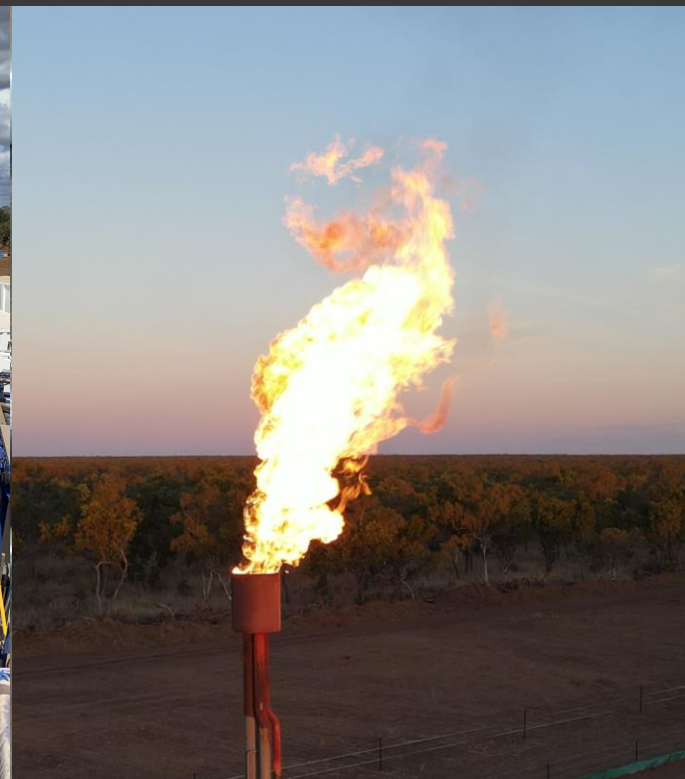




ASX:EEG

Empire Energy – Sights on Early Production in the Beetaloo



SEAAOC Presentation October 2021

Corporate Snapshot



Capital Structure

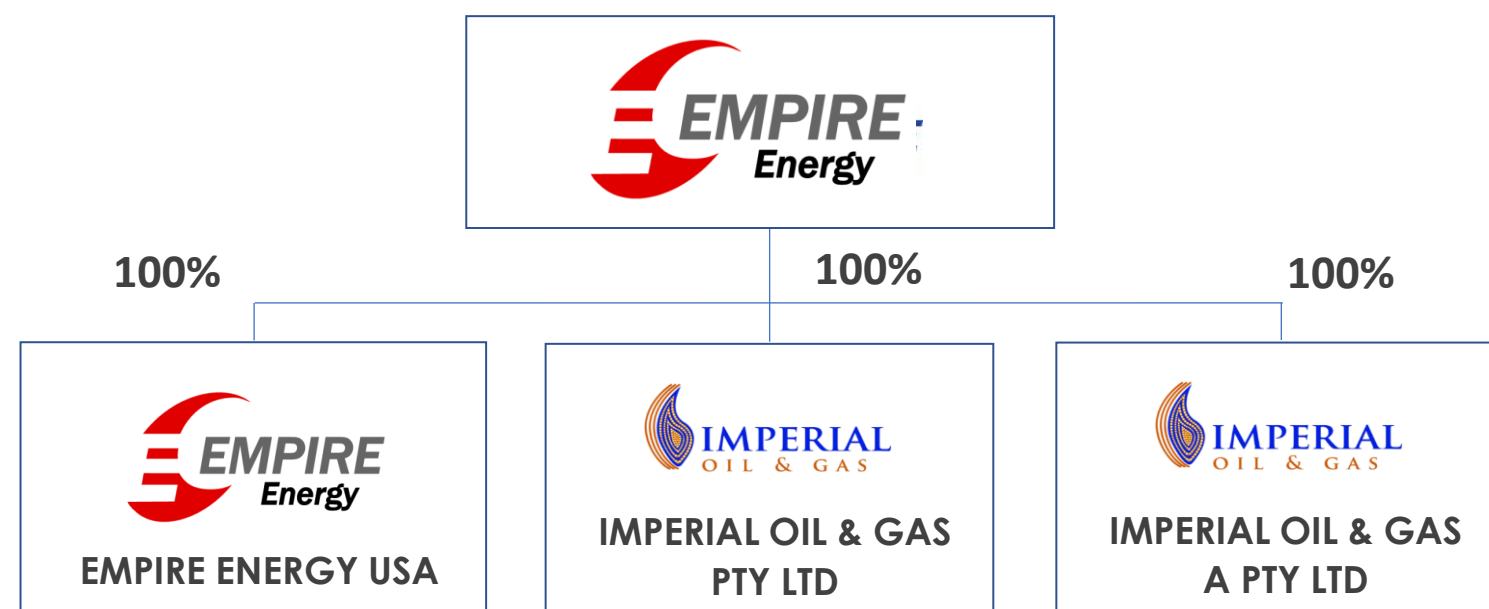
Shares on issue ¹	599.5m
Share price	\$0.365
Market cap	\$218.8m
Net (debt ²) / cash	~\$21.8m
Enterprise value	~\$197.0m
Cash at bank	~\$30.0m

ASX Share Price



Pro-forma Top Shareholders

Pangaea Resources (NT) Pty Limited ³	20.0%
Elphinstone Holdings Pty Limited	8.9%
Global Energy and Resources	5.4%
Energy and Minerals Group	5.0%
Macquarie Bank Limited	4.4%
Board of Directors ⁴	22.0%



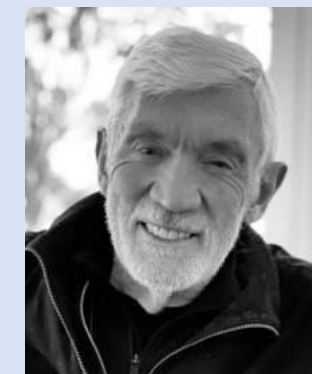
1. Empire has 28.1m unlisted options on issue with an average exercise price of ~A\$0.48 per share. In addition, there are 13.0m Share Rights on issue to members of the management team and Board. Most of the Share Rights have performance hurdles tied to total shareholder return.

2. Empire has a US\$7.5 million debt facility (drawn to US\$6.125 million) with Macquarie Bank maturing in September 2024 which is secured against the Company's USA gas production assets. Under new management, total debt has been reduced by over 80% since 2018. Net debt excludes a US\$343,602 loan which has been approved and received under the US Paycheck Protection Program which is expected to be forgiven.

3. Pangaea shares total 140m, which will be issued subject to Pangaea not holding an interest of more than 20% in Empire's ordinary shares at any point in time. Currently there are 119,894,868 issued shares held by Pangaea, with 20,105,132 being unissued

4. Board shareholding includes Mr Paul Fudge (Pangaea Resources) and excludes options and MD Rights

Empire's Board of Directors



Paul Espie AO

Chairman & Non-Executive Director

- Founding principal of Pacific Road Capital, a resources investing manager of private equity funds
- Former Chairman of Oxiana Ltd during the development of the Sepon copper/gold project in Laos
- Former Chairman of Cobar Mines Pty Limited after a management buyout
- Former Head of Bank of America operations in Australia, New Zealand and PNG

Alex Underwood

Managing Director

- Associate Director Energy Markets Division of Macquarie Bank Limited (Sydney and Singapore)
- 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

Peter Cleary

Non-Executive Director

- 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

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
- Non-Executive Director of Senex Energy

Paul Fudge

Non-Executive Director

- Controlling shareholder of Pangaea
- Significant investment experience in onshore Australian oil & gas, including being an early mover in the Queensland Coal Seam Gas industry and in the Beetaloo Sub-Basin
- Paul brings significant business and investment experience to the Board of Empire

Jacqui Clarke

Alternate Director

- 30 years professional services experience, with over 15 years as a Partner at Deloitte.
- Jacqui is a Chartered Accountant and Fellow of the Institute of Chartered Accountants, Graduate of AICD (Australian Institute of Company Directors), Chartered Tax Advisor and Justice of the Peace

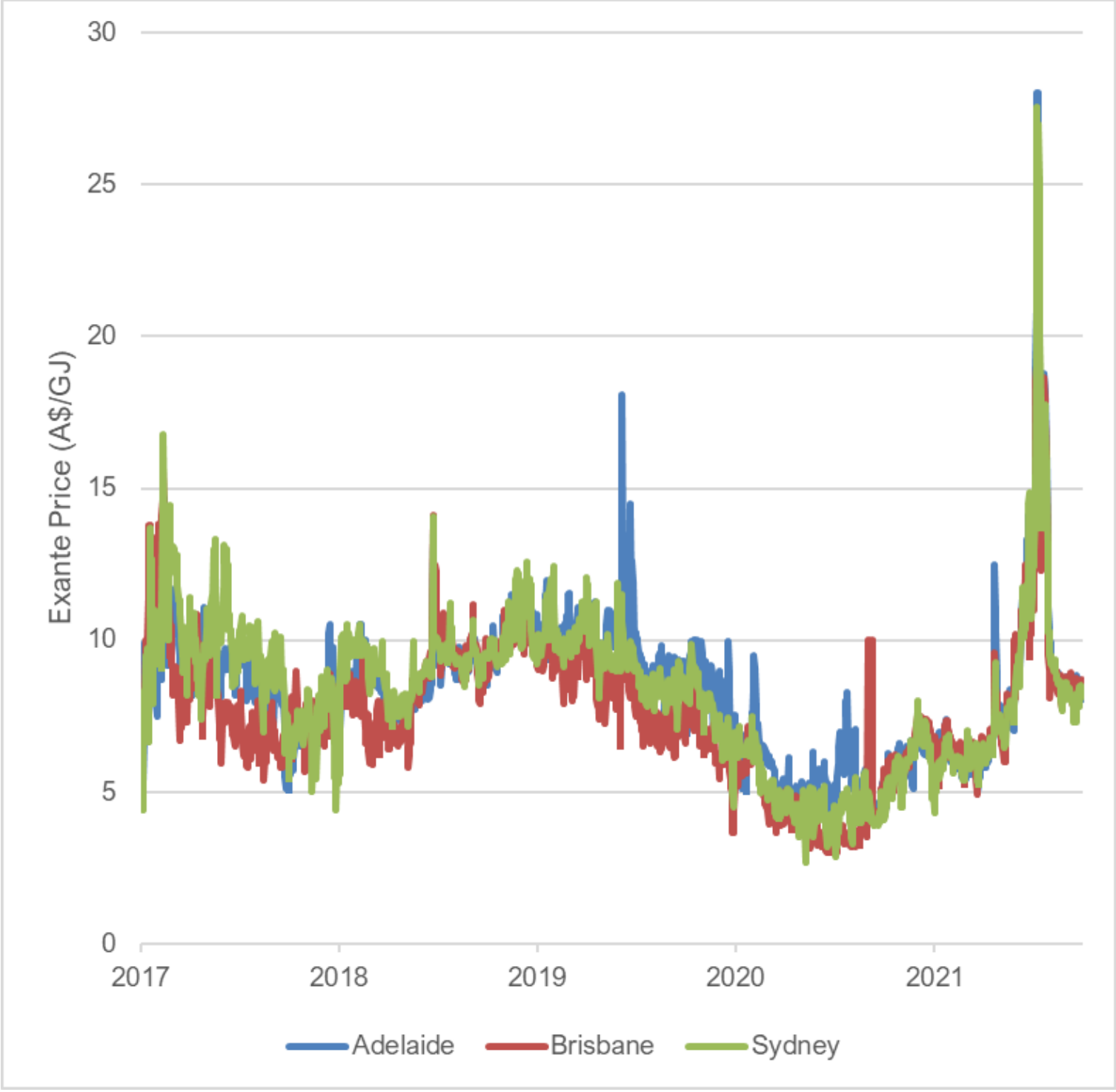
Pangaea Representatives



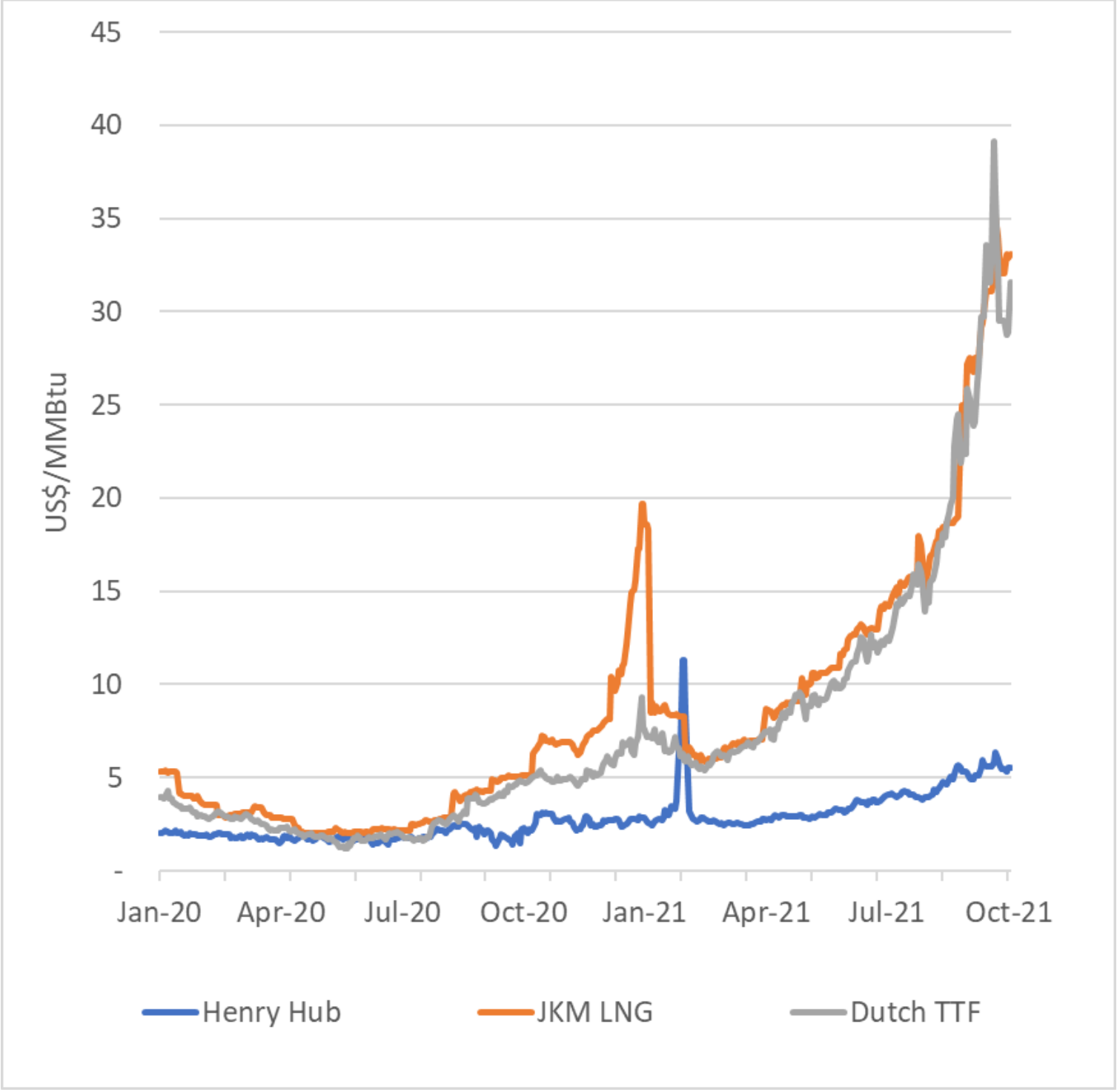
Global gas prices rising strongly



Australian East Coast Domestic (A\$/GJ)

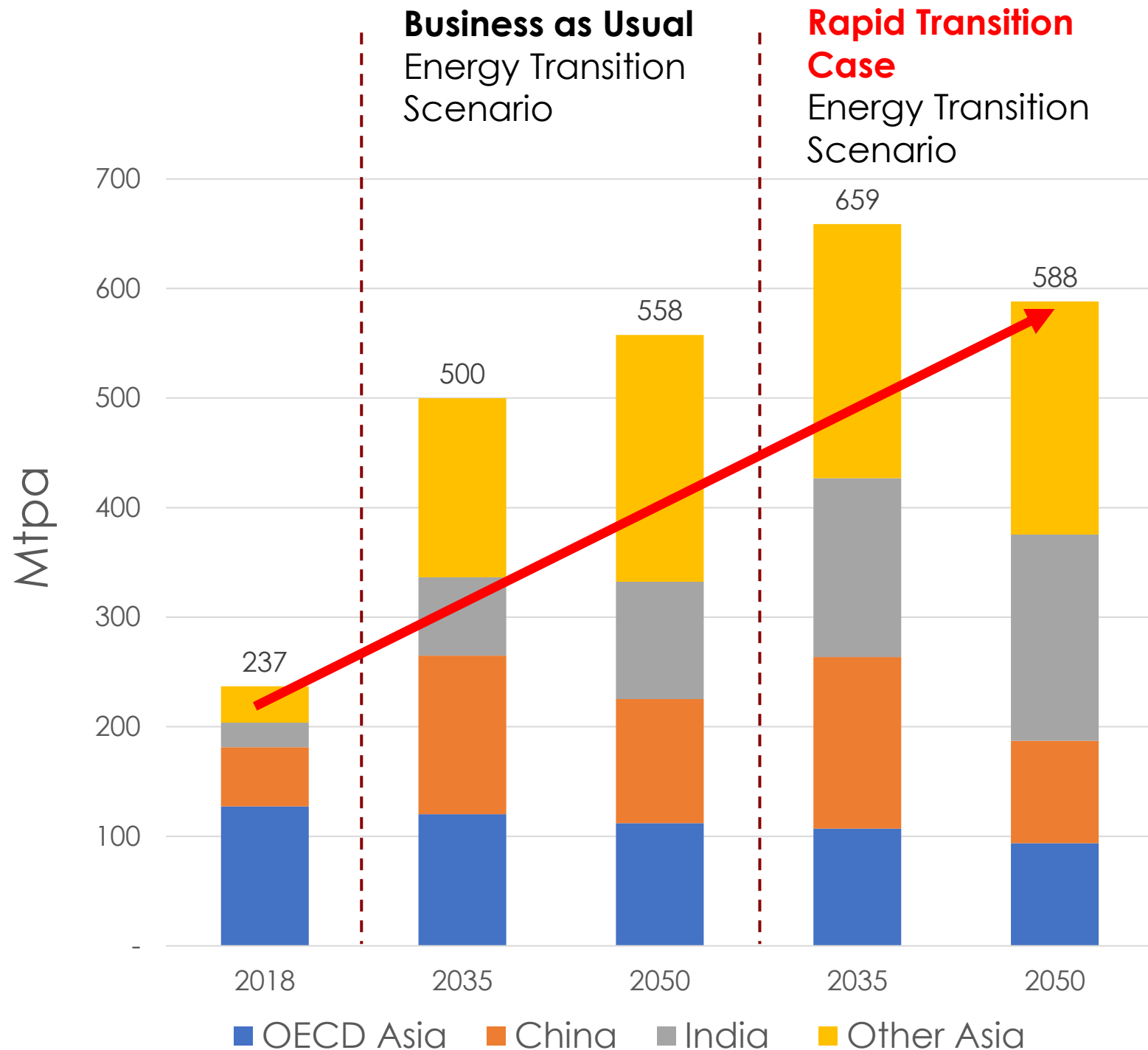


International (US\$/MMBtu)



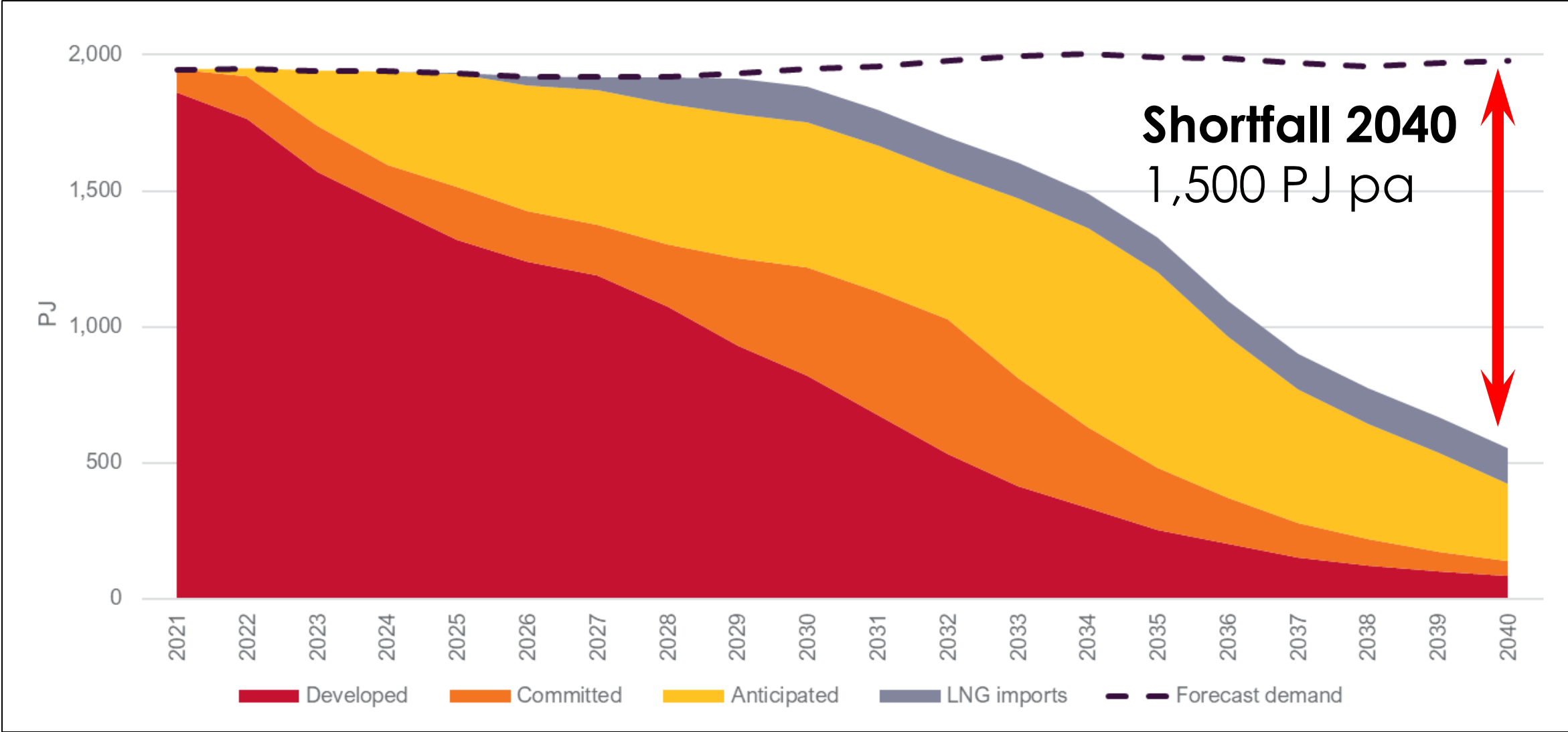
Gas running strong - Asian LNG demand increasing dramatically

Forecast Asian LNG Imports – BP World Energy Outlook 2020



- Growing LNG demand in 'hard to abate sectors' such as heavy industry, shipping, road logistics
- Asian LNG demand doubles even in a '**Rapid Transition Case**' scenario led by China, India, Bangladesh, Pakistan and ASEAN nations
- This equates to **~32Tcfe per annum** LNG demand
- "Global LNG demand is expected to outpace total demand for energy and the QCLNG venture is crucial in helping Shell meet the world's growing energy needs" Global Infrastructure Partners

Australia's looming gas shortage – Beetaloo poised to fill the gap

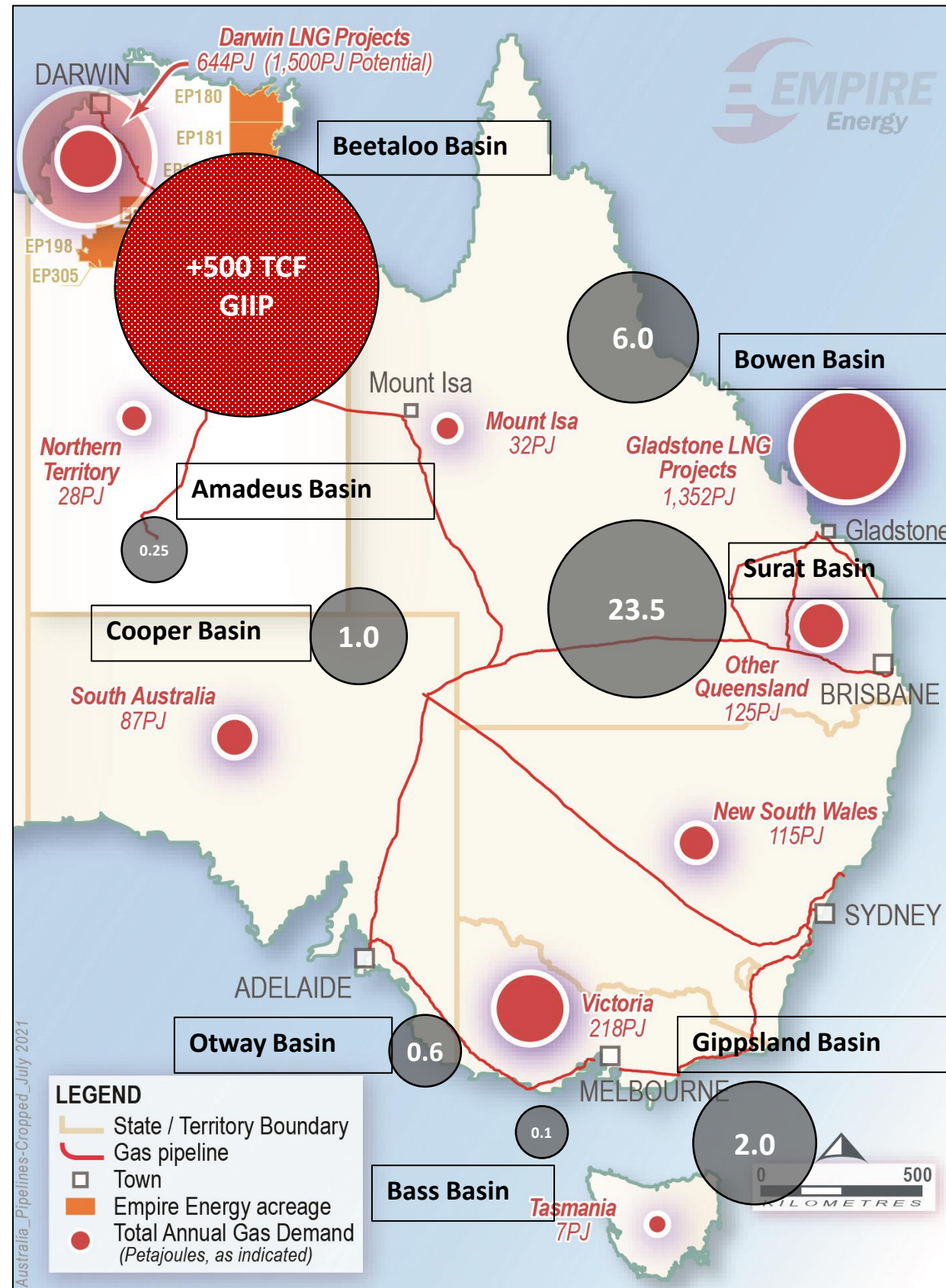


- The Beetaloo Sub-basin is well positioned to meet this challenge with the scale of resource and existing infrastructure
- Empire's Beetaloo gas has notably low CO₂ (0.5% to 1%) and high calorific content
- Australian Federal Government demonstrating strong support through its Beetaloo Strategic Basin Plan committing \$220 million (including \$50 million to incentivise drilling by Beetaloo operators)

Australian Energy Market Operator 2021, *Gas Statement of Opportunities*



The Beetaloo is Australia's largest Undeveloped Gas Resource

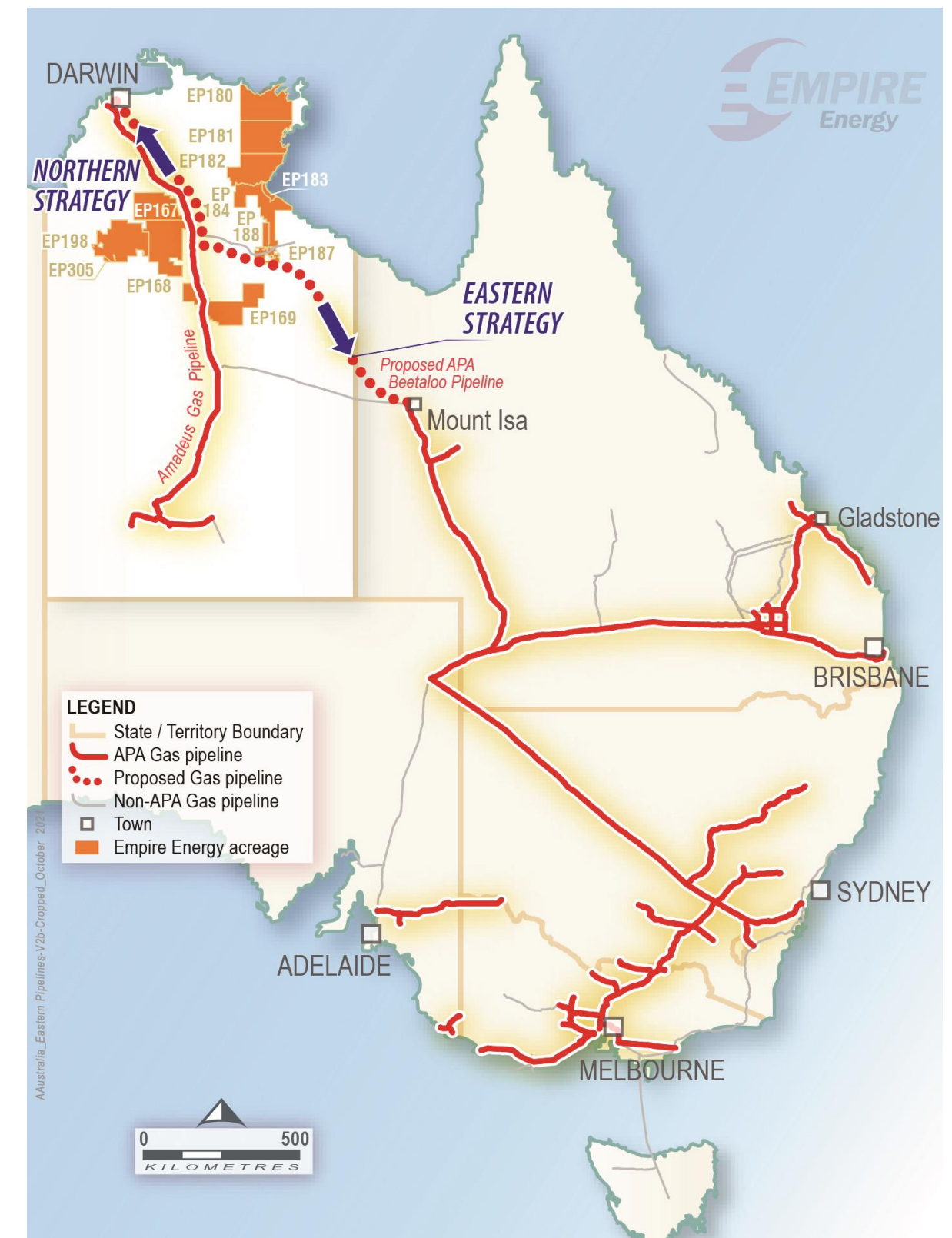


- Total potential prospective resources in the Velkerri B shale unit of between **50 Tcf and 100 Tcf** based on Government estimates of **500 Tcf** gas-in-place (assuming recovery factors of between 10% and 20%)
- **Add to this the upside** from other productive shale units - the Velkerri A, Intra A-B and C, the Kyalla - plus contained liquids, which can greatly enhance project economics
- The Australian Federal Government, 14 January 2021: "The Beetaloo Sub-basin has the potential to rival the world's biggest and best gas resources... **The \$224 million Beetaloo Strategic Basin Plan** sets out bold, innovative and cooperative actions. These actions will help us seize the opportunities presented by the natural resources in the Beetaloo."

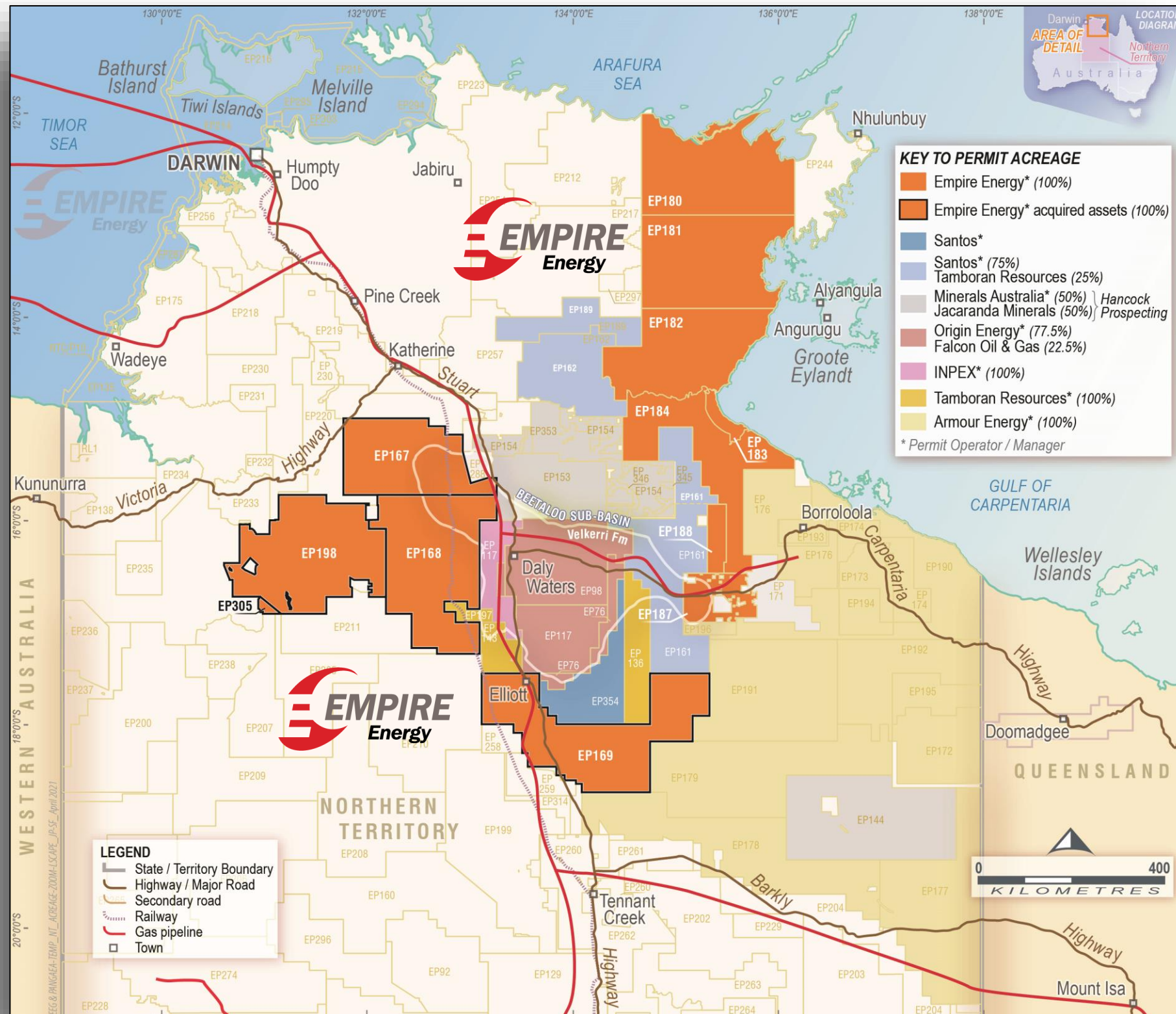
Source: 2P data sourced from ACCC's Gas inquiry January 2021 interim report (published February 2021)

MOU Executed With APA Group

- APA Group (ASX: APA) and Empire have today executed an MOU to explore opportunities for the development of Beetaloo mid-stream infrastructure including gas and liquids gathering, processing and pipelines
- APA is a leading Australian energy infrastructure business connecting sources of gas supply and markets across mainland Australia delivering approximately half of Australia's natural gas usage
- APA will support Empire to get our production to market, promptly, leveraging its existing network of gas transmission infrastructure
- APA and Empire are supportive of a common infrastructure approach amongst Beetaloo upstream producers to deliver lower per unit costs
- 'Northern Strategy' will support the development of a gas-fed manufacturing industry and LNG export expansion at Darwin
- 'Eastern Strategy' including a new Beetaloo Pipeline to Mount Isa will allow Beetaloo gas to be transported to all Australian east coast domestic markets (Wallumbilla, Brisbane, Sydney and Melbourne) and LNG export through Gladstone



A Larger Empire through a major acquisition



Pangaea /
EMG assets

In area: millions of acres:	P(50) Gas in TCf	P(50) Prospective Resource in PJe
14.6	14.4	14,661
14.3	27.7	32,209



28.9	42.1	46,870
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- Pangaea and EMG invested ~\$110 million in exploration and appraisal between 2012 and 2015
- Stuart Highway, Darwin to Adelaide rail corridor and the Amadeus Gas Pipeline (connecting to the East via the Northern Gas Pipeline)

A **191% lift** in gas, 2,830% lift in liquids Prospective Resources



Pre Acquisition



Pangaea / EMG assets (100%)



Post Acquisition

Shale Unit	Unrisked Prospective Resources (Liquids)			Unrisked Prospective Resources (Gas)			Unrisked Prospective Resources (Liquids)			Unrisked Prospective Resources (Gas)			Unrisked Prospective Resources (Liquids)			Unrisked Prospective Resources (Gas)		
	Low Estimate (1U)	Best Estimate (2U)	High Estimate (3U)	Low Estimate (1U)	Best Estimate (2U)	High Estimate (3U)	Low Estimate (1U)	Best Estimate (2U)	High Estimate (3U)	Low Estimate (1U)	Best Estimate (2U)	High Estimate (3U)	Low Estimate (1U)	Best Estimate (2U)	High Estimate (3U)	Low Estimate (1U)	Best Estimate (2U)	High Estimate (3U)
	mmbbls	mmbbls	mmbbls	bcf	bcf	bcf	mmbbls	mmbbls	mmbbls	bcf	bcf	bcf	mmbbls	mmbbls	mmbbls	bcf	bcf	bcf
Kyalla	-	-	-	-	-	-	88	378	1,571	184	857	4,891	88	378	1,571	184	857	4,891
Mid Velkerri	4	27	99	1,990	3,446	7,091	76	386	1,938	8,173	26,768	80,644	80	413	2,037	10,163	30,214	87,735
Barney Creek	-	-	-	1,633	11,053	45,380	-	-	-	-	-	-	-	-	-	1,633	11,053	45,380
Total	4	27	99	3,623	14,499	52,471	164	764	3,509	8,357	27,625	85,535	168	791	3,608	11,980	42,124	138,006

Empire P(50) Prospective Resources of **42 Tcf gas** and **791 mmbbls liquids**

A **384% increase** in 2C gas + 2C liquids Contingent Resources



Pre Acquisition

+

Pangaea / EMG
assets (100%)

=



Post Acquisition

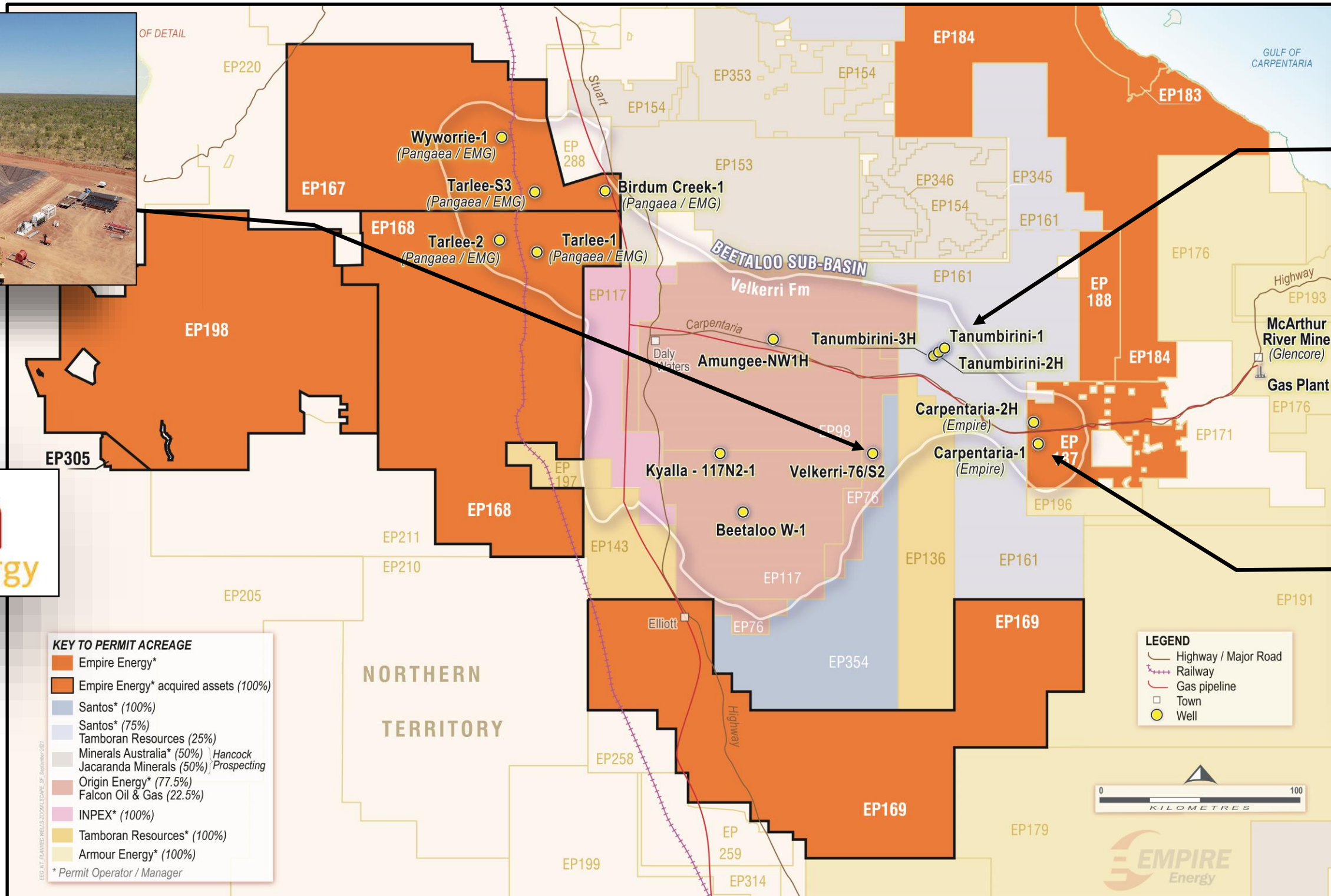
Shale Unit	Contingent Resources (Liquids)			Contingent Resources (Gas)			Contingent Resources (Liquids)			Contingent Resources (Gas)			Contingent Resources (Liquids)			Contingent Resources (Gas)		
	Low Estimate (1C)	Best Estimate (2C)	High Estimate (3C)	Low Estimate (1C)	Best Estimate (2C)	High Estimate (3C)	Low Estimate (1C)	Best Estimate (2C)	High Estimate (3C)	Low Estimate (1C)	Best Estimate (2C)	High Estimate (3C)	Low Estimate (1C)	Best Estimate (2C)	High Estimate (3C)	Low Estimate (1C)	Best Estimate (2C)	High Estimate (3C)
	mmbbls	mmbbls	mmbbls	bcf	bcf	bcf	mmbbls	mmbbls	mmbbls	bcf	bcf	bcf	mmbbls	mmbbls	mmbbls	bcf	bcf	bcf
Kyalla	-	-	-	-	-	-	0.8	3.0	11.1	0.8	4.5	27.7	0.8	3.0	11.1	0.8	4.5	27.7
Mid Velkerri	-	-	-	-	41.0	86.0	0.1	0.5	3.0	57.2	153.0	388.1	0.1	0.5	3.0	57.2	194.0	474.1
Barney Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	41.0	86.0	0.9	3.5	14.1	58.0	157.5	415.8	0.9	3.5	14.1	58.0	198.5	501.8

Empire's 2C Contingent Resource of **198 Bcf gas** and **3.5 mmbbls liquids**



 **EMPIRE**
Energy

2021 Appraisal work accelerating across the Basin



Santos



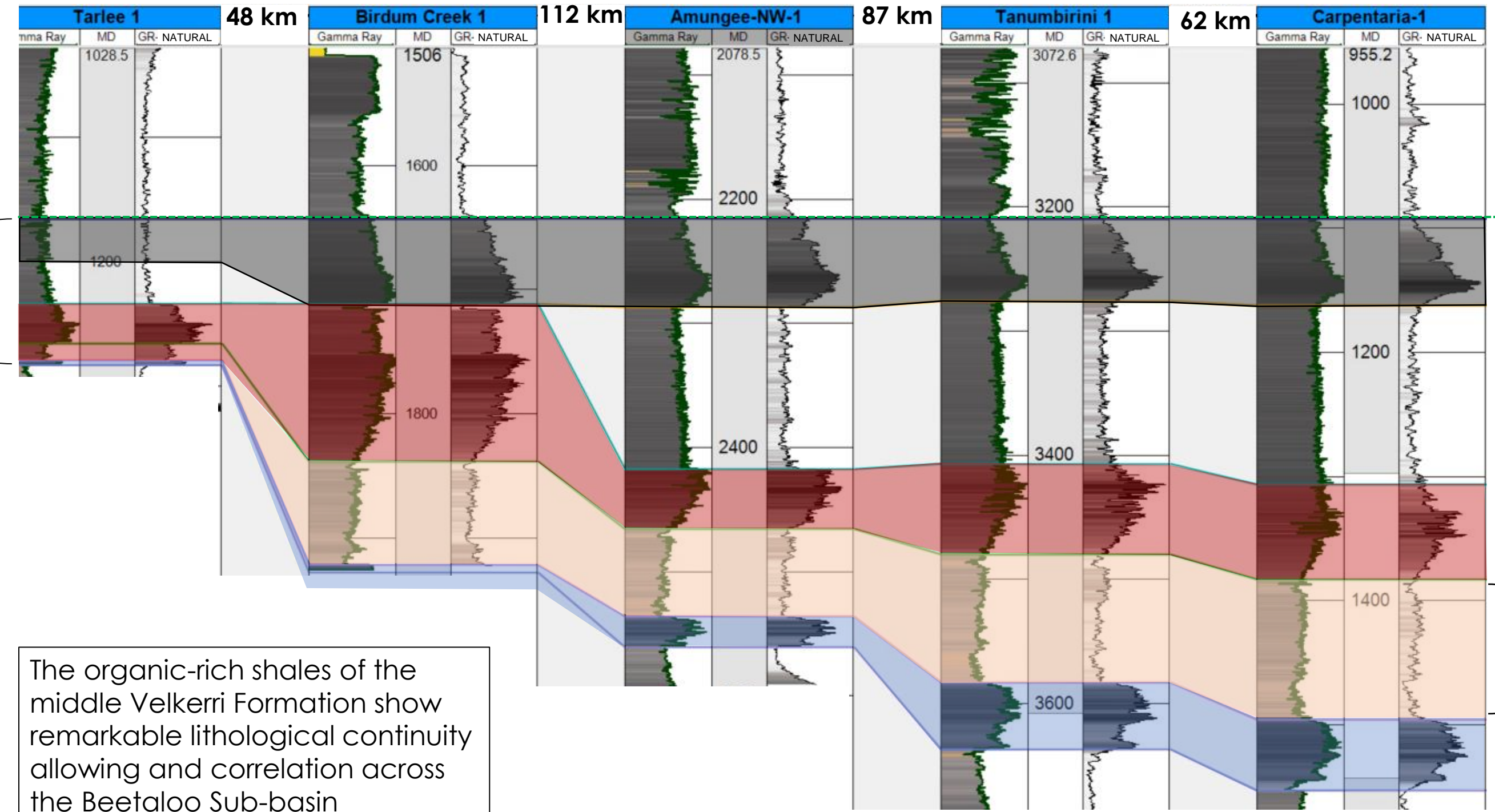
Continuously productive shales, these five wells span 309km

West

East



Santos



Middle Velkerri Formation

100 m

Datum on C Shale
C Shale

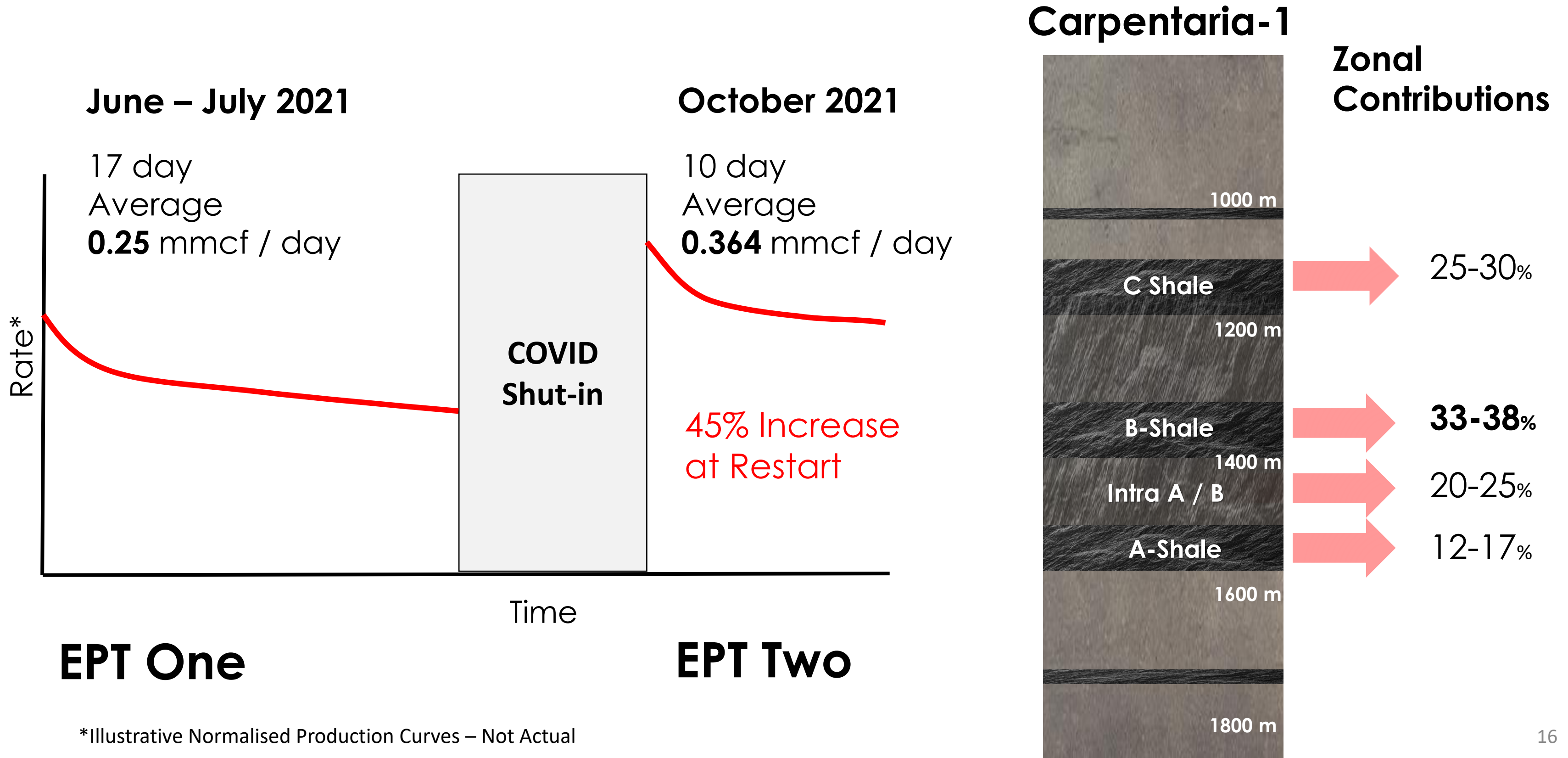
B Shale

Intra A-B Shale

A Shale

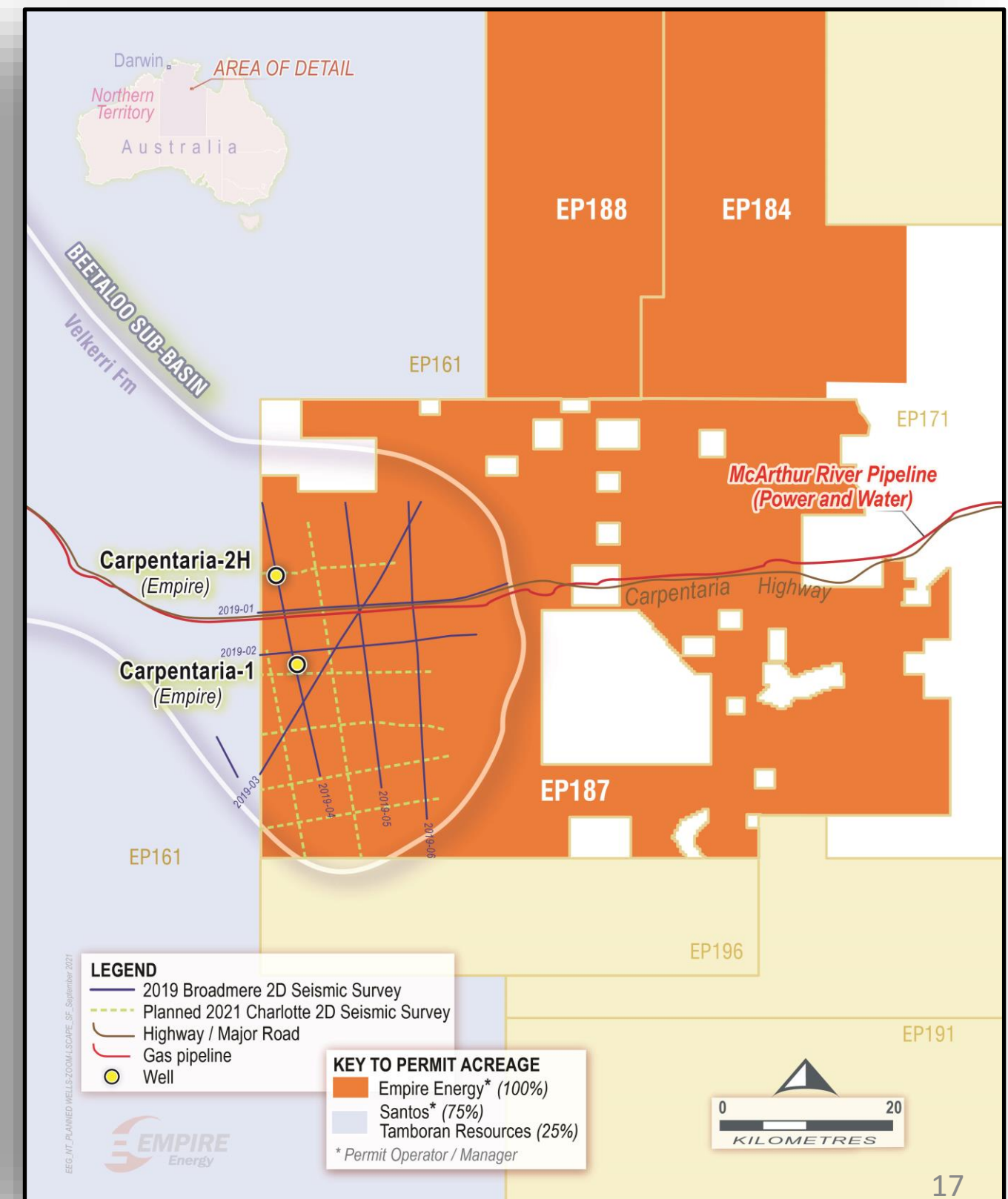
The organic-rich shales of the middle Velkerri Formation show remarkable lithological continuity allowing correlation across the Beetaloo Sub-basin

Second Carpentaria-1 EPT lifts Velkerri flow rate



2020 – 2021 Exploration & Appraisal Campaign Successes

- October 2020 Carpentaria-1 drilled to TD 1,915m intersected a **column of liquids rich gas in the Velkerri nearly 1 km thick (998m)**
- Substantial proportions of heavier-end, **higher-value liquid** hydrocarbons intersected - enhancing the economics of future production scenarios
- The Velkerri Shale is shallower than in analogue Beetaloo Basin wells and offers **lower drilling costs** in future wells
- Post-well analysis undertaken at W.D. Von Gonten & Co (Houston, Texas) in collaboration with Empire's technical team recorded **favourable rock properties**
- Carpentaria-1 four stage vertical fracture stimulation and **flow testing** produced a peak rate >1.6mmcf / day and ~0.25 mmcf / day average in EPT 1 and ~0.364mmcf / day average in EPT 2
- October 2021: Drilling and hydraulic stimulation approval of up to **7 horizontal wells** across EP187 approved
- **Three grant agreements** under the *Beetaloo Cooperative Drilling Program* for up to **\$19.3m** executed
- Carpentaria-2H horizontal appraisal drilling program underway





<https://empireenergygroup.net/>

ASX:EEG

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