

Emerging Company

SPECULATIVE BUY

Initiation

Current price:	A\$0.39
Target price:	A\$0.525
Previous target:	A\$
Up/downside:	34.5%
Reuters:	EEG.AX
Bloomberg:	EEG AU
Market cap:	US\$92.85m
	A\$126.3m
Average daily turnover:	US\$0.14m
	A\$0.20m
Current shares o/s	323.9m
Free float:	60.9%



Price performance	1M	3M	12M
Absolute (%)	-3.7	14.7	-4.9
Relative (%)	-12.1	6.2	-4.2

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Analyst(s) own shares in the following stock(s) mentioned in this report:

– N/A

Empire Energy Group

Backing the Beetaloo

- Empire Energy Group (EEG) has found liquids-rich gas at its Carpentaria-1 exploration well in the Beetaloo basin.
- EEG's Australian exploration tenure is estimated to hold 13.5Tcf of gas.
- Balance sheet holds USD8.1m in net cash as of 3Q20.
- We initiate coverage with a price target of 52.5cps and a SPECULATIVE BUY recommendation.

Pivoting from the US to the NT

EEG operates conventional oil and gas tenure in New York and Pennsylvania and sold its Kansas operations during 2019. The company intends to focus its efforts on exploring and appraising shale in the Beetaloo and McArthur basins in the Northern Territory. EEG drilled the Carpentaria-1 exploration well in 3Q20-4Q20 which found liquids rich gas in the Velkerri formation.

The Beetaloo could be big

Independent reserves certifiers, Netherland Sewell and Associates' (NSAI) best estimate is that there is 13.5Tcf of gas in EEG's tenure in the Beetaloo sub-basin and the McArthur basin. Origin Energy (ORG) and Santos (STO) both have ongoing exploration programs in the basin. The majors and their joint venture partners along with EEG collectively hold 122Tcf of prospective resource. The Beetaloo has drawn the attention of the Federal Government, being earmarked as one of the most promising greenfields basins, and it could develop into one of Australia's largest gas producing regions.

Exploration supported by cash and balance sheet options

As of the end of 3Q20 EEG held USD14.9m in cash. The company also owes USD6.8m of debt secured against its US operations but a sale of those assets could eliminate the debt and potentially deliver cash to spare. EEG is planning on fracture stimulation of Carpentaria-1 during 2021 and also eventually a horizontal pilot well to conduct flow tests. With flow tests we anticipate that EEG would be able to recognise 2C resources which we anticipate would give the market additional confidence in the company's future exploration and appraisal success.

Still early in the EEG journey but risk vs reward looks attractive

EEG is beginning to unlock the value of its Australian assets. A lot of work will need to be done to determine how much gas and liquids are present under the ground, how to get it to market and there are still significant risks to be overcome. However, we think the exploration success that EEG, ORG and STO have had suggest that the risk to reward trade-off is tilted in investors' favour. We think if EEG can perform a successful flow test the stock has the potential to re-rate significantly higher. We initiate coverage with a SPECULATIVE BUY recommendation and a target price of 52.5cps but with a potential range of 20 – 79cps based on our bear and bull case scenarios.

Figure 1: Valuation summary

Valuation summary	Bear Case	Base case	Bull case
NT prospective resource (A\$ m)	47.0	151.1	236.7
US 1P reserves (A\$ m)	10.5	10.5	10.5
US probable reserves (A\$m)	5.0	5.0	5.0
Total O&G Assets	62.6	166.6	252.3
Net Cash (A\$m)	3.3	3.3	3.3
Total Valuation	65.8	169.9	255.5
Shares on issue (m)	323.9	323.9	323.9
Per share value (A\$ cps)	20.3	52.5	78.9

SOURCE: MORGANS RESEARCH, COMPANY

Empire Energy Group

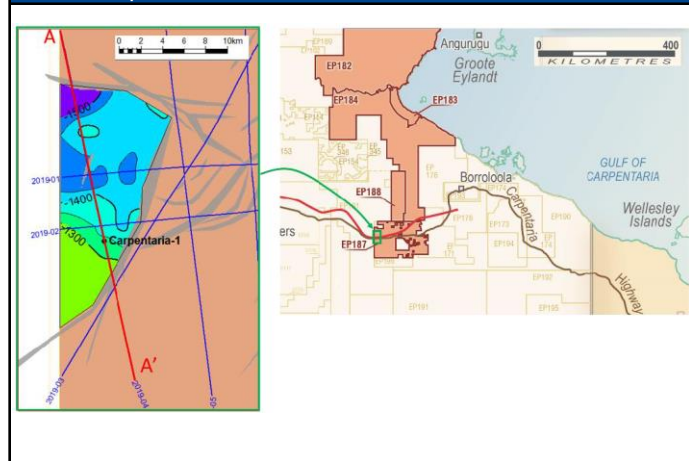
as at November 26, 2020

Market cap (A\$m):	126.3	Rating:	SPECULATIVE BUY
Shares outstanding (m):	323.9	Price (A\$):	0.39
Free float (%):	60.9	Target price (A\$):	0.525
Website:	https://empireenergygroup.net/	Upside/downside to target price (%):	34.5

Company description

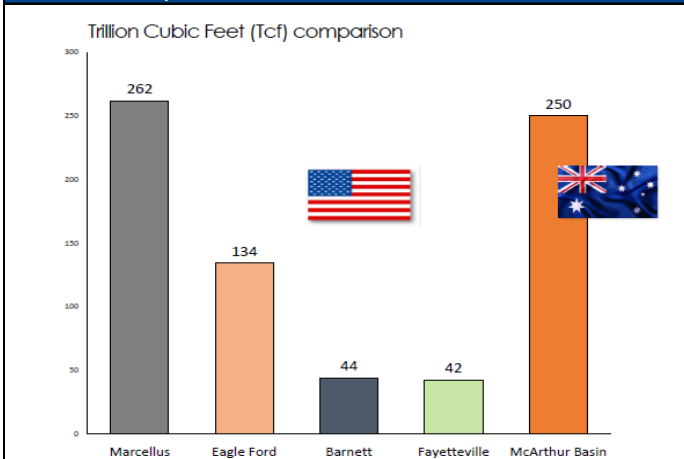
Empire Energy is a junior oil and gas company with assets in the USA and in the Northern Territory. The US assets produce gas from in the Marcellus and Utica basins while the Northern Territory assets are being explored and appraised. The company is focused on proving up its 13.5Tcf of prospective resource in the Beetaloo Sub-basin and Macarthur Basin. Its first exploration well, Carpentaria-1 intersected gas and liquids in the Velkerri shale formation and is located near to the Macarthur River zinc-lead mine. Origin (ORG) and Santos (STO) are also exploring in the basin and Santos holds tenure adjacent to EEG's.

Overview of Carpentaria-1 and Beetaloo Sub-Basin tenure



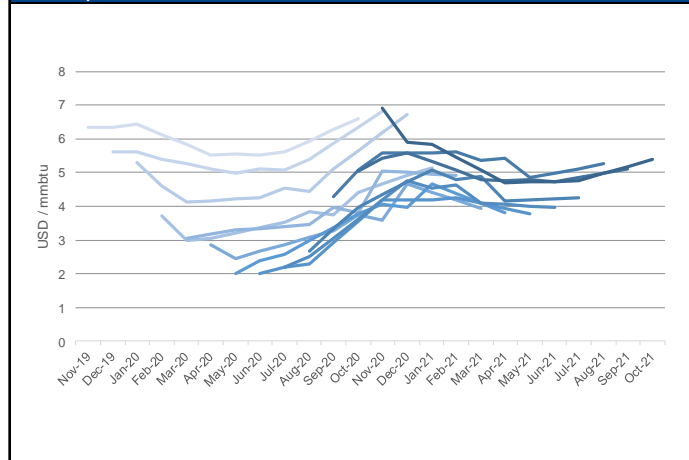
SOURCE: EEG

NT and US shale comparison



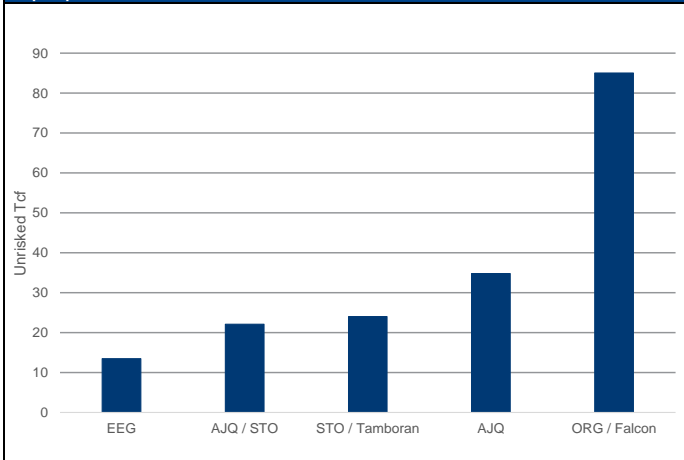
SOURCE: EEG

JKM LNG prices



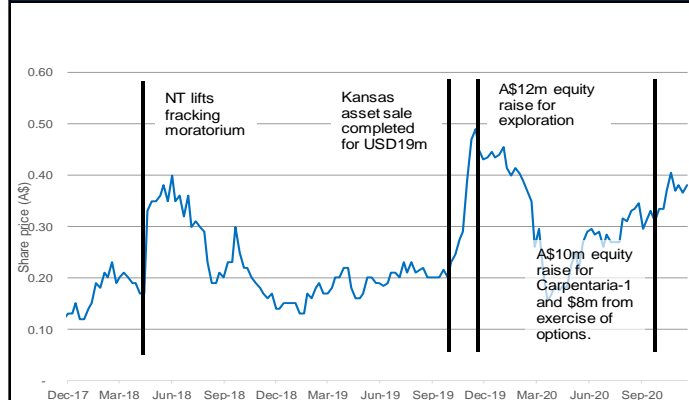
SOURCES: MORGANS RESEARCH, BLOOMBERG

NT prospective resources



SOURCE: MORGANS RESEARCH, COMPANY REPORTS

Share price history and key events



SOURCE: MORGANS, IRESS

Risks and drivers

- Value drivers:**
- Exploration success in upcoming work programs.
 - Exploration success of peers working in the area.
 - Commodity prices.
- Risks:**
- Regulatory changes from the NT government.
 - Community relationships with traditional owners.
 - Commodity prices namely: oil, gas, carbon and currency.
 - Interest rates.
 - Changes to tax regimes.

SOURCE: MORGANS RESEARCH

Investment Highlights:

- Micro-cap with promising gas tenements in the Northern Territory.
- EEG's first NT exploration well, Carpentaria-1, found strong indications of wet gas and intersected ~1,000m of the Velkerri shale formation.
- NSAI estimates 13.5Tcf of prospective gas resource.
- Larger peers such as Santos (STO) and Origin (ORG) have also had exploration success in the basin.
- Next steps are vertical fracture stimulation of Carpentaria-1 for initial flow tests and then a horizontal pilot well for further flow testing and resource certification.
- A 2D seismic survey of the southern area of EP187 is also planned.
- Gas could be exported via LNG terminals in Darwin or via proposed pipelines to the East Coast market.

Valuation:

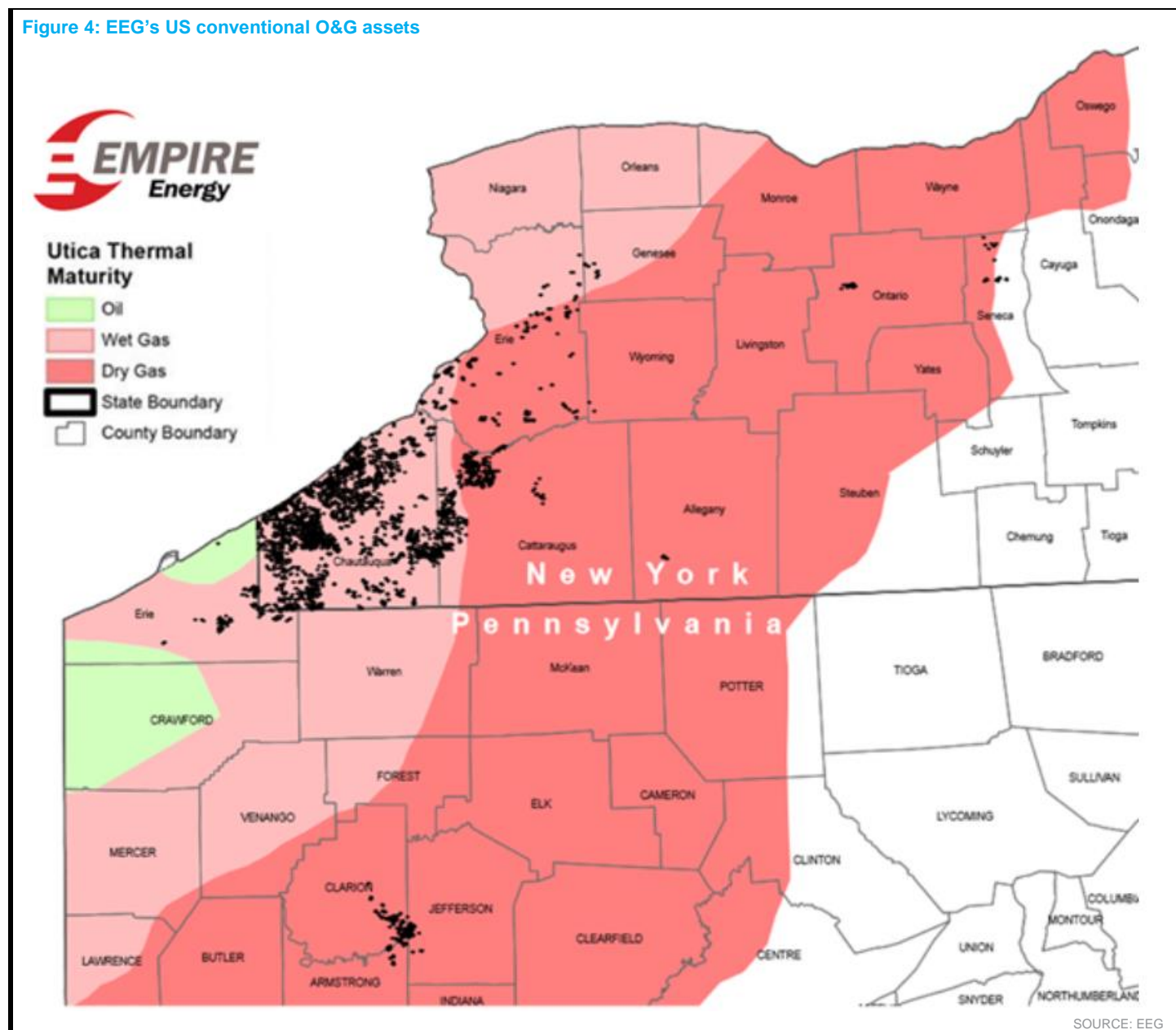
- We value the company's Australian prospective resource on a 99% risked Tcf multiple of A\$7.1/Mscf similar to our other coverage.
- We value the US 1P oil and gas reserves on a multiple of A\$2.8/MMbo based on M&A transactions in US gas assets.
- We value the probable US oil and gas reserves in line with EEG's third party PV10 reserves certification.
- Our base case valuation is 52.5cps but our bull and bear case valuations range between 20 - 79cps. The bull and bear cases are contingent on near term exploration performance in EP187.

Risks:

- Exploration success in the Northern Territory.
- Commodity prices in the US, Australia and internationally.
- Industry regulation in both the US and Northern Territory.
- Social license to operate and relationships with traditional owners.
- Ongoing success in raising funds to continue with exploration programs.
- Interest rates.
- Tax regulation both in Australia and the US.

from conventional reservoirs at a rate of ~4,226Mcf/d for 3Q20. Production for 4Q20 could be higher as the US winter leads to higher demand. Hedge contracts are in place for the next three years for the majority of production at ~USD2.5/Mcf. We think it's likely that at some point EEG will complete its pivot towards its Australian operations and sell the remaining US assets.

Figure 4: EEG's US conventional O&G assets



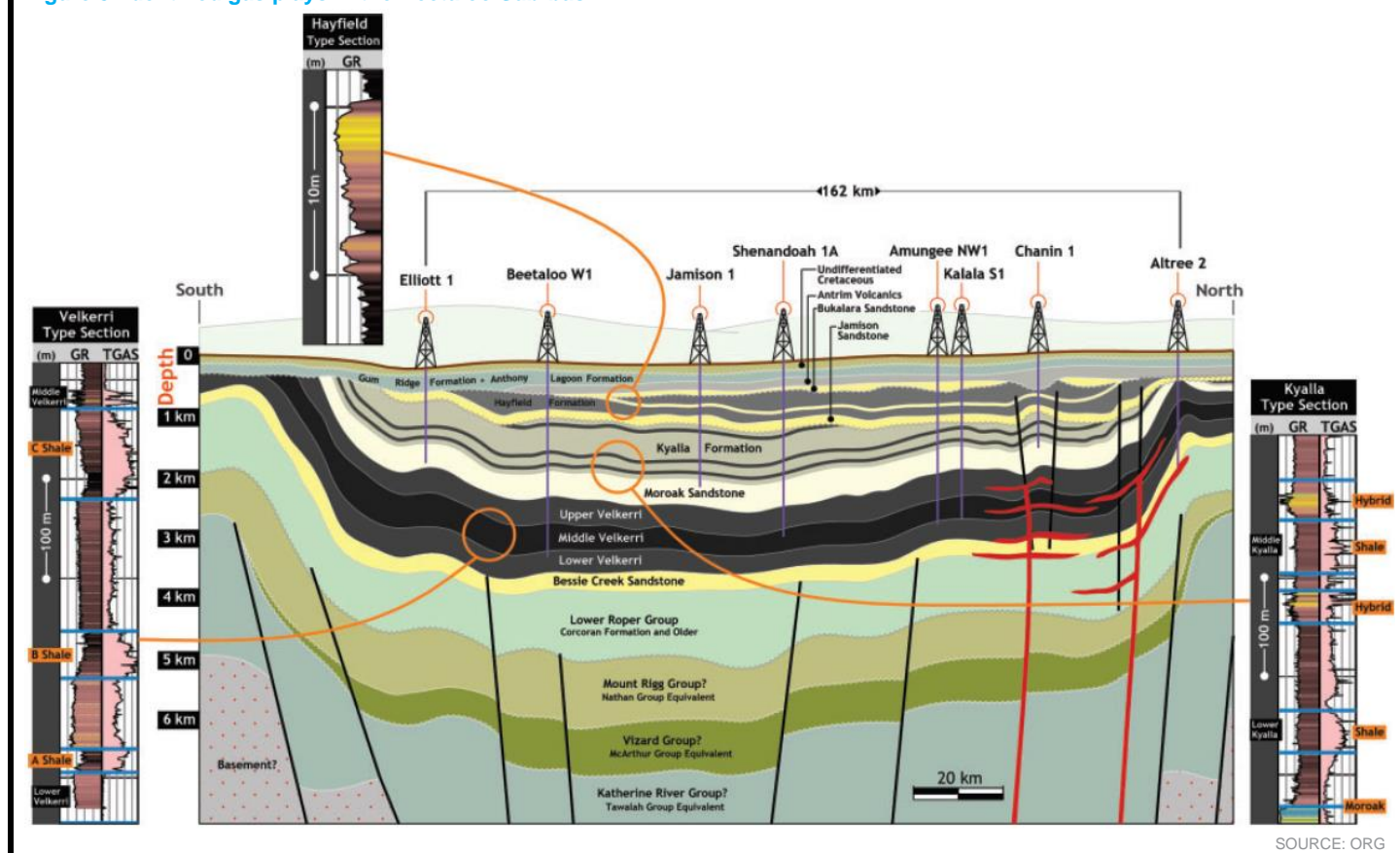
Beetaloo basin – state of play

Exploration history

Due to the age of the source rocks the Beetaloo and McArthur basins were underexplored for a long time. The area came to prominence though as Origin Energy (ORG) and Santos (STO) had reported on the potential for significant gas deposits following the success of the Amungee (ORG) and Tanumbirini (STO) exploration wells. Activity stalled following a moratorium that was placed on hydraulic fracturing by the Northern Territory Government in September 2016. Exploration recommenced in May 2018 when the moratorium was lifted with ORG, STO and EEG all drilling further exploration and appraisal wells.

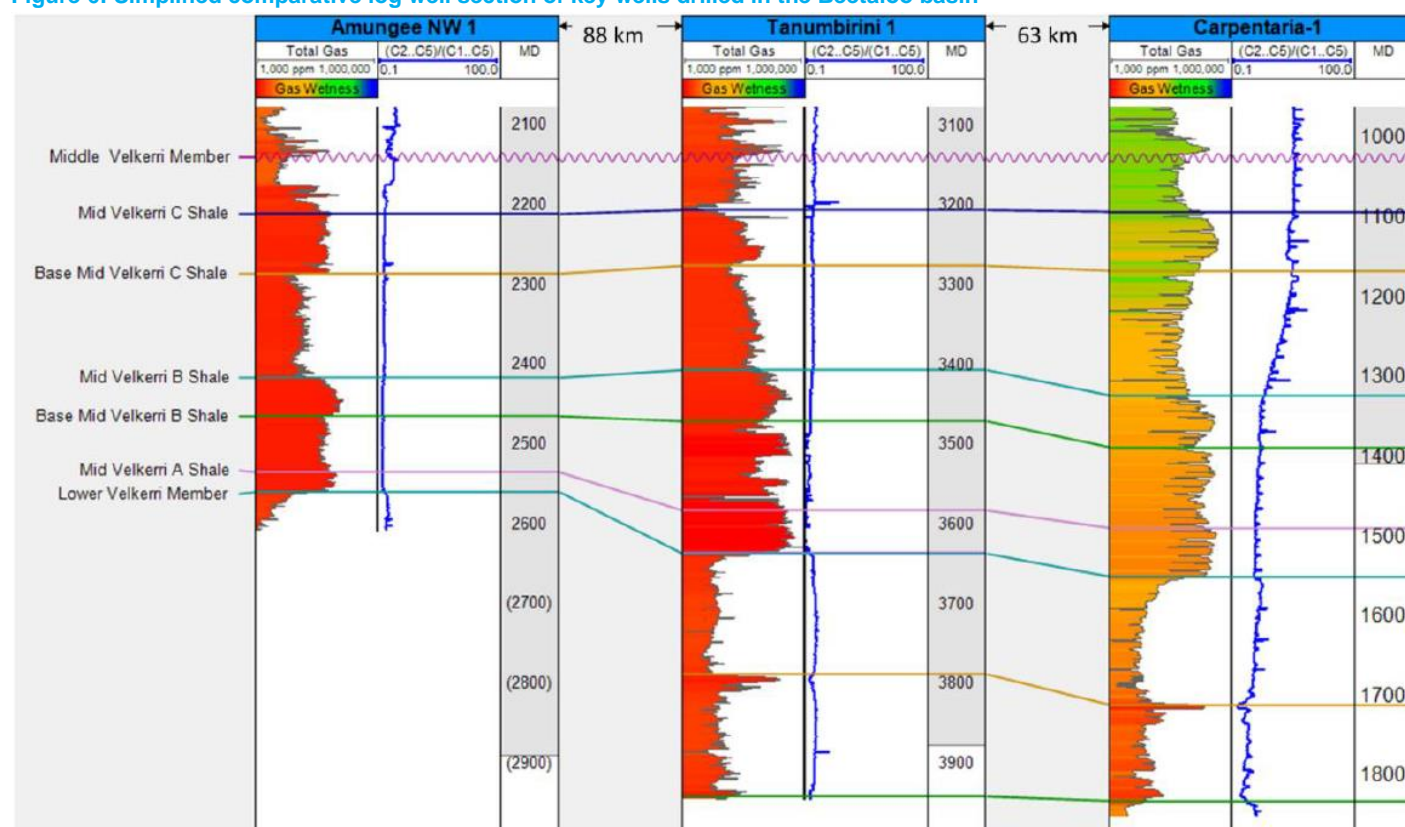
ORG has drilled into the Kyalla formation (with the Kyalla-117 well) and results from fracture stimulation are expected in 3QFY21 (March quarter). ORG is expected to drill another well targeting the Velkerri formation in late FYEJ21 or early FYEJ22. STO's vertical Tanumbirini well has been successfully fracture stimulated and achieved flow rates as high as 2.4TJ/d after being shut in but is expected to settle at lower rates in stable production.

Figure 5: Identified gas plays in the Beetaloo Sub-basin



EEG's Carpentaria-1 well has not yet been fracture stimulated but has indications of liquids-rich gas which will improve the economics of EEG's tenure. The company is planning on hydraulic stimulation of Carpentaria-1 to conduct flow tests which will help reduce technical uncertainty. Following that EEG should be able to re-enter Carpentaria-1 to drill a horizontal lateral to be hydraulically fractured for production tests.

Figure 6: Simplified comparative log well section of key wells drilled in the Beetaloo basin

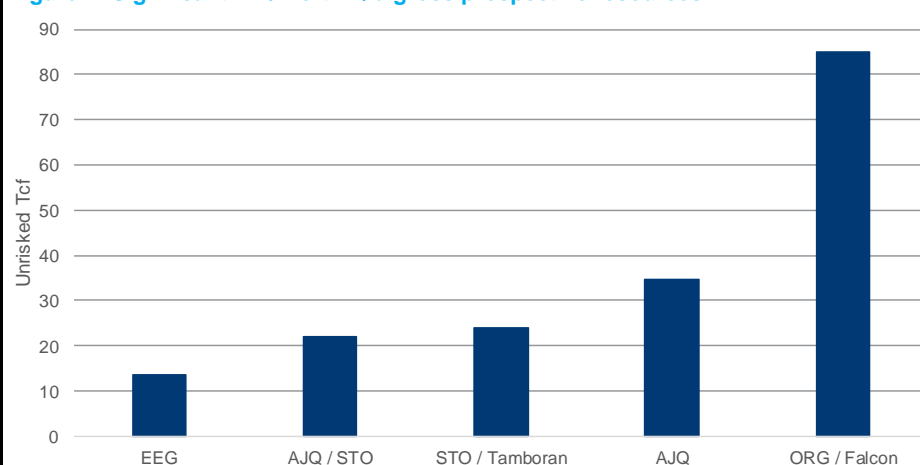


SOURCE: EEG

Who's got what

EEG is one of a number of companies exploring in the Beetaloo and McArthur basins. Both ORG and STO hold significant prospective resources in joint venture partnerships. Armour Energy (AJQ) also holds significant gas deposits in its own right as well as in partnership with STO. We have compiled a list of the publicly disclosed significant prospective resources but this list is not exhaustive. INPEX, Pangaea and Hancock Resources also have interests in the region.

Figure 7: Significant NT / North Qld gross prospective resources

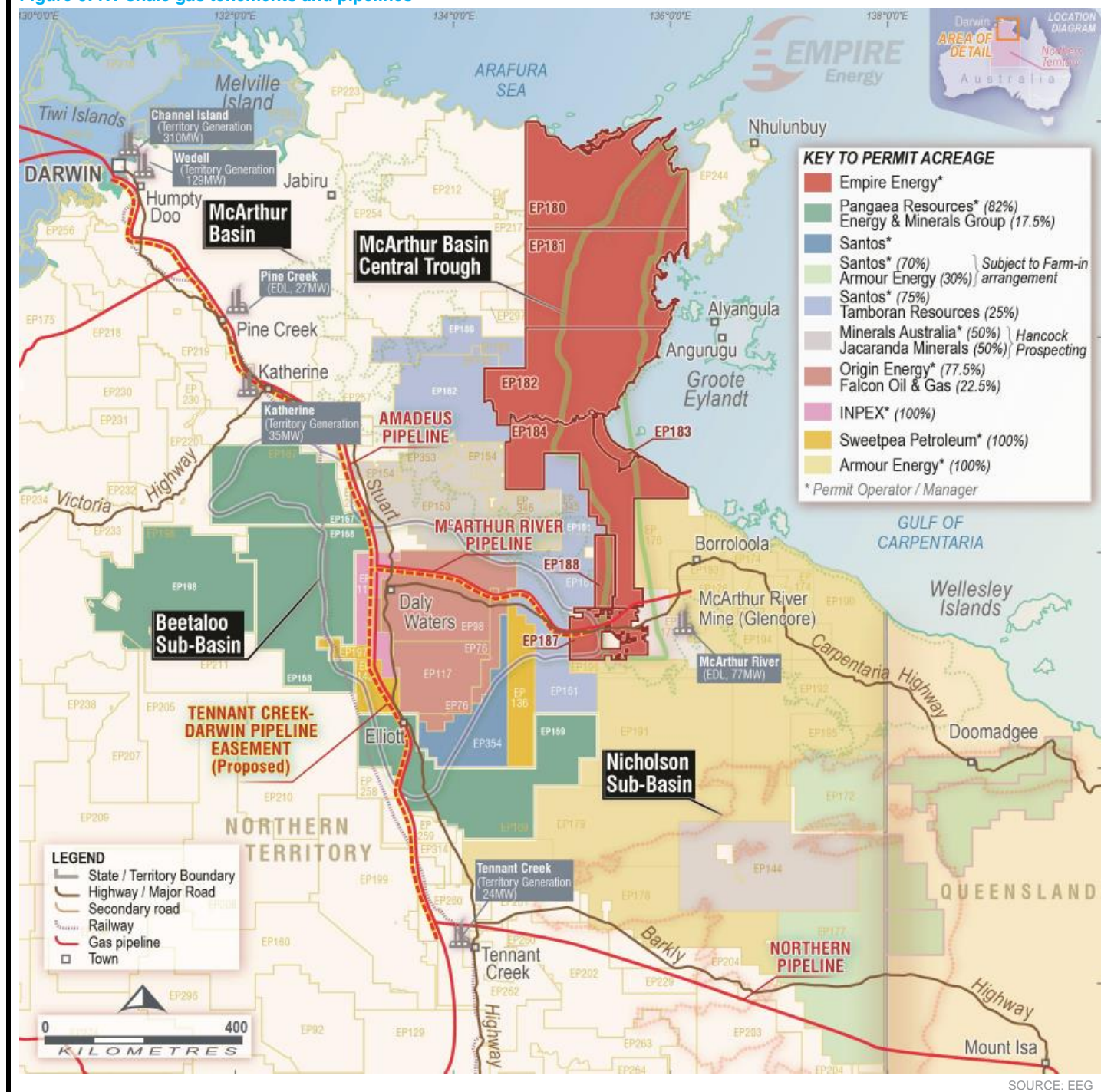


SOURCES: MORGANS, ORG, TAMBORAN, AJQ

Getting it to market

EEG has access to local markets to be able to begin earning revenue as future pilot wells enter production. The 16 TJ/d Daly Waters to McArthur River pipeline that supplies EDL's 77MW power station runs very close to EEG's Carpentaria-1 well. If EEG transports its gas further north to Darwin it could supply the local electricity market (>400MW of open and closed cycle gas turbines), gas retailers who supply the local market or potentially a nascent petrochemicals industry and LNG exporters. With a number of producing wells, EEG could also potentially strip the liquids from its gas and truck condensate to customers.

Figure 8: NT shale gas tenements and pipelines



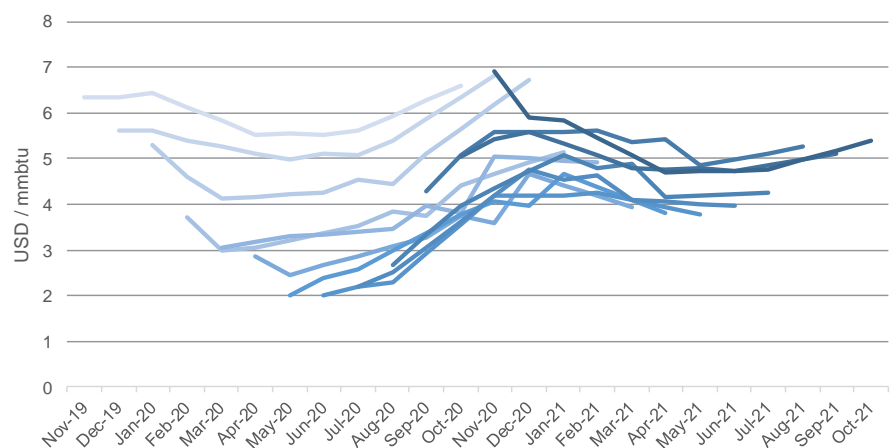
In the medium term EEG's gas could be used to backfill or expand production capacity of the two LNG processing plants in Darwin. INPEX (Ichthys LNG) and Santos (Darwin LNG) operate LNG plants that are fed by offshore gas fields that are maturing and will need additional sources of gas to maintain utilisation or for brownfields expansion. Onshore gas from the Beetaloo and McArthur basins could be an economic alternative to sourcing further offshore gas. New pipelines and expansion options are also being considered to move large volumes of gas to the East Coast from the Northern Territory. The Northern Gas Pipeline (NGP) that runs to Mt Isa could be expanded and a pipeline between Alice Springs and Moomba is also a possibility. Given the large volume of prospective resource in the area we think there is the potential for infrastructure to be developed at scale which would reduce development costs per GJ in the long term.

Gas markets and regulation

International markets

International energy markets have had mixed recoveries from the pandemic. Brent oil is still well below where most analysts believe the long term price is (consensus long term forecast range is between USD44-62/bbl and Morgans is USD62/bbl). On the other hand, Asian LNG spot markets have recovered fairly well following steep declines during the peaks of the COVID pandemic. One of the possible routes to market for EEG's gas is via the two LNG export facilities in Darwin. While EEG is a long way from making decisions about which markets to target these commodities will have an impact on investor sentiment towards the sector.

Figure 9: LNG Japan Korea Marker (JKM) curve history

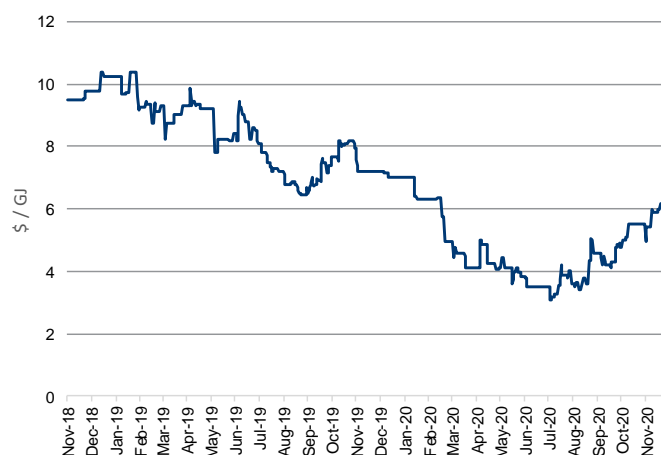


SOURCES: MORGANS, BLOOMBERG

Domestic and regional markets

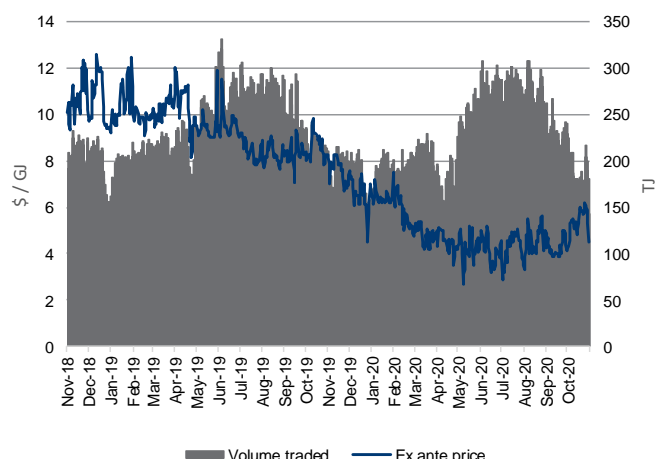
Gas prices on Australia's East Coast are recovering but are still weaker than where they were a year earlier. We anticipate that prices will recover though as international markets have more influence on marginal prices as demand recovers globally. We don't anticipate that domestic prices will have a significant impact in the short term though apart from general investor sentiment. As production is ramped in the Beetaloo these prices will become a more significant indicator for profitability.

Figure 10: Wallumbilla hub benchmark price 2 year history



SOURCES: MORGANS, AEMO

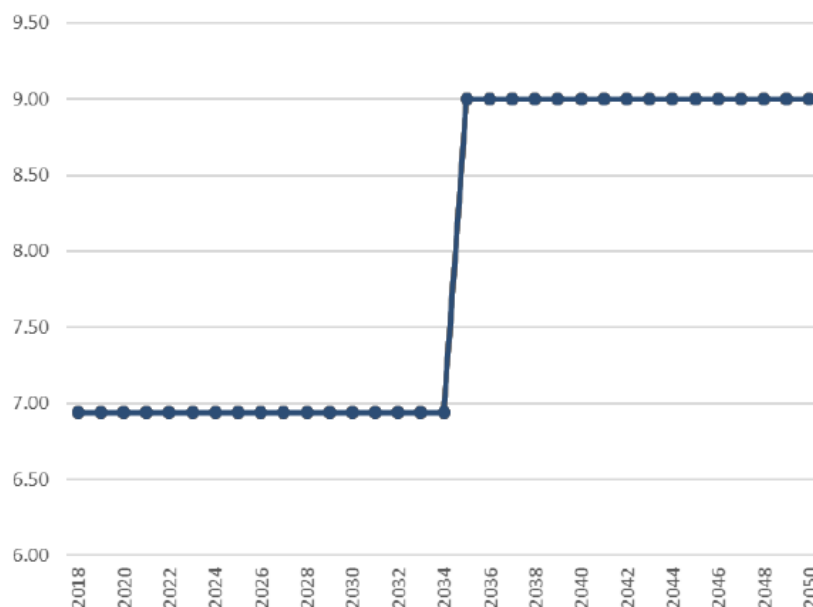
Figure 11: Sydney STTM 2 year price and volume history



SOURCES: MORGANS, AEMO

The bulk of the Northern Territory's gas is supplied by a long term contract between the NT Government's Power and Water Corporation and Eni. The deal was struck in 2009 for a 25 year term. Pricing has not been disclosed but Core Energy, in a report submitted to the Australian Energy Market Operator (AEMO), estimates that the contract was struck at just short of \$7/GJ. We anticipate that in any discussion EEG would have with local buyers for early gas that \$7 would be the benchmark.

Figure 12: Forecast NT wholesale gas prices (\$ / GJ)



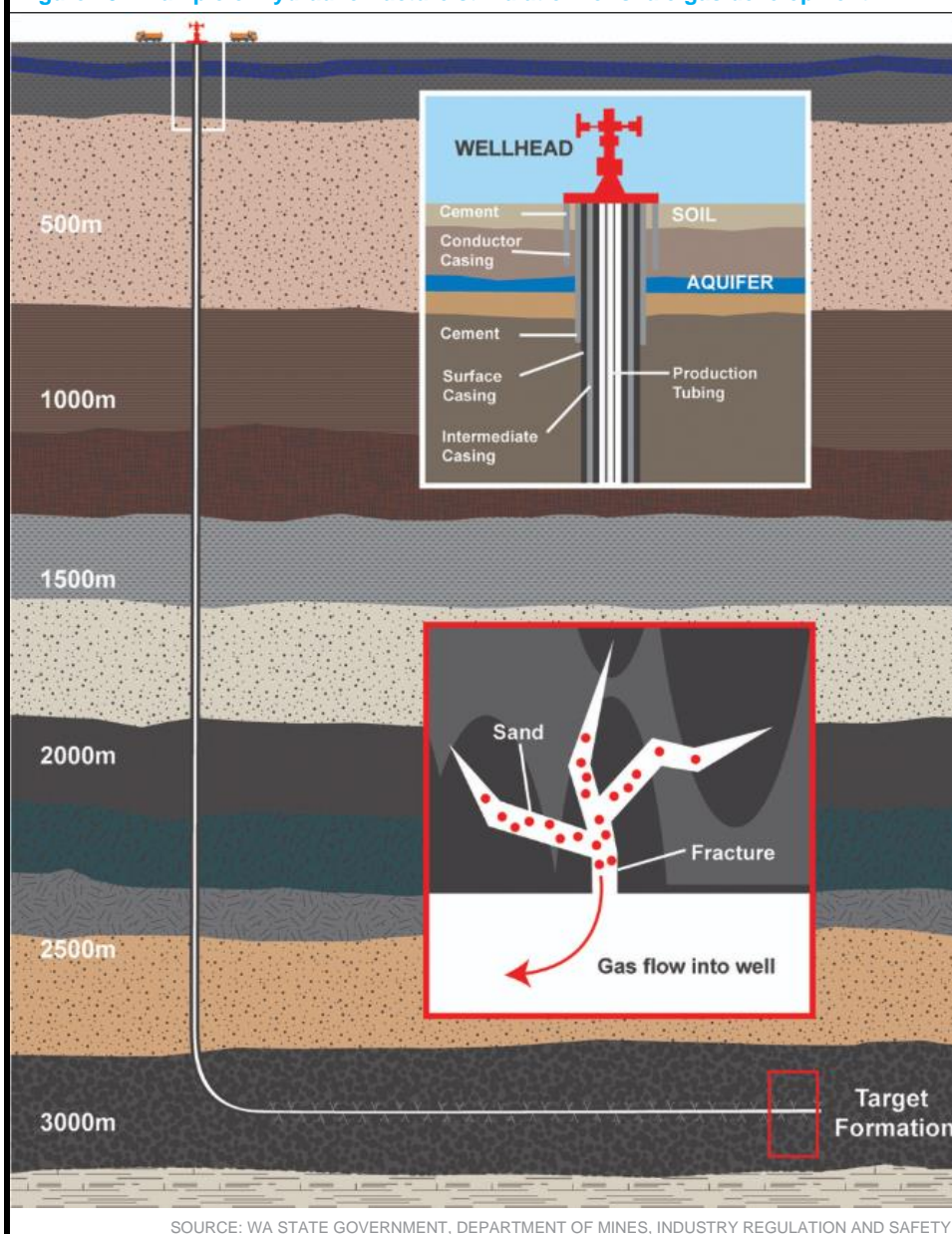
SOURCE: CORE ENERGY & RESOURCES

Release the fraccin'

Gas exploration in the Northern Territory was largely on hold while there was a moratorium on hydraulic fracture stimulation. Following extensive technical review and community consultation the Labor government led by Michael Gunner lifted the moratorium in May 2018. As the source rocks for the hydrocarbons are shale, it's necessary to use hydraulic fracturing to allow gas and associated liquids to flow. Hydraulic fracturing involves using a mixture, mostly made up of water, to put pressure on the shale to crack the rocks and allow gas and oil liquids to flow up the well bore.

The WA government has a good example of a fracture stimulated well targeting shale. In the top inset, the casing and cement used to seal off aquifers from contamination is shown. Also shown in the bottom inset is sand used to keep fractures open, otherwise known as 'proppant', after the fracing fluid is removed and pressure is returned to normal. Similar techniques will likely be used by EEG although the target shale formations will likely not be at the depth shown in the example.

Figure 13: Example of hydraulic fracture stimulation for shale gas development



While drilling Carpentaria-1, EEG worked carefully to isolate any aquifers from the target hydrocarbons to prevent any contamination. Water monitoring bores will be drilled to ensure that any unwanted impact from the company's activities can be quickly identified and rectified. We're confident that EEG is taking its obligations seriously (as determined by the NT government's Pepper Inquiry) but it's important to note there will likely be very limited tolerance for mistakes for the industry if it wants to maintain its social licence to operate.

Have you got a reservation?

During the announcement of its gas-powered economic recovery plan, the Australian Federal Government said it was considering implementing a domestic gas reservation scheme. This could require newly developed gas fields to sell a portion of their reserves to domestic customers at potentially lower prices than what could be received by sending gas to export markets. There are no firm proposals for specific policy yet but it's not unrealistic that a scheme could be developed before investment decisions are made on the basin's future.

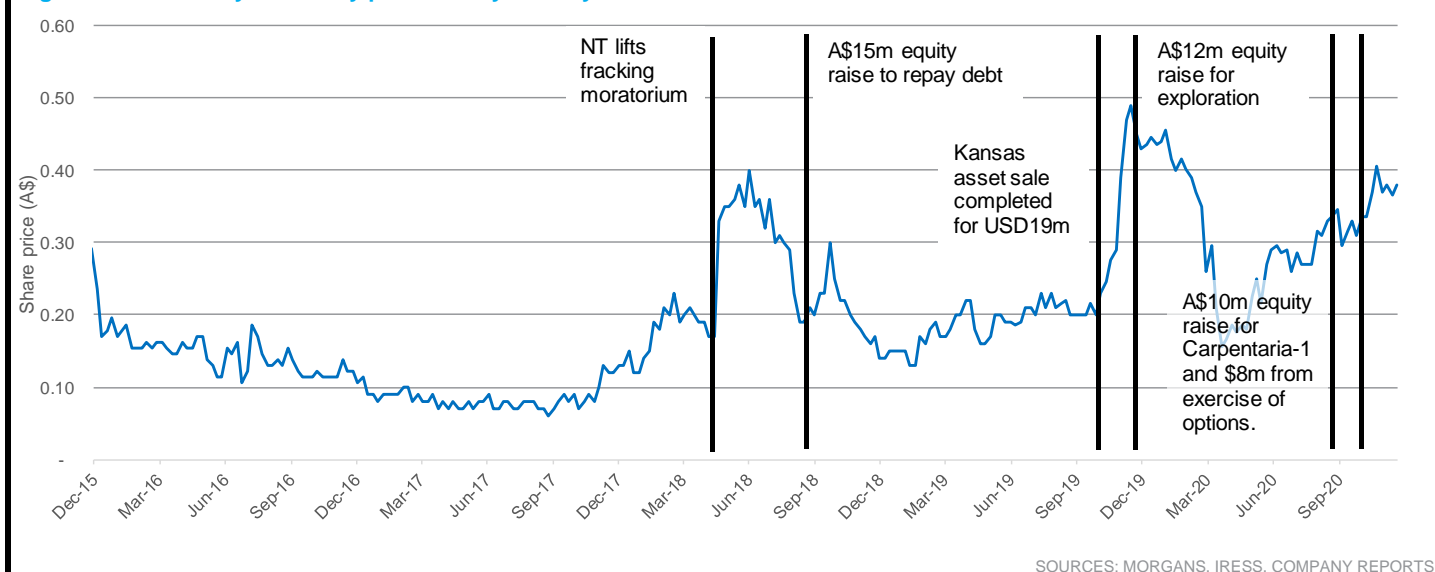
Will there be any heat from carbon?

Australia does not currently penalise carbon emissions outside of the electricity sector. Previous schemes have targeted only direct emissions (Scope 1) not the carbon produced by using energy from other sources (Scope 2) or the carbon that would be released from the eventual combustion of hydrocarbons (Scope 3) that haven't been extracted. If future carbon policies don't depart significantly from previous versions we would expect the direct financial impact from Australian government regulation to be manageable. The impact of carbon regulation in the jurisdictions of gas buyers is more relevant. We see potential carbon regulation as a medium to long term issue rather than an immediate concern but investors should be aware that risks could evolve over time.

Company Details

Recent company history

Figure 14: EEG five-year weekly price history and key events



Company Management & Board

Managing Director / CEO – Alexander Underwood:

Mr Underwood was appointed to his role in August 2018 and has been investing in upstream oil and gas for over 15 years. He was a Director in Commonwealth Bank of Australia's Natural Resources Division and an Associate Director at Macquarie's Energy Markets division.

Chairman – Paul Espie AO:

Mr Espie has a long history of investing in natural resources. He was a founder of Pacific Road Capital, a private equity fund focused on the resources sector. Mr Espie is also a director of Aurelia Metals and has also previously been the Chairman of Oxiana and Cobar Mines.

Chief Operating Officer – David Evans:

Mr Evans was appointed Chief Operating Officer in October 2019 and has 30 years' global upstream oil & gas exploration, development and production experience in both Australian and North American operations. Mr. Evans holds a BSc(Hons) degree in Geology from the University of London, a Postgraduate Diploma in Petroleum Exploration Geology from Oxford Brookes University and a Master of Applied Science from University of Canberra.

Financials

Profit and Loss

EEG currently earns all of its revenue from its US operations, predominantly through gas sales. We have assumed a hedged price of USD2.5/Mcf for US gas sales and operating costs of USD1.20/Mcf that escalates with assumed inflation of 2% pa. We have used the HY20 G&A costs as a baseline and also escalate them at 2%. We have assumed an interest rate of 7% on EEG's debt (Macquarie loan is LIBOR + 650bps) and negligible interest earned on cash. Because the Australian assets are in the early stages of exploration we do not forecast any earnings from these assets yet however we do note that the company could begin to earn revenue from early commercialisation opportunities.

Figure 15: Production / Profit & Loss history and forecast

Net Production (Mboe)	FY18A	FY19A	FY20E	FY21E	FY22E
Appalachia	310.2	298.8	281.0	267.0	253.6
Kansas	126.5	86.5	0.0	0.0	0.0
Revenue (USDm)					
Sales revenue	6.6	5.4	4.2	4.0	3.8
Other	2.2	0.2	0.0	0.0	0.0
Total revenue (USDm)	8.8	5.6	4.2	4.0	3.8
Operating expenses	(4.7)	(4.2)	(2.0)	(2.0)	(1.9)
G&A	(3.2)	(3.2)	(3.3)	(3.5)	(3.5)
Other	(0.2)	(0.0)	0.0	0.0	0.0
Underlying EBITDAX (USDm)	0.6	(1.9)	(1.1)	(1.4)	(1.6)
Exploration expensed	(0.4)	(0.1)	(0.0)	(0.0)	(0.0)
Underlying EBITDA (USDm)	0.2	(2.0)	(1.1)	(1.5)	(1.7)
D&A	(0.5)	(1.4)	(0.9)	(0.9)	(0.9)
EBIT (USDm)	(0.4)	(3.4)	(2.0)	(2.3)	(2.5)
Interest revenue	0.0	0.0	0.0	0.0	0.0
Interest cost	(2.4)	(1.8)	(0.5)	(0.4)	(0.4)
Net interest	(2.4)	(1.8)	(0.5)	(0.4)	(0.4)
PBT (USDm)	(2.8)	(5.2)	(2.4)	(2.8)	(2.9)
Tax	(0.1)	(0.1)	0.0	0.0	0.0
Adjusted NPAT (USDm)	(2.9)	(5.4)	(2.4)	(2.8)	(2.9)
Abnormals	(13.1)	(10.7)	0.0	0.0	0.0
Reported NPAT (USDm)	(16.0)	(16.1)	(2.4)	(2.8)	(2.9)

SOURCES: MORGANS, COMPANY REPORTS

Cashflow

EEG's operating cashflow was slightly negative in the first half of FY20. We forecast that this is likely to continue with ongoing weakness in US gas markets and declining production. We have assumed that EEG will focus capital expenditure on the NT exploration program rather than on expanding or increasing production in the US. Given EEG's likely exploration program of a vertical frac, horizontal well and flow tests we estimate that the company will need A\$10m for investment capital next year. If the US assets aren't sold we assume that another \$10m equity raise would be required to complete the program. However, depending on the cash reserves at the end of this quarter the company may be able to complete the vertical frac and early flow tests. This could position the company well to able to leverage potentially positive newsflow.

Figure 16: Cash flow history and forecast (USDm)

	FY18A	FY19A	FY20E	FY21E	FY22E
Operational Cash Flow					
Gross operational casflow	2.8	1.3	(1.1)	(1.5)	(1.7)
Exploration expenditure	0.0	0.0	(0.0)	0.0	0.0
Interest Paid	(3.0)	(1.9)	(0.5)	(0.4)	(0.4)
Tax Paid	(0.1)	(0.1)	(0.0)	0.0	0.0
Net Cash Flow from Operating Activities	(0.3)	(0.8)	(1.6)	(1.9)	(2.1)
Cash Flows from Investing Activities					
Capex - O&G properties	(0.2)	(1.8)	(11.3)	(7.0)	0.0
Capex - PP&E	(0.0)	0.0	0.0	0.0	0.0
Capex	(0.2)	(1.8)	(11.3)	(7.0)	0.0
Asset sales	0.1	19.3	0.0	0.0	0.0
Net Cash Flow from Investing Activities	(0.1)	17.4	(11.3)	(7.0)	0.0
Cash Flows from Financing Activities					
New Equity	11.7	8.5	12.5	7.0	0.0
Repayment of Borrowings	(7.9)	(18.7)	(0.8)	(0.6)	(0.6)
Other	0.0	(0.4)	0.0	0.0	0.0
Net Cash Flow from Financing Activities	3.8	(10.7)	12.2	6.5	(0.6)
Net Change in Cash Balance	3.4	6.0	(0.7)	(2.5)	(2.6)

SOURCE: MORGANS RESEARCH, COMPANY

Balance sheet

Most of the company's balance sheet is connected to the US assets. EEG currently has USD6.8m in debt against the USD23.5m in gross book value of US oil and gas assets. The loan has been provided by Macquarie and it matures in September 2024. The loan requires minimum principal repayments of the greater of USD550k pa or the net operating cashflow of the US business. EEG also holds significant provisions for environmental restoration (~USD18.3m at 30 June 2020) which the majority is in connection with its US assets.

Figure 17: Balance sheet history and forecast (USDm)

	FY18A	FY19A	FY20E	FY21E	FY22E
Current Assets					
Cash and cash equivalents	4.2	9.9	9.2	6.7	4.1
Prepayments	0.4	0.1	0.1	0.1	0.1
Trade and other receivables	2.3	1.8	1.8	1.8	1.8
Inventory	0.0	0.0	0.0	0.0	0.0
Other financial assets	25.9	0.7	0.7	0.7	0.7
Total Current Assets	32.8	12.5	11.8	9.4	6.7
Non-current Assets					
Property, plant and equipment	0.2	0.5	0.5	0.5	0.5
Intangibles	0.1	0.1	0.1	0.1	0.1
Oil and gas properties	31.0	26.3	36.7	42.8	41.9
Other financial assets	0.0	0.3	0.3	0.3	0.3
Total Non-current Assets	31.3	27.1	37.5	43.6	42.8
TOTAL ASSETS	64.1	39.7	49.3	53.0	49.5
Current Liabilities					
Trade and other payables	3.6	3.4	3.4	3.4	3.4
Other financial liability	26.4	6.7	0.0	0.0	0.0
Provisions	0.0	0.0	0.0	0.0	0.0
Total Current Liabilities	30.0	10.1	3.4	3.4	3.4
Non-current Liabilities					
Debt	0.1	0.1	6.8	6.3	5.7
Provisions	12.7	15.8	18.3	18.3	18.3
Total Non-current Liabilities	12.7	15.9	25.1	24.5	24.0
TOTAL LIABILITIES	42.7	26.0	28.5	27.9	27.4
NET ASSETS	21.4	13.7	20.9	25.1	22.1
Equity					
Contributed equity	94.1	101.5	114.0	121.0	121.0
Reserves	6.5	4.8	4.6	4.6	4.6
Retained earnings	(79.2)	(92.7)	(97.7)	(100.5)	(103.5)
TOTAL EQUITY	21.4	13.7	20.9	25.1	22.1

SOURCES: MORGANS, COMPANY REPORTS

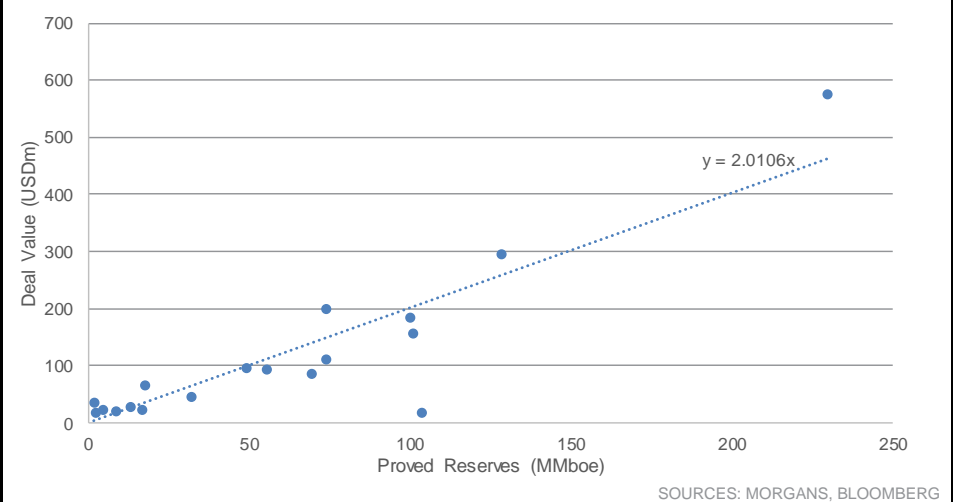
Valuation and Risks

US Shale M&A

We value EEG's US 1P reserves on a 2x multiple based on completed transactions for US gas assets during the last three years. The majority of these transactions involved assets that were dominated by gas production and with 100% proved developed producing reserves like EEG's US assets. We therefore value EEG's estimated 1P reserves at 31 Dec 2020 at A\$10.5m. This assumes an exchange rate of 0.72 AUD:USD.

We also assign an additional USD3.6m for the shale development rights based on EEG's PV10 reserves certification produced by third party consultants and included in its 2019 annual report.

Figure 18: Three-year US gas asset M&A summary



Australian prospective resource valuation

In a number of companies that we cover we use a multiple for unrisksed contingent resource of USD5/boe with a subjective risking factor applied. We see the Kyalla and Velkerri formations as being the most explored in EEG's portfolio and so apply a more confident risk factor to those prospective resources. We define our risk factor as the inverse of a probability of success, i.e. a risk factor of 97% is equivalent to a 3% probability of success.

Figure 19: Undeveloped gas resource base case valuation summary

Formation	Unrisksed volume (Mmboe)	Multiple (A\$ / boe)	Unrisksed value (A\$m)	Risk factor (%)	Risksed volume (Mmboe)	Risksed value (A\$m)	Risksed value (A\$ cps)
Kyalla - prospective resource	14.0	6.9	97.2	97.0%	0.4	2.9	0.9
Velkerri - prospective resource	397.0	6.9	2,756.9	97.0%	11.9	82.7	25.5
Barney Creek - prospective resource	1,886.0	6.9	13,097.2	99.5%	9.4	65.5	20.2
Total Undeveloped Gas	2,297.0	6.9	15,951.4	99.1%	21.8	151.1	46.6

SOURCE: MORGANS

As work progresses on appraising the area around Carpentaria-1 we see opportunity for the Velkerri resource to be significantly derisksed. Our bull case scenario assumes a 94% risk factor for the Velkerri and Kyalla which increases the risksed value of the NT resources to 73.1cps. Conversely our bear case scenario assumes that flow tests are unsuccessful on Carpentaria-1 and assign a 99.5% risk factor to the Velkerri and Kyalla resources and a 99.75% risk factor to the Barney Creek resource which reduces the total estimated value to 14.5cps.

Valuation summary

We see most of EEG's value coming from the exploration prospects in the NT. While the exploration program has achieved significant successes to date it is in the early stages of development and so we see a wide range of share price outcomes (20cps – 79cps) being possible depending on the outcomes of the upcoming flow tests in Carpentaria-1. Our base case scenario of 52.5cps offers 35% upside to the closing share price on 25 November.

Figure 20: Valuation scenarios

Valuation summary	Bear Case	Base case	Bull case
NT prospective resource (A\$ m)	47.0	151.1	236.7
US 1P reserves (A\$ m)	10.5	10.5	10.5
US probable reserves (A\$m)	5.0	5.0	5.0
Total O&G Assets	62.6	166.6	252.3
Net Cash (A\$m)	3.3	3.3	3.3
Total Valuation	65.8	169.9	255.5
Shares on issue (m)	323.9	323.9	323.9
Per share value (A\$ cps)	20.3	52.5	78.9

SOURCE: MORGANS

Risks

Investors in EEG will face a number of risks:

- Exploration success in the Northern Territory – the bulk of the value we see in EEG comes from their prospective resources and investor sentiment could turn negative if the next exploration program is not successful.
- Commodity prices in the US, Australia and internationally – investor sentiment towards the larger oil and gas sector will be impacted by commodity prices and a small portion of US production is unhedged which could lead to lower earnings than our forecast.
- Industry regulation in both the US and Northern Territory – could impact the ability of the company to sustain its activities at an acceptable cost if regulations are tightened.
- Social license to operate and relationships with traditional owners – will be key to be able to operate without significant public opposition or legal challenges from traditional owners.
- Ongoing success in raising funds to continue with exploration programs – EEG is in the early stages of exploration so it will likely need further capital before it can enter production to be able to produce cashflow to sustain further exploration activity.
- Interest rates – will influence the interest costs of the Macquarie loan.
- Tax regulation both in Australia and the US - will impact operating cash flows.

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