ASX: EEG

BEETALOO OPERATIONS UPDATE **5 SEPTEMBER 2023**

INCREASED FLOW RATES REPORTED AT C-3H

- Carpentaria-3H ("C-3H") has flowed gas at an average rate of **3.3 mmscf / day (3.8 TJ / day**) over the first 30 days ("IP30") following reopening
- C-3H was brought back online on 3 August 2023 and has demonstrated the material benefits to productivity of soaking, through significantly increased gas flow rates
- The C-3H "post-soak" average daily production rates have increased 30% over the IP27 "pre-soak" test conducted during Q1 2023
- Flow testing is continuing at C-3H to further refine a production type curve before incorporating it into Empire's ongoing Front-End Engineering and Design ("FEED") process for the Carpentaria Pilot Project ("Pilot")
- C-3H and C-2H may be utilised as development wells for minimal incremental cost in future development scenarios including the Carpentaria Pilot Project
- Planning for the Carpentaria Pilot Project continues to gather pace

Comments from Managing Director Alex Underwood:

"The Empire team is pleased to see increasing flow rates at C-3H which replicate the improvements in C-2H flow rates post-soaking.

The technical learning that is occurring is rapidly building our understanding of how to develop the Beetaloo's Velkerri Shale. We believe that this will have positive implications for the productivity of future development wells.

We continue to progress our planning for the Carpentaria Pilot Project and are on track to seek a final investment decision from the Board to progress to commercial production from EP187 in the months ahead.

In the success case, Empire may commence commercial production from the Beetaloo Basin by early 2025, a time when incremental gas supply into the Northern Territory and Australia's East Coast will be critical as existing sources of supply decline.

Recent announcements by Empire and APA Group detailing the work we are doing together reinforce the opportunity to transport large volumes of low-CO2 Beetaloo gas to the East Coast in years ahead.

We look forward to sharing further updates with shareholders on these value accretive work streams in the near term."

EMPIRE ENERGY GROUP LTD
ABN 29 002 148 361
Level 5, 6-10 O'Connell Street Sydney NSW 2000

T: +61 2 9251 1846
F: +61 2 9251 0244
E: info@empiregp.net

CARPENTARIA-3H UPDATE

C-3H was reopened on Sunday, 3 August 2023, after ~5 months of shut-in for soaking. Following the reopening, gas was produced at a higher sustained rate than the original pre-shut-in 27-day cleanup extended production test ("EPT") undertaken through January and February 2023. The original EPT commenced immediately following the completion of the well's 40-stage fracture stimulation program executed across an effective 1,989 metre (6,526 foot) of the 2,632 metre (8,635 foot) horizontal section.

The IP30 rate following reopening is 3.3 mmscf / day (3.8 TJ / day). C-3H was progressively opened with a restricted choke over the 30 days and is currently flowing at 2.6 mmscf / day (2.9 TJ / day). The current post-soak EPT had a 30% higher average rate than at the comparable 27-day shut-in point of the original EPT undertaken in Q1 2023. This significant increase, coupled with the material improvement observed at Carpentaria-2H ("C-2H"), further confirms the strategy of shutting in and soaking as an effective practice for improving gas flow rates. This practice may improve total gas recovery over the life of the well.

The volume and ratio of water to gas produced have reduced throughout testing. Notwithstanding, the slugging observed during the first EPT has been curtailed. Empire's Beetaloo Sub-basin-specific well completion strategy continues progressing, with flowback techniques rapidly advancing. During ongoing testing, gas and water samples are collected for laboratory-based tracer analysis for stage contribution determination. Learnings and observations from the fracture stimulation and production testing operations at C-2H and C-3H are being actively reviewed for future enhancement.

Empire expects improved recovery and rates in future wells as it adapts drilling and completion lessons learnt from executed work programs. The C-3H testing further affirms a gas production type curve generated from the early and unoptimized C-2H production testing that indicated development wells could exceed commercial thresholds. Nonetheless, the type curve will be refined with ongoing production testing for incorporation into the final investment decision for the Carpentaria Pilot Project ("Pilot").

No well intervention or optimisation was undertaken before the restart of C-3H, as the gas rate is sufficient to lift wellbore fluids in 4-½" casing.

C-3H well testing is continuing.

Gas flare at Carpentaria-3H

This ASX release has been authorised by the Managing Director

For queries about this release, please contact:

Alex Underwood, Managing Director

Ph: (02) 9251 1846

DISCLOSURES UNDER ASX LISTING RULE 5

Carpentaria-3H	
LR 5.30 (a)	Shale gas well
LR 5.30 (b)	EP187 tenement, within the Beetaloo Sub-basin, Northern Territory
LR 5.30 (c)	Empire holds a 100% working interest and operatorship
LR 5.30 (d)	Not applicable
LR 5.30 (e)	Horizontal section has been drilled in the B Shale of the Velkerri Formation
LR 5.30 (f)	The depths of the 1,989 metre (6,526 foot) fracture stimulated horizontal section tested range from 1,608 to 1,733 metres (5,275 feet to 5,685 feet) True Vertical Depth (TVD) referenced to Rotary Table (5.35 metres (17.5 feet) above ground level). 1,989 metres (6,526 feet) of the 2,632 metres (8,635 feet) horizontal section was fracture stimulated.
LR 5.30 (g)	Extended production testing following fracture stimulation. *Phase-1 (pre-soak)* Extended production testing following fracture stimulation. 27.5 days duration (to 9 AM ACST on Friday, 24th February 2023) *Phase-2 (post-soak)* Extended production testing following 5-month shut-in. 30 days duration (to 12 PM ACST on Saturday, 2nd September 2023)
LR 5.30 (h)	Not tested, however, analysis undertaken on C-2H gas recovery is applicable due to location and depth proximity Gas recovery - mole %: Methane 83.17, Ethane 11.95, Propane 1.47, Butane 0.3, Pentane and Higher 0.06
LR 5.30 (i)	*Phase-1 (pre-soak).* 40,192 barrels of flowback fluid (including coiled tubing cleanout volume) recovered, representing 28.8% of total injected water. During the combined 27.5 days of measured gas flow, the rate of fluid flowback has declined from 3,600 bbl/day to 300 bbl/day *Phase-2 (post-soak).* 8,215 barrels of flowback fluid recovered, representing 5.9% of total injected water. During the 30 days of measured gas flow, the rate of fluid flowback has declined from 402 bbl/day to 168 bbl/day
LR 5.30 (j)	Stimulated horizontal section of 1,989 metres (6,526 feet) *Phase-1 (pre-soak)* Choke size 64/64 to 68/64". Initial flow to the separator of 52/64" incrementally increasing to 128/64" during main flow Gas flow averaged 2.6 MMSCF / day over the first 27 days (Day 27 rate of 2.3 MMSCF per day). *Phase-2 (post soak)* Choke size 16/64 to 108/64". Incrementally increased over the duration of the test. Gas flow averaged 3.3 mmscf / day over the first 30 days (Day 30 rate of 2.6 mmscf per day).
LR 5.30 (k)	*Phase-1 (pre-soak)* Wellhead pressure has ranged from 500 psi -120 psi (Upper pressure relates to first flow through separator). Test duration 27.5 days (to 9 AM ACST on Friday, 24th February 2023). *Phase-2 (post soak)* Wellhead pressure has ranged from 2,000 psi -155 psi. Test duration 30 days duration (to 12 PM ACST on Saturday 2nd September 2023).

Carpentaria-3H	
LR 5.30 (l)	40 stages along an effective stimulated horizontal length of 1,989 metres (6,526 feet). 16 Crosslink, 3 Slickwater and 21 hybrid stages executed with a total of 12.8 million lbs of proppant (sand) placed at an average proppant concentration of 1,956 lbs per foot
LR 5.30 (m)	Not tested, analysis undertaken on C-2H gas recovery is applicable due to depth and location proximity Mole %: Helium 0.16%, Carbon Dioxide 0.88% and other Inert volume 2.01%
LR 5.30 (n)	Not applicable