



ASX:EEG

## Empire Energy – The Beetaloo Basin Pioneer moving into Production



Corporate Presentation – 21st January 2025

# Corporate Snapshot



## Capital Structure

Shares on issue <sup>1</sup>	1,017.3M
Share price	A\$0.21
<b>Market cap</b>	<b>A\$213.6M</b>
Net (debt <sup>2</sup> ) / cash <sup>3</sup>	~A\$21.3M
Enterprise value	~A\$192.3M
<b>Cash at bank<sup>3</sup></b>	<b>~A\$25.7M</b>

## Top Shareholders

Pangaea Resources	13.8%
Sheffield Holdings (USA)	9.0%
Elphinstone Group	8.0%
Liberty Oilfield Services (USA)	4.7%

## 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 26.5m Share Rights on issue to members of the management team and Board, 14.3m of which have performance hurdles tied to total shareholder return or service period thresholds.
2. Total available debt of A\$65.0 million (drawn to A\$4.4 million), comprising: (i) A\$30.0 million revolving credit facility; (ii) A\$5 million performance bonding facility (drawn to A\$4.4 million), representing a contingent liability; and (iii) \$30m Midstream Infrastructure Facility (undrawn). All the facilities are provided by Macquarie Bank
3. As at 30 December 2024

## The Beetaloo Basin Focused Gas Development Company

- The Beetaloo's Velkerri Shale is an enormous (>500 TCF) low CO<sub>2</sub> 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 US 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% CO<sub>2</sub>
- Recent appraisal drilling by Empire and other operators has demonstrated commercial viability
- Binding gas sales agreement with investment grade customer
- Australian gas prices are over three times US, demonstrating an urgent need for increased supply
- Empire is targeting first gas sales from its Carpentaria Pilot Project in 2025 with scope to grow to LNG scale in years ahead

# Empire's Achievements to Date and Near-term Plan



## EXPLORATION & APPRAISAL

2021	✓ Gas Sales & Transportation: APA Group and Power and Water Corporation MoUs Executed
	✓ Carpentaria-1V: demonstrated the existence of Velkerri shales in the Carpentaria Area and flowed gas to surface
	✓ Carpentaria-2H flow rates: IP30 of 3.2 TJ (2.8 mmscf) per day
2022	✓ Carpentaria-3H flow rates: IP30 of 3.8 TJ (3.3 mmscf) per day
	✓ Carpentaria-4V: intersected the same stacked Velkerri Formation shales as the Carpentaria Project wells thereby opening the Carpentaria East Area (total 110,000-acre development area delineated (~800 well locations))
2023	✓ Major 2C Contingent Resource upgrade announced for EP187 to 1,739 PJ (1.5 TCF high calorific, low CO <sub>2</sub> gas)
	✓ <b>Activities to date have been supported by \$48 million in Australian Government funding across R&amp;D incentive rebates and drilling grants</b>

## KEY ACTIVITIES TO CARPENTARIA PILOT PROJECT FID

2024	✓ Completed Front End Engineering & Design ("FEED"): including engineering, economic modelling etc.
	✓ Acquired 42TJ/d capacity gas plant from AGL Limited
	✓ Executed gas sales agreement with the Northern Territory Government for up to 25TJ/d for 10 years at attractive market pricing
	✓ Drilled and cased Carpentaria-5H (3,310 metre / 10,860 feet lateral)
	✓ <b>Carpentaria Pilot Project is FID ready subject to Traditional Owner agreement. Environmental approvals received</b>

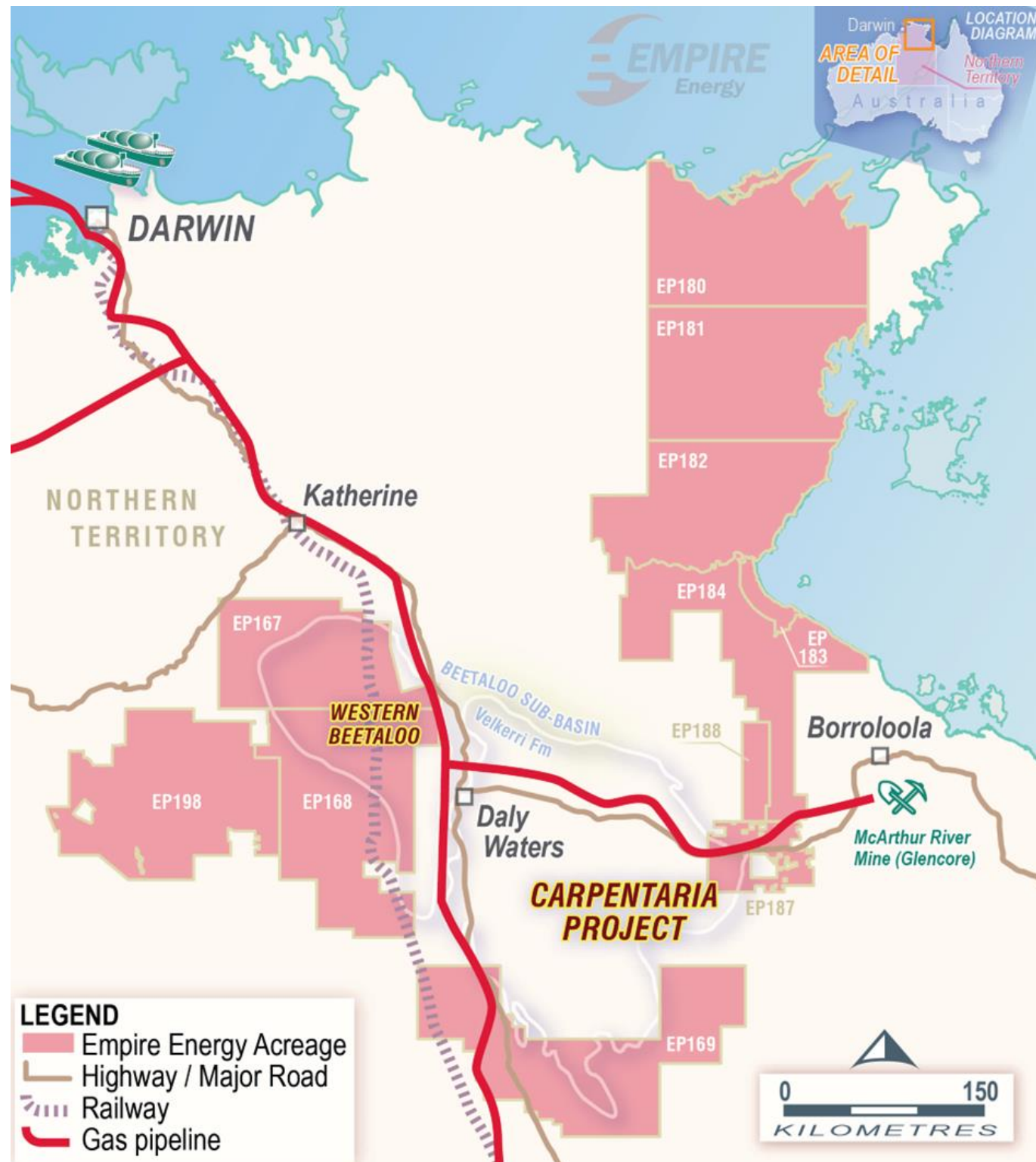
## PLANNED ACTIVITIES

2025	1. Fracture stimulate Carpentaria-5H (60+ stages targeted)
	2. Install the Carpentaria Pilot Project Gas Plant ("CGP")
	3. <b>Commence gas sales</b>

**2025+ Drill additional pilot development wells and appraise Western Beetaloo discoveries (~20 TCF 2U resource)**

# Empire's Beetaloo Basin Position

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

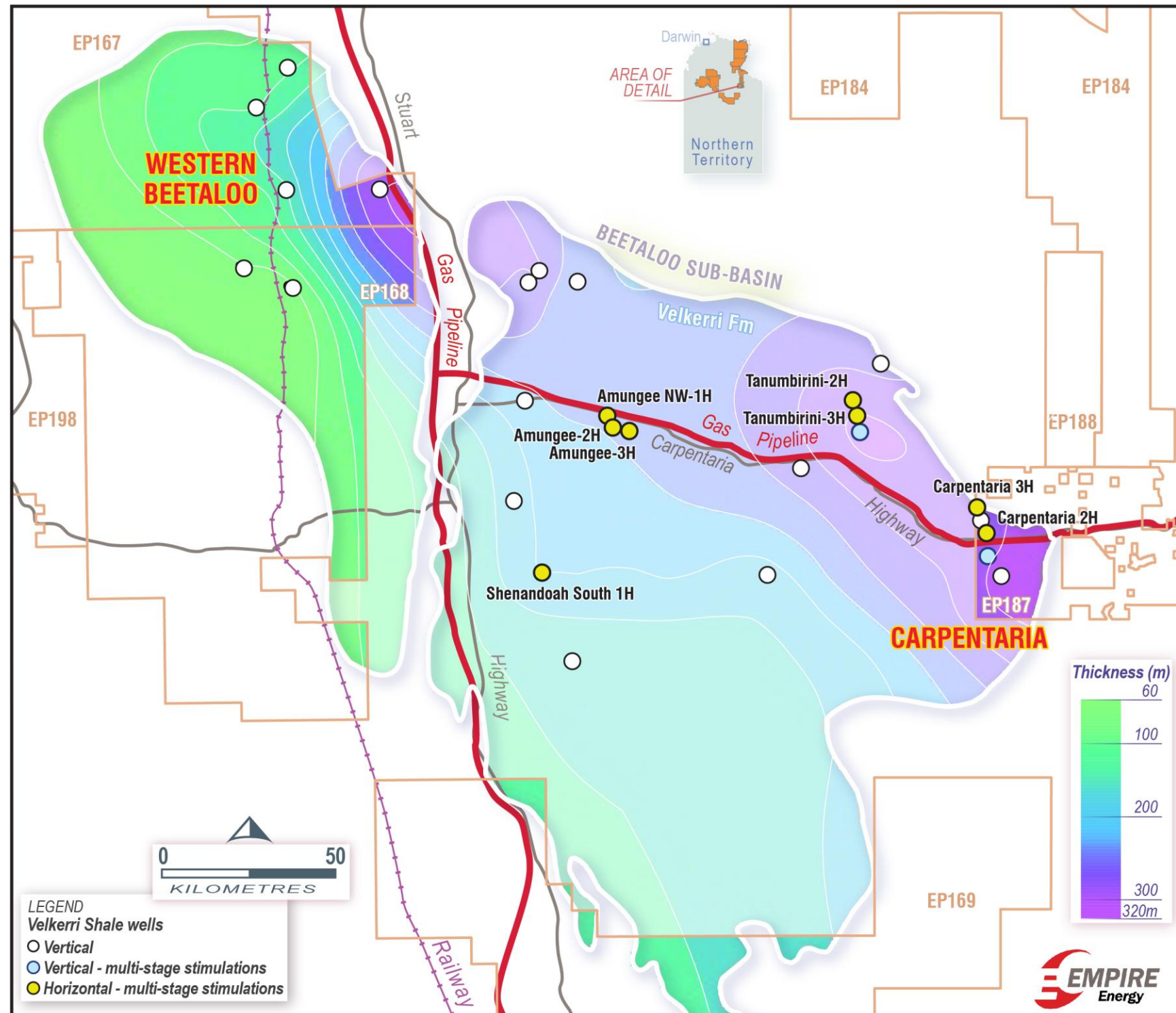


- Empire is the largest net acreage holder in the Beetaloo
- All acreage is 100% owned and operated by Empire
- Acreage benefits from high Net Revenue Interest of ~85%<sup>1</sup> vs typical US NRI ~75%
- Acreage is proximal to existing pipeline and road infrastructure to facilitate rapid commercialisation
- NT Government is 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 2025 with >20 TCF Western Beetaloo Velkerri Shale 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

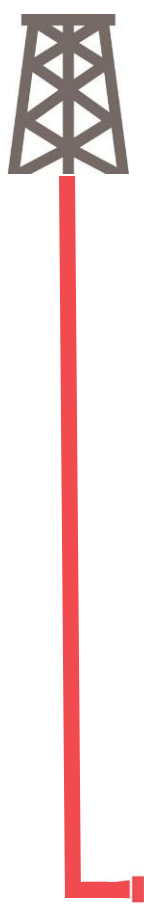
# Positioned Across the Thickest Section of the Stacked Play

## Combined Thickness of A, Intra A/B, B and C Velkerri 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's "stacked shale play" results in a 4x increase in the net effective acres compare to the B Shale alone**

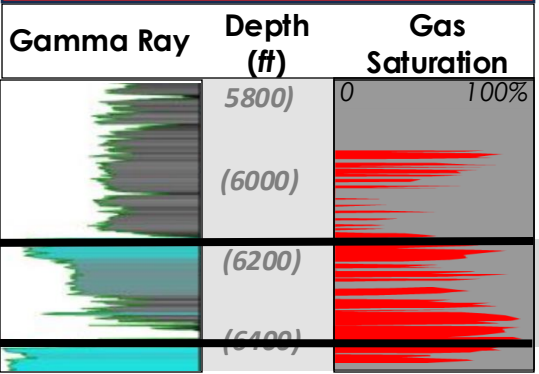
# Empire's Stacked Play Improves Development Economics



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

## Single Reservoir

### SW Marcellus Section



Total Marcellus Thickness ~60 m

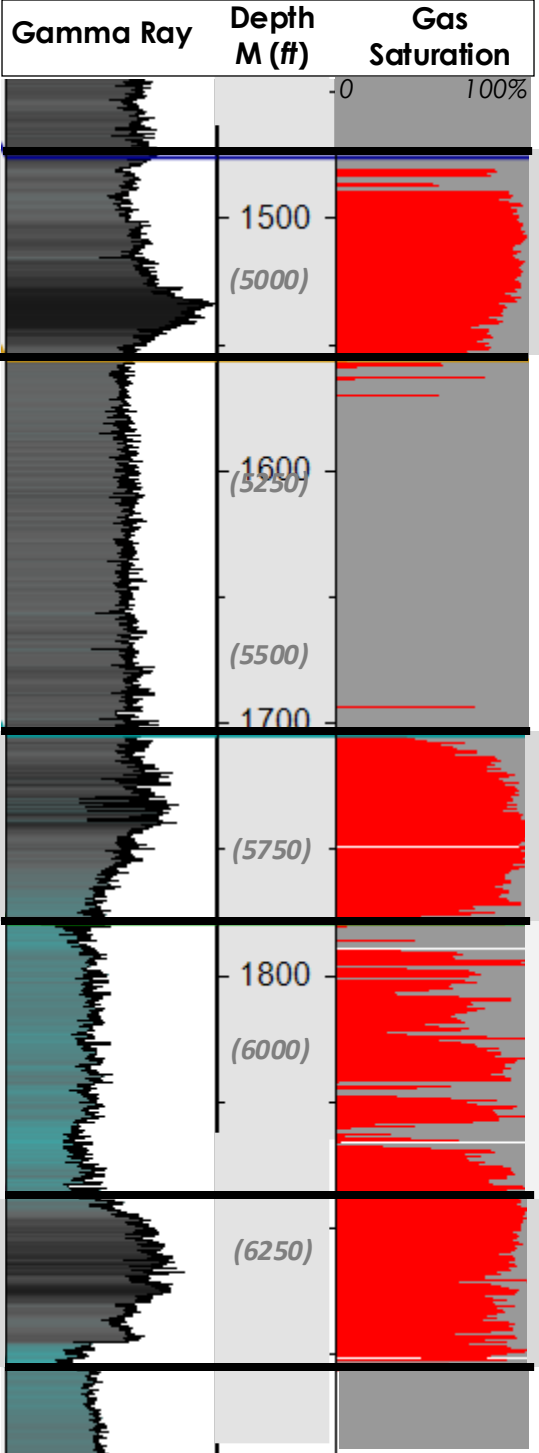
100 m  
328 ft

Marcellus



## Four Stacked Reservoirs

### Carpentaria-4 Type Section



C Shale

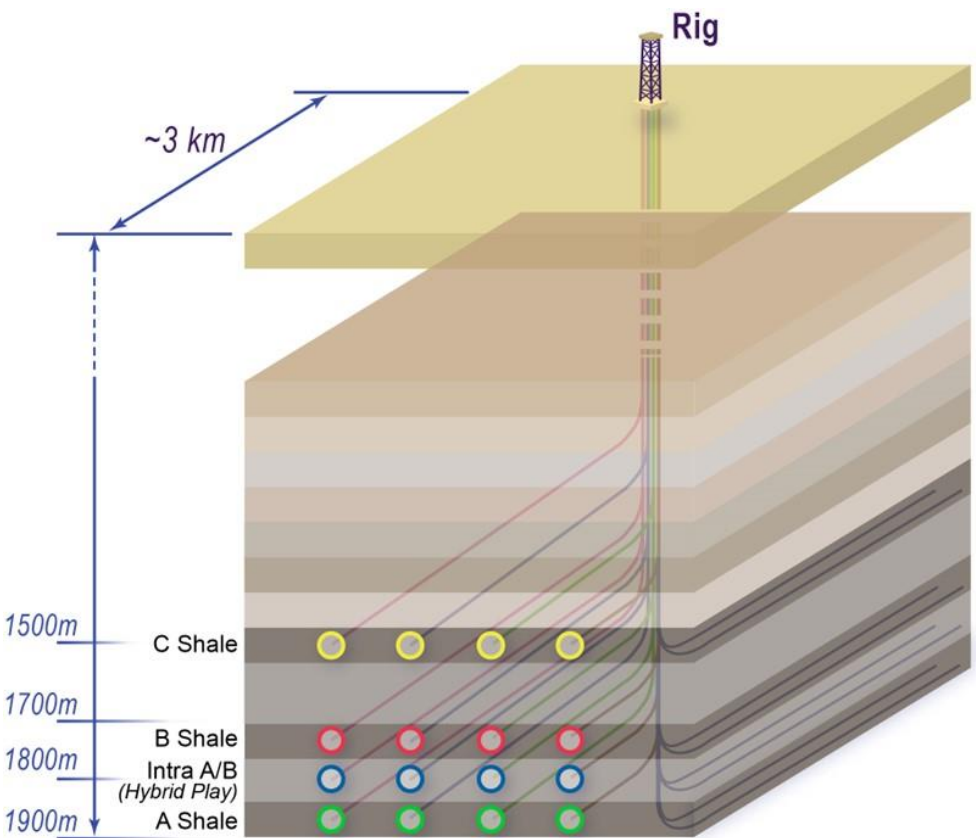
B Shale

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

# Empire has High-Quality, Low CO<sub>2</sub> Gas



## Empire's Carpentaria gas composition meets Japanese customer specifications

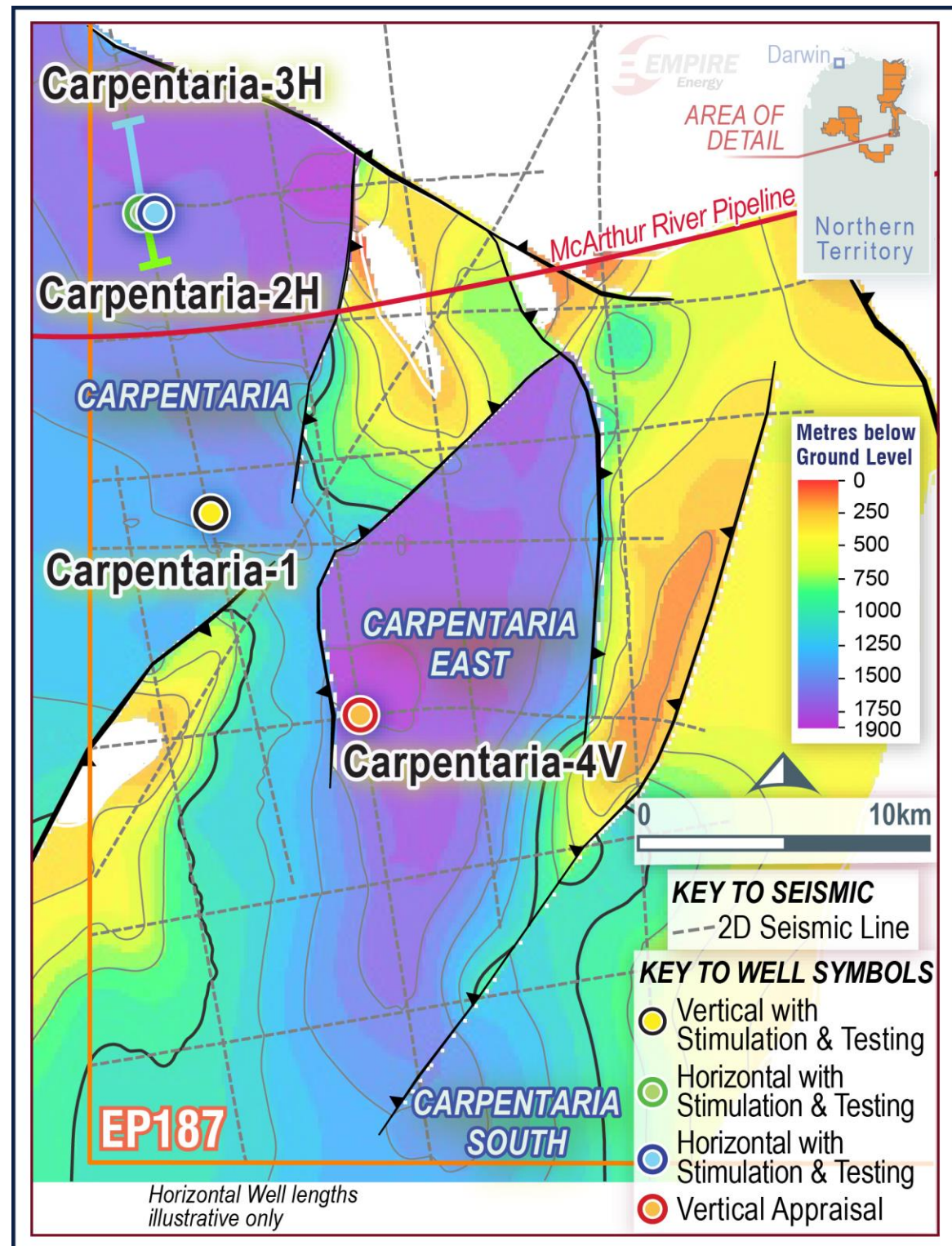
- **Gas for the Ichthys LNG is supplied from the Brewster Member and the Plover Formations which comprise the Ichthys Gas Field**
  - Production to date has mainly been from the Brewster Member, however production is expected to move towards Plover and peak in the 2030s as Brewster is depleted<sup>1</sup>
- **Gas composition of Brewster and Plover**
  - Brewster: ~8% (CO<sub>2</sub>), ~11% (ethane)
  - Plover: ~17% (CO<sub>2</sub>), ~4% (ethane)<sup>2</sup>
- **Empire's low CO<sub>2</sub> (>1%) and high ethane (~12%) is perfectly positioned to be blended with emerging Ichthys Gas supply to:**
  - Reduce average CO<sub>2</sub> content (lessen need for CO<sub>2</sub> 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 2030<sup>3</sup>

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>

# 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 km<sup>2</sup>)
- ~A\$90m (~US\$60m) invested delivered >1,739 PJ (~1.5 TCF)

## Commercial rates achieved

- 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 2025

### The Carpentaria Pilot Project aims to:

- Produce sales gas from existing Carpentaria-2H and Carpentaria-3H test wells, Carpentaria-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
  - **"T-piece" connection has been inserted into the pipeline to facilitate Empire's access to the line for gas sales**
- 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

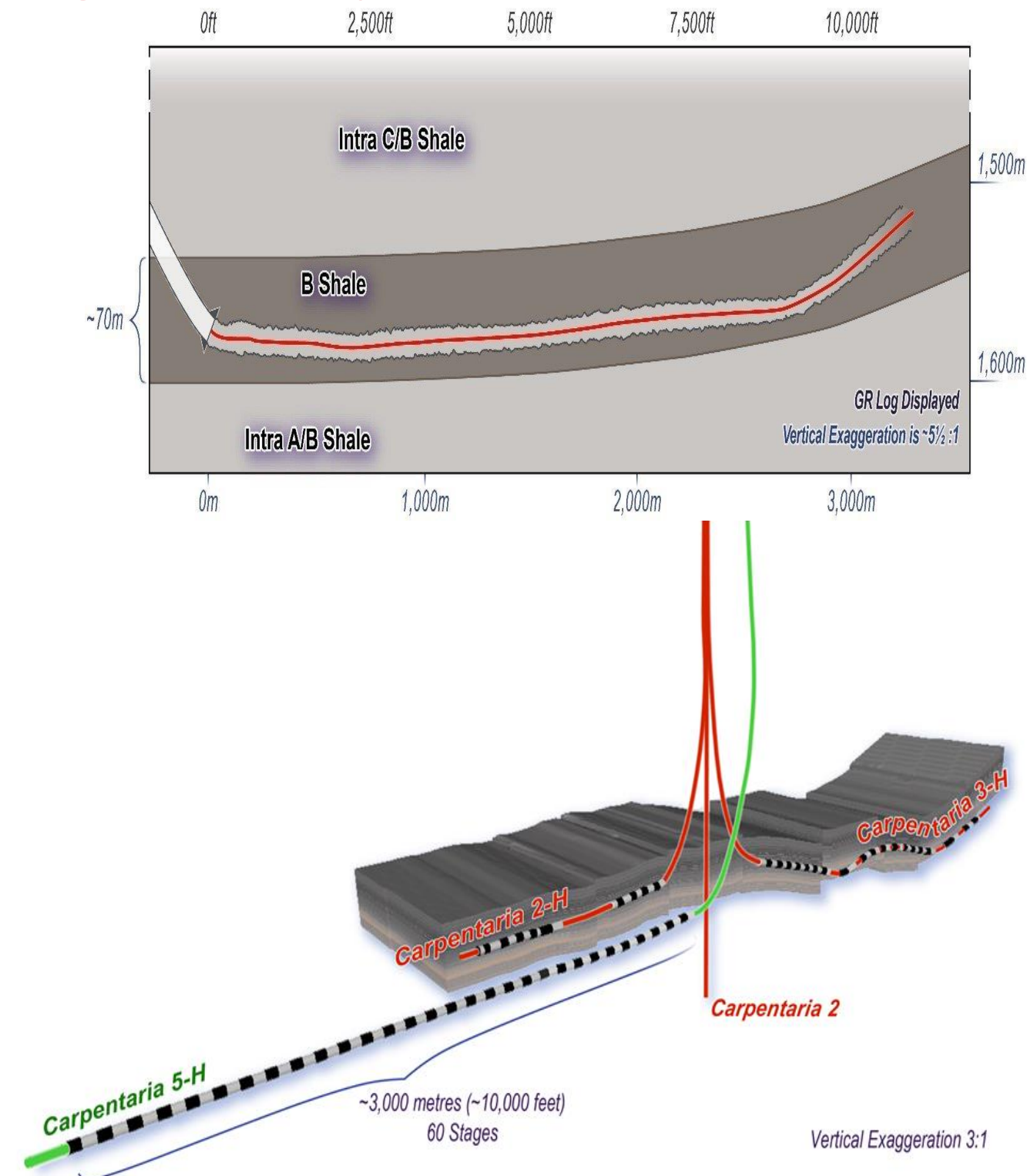


Carpentaria-2H flare

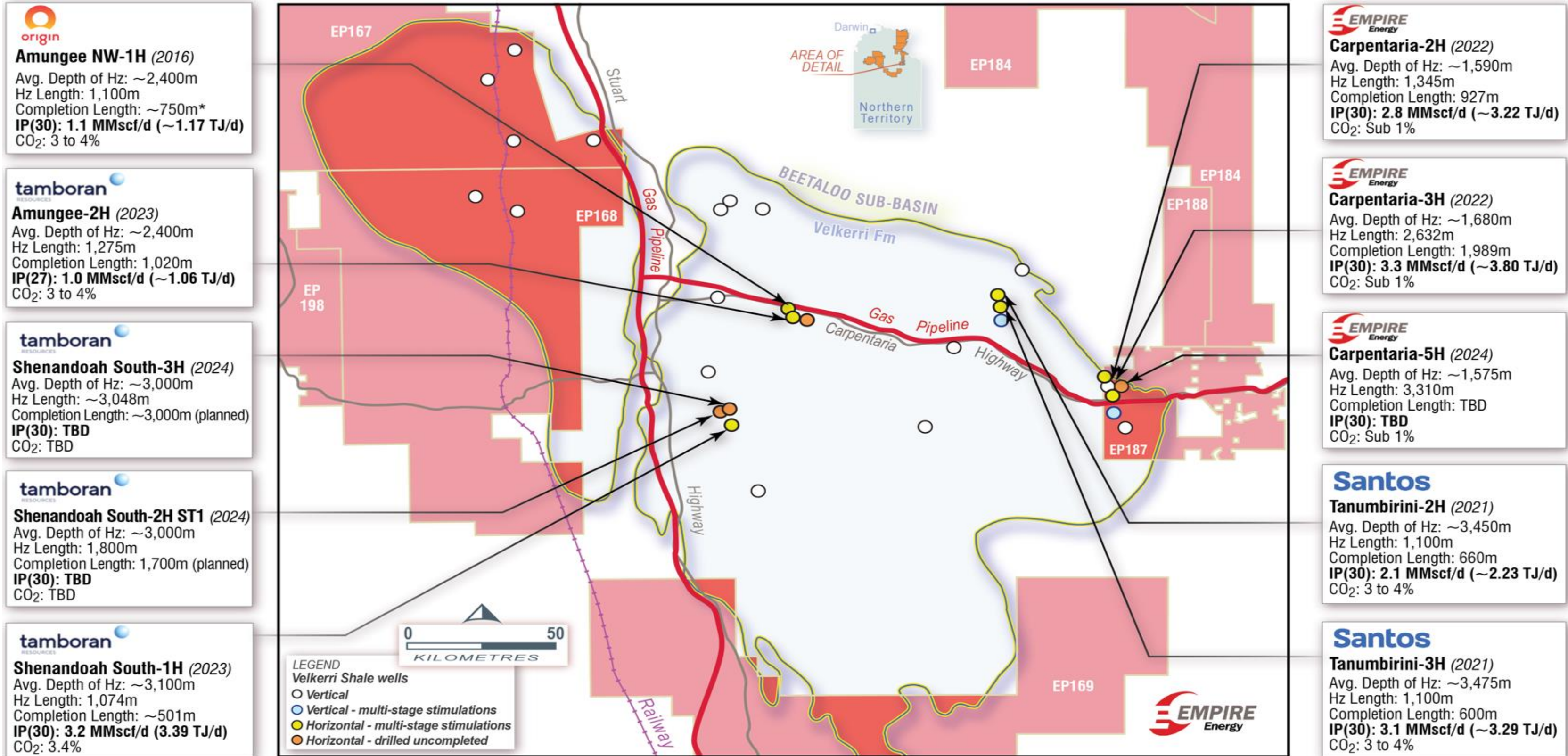
# Carpentaria-5H

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

- C-5H was drilled from the same well pad as Carpentaria-2H ("C-2H") and Carpentaria-3H ("C-3H") in 5 ½" casing
- C-5H:
  - is the longest horizontal well drilled in the Beetaloo to date (3,310 metres of horizontal section); and
  - will target 60 fracture stimulation stages
- C-5H will utilise the best practise completion to optimise productivity. Empire has engaged specialist US shale experts to refine design and ensure learnings from previous wells are captured in C-5H
- The goals of C-5H are:
  - Execute a development scale well for the Carpentaria Pilot Project;
  - Optimise fracture stimulation design to achieve higher productivity;
  - Conduct a long-term production test to develop a Carpentaria type curve for long laterals for development planning, and
  - Commence gas sales from the Beetaloo Basin
- Halliburton contracted to fracture stimulate C-5H after the northern wet season



# Basin-wide appraisal is demonstrating the commercial case

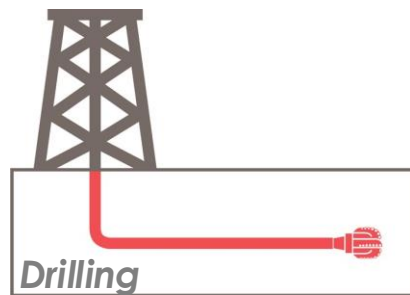


\* Due to casing deformation the majority of flows measured, between 85-95%, came from the first 200m section of the well

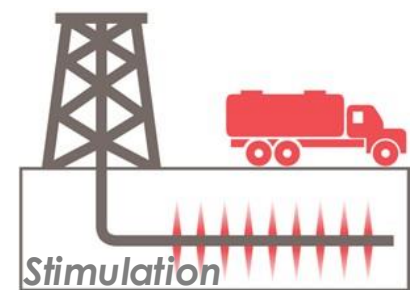
# A Platform for Increased Productivity

**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**

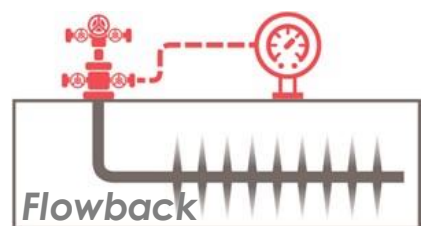
## Drilled Appraisal Wells



**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

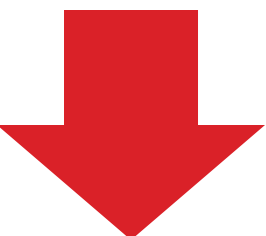
- Higher horsepower and doubling pump rates to >100 barrels per minute
- One optimised strategy

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



**EUR**

**Well Cost**



# 10 Year Binding Gas Sales Agreement with NT Government



## Foundation gas sales agreement with investment grade customer underwrites pilot economics

- **Buyer:** Northern Territory Government (Aa3, stable)
- **Volume / Term:**
  - up to 25 TJ/d for 10 years (~75PJ total, net to Empire)
  - an additional 10 TJ/d+ for up to 10 years at the option of the Buyer to be made available by Empire if production levels from the Carpentaria project exceed 100 TJ/d
- **Pricing:** ex-field take-or-pay basis at competitive market gas prices, escalating at 100% of the Australian CPI
- **Delivery:** McArthur River Gas pipeline ("MRP")
  - A T-piece connection has already been installed into the MRP at the proposed location of the Carpentaria Gas Plant
- **Conditions Precedent:** customary conditions for an agreement of this nature including Empire reaching FID for the Carpentaria Pilot Project and receipt of regulatory approvals which are well advanced



Carpentaria Gas Plant





# \$65M Beetaloo Financing Package



## Empire has executed binding debt commitment letters for Carpentaria Pilot Project

- This financing package represents a continuation of a 15-year relationship between Empire and Macquarie Bank
- Execution of the financing package follows the completion of an extensive competitive tender process of global oil & gas financiers
- The financing will be provided across three tranches:
  - A\$30 million R&D Facility will fund exploration, appraisal and development activities including Carpentaria-5H and construction of infield infrastructure representing an upsizing and maturity extension of existing A\$2.25 million facility
  - A\$5 million Performance Bond Facility to meet Empire's Northern Territory environmental bonding obligations
  - New A\$30 million Midstream Infrastructure Facility to finance refurbishment and construction of the Carpentaria Gas Plant and associated infrastructure. Repayment of this tranche will be via a tolling fee
- **This financing along with existing cash resources, will fund the drilling, completion and flow testing of C-5H and the installation of the Carpentaria Gas Plant and associated infield infrastructure**

# Pathway to Full-Field Development of the Carpentaria Project

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

**Carpentaria Pilot Project**

**Carpentaria Gas Project**

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



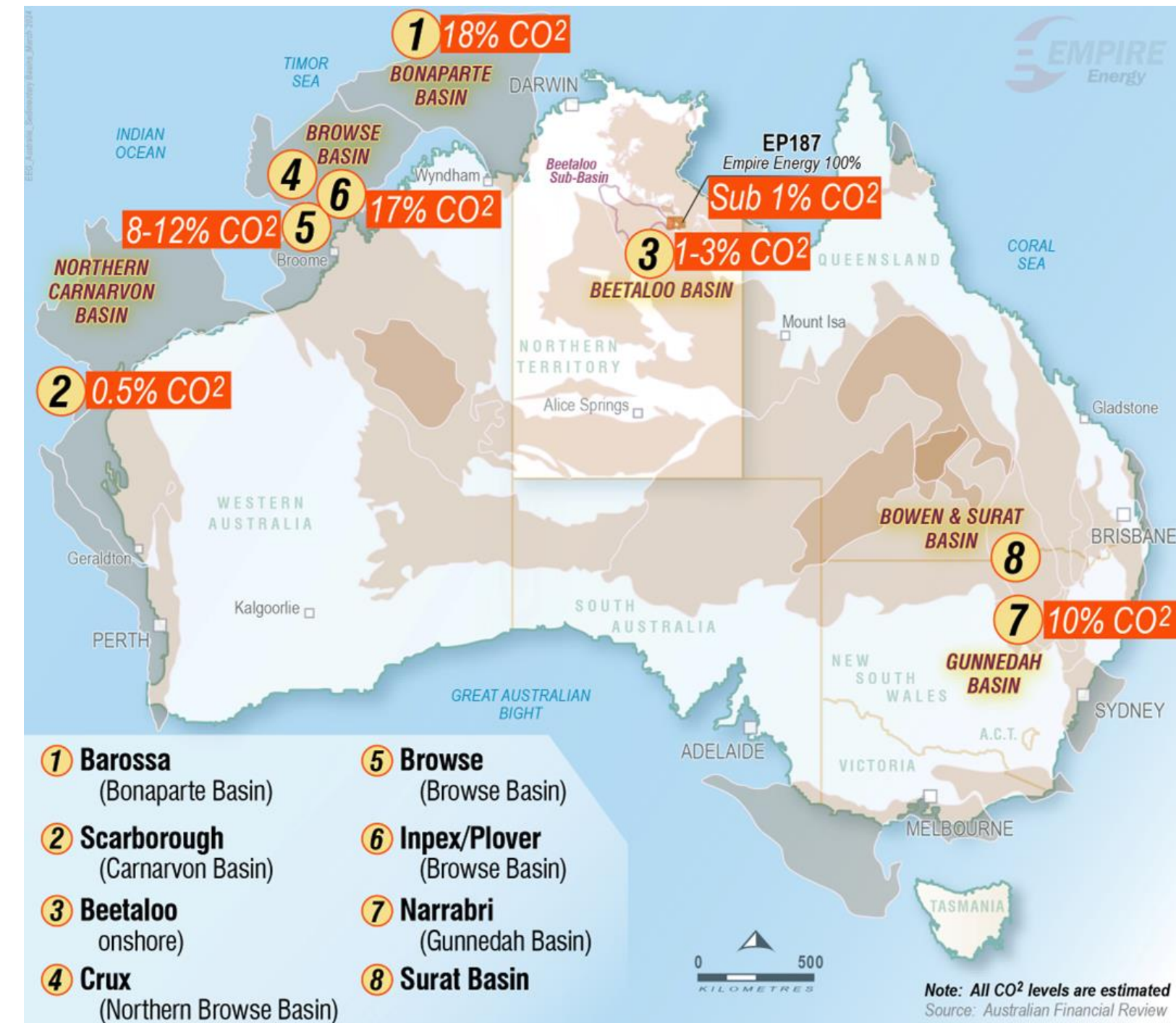
## Empire's Beetaloo gas contains sub 1% CO<sub>2</sub> in the reservoir

### Environment

- **Carpentaria CO<sub>2</sub> 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 CO<sub>2</sub>e<sup>1</sup>
- 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>)

# Government Supporting the Beetaloo

## NT Government has primary responsibility for regulation of the Beetaloo Basin Federal Labor Government is supportive of Beetaloo development

### The Hon Lia Finocchiaro (Chief Minister of the Northern Territory)

***"The CLP have always stood up for, and supported the Territory's gas industry, and this industry will proceed with certainty under a CLP government."***

*We have this incredible resource right here and thousands of Territory jobs could be created over the next 20 years.*

*Gas is the cleaner and cheaper pathway to renewables. The Territory's gas can provide the solution to the East Coast power shortage and provide economic benefit to Territorians."*<sup>1</sup>

### The Hon Gerard Maley (Deputy Chief Minister of the Northern Territory)

***"Our Government is fully and unequivocally committed to the development of the Beetaloo Sub-basin, the untapped potential of which represents decades of prosperity and energy security for Territorians and an answer to the nation's worsening energy crisis."***<sup>2</sup>

### The Hon Madeleine King MP (Minister for Resources and Minister for Northern Australia)

***"The (Future Gas) Strategy makes it clear that gas will remain an important source of energy through to 2050 and beyond, and its uses will change as we improve industrial energy efficiency, firm renewables, and reduce emissions"***

***"But it is clear we will need continued exploration, investment and development in the sector to support the path to net zero for Australia and for our export partners, and to avoid a shortfall in gas supplies."***<sup>3</sup>



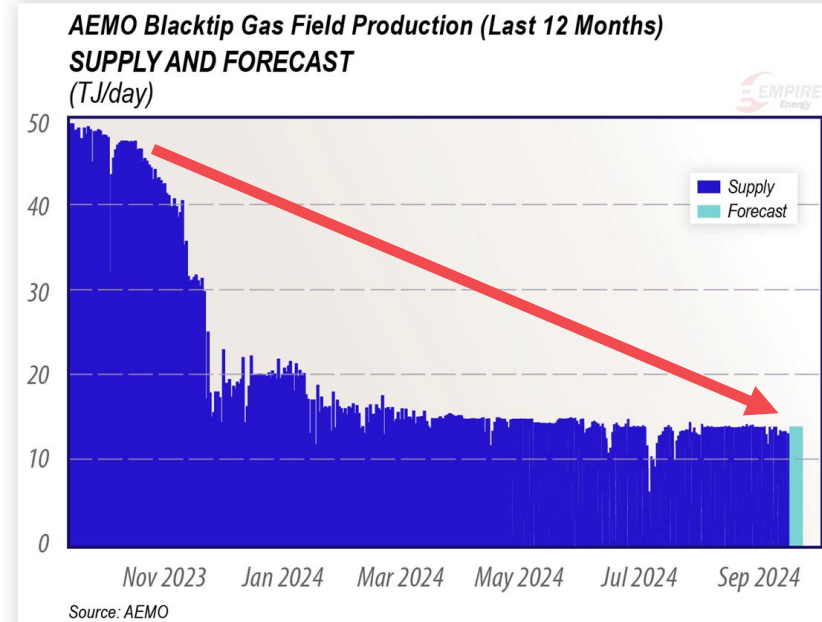
The Hon Gerard Maley – Deputy Chief Minister NT, The Hon Lia Finocchiaro – Chief Minister NT and Managing Director Alex Underwood, September 2024

1. The CLP's Plan to Rebuild the Territory  
2. (26) Activity | Gerard Maley MLA | LinkedIn  
3. <https://www.minister.industry.gov.au/ministers/king/media-releases/australias-future-gas-strategy>

# Australia, Asia and the World Need New Gas Supply

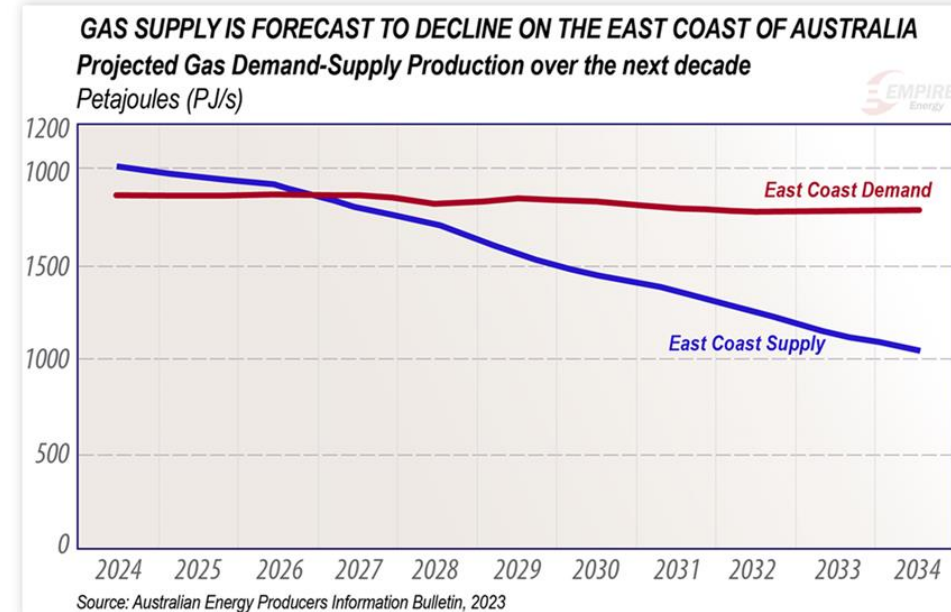
## Empire's strategy is to supply domestic and international gas markets

### Phase 1: Northern Australian Gas Market



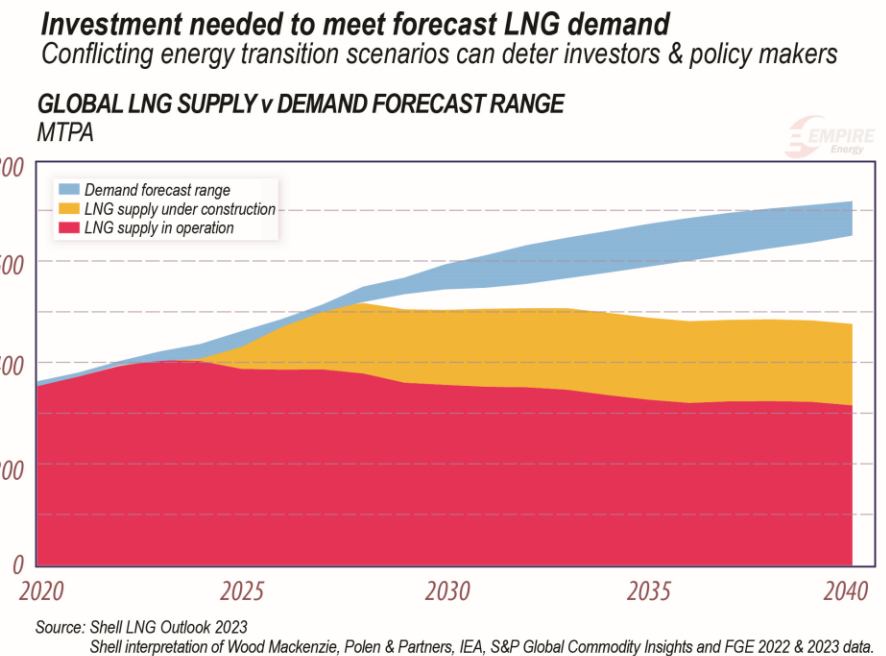
- **Blacktip Gas Field:** GSA to 2034 of 104TJ/d vs. 11TJ/d production
- NT needing to buy emergency gas from Darwin LNG terminals
- **Northern Gas Pipeline (to QLD):** currently closed<sup>1</sup>

### 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



- **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 2027<sup>2</sup>

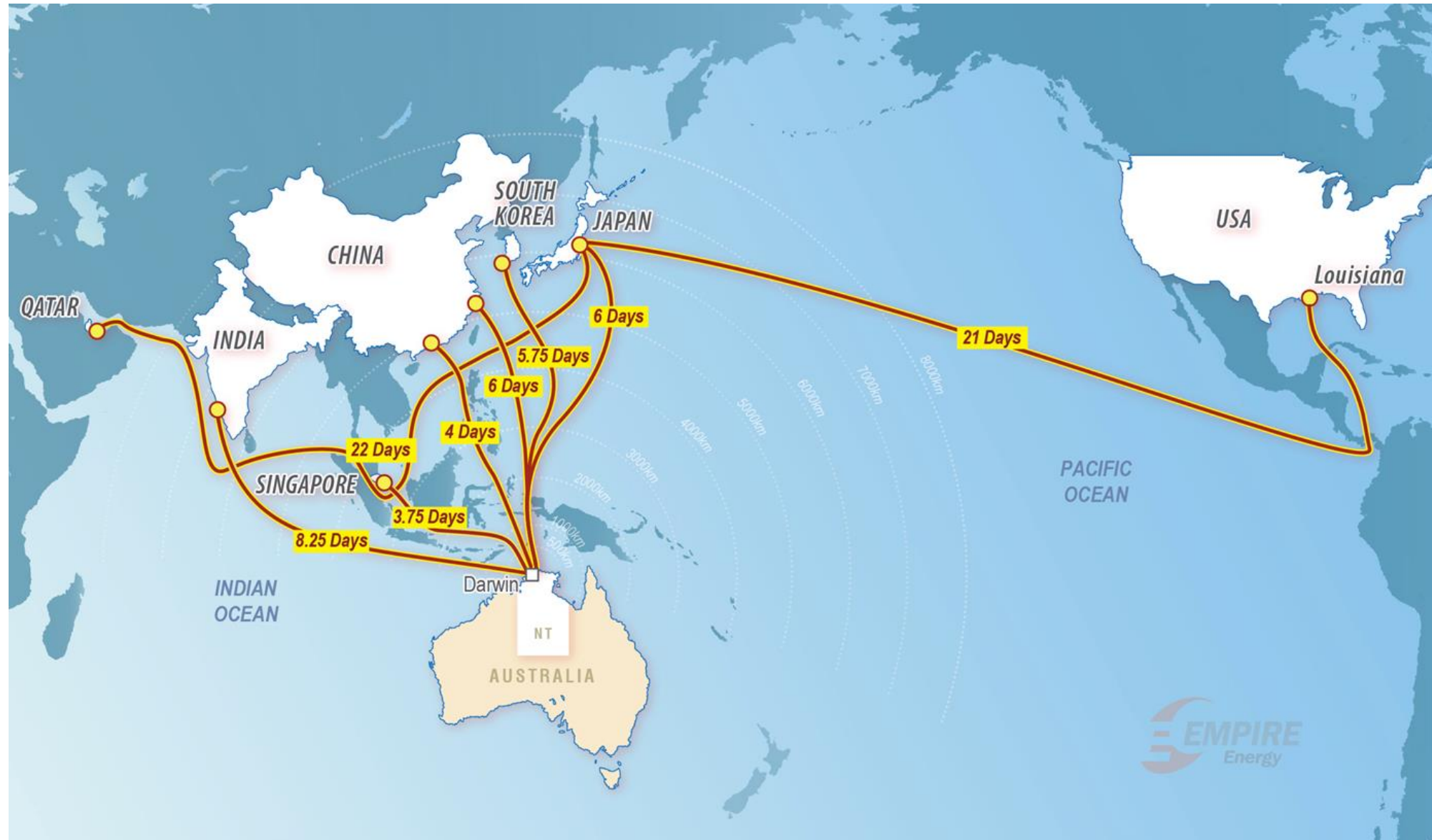
1. <https://www.aemo.com.au/energy-systems/gas/gas-bulletin-board-gbb/data-gbb/data-dash-board>

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 Bay<sup>1</sup>



- **Exposure to Pacific Basin gas prices**
  - ~US\$10 / MMBtu premium to Henry Hub
- **Japan/Korea Marker (Platts) LNG price**
  - US\$13.62 / MMBtu (as at 21 January 2025)
  - US\$11.98 / MMBtu (avg. previous 12 months)
  - US\$19.89 / MMBtu (avg. previous 3 years)
- **US Henry Hub price**
  - US\$3.83 / MMBtu (at 21 January 2025)
- **Wallumbilla (Main East Coast Australian Index)**
  - A\$13.94 / MMBtu (at 21 January 2025)
  - US\$8.64 / MMBtu (at 21 January 2025)
  - A\$20.77 / MMBtu **Wallumbilla LNG Netback**

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**
- **Binding gas sales agreement with investment grade customer**
- Macquarie Bank funding package 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

# Near-term Growth Catalysts

## FY2024 Achievements

- 1. Divested US assets and repaid outstanding debt**
- 2. Raised ~\$46 million in equity and sale of royalty**
- 3. Executed Gas Sales Agreement with NT Government**
- 4. Obtained Environmental Approvals for Carpentaria and Western Beetaloo**
- 5. Drilled C-5H (longest horizontal in the Beetaloo to date)**
- 6. Arranged committed debt financing for Carpentaria Pilot Project**

## Key Near-term Catalysts

- 1. Complete C-5H stimulation and well testing**
- 2. Obtain Indigenous Approvals**
- 3. Construct surface facilities**
- 4. Commence pilot project gas sales**



<https://empireenergygroup.net/>

**ASX:EEG**

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# Appendix 1: 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 2: 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



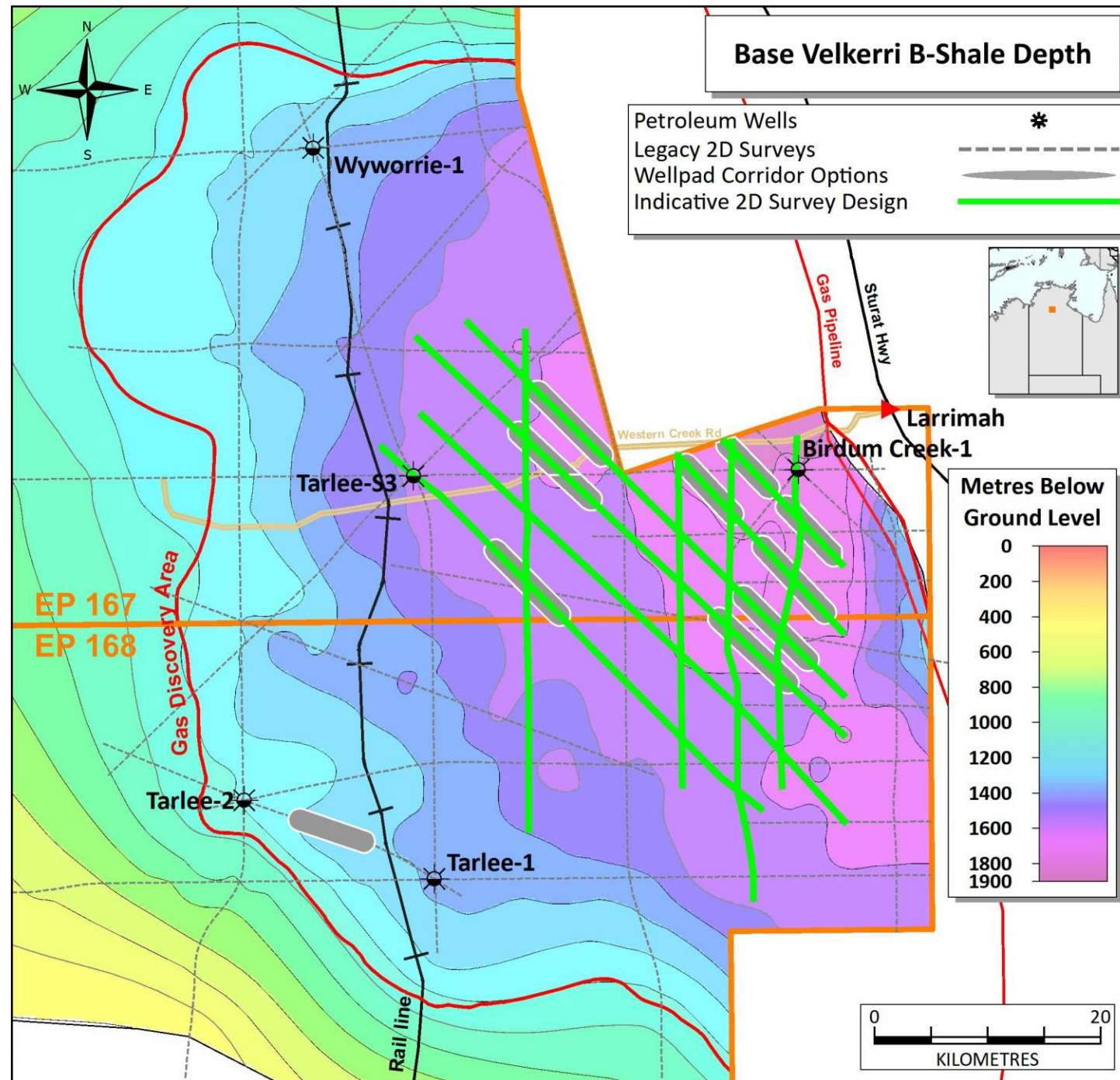
**Prof. John Warburton**

**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 3: 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% CO<sub>2</sub>
- Thickest B and C Shale in Beetaloo
- **Same rock as Carpentaria Project – Stacked Play**
- Huge running room

## Forward program

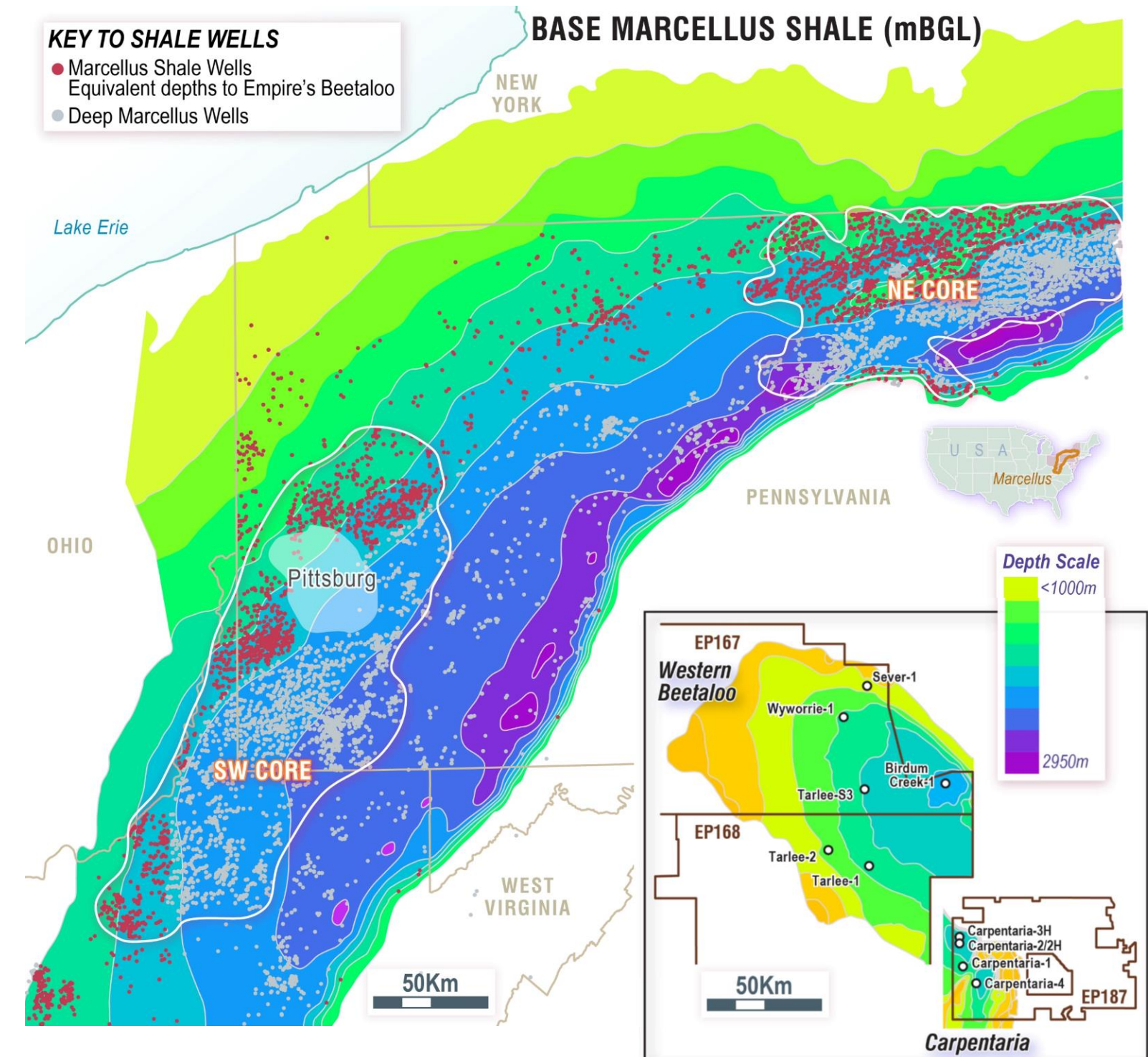
- Up to 380 km in-fill 2D seismic oriented for future Hz wells
- Multiple locations cleared for drilling and flow testing

# Appendix 4: Conversion Table

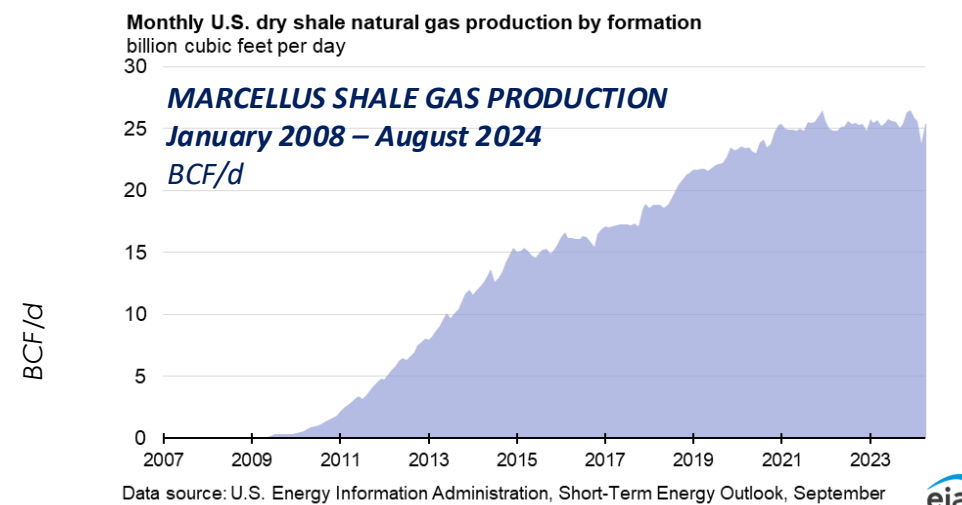
<u>Exchange Rate</u>	
US\$ : A\$	0.62
<u>Energy</u>	
MCF : GJ	1.06
MMCF : TJ	1.06
BCF : PJ	1.06
GJ : TJ	1,000
GJ : PJ	1,000,000
<u>Distance</u>	
Feet : Metres	3.28

# Appendix 5: Empire's Beetaloo Footprint Comparable to Marcellus

- Empire's Beetaloo footprint is comparable in size to significant portions of the core areas of the Marcellus Shale play in the Appalachian Basin
- More than 9,000 wells are producing from similar depths to Empire's Beetaloo play (~34 percent of all Marcellus wells)<sup>1</sup> across both core areas
- The majority of the more than 27,000 producing Marcellus Shale wells are less than 2,250 metres below ground level
- **Marcellus shale producing acreage has typically transacted at US\$5,000 to US\$25,000 per acre<sup>2</sup>. Empire is valued at ~US\$100 per acre based on the Carpentaria Project and Western Beetaloo Project alone.**



**“Marcellus shale gas production has grown by 25 BCF/d over ten years”**



Source: U.S. Energy Information Administration - EIA - Independent Statistics and Analysis

1. EIA and relevant State databases

2. <https://mercercapital.com/energyvaluationinsights/ma-in-marcellus-utica-basins-2>

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