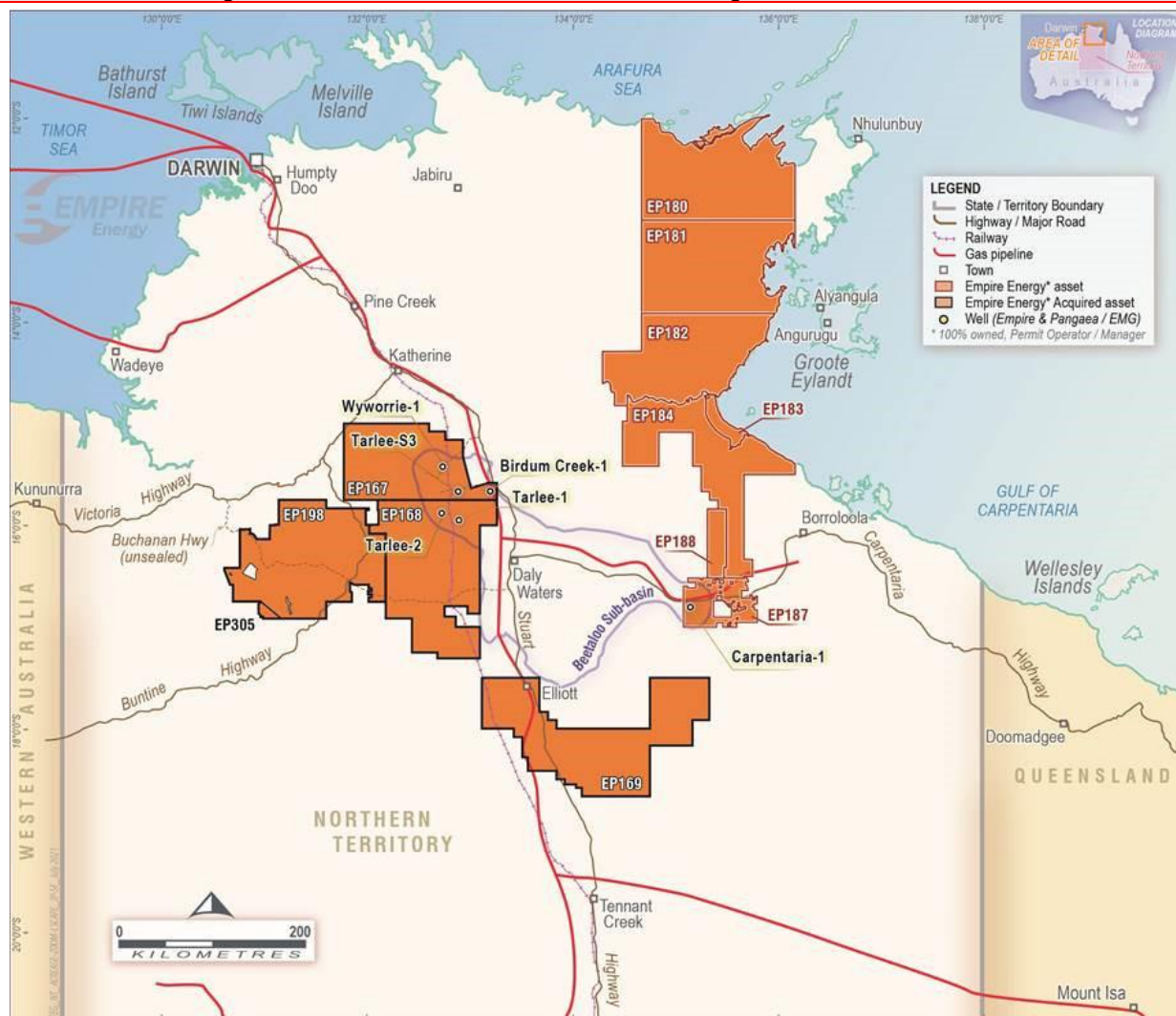
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*The analyst holds shares

Empire Energy Group – 2Q21 update and Pangaea approval

Exhibit 1: EEG + Pangaea/EMG McArthur-Beetaloo tenement holdings



Source: Company data

Empire Energy Group (EEG) has gained 98.56% shareholder approval for its Pangaea-EMG Beetaloo acreage acquisition at its 3 August 2021 EGM (with only NT Government approvals outstanding to finalise the deal).

Exhibit 2: Pangaea acquisition deal terms: a mix of cash; scrip & 70cps options

Pangaea-EMG JV sellers	Paul Fudge (Pangaea)	EMG	Totals	Total Value (\$) @30cps
Shareholding in Pangaea -EMG JV	82.5%	17.5%	100.0%	56,970,091
Cash	5,000,000	1,061,000	6,061,000	6,061,000
Shares issued by EEG	140,000,000	29,696,970	169,696,970	50,909,091
no escrow	15,000,000	3,181,818	18,181,818	
escrow 12 mths	55,000,000	11,666,667	66,666,667	
escrow 24 mths	70,000,000	14,848,485	84,848,485	
2024 Options (70cps)	8,000,000	1,696,970	9,696,970	
Shareholding post deal	20%*	5%	25%	

Source: Company data, RaaS analysis *It is expected that 119,394,868 shares will be issued to Pangaea at completion, with 20,605,132 shares to be issued at a later date so that Pangaea holds 20% or less of Empire

EEG also released its June 2021 quarterly update, highlighting a strategically significant three months, honing the progress of the company's commercial prospects. Of particular note were the following highlights:

- (i) Purchasing the Pangaea-EMG Beetaloo permits EP167, EP168; EP169; EP198 & EP305 for ~\$57m (30cps), to achieve a near-doubling of EEG's NT acreage position to 28.9m acres, while lifting Prospective Resources (2U) to ~47Tcf (42Tcf gas/791MMbbls liquids) and 2C Contingent Resources to 220 Bcfe (199 BCF gas/3.5MMbbls liquids), resulting from \$110m work program investments from 2012 until the 2016 NT Moratorium;
- (ii) Concluding a fresh capital equity raise totalling \$37.2m (gross) at 30 cents a share to fund the acquisition and future Beetaloo appraisal works, enabling EEG to complete 2Q with ~\$42m gross cash/\$33m net cash, up from \$11.35m gross/\$2.3m net cash at the end of 1Q21;

Exhibit 3: EEG post-Pangaea/EMG 2C Contingent & P(50) Prospective Resource estimate

Zone	Unrisked Net Contingent Resources Liquids (MMBBL)			Unrisked Net Contingent Resources Sales Gas (BCF)			Unrisked Net Prospective Resources Liquids (MMBBL)			Unrisked Net Prospective Resources Gas (BCF)		
	Estimate			Estimate			Estimate			Estimate		
	Low (1C)	Best (2C)	High (3C)	Low (1C)	Best (2C)	High (3C)	Low (1U)	Best (2U)	High (3U)	Low (1U)	Best (2U)	High (3U)
Kyalla*	0.8	3.0	11.1	0.8	4.5	27.7	88	378	1,571	184	857	4,891
Mid Velkerri*	0.1	0.5	3.0	57.2	194.0	474.1	80	413	2,037	10,163	30,214	87,735
Barney Creek*	-	-	-	-	-	-	-	-	-	1,633	11,053	45,380
Total*	0.9	3.5	14.1	58.0	198.5	501.8	168	791	3,608	11,980	42,124	138,006

*Empire derived arithmetic summation of NSAI probabilistic resource estimations

Source: Company data

- (iii) Issuing a gas Discovery Notice following successful fracture-stimulation of its Carpentaria-1 vertical well, across a 998m column of wet gas testing the Velkerri Formation's four stacked targets (A, A/B, B, C), amid 17-days of flow test results to surface, before Covid-19 issues resulted in a shut-down on 16 July. The remainder of the 90-day flow test is expected to recommence when restrictions lift. Empire is presently analysing gas samples taken from the well for gas/liquids composition and zonal contribution.
Of note, the initial gas flow results from the Carpentaria-1 vertical well included: an initial peak flow of >1.6mmscf/day; and an average flow rate of 0.25mmscf/day over the 17 days; plus "clean" CO₂ levels <1%. Improvement to the artificial lift system to lower down-hole pressure is likely to lift flow rates, while EEG's horizontal well tests will further define its portfolio's commercial implications, since lateral shale gas flow continuity is far greater than vertical.
- (iv) Removal of two financial covenants from its ~US\$6m Macquarie Bank US-business backed credit facility (interest coverage ratio & 1P PV10 ratio).

Subsequent to the quarter, EEG also announced:

- a) \$21m grant funding approvals under the Federal Government's Beetaloo Cooperative Drilling Program, to be applied to up to 3 horizontal wells on EP187 (\$7.5m cap each), including any seismic costs;
- b) Shareholder EGM approval for the Pangaea-EMG NT asset acquisition on 3 August;

Later in August, EEG expects to receive:

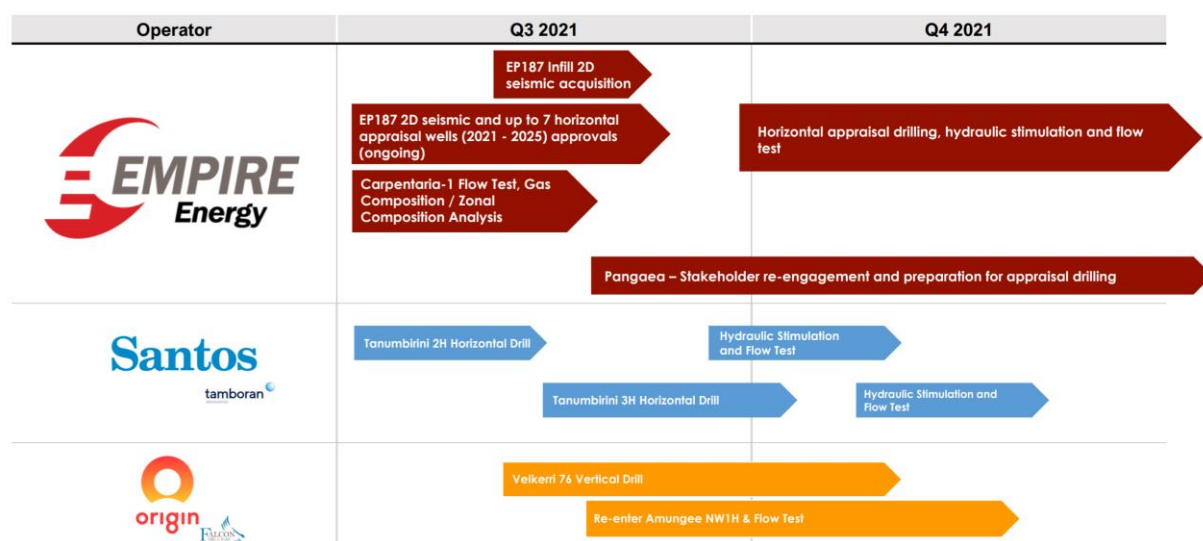
- a) NT government approvals for second round of infill 2D seismic (~165kms) in the EP187 acreage's SW region with a 7-line survey; and horizontal drilling approvals for up to 7 well-pad sites on EP187 (including Carpentaria-1), with the first, Carpentaria-2, planned to be located ~10kms north of Carpentaria-1, where the Velkerri is mapped to be ~260m deeper;
- b) Carpentaria-1 sample analysis results including relative gas/liquids composition and proportionate contribution data from each Velkerri zone (A, A+B, B and C). This data will guide the planning of

the Carpentaria-2 horizontal well. Horizontal wells produce higher flow rates than vertical fracture stimulated wells, because a larger volume of the hydrocarbon-bearing shale targets is exposed to the wellbore and induced fractures.

EEG's portfolio prospects are also being assisted by current positive externalities, including:

- a) The rally in global gas prices, with Henry Hub returning to late-2018 levels, amid reduced well investment activities; returning post Covid, transport/travel demand, ever growing gas demand from Gulf Coast LNG projects supporting Asia, and the structural shift as the world transitions from more-carbon intensive fossil fuel consumption;
- b) A package of indigenous land reforms in the NT focusing on projects funded by mining royalties generated on local lands, which will be invested to benefit local NT residents and which will be administered by a new Aboriginal-controlled corporate Commonwealth entity;
- c) The recommencement of work programs by other key operators in the Beetaloo Sub-basin, providing useful "read-through" commercial appraisal results on the wider regional basin geological conditions, including:
 - (i) Origin/Falcon Kyalla-117 re-working; Amungee NW 1H extended flow test & zonal contributions & Velkerri-76 vertical test results, with potential for liquids-rich gas showings;
 - (ii) Santos/Tamboran EP161 test results from Tanumbirini-2H & 3H (10-20 stage horizontal fractured stimulation and extended flow tests, focused on the Mid-Velkerri B shale down to a depth of 4,800m).

Exhibit 4: Beetaloo 2021 regional commercial appraisal activities (EEG and near-neighbours)



Source: Company disclosures & regulatory filings

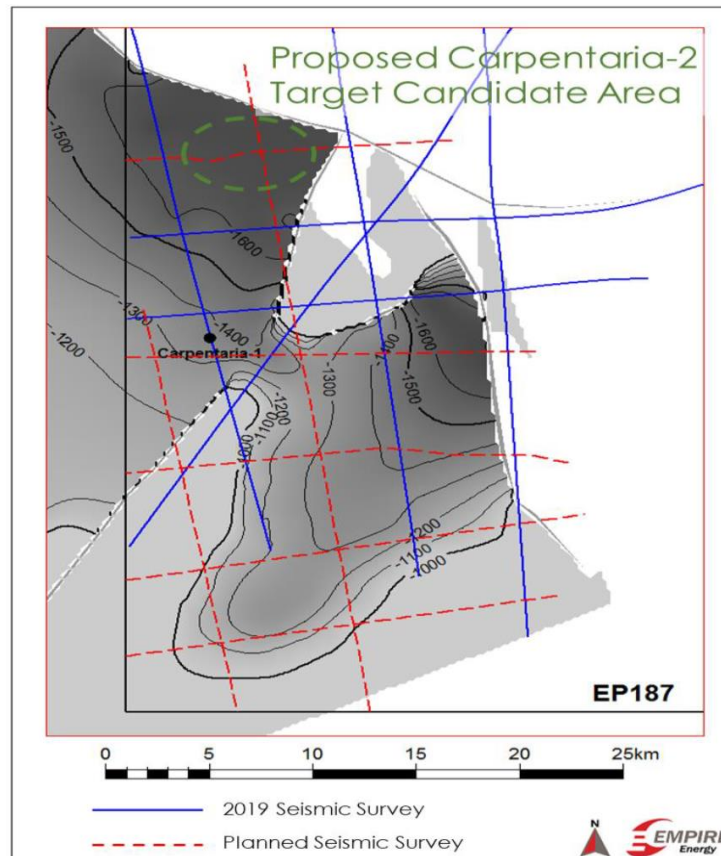
We are equally cognisant that a number of externalities are potentially overhanging EEG's short-term share price performance, including:

- a) The conclusion to the current NT lockdown restrictions to enable EEG to maximise its pre-wet season (Nov-April) Beetaloo appraisal activities (both the EP187 seismic and Carpentaria-2 horizontal);
- b) The Federal Senate inquiry results into whether the Federal Government's Beetaloo Cooperative Drilling Program (part of its gas-led recovery plan) should be funded by public monies. An initial report is due on 24 August 2021, with the final report due in March 2022. EEG made a submission to the inquiry, while CEO Alex Underwood appeared before the inquiry on 28 July 2021.
- c) Separately, a court case was also launched in the federal court against the government's funding program on 29 July by environmental advocates, alleging the grants to EEG are unlawful under public governance laws, because they fail to follow proper process to consider increased climate

change risks. Resources Minister Pitt has in turn called the case “green lawfare” which “threatens to delay an estimated 6,000 new jobs”.

- d) Gaining owner access to EEG’s other Beetaloo tenements to further progress regional appraisal programs, particularly on the newly-acquired Pangaea-EMG areas, once the deal is fully-approved.

Exhibit 5: EEG’s Proposed Beetaloo EP187 2D 7-line Seismic Survey target zone (2021 red lines)



Source: Company data

2Q21 US Production and Financial Results

During 2Q21, EEG’s US Appalachia oil & gas production operations achieved another positive EBITDA quarter of US\$16,000, with 1H21 EBITDA totalling US\$77,000. Results were chiefly lifted by better gas prices (weighted average sales price: US\$2.47/Mcfe vs US\$2.12/Mcfe 2Q20); receipt of a US\$343,602 “forgivable” loan under the US Paycheck Protection Program and US\$120,000 inflows from lease rental receipts generated by wind/solar construction project agreements (US\$45,000 received at Quarter end). Further solar agreements are under negotiation, covering >2000 acres.

Net Appalachian gas equivalent output totalled 413,987 Mcf for the quarter, while lifting costs averaged US\$1.09/Mcfe. Borrowings underpinned by the US business totalled US\$6.125m at end-quarter. Gas price hedges (a combination of swaps & options) are in place out to December 2023, at a strike price of US\$2.50/mmbtu and premia up to US\$0.41 for the puts, covering ~25k mmbtu/month.

Event drivers - looking ahead

We expect EEG to make strong appraisal progress in the next 6-12 months on a number of investment fronts focused on commercialising the Beetaloo's Middle Velkerri shale reservoirs, including:

August:

- (i) NT government approval for the Pangaea-EMG Beetaloo tenement acquisition;
- (ii) NT government approval for the EP187 2D seismics;
- (iii) NT government approval for the drilling programme in EP 187 of up to 7-horizontal wells;
- (iv) Receiving Carpentaria-1 sample analysis test results;

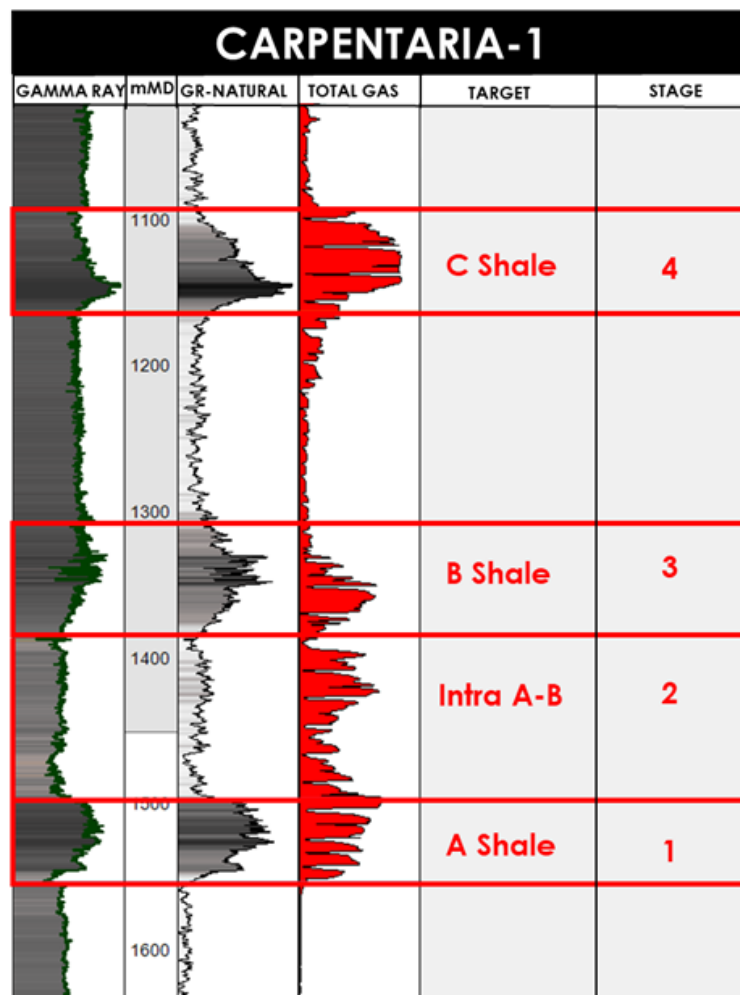
September:

- (i) carrying-out the ~165km 2D 7-line EP187 seismic survey to better delineate the continuity of the Velkerri shale resource with existing regional data points & to avoid any structural interference, ahead of locating the final well-pad position for Carpentaria-2;
- (ii) re-commencing the Carpentaria-1 90-day extended flow test to ascertain hydrocarbon deliverability of the Velkerri shales;

November:

- (i) carrying-out the Carpentaria-2 horizontal well fracture stimulation and production test to determine deliverability of a horizontal well.

Exhibit 6: EEG Carpentaria-1 vertical well fracture stimulation log response targets



Source: Company data

Other Ongoing Event Drivers:

Ongoing: commercial-customer and infrastructure-access negotiations exploring regional “fast-track” business opportunities in the NT and into East Coast Australia’s gas market;

Ongoing: Receiving landowner agreement to access EEG tenement holdings (EP180; 181; 182; 183; 188) for hydrocarbon exploration purposes;

Ongoing: Receiving landowner agreement to access Pangaea-EMG tenement holdings (EP167; 168; 169; 198 and 305), ahead of gaining NT government approvals to begin hydrocarbon exploration purposes.

EP167 and EP168 are likely to be EEG’s initial focus permits, particularly around Birdum Creek-1, given the historical works already invested which underpin existing resource estimates, amounting to \$110m of exploration capex from 2013-2016, including:

- (i) 1 exploration well (Hidden Valley S2);
- (ii) 4 appraisal wells (Birdum Creek-1; Tarlee-1; Tarlee-2; Wyworrie-1 (gas discovery));
- (iii) 2 stratigraphic holes (Manbulloo-S1; Tarlee-S3 (live oil shows));
- (iv) 1,764km of 2D seismic surveys;
- (v) 29,268 kms of airborne surveys;
- (vi) 3,500m of core samples.

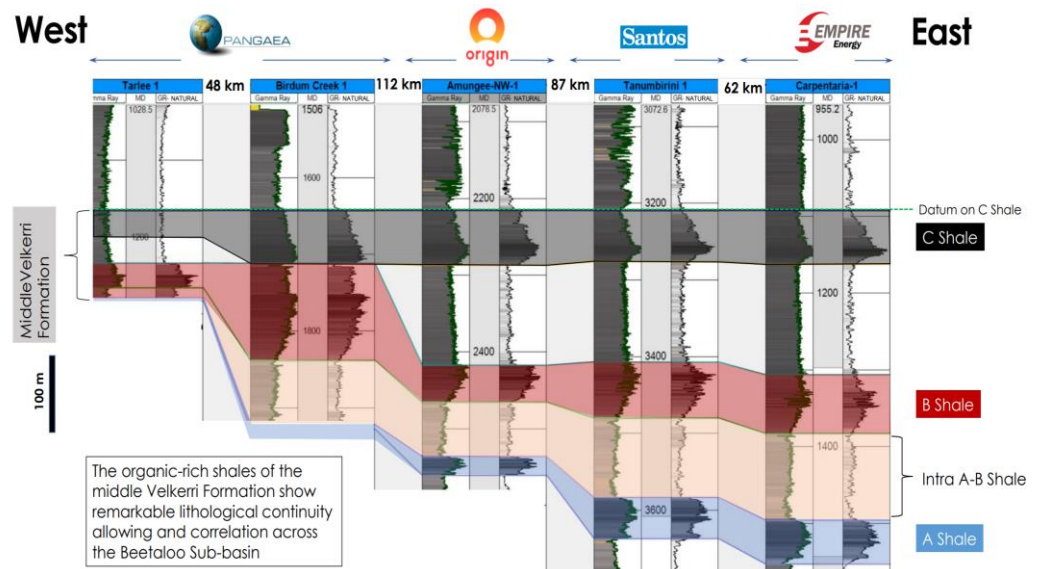
Exhibit 7: Pangaea-EMG historical drilling details

Well Name	Tenement	SPUD Date	Total V Depth	Well Type	Results
Pangaea-EMG JV works					
Hidden Valley - S2	EP168	26.05.14	1744	exploration	oil shows
Manbulloo-S1	EP 167	17.07.14	1236	stratigraphic core	oil shows
Tarlee-S3	EP 167	21.08.14	1650	stratigraphic core	oil & gas shows
Birdum Creek-1	EP 167	03.06.15	1935	appraisal	HC shows - Kyalla / Middle Velkerri (minimal)
Tarlee-1	EP 168	10.06.15	1388	appraisal	HC shows
Tarlee-2	EP 168	30.06.15	1180	appraisal	HC shows - Kyalla / Middle Velkerri
Wyworrie-1	EP167	26.07.15	1385	appraisal	oil & gas shows
Pacific Oil & Gas					
Sever-1	EP167	1.09.1990	1260	stratigraphic	no shows

Source: NT Open Source file data; RaaS

The KEY highlight from all regional works concluded in the Beetaloo to-date is the remarkable continuity, thickness, porosity, permeability; mineralogy, pressure-levels and gas concentrations across the Middle Velkerri Formation shales, giving justification to the “world-class” description, aka the US Marcellus Shale:

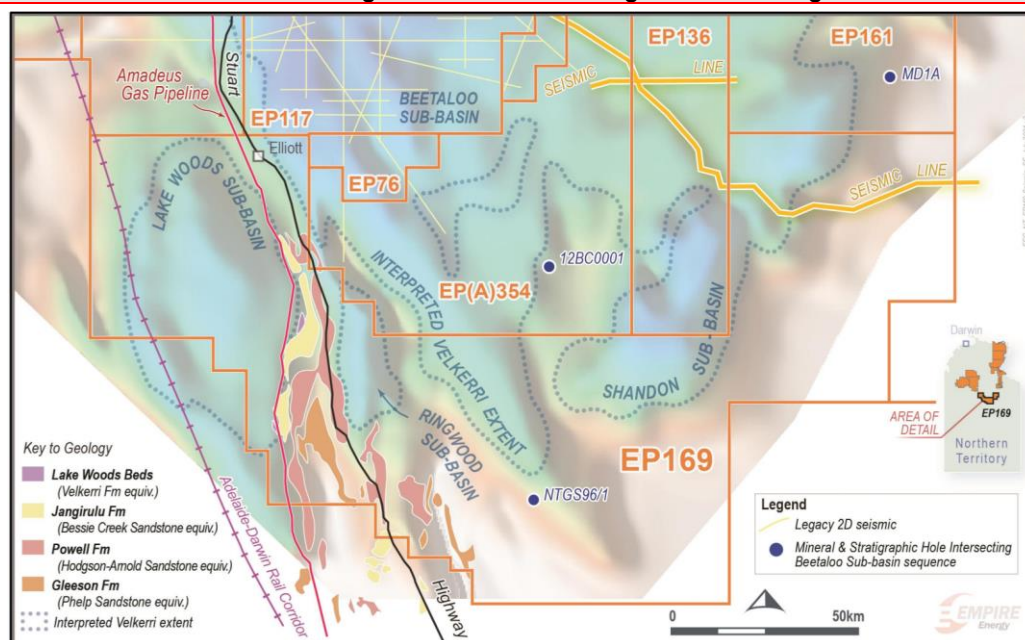
Exhibit 8: McArthur-Beetaloo regional tenement holdings: EEG and neighbours



Source: Company data

Meanwhile although the EP169 tenement is relatively underexplored, the permit lies directly to the south of Origin/Falcon and Santos/Tamboran Beetaloo permits, while being well-served by regional infrastructure; crossing the Amadeus gas pipeline, the Darwin-Adelaide rail corridor and the Stuart Highway. Recent government 2D seismic and mineral holes indicate not only that the Middle Velkerri Formation may extend into EP169, but also other potential large sub-basins.

Exhibit 9: McArthur-Beetaloo regional tenement holdings: EEG and neighbours



Source: Company data; FrogTech Oz Seabase

Meanwhile past work has suggested that the middle Velkerri does not extend into EP198, leading us to conclude that this will occupy less of EEG's immediate attentions.

Future funding sources

EEG is sitting on ~\$30m gross cash (post completion) which will stretch further with the Federal grant funding assistance, capped at \$7.5m per well and 25% of total costs.

As we have highlighted in previous reports, we believe EEG has a number of future potential funding sources to support its path to Beetaloo commercialisation strategy, including:

- Partnering
- Additional equity raising
- 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.
- The exercise of unlisted options, assuming these are trading "in-the-money" at exercise:

Exhibit 10: EEG unlisted option details (total: 18.4m)

Exercise Date	Option Class	Issued ###	Exercise price A\$	Gross Cash Value A\$
30/12/2021	Unlisted	1,300,000	0.30	390,000
30/12/2021	Unlisted	600,000	0.30	180,000
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 (as at 31 December 2020)

Note: the Pangaea-EMG owners will be entitled to 2024 70c options (9,696,970) once deal approvals complete

Exhibit 11: Financial Summary

EMPIRE ENERGY GROUP LTD		EEG						
YEAR END		Dec						
NAV	A\$mn	622						
SHARE PRICE	A\$cps	0.29		priced as of close trading				
MARKET CAP	A\$mn	170						
ORDINARY SHARES	M	597						
OPTIONS	M	57						
nm = not meaningful na = not applicable								
6-Aug								
PROFIT & LOSS		A\$000s	2019	2020	2021E	2022E		
Revenue			7,763	6,464	7,460	7,637		
Cost of sales			(6,026)	(5,266)	(4,684)	(4,831)		
Gross Profit			1,737	1,198	2,776	2,806		
Other revenue								
Other income			224	1,039	263	267		
Exploration written off								
Finance costs			(916)	(755)	(808)	(790)		
Impairment			(1,677)	0	0	(2,505)		
Other expenses			(18,806)	(8,682)	(7,133)	(6,502)		
EBIT			(13,783)	(7,013)	(3,004)	122		
Profit before tax			(17,069)	(7,485)	(4,357)	(3,696)		
Taxes			(194)	(200)	0	0		
NPAT Reported			(17,263)	(7,684)	(4,357)	(3,696)		
Underlying Adjustments			(5,971)	0	0	0		
NPAT Underlying			(23,234)	(7,684)	(4,357)	(3,696)		
CASHFLOW		A\$000s	2019	2020	2021E	2022E		
Operational Cash Flow			1,822	(1,970)	573	735		
Net Interest			(2,712)	(755)	(614)	(593)		
Taxes Paid			(194)	(200)	(50)	(100)		
Other								
Net Operating Cashflow			(1,084)	(2,924)	(92)	42		
Exploration			0	(856)	0	0		
PP&E			0	(12)	0	(133)		
Petroleum Assets			(2,658)	(12,841)	0	0		
Net Asset Sales/other			27,698	0	0	0		
Net Investing Cashflow			25,040	(12,841)	(18,390)	(10,000)		
Dividends Paid								
Net Debt Drawdown			(26,943)	(1,845)	(723)	(1,233)		
Equity Issues/(Buyback)			11,562	17,640	36,782	153		
Other								
Net Financing Cashflow			(15,381)	15,795	35,309	(1,080)		
Net Change in Cash			8,575	29	16,827	(11,038)		
BALANCE SHEET		A\$000s	2019	2020	2021E	2022E		
Cash & Equivalents			14,106	14,146	30,973	19,935		
O&G Properties			37,505	46,442	125,488	135,755		
PPE + ROU Assets			711	1,716	1,199	1,181		
Total Assets			56,594	66,563	158,648	157,613		
Debt			9,251	7,824	8,284	7,551		
Total Liabilities			37,089	36,327	45,537	45,857		
Total Net Assets/Equity			19,505	30,236	113,112	111,757		
Net Cash/(Debt)			4,855	6,322	22,689	12,384		
NET PRODUCTION			2019	2020	2021E	2022E		
Crude Oil		kb	89	2	2	2		
Nat Gas		mmcf	1,778	1,630	1,646	1,663		
TOTAL		kboe	385	273	276	279		
Product Revenue		A\$mn	7.8	6.5	7.5	7.6		
Cash Costs		A\$mn	(6.0)	(5.3)	(4.7)	(4.8)		
Ave Price Realised		A\$/boe	20.16	23.64	27.02	27.40		
Cash Costs		A\$/boe	(15.65)	(19.26)	(16.96)	(17.33)		
Cash Margin			4.51	4.38	10.05	10.07		
COMMODITY ASSUMPTIONS			2019	2020	2021E	2022E		
Realised oil price		US\$/b	59.76	39.48	67.00	66.39		
Realised gas price		US\$/mcf	2.44	1.96	3.26	3.17		
Exchange Rate		A\$:US\$	0.6958	0.6989	0.7603	0.7502		
RESOURCES and RESERVES			assumed post transaction					
Contingent Resources			Prospective Resources					
			1C	2C	3C	1U	2U	3U
Northern Territory								
Gas (Bcf)			58.1	198.5	501.9	11,979	42,124	138,006
Liquids (Mb)			1.0	3.5	14.2	169	792	3,608
TOTAL (Mboe)			10.6	36.6	97.8	2,165	7,813	26,609
US Onshore			1P	2P	3P			
Gas (Bcf)			24	34	38			
PRODUCTION			2019	2020	2021E	2022E		
Year end Dec								
Crude oil		kboe	89	2	2	2		
Natural Gas		mmcf	1778	1630	1646	1663		
Total		kboe	385	273	276	279		
EQUITY VALUATION			Low	Mid	High	Low	Mid	High
NT								
Contingent			\$153	\$191	\$220	\$0.26	\$0.32	\$0.37
Prospective			\$223	\$402	\$485	\$0.37	\$0.67	\$0.81
US Onshore								
Appalachian			\$5	\$10	\$15	\$0.01	\$0.02	\$0.03
			\$381	\$603	\$720	\$0.64	\$1.01	\$1.21
Net Cash (Debt)			\$23	\$23	\$23			
Corporate Costs			-\$5	-\$5	-\$5			
TOTAL			\$400	\$622	\$738	\$0.67	\$1.04	\$1.24
Shares on Issue			597 mn					
RATIO ANALYSIS			2019	2020	2021E	2022E		
Shares Outstanding		M	263	324	622	622		
EPS (pre sig items)		US\$cps			(0.70)	(0.59)		
EPS		Acps	(9.31)	(2.73)	(0.70)	(0.59)		
PER		x			na	na		
OCFPS		Acps	0.69	(0.61)	(0.19)	0.09		
CFR		x			na	na		
BVPS		Acps	7.5	13.4	18.2	18.0		
Price/Book		x	3.8x	2.1x	1.6x	1.6x		
ROE		%			na	na		
ROA		%			na	na		
Gross Profit/share		Acps	6.6	3.7	4.5	4.5		
EBITDAX		A\$M	2.7	2.9	3.7	3.7		
EBITDAX Ratio		%	34.2%	44.6%	49.3%	48.5%		

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: 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.

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.

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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.

The science of climate change is common knowledge and its impacts may damage the global economy. Mitigating climate change may also disrupt the global economy. Investors need to make their own assessments and we disclaim any liability for the impact of either climate change or mitigating strategies on any investment we recommend.

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