



**Building a 1.5 BCFD low-cost Beetaloo Basin gas development by 2030**

**Beetaloo Basin Site Tour | September 2023**

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**This ASX announcement was approved and authorised for release by Joel Riddle, the Managing Director and Chief Executive Officer of Tamboran Resources Limited.**

## Conversion factors

1 TJ sales gas	0.943 mmscf
1 PJ sales gas	0.943 BCF
1 million tonnes of LNG	55.43 PJ or 46.37 BCF

# Tamboran Resources – Emerging next generation E&P company

## Our role in the energy transition

### Our Vision

To play a role in the global energy transition by responsibly investing in the development of low-reservoir CO<sub>2</sub> natural gas resources in the Beetaloo Basin of the Northern Territory of Australia.

### Our Mission

Accelerate >1.5 BCFD<sup>1</sup> of new gas supply from the Beetaloo Basin to meet forecast Australian domestic gas shortfalls<sup>2</sup>, and ~300 MTPA of LNG demand from Asia<sup>3</sup>.



<sup>1</sup>Reflects gross Beetaloo Basin production aspirations by 2030 from assets Tamboran has ownership in (EP 98, 117, 76, 161 and 136). Refer to Tamboran ASX Announcement (23 June 2023): "Tamboran selects APA Group as preferred Beetaloo Basin pipeline partner".

<sup>2</sup>ACCC Gas Enquiry 2017 – 2030: Interim update on East Coast gas supply-demand outlook for 2023 (March 2023).

<sup>3</sup>Third-party data provided by Rystad Energy (June 2023).



# Sustainability highlights

Focused on partnering with NT communities to bring new opportunities and a sustainable future

## Community

- >\$100,000 invested in community contribution to sporting, cultural and other initiatives.
- Local presence in Elliott to accelerate development opportunities.

## Diversity and inclusion

- Increased female participation to ~30%.
- Focused on providing economic opportunities in Elliot and Roper/Barkly region, providing local employment and working with local Aboriginal-owned contractors.

## Safety

- Zero TRIFR<sup>1</sup> for FY23 drilling program, including Maverick 1V and Amungee 2H operations.

## Environment

- Targeting Net Zero Scope 1 & 2 emissions from the commencement of commercial production from the Beetaloo Basin.
- Joined the Methane Guiding Principles<sup>2</sup>, an organisation focused on reducing methane emissions from the natural gas supply chain.
- Extensive and ongoing groundwater monitoring.

<sup>1</sup>Total Recordable Incident Frequency Rate.

<sup>2</sup>Methane Guiding Principles is an international organisation focused on reducing methane emissions ([further details](#)).



NRL Dolphins Fan Tour to Katherina

## Territory economic benefit

- ~\$18 million spent in the Northern Territory during FY23.
- ~\$500,000 spent with local First Nations companies in FY23.
- Commitment to growing businesses and economic opportunities in the region and across the Territory.

# Developing the Beetaloo is a transformational opportunity for the Northern Territory

Delivery of job opportunities and material future royalty payments to the region



tamboran  
RESOURCES

**Under Tamboran's 2030 proposed plan to deliver >1.5 BCFD<sup>1</sup> from the Beetaloo Basin, the Northern Territory is expected to receive significant economic benefits, including:**

- >\$220 million increase in net real income for the NT.
- >13,000 full time jobs (incl. indirect employment).
- >\$3.5 billion in additional revenue for the NT Government and Traditional Owners over 25-years (~\$140 million per annum).

<sup>1</sup>Reflects gross Beetaloo Basin production aspirations by 2030 from assets Tamboran has ownership in (EP 98, 117, 76, 161 and 136). Refer to Tamboran ASX Announcement (23 June 2023): "Tamboran selects APA Group as preferred Beetaloo Basin pipeline partner".

Source: ACIL Allen, *The Economic Impacts of a Potential Shale Gas Development in the Northern Territory* (October 2017).

# Tamboran Resources overview

Key operator of ~4.7 million gross acres of world class Beetaloo Basin shale play

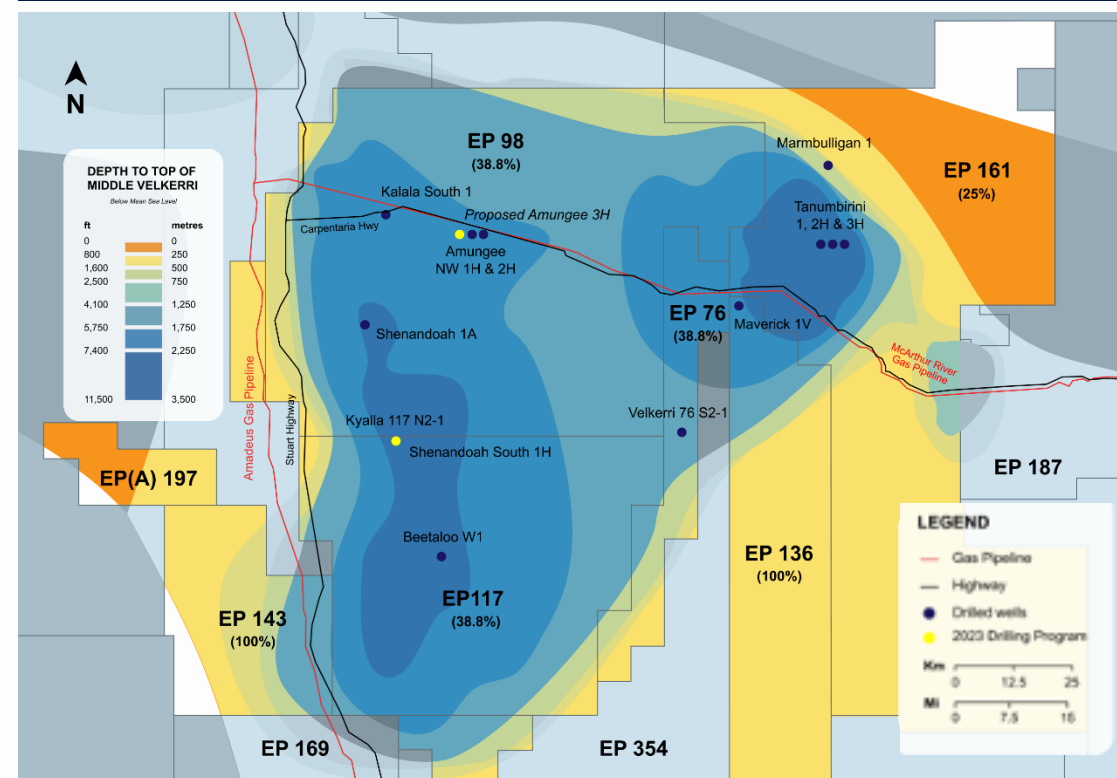
## Tamboran Resources Limited (as at close 07 September 2023)

Stock code:	TBN (ASX), TBNY (OTC)
Shares on issue (m):	1,710.0
Share price (\$ per share):	\$0.140
Market capitalisation (\$ million):	\$239.4
Net debt/(cash) (\$ million):	(\$51.4) <sup>1</sup>
Enterprise value (\$ million):	\$188.0
2U Prospective gas resources (TCF) <sup>2</sup>	147 TCF
2C Contingent gas resources (TCF) <sup>3</sup>	1.5 TCF
Net prospective acreage (million acres)	~ 2 million acres

## Top 20 shareholders with expertise developing US unconventional oil and gas<sup>4</sup>

Shareholder	No. Shares (m)	Percentage (%)
Sheffield Holdings, LP	295.8	17.3%
Nuveen LLC	124.8	7.3%
The Baupost Group, L.L.C.	119.2	7.0%
Morgan Stanley Australia Ltd.	114.6	6.7%
Helmerich & Payne International Holdings LLC	106.0	6.2%
<b>Total Top 5 Holdings</b>	<b>760.3</b>	<b>44.5%</b>
Remaining Top 20	533.1	31.2%
<b>Total Top 20 Holdings</b>	<b>1,293.5</b>	<b>75.6%</b>

## Tamboran's Beetaloo Basin acreage position – 4.7 million acres (gross)



<sup>1</sup>Cash balance of \$10.6 million at 31 June 2023, plus \$54.1 million equity raised via placement (pre-costs) and SPP in July, less \$13.3 million Convertible Note with Helmerich & Payne (H&P).

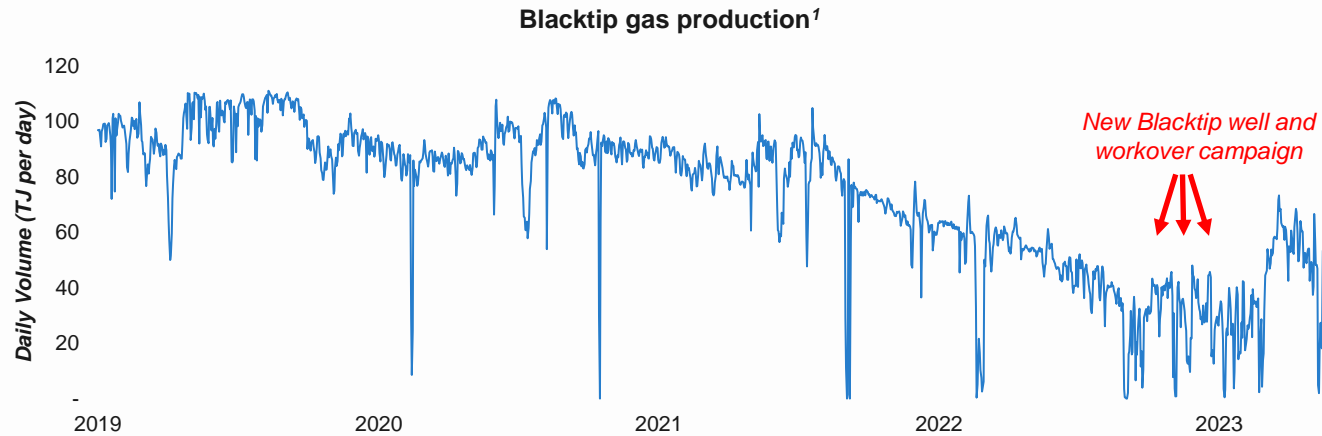
<sup>2</sup>The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

<sup>3</sup>2C net contingent gas resources and 2U net prospective resources were assessed and verified by Netherland, Sewell & Associates, Inc. (NSAI) in report dated 26 August 2022.

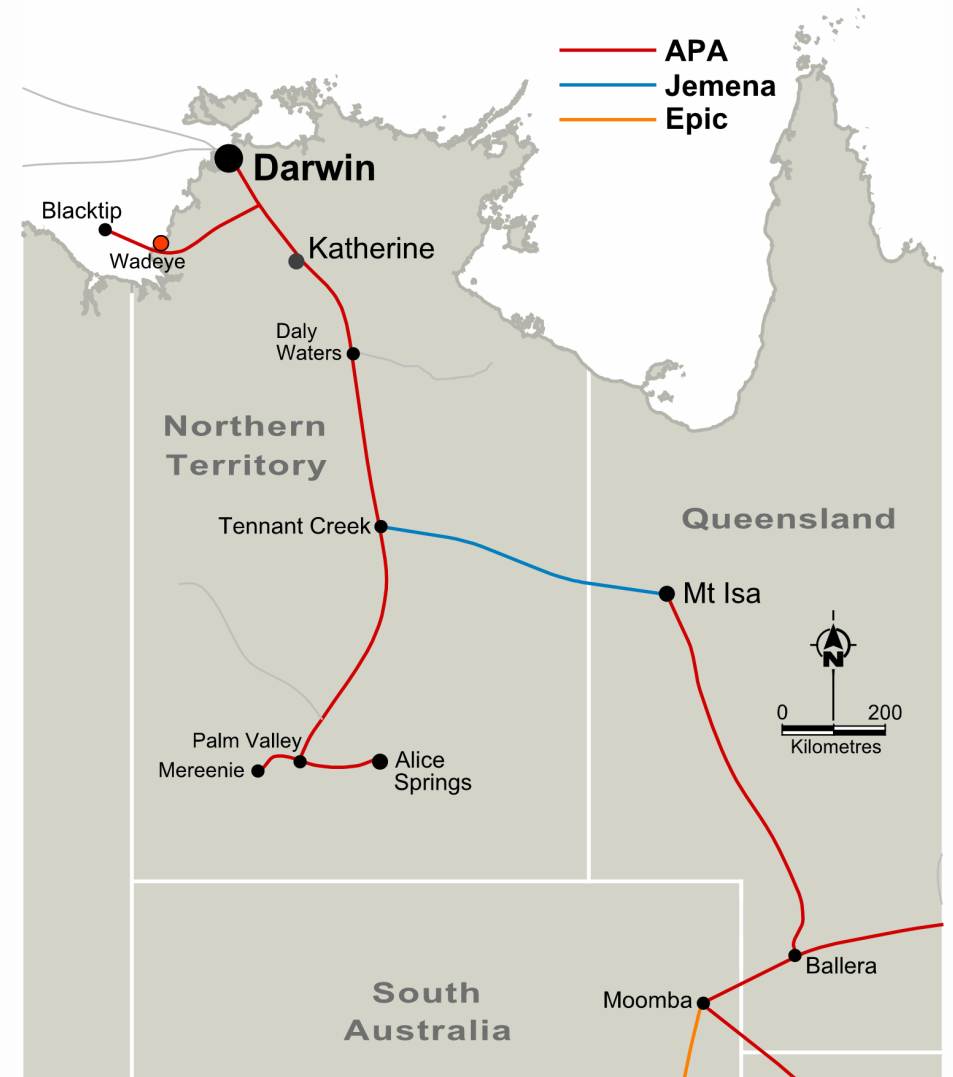
<sup>4</sup>Shareholder register at 17 August 2023.

# Northern Territory domestic gas market

## Declining Blacktip production impacting NT gas market



- ~50 – 65 TJ per day of NT gas demand mostly supplying power generation.
- Existing supply:
  - o ~50 TJ per day from Eni's Blacktip field.
  - o ~25 TJ per day from Mereenie & Palm Valley.
  - o Excess gas sent to Mt Isa via Northern Gas Pipeline (Tennant Creek to Mt Isa).
- Blacktip production declining despite recent development and workover program.
- Government-owned Power and Water Corporation (PWC) has a 25-year contract from Blacktip, expiring in 2031<sup>2</sup> and is seeking new supply to replace anticipated shortfall.



<sup>1</sup>Australian Energy Market Operator (Gas Bulletin Board) – Gas flows through Bonaparte Gas Pipeline.

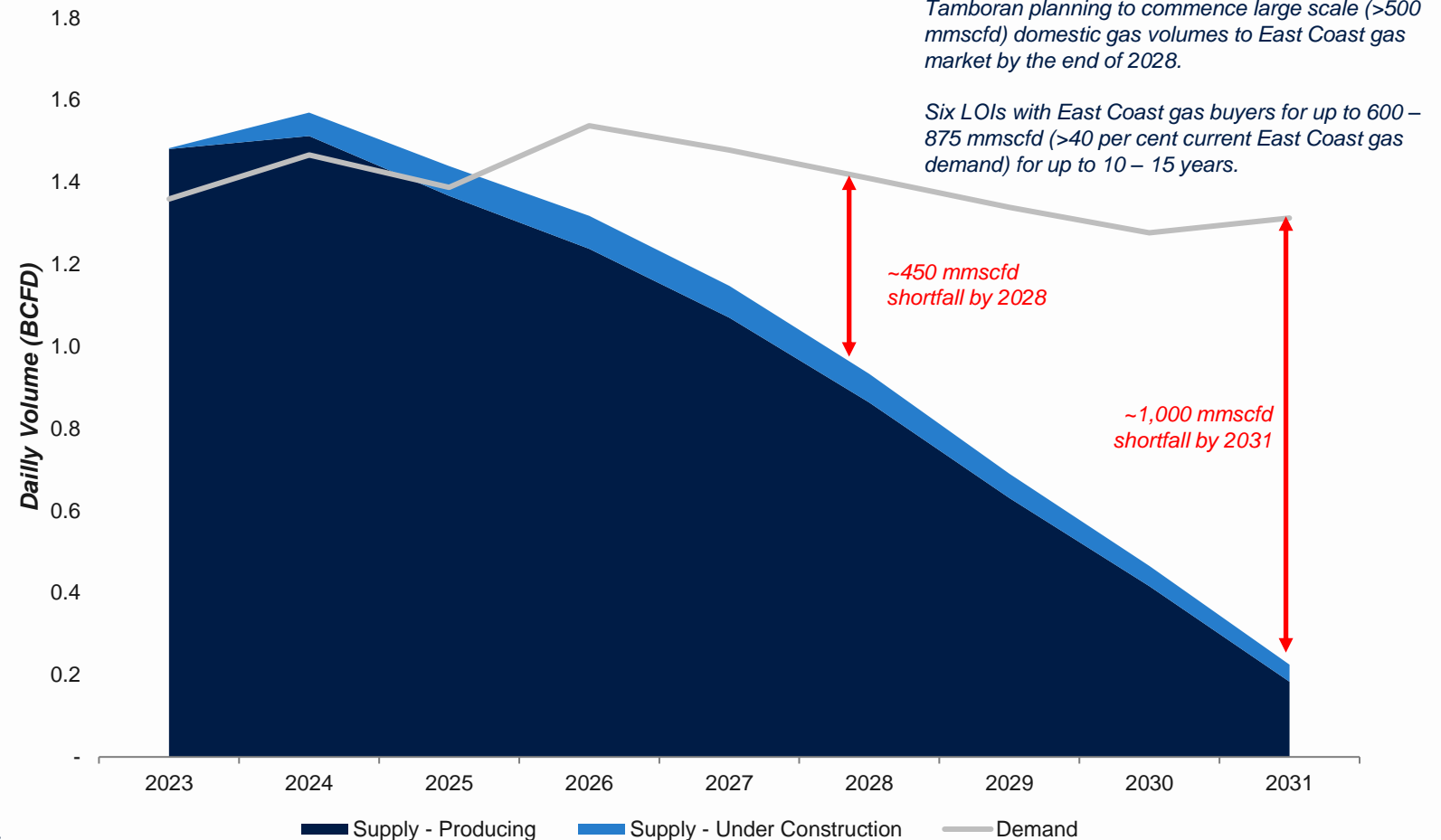
<sup>2</sup>Source: ABC News: "NT's Blacktip gas field production drops, forcing shutdown of Northern Gas Pipeline" (22 October 2022).

# Australia's East Coast gas market

~450 mmscfd shortfall forecast by 2028, increasing to 1,000 mmscfd by 2031<sup>1</sup>

- Australia's East Coast gas market **requires significant investment** in new gas developments to meet forecast demand.
- Rystad forecast **sustained demand for gas from gas-fired power generation**, which supports firming capacity for renewables (including wind and solar).
- Government moves to ban gas in new houses is expected to increase demand for electricity at a time when AEMO are forecasting blackouts<sup>2</sup>.
- Current solution is to extend life of coal-fired power stations<sup>3</sup>.
- **If Australia's East Coast coal fired power stations were replaced with gas, Australia's total GHG emissions could fall by ~13 per cent<sup>4</sup>.**

East Coast gas market supply/demand<sup>1</sup>



<sup>1</sup>Source: Rystad Energy (September 2023). Project producing and under construction.

<sup>2</sup>Source: AFR (31 August 2023): "Five reasons blackouts are more likely this summer" ([link](#)).

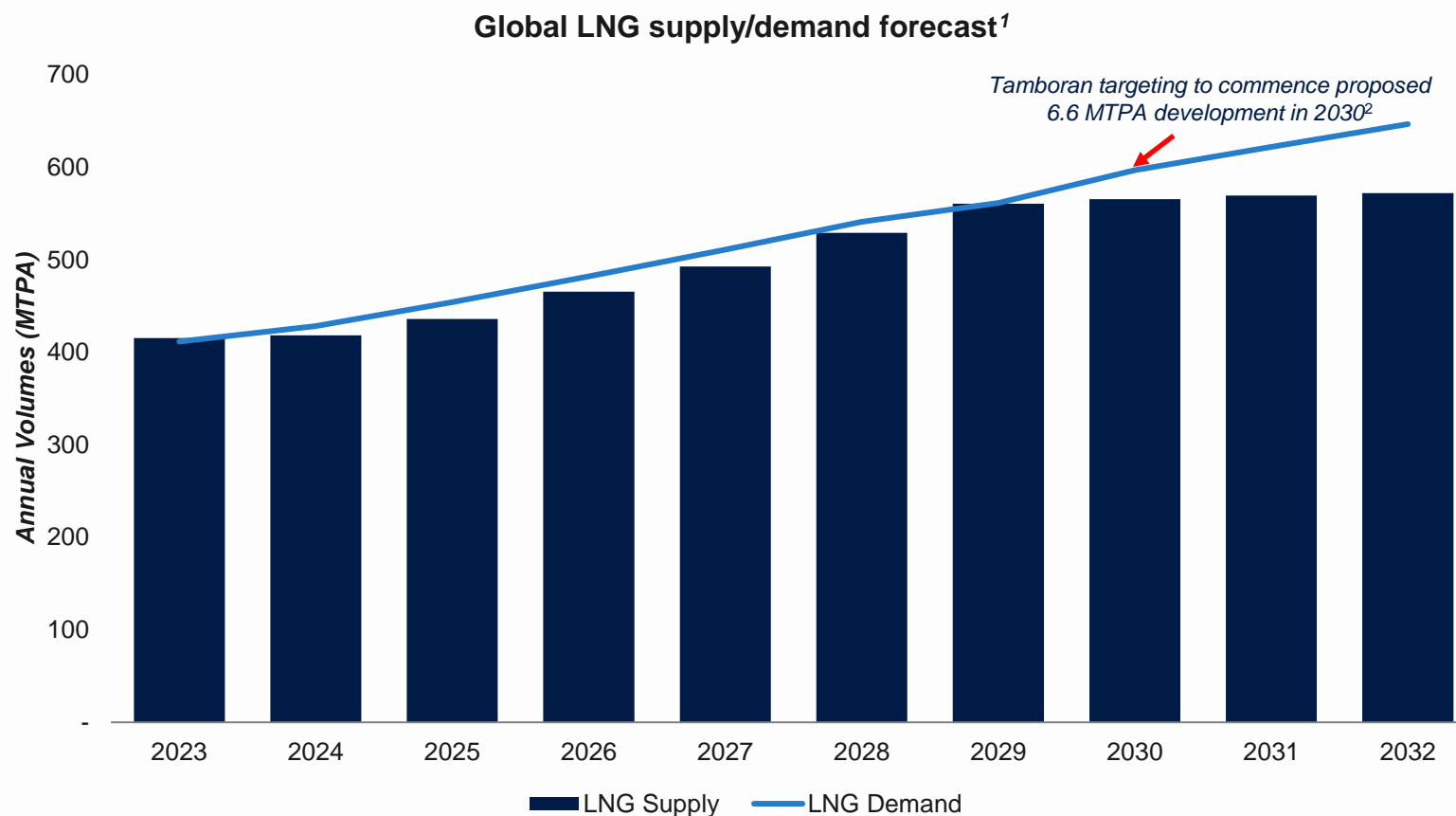
<sup>3</sup>Source: AFR (31 August 2023): "AGL forced to extend unit shutdown at Loy Yang" ([link](#)).

<sup>4</sup>Australia East Coast coal facility GHG emissions: National Greenhouse and Energy Reporting data, Electricity sector emissions and generation data 2021–22.



# Global LNG markets

>30 MTPA shortfall forecast by 2030, increasing to 75 MTPA by 2032<sup>1</sup>



- The global LNG market is expected to be **>30 MTPA short by 2030** due to:
  - **lack of investment** in new supply (forecast 3.6 per cent CAGR<sup>3</sup>), and
  - **Increasing demand** (forecast 5.2 per cent CAGR).
- Increased LNG prices drove shift to coal fired power in 2022, coinciding with increasing coal demand in Asia and higher emissions<sup>4</sup>.
- **Gas has less than half of the greenhouse gas emissions** compared to coal for electricity generation<sup>5</sup>.
- Increasing the availability of LNG to our global partners can help to reduce emissions and improve energy security.

<sup>1</sup>Source: Rystad Energy (September 2023). Project producing and under construction.

<sup>2</sup>Subject to establishment of commercial flow rates within the Beetaloo Basin and standard government and commercial approvals.

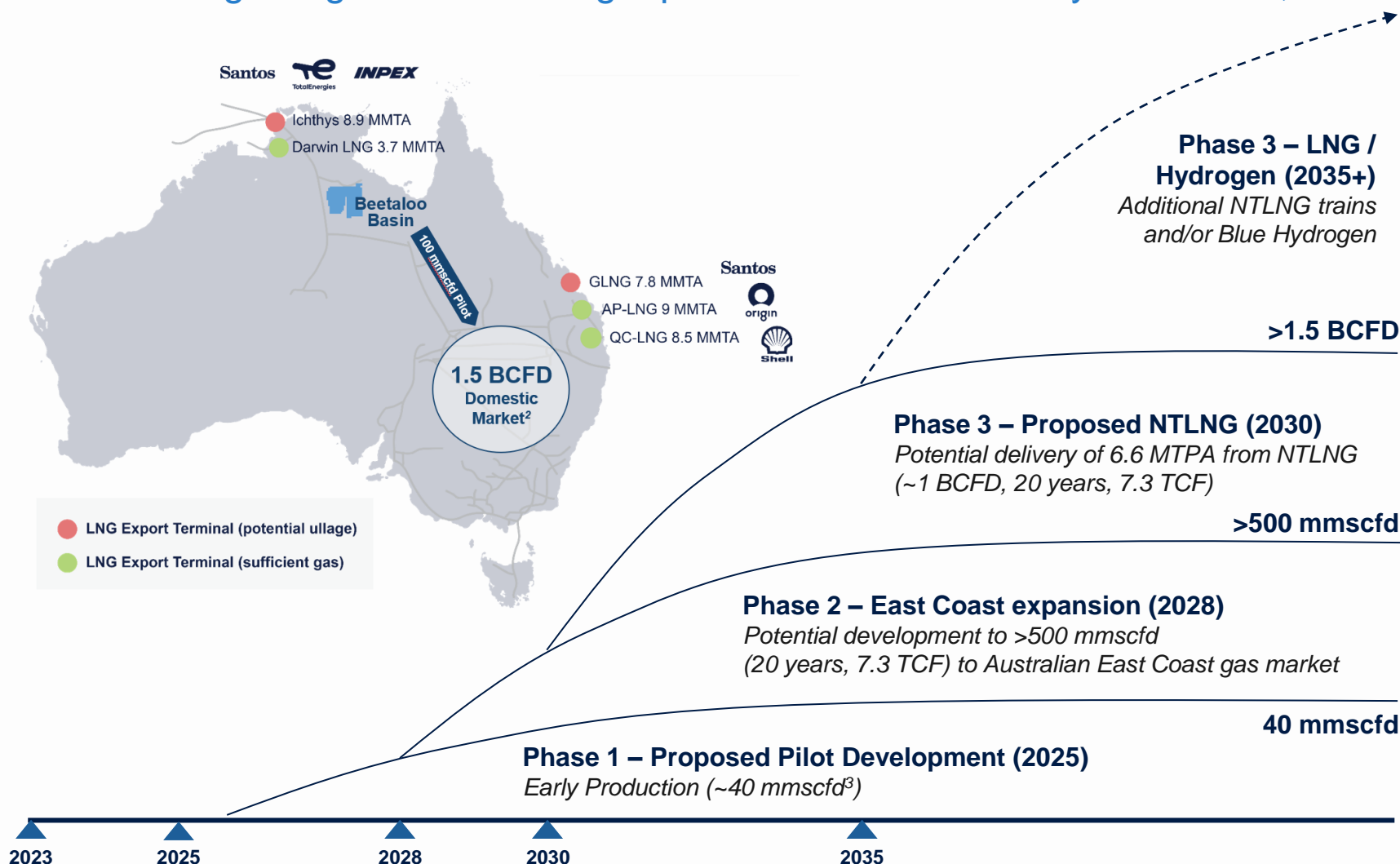
<sup>3</sup>Compound Annual Growth Rate (CAGR).

<sup>4</sup>Source: IEA Report – “Coal 2022 - Global coal demand is set to rise in 2022 amid the upheaval of the energy crisis” ([link](#)).

<sup>5</sup>Source: IEA Report – “The Role of Gas in Today's Energy Transitions” ([link](#)).

# Tamboran's strategy

Focused on growing Beetaloo Basin gas production to >1.5 BCFD by 2030<sup>1</sup> to NT, East Coast and Asia Pacific markets



- Additional wells to develop LNG upside at Middle Arm (via new NTLNG trains or tolling) or Australia's East Coast via LNG.
- Opportunities to supply potential Blue Hydrogen projects across NT or East Coast.
- ~55 wells to deliver first ~2.2 MTPA (~300 mmscfd) of ~6.6 MTPA phased development to proposed NTLNG plant at Middle Arm (total ~1 BCFD).
- Phase 3 supported by alignment with midstream partner (APA Group).
- ~90 wells to develop >500 mmscfd supplying East Coast domestic gas market.
- Phase 2 supported by alignment with midstream infrastructure partner (APA Group).
- ~7 wells to develop 40 mmscfd for NT / East Coast domestic gas markets<sup>3</sup>.
- Book gross 2C contingent gas resources of ~17 TCF to underpin >1.5 BCFD (20 years) development.

<sup>1</sup>Reflects gross Beetaloo Basin production aspirations by 2030 from assets Tamboran has ownership in (EP 98, 117, 76, 161 and 136). Refer to Tamboran ASX Announcement (23 June 2023): "Tamboran selects APA Group as preferred Beetaloo Basin pipeline partner".

<sup>2</sup>AEMO: Gas Statement of Opportunities (March 2023); forecast East Coast gas market demand in 2022.

<sup>3</sup>Subject to available pipeline capacity in the Amadeus Gas Pipeline and Blacktip production by 2025.

Note: Timings for phased development are flexible and subject to commercialisation of Beetaloo gas resources and key stakeholder and JV approvals.

# Upcoming activities

SS1H stimulation and IP30 flow rates expected to support sanctioning of proposed Pilot Development<sup>1</sup>

**Preparing to undertake 10 stage, 500-metre stimulation program at SS1H during Q4 2023.**

**IP30 flow rates planned for early Q1 2024<sup>2</sup>.**

**Targeting sanction of proposed ~40 mmscfd Pilot Development on demonstration of commercial rates at SS1H<sup>1,3</sup>.**

**APA to construct proposed pipeline from Shenandoah South location to Amadeus Gas Pipeline (AGP).**

**Commenced discussions with contractors to build, own and operate processing and gathering infrastructure.**

**Maturation study to delineate ~17 TCF 2C contingent gas resources between Amungee and Shenandoah South regions<sup>4</sup>.**



<sup>1</sup>Subject to joint venture approval and funding.

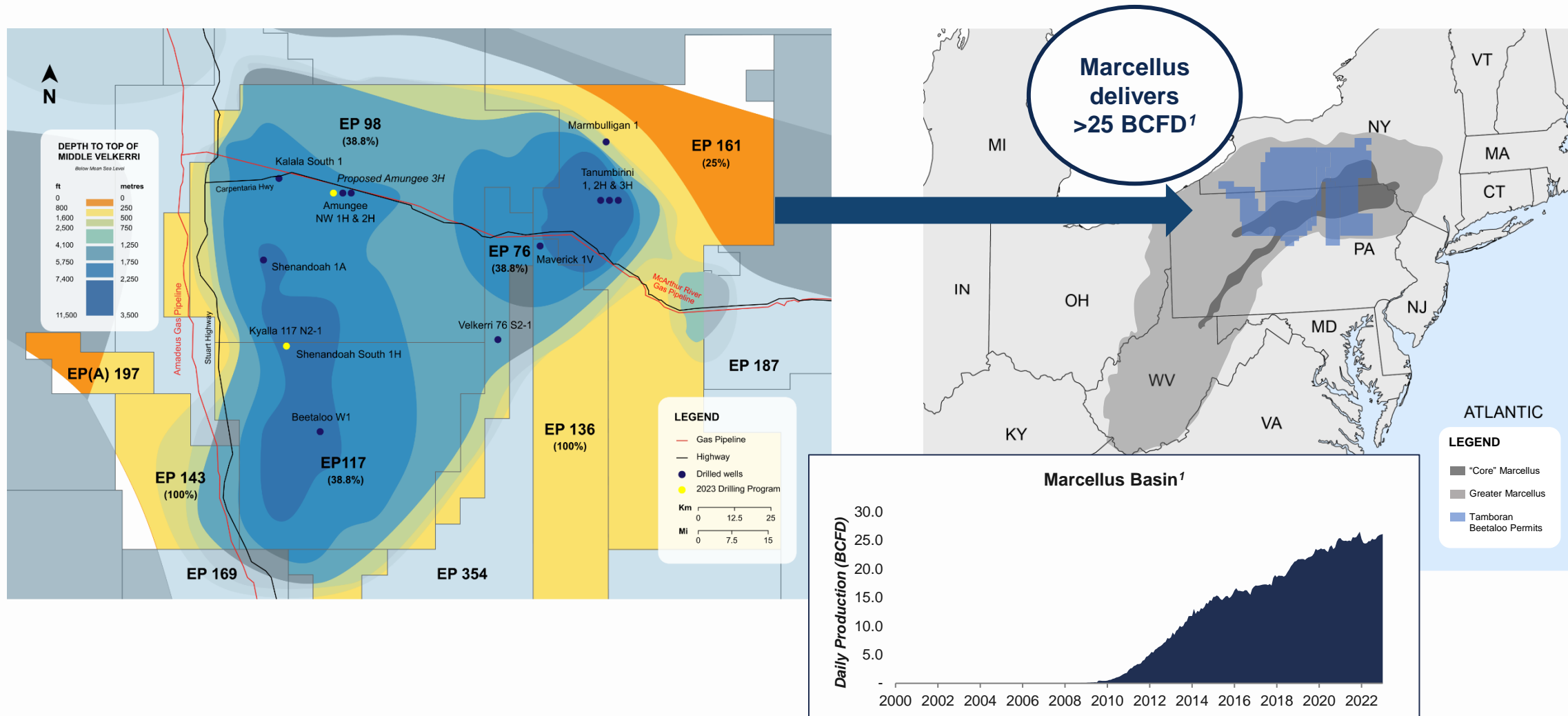
<sup>2</sup>Subject to equipment availability and weather conditions.

<sup>3</sup>Tamboran have historically indicated the T2H demonstrated commercial IP30 flow rates of 3.3 mmscfd over a 1,000-metre horizontal section.

<sup>4</sup>Booking of ~17 TCF (gross) 2C contingent gas resources delivered following drilling and flow testing of Amungee 3H, Shenandoah South 1H and proposed Shenandoah North 1V well. Data supported by Netherland, Sewell & Associates, Inc. (NSAI) (03 March 2023).

# Scale of Tamboran's consolidated acreage in Beetaloo Basin on par with the US Marcellus Shale

Tamboran's continuous Beetaloo Basin acreage equivalent to entire Marcellus gas window acreage (>25 BCFD<sup>1</sup>)

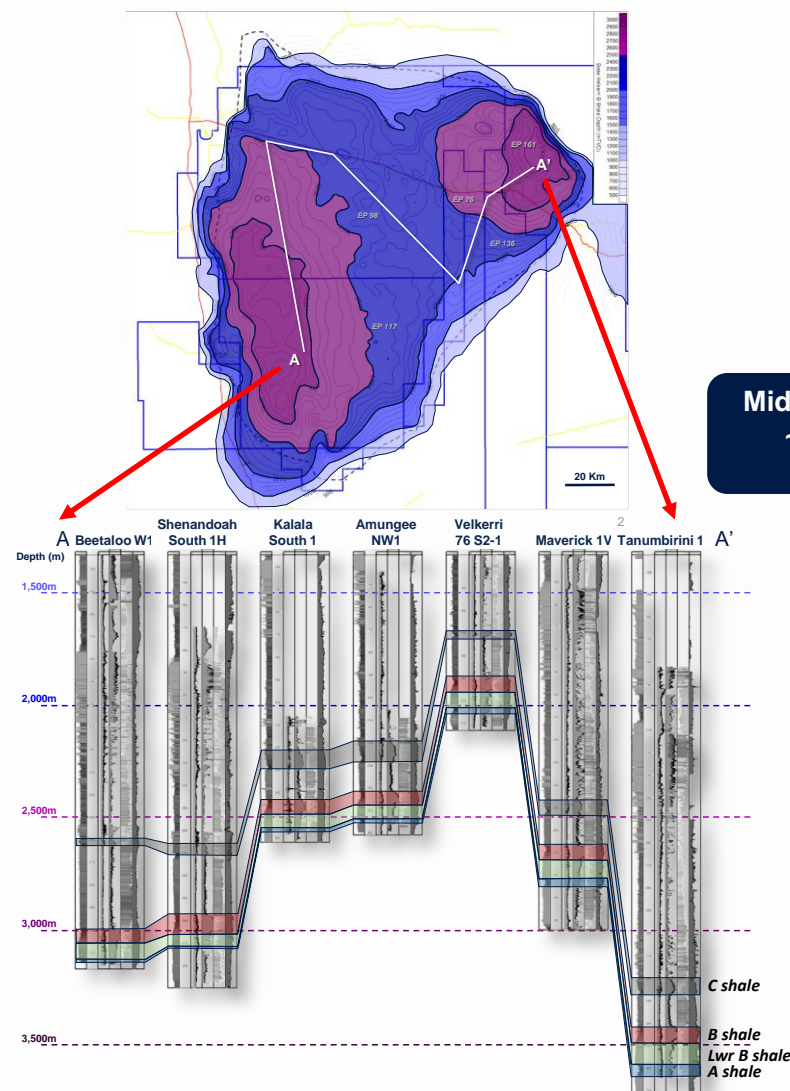


<sup>1</sup>US Energy Information Administration (EIA), 28 February 2023 data.



# Beetaloo Basin - continuous high quality subsurface resource over ~5 million acres

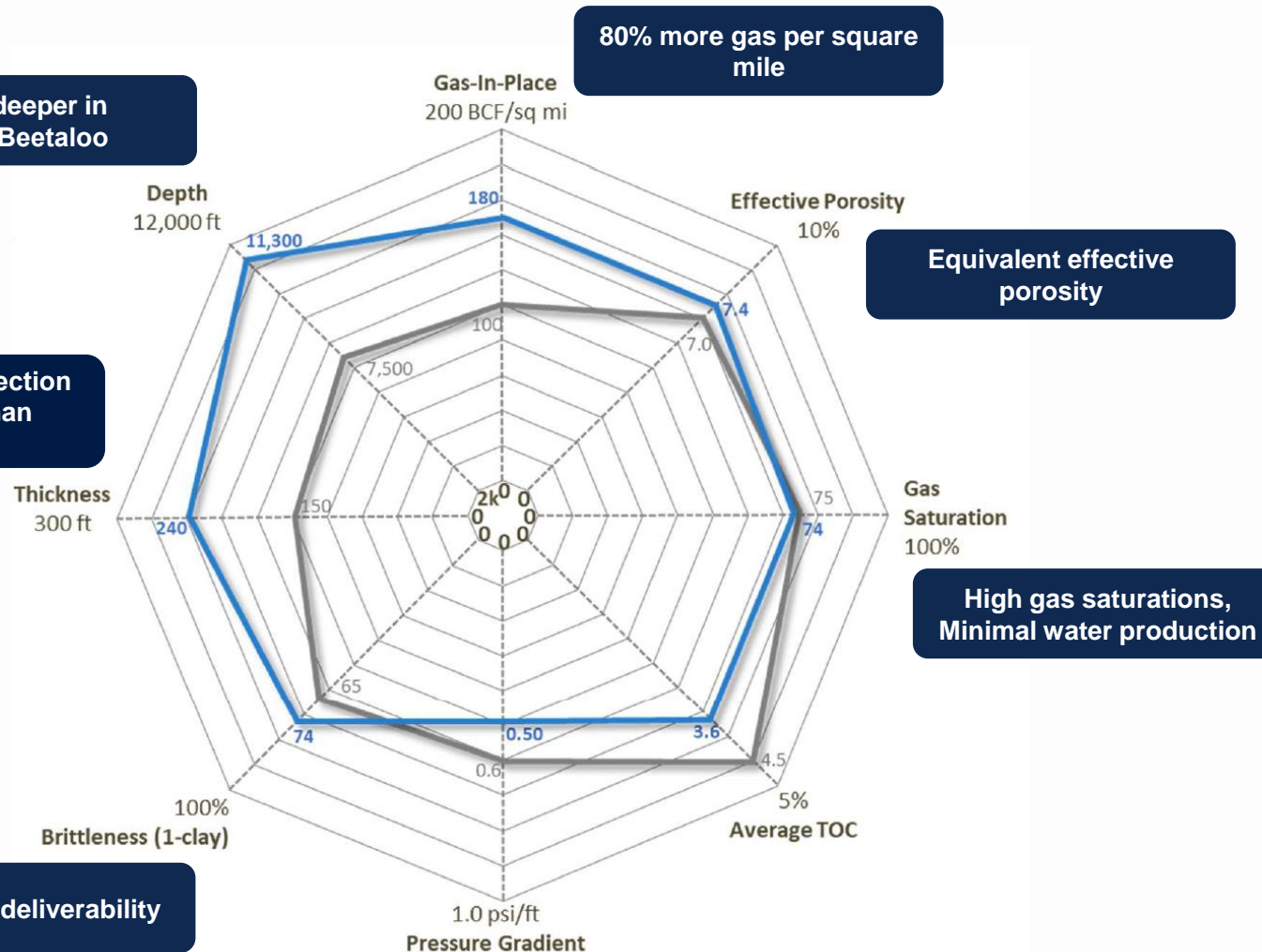
Rock qualities closely resemble the US' most prolific gas resource in the Marcellus Basin



~50% deeper in  
'Core' Beetaloo

Mid-Velkerri "B" section  
~60% thicker than  
Marcellus

Equivalent deliverability



Beetaloo Sub-basin Mid-Velkerri "B" properties  
Marcellus shale properties

# Recent well performance confirming Tamboran's 'core' Beetaloo focus

SS1H demonstrated 1-million-acre prospective development area with high-quality shale

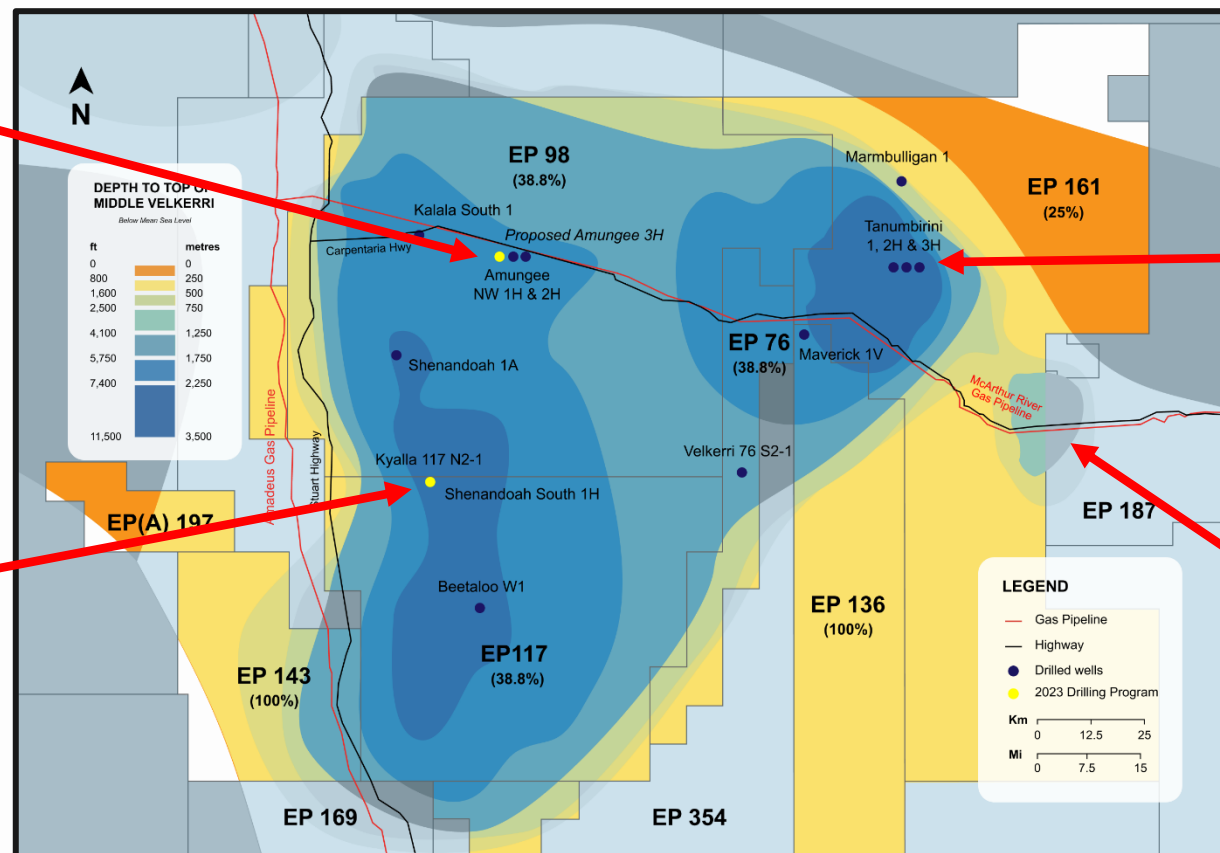


## Amungee Area

- Mid Velkerri B Shale (2,440-metre depth, 0.44 psi/ft pressure gradient).
- Amungee NW 1H (2016) averaged **IP30 rates of >5 mmscfd**, (normalised to 1,000-metre lateral)<sup>1</sup>.
- Evaluating Amungee 2H (2023) well fluid<sup>2</sup>. Planning remediation activity in Q4 2023.

## Shenandoah Area

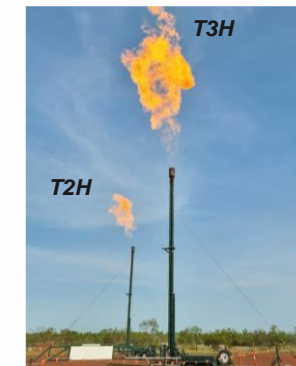
- Mid Velkerri B Shale (~3,000-metre depth).
- Shenandoah South 1H intersected ~90 metres of high-quality Mid Velkerri B Shale with higher porosity and gas saturation relative to offset wells.
- Testing in H2 2023<sup>3</sup>.



- Mid Velkerri B Shale (3,400-metre depth, 0.51 – 0.56 psi/ft pressure gradient).
- Tanumbirini 2H and 3H wells (2022) averaged **IP30 rates of 3.3 and 5.2 mmscfd**, respectively (normalised to 1,000-metre lateral)<sup>4</sup>.
- Flow rates and regional analysis validate focus on targeting 'core' Beetaloo.**



- Mid Velkerri B Shale (>1,600 metre depth, ~0.5 psi/ft pressure gradient).
- Carpentaria 2H and 3H (2023) averaged post soaking **IP30 rates of 3.0 mmscfd<sup>5</sup> and 1.7 mmscfd<sup>6</sup>**, respectively, normalised to 1,000-metre lateral.



<sup>1</sup>Refer to Falcon Oil & Gas Announcement (3 September 2021): "Amungee NW 1H Normalised Gas Flow Rate Equivalent to 5 mmscfd per 1,000m Horizontal".

<sup>2</sup>Refer to Tamboran ASX Announcement (23 June 2023): "EP 98/117 Operational Update: Interim Amungee 2H update and forward plan".

<sup>3</sup>Subject to equipment availability and weather conditions.

<sup>4</sup>Refer to Tamboran ASX Announcement (05 September 2022): "Tanumbirini 2H and 3H 30-day normalised flow rates exceed estimated Beetaloo commerciality threshold".

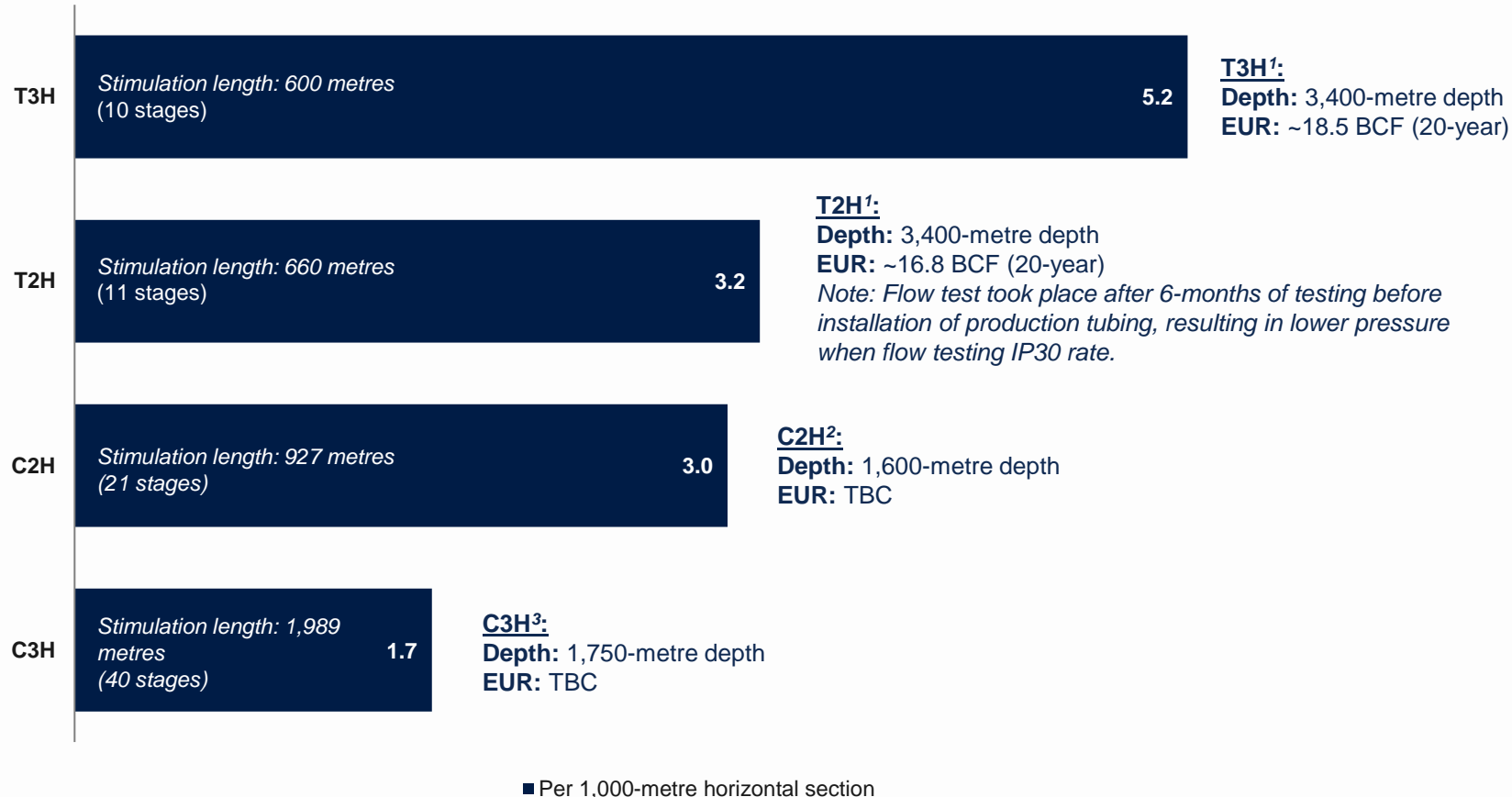
<sup>5</sup>Refer to Empire Energy (EEG AU) Announcement (24 May 2023): "Carpentaria-2H flow testing complete following continued strong gas rates".

<sup>6</sup>Refer to Empire Energy (EEG AU) Announcement (05 September 2023): "Beetaloo Operations Update – Increased Flow Rates Reported at C-3H".

# Recent Beetaloo Basin flow tests

Testing demonstrates greater well productivity at depth within Beetaloo Basin

## Beetaloo Basin IP30 Flow Rates



- Three key flow tests over the last 12 months have demonstrated commerciality of the Beetaloo Basin<sup>4</sup>.
- Tests to date highlight increased productivity and higher flow rates with increased EURs of deeper shale formation, indicative of higher formation pressure.
- Mid-Velkerri B Shale at SS1H was intersected at 2,980 metres, ~20 per cent deeper than A2H.

<sup>1</sup>Refer to Tamboran ASX Announcement (05 September 2022): "Tanumbirini 2H and 3H 30-day normalised flow rates exceed estimated Beetaloo commerciality threshold".

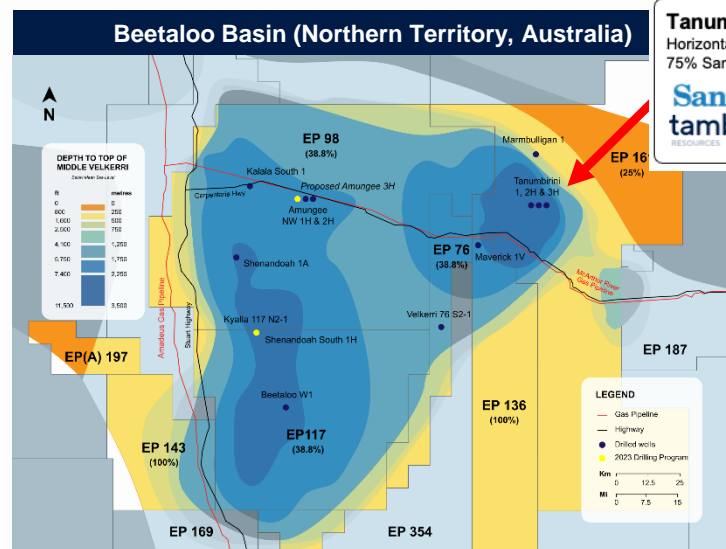
<sup>2</sup>Refer to Empire Energy (EEG AU) Announcement (24 May 2023): "Carpentaria-2H flow testing complete following continued strong gas rates".

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<sup>4</sup>Tamboran have historically indicated the T2H demonstrated commercial IP30 flow rates of 3.3 mmscf/d over a 1,000-metre horizontal section.

# 'Core' Beetaloo well performance at EP 161 consistent with Marcellus Basin wells

Independently verified analysis indicates 20-year EUR of 16.8 – 18.5 BCF<sup>1</sup> for assumed development well at Tanumbirini

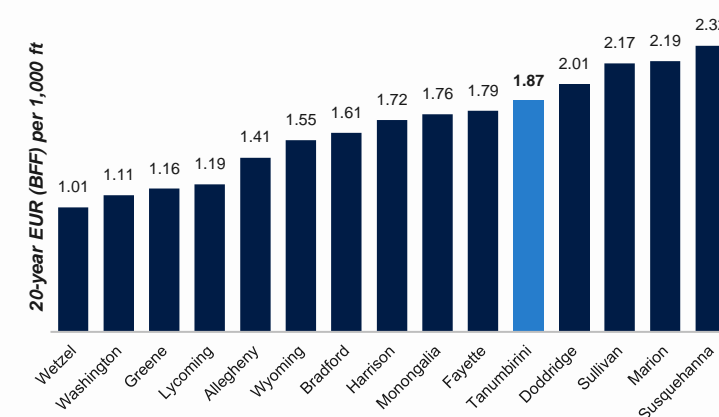
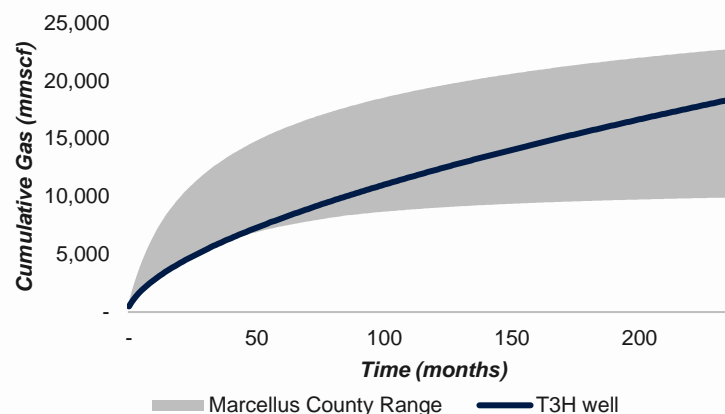
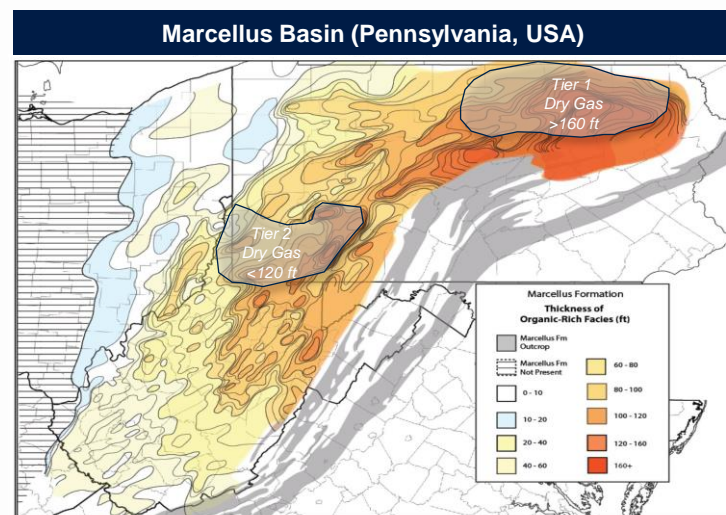


**Tanumbirini 2H & 3H (2021)**  
Horizontal Frac and Flow Test  
75% Santos, 25% Tamboran

	Tanumbirini 2H	Tanumbirini 3H
Stimulated lateral length (metres)	660	600
Stimulated stages (#)	11	10
Cumulative gas production (mmscf)	416	272
Flow test (days)	280	178
IP30 / IP90 (normalised 1,000-metre) (mmscfd) <sup>2,3</sup>	3.3 / 2.4	5.2 / 3.5
Normalised EUR (BCF, 20-years, 3,000-metre) <sup>1</sup>	16.8 – 18.5 BCF	

The Tanumbirini wells show 20-year cumulative gas volumes<sup>1,4</sup>

Normalised 20-year EUR (BCF per 1,000 ft, 300 metres)<sup>1,4</sup>



<sup>1</sup>Refer to Tamboran ASX Announcement (23 June 2023): "EP 161 Update: Flow test analysis of Tanumbirini wells".

<sup>2</sup>Refer to Tamboran ASX Announcement (05 September 2022): "Tanumbirini 2H and 3H 30-day normalised flow rates exceed estimated Beetaloo commerciality threshold".

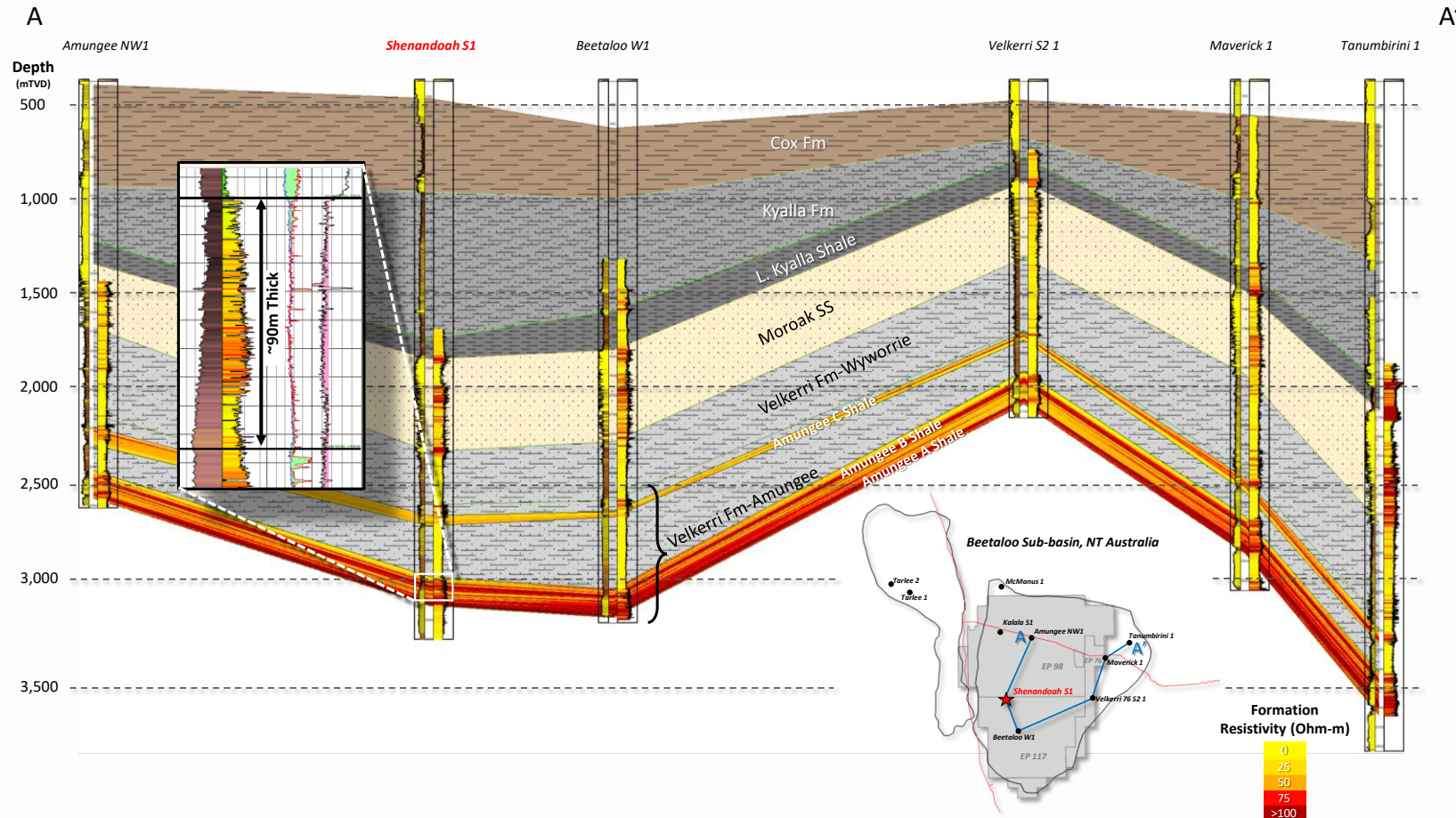
<sup>3</sup>Refer to Tamboran ASX Announcement (25 January 2023): "Second quarter activities report for period ended 31 December 2022".

<sup>4</sup>Marcellus County Range includes Allegheny, Bradford, Fayette, Greene, Lycoming, Sullivan, Susquehanna, Washington, Wyoming, Doddridge, Harrison, Marion, Monongalia and Wetzel ([https://www.eia.gov/analysis/drilling/curve\\_analysis/archive/2022/](https://www.eia.gov/analysis/drilling/curve_analysis/archive/2022/)), extrapolated over 3,000-metre horizontal section).



# Shenandoah South 1H (EP 117)

Intersected 90 metres of high quality Mid Velkerri B Shale, thickest section in the Beetaloo depocenter<sup>1</sup> to date

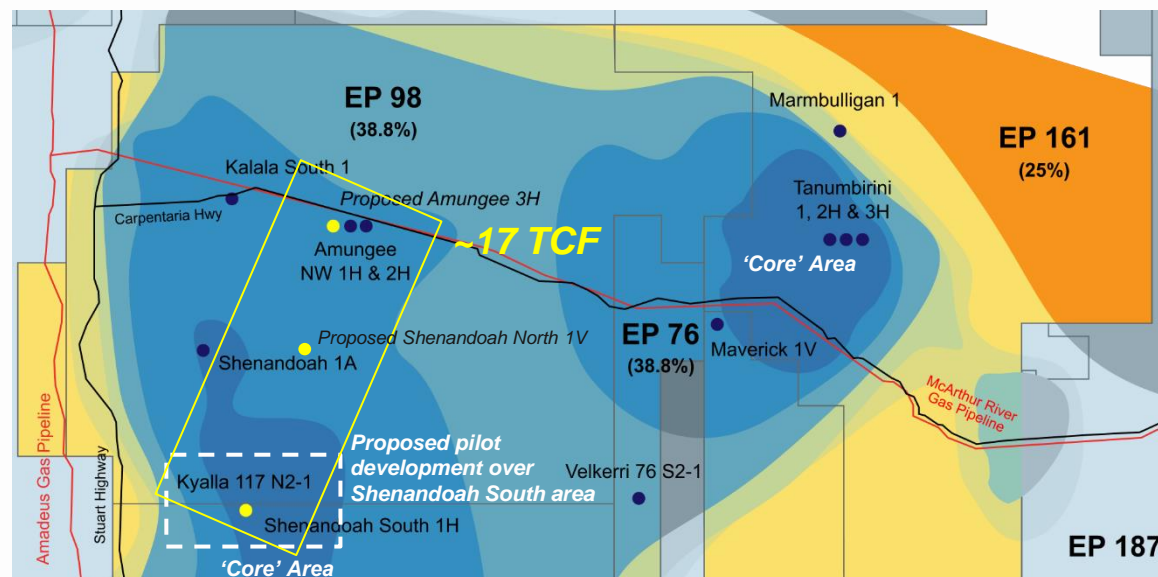


- Drilled with recently imported H&P super spec FlexRig® Flex 3 rig.
- Pilot hole drilled to 3,300 metres, in 21.5 days intersecting **~90 metres of high quality Mid Velkerri B Shale** with **strong dry gas shows**.
- Logging indicates **higher porosity and gas saturation relative to offset wells**.
- Rig currently drilling 1,000-metre horizontal section.
- Planning **10 stage stimulation over 500 metres**, incorporating key learnings from T2H/3H and A2H.
- Targeting IP30 flow test results in early Q1 2024.

<sup>1</sup>Refer to Tamboran ASX Announcement (30 August 2023): “SS1H intersects 90m of high quality Mid Velkerri B shale”.

# Tamboran to focus development on 'core' Beetaloo

Three well upcoming work program to delineate ~17 TCF (gross) 2C contingent gas resources<sup>1</sup> across 'core' region



- Regional analysis post-acquisition and evaluation of EP 161 flow tests validates Tamboran's plan on targeting deeper 'core' regions of the Beetaloo.
- Delineating LNG-scale resource of 17 TCF (gross) 2C contingent gas resources<sup>1</sup>.
- Close to ~100 TJ per day Amadeus Gas Pipeline and in alignment with midstream pipeline partner.
- Shenandoah South 1H**: Commenced drilling in August 2023 with recently imported H&P rig. Intersected 90 metres of high quality Mid Velkerri B Shale. Completing 1,000 metre horizontal section and planned 10 stage stimulation program over 500 metres.
- Amungee 3H**: Follow up A2H well close to existing MRP infrastructure. Potential for early mini-LNG sales.
- Shenandoah North 1V**: Planned to be drilled as a vertical well between Amungee and Shenandoah South to support potential material resource booking (NSAI Maturation Study<sup>1</sup>). Subject to standard regulatory and JV approvals.

<sup>1</sup>Booking of ~17 TCF (gross) 2C contingent gas resources delivered following drilling and flow testing of Amungee 3H, Shenandoah South 1H and proposed Shenandoah North 1V well. Data supported by Netherland, Sewell & Associates, Inc. (NSAI) (03 March 2023).

# H&P and Tamboran Strategic Alliance

Rig imported into Beetaloo Basin and currently drilling Shenandoah South 1H

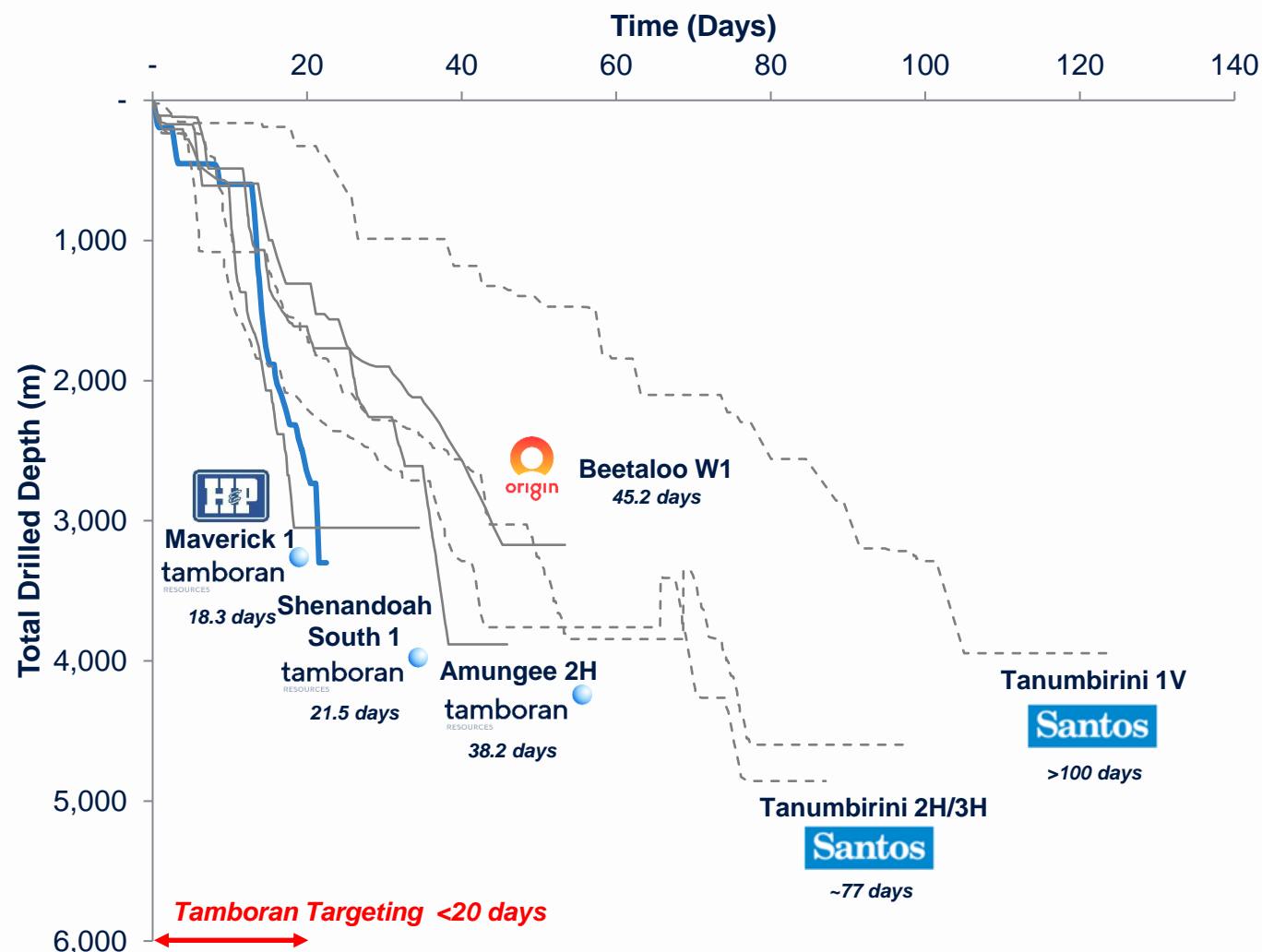


- Tamboran / H&P Strategic alliance to import a modern US unconventional drilling rigs into the Beetaloo.
- H&P aligned with Tamboran via \$22 million strategic investment (6.2% interest).
- Tamboran has contracted an H&P FlexRig® super-spec rig (2,200 HP, 1,000,000 lb hook load) for a minimum of two years.
- Drilled 3,300-metre SS1H plot hole in 21.5 days, achieving 153 metres per day, fastest rate for a Beetaloo Basin well sub-3,000 metres.

**H&P Rigs = Key for reducing drilling costs and commercialising 1.5 BCFD development**

# Latest wells proving operational capability and transfer of US shale technology

SS1H drilled 3,300 metres in 21.5 days, a daily average record with hole sized suited to run 5 ½ inch casing<sup>1</sup>



- H&P's super spec FlexRig® Flex 3 rig has already delivered a **step change in drilling efficiency**.
- **SS1H pilot hole drilled at record pace**, reaching maximum drilling speed of 80 metres per hour.
- Leveraging learnings from drilling of Tanumbirini 2H and 3H (25% working interest, Santos 75% and operator).
- Application of latest generation US drilling technology, including specialised Drilling Bit design.
- **Tamboran targeting less than 20 days drilling time for future 3,000-metre horizontal wells using the super spec FlexRig® Flex 3 rig.**

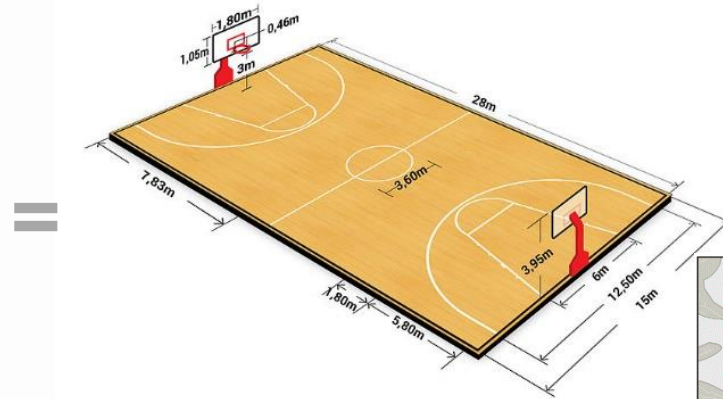
<sup>1</sup>For a true vertical section greater than 2,500-metres.



# Significant environmental benefits of using larger drill rigs

Well spacing increases to 6 km (previously 2 km) – equivalent distance of Opera House to Bondi Beach

Beetaloo production wells are expected to have a footprint similar to a basketball court.



Using larger rigs means gas wells are placed 6 km apart.

Equivalent to standing on a basketball court on Bondi Beach and looking for another basketball court at the Opera House.

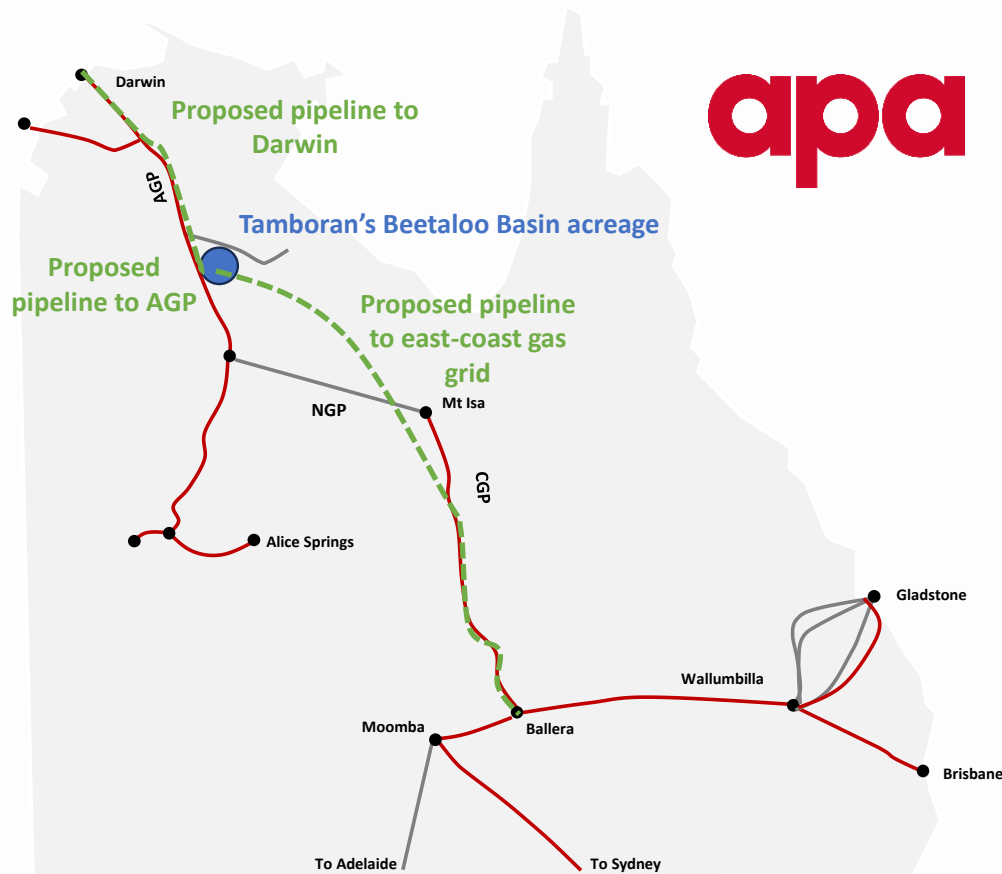
**Real environmental benefit of using H&P's larger US rig:**

- Fewer wells.
- Smaller surface impact.
- Maximise distance between pads.
- Lower development cost (larger resource per well).
- Lower rehabilitation cost (reduced land disturbance and well numbers).



# Tamboran's Strategic Midstream Partnership with APA Group (June 2023)

APA selected as Tamboran's transmission pipeline partner to support the Beetaloo Basin development



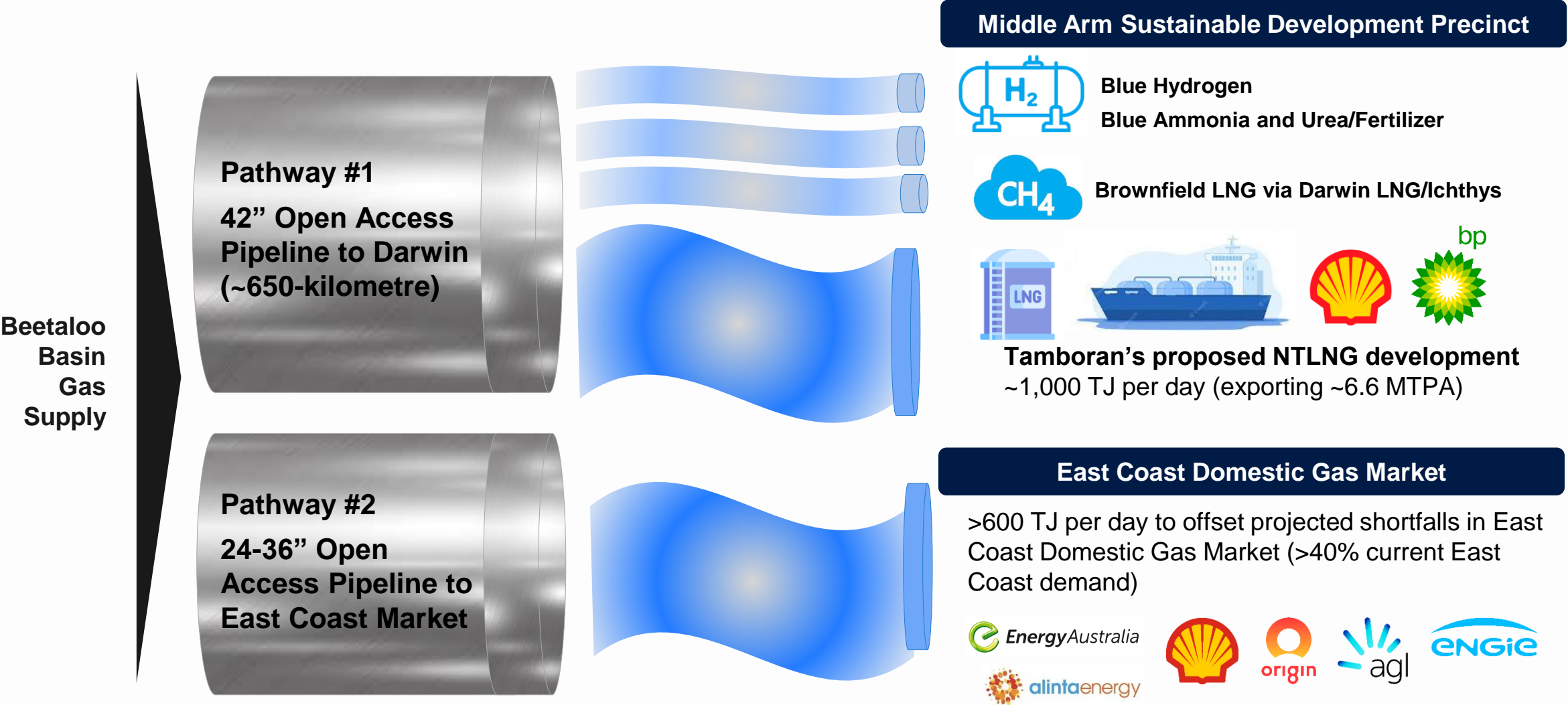
## Strategic midstream partnership with APA Group

- APA Group (ASX: APA) and Tamboran have signed a term sheet to jointly develop gas transmission pipelines connecting Tamboran's Beetaloo Basin assets to the East Coast gas market and Darwin.
- APA will fully fund all activities proposed under the strategic partnership, including spending of up to \$10 million on studies and approvals over the next twelve months<sup>1</sup>.
- Work has commenced for early land access and approvals, and pre-engineering studies to install the Shenandoah South to Amadeus Gas Pipeline (AGP) pipeline connecting Tamboran's proposed pilot development to the domestic market, targeting completion by 2025.
- APA will commence early land access and approvals, and pre-engineering studies to connect the Beetaloo Basin to its existing East Coast gas network with planned pipeline capacity of >500 mmscfd to enable gas to flow by 2028.

<sup>1</sup>Funding subject to Tamboran reaching key milestones for the commercialisation of Beetaloo Basin assets.

# Multiple pathways to commercialise Beetaloo Basin gas

Oversized 42-inch pipeline would enable development of Beetaloo feed gas to supply additional Middle Arm projects



# Beetaloo Basin provides an opportunity to future proof East Coast gas supply

Expressions of interest from six potential buyers for up to 600 – 875 TJ per day demonstrates LT gas supply requirements

- Tamboran has secured separate non-binding letters of intent (LOIs) with **six of Australia’s largest and most reputable energy companies**<sup>1,2</sup>.
- **Cumulative potential gas supply of between 600 - 875 TJ per day** (~220 - 320 PJ per annum) from Beetaloo Basin up to a 10 – 15-year period.
  - Reflects **>40% of the current East Coast gas demand**.
- Significant opportunity for Australia to secure gas supply with locally sourced, low-reservoir CO<sub>2</sub> gas, which has the potential to alleviate the impending gas supply crisis in the East Coast market.
- On securing binding GSAs with the Parties, Tamboran will progress APA Group’s (ASX: APA) proposed pipeline between the Beetaloo Basin and the East Coast gas transmission network<sup>3</sup>.
- Demand for Beetaloo gas volumes highlight the long-term need for gas on Australia’s East Coast to support the phase out of coal fired generators and provide firming capacity to solar and wind generation.



<sup>1</sup>Refer to Tamboran ASX Announcement (02 August 2023): “Tamboran signs LOIs with four domestic buyers”.

<sup>2</sup>Refer to Tamboran ASX Announcement (28 August 2023): “Tamboran signs additional East Coast gas LOIs”.

<sup>3</sup>Refer to Tamboran ASX Announcement (23 June 2023): “Tamboran selects APA Group as preferred Beetaloo Basin pipeline partner”.



# Tamboran's proposed NT LNG Project at Middle Arm

Proposed NTLNG project leading Australia's third wave of LNG, focused on supporting Asia Pacific energy transition<sup>1</sup>




**Location**




Northern Territory Government awarded Tamboran a 170-hectare (~420 acre) site at Middle Arm Sustainable Development Precinct

**LNG Capacity**



Concept Select phase to utilise Middle Arm acreage for initial proposed 6.6 MTA LNG development

**Marine**




Federal Government has committed \$1.5 billion toward common user infrastructure and marine works at Middle Arm

**Upstream**




Strategic drilling partnership with H&P to unlock ~150 TCF 2U prospective<sup>2,3</sup>, low-CO<sub>2</sub> gas resources<sup>4</sup> in the Beetaloo

**Pipeline**



APA selected as Tamboran's transmission pipeline partner to build pipelines to East Coast and proposed NTLNG

**CCUS**



Proposed open-access, multi-user CCUS hub planned for Middle Arm in Darwin<sup>5</sup> to support lower emission from supplying gas

<sup>1</sup>Reference to energy transition supported by potential coal to gas switching in the Asia Pacific region.

<sup>2</sup>The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

<sup>3</sup>2C net contingent gas resources and 2U net prospective resources were assessed and verified by Netherland, Sewell & Associates, Inc. (NSAI) in report dated 26 August 2022.

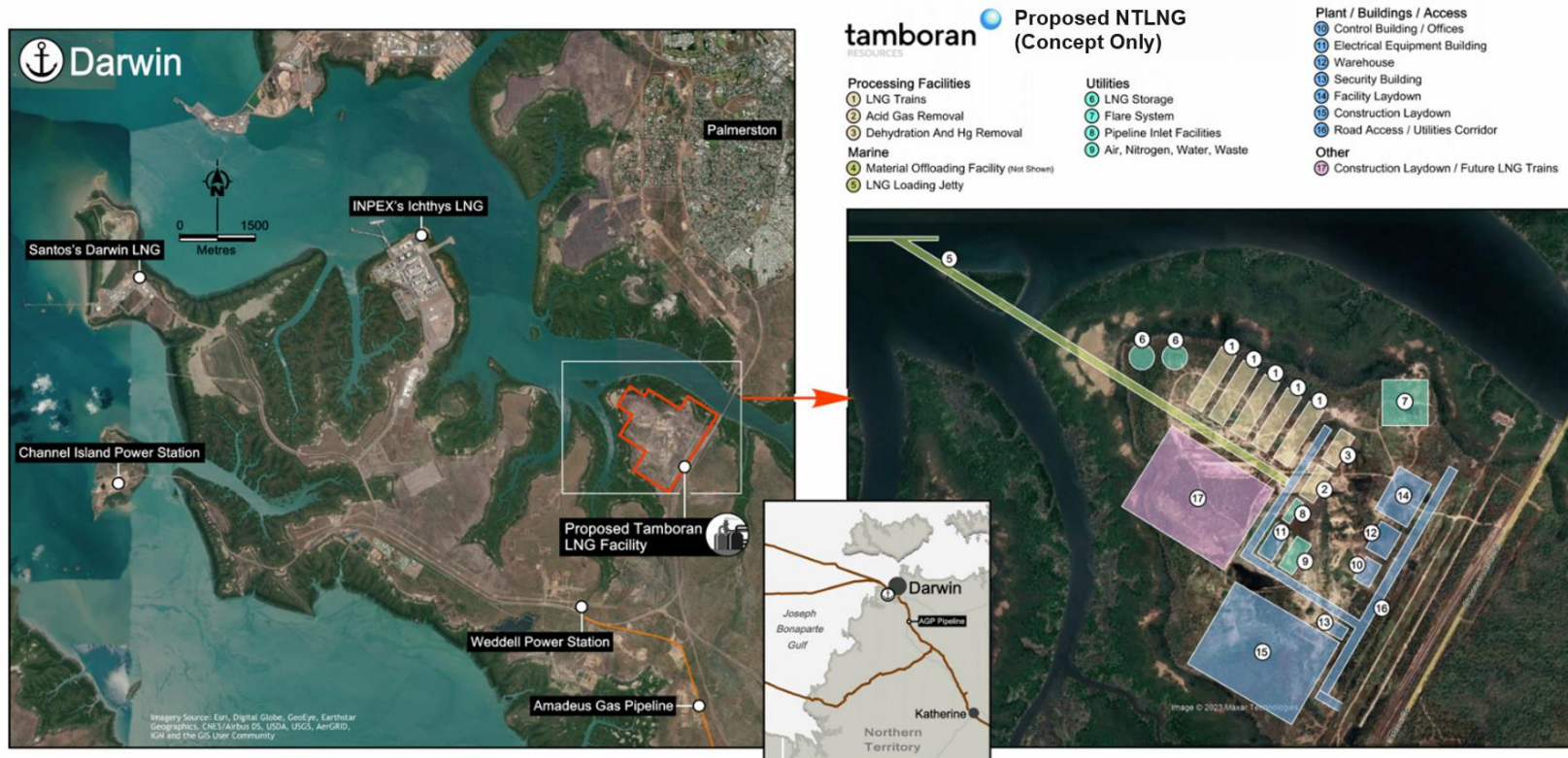
<sup>4</sup>Tamboran's Beetaloo Basin assets hold 3 – 5 per cent CO<sub>2</sub> volumes in the reservoir, significantly lower than regional resources, including Barossa ~18 per cent, Cooper Basin ~20 per cent, Ichthys ~8 – 17 per cent.

<sup>5</sup>Refer to Northern Territory Government's CCUS project plan (<https://territorygas.nt.gov.au/projects/carbon-capture-utilisation-and-storage>).

# Site for proposed NTLNG site at Middle Arm Sustainable District awarded to Tamboran<sup>1</sup>

## Targeting first fully integrated LNG development in onshore Northern Australia

- Northern Territory Government awarded Tamboran a 170-hectare (~420 acre) site at Middle Arm Sustainable Development Precinct (MASDP), specifically at the Wirraway North site, to be named Northern Territory LNG (NTLNG).
- The Australian Federal Government contributed \$1.5 billion towards the development of the MASDP<sup>2</sup> which will provide significant infrastructure to support Tamboran's NTLNG (road, rail, electricity, water, deep-water port, module offload facilities, jetty, common user marine berths).



<sup>1</sup>Refer to Northern Territory Government Media Release (09 June 2023) - [Link](#).

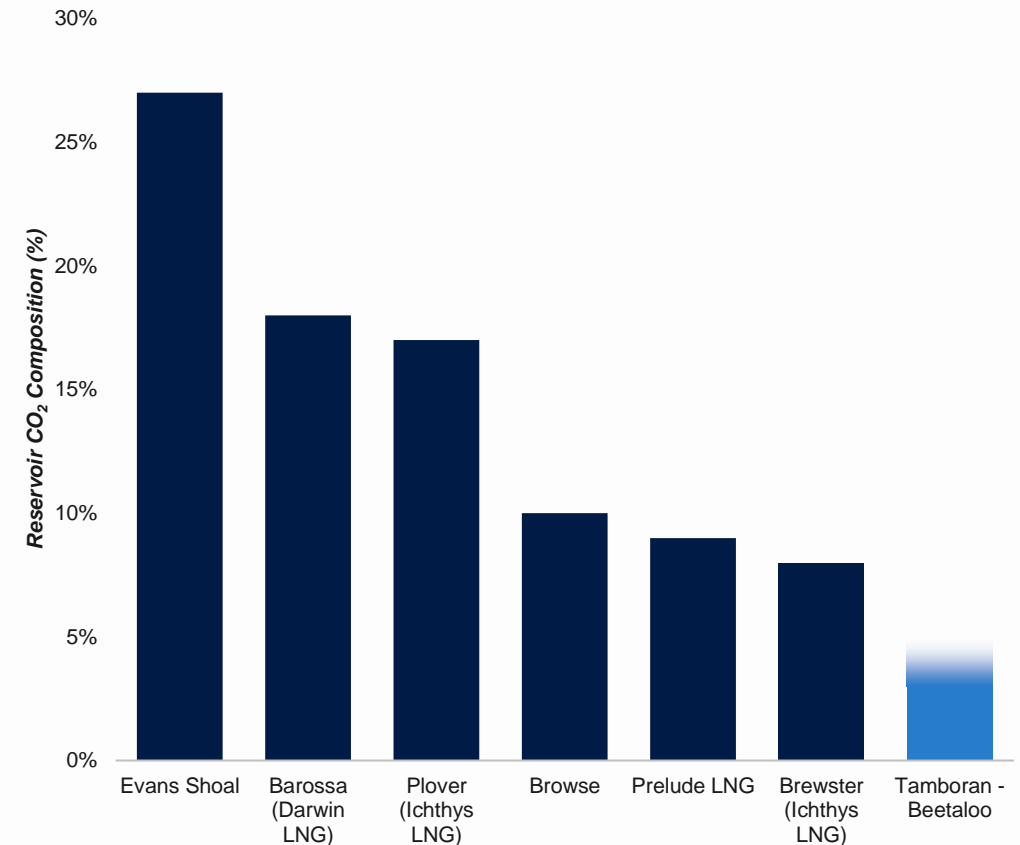
<sup>2</sup>Refer to Middle Arm Development Precinct website ([The Precinct | Middle Arm Sustainable Development Precinct](#)).

# Australian Government's new GHG regulations and Net Zero Scope 1 rules on the Beetaloo Basin

## First regulated Net Zero Scope 1 gas development in the world

- Australian Government's Safeguard Mechanism establishes "GHG baselines" for facilities in Australia.
- Facilities required to purchase carbon offsets for any Scope 1 emissions above that GHG baseline.
- Safeguard regulations establish that new shale gas facilities have a "zero" GHG baseline, meaning that the facility is required to have Net Zero Scope 1 emissions<sup>1</sup>.
- The Safeguard Mechanism also requires natural gas backfilling LNG facilities must have Net Zero reservoir CO<sub>2</sub> emissions.
- Regulation gives Tamboran's low-reservoir CO<sub>2</sub> Beetaloo gas a cost advantage compared to Northern Australia offshore gas fields<sup>2</sup>.
- The Beetaloo Basin is expected to be the world's first Net Zero Scope 1 gas basin.
- In a decarbonising economy, low-reservoir CO<sub>2</sub> natural gas produced by a company with Net Zero targets should be prioritised for development.

Tamboran's Beetaloo Basin asset is has low reservoir CO<sub>2</sub> compares to other Australian gas resources in the region<sup>2</sup>



<sup>1</sup>Safeguard Mechanism Reforms, Department of Climate Change, Energy, the Environment and Water, May 2023.

<sup>2</sup>Refer to reservoir CO<sub>2</sub> levels in Barossa Offshore Project Proposal and Ichthys Environmental Impact Statement.

# The Beetaloo – Significant emissions reduction opportunity for Australia

Tamboran's business model to deliver first commercial gas with Net Zero Scope 1 and 2 emissions<sup>1</sup>

Potential for ~60 million tonnes CO<sub>2</sub>e per annum reduction in global emissions if 3 BCFD of low-reservoir CO<sub>2</sub> Beetaloo gas is used to displace coal in power generation, equivalent to:

**12%**

reduction in Australia's GHG emissions (2021)

**4**

of Australia's largest coal-fired power stations closed<sup>2</sup>

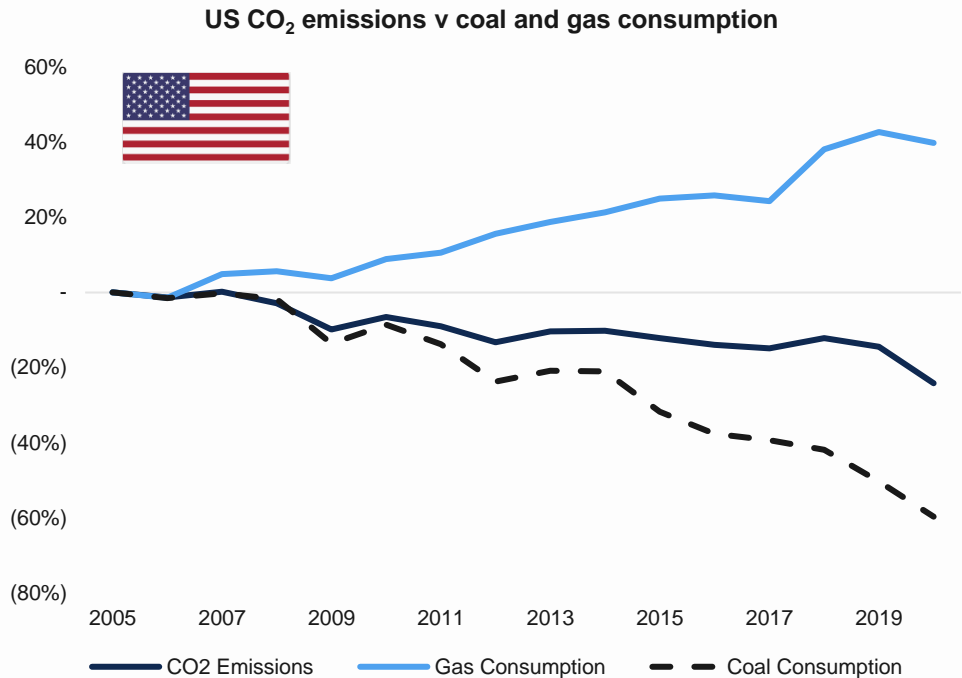
**100%**

of Australian cars replaced with EVs powered by renewable energy

**All**

GHG emissions from South Australia, Northern Territory, Tasmania and ACT combined

The US provides a template for how an increase in gas can support emissions reduction



Source: BP Statistical Review of World Energy (July 2021).

<sup>1</sup>The Commonwealth's new Safeguard Mechanism also legislates a minimum of Net Zero Scope 1 emissions from Beetaloo Basin production operations.

<sup>2</sup>Loy Yang A Power Station, Bayswater Power Station, Eraring Power Station, and Yallourn Power Station.



# Appendix A:

## Additional Information





# Tamboran's Board of Directors

Deep technical knowledge and track record in early-stage E&P success



**Dick Stoneburner**  
Chairman

- Over 35 years' experience in petroleum geology.
- Former Co-founder, President and COO of Petrohawk Energy Corporation (sold to BHP Billiton Petroleum for US\$12.1 billion).
- President North American Shale Production Division at BHP Billiton Petroleum.



**Joel Riddle**  
Managing Director and CEO

- Joined Tamboran Resources as CEO in 2013.
- Over 25 years' experience in upstream oil and gas.
- Previously with Cobalt International Energy.
- Various technical and leadership roles at ExxonMobil, Unocal and Murphy Oil.



**Fred Barrett**  
Non-Executive Director

- Co-founder, President, CEO and Chairman of Bill Barrett Corporation.
- Previous experience at The Williams Companies, Barrett Resources and Terred Oil.



**Patrick Elliott**  
Non-Executive Director

- Founder of Tamboran Resources in 2009.
- Former Director of Eastern Star Gas (sold for \$924 million to Santos) and SAPEX Limited.



**David Siegel**  
Non-Executive Director

- Chairman and Managing Member of Longview Petroleum, LLC, one of Tamboran's largest shareholders.
- Serves as a Senior Advisor to Apollo Global Management.



**John Bell**  
Non-Executive Director

- 25 years' experience in unconventional drilling and operations.
- Currently the Senior Vice President, International & Offshore, at Helmerich & Payne (H&P).
- Previous roles in various senior leadership positions, including Vice President of Human Resources and Vice President of Corporate Services.



**Andrew Robb AO**  
Non-Executive Director

- Member of Australia's House of Representatives for 12 years, including the role of Australia's Minister for Trade, Investment, and Tourism in the Federal Parliament.
- Currently Chairman of The Robb Group, Board Member of The Kidman Cattle Enterprise and a range of national and international businesses.

# Appendix B:

## Resource disclosures



# NSAI estimates of contingent gas resources

1.5 TCF 2C contingent gas resources<sup>1</sup> and 148 TCF 2U prospective gas resources<sup>2,3</sup>

	Contingent Gas Resources			Unrisked Prospective Gas Resources		
	Low Estimate (1C)	Best Estimate (2C)	High Estimate (3C)	Low Estimate (1U)	Best Estimate (2U)	High Estimate (3U)
	BCF	BCF	BCF	BCF	BCF	BCF
Lower Kyalla	-	-	-	177	451	1,457
Mid Velkerri C	133	590	1,342	20,496	35,644	75,245
Mid Velkerri B	202	897	2,039	51,798	86,148	175,653
Mid Velkerri A	-	-	-	13,157	25,553	59,691
<b>Total</b>	<b>335</b>	<b>1,488</b>	<b>3,381</b>	<b>85,628</b>	<b>147,796</b>	<b>312,046</b>

<sup>1</sup>2C net contingent gas resources assessed and verified by Netherland, Sewell & Associates, Inc. (NSAI) in Report Dated 26 August 2022. Totals may not add due to rounding.

<sup>2</sup>2U net contingent gas resources assessed and verified by Netherland, Sewell & Associates, Inc. (NSAI) in Report Dated 26 August 2022. The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

<sup>3</sup>Refer to Resources statement.





## Resources statement

The estimates of contingent and prospective gas resources in the permits contained in the announcement were prepared by Netherland, Sewell & Associates, Inc., qualified resource evaluators. The resource assessment was independently carried out by John G. Hattner, Senior Vice President, and Joseph M. Wolfe, Vice President of Netherland, Sewell & Associates Inc., in accordance with the 2018 Petroleum Resource Management System (PRMS) approved by the Society of Petroleum Engineers (SPE).

Mr. Hattner and Mr. Wolfe meet the requirements of Qualified Petroleum Reserve and Resource Evaluator as defined in Chapter 19 of the ASX Listing Rules. Mr. Hattner is a Licensed Professional Geophysicist in the State of Texas, USA and Mr. Wolfe is a Licensed Professional Engineer in the State of Texas, USA. Mr. Hattner and Mr. Wolfe have consented to the use of the resource estimates figures in the form and context in which they appear in this release. Mr. Hattner has over 42 years of relevant experience. His qualifications include an MBA from Saint Mary's College of California, Master of Science in Geological Oceanography, Florida State University, and a Bachelor of Science in Geology from University of Miami. Mr. Wolfe has over 14 years of relevant experience. His qualifications include a Master of Petroleum Engineering from Texas A&M University and a Bachelor of Science in Mathematics from Northwestern State University.

The estimates of contingent gas resources provided in this announcement were estimated using a combination of deterministic and probabilistic methods as of 31 August 2022. The prospective gas resources provided in this announcement were estimated using a combination of deterministic and probabilistic methods and are dependent on an unconventional gas discovery being made and were prepared as of 31 August 2022.

As recommended in the 2018 Petroleum Resources Management System approved by the Society of Petroleum Engineers, the contingent resources and prospective resources have been aggregated by category beyond the field level by arithmetic summation; therefore, these totals do not include the portfolio effect that might result from statistical aggregation.

The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially movable hydrocarbons.

For further details, refer to Tamboran's ASX presentation released on 20 September 2022.

Tamboran is not aware of any new information or data that materially affects the information included in this presentation and that all the material assumptions and technical parameters underpinning the estimates in this presentation continue to apply and have not materially changed.

Numbers in this report have been rounded. As a result, some figures may differ insignificantly due to rounding and totals reported may differ insignificantly from arithmetic addition of the rounded numbers.



