



26 August 2021

Companies Announcement Office  
ASX Limited  
Exchange Centre  
Level 4, 20 Bridge Street  
Sydney, NSW 2000

Dear Sir/Madam

**BPH ENERGY LIMITED (ASX: BPH) BROKER BRIEFING INVESTOR WEBINAR**

BPH Energy (ASX: BPH) ("BPH" or the "Company") is pleased to advise shareholders and investors that the Company will be presenting as part of the free Broker Briefing Investor Webinar on Thursday 26 August 2021.

**Date:** 26 August 2021

**Time:** 11:30am AEST / 9:30am AWST

**Presenter:** Executive Chairman and Managing Director, David Breeze presenting at 11:50am AEST / 9:50am AWST

The Company invites shareholders, investors, and media to participate in this digital event by registering online via the link below:

[https://zoom.us/webinar/register/2316296780420/WN\\_fk\\_4dLRATdyptba9NNrEng](https://zoom.us/webinar/register/2316296780420/WN_fk_4dLRATdyptba9NNrEng)

Participants will be able to submit questions via the panel throughout the presentation, however, we encourage shareholders and investors to send through questions via email beforehand to [info@brokerbriefing.com](mailto:info@brokerbriefing.com)

Please find attached the associated presentation.

Authorised for release by

A handwritten signature in black ink, appearing to read "D. Breeze".

David Breeze  
Executive Director



ADVENT ENERGY LIMITED

# BPH Energy Ltd -Company Presentation on Advent PEP11 – Offshore Sydney Basin

26 August 2021





# ADVENT ENERGY LIMITED

- **Daily Telegraph 23 08 2021- Clarissa Bye “As Energy Prices Rise the heat is on for NSW to find its own sources of gas”** “Opening up new sources of gas will be critical to preventing price hikes over the next two years”

- **“East Coast Gas shortfall imminent “Annabelle Powell Energy Magazine 17 08 2021** The latest gas report from the ACCC has revealed that a supply shortfall in Australia’s east coast gas market is increasingly likely, and indicates a finely balanced supply outlook for 2022.

A shortfall of 2PJ could arise across the entire east coast gas market in 2022, driven by a shortfall of up to 6PJ in the southern states, if LNG producers export all of their surplus gas.

This forecast is dependent upon demand from gas powered generators decreasing to record lows, and a material volume of gas from currently undeveloped reserves being supplied. ACCC Chair, Rod Sims, said, “The precarious supply situation for next year highlights the importance of the new Heads of Agreement that the Australian Government signed with LNG exporters in January 2021.”

- **This price is definitely not right .Energy Magazine 17 06 2021 by Tamatha Smith, General Manager, Corporate Affairs, Energy Networks Australia.** A network price increase of 40 per cent from one year to the next is almost unheard of – but it is about to happen to the Australian Capital Territory’s (ACT) electricity customers. Evoenergy’s pricing proposal for 2021/22 was released by the Australian Energy Regulator in early April and it tells a cautionary tale about how state-based policies can very quickly turn on their customers. <sup>2</sup>



## Cost of taking foot off the gas

### NSW supply stifled

**CLARISSA BYE**

OPENING up more sources of gas will be critical to preventing price hikes over the next two years, but NSW's best chance of creating its own supply is being threatened by court appeals from green activists.

Despite the nation's consumer watchdog issuing a stark warning about a looming gas shortfall for NSW, the new \$3.6bn Narrabri Gas Project has been delayed by an appeal on climate-change grounds.

Approval last year by the NSW Independent Planning Commission, the project in the state's central west will enable NSW to begin to build its own gas supply instead of relying on interstate.

It comes amid rising gas prices, with Australian supplies from other states tied up in overseas contracts.

But NSW Energy Minister Matt Keen has recently moved to block any further exploration of gas mining in NSW apart from Narrabri – a decision that should be reversed, according to the industry.

And the powerful Australian Workers' Union has also weighed into the gas price debate, claiming Australians are being plagued with the highest gas prices ever.

A three-day appeal against the Santos Narrabri Gas Project is set to be heard in the NSW Land and Environment Court from August 30.

The Environmental Defenders Office, representing an action group, appealed against the approval of the gas mine saying it "failed to properly assess the climate impacts" of its greenhouse gas emissions, among other reasons. Santos chief executive Levin Gallagher said the secrecy of new gas development in the east coast was "highlighting".

Mr Gallagher said the company had already spent more than \$1.5bn and gone through the independent approval process, but gas supply was being "choked".

Meanwhile, the company had drilled more than 700 wells and spent \$200m in gas development in Queensland in the past two years.

"We wanted to spend up to \$250m on Narrabri this year and reveal that without a project approval, that's just not viable," he said.

Australian Workers' Union national secretary Daniel Woburn said NSW residents were "getting increasingly smashed on their gas bills".

"Australia has never produced more gas and yet Australians are being plagued with the highest gas prices ever faced," he said.

The Australian Petroleum Producers' and Exploration Association believes Mr Keen needs to rethink his policy locking up NSW's gas supply.

"Australia has abundant gas resources and the real driver to more supply and competitive prices is safely developing more gas resources close to customers," chief executive Andrew McConville said.

The Daily Telegraph asked Mr Keen what he was doing to keep prices down. His spokeswoman said: "The NSW government has recently approved the Narrabri Gas Project and the Port Kembla LNG import terminal that will help to bolster supply and drive down prices into the future."



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## ADVENT ENERGY LIMITED

**The PEP 11 Gas and proposed CCS Project at Baleen ( Seablue1 well) in the Offshore Sydney Basin has potential national significance.**

**It addresses both forecast gas shortages and the objective of Net Zero Emissions.**

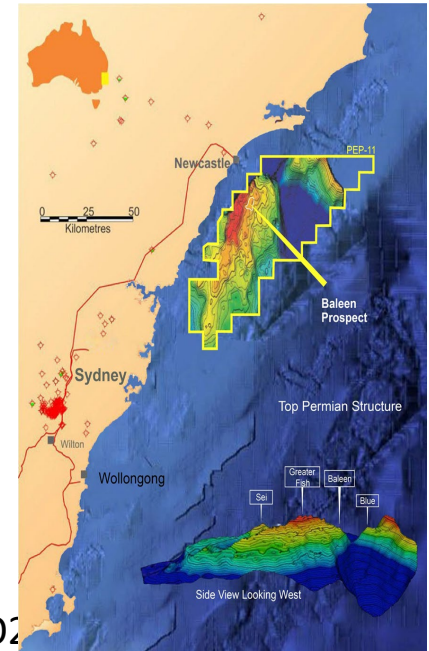
**Advent has committed all gas from the project to Australia domestic supply**

### **CCS**

- Carbon Capture, Usage and Storage (CCUS) technology is one of the priority technologies in Australia's Technology Investment Roadmap.
- It has been identified by the IEA as the only large-scale mitigation option available that can deliver the additional CO<sub>2</sub> emissions reductions that would be required to meet the climate goals in 2050.
- The PEP11 project is the closest potential carbon storage area to the major Australian carbon sources which are in the order of 30% of the entire Australian CO<sub>2</sub> output.
- The Wood Mackenzie report (June 2021) "Location, location, location -the key to carbon disposal "notes "Synergies are greatest where industrial point sources are both near each other and a viable storage site."

### **Gas-Base load power ,Energy costs and employment**

- In NSW, est. 300,000 jobs rely on gas supply. Gas supplies around 1.3 million households and 33,000 businesses.
- NSW's manufacturing sector, which is approximately 84% of the state's Industrial gas load, employs 253,000 people in 26,127 businesses, adding \$33 billion in industry value. Without addressing NSW's looming gas shortfall these could be at risk.



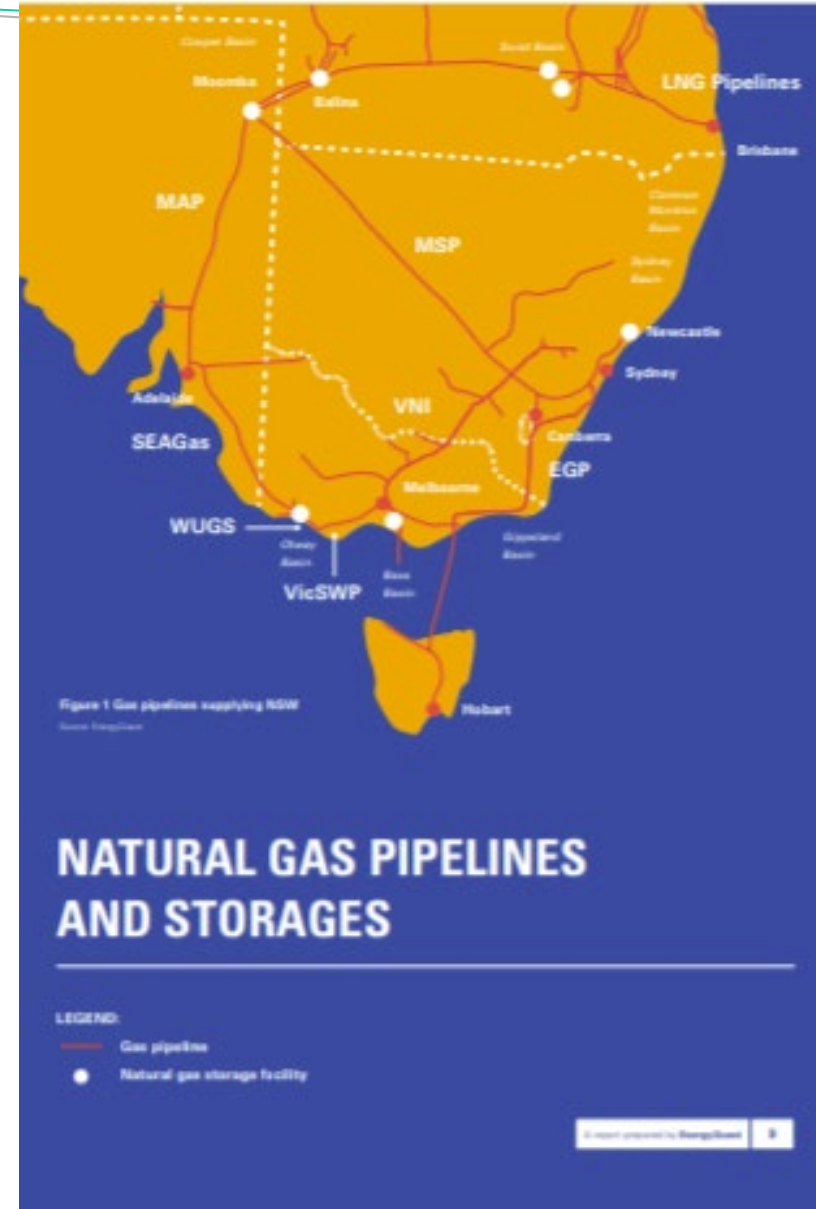


## ADVENT ENERGY LIMITED

### CRUCIAL GAS SUPPLY ISSUES NSW

#### NSW GAS “Running on empty -NSW Business Chamber”

- NSW imports 98 per cent its gas requirements from other states
- A constrained national gas market will see further price rises for every household and business in NSW
- Inaction on gas and energy security are now holding the future of businesses in NSW to ransom, threatening employment losses and reduced investment
- As the southern (Victoria, Tasmania, NSW and South Australia) fields further decline in the future and if no more southern resources are developed, pipeline constraints (particularly in the pipelines from
- **Victoria “Gas Substitution road map “**
- Gas supply outlook for Victoria For over fifty years, Victoria has had access to low cost, abundant natural gas, extracted from offshore gas fields located in Bass Strait. 1
- Australian Energy Market Operator (AEMO), However, as AEMO has indicated in its 2021 Gas Statement of Opportunities (GSOO), these gas fields are rapidly depleting. AEMO is **forecasting an overall decline in Victoria’s production of 43 per cent from 360 PJ per year in 2021 to 205PJ per year in 2025.**

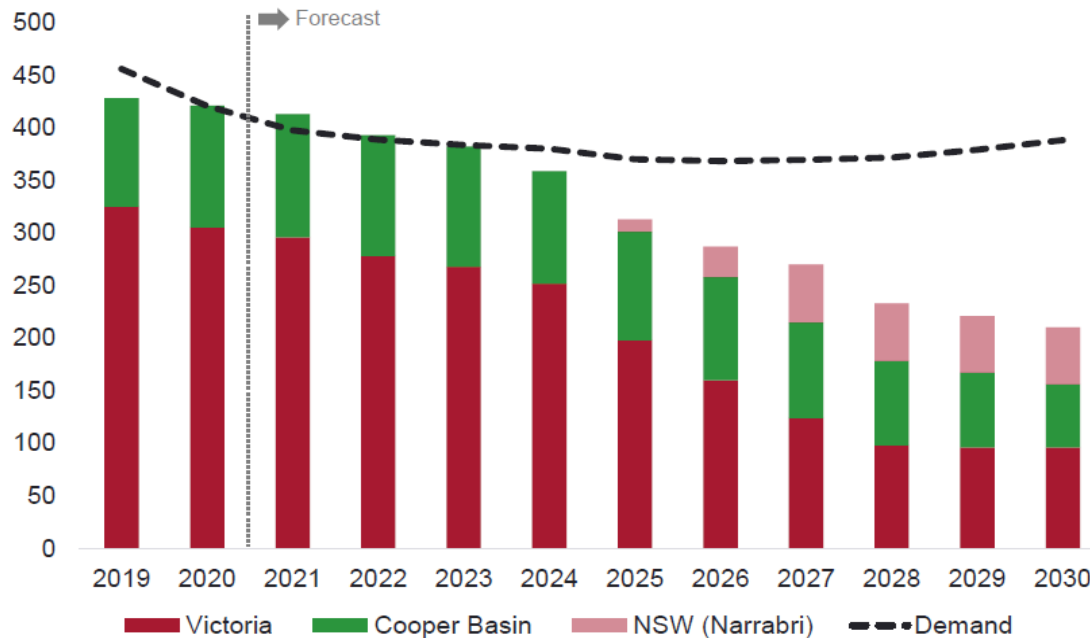




# Gas supply shortage story continues

## Rapidly declining southern gas production

Southern gas production and demand (PJ)<sup>1</sup>



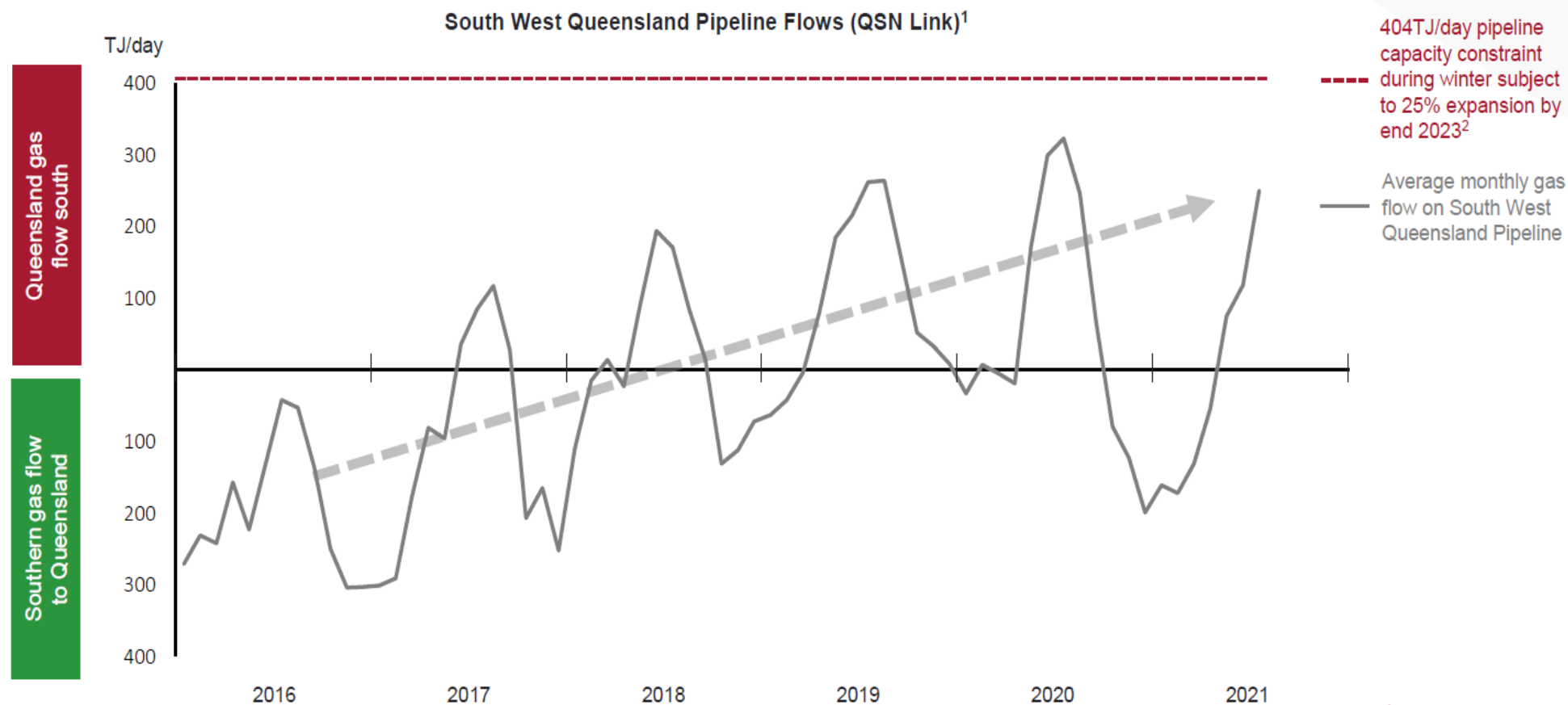
- Declining Victorian production a key driver of expected gas supply shortages
- Expected supply shortfall of ~60 PJ by 2025
- Macro settings and support for exploration and development critical for new gas supply

1. Source of production forecasts: EnergyQuest; Source of demand forecasts: Central scenario, AEMO Gas Statement of Opportunities 2021



# Increasing reliance on Queensland gas to meet southern demand

Growing influence of LNG pricing on domestic gas prices as southern supply declines



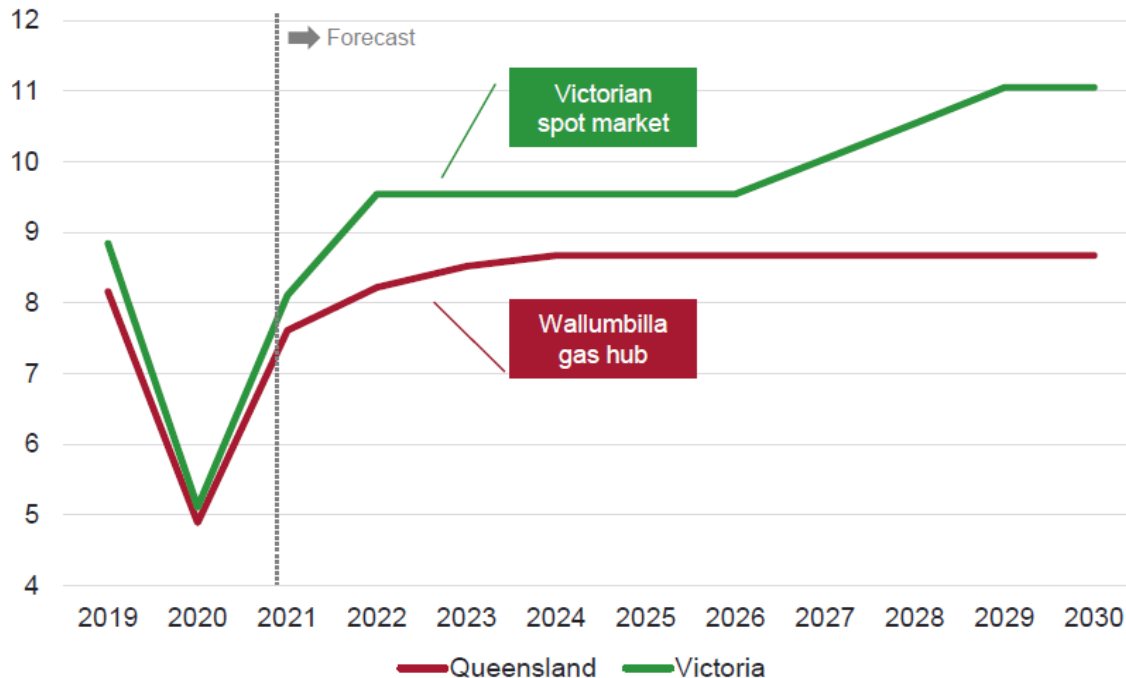
1. Source: Australian Energy Regulator  
2. Refer APA website for further information



# Forecast southern gas supply shortages reflected in price outlook

LNG netback pricing an emerging influence

Forecast gas prices (\$/GJ)<sup>1</sup>



- LNG netback an emerging benchmark for domestic price ex-Wallumbilla
- Transport to Victoria adds \$2.00/GJ - \$2.50/GJ to delivered cost
- Long-term domestic gas prices expected to be \$8/GJ – \$11/GJ





## Recognition of value and need –CCS and Gas

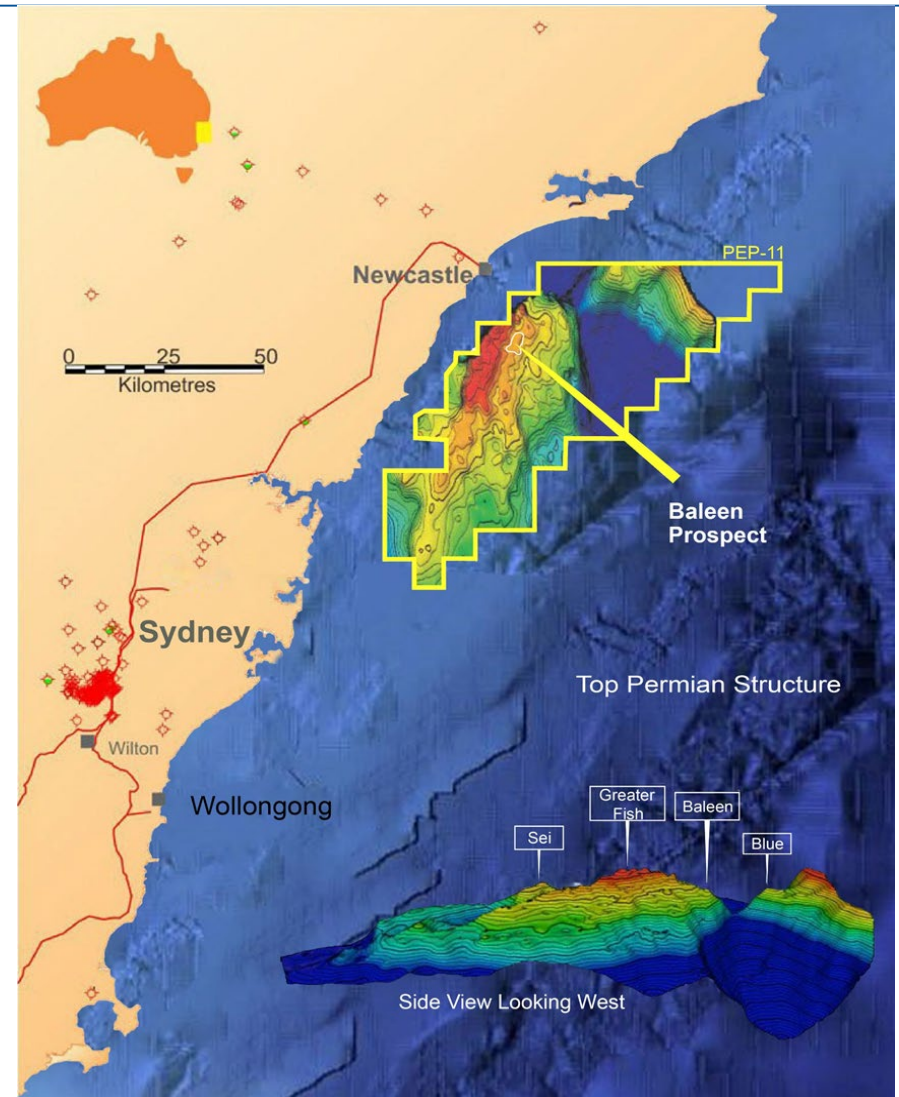
- In January 2020, the NSW and Australian governments signed a MOU to jointly fund \$2 Billion to increase energy supply and reduce emissions in NSW. This includes a specific target to bring an additional 70 PJ/yr. into the NSW market by 2022.
- The NSW Future of Gas statement released July 2021 notes the east coast gas market could face a supply shortage as early as 2023 and simultaneously reduced the area covered by Petroleum exploration Licences by 77%
- The gas price spikes and shortages in the east Australian gas market occur when there is high demand during the Australian winter. This period coincides with summer demand in the northern hemisphere also spiking driven by increased power needs related to summer heatwaves. In the week to 30 07 2021 this sent Japan futures to U.S.\$16 per million British thermal units ('ENB 30 07 2021')
- International energy prices are increasingly setting east coast domestic prices ,increasing the volatility in domestic gas prices .This has forced some manufacturers exposed to spot prices to the brink.(AFR 09 08 21)
- Preventing power blackouts is becoming more difficult as weather dependent renewables replace coal powered generation .This is forcing the energy market regulator (AEMO) to intervene more often (**250 times in 2019 -20 compared to 20 three years earlier.**)and ordering other sources typically gas power to come online. The 2020 report ranked electricity supply security as “critical “ status. (“POWER FIX URGENT AS GRID TEETERS AFR 050121”)



## PEP11-85% Interest

### PEP11– Offshore Sydney Basin:

- The Sydney Basin is a proven hydrocarbon basin with excellent potential for further discovery of natural gas / significant multi-Tcf natural gas project
- PEP11 covers 4,649 km<sup>2</sup> on the doorstep of Sydney-Newcastle & extensive gas infrastructure (<50km).
- Analogues to major discoveries -the offshore Sydney Basin contains all the elements seen in other producing world class petroleum basins, including Prospective Resources of 5.7 Tcf (P50) in structural targets.
- Current application to NOPTA to enable drilling as next step
- Significant interest in the project is driven by the gas market dynamics Shortfall forecast in gas supply east coast
- Two new gas fired power stations for NSW firming generation
- CCS potential (independently verified)
- Key attributes for Hydrogen role
- Significant potential employment driver



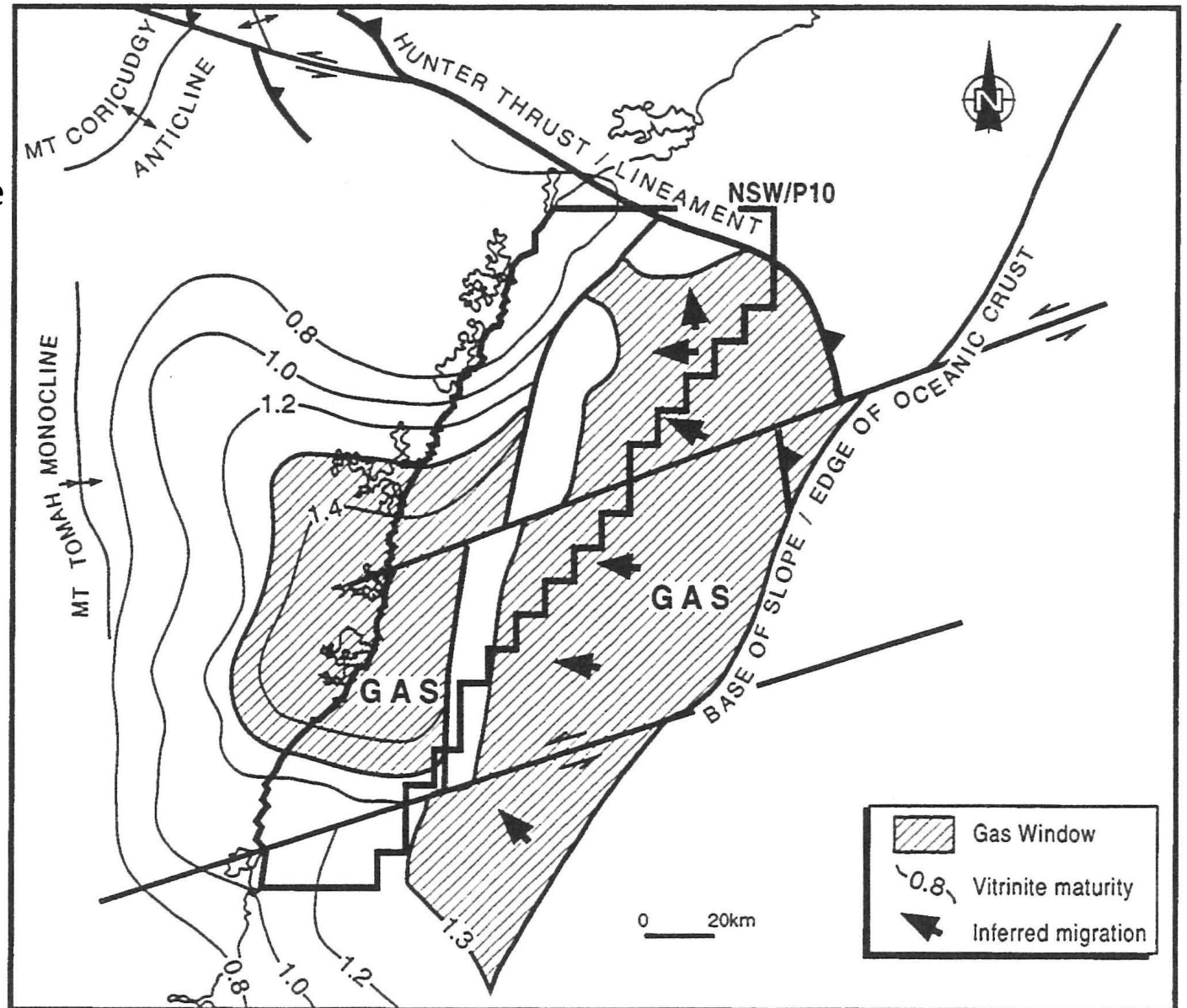


“The late Permian coal measures could provide a viable ,mature ,gas /condensate source along the length of the Offshore Uplift with simple migration pathways updip to the crest of the uplift....”

“This model results in all of the Late Permian Coal Measures being in the gas window”

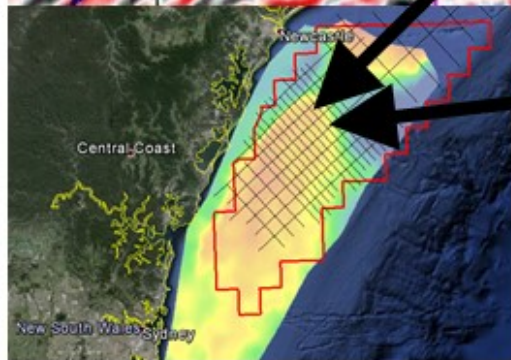
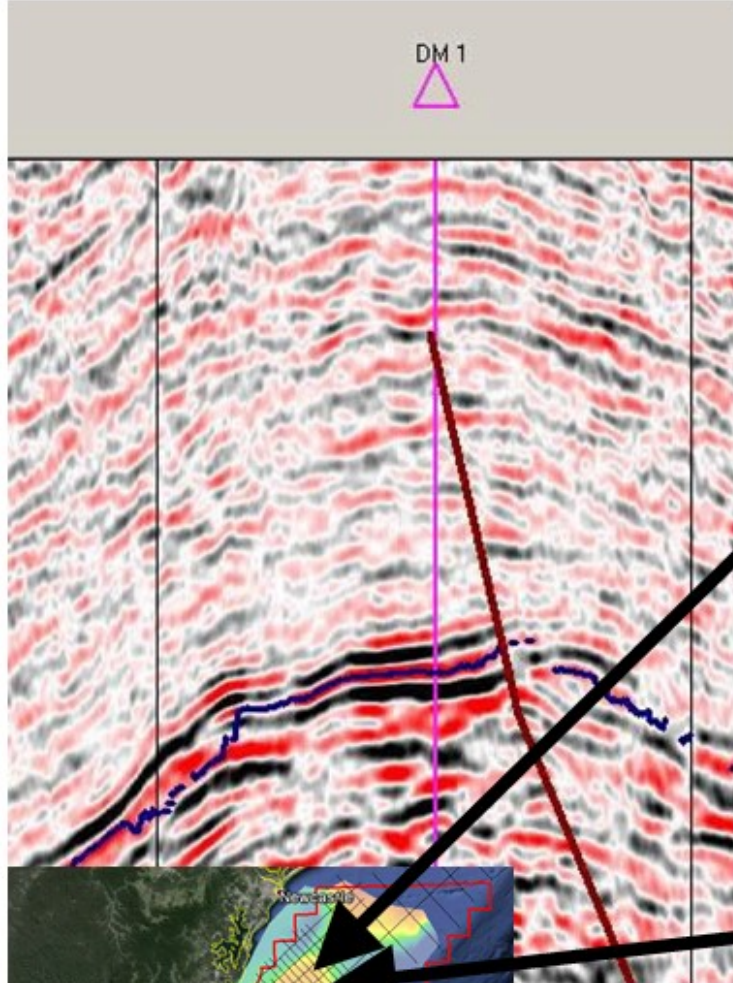
Figure-Offshore Sydney Basin –Inferred Maturity and Migration Pathways

Source “Evolution and Hydrocarbon Prospectivity of the Offshore Sydney Basin  
Bradley G New Petroleum Symposium 1993”



# Near Top Permian / Base Triassic amplitude extraction

Estimate: 6196 acres of estimated amplitude closure

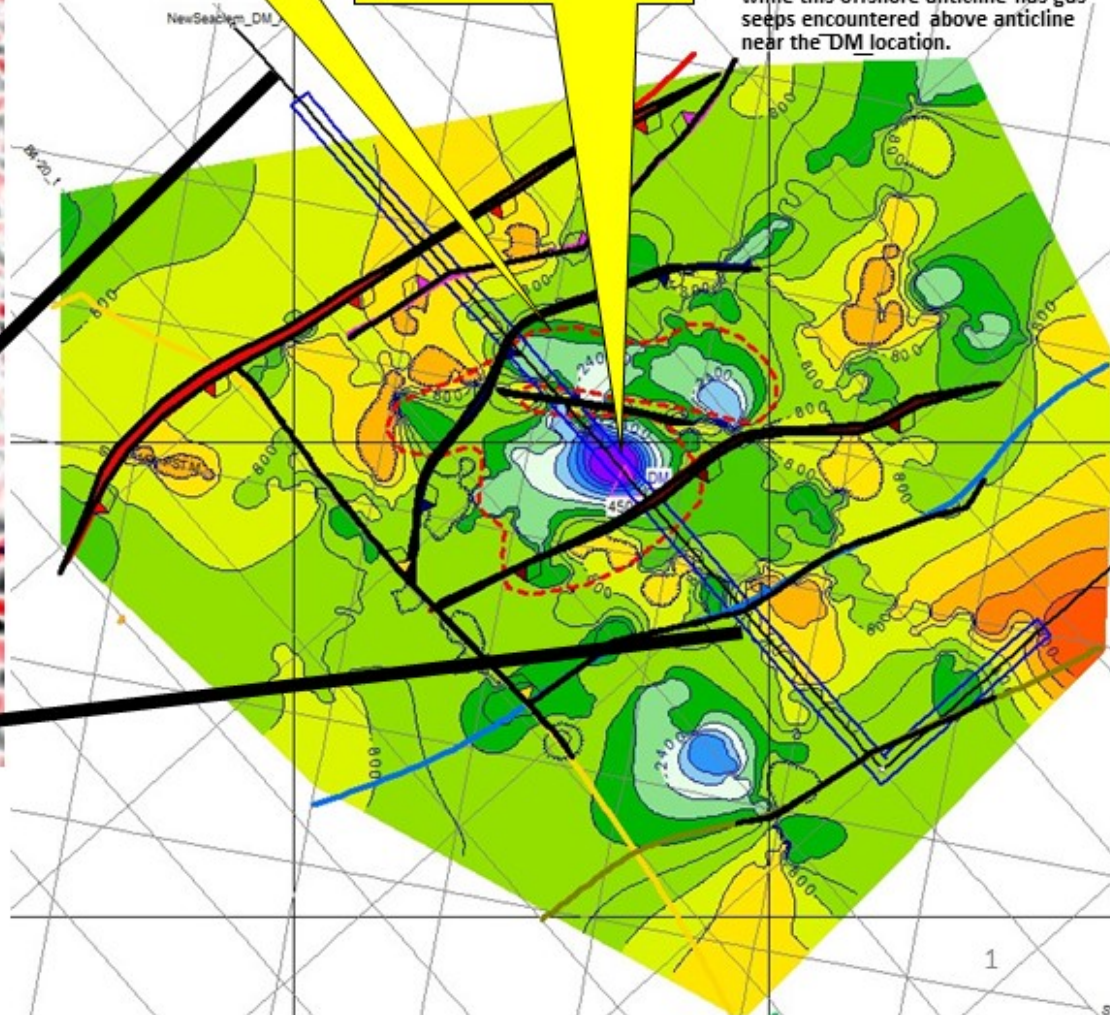


6196 ac  
Amp Area

Suggested  
LOCATION  
398578mE  
6328774mN

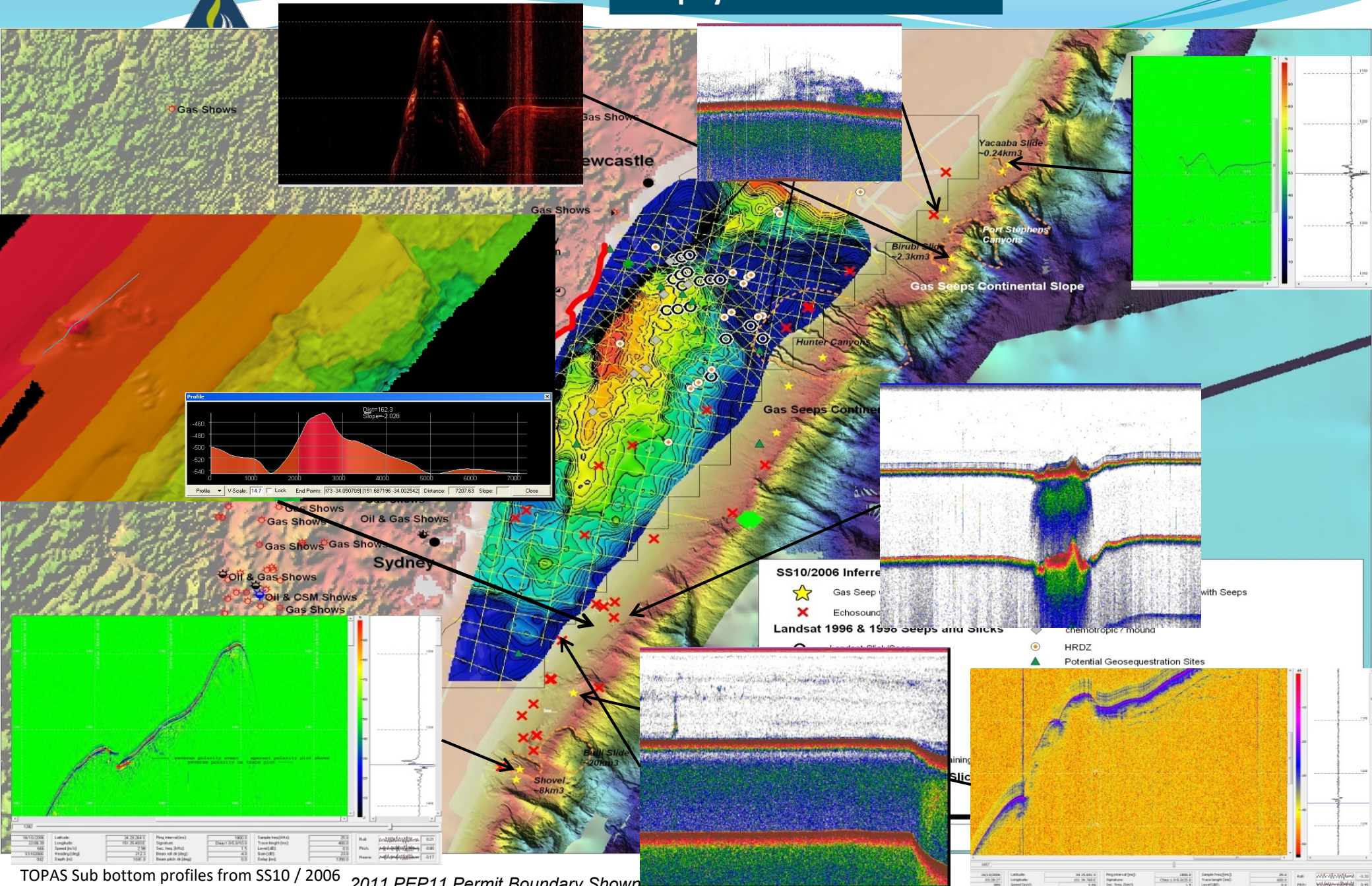
Suggested Target: Test 2D seismic line amplitude anomaly at DM1 on North end of ~Late Permian anticline formed on the upper plate of easterly dipping thrusts fault (red).

Onshore Sydney basin Permian provides some coal seam gas (CSG) while this offshore anticline has gas seeps encountered above anticline near the DM location.



(25 sq km)\*

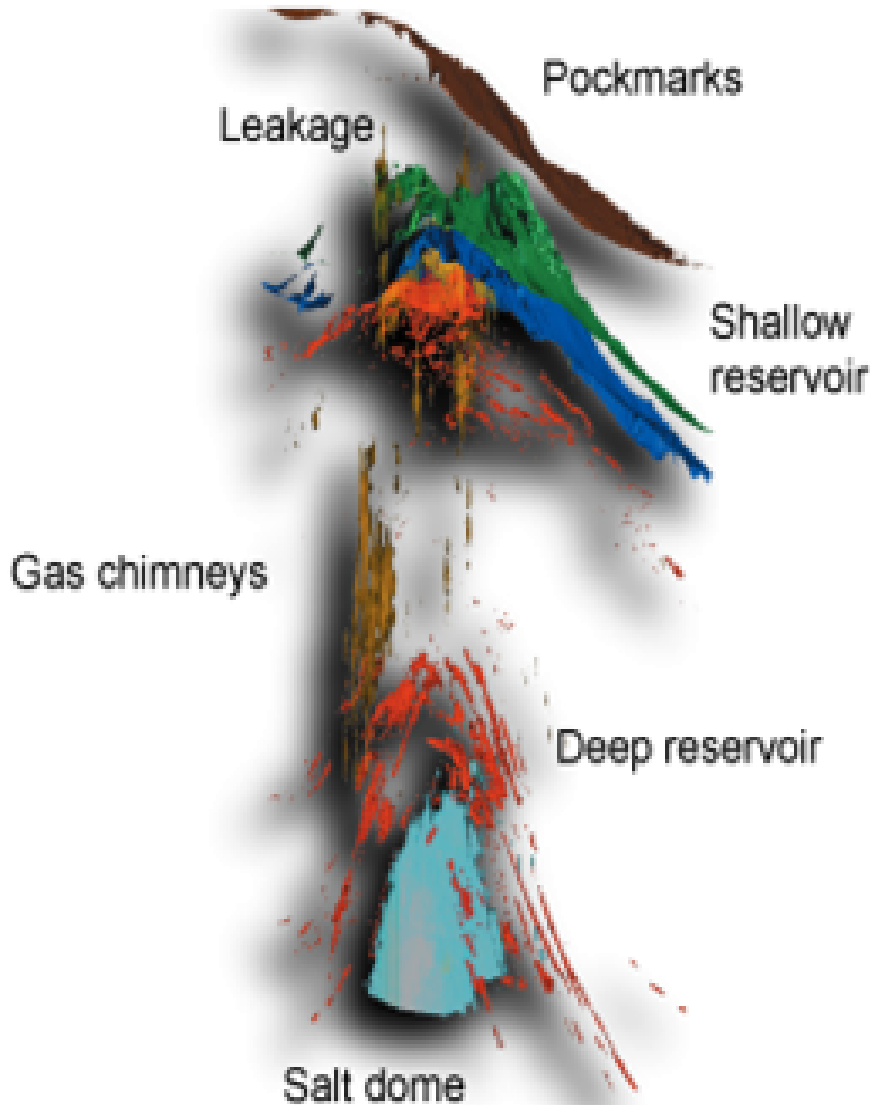
# Geophysical Gas Indications



TOPAS Sub bottom profiles from SS10 / 2006 2011 PEP11 Permit Boundary Shown



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*Chimneys and pock marks indicating focus areas of fluid flow above the top reservoir*

- “seismic chimneys are visible in 90% of all Mesozoic and Tertiary basins.”
- Gas chimneys have been observed to tie in to features associated with gas seepage like pockmarks and ....shallow gas accumulations and faults
- Recent studies have revealed that chimneys can represent a link to deeper hydrocarbon accumulations
- Active seeps and migrated hydrocarbons are a key indicator of ongoing hydrocarbon generation (Abrams M Hydrocarbon migration and its near surface expression: AAPG Memoir 66)
- The mapping of chimneys has significance in geohazards interpretation
- High concentrations of chimneys are observed in areas where discovery wells and oil and gas fields are present
- Schumacher D “A recent review of more than 850 wildcat wells –all drilled after geochemical surveys finds that 79% of wells drilled in positive anomalies resulted in commercial oil and gas discoveries “(Surface geochemical exploration, D. Schumacher, 2000,)

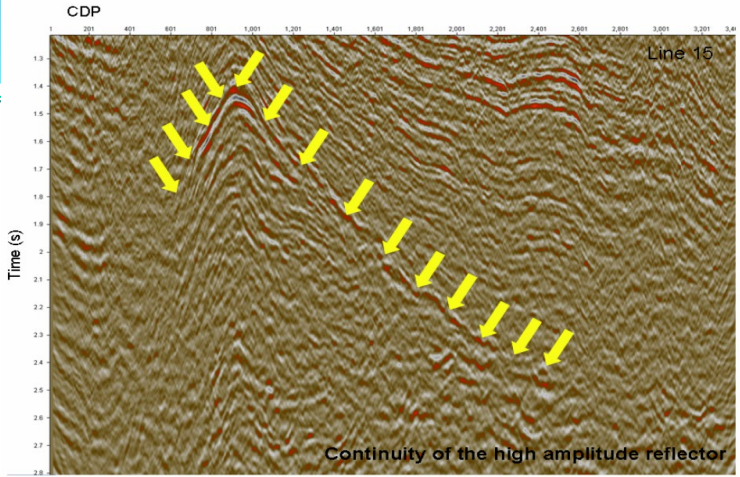


Figure 69: Display of Line B4-15. The continuity of high amplitude reflector has been mapped.

“Strong energy reflections present on seismic section can be associated with major lithologic changes as well as hydrocarbon accumulations.”

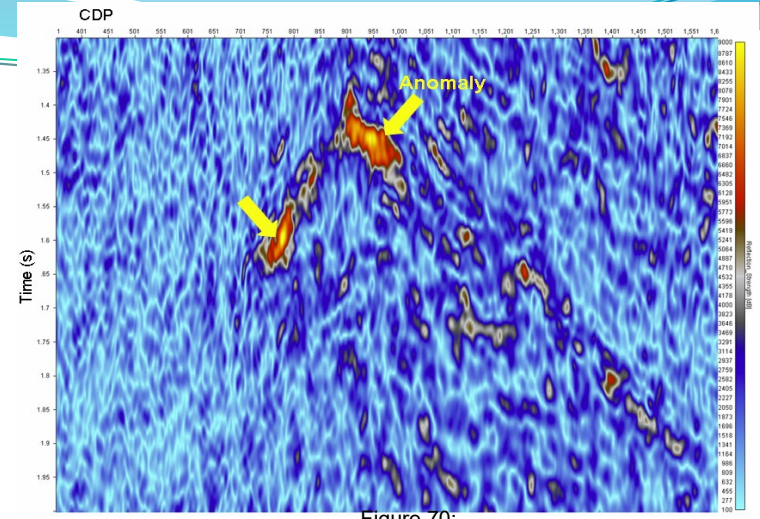


Figure 70: Reflection Strength plot of the high amplitude reflector

“Gas reservoirs, in particular, appear as high amplitude “bright spot” reflections.”

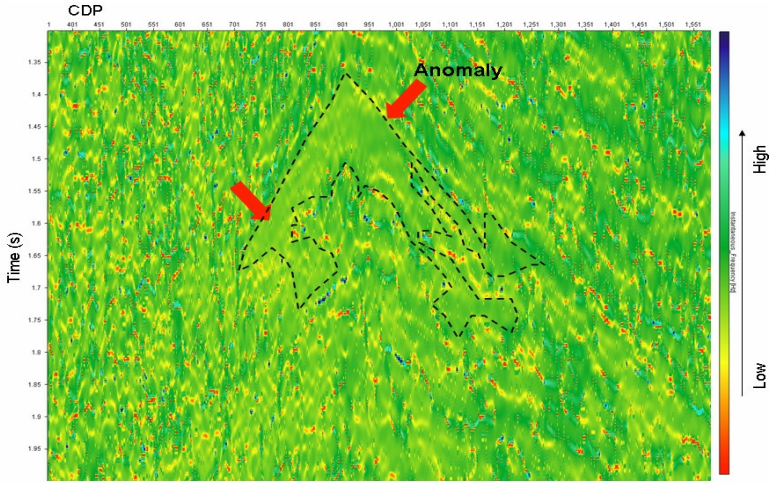


Figure 72: Instantaneous frequency plot for the high amplitude reflector. It is showing low frequency anomaly.

“Instantaneous frequency content is of interest in that high frequencies are attenuated by gas and condensate reservoirs.”

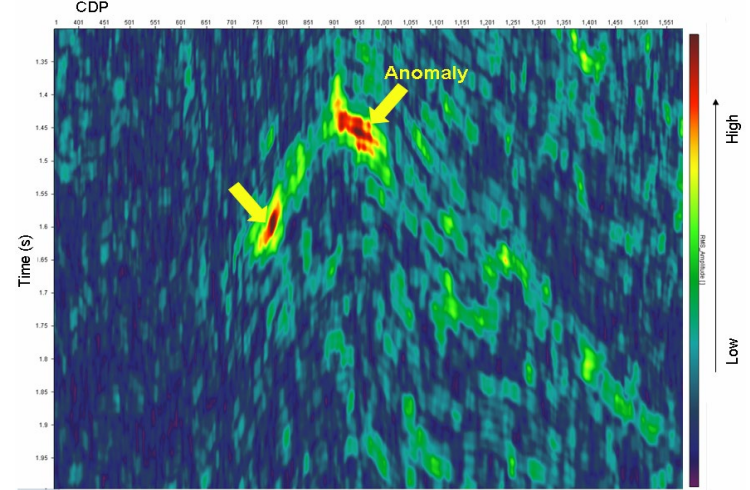


Figure 74: RMS of seismic amplitude over the area of Line B4-15, where high amplitude reflector is mapped.

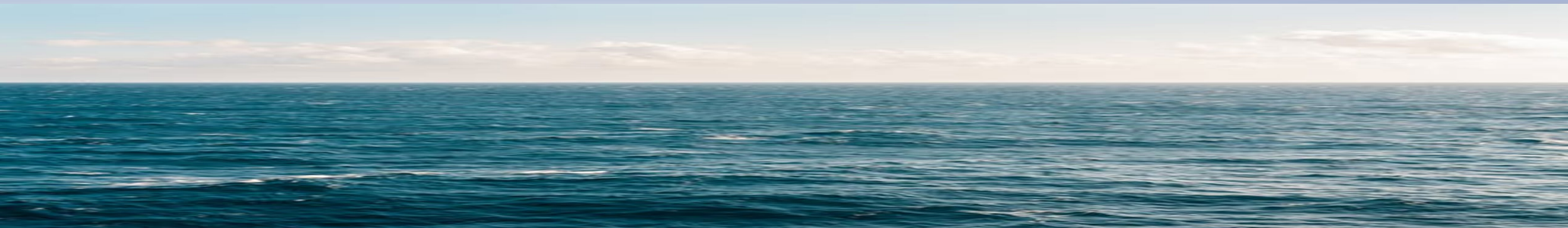
“The Root Mean Square (RMS) amplitude ... may be used to map direct hydrocarbon indicators in a zone.”

“The RMS of seismic amplitude for the 700ms window have been calculated. This indicates a bright spot like feature, which is a prime indicator for the occurrence of gas.”



## ADVENT ENERGY LIMITED IN CONCLUSION

- **Advent Energy proposes to drill a gas exploration well, Sea Blue-1, in the offshore Sydney Basin.**
- **The exploration lease (PEP 11) is located close to the Newcastle-Hunter region - and major emission sources which will need to be cut if NSW is to meet its target of NET Zero by 2050.**
- **CCS is a key technology option to do this - and maintain an industrial base.**
- **There is presently no confirmed onshore geological storage site in NSW**
- **The offshore Sydney Basin has storage potential but has never been definitely evaluated due to lack of well data**
- **Sea Blue- 1 will provide the opportunity to cost-effectively assess CO2 storage potential.**
- **Confirmation of offshore geological storage potential would be a game changer for NSW and its NZE target**







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