

ASX:EEG

**EMPIRE**  
Energy

# Quarterly Report

For the period ending 30<sup>th</sup> September 2020

Level 19, 20 Bond Street  
Sydney NSW 2000

## Highlights

The Quarter ending 30<sup>th</sup> September 2020 has been productive for Empire Energy Group Limited (“Empire” or the “Company”). The Company commenced drilling Carpentaria-1, its first well in the highly prospective and increasingly active Beetaloo Sub-basin of the Northern Territory. The results of Carpentaria-1 are positive for the future of the Company. Empire looks forward to providing further updates to shareholders as our analysis and understanding of the well results develops.

Highlights of Q3 2020:

- **Empire intersected liquids rich gas across a thick sequence of the Velkerri Formation in its 100% owned Carpentaria-1 well. The results materially exceeded pre-drill expectations**
- **Major operators in the Beetaloo Sub-basin continue to generate strong operational results. Santos flow tested the Tanumbirini-1 vertical well which ‘significantly exceeded expectations’ with strong flow rates and Origin drilled and hydraulically stimulated the Kyalla-117 horizontal well with flow test results expected in Q4 2020**
- **Empire raised ~A\$18.1 million following a successful A\$10 million placement and A\$8.1 million option conversion proceeds during the quarter**
- **Empire Directors exercised A\$1.9 million of options bringing their total investments to A\$6.1 million since 2018**
- **The Northern Territory elections returned the Labor Government to power. The industry now has strong bipartisan Government support in the Northern Territory and Federal Government support**
- **A further increase in activity in the Beetaloo Sub-basin is anticipated in 2021**
- **The Company ended the Quarter with A\$21m cash at bank**

### Comments from Managing Director Alex Underwood:

It has been a busy and successful Quarter for the Empire team. We commenced drilling Carpentaria-1, only the second well drilled in the Beetaloo under the new regulatory framework. The results have materially exceeded our expectations both in terms of the thickness of the shales and the presence of higher value liquids. Our intersection of liquids rich gas is a new paradigm for this major emerging basin. These results are likely to materially impact our resource assessments which had previously assumed that we would encounter dry gas and give us greater optionality to consider early commercialisation strategies.

Our neighbours continue to generate strong results and are planning further material investments to continue appraising major discoveries in the year ahead. This activity enhances our understanding of our own properties and how to add value to them.

These results and our own are attracting wide attention for the Beetaloo Basin and play into the Federal Government’s *Gas Fired Recovery* strategy and its promotion of gas for energy and feedstock material as an industrial foundation for Australia’s economy.

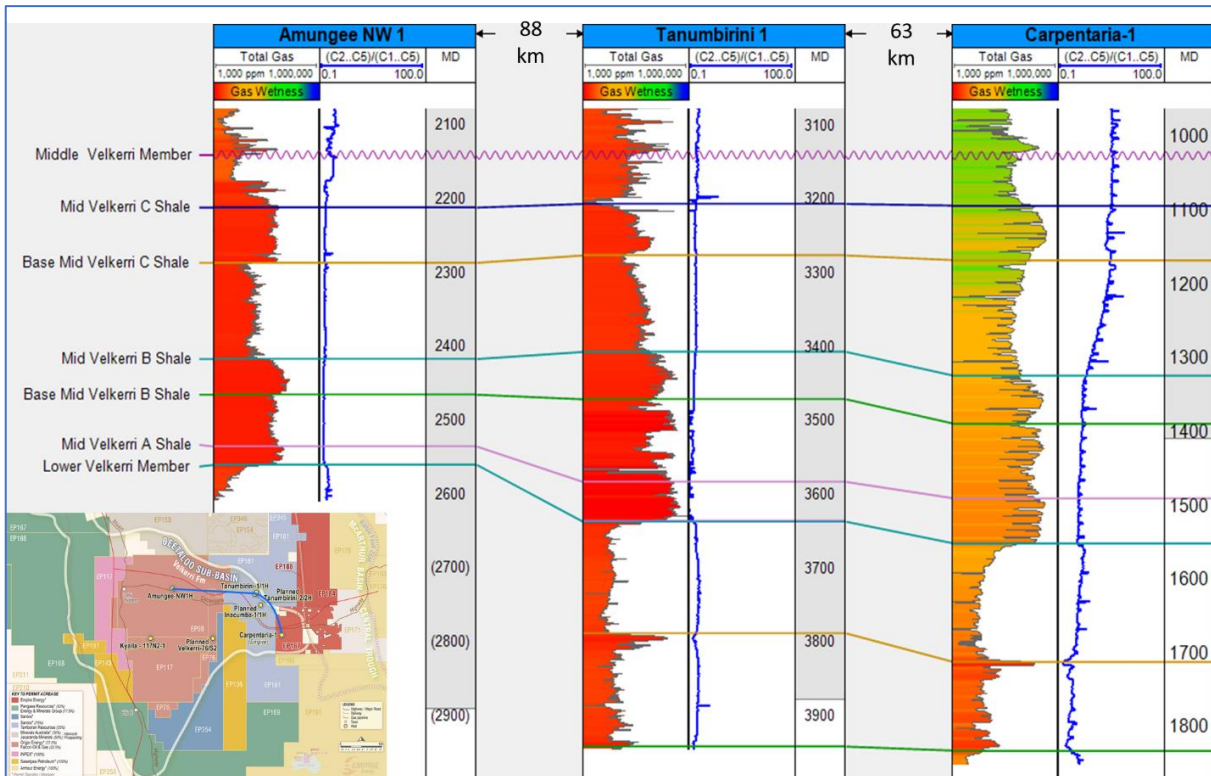
With support for our industry now firmly entrenched at the Federal and Northern Territory Government levels, strong forecast Australian and Asian gas market fundamentals and our balance sheet strengthened through recent capital issuance, the platform for further growth is well established as we move into the appraisal phase in EP187 and prepare for exploration of our Northern properties.

# Northern Territory Operations Update

Empire announced in early October that the Carpentaria-1 well in Empire’s wholly owned and operated EP187 permit had intersected an extensive interval of liquids rich gas in the Velkerri Shale. The proportion of liquids rich gas intersected was the highest of any well targeting the Velkerri Formation to date. The target shales within the Velkerri Formation were equivalent in thickness to analogue wells, and substantially thicker than the target formations of the prolific major US shale basins.

The comparative well log section below illustrates the relative abundance of liquid rich gases in the Carpentaria-1 well across multiple Velkerri Shale pay zones. The total gas curves illustrate the absolute value of gas recorded and the component of ‘wet’, or longer chain hydrocarbons, is reflected in yellow and green. The blue lines are representative of the proportion of liquids (ethane, propane, butane and pentane) observed in the mud gas.

The locations of the three wells are shown west to east, and on the inset map being Amungee NW-1 (Origin Energy / Falcon Oil & Gas JV) and Tanumbirini-1 (Santos / Tamboran Resources JV) and Empire’s Carpentaria-1. The red colour indicates dry gas in wells to the West of Empire in the Beetaloo.



The field crews have now undertaken a comprehensive formation evaluation program comprising wireline logging, coring and diagnostic fracture injection tests (“DFITs”). A total of 50 cores were recovered from the target formations for specialised testing in the USA. Over the coming months the wireline logs, sidewall cores and drill cuttings will be evaluated and integrated with regional data to estimate gas in place, plan future hydraulic stimulation and the drilling of future horizontal wells. The postwell analysis will be undertaken in Houston, Texas USA, at the W.D. Von Gonten & Co (WDVG) Petroleum Engineering Laboratory in collaboration with Empire’s technical team in Sydney. WDVG are a global leader in unconventional reservoir evaluation.

An Origin Energy technical team published a paper in the APPEA Journal 2018 entitled “Australia’s premier shale basin: five plays, 1,000,000,000 years in the making” identified a potential Velkerri Shale liquids rich gas play on the Beetaloo Basin flanks.

The results of the Carpentaria-1 well reinforce Origin’s thesis. The Origin paper indicates that total porosity and absolute permeability of the Velkerri Shale appears to be higher on the flanks of the Beetaloo than in the centre, and preceding regional gas composition and maturity data indicate a potential condensate-to-gas ratio in the region of 5 - 40 bbl / mmcf.

An initial review of Carpentaria-1 wireline logging data has found comparable porosity to deeper analogue wells in the Beetaloo. Porosity, the percentage of void volume of a rock, is an indicator of the potential volume of gas that can be held in a formation.

The Velkerri Shale interval in EP187 is shallower than in the analogue wells which is likely to reduce costs in future drilling and production scenarios. The existence of liquids in the gas will likely enhance economics of this project, offering higher energy hydrocarbons and chemical feedstocks. Numerous US shale gas plays have been developed in the ‘liquids rich’ windows, as the presence of liquids can enhance revenues with similar development and production costs.

Empire intends to update its prospective resource estimates for EP187 utilising the results of the Carpentaria-1 well and enhanced understanding of seismic data. Empire is currently planning for hydraulic stimulation and production testing of the vertical Carpentaria-1 well after the Northern Territory’s current Wet Season, conditional upon approvals. Upon flowing gas to surface, Empire will be able to convert part of its prospective resource to contingent resource and will be able to plan for horizontal development scenarios and economic assessment.

The table below provides an overview of the uses of dry gas (methane) and longer chain liquid hydrocarbons and their typical market pricing metrics.

Gas	Carbon	Uses	Sale Price Basis
Methane	C1	<ul style="list-style-type: none"> <li>▪ Electricity generation</li> <li>▪ Power for mining sector</li> <li>▪ Manufacturing (ammonia, building materials, fertiliser, methanol, hydrogen)</li> <li>▪ Heating</li> </ul>	Gas Price
Ethane	C2	<ul style="list-style-type: none"> <li>▪ Petrochemical feedstock for ethylene production</li> <li>▪ Power generation</li> <li>▪ Manufacturing (plastics, detergents)</li> </ul>	Premium to Gas Price
Propane (Liquefied Petroleum Gas)	C3	<ul style="list-style-type: none"> <li>▪ Cooking</li> <li>▪ Transportation</li> <li>▪ Petrochemical feedstock</li> <li>▪ Refrigeration</li> </ul>	Strong correlation to Oil
Butane	C4	<ul style="list-style-type: none"> <li>▪ Petrochemical and petroleum refinery feedstock</li> <li>▪ Motor gasoline blending</li> <li>▪ Synthetic rubber manufacturing</li> </ul>	Strong correlation to Oil
Pentane	C5	<ul style="list-style-type: none"> <li>▪ Petrochemical feedstock</li> <li>▪ Additive to motor gasoline</li> <li>▪ Diluent for heavy crude oil</li> <li>▪ Manufacture of solvents</li> </ul>	Strong correlation to Oil



Empire incurred A\$6.1 million of exploration expenses on its Northern Territory assets during the Quarter.

### Empire Hosts Carpentaria-1 Site Visit for Government Leaders

On 16<sup>th</sup> October, 2020, Empire hosted a site visit to the Carpentaria-1 well site for a party of Government Leaders. The Federal Minister for Energy and Emissions Reduction Angus Taylor MP, attended the site visit to build on the Morrison Government's *Gas-Fired Recovery Plan*. Also visiting were Federal Senator for the Northern Territory Sam McMahon and Northern Territory Opposition Leader Lia Finocchiaro MLA.

Following the visit, Minister Taylor and Minister Pitt, Federal Minister for Resources, Water and Northern Australia released a joint statement in which they together reinforced the Australian Government's firm support for the development of the Beetaloo Basin.

"The Beetaloo Basin is a world-class resource that has the potential to drive significant development in the Top End to create local jobs and help Australia remain a world leader in gas", Minister Taylor said. "The Beetaloo Basin has enormous potential for the Territory and the country, and it's great to see this work getting underway", Minister Pitt said<sup>1</sup>.

Empire was joined on site by senior members of Northern Territory Government Departments and looks forward to welcoming Northern Territory Government Ministers and Traditional Owners on its next site visit which will likely coincide with the stimulation and flow testing program in 2021.



L to R: Empire Chairman Paul Espie AO, Empire Managing Director Alex Underwood, NT Opposition Leader Lia Finocchiaro, Hon Angus Taylor MP and NT Senator Sam McMahon

<sup>1</sup> <https://www.minister.industry.gov.au/ministers/taylor/media-releases/beetaloo-basin-key-element-gas-fired-recovery>



L to R: Empire Chairman Paul Espie AO, Managing Director Alex Underwood and NT Senator Sam McMahon with a Schlumberger rig team member explaining equipment



Schlumberger orientation for Empire's Carpentaria-1 site visit



## Developments in the NT petroleum sector

- **On 22<sup>nd</sup> August, 2020, general elections were held for the Legislative Assembly of the Northern Territory Parliament.** The Labor Party formed a majority Government for a new fixed four-year team. There is now bipartisan support in the Northern Territory for the development of the onshore gas industry including unconventional gas.
- **On 15<sup>th</sup> September, 2020, the Prime Minister Scott Morrison announced a national plan for a *Gas-Fired Recovery*.** As part of this ambitious Plan, the Beetaloo Basin was specifically identified as the first of five in the accompanying *Strategic Basin Plan* to accelerate the development of onshore gas resources for the increased supply of domestic gas and to lower gas prices for Australians. The Beetaloo was selected as the first basin as a focus for an acceleration of production to facilitate the Federal Government's strategy. The *Gas-Fired Recovery Plan* forms part of a wider strategy to ensure Australia remains a major gas exporter as it also delivers affordable and reliable energy to its domestic market including manufacturing. The Federal Government will also identify priority gas pipelines and critical infrastructure to improve pipeline access, and to promote competition and transparency to further support our industry.<sup>2</sup>



Hon Angus Taylor MP been interviewed by NT Sky News at the Carpentaria-1 well site

- **On 2<sup>nd</sup> October, 2020, Falcon Oil & Gas Limited (TSXV:FO, AIM: FOG) provided a technical update on its Beetaloo Basin project with Origin Energy** following successful completion of 11 hydraulic stimulation stages along the 1,579 metre horizontal section of its Kyalla 117 well in the Lower Kyalla Formation. Early stage gas flow rates are anticipated in the coming weeks.<sup>3</sup>

<sup>2</sup> <https://www.pm.gov.au/media/gas-fired-recovery>

<sup>3</sup> Falcon Oil & Gas release dated 2 October 2020



- **On 6<sup>th</sup> October, 2020, the Australian Government handed down its 2020/21 Budget which included important elements in support of the development of the Beetaloo Basin:**
  - Initiatives to support the *Gas-Fired Recovery Plan* form a significant part of the Budget including A\$52.9 million to be invested for the Strategic Basin Plans; independent scientific research into the social, economic and environmental impacts of gas; and support for emissions reduction through carbon capture. The Hon Keith Pitt MP Federal Minister for Resources, Water and Northern Australia said ‘Gas will play a critical role in the nation’s economic recovery, to capture new opportunities in global resources markets and position Australia to bounce back stronger’.<sup>4</sup>
  - The Budget seeks to reform the Northern Australia Infrastructure Facility (“NAIF”) to improve the speed of its deployment and scope of projects to be funded. The NAIF is a A\$5 billion lending facility to provide loans to infrastructure projects across northern Australia. As at 21 July 2020, the current value of NAIF loan commitments forecast is A\$2.1 billion<sup>5</sup>. NAIF may improve access to capital for the construction of critical Beetaloo infrastructure such as pipelines and gas processing;
  - A\$120m has been allocated towards the upgrade of the Carpentaria Highway which connects the Beetaloo Basin including Empire’s EP187 to the Stuart Highway and onto Alice Springs in the South and Darwin to the North.<sup>6</sup> Carpentaria Highway upgrades include road strengthening and widening, flood immunity works and road safety improvements. Empire management witnessed this work already underway during the site visit.
  - A\$180m was also allocated to the Central Arnhem Road upgrade. The Central Arnhem Road is a 710km road connecting Katherine via the Stuart Highway to Nhulunbuy which passes through Empire’s northern permits.<sup>7</sup>
- **On 22<sup>nd</sup> October, 2020, Santos announced in its Q3 Activities Report that production testing at the Tanumbirini-1 vertical well in the McArthur Basin had resumed in September and that results achieved had “significantly exceeded expectations”.** An encouraging initial peak gas flow rate of 10mmcf / day and an average rate of 1.5mmcf / day during the first 9 days of testing was reported. Santos’ Joint Venture partner, Tamboran Resources, reported an average flow rate of 2.3 mmcf / day over the first 90 hours from the same test.<sup>8</sup> Santos is now planning the next phase of appraisal which is expected to include two horizontal wells with multi-stage stimulation commencing in 2021. Santos indicated that the recent Tanumbirini-1 results “provide further confidence there is potential to achieve economic flow rates from multi-stage horizontal wells”.<sup>9</sup>

<sup>4</sup> <https://www.minister.industry.gov.au/ministers/pitt/media-releases/budget-invests-more-4-billion-northern-australia>

<sup>5</sup> <https://naif.gov.au/about-naif-finance/current-pipeline/>

<sup>6</sup> Economic Recovery Plan for Australia

[https://budget.gov.au/2020-21/content/download/glossy\\_overview.pdf](https://budget.gov.au/2020-21/content/download/glossy_overview.pdf)

<sup>7</sup> Economic Recovery Plan for Australia

[https://budget.gov.au/2020-21/content/download/glossy\\_overview.pdf](https://budget.gov.au/2020-21/content/download/glossy_overview.pdf)

<sup>8</sup> [http://www.tamboran.com/wp-](http://www.tamboran.com/wp-content/uploads/2020/10/201020_Tamboran_EP161_Gas_Discovery_vFINAL.pdf)

[content/uploads/2020/10/201020\\_Tamboran\\_EP161\\_Gas\\_Discovery\\_vFINAL.pdf](http://www.tamboran.com/wp-content/uploads/2020/10/201020_Tamboran_EP161_Gas_Discovery_vFINAL.pdf)

<sup>9</sup> Santos Limited Third Quarter Activities Report, 22 October 2020

## US Operations

Empire's US operations reported an EBITDA for Q3 2020 of US\$(250)k (Q2 2020: US\$(108)k) reflecting depressed gas prices. Empire is tightly managing its outgoings to preserve cash in this environment and has selectively shut-in production due to the prevailing low gas prices. Shut-in production can be brought back online for minimal cost in improved market conditions.

Hedging has provided a buffer against low gas prices with the average weighted sales price for gas after hedging being US\$2.17 / Mcf (Q2 2020: US\$2.14 / Mcf) being higher than before hedging weighted average sales price of US\$1.83 / Mcf (Q2 2020: US\$1.58 / Mcf).

The State of New York has experienced significant growth in installed solar electricity generation driven by Government policy and tax incentives and rebates. Empire has been in discussions with solar farm developers who are seeking to construct new solar capacity on Empire's petroleum leases and is advancing negotiations with selected parties. A potential transaction structure would result in annual lease payments to Empire with all capital expenditure borne by the third-party solar operator. Empire will update shareholders if any transactions eventuate.

Empire is continuing to operate under its COVID-19 policy and its status as an essential business. To date, there have been no confirmed cases of COVID-19 amongst Empire's workforce.

Description	3 months to 30 Sep 2020	3 months to 30 Sep 2019	YTD 31 Dec 2020	YTD 31 Dec 2019
<b>Net Oil Production (Bbls)</b>				
Appalachia	648	868	1,090	2,102
Mid-Con	-	21,617	-	85,732
Total Oil	648	22,487	1,090	87,834
<b>Net Natural Gas Production (Mcf)</b>				
Appalachia	384,945	450,965	1,254,255	1,329,668
Mid-Con	-	4	-	2,835
Total Natural Gas	384,945	450,969	1,254,255	1,332,503
<b>Net Gas Equivalent (Mcf):</b>				
Appalachia	388,833	456,173	1,260,795	1,332,503
Mid-Con	-	129,706	-	527,004
Total	388,833	585,879	1,260,795	1,859,507
<b>Mcf/d</b>	<b>4,226</b>	<b>6,368</b>	<b>4,601</b>	<b>6,811</b>
<b>Weighted Avg Sales Price (\$/Mcf)</b>				
Before Hedge	1.83	2.44*	1.87	2.64*
After Hedge	2.17	2.83*	2.41	2.90*
<b>Lifting Costs (incl. taxes):</b>				
Total Natural Gas Equivalent (\$/Mcf)	1.41	1.33*	1.22	1.32*

\*excluding oil sales from discontinued Kansas operations to allow for like-for-like comparison

Revenue estimates have been made for the last 2 production months of the quarter under review due to customer payment/invoice cycles. As such, there may be changes to production, revenues and operating ratios for the previous quarter as final production statements are received



## Other News

### Share Placement

On 26<sup>th</sup> August, 2020, Empire announced it had successfully raised A\$10 million with an unconditional single-tranche placement at an issue price of A\$0.30 per share, representing a discount of 8.7% to the 15-day VWAP of A\$0.329 per share. The Placement was well-supported by existing and new institutional and sophisticated investors.

Funds raised under the Placement have been applied to Empire's Northern Territory exploration and development program including the drilling of the Carpentaria-1 well and for working capital.

### Options Exercise

Following the conversion of 26,907,501 options expiring on 26<sup>th</sup> September, 2020 at A\$0.30 per share, Empire raised a further A\$8.1 million. The options had been issued in conjunction with a share placement conducted by Empire in August 2018.

Empire Directors exercised 6,187,500 of these options representing all of their September 2020 option holdings to raise A\$1.9 million. Following the conversion of these options by Directors, Empire Directors have invested ~A\$6.1 million in cash into Empire.

At the end of the Quarter, the Company had A\$21 million cash at bank.

412,500 unlisted options to acquire Empire shares exercisable at A\$0.30 per share with a 26<sup>th</sup> October, 2020 expiry date were exercised after the Quarter raising A\$123,750. 187,500 options with the same terms were not exercised and have expired.

### Northern Territory Border Re-opening

The Northern Territory border opened on 17<sup>th</sup> July, 2020 for interstate travellers not arriving at the Northern Territory from identified COVID-19 hotspots. On 9<sup>th</sup> October 2020, the Sydney metropolitan area was removed from the list of identified hotspots following a deemed sufficient period of low new coronavirus cases. Victoria is now the only jurisdiction remaining on the COVID-19 hotspot list.

Removal of Sydney from the list means that Empire's Sydney based team can enter and exit the Northern Territory freely as it plans for the 2021 Work Program.



Empire Directors visiting the Northern Territory for site visit

### Broker Research Coverage

Research as a Service (“RaaS”) updated its research coverage of Empire during the Quarter (but prior to the release of Carpentaria-1 well results) with a new base case valuation of A\$182 million or A\$0.56 per share (previously A\$0.61 per share), following Empire’s placement to raise A\$10 million and A\$8.1 million options conversion during September.

After Quarter end, Taylor Collison increased its Empire Target Price to A\$0.63 per share (previously A\$0.31 per share) reflecting current technical, market and operating outcomes, noting the potential for a significant re-rating on further evaluation and testing results from Carpentaria-1. Taylor Collison retained its BUY recommendation for Empire.

Research reports can be found on Empire's website <https://empireenergygroup.net/investor-information/research-and-media/>.

## Energy Market Update

**Although Henry Hub spot price remained at very low levels over the September Quarter, prices have improved substantially since Quarter end, reaching US\$3.30 / mmcf as at 29<sup>th</sup> October, the highest level since January 2019.**

Empire has taken advantage of recent market strength by entering into additional gas hedges as described in the Balance Sheet & Liquidity section below.

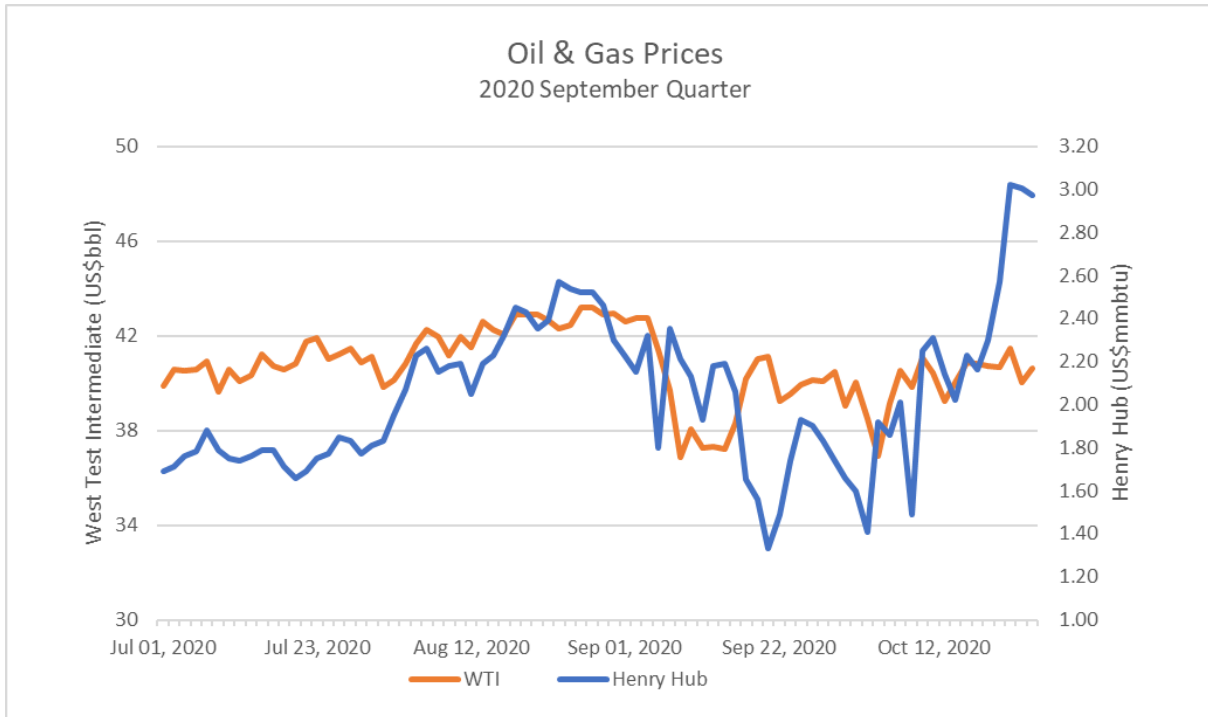
The average Henry Hub natural gas spot price over the course of Q3 2020 was US\$2.00 / mmbtu. The low prices reflected reduced demand for natural gas from the US electricity generation sector due to economic shutdowns and as temperatures cooled and lower demand from the US LNG export terminals amid hurricane-related activity in the Gulf of Mexico.

The EIA forecasts rising domestic demand for natural gas and LNG exports heading into Winter, combined with reduced production, will cause Henry Hub spot prices to rise. EIA expects that monthly average spot prices will remain higher than US\$3.00 / mmbtu throughout 2021, averaging US\$3.13 / mmbtu for the year, up from a forecast average of US\$2.07 / mmbtu in 2020.<sup>10</sup> These forecasts are slightly higher than current market forward curve prices.

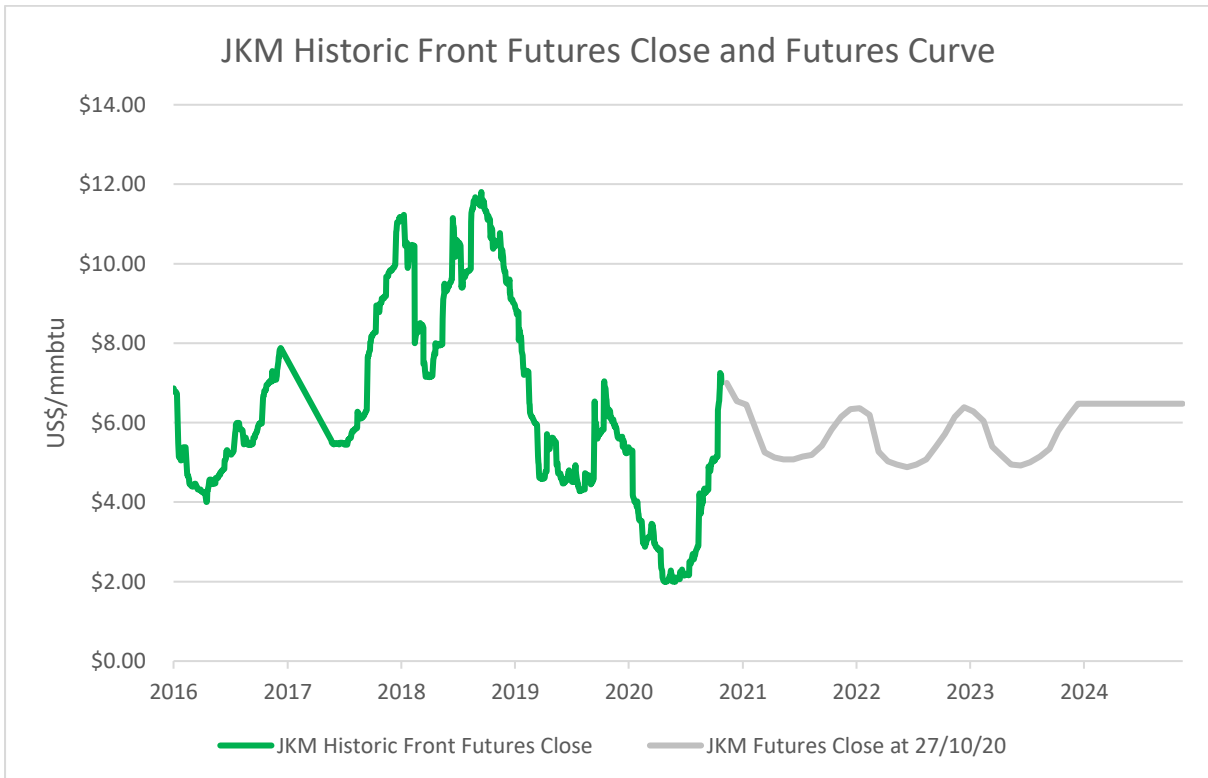
The WTI (West Texas Intermediate) closed on 30<sup>th</sup> September, 2020 at US\$39.03 / bbl vs. an average price over the quarter of US\$40.91 / bbl. Though the WTI traded in a tight trading range over the quarter, a resurgence of COVID-19 cases in many countries, local lockdown measures, a continued trend towards ‘working from home’ and a weak aviation sector are weighing on economic activity and therefore sentiment in the oil markets. Empire has only minimal direct exposure to oil prices given that the majority of its revenues are generated from natural gas production tied to US gas benchmarks.

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<sup>10</sup> U.S. Energy Information Administration Short Term Energy Outlook – October 2020



The COVID-19 pandemic has had a material negative impact on LNG prices due to subdued economic activity and market dislocation. During H1 2020, LNG prices as evidenced by the Japan Korea Marker (“JKM”) historic front futures closing price reached record lows. Prices have more than trebled from the lows seen earlier in the year. The JKM forward curve published by Platts shows an improving forward market for LNG prices.





## The Role of Natural Gas in an Energy Transition World

In Australia, natural gas is playing an increasingly important role in ‘firming’ the electricity grid as the contribution of renewable energy generation to the network grows. Gas ‘peaker’ plant generation (open cycle gas turbine or “OCGT”) provides quick start electricity generation to firm the electricity grid thereby providing electricity security in times of peak demand or when renewable energy generation is weak e.g. night-time for solar or periods of light winds for wind generation. Furthermore, natural gas generates substantially lower emissions than coal.

While renewable energy is useful for electricity generation, it does not have reliability or the wide applications of natural gas which are essential for maintaining growing economies. In Australia beyond the LNG sector (exports and LNG plant own use), only 40% of gas is used to generate electricity with the remainder used in manufacturing (32%), residential (14%), mining (6%) and other (8%).<sup>11</sup>

In the US, the development of the shale gas industry has had a material impact on reducing CO<sub>2</sub> emissions as a result of coal to gas switching. Energy-In-Depth a project of the Independent Petroleum Association of America, states that since 2005, natural gas has contributed 50 per cent more to emissions reduction than wind and solar combined and is responsible for 61 per cent of all US electricity generation emission reductions. The United Nations Intergovernmental Panel on Climate Change has previously stated that “*The rapid deployment of hydraulic-fracturing and horizontal-drilling technologies...is an important reason for a reduction of GHG emissions in the United States*”.<sup>12</sup>

## Balance Sheet & Liquidity

Empire’s cash balance as at 30<sup>th</sup> September, 2020 was US\$14.9 million, of which A\$20.0 million was held in Australian dollars, with the remainder (US\$0.71 million) held in United States dollars.

Empire’s existing US\$7.5 million debt facility with Macquarie Bank Limited is drawn to US\$6.7 million. As previously disclosed to shareholders, Macquarie and Empire have entered into a waiver agreement for potential breaches of the financial covenants under the debt facility for all quarterly covenant tests until 31 December 2020 (inclusive).

Empire also has a forgivable loan of US\$552,600 under the Paycheck Protection Program (“PPP”) which forms part of the US *Coronavirus Aid, Relief, and Economic Security Act* (the “CARES Act”). PPP loans can be applied to business expenses including payroll, interest, rent and utilities with the quantum of loan forgiveness totalling the amount spent by the borrower on these items ending the earlier of: (a) 31 December 2020; or (b) 24 weeks following loan disbursement date. However, at least 60% of the forgiven amount must have been used for payroll. Empire is only using for forgivable purposes so that it does not have to repay the loan.

To provide a level of cash flow stability, the Company has in place a prudent gas hedging policy through put options ensuring price protection below the US\$2.50 / mmbtu strike price for hedged volumes and allowing Empire full exposure to gas prices above the US\$2.50 / mmbtu strike price.

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<sup>11</sup> Australian Energy Update 2020, Australian Energy Statistics, September 2020

<sup>12</sup> UN Intergovernmental Panel on Climate Change, 2014 Fifth Assessment Report

Since the end of the Quarter, Empire has entered into additional gas hedges to underpin the revenues of its US business. 600,000 mmbtu of swaps are in place over the course of 2021 at a Winter price (January – March 2021 and October – December 2021) of US\$3.10 / mmbtu and a Summer price (April – September 2021) of US\$2.85 / mmbtu. Empire will continue to retain price upside on its expected 2021 production because the remaining volumes are hedged with put options which provide a price floor of US\$2.50 / mmbtu (less premiums) and no price caps.

As at 30<sup>th</sup> September, 2020 (prior to execution of the new hedges), Empire's hedge portfolio comprised 360,000 mmbtu in 2020 (October to December), 900,000 mmbtu in 2021, 900,000 mmbtu in 2022 and 300,000 mmbtu in 2023:

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

During the Quarter, the Company made payments to related parties of US\$55,305. These payments comprised the Managing Director's salary and Non-Executive Directors' fees paid in cash.

### Liquidity

Quarter Ended	30/09/2020	30/06/2020	31/03/2020	31/12/2019
Cash (US\$m)	\$14,940,727	\$7,088,271	\$6,978,526	\$9,923,707
Debt (US\$m) <sup>13</sup>	\$(7,227,600)	\$(7,227,600)	\$(6,675,000)	\$(7,500,000)
<b>Net Cash /(Debt)<sup>14</sup></b>	<b>\$7,713,127</b>	<b>\$(139,329)</b>	<b>\$303,526</b>	<b>\$2,423,707</b>

### Capital Expenditure

Capitalised expenditure of US\$4.06 million included Carpentaria-1 rig mobilisation and demobilisation, drilling costs and materials.

Description	3 months to 30/09/2020	3 months to 30/09/2019	YTD 30/09/2020	YTD 30/09/2019
Exploration (US\$)	\$4,062,193	\$257,551	\$5,256,535	\$369,730
Property, plant & equipment (US\$)	\$914	\$1,860	\$69,341	\$1,860
<b>Capitalised Expenditure (US\$)</b>	<b>\$4,063,107</b>	<b>\$259,411</b>	<b>\$5,325,876</b>	<b>\$371,590</b>
Other exploration costs (expensed) (US\$)	\$119,305	\$162,600	\$166,513	\$406,229

<sup>13</sup> Note: Debt is comprised of US\$6,675,000 owing under the Senior Secured Facility with Macquarie Bank Limited and US\$552,600 forgivable loan under the PPP

<sup>14</sup> Note: Net Cash / (Debt) is defined as USD equivalent cash minus USD debt for the purposes of this calculation



Well Casing on location at the Carpentaria-1 site

This ASX release has been authorised by the Empire Board of Directors.

For queries about this release, please contact:

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## About Empire Energy

Empire Energy holds over 14.5 million acres of highly prospective exploration tenements in the McArthur and Beetaloo Basins, Northern Territory. Work undertaken by the Company since 2010 demonstrates that the Eastern depositional Trough of the McArthur Basin, of which the Company holds around 80%, has enormous conventional and unconventional hydrocarbon potential. The Beetaloo sub-Basin, in which Empire holds a substantial position, has world-class hydrocarbon volumes in place and a ramp up in industry activity to appraise substantial discoveries already made by major Australian oil and gas operators is ongoing.

Empire Energy is an experienced conventional oil and natural gas producer with operations in the Appalachia region of the USA (New York and Pennsylvania). Empire has been successfully developing and producing oil and gas since 2006.



Empire Managing Director Alex Underwood at Empire's Carpentaria-1 well site

### Registered Office

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### Empire Energy Group Limited

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### Securities Exchange

ASX: EEG

### Share Registry

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