

Empire Energy Group Limited

Resource uplift brightens valuation metrics 20%

Empire Energy Group Limited (ASX:EEG) is a junior oil and gas producer and explorer with onshore oil & gas shale 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) boost to future east coast Australia's energy needs and Darwin's expanding LNG export terminals, amid strong policy support from both the Northern Territory (NT) and Federal governments. The Beetaloo Basin alone is considered to contain recoverable shale dry gas volumes of over 100 Tcf, with liquids upside. EEG also owns conventional gas/oil assets in the US Appalachia, 80%-hedged at US\$2.50/mcf for 2020. Recent 2D seismic results have enabled a 22% upgrade of EEG's NT P50 prospective resource estimates to 13.5 Tcf gas (vs 11 Tcf previously). Crystallising EEG's longer-term potential rests on successful drilling; then securing strategic funding and infrastructure support to commercialise the acreage. With A\$11.3m gross cash, EEG is seeking to finalise a safe-work drill plan with local communities and NT authorities as soon as practicable.

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 holds substantial exploration acreage in Australia's Northern Territory McArthur-Beetaloo basin and is the 2nd largest conventional gas producer in the US Appalachia NY State. EEG's NT assets are at an early exploration stage. Given the region's high prospectivity, success from future drill programs could see cashflows within 36-48 months, assuming links and upgrades to existing pipeline infrastructure are delivered in parallel. COVID-19 delays, not dents, the opportunity.

Significant prospective gas resource uplift in NT McArthur

EEG has announced a significant independent P50 prospective resource upgrade of its NT McArthur-Beetaloo basin tenement holdings, with a 22% increase in its gas prospective resources from 11.1tcf to 13.5tcf. The upgrade follows recent 2D seismic results on its EP187 property confirming the Beetaloo's extension into EEG's permit zone. Gross cash of ~A\$11.3m leaves EEG funded to support its 2020 EP187 Carpentaria-1 work program appraisal aims in line with its 2018 strategic pivot towards the McArthur-Beetaloo. We chiefly await a) NT drilling commencement (COVID-19 safe-work clearance & a rig supply contract); b) NT EMP submission for Carpentaria-1's vertical frac; c) regional land access clearance for EEG's other tenement applications. Robust results from EEG's 20/21 programs could evolve this latest prospective resource (P50) into a contingent resource (2C), better positioning the company to attract strong potential funding partners. Positive read-throughs from Beetaloo neighbours (Origin & Santos) are also likely to inject value.

Valuation upgrade

Following EEG's P50 prospective resource upgrade, we have increased our base case valuation by 20% to \$159m or \$0.61/share (previously \$133m (\$0.51/share), using the RaaS 2Q20 commodity price deck and current share count of 263.3m. EEG has a number of event drivers over the next 6-12 months which in our view hold potential to confirm and expand this sizeable uplift in NAV.

Historica	l earnings ar	nd RaaS Adv	isory estima	tes		
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)	18.6
12/19e	5.4	1.2	(12.0)	(4.12)	(9.29)	3.1
12/20e	4.7	1.4	(3.3)	1.32	(1.95)	5.1
12/21e	4.4	1.1	(3.7)	2.82	(2.22)	8.8
Source: Co	mpany data, R	aaS estimates	s for FY19e, FY	20e and FY2	?1e *restated	

Energy exploration & production

20 May 2020



Share performance (12 months)



Upside Case

- EEG's Carpentaria-1 drill program proves the Beetaloo Velkerri/Kyalla shales extend into EP187 & hold 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
- Continuing equity issue financing is 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

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Resource uplift from independent assessment

	••.				urce upgrade					
BEFORE		P90	P50	P10	AFTER		P90	P50	P10	Delta
Northern Territory					Northern Territory					
Gas					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

EEG has announced a 22% uplift in its independent prospective resource to 13.5tcf from 11.1tcf across its 14.5m acre regional tenement holdings. Of particular note, EEG's Kyalla shale formation P50 resource estimate has been independently assessed for the first time, kicking off with 72 bcf of gas or 14m boe.

Meanwhile EEG's Velkerri shale formation P50 resource estimate has risen from 1.2tcf gas to 2.3tcf gas, up 96.2%. EEG's Barney Creek shale was also reassessed, with the formation's P50 increasing from 8.7tcf to 11tcf gas (+27.1%). The Wollogorang prospect was not reassessed by Netherland, Sewell and Associates as further delineation is required.

The updated results incorporate the latest publicly-available regional geological survey data, together with EEG's own recent "better-than-expected" 2D seismic results which were concluded over 231-line kms on its EP187 Beetaloo sub-basin property in the McArthur basin last December. In particular, these highlighted that the Kyalla and Velkerri hydrocarbon-prospective shale sequences extended into EEG's EP 187 permit zone.

The resource estimate upgrade work was prepared by Netherland, Sewell and Associates Inc (NSAI), a leading global specialist petroleum property evaluation consultancy, based in Texas USA.

EEG had last updated its NT tenement resource estimate in February 2016, prior to the NT's hydraulic fracturing moratorium which concluded in 2018. Its previous P50 Prospective Resource calculated a total of ~11Tcfe (~13k PJ) across its McArthur basin holdings, covering 5.5m/14.5m acres.

EEG has the largest acreage held by any company in the Australian Northern Territory's McArthur-Beetaloo region and is the only independent ASX-listed junior explorer in the region with exposure to both the Beetaloo and McArthur Basins.

What Next?

EEG remains in talks to secure a drill rig for its Carpentaria-1 vertical well, after submitting its COVID-19 safety management plan to the NT's Chief Medical Officer. If approved, its employees and contractors will be exempt from border restrictions as it prepares to resume its drilling program plans.

EEG continues to progress on a number of fronts:

- a) The company is drafting the **Environmental Management Plan** for the next phase of its Carpentaria-1 well work program. Baseline environmental testing is ongoing.
- b) The company is prioritising negotiations with **local landowners** to gain regional land access clearance on its remaining Northern Territory permits, including EP180, 181, 182, 183 and 188.
- c) EEG has been approved by local authorities to continue operating its New York State and Pennsylvania Appalachia conventional energy assets during the COVID-19 shutdown. In both states, natural gas for power generation has been deemed an "essential service".



d) The company obtained agreement with its US bankers to waive all debt covenants until year-end, allowing breathing space for US Henry Hub gas prices to recover above \$2/mmbtu, while providing investors with reasonable comfort that its US production assets can be self-sustaining for the remainder of 2020. EEG's 2020 Appalachian gas output is 80%-hedged at US\$2.50/mmBtu.

Financials

EEG holds a total of A\$11.3m in gross cash, of which A\$9.5m is held in Australian dollars and US\$1.1m is held in US dollars.

Since its March quarterly report release on 29 April, EEG has seen its US cash holdings boosted by a US\$0.55m "forgivable" loan received under the US Paycheck Protection Program. The program has been established to support SME job retention during the COVID-19 pandemic. The funds can be applied to payroll, interest, rent & utility business expenses and are being kept in a segregated account focused on making such payments. EEG has 33 employees supporting its Appalachian conventional energy production business.

Exhibit 2: EEG's cash position in AUD	and USD terms	
	AUD (m)	USD (m) *
Gross Cash	11.30	7.35
Debt	10.27	6.675
Net Cash	1.03	0.67
Source: Company data; assumes AUD-USD	exchange rate of 1:0.65	

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\$5-8m, while Australian corporate overheads are running at ~A\$2.5m per annum. We note that our funding forecasts assume a COVID-19 shutdown of 2-3 months and incorporate a small potential upward revision of costs to take account of additional health and safety distancing measures.

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 ~57.43m unlisted options exercisable at share prices of A\$0.30, \$0.32 and \$0.60 over various periods through until 30 December 2022.



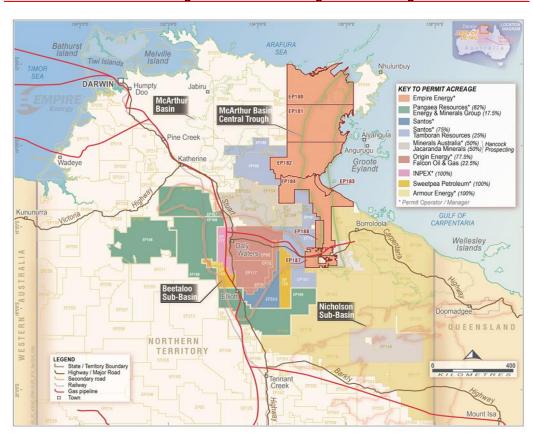
Beetaloo neighbour activities to help validate world class hydrocarbon significance

Exhibit 3: 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	EP161 Inacumba-1 vertical drilling	2H 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	2021

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

Exhibit 4: McArthur-Beetaloo regional tenement holdings: EEG and neighbours



Source: Company data



Exhibit 5: Financial Summary

EMPIRE ENERGY GRO	OUP LTD	EEG				NET PRODUCTION			2018	2019	2020E	2021
YEAR END		Dec				Crude Oil	k	h	127	89	3	
NAV	A\$mn	\$0.61				Nat Gas		imcf	1,834	1,778	1,748	1,73
SHARE PRICE	A\$cps		ast price		19-May	TOTAL		boe	432	385	294	29
	A\$cps A\$mn		ast price		15-iviay	TOTAL		DUE	432	363	234	
MARKET CAP	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	60				Decelust December	Δ	ć	140	10.2	4 F	
ORDINARY SHARES	M	263				Product Revenue		\$mn	14.0	10.3	4.5	4
OPTIONS	M	54				Cash Costs		\$mn	(5.1)	(4.4)	(2.4)	(2.
						Ave Price Realised	Α	\$/boe	32.49	26.84	15.30	14.6
COMMODITY ASSUMPT	IONS	2018	2019	2020E	2021E	Cash Costs	A	\$/boe	(11.84)	(11.54)	(8.00)	(8.1
Realised oil price	US\$/b	59.86	59.76	36.90	39.16	Cash Margin			20.65	15.29	7.30	6.5
Realised gas price	US\$/mcf	3.24	2.72	2.49	2.36							
Exchange Rate	A\$:US\$	0.7452	0.6958	0.6389	0.6290	RESOURCES and R	ESERVES	Prospe	ctive Resou	rces		
									P90	P50	P10	
						Northern Territor	v					
EARNINGS	US\$000s	2018	2019	2020E	2021E	Gas	L					
Revenue	0390003	6,593	5,397	4,656	4,407	Barney Creek Fm		Bcf	3,304	8,699	20,172	
Cost of sales		(4,723)		(3,305)		Velkerri Fm		Bcf	383	1,192	3,086	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			(4,189)		(3,325)					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~	
Gross Profit		1,870	1,208	1,352	1,082	Wooogorang Fm		Bcf	524	1,185	2,371	
Other revenue						TOTAL			4,211	11,076	25,629	
Other income		2,192	155	200	200							
Exploration written off	***************************************	0	0	0	0	Oil						
Finance costs		(801)	(637)	135	45	Barney Creek Fm		Mb	66	174	403	
Impairment		0	(6,512)	0	0	Velkerri Fm		Mb	8	24	62	
Other expenses		(8,399)	(6,052)	(4,950)	(4,985)	Wooogorang Fm		Mb	10	24	47	
Profit before tax		(5,138)	(11,838)	(3,263)	(3,658)	TOTAL			84	222	512	
Taxes		(115)	(135)	0	0							
NPAT Reported		(5,254)	(11,973)	(3,263)	(3,658)				1P	2P	3P	
Loss on discontinued opera	ations	(10,714)	(4,102)	0	0	US						
NPAT Underlying	200113	(15,968)	(16,075)	(3,263)	(3,658)	Gas		Bcf	24.3	34.4	38.2	
MITTI OHUCHIJING		(13,300)	(10,075)	(5,255)	(3,030)			D01			30.2	
CASHFLOW	US\$000s	2018	2019	2020E	2021E	EQUITY VALUATION	N.					
Operational Cash Flow		2,828	1,267	117	450	EQUITI VALUATIO		ange (In A	¢Μ)	Ricked Ra	ange Per Shar	- (A¢)
Net Interest		(2,974)	(1,885)	135	45	NT	Low	Mid	High	Low	Mid	Hig
Taxes Paid		(2,374)	(1,003)	133		Gas	\$74	\$103	\$222	\$0.28	\$0.39	\$0.
		(445)	(4.25)	(20)	(20)	***************************************	~~~~~	~~~~~			~~~~~	
Other		(115)	(135)	(30)	(30)	Oil	\$33	\$46	\$99	\$0.13	\$0.18	\$0.
					465							
	v	(261)	(753)	222		US Onshore	4 -		4	4		
Exploration	V	0	0	(1,278)	(3,774)	Appalachian	\$5	\$10	\$15	\$0.02	\$0.04	~~~~~
Net Operating Cashflow Exploration PP&E	V	0 (49)	0	(1,278) 0	(3,774) 0	Appalachian	\$112	\$159	\$336	\$0.02 <b>\$0.43</b>	\$0.04 <b>\$0.60</b>	\$0. <b>\$1.</b>
Exploration PP&E	V	0	0	(1,278)	(3,774)		<b>\$112</b> \$5	\$159 \$5	<b>\$336</b> \$5			~~~~~
Exploration PP&E Petroleum Assets	V	0 (49)	0	(1,278) 0	(3,774) 0	Appalachian	\$112	\$159	\$336			~~~~~
Exploration PP&E Petroleum Assets Net Asset Sales/other		0 (49) (168)	0 0 (1,848)	(1,278) 0 0	(3,774) 0 0	Appalachian  Net cash/(debt)	<b>\$112</b> \$5	\$159 \$5	<b>\$336</b> \$5			~~~~~~
Exploration PP&E Petroleum Assets Net Asset Sales/other <b>Net Investing Cashflow</b>		0 (49) (168) 359	0 0 (1,848) 20,008	(1,278) 0 0 (472)	(3,774) 0 0 (715)	Appalachian  Net cash/(debt)	<b>\$112</b> \$5	\$159 \$5	<b>\$336</b> \$5			\$1.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid		0 (49) (168) 359 (120)	0 0 (1,848) 20,008 <b>17,407</b>	(1,278) 0 0 (472) (1,528)	(3,774) 0 0 (715) (4,024)	Appalachian  Net cash/(debt)  Corporate costs	\$112 \$5 (\$5)	\$159 \$5 (\$5)	\$336 \$5 (\$5)	\$0.43	\$0.60	\$1.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown		0 (49) (168) 359 (120) 0 (7,878)	0 0 (1,848) 20,008 <b>17,407</b> 0 (18,497)	(1,278) 0 0 (472) (1,528) 0 (2,148)	(3,774) 0 0 (715) <b>(4,024)</b> 0 (1,893)	Appalachian  Net cash/(debt)  Corporate costs	\$112 \$5 (\$5)	\$159 \$5 (\$5)	\$336 \$5 (\$5)	\$0.43	\$0.60	\$1.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback)		0 (49) (168) 359 (120) 0 (7,878) 11,677	0 0 (1,848) 20,008 <b>17,407</b> 0 (18,497) 8,037	(1,278) 0 0 (472) (1,528) 0 (2,148) 0	(3,774) 0 0 (715) (4,024) 0 (1,893) 0	Appalachian  Net cash/(debt)  Corporate costs  TOTAL	\$112 \$5 (\$5)	\$159 \$5 (\$5)	\$336 \$5 (\$5) \$336	\$0.43	\$0.60 \$0.61	\$1. \$1.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other		0 (49) (168) 359 (120) 0 (7,878) 11,677 0	0 (1,848) 20,008 <b>17,407</b> 0 (18,497) 8,037	(1,278) 0 0 (472) (1,528) 0 (2,148) 0	(3,774) 0 0 (715) (4,024) 0 (1,893) 0	Appalachian  Net cash/(debt)  Corporate costs  TOTAL  RATIO ANALYSIS	\$112 \$5 (\$5) \$112	\$159 \$5 (\$5)	\$336 \$5 (\$5) \$336	\$0.43 \$0.43 2019	\$0.60 \$0.61 2020E	\$1. \$1.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow		0 (49) (168) 359 (120) 0 (7,878) 11,677 0	0 (1,848) 20,008 <b>17,407</b> 0 (18,497) 8,037 0 ( <b>10,693</b> )	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 (2,148)	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893)	Appalachian  Net cash/(debt)  Corporate costs  TOTAL  RATIO ANALYSIS  Shares Outstanding	\$112 \$5 (\$5) \$112	\$159 \$5 (\$5) \$159	\$336 \$5 (\$5) \$336 2018 2313	\$0.43 \$0.43 2019 263	\$0.60 \$0.61 2020E 263	\$1. \$1.
Exploration		0 (49) (168) 359 (120) 0 (7,878) 11,677 0	0 (1,848) 20,008 <b>17,407</b> 0 (18,497) 8,037	(1,278) 0 0 (472) (1,528) 0 (2,148) 0	(3,774) 0 0 (715) (4,024) 0 (1,893) 0	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items)	\$112 \$5 (\$5) \$112 M US	\$159 \$5 (\$5) \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05)	\$0.43 \$0.43 2019 263 (6.46)	\$0.60 \$0.61 2020E 263 (1.24)	\$1. \$1. 202 2 (1.3
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash	·	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404	0 0 (1,848) 20,008 <b>17,407</b> 0 (18,497) 8,037 0 ( <b>10,693</b> ) <b>5,961</b>	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452)	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS	\$112 \$5 (\$5) \$112 M US Ac	\$159 \$5 (\$5) \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41)	\$0.43 \$0.43 2019 263 (6.46) (9.29)	\$0.60 \$0.61 2020E 263 (1.24) (1.95)	\$1. \$1.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET		0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 0 (1,893) (5,452)	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER	\$112 \$5 (\$5) \$112 M US Ac	\$159 \$5 (\$5) \$159 ccps	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na	\$0.61 2020E 263 (1.24) (1.95) na	\$1. \$1. 202 (1 (2
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents	·	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 (2,148) (3,454)  2020E 6,429	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452) 2021E	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS	\$112 \$5 (\$5) \$112 M US Ac x	\$159 \$5 (\$5) \$159 ccps	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15)	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12)	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32	\$1. \$1. 202 (1.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development	·	0 (49) (168) (359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 (2,148) 0 (2,148) (3,454)  2020E 6,429 25,704	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452)  2021E 977 29,928	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCEPS CFR	\$112 \$5 (\$5) \$112 M US Ac x	\$159 \$5 (\$5) \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na	\$0.61 2020E 263 (1.24) (1.95) na	\$1. \$1. 202 (1. (2.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration	·	0 (49) (168) 359 (120) 0 (7,878) 11,677 3,785 3,404 2018 4,157 31,241 0	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)  2020E 6,429 25,704 127	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452) 2021E 977 29,928	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS	\$112 \$5 (\$5) \$112 M US Ac x Ac	\$159 \$5 (\$5) \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15)	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12)	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32	\$1. \$1. 202 (1. (2.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration	·	0 (49) (168) (359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 (2,148) 0 (2,148) (3,454)  2020E 6,429 25,704	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452)  2021E 977 29,928	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield	\$112 \$5 (\$5) \$112 M US Ac x	\$159 \$5 (\$5) \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15)	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12)	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32	\$1. 202 (1. (2.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets	·	0 (49) (168) 359 (120) 0 (7,878) 11,677 3,785 3,404 2018 4,157 31,241 0	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)  2020E 6,429 25,704 127	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452) 2021E 977 29,928	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS	\$112 \$5 (\$5) \$112 M US Ac x Ac	\$159 \$5 (\$5) \$159 \$ccps ccps ccps	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15)	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12)	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32	\$1. 202 (1. (2.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets Total Assets	·	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241 0 28,673	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141 2,993	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 (2,148) (3,454)  2020E 6,429 25,704 127 991	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452) 2021E 977 29,928 114 1,495	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield	\$112 \$5 (\$5) \$112 M US Ac x Ac x Ac x Ac	\$159 \$5 (\$5) \$159 \$ccps ccps ccps	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12) na	\$0.61 2020E 263 (1.24) (1.95) na 1.32 na	\$1. 202 (1. (2.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets Total Assets Debt	·	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241 0 0 28,673 64,071	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141 2,993 39,650	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 (2,148) 0 (2,148) (3,454)  2020E 6,429 25,704 127 991 33,251	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452)  2021E 977 29,928 114 1,495 32,515 2,990	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield BVPS	\$112 \$5 (\$5) \$112 M US Ac x Ac x Ac	\$159 \$5 (\$5) \$159 \$ccps ccps ccps	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12) na	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32 na	\$1. \$1. 202 (1. (2. 2
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets Total Assets Debt Other Liabilities	·	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241 0 28,673 64,071 24,369 18,332	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141 2,993 39,650 6,481 19,504	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) 3,454) 2020E 6,429 25,704 127 991 33,251 4,883 20,846	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452) 2021E 977 29,928 114 1,495 32,515 2,990 25,212	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield BVPS Price/Book ROE	\$112 \$5 (\$5) \$112 M US Ac x Ac x Ac x Ac x %	\$159 \$5 (\$5) \$159 \$ccps ccps ccps	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12) na	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32 na 4.5 5.1x	\$1. \$1. 202 (1. (2. 2
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets Total Assets Debt Other Liabilities Total Liabilities	US\$000s	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241 0 28,673 64,071 24,369 18,332 42,701	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141 2,993 39,650 6,481 19,504 25,985	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)  2020E 6,429 25,704 127 991 33,251 4,883 20,846 25,729	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452) 2021E 977 29,928 114 1,495 32,515 2,990 25,212 28,202	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield BVPS Price/Book ROE ROA	\$112 \$5 (\$5) \$112 M US Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x Ac x x x x x x x x x x x x x	\$159 \$5 (\$5) \$159 \$ccps ccps ccps	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12) na	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32 na 4.5 5.1x	\$1. \$1. 202 (1. (2. 2
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Exploration PP&E Petroleum Assets Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets Debt Other Liabilities Total Liabilities Net Assets/Shareholder Net Cash/(Debt)	US\$000s	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241 0 28,673 64,071 24,369 18,332 42,701 21,370 (20,211)	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141 2,993 39,650 6,481 19,504 25,985	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)  2020E 6,429 25,704 127 991 33,251 4,883 20,846 25,729	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452) 2021E 977 29,928 114 1,495 32,515 2,990 25,212 28,202	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield BVPS Price/Book ROE ROA (Trailing) Debt/Cash Interest Cover	\$112 \$5 (\$5) \$112 M US Ac x Ac x Ac x Ac % Ac x x x x x x x x x x x x x	\$159 \$5 (\$5) \$159 \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12) na 7.5 3.1x na	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32 na 4.5 5.1x na	\$1. 202 (1. (2.
Exploration PP&E Petroleum Assets Net Asset Sales/other Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets Debt Other Liabilities Net Assets/Shareholder	US\$000s	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241 0 28,673 64,071 24,369 18,332 42,701 21,370	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141 2,993 39,650 6,481 19,504 25,985 13,665	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)  2020E 6,429 25,704 127 991 33,251 4,883 20,846 25,729 7,522	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452)  2021E 977 29,928 114 1,495 32,515 2,990 25,212 28,202 4,313	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield BVPS Price/Book ROE ROA (Trailing) Debt/Cash Interest Cover Gross Profit/share	\$112 \$5 (\$5) \$112 M US Ac X Ac X Ac X % Ac X Ac X Ac X Ac X Ac X Ac X Ac X Ac Ac Ac Ac Ac Ac Ac Ac Ac Ac	\$159 \$5 (\$5) \$159 \$159 \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12) na 7.5 3.1x na	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32 na 4.5 5.1x na na	\$1. 2022 2 (1. (2. 2
Exploration PP&E Petroleum Assets Net Investing Cashflow Dividends Paid Net Debt Drawdown Equity Issues/(Buyback) Other Net Financing Cashflow Net Change in Cash BALANCE SHEET Cash & Equivalents PP&E & Development Exploration Other Assets Debt Other Liabilities Total Liabilities Net Assets/Shareholder Net Cash/(Debt)	US\$000s	0 (49) (168) 359 (120) 0 (7,878) 11,677 0 3,785 3,404 2018 4,157 31,241 0 28,673 64,071 24,369 18,332 42,701 21,370 (20,211)	0 0 (1,848) 20,008 17,407 0 (18,497) 8,037 0 (10,693) 5,961 2019 9,882 26,633 141 2,993 39,650 6,481 19,504 25,985 13,665	(1,278) 0 0 (472) (1,528) 0 (2,148) 0 0 (2,148) (3,454)  2020E 6,429 25,704 127 991 33,251 4,883 20,846 25,729 7,522	(3,774) 0 0 (715) (4,024) 0 (1,893) 0 (1,893) (5,452)  2021E 977 29,928 114 1,495 32,515 2,990 25,212 28,202 4,313	Appalachian  Net cash/(debt) Corporate costs  TOTAL  RATIO ANALYSIS Shares Outstanding EPS (pre sig items) EPS PER OCFPS CFR DPS Dividend Yield BVPS Price/Book ROE ROA (Trailing) Debt/Cash Interest Cover	\$112 \$5 (\$5) \$112 M US Ac x Ac x Ac x Ac % Ac x x x x x x x x x x x x x	\$159 \$5 (\$5) \$159 \$159 \$159	\$336 \$5 (\$5) \$336 2018 2313 (1.05) (1.41) na (0.15) na	\$0.43 \$0.43 2019 263 (6.46) (9.29) na (4.12) na 7.5 3.1x na	\$0.60 \$0.61 2020E 263 (1.24) (1.95) na 1.32 na 4.5 5.1x na	\$1 \$1 202 (1 (2 2

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



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

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

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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

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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: <a href="www.afca.org.au">www.afca.org.au</a>; Email: <a href="mailto:info@afca.org.au">info@afca.org.au</a>; 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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