

Empire Energy Group

Positioned for growth in the Beetaloo

SPECULATIVE BUY (no change)

| | |
|-------------------------|-------------------------|
| Current price: | A\$0.31 |
| Target price: | A\$1.14 ▲ |
| Previous target: | A\$0.643 |
| Up/downside: | 268.3% |
| Reuters: | EEG.AX |
| Bloomberg: | EEG AU |
| Market cap: | US\$87.09m A\$112.6m |
| Average daily turnover: | US\$0.06m A\$0.08m |
| Current shares o/s | 593.6m |
| Free float: | 60.9% |



| Price performance | 1M | 3M | 12M |
|-------------------|-------|-------|------|
| Absolute (%) | -13.9 | -12.7 | 40.9 |
| Relative (%) | -17.4 | -17.2 | 8 |

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

– Empire Energy Group

- EEG has acquired the interests of Pangaea Resources and potentially its JV partner to roughly treble the amount of Prospective Resource in the NT.
- The deal is structured as a combination of scrip, cash and options in EEG with Pangaea holding a 24% ownership in EEG.
- \$30m of new equity raised will go towards funding two development wells.
- We maintain our SPECULATIVE BUY rating and upgrade our target price to \$1.14ps (+78%).

Transformative acquisition in the NT

EEG is acquiring an 82.5% interest in five tenements across the Beetaloo Sub-basin from Pangaea. EEG is also likely to acquire the remaining 17.5% interest with Pangaea's minority JV partner, Energy & Minerals Group (EMG), agreeing to sell its stake on the same pro-rata terms as Pangaea. When the transaction is completed we estimate that the company's total Prospective Resources in the NT will be 7,728MMboe (including EMG's interest). This will more than triple EEG's Prospective Resource and position it as one of the largest independent explorers in the Beetaloo basin. The deal has been funded by a combination of scrip (140m new shares to Pangaea, 29.7m new shares to EMG), \$6.1m in cash and 9.7m in options to Pangaea and EMG.

Next steps: 7 well program for EP-187 including Carpentaria-1 frac

In addition to the acquisition, EEG also raised \$30m from institutional investors (\$3m SPP also currently underway) at 30cps that could potentially fund two horizontal development wells. The company has submitted an Environmental Management Plan to the NT environmental regulator for a seismic and 7 well program in EP187. EP187 is the part of EEG's existing tenure that contains the Carpentaria-1 well. The company will execute a fracture stimulation and flow test on the vertical well to identify targets for later horizontal development. We also anticipate that EEG will look to appraise and develop the fields it has acquired from Pangaea and EMG.

Changes in valuation

Our valuation is driven by the Prospective Resource base of EEG and this deal is transformative for the company that now holds a much larger estimated gas and liquids resource. We have also adjusted our risk factors given the different make up of estimated resource across the Kyalla, Velkerri and Barney Creek formations in addition to the new fields. Our new base case risk factors are 99.5%, 98.5% and 99.5% respectively across the formations. Despite the higher risk factors and increased shares on issue our per share valuation has still increased significantly to \$1.14 (+78%).

Investment view

While we see significant upside in EEG we also note that there are considerable risks. Chief amongst these is the uncertainty around whether or not gas and liquids can be developed at commercial flow rates and at scale. Should EEG successfully deliver a development well then we expect there would be a material increase in the company's share price. Growth beyond what can be sustained by local demand in the Beetaloo basin will come with its own set of risks and ongoing exploration and appraisal will be required in the medium term. However, there is a long growth pathway for the company if it can overcome the challenges ahead of it. We maintain our SPECULATIVE BUY rating and increase our base case target price to \$1.14ps.

Figure 1: Valuation Summary

| Valuation summary | Bear Case | Base case | Bull case |
|----------------------------------|--------------|--------------|----------------|
| NT prospective resource (A\$ m) | 130.5 | 625.2 | 1,171.4 |
| 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 | 146.1 | 640.7 | 1,186.9 |
| Net Cash (A\$m) | 37.1 | 37.1 | 37.1 |
| Total Valuation | 183.2 | 677.8 | 1,224.0 |
| Shares on issue (m) | 593.6 | 593.6 | 593.6 |
| Per share value (A\$ cps) | 31 | 114 | 206 |

SOURCE: MORGANS

Empire Energy Group

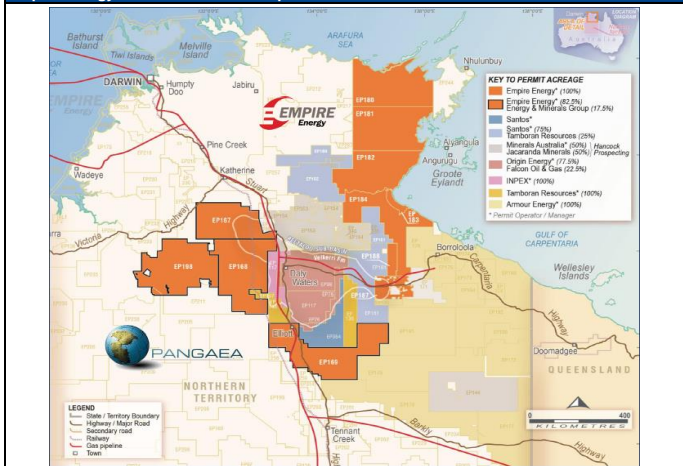
as at May 4, 2021

| | | | |
|-------------------------|---|--------------------------------------|-----------------|
| Market cap (A\$m): | 112.6 | Rating: | SPECULATIVE BUY |
| Shares outstanding (m): | 593.6 | Price (A\$): | 0.31 |
| Free float (%): | 60.9 | Target price (A\$): | 1.14 |
| Website: | https://empireenergygroup.net/ | Upside/downside to target price (%): | 268.3 |

Company description

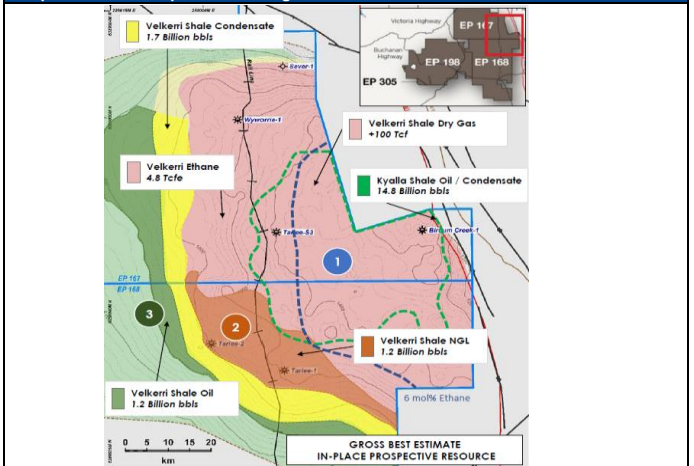
Empire Energy is a junior oil and gas company with assets in the USA and in the Northern Territory. The US assets produce gas from the Appalachian basin while the Northern Territory assets are being explored and appraised. The company is focused on proving up its 42Tcf (following acquisition of Pangaea and EMG's NT assets) of prospective resource in the Beetaloo Sub-basin and McArthur Basin. It's first exploration well, Carpentaria-1 intersected gas and liquids in the Velkerri shale formation and is located near to the McArthur River zinc-lead mine. Origin (ORG) and Santos (STO) are also exploring in the basin and Santos holds tenure adjacent to EEG's.

Empire Energy's Beetaloo Sub-basin portfolio



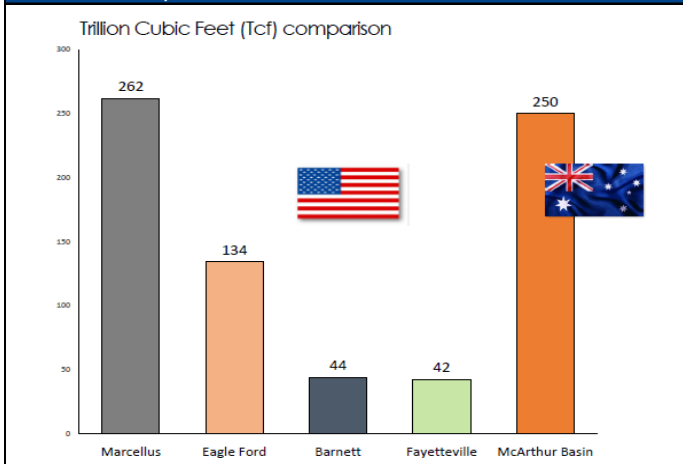
SOURCE: EEG

Prospective tenure acquired from Pangaea / EMG



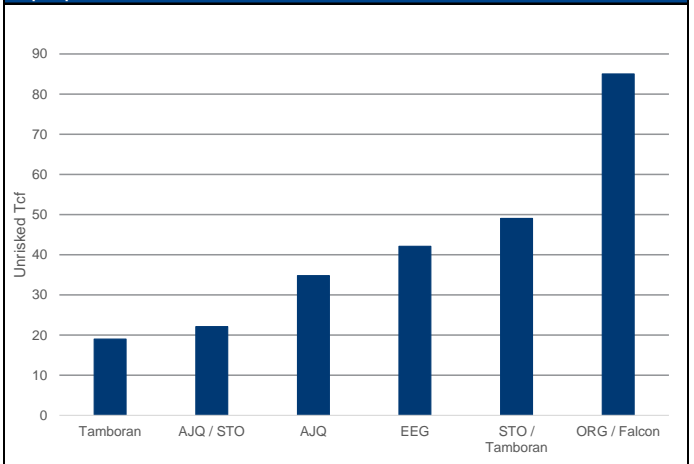
SOURCES: EEG, Pangaea

NT and US shale comparison



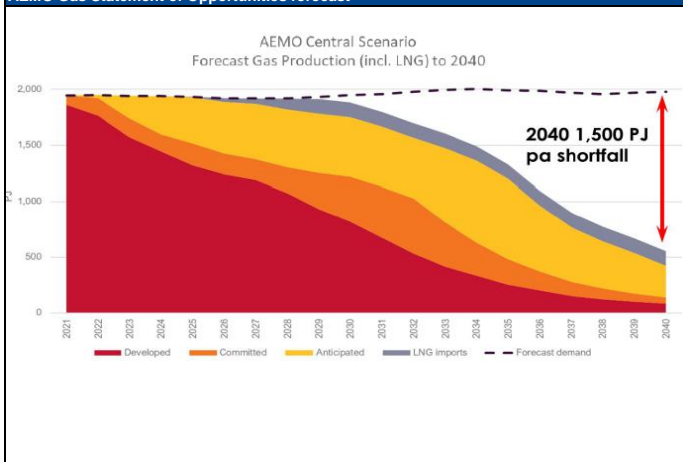
SOURCE: EEG

NT prospective resources



SOURCES: MORGANS RESEARCH, COMPANY REPORTS

AEMO Gas Statement of Opportunities forecast



SOURCES: EEG, AEMO

Risks and drivers

- Value drivers:**
- Exploration success in upcoming work programs.
 - Exploration success of peers working in the area.
 - Commodity prices.
- Risks:**
- Exploration success.
 - 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

Valuation and risks

We have increased our risking factors given the newly acquired tenure from Pangaea and EMG to give an updated base case valuation of \$1.14ps. There is an increased amount of prospective resource in the Kyalla formation which has been difficult to develop so far for ORG in its tenement. We are also taking a cautious approach to the additional Velkerri resource but will look to review our assumptions following further work from EEG.

Figure 2: Undeveloped resource valuation (bear case)

| Formation | Unrisked volume (Mmboe) | Multiple (A\$ / boe) | Unrisked value (A\$m) | Risk factor (%) | Risk volume (Mmboe) | Risk value (A\$m) | Risk value (A\$ cps) |
|-------------------------------------|-------------------------|----------------------|-----------------------|-----------------|---------------------|-------------------|----------------------|
| Kyalla - prospective resource | 519 | 6.8 | 3,508.7 | 99.8% | 1.3 | 8.8 | 1.5 |
| Velkerri - prospective resource | 5,389 | 6.8 | 36,411.1 | 99.8% | 13.5 | 91.0 | 15.3 |
| Barney Creek - prospective resource | 1,820 | 6.8 | 12,297.4 | 99.8% | 4.6 | 30.7 | 5.2 |
| Total Undeveloped Resource | 7,728 | 6.8 | 52,217.2 | 99.8% | 19.3 | 130.5 | 22.0 |

SOURCE: MORGANS

We have also updated our risking assumptions to derive our updated bull and bear cases. Our bull case scenario assumes a 97% risk factor for the Velkerri which increases the risked value of the NT resources to \$2.06ps. Conversely our bear case scenario assumes that flow tests are unsuccessful on Carpentaria-1 and assign a 99.75% risk factor to all resources which reduces the total estimated Australian resource value to 22cps.

Figure 3: Valuation summary

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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.
- Carbon regulation – changes to policy in Australia or internationally could impact the relative attractiveness of gas compared to other energy sources.
- 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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