



ASX:EEG

Empire Energy – The Beetaloo Basin Pioneer moving into Production



AEP Conference Presentation

The Beetaloo Basin Focused Gas Development Company

- The Beetaloo's Velkerri Shale is an enormous (>500 TCF) low CO₂ shale gas resource located in Northern Australia close to Asian LNG markets and existing export infrastructure
- The Beetaloo is a stacked shale play with world class geological characteristics analogous to the prolific Marcellus Shale
- Empire holds ~3 million net effective Beetaloo acres in two contiguous landholdings
- Empire owns and operates all of its acreage with 100% working interest and ~85% net revenue interest

Empire Energy Investment Case (Cont'd)

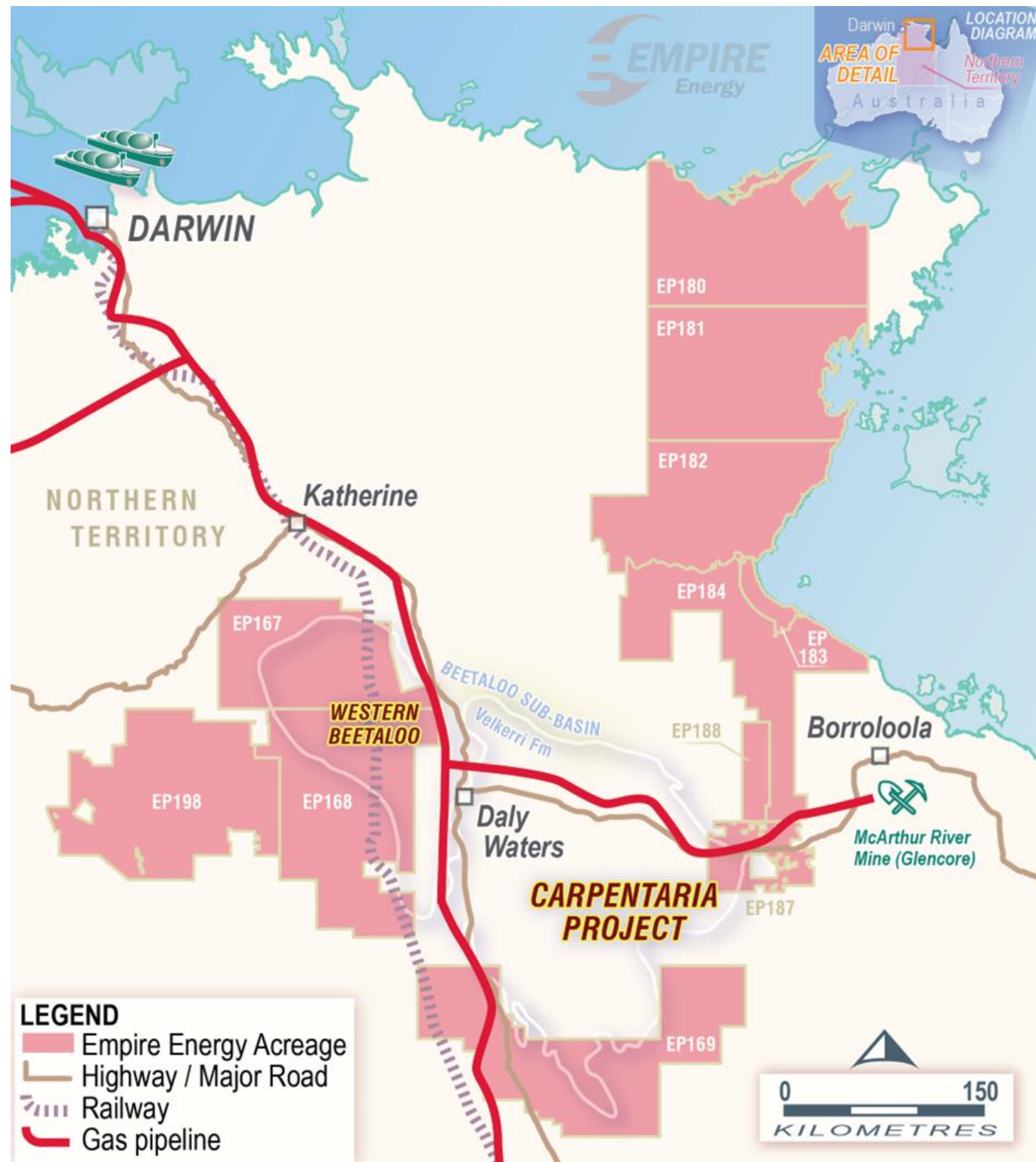


The Beetaloo Basin Focused Gas Development Company

- Empire's acreage contains >47 TCFe 2U resource and >1.6 TCF 2C resource independently assessed by NSAI with <1% CO₂
- Recent appraisal drilling by Empire and other operators has demonstrated commercial viability
- Australian gas prices are over four times US, demonstrating an urgent need for increased supply
- Empire is targeting first gas sales from its Carpentaria Pilot Project in 1H 2025 with scope to grow to LNG scale in years ahead

Empire's Beetaloo Basin Position

5 TCF gas pilot ready Carpentaria Project with >20 TCF Western Beetaloo resource delineated



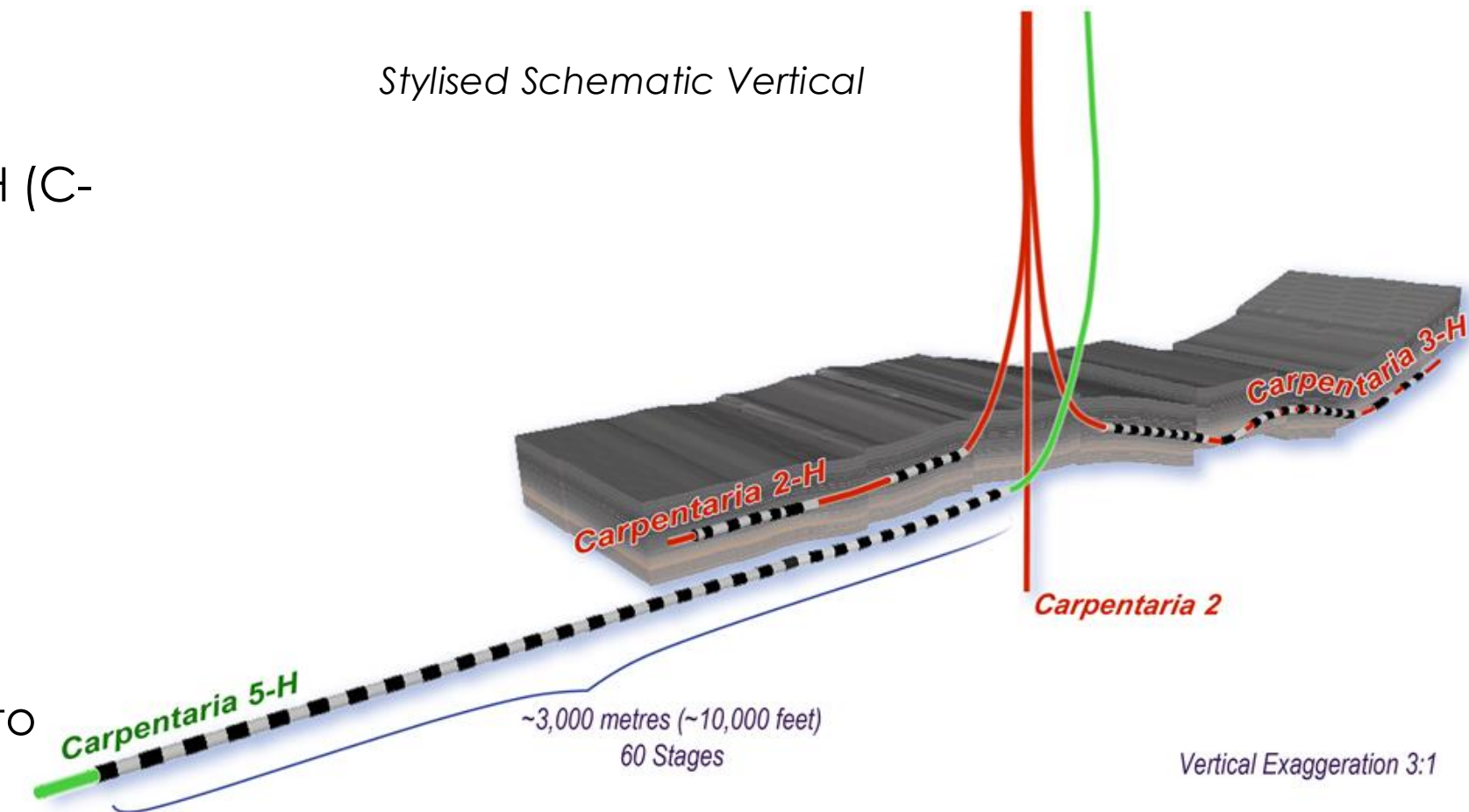
- Empire is the largest net acreage holder in the Beetaloo
- All acreage is 100% owned and operated by Empire
- Acreage benefits from high Net Revenue Interest of ~85%¹ vs typical US NRI ~75%
- Acreage is proximal to existing pipeline and road infrastructure to facilitate rapid commercialisation
- NT Government investing in infrastructure corridors to facilitate rapid industry growth
- The Carpentaria Project (EP187) is the immediate focus (5 TCF pilot ready) targeting first production in 1H 2025 with >20 TCF Western Beetaloo resource providing material drilling inventory

1. Net revenue interest (NRI) equals Working Interest (100%) minus 10% Northern Territory Government royalty (partially offset by statutory deductions) minus Traditional Owner royalty and private royalties

Introducing Carpentaria-5H

C-5H will be the longest horizontal shale well, and the largest frack job ever executed in Australia

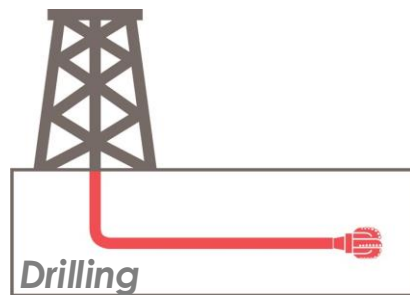
- **Empire is fully funded for C-5H and will be drilled in H2 2024**
- C-5H will be drilled from the same well pad as Carpentaria-2H (C-2H") and Carpentaria-3H ("C-3H") in 5 ½" casing
 - Reducing civil costs
- C-5H will target:
 - 3,000 metres of horizontal section
 - 60 fracture stimulation stages
- C-5H will utilise the best practise completion to optimise productivity. Empire has engaged specialist US shale experts to refine its design and ensure learnings from previous wells are captured in C-5H
- The goals of C-5H are:
 - Optimise fracture stimulation design to achieve higher productivity
 - Commence the sales of gas
 - Conduct a long-term production test to develop a Carpentaria type curve for long laterals



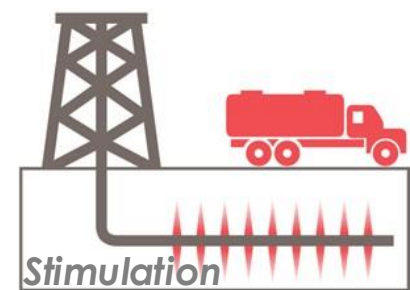
A Platform for Increased Productivity

Basin-specific drilling and completion methodologies are being developed to drive increasing flow rates and EUR consistent with the lived experience of the US Shale Revolution

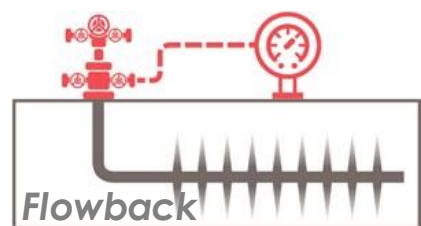
Drilled Appraisal Wells



Demonstrated Execution
> 2.6 km horizontal well drilled successfully with 4 ½" casing



Trialled multiple techniques
*61 stimulation stages successfully executed without screenout
Multiple stimulation fluids trialled*



Lift, Choke & Soak
*No artificial lift required during flowback
Trialled choke management and soaking*

Future Pilot / Development Wells

- Drilling 3km horizontal wells
- Increase casing size to 5 ½"
- Completion focus for landing zone, geosteering and cementing

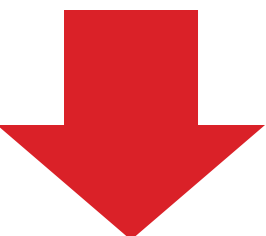
- Higher horsepower and doubling pump rates to >100 barrels per minute
- One optimised strategy per well

- Post stimulation well cleanup timing and technique ("soak")
- Managed choke scheme for long term productivity



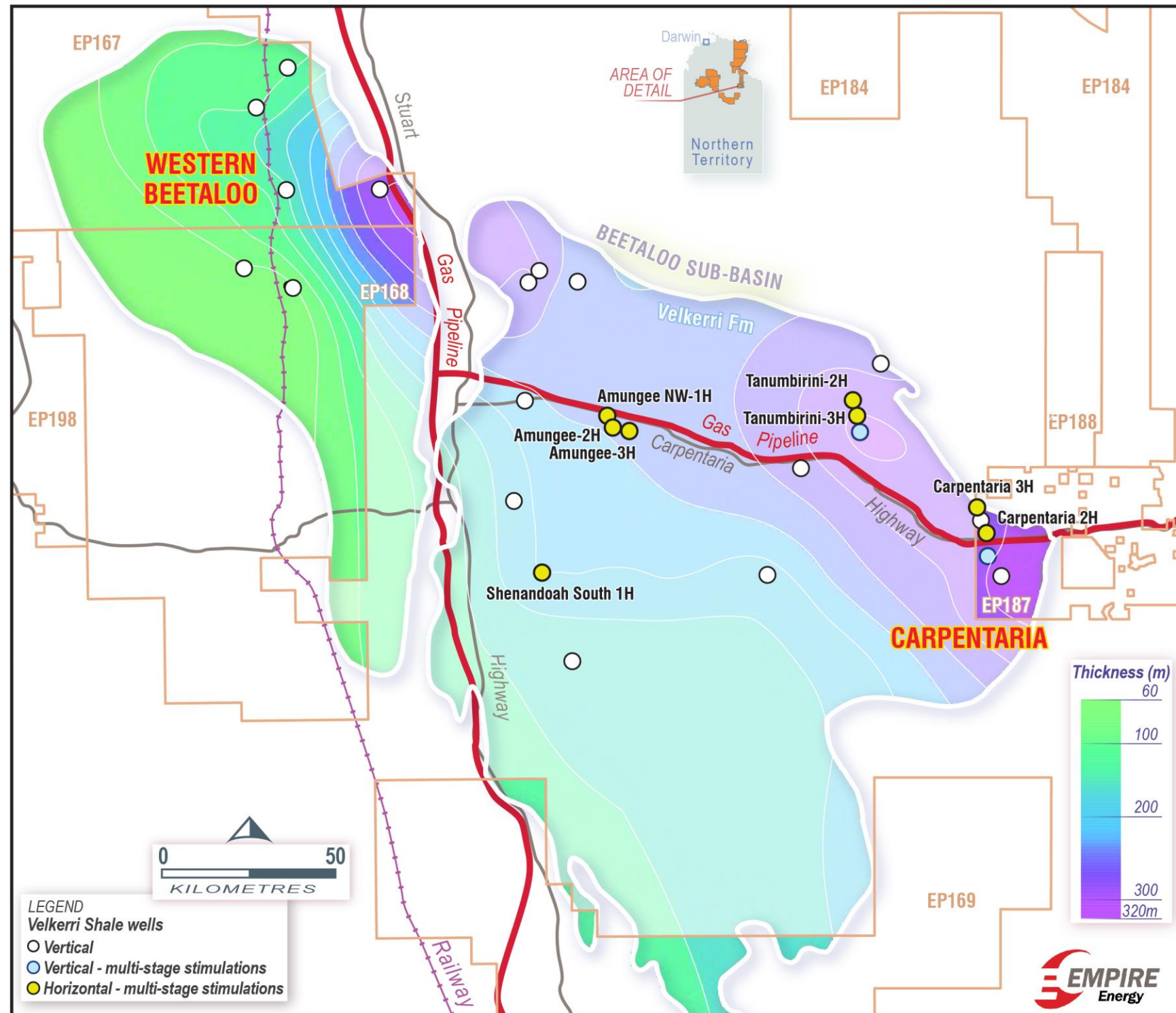
EUR

Well Cost



Positioned Across the Thickest Section of the Stacked Velkerri Shale

Combined Thickness of A, Intra A/B, B and C Shales



- Empire's Beetaloo Projects area located across the thickest section of stacked Velkerri Shale reservoirs in the basin
- Carpentaria Project has >300 m gross thickness of A, Intra A/B, B and C Shale reservoirs
- Western Beetaloo Project has the thickest stacked B and C Shale in the Beetaloo
- Empire benefits from its 'stacked shale play' resulting in net effective acres ~x4 of that contained in the Velkerri B Shale (only)

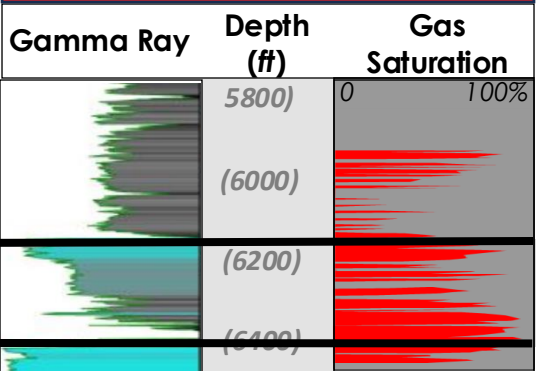
Empire's Stacked Play Improves Development Economics



Empire's four stacked shale reservoirs are 5x thicker than the prolific Marcellus

Single Reservoir

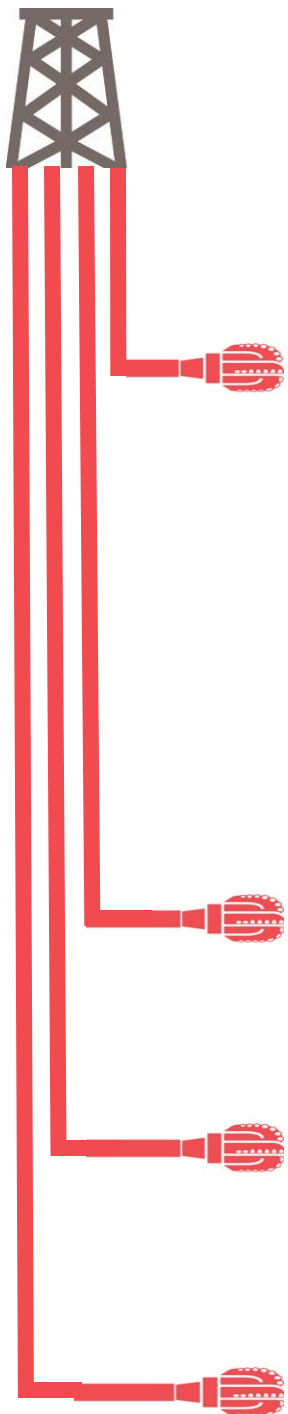
SW Marcellus Section



Total Marcellus Thickness ~60 m

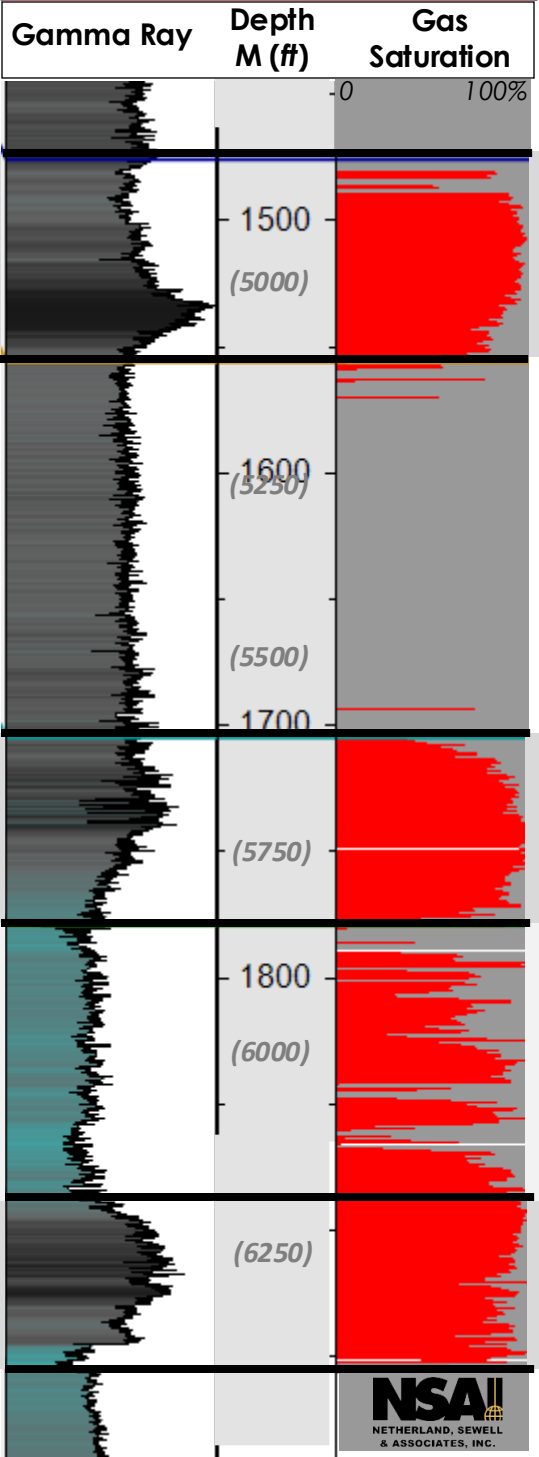
100 m
328 ft

Marcellus



Four Stacked Reservoirs

Carpentaria-4 Type Section



C Shale

B Shale

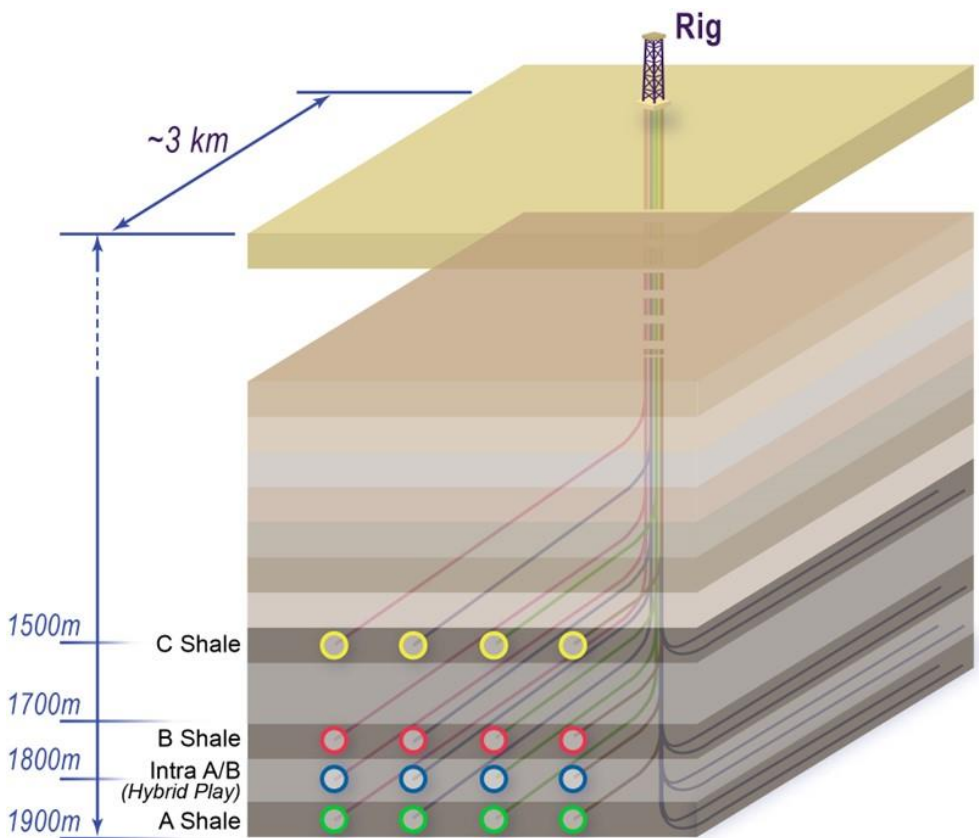
Intra A/B (Hybrid Play)

A Shale

Total Net Thickness >300 m

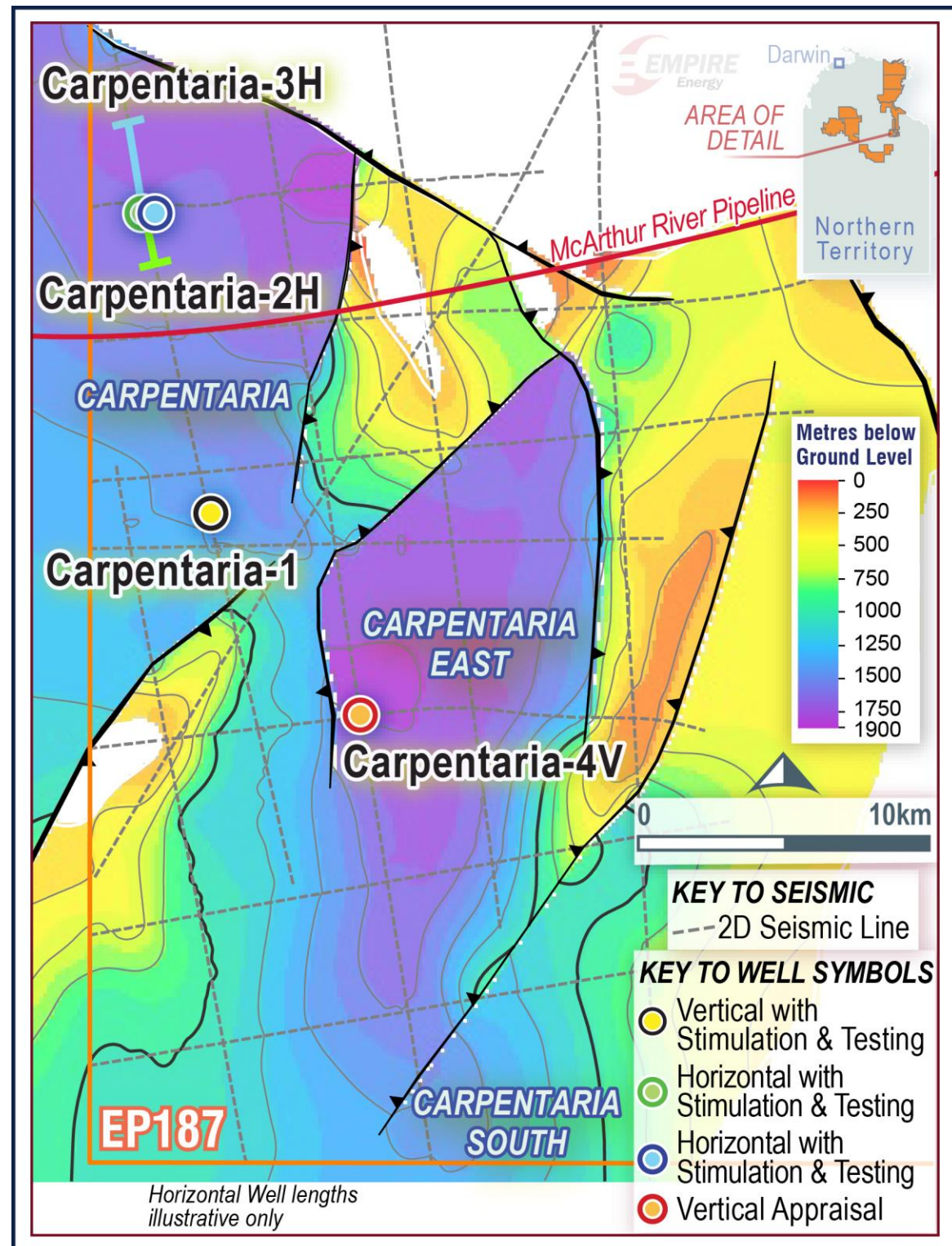


Stacked Shale Play Development Concept



- Four stacked reservoirs allows for fewer well pads with more wells
- Option for more than 30 wells per pad
- Leads to improved development efficiencies and economics
- Akin to Permian Basin style development

Appraisal Activity has Delivered the Carpentaria Project



Cost-Effective Approach to Appraisal

- Seismic, multi-stage vertical and horizontal flow tests have delineated a large stacked play
- Four zones with a net effective area of >460,000 acres (~1,900 km²)
- ~A\$90m (~US\$60m) invested has delivered >1,739 PJ (~1.5 TCF)

Commercial rates confirmed

- Two horizontal wells stimulated
- Excellent flow rates – normalised rate of 3.5 TJ/d per 1,000 m
- High calorific value gas (1.15 TJ per MMCF)

Gas resource and productivity now established to move into pilot production

- More than 200 drilling locations delineated in the B Shale
- ~600 additional locations across A, Intra A/B and C Shales

The Carpentaria Pilot Project

Empire is targeting first production from Carpentaria in H1 2025

The Carpentaria Pilot Project aims to:

- Produce sales gas from existing Carpentaria-2H and Carpentaria-3H test wells, C-5H and future pilot development wells
- Process gas through Empire's Carpentaria Gas Plant which has a design capacity of 42 TJ/d (40 mmcf/d)
- Utilise existing McArthur River Gas Pipeline capacity to produce up to 25 TJ /d (23 mmcf/d) in the pilot phase
- Deliver both cash flow and additional resource definition for large-scale development



Carpentaria Gas Plant in operation immediately prior to acquisition







Carpentaria 2H and 3H well pad from above



Carpentaria-2H flare

Pathway to Full-Field Development of the Carpentaria Project

| Year | 2024 | 2025 | 2026 | 2028+ |
|-----------------------|---|---|--|---|
| |  |  |  |  |
| KEY ACTIVITIES | <ul style="list-style-type: none"> Construct Carpentaria Pilot Project midstream facilities and gas gathering network Drill, fracture stimulate and connect Carpentaria-5H (3,000m lateral, ~60 stages) and existing well inventory (C-2H and C-3H) | <ul style="list-style-type: none"> First gas deliveries from the Carpentaria Pilot Project (~15TJ/d) Planning and engineering work for full-field development | <ul style="list-style-type: none"> Drill, fracture stimulate and connect a further ~3 wells (3,000m lateral, ~60 stages) to grow production to ~25TJ/d APA to commence work on pipeline and gas processing infrastructure for full-field development | <ul style="list-style-type: none"> 'Factory' drilling Grow production up ~1 BCF/d to supply east coast and LNG markets All three target gas markets (NT, east coast and LNG) are structurally short of gas |

Carpentaria Pilot Project

Carpentaria Gas Project

Empire is a Responsible Operator with ESG at the Core of its Strategy



Empire's Beetaloo gas contains sub 1% CO₂ in the reservoir

Environment

- **Carpentaria CO₂ reservoir levels are extremely low compared to other new supply options**
- Empire will offset all Scope 1 emissions with minimal impact on revenues
 - ~2% of gross revenue (at A\$10/GJ gas price) for Carpentaria's full field economic life at the current Australian Carbon Credit Unit ("ACCU") price of ~A\$35 per tonne of CO₂e¹
- Stacked shale play minimises surface footprint

Social and Governance

- **Empire maintains strong relationships with Traditional Owners (TOs) and pastoralists on whose land it operates with full consent**
 - ~30 on-county meetings held with TOs to date
 - Northern Land Council exploration payments paid for the benefit of TOs and thousands of hours of employment for TOs to date
 - Land access agreements signed with pastoralists

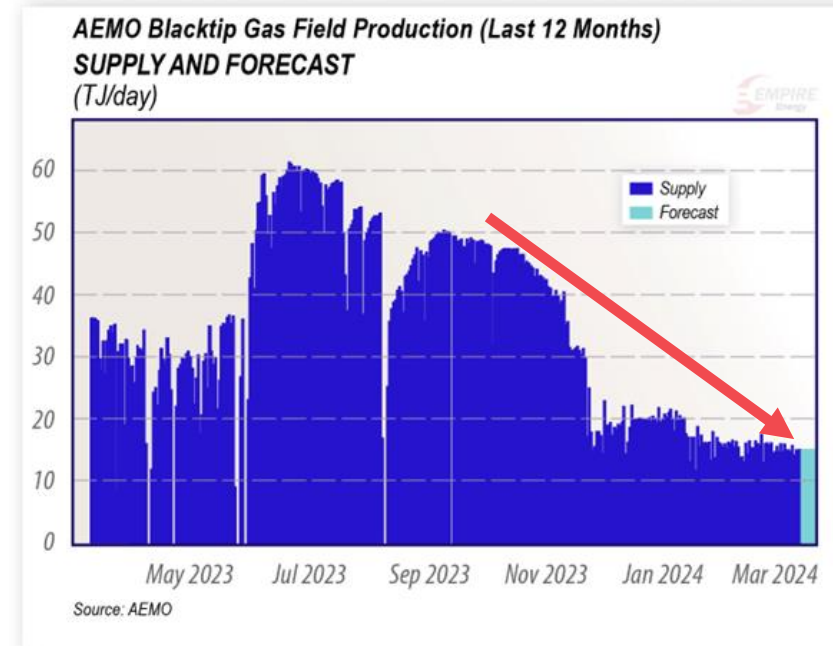


1. Estimates have been prepared by Empire and independently reviewed by HRL Technology Group Pty Limited (<https://www.hrlt.com.au>)

Australia, Asia and the World Need New Gas Supply

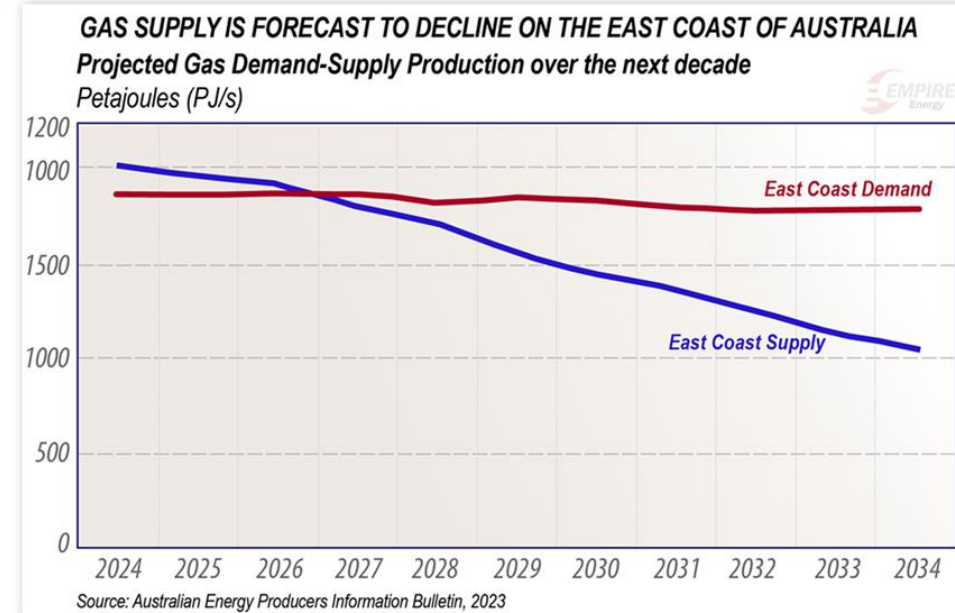
Empire's strategy is to supply domestic and international gas markets

Phase 1: Northern Australian Gas Market



- **Blacktip Gas Field:** GSA to 2034 of 104TJ/d vs. 15TJ/d production
- NT needing to buy emergency gas from Darwin LNG terminals
- **Northern Gas Pipeline (to QLD):** expected to be closed until 30 June 2024 to hold gas in NT¹

Phase 2/3: Australian East Coast Gas Market

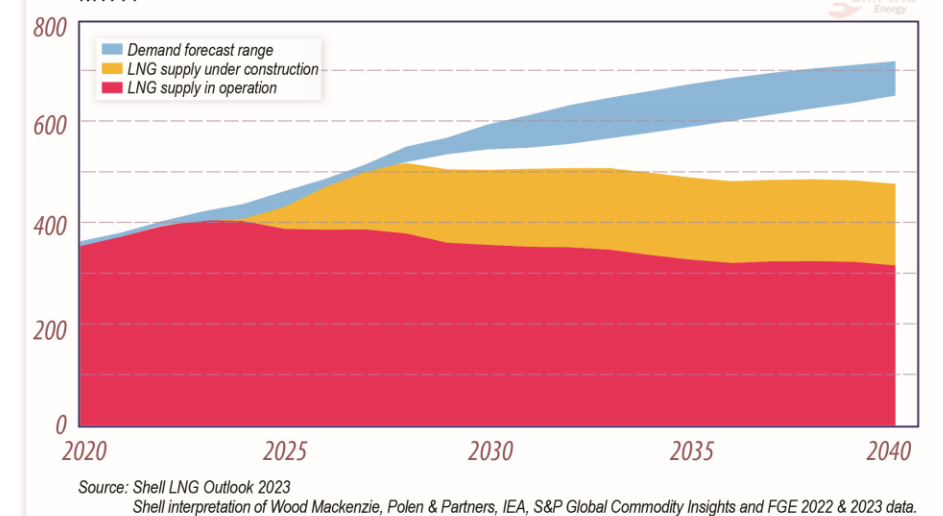


- Australian east coast domestic market is structurally short of gas with a supply vs. demand deficit emerging in 2027
- Existing supply sources such as the Gippsland Basin are in decline. QLD CSG largely developed and contracted for LNG to Asia

Phase 2/3: Global LNG Market

Investment needed to meet forecast LNG demand
Conflicting energy transition scenarios can deter investors & policy makers

GLOBAL LNG SUPPLY v DEMAND FORECAST RANGE
MTPA



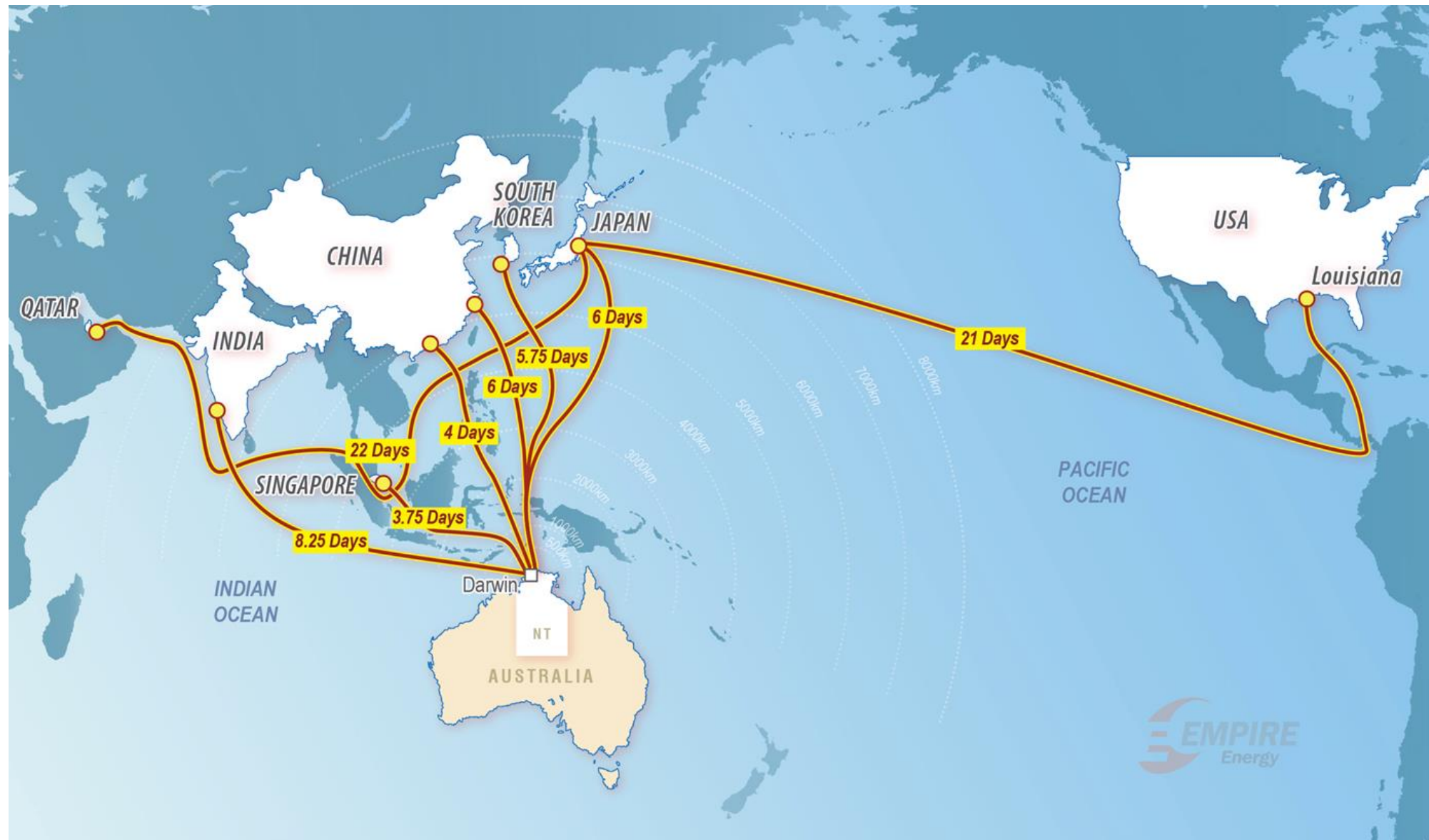
- **Empire is strategically located between Darwin and Gladstone LNG export infrastructure**
- LNG demand to reach around 625-685 million tonnes a year in 2040 (2023: 404mt) and outstrip supply by 2027²

1. Central Petroleum ASX release entitled "Northern Gas Pipeline Update" dated 15 March 2024
2. Shell LNG Outlook 2024

The Beetaloo is Strategically Located Near Asian Markets

Australian domestic gas and Asian LNG indices trade at multiples of US Henry Hub prices

LNG Tanker Sailing Days to Tokyo Bay¹



- **Exposure to Pacific Basin gas prices**
 - >US\$8 / MMBtu premium to Henry Hub
- **Japan/Korea Marker (Platts) LNG price**
 - US\$10.47 / MMBtu (as at 16 May 2024)
 - US\$12.05 / MMBtu (avg. previous 12 months)
 - US\$21.85 / MMBtu (avg. previous 3 years)
- **Henry Hub price**
 - US\$2.32 / MMBtu (as at 16 May 2024)
- **Wallumbilla (Main East Coast Australian Index)**
 - A\$12.18 / MMBtu (as at 16 May 2024)
 - US\$8.16 / MMBtu (as at 16 May 2024)

Source:

1. BloombergNEF, Tamboran Resources

The Empire Value Proposition

Phase 1 Carpentaria Pilot Project



- Up to 25 TJ/d (24 mmcf/d)
- Targeting first revenue in 2025
- Mature resource definition and type curves for larger scale development
- Gas plant secured

Phase 2 Domestic Gas Project



- ~200TJ/d (~190 mmcf/d) to supply Australian east coast
- Carpentaria 'stacked play' provides additional drilling inventory across ~460,000 net effective acres

Phase 3 Full-Field Development - LNG



- ~1 BCF per day to supply LNG export markets
- ~2.6 million net effective acres of 'running room' across Western Beetaloo



<https://empireenergygroup.net/>

ASX:EEG

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Appendix 1: Corporate Snapshot



Capital Structure

| | |
|--|------------------|
| Shares on issue ¹ | 966.7M |
| Share price | A\$0.21 |
| Market cap | A\$203.0m |
| Net (debt ²) / cash ³ | ~A\$47.2m |
| Enterprise value | ~A\$155.8m |
| Cash at bank³ | ~A\$49.0m |

Top Shareholders

| | |
|---------------------------|-------|
| Pangaea Resources | 14.5% |
| Sheffield Holdings (USA) | 8.5% |
| Elphinstone Group | 8.1% |
| Liberty Oilfield Services | 4.0% |

ASX Share Price



Contingent and Prospective Resources

| | | |
|--------------------------|-----------|------------|
| 2C Contingent Resources | 1.65 TCFe | 1,927 PJe |
| 2U Prospective Resources | 46.6 TCFe | 49,125 PJe |

1. Empire has 78.9m unlisted options on issue with an average exercise price of ~A\$0.39 per share. In addition, there are 17.5m Share Rights on issue to members of the management team and Board, 6.9m of which have performance hurdles tied to total shareholder return or service period thresholds.

2. Empire has in place a A\$2.25 million revolving credit facility (drawn to A\$1.8 million) and A\$5 million performance bonding facility (drawn to A\$4.4 million) with Macquarie Bank

3. As at 30 April 2024

Appendix 2: A Globally Significant Resource Position



| Contingent Resources (Gas) | | | Contingent Resources (Liquids) | | | Prospective Resources (Gas) | | | Prospective Resources (Liquids) | | |
|----------------------------|--------------------|--------------------|--------------------------------|--------------------|--------------------|-----------------------------|--------------------|--------------------|---------------------------------|--------------------|--------------------|
| Low Estimate (1C) | Best Estimate (2C) | High Estimate (3C) | Low Estimate (1C) | Best Estimate (2C) | High Estimate (3C) | Low Estimate (1U) | Best Estimate (2U) | High Estimate (3U) | Low Estimate (1U) | Best Estimate (2U) | High Estimate (3U) |
| PJ | PJ | PJ | mmbbls | mmbbls | mmbbls | PJ | PJ | PJ | mmbbls | mmbbls | mmbbls |
| 365.2 | 1,906.1 | 3,946.1 | 0.9 | 3.5 | 14.1 | 12,380 | 44,540 | 145,523 | 164 | 764 | 3,509 |

Empire 2C Contingent Resource of **1,906 PJ (1,625 BCF gas)** and **3.5 MMBBLs liquids**

Empire P(50) Prospective Resource of **44,541 PJ (42 TCF gas)** and **764 MMBBLs liquids**

Appendix 3: Empire's Board of Directors



Peter Cleary

Chairman

- Distinguished 29-year career representing Santos, the North West Shelf Venturers and BP in Asia. His executive career was in LNG, pipeline gas and chemicals operations
- Member of the Executive Committee of the Australia Japan Business Co-operation Committee and the Australia Korea Business Council



Alex Underwood

Managing Director

- Associate Director Energy Markets Division of Macquarie Bank Limited (Sydney and Singapore) for 10 years
- Director Natural Resources Division of Commonwealth Bank of Australia (Singapore)
- Financial Analyst BHP Billiton Petroleum (Perth)
- Experience investing debt and equity in the upstream oil and gas sector and identification of value creation opportunities for upstream oil and gas development / production assets
- Deep understanding as an institutional investor of the key drivers of shale gas value generation



Karen Green

Non-Executive Director

- Over 30 years' experience in Chartered Accountancy, predominantly in business advisory services and has lived and worked in Darwin since 1991
- Managing Partner for the Northern Territory and leader for Advisory Services for Deloitte in the Northern Territory
- 5th female ever to enter the Deloitte Australian Partnership
- Currently on the Northern Territory Investment Advisory Group and on the Northern Territory National Security Advisory Panel.
- Non-Executive Director of Airport Development Group Pty Ltd (the long-term lease holder of Darwin International Airport, Alice Springs Airport and Tennant Creek Airport)



Louis Rozman

Non-Executive Director

- Former Managing Director of CH4 Gas which merged with Arrow Energy and later acquired by PetroChina and Shell
- Founding principal of Pacific Road Capital, a resources investing manager of private equity funds
- Former Chief Operating Officer of AurionGold Limited
- Chairman of the VALMIN Code Committee for the AusIMM and Australian Institute of Geoscientists



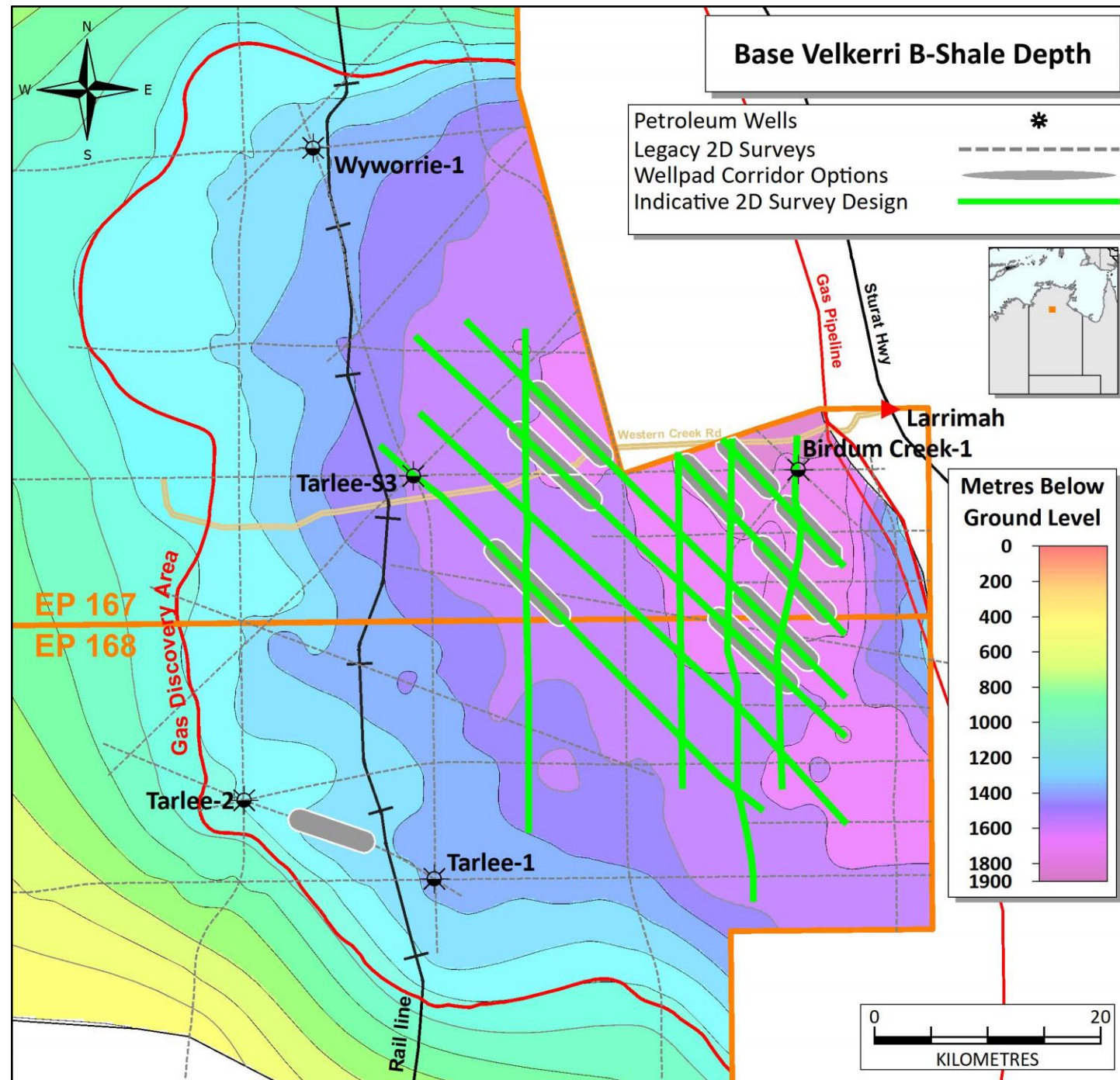
Prof. John Warburton

Non-Executive Director

- Highly regarded petroleum geoscientist experienced in big fields
- 30 years technical & leadership experience in leading E&P companies including BP, LASMO-Eni and Oil Search
- Previously Chief of Geoscience & Exploration Excellence for Oil Search

Appendix 4: Large Western Beetaloo Resource

Comprehensive well and seismic datasets in the Western Beetaloo Project have defined a large extensive resource strategically located on existing infrastructure



EP 167 and EP 168 100% EEG

Resource has been delineated

- Delineated ~2.6 million net effective acres
- 100+ TCF OGIP Discovery (B Shale only)
- Less than 1% CO₂
- Thickest B and C Shale in Beetaloo
- **Same rock as Carpentaria Project – Stacked Play**
- Huge running room

Forward program

- Up to 380 km in-fill 2D seismic oriented for future Hz wells
- Multiple locations cleared for drilling and flow testing

Appendix 5: Empire has the Right Gas

Empire's Carpentaria gas composition meets Japanese customer specifications

- **Gas for the Ichthys LNG is supplied from the Brewster Member and the Plover Formations which comprise the Ichthys Gas Field**
 - Production to date has mainly been from the Brewster Member, however production is expected to move towards Plover and peak in the 2030s as Brewster is depleted¹
- **Gas composition of Brewster and Plover**
 - Brewster: ~8% (CO₂) / ~11% (ethane)
 - Plover: ~17% (CO₂) / ~4% (ethane)²
- **Empire's low CO₂ (>1%) and high ethane (~12%) is perfectly positioned to be blended with emerging Ichthys Gas supply to:**
 - Reduce average CO₂ content (lessen need for CO₂ stripping and carbon, capture and storage)
 - Increase ethane content (attractive to Japanese energy market given high heating value required and lessen the requirement for ethane spiking of gas into plant or upon arrival in Japan)
 - Support Ichthys LNG planned expansion to three trains by 2030³

| Carpentaria-2H Gas Composition - Mole % | | | | |
|---|-----------------------------|--------------|-----------------|--------------------|
| Component | | | Q3 2022 Testing | Q1-Q2 2023 Testing |
| C1 | Methane | Hydrocarbons | 83.17 | 82.80 |
| C2 | Ethane | | 11.95 | 12.40 |
| C3 | Propane | | 1.47 | 1.50 |
| C4 | Butane | | 0.30 | 0.30 |
| C5+ | Pentane and Higher | | 0.06 | 0.06 |
| He | Helium | Inerts | 0.16 | 0.12 |
| CO2 | Carbon Dioxide | | 0.88 | 0.91 |
| | Other Inerts e.g., Nitrogen | | 2.01 | 1.91 |
| Total Gas Composition | | | 100.00 | 100.00 |

Sources:

1. <https://www.upstreamonline.com/field-development/inpex-steps-to-the-starting-line-for-next-ichthys-phase/2-1-972375>
2. <https://www.inpex.com.au/media/yrobfsay/draft-environmental-impact-statement-06-chapter-4-project-description.pdf>
3. <https://territorygas.nt.gov.au/Knowledge-Centre/latest-news/2022/inpex-commits-to-lng-expansion>

Appendix 6: Conversion Table

| <u>Exchange Rate</u> | |
|----------------------|------|
| US\$: A\$ | 0.65 |

| <u>Energy</u> | |
|---------------|-----------|
| MCF : GJ | 1.06 |
| MMCF : TJ | 1.06 |
| BCF : PJ | 1.06 |
| GJ : TJ | 1,000 |
| GJ : PJ | 1,000,000 |

| <u>Distance</u> | |
|-----------------|------|
| Feet : Metres | 3.28 |

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