

Australia at peak gas output



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2023 Roundtable for Energy
Resources in SA
24 October 2023

Indigenous win on Woodside's Scarborough testing approvals

Santos to provide assumptions for net zero in greenwashing case

Back to the drawing board: Santos loses landmark court case on Barossa gas project offshore Australia

ABC Four Corners controversially releases footage outside Meg O'Neil's home following protest

'Misguided': Labor gas strategy ignores Asia's rising demand

Despite Australia's pledge, Japan 'more concerned than ever' over LNG supply

In a world of turmoil, Labor reassures that gas exports are a priority

Mitsubishi CEO calls for 'stable' investment climate in Australia

 REUTERS

EUROPE GAS-Prices rise on Australia LNG strikes, Middle East tension fears
'Get your candles': energy experts are 'terrified' about this summer

Introduction

Overview...

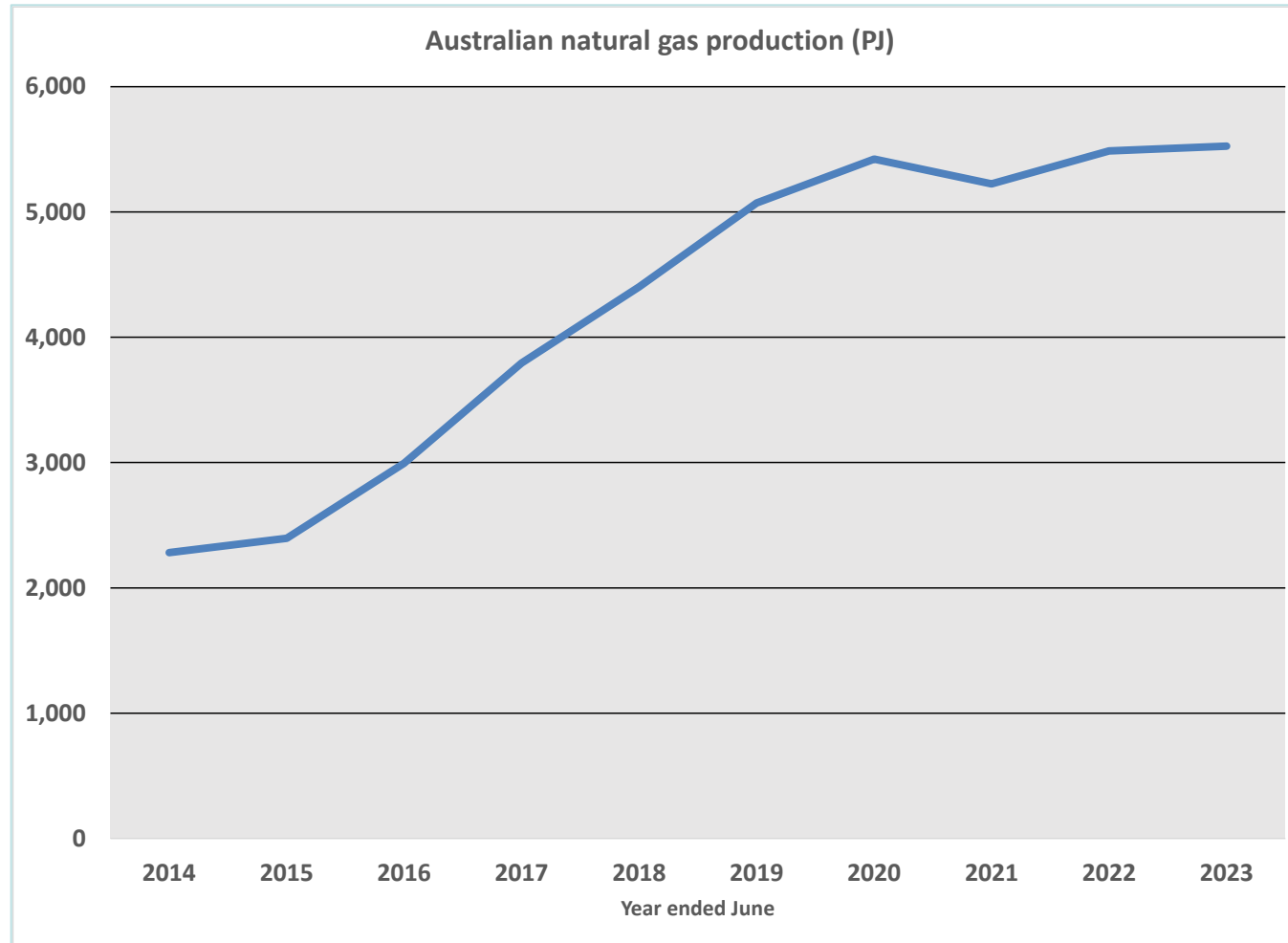
- Australia's important place in the global gas market
- But legacy domestic fields declining
- LNG peaking
- Development of Contingent Resources challenged
- Lowest exploration in 20 years
- Falling domestic supply



EnergyQuest...

- *an advisory firm, providing independent energy market analysis and strategy for energy companies, energy buyers, investors and governments around Australia and the world.*
- *Founded in Adelaide in 2005 by Graeme and Susan Bethune.*
- *Regular reports include the EnergyQuarterly, Australian LNG Monthly, East Coast Gas Outlook, and Western Australian Gas Outlook.*

Rapid gas production growth

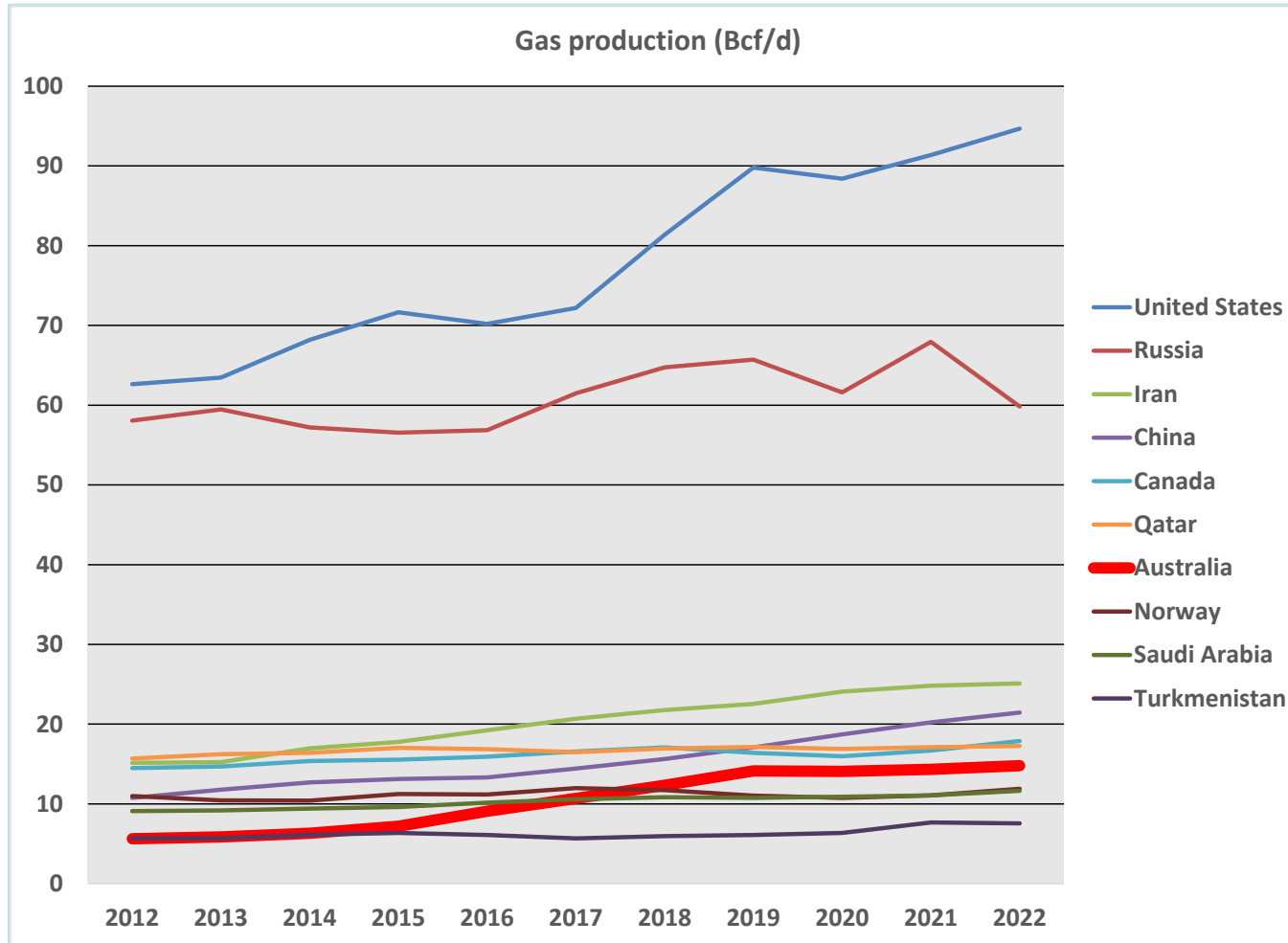


Source: EnergyQuest

- With 7 new LNG projects, Australian natural gas production has more than doubled over the last decade.



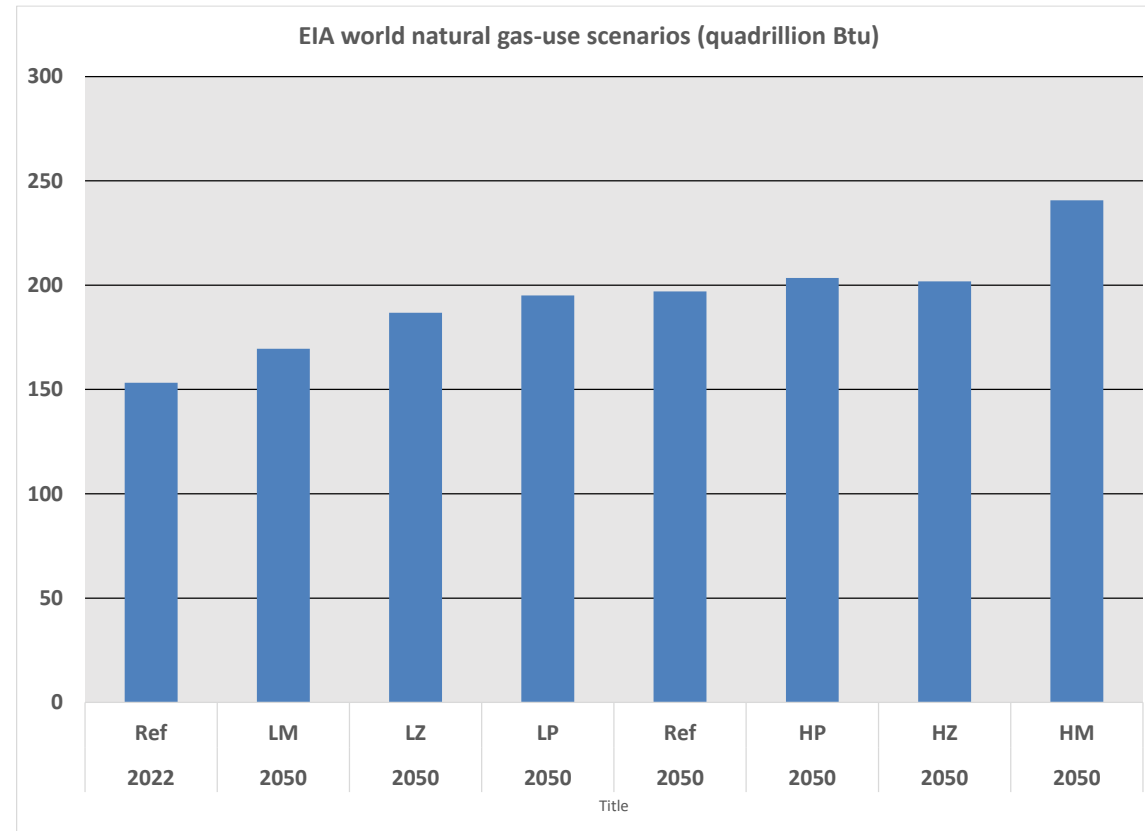
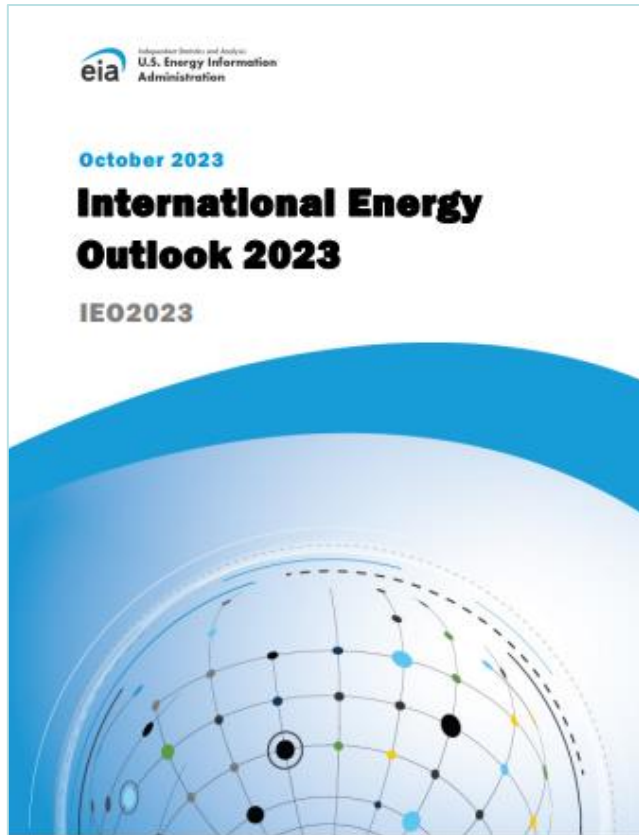
Australia a world-leading gas producer



Source: Energy Institute

- This has made Australia one of the most important gas producers globally.
- One of the world's top 10 natural gas producers.
- Australia is one of only four OECD countries in the top 10 gas producers and the biggest OECD LNG producer in the Asia-Pacific.

Growing world gas demand



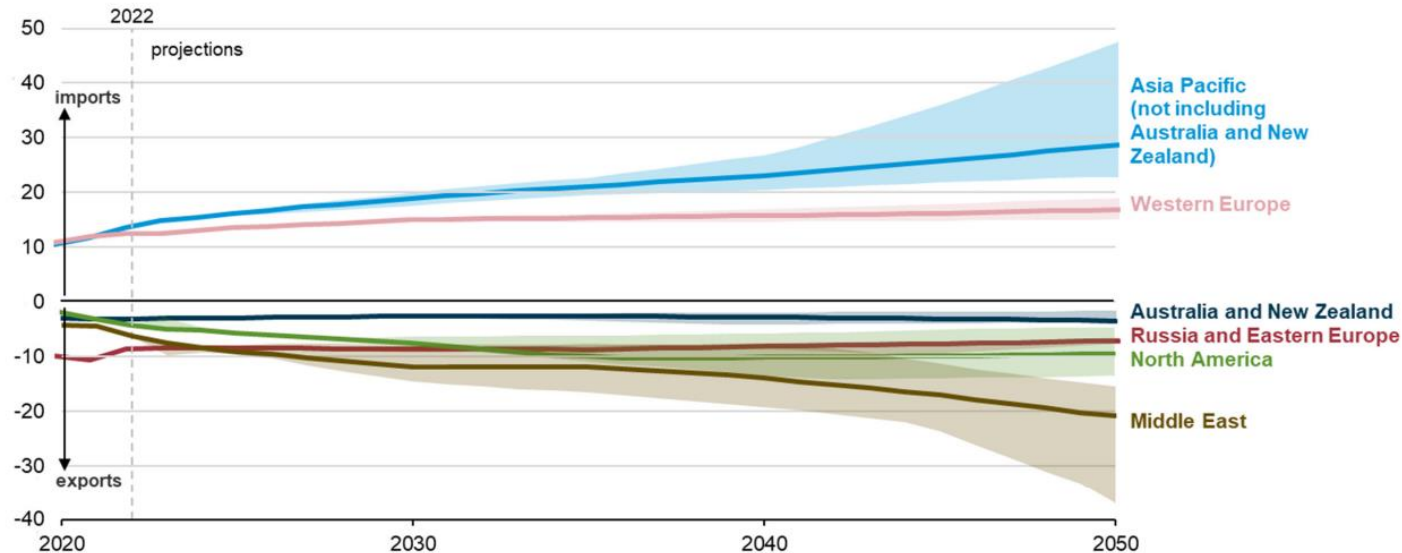
Source: EIA

- What is the future for gas and LNG? Notwithstanding current emission reduction policies, global gas demand increases in all scenarios modelled by the US EIA, driven by population and GDP growth. A similar result to IEA Stated Policies scenario.

Growing Asia-Pacific demand

Asia and Europe import more natural gas to meet growing demand, mostly supplied by growing production from the Middle East

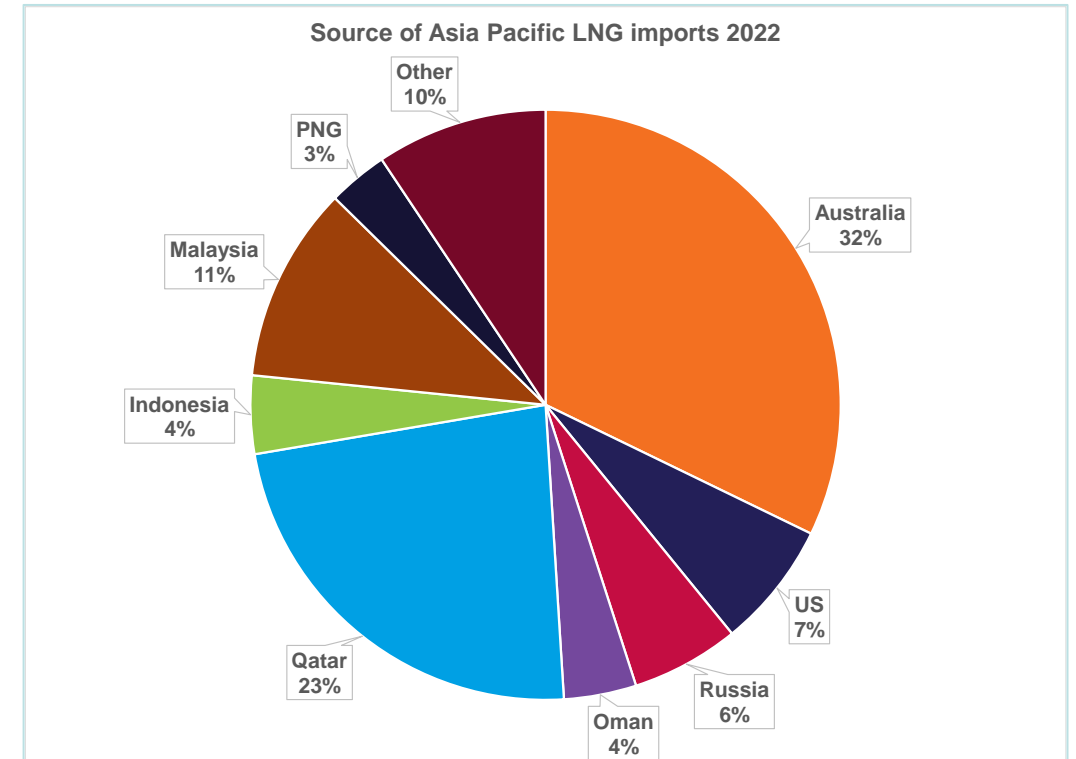
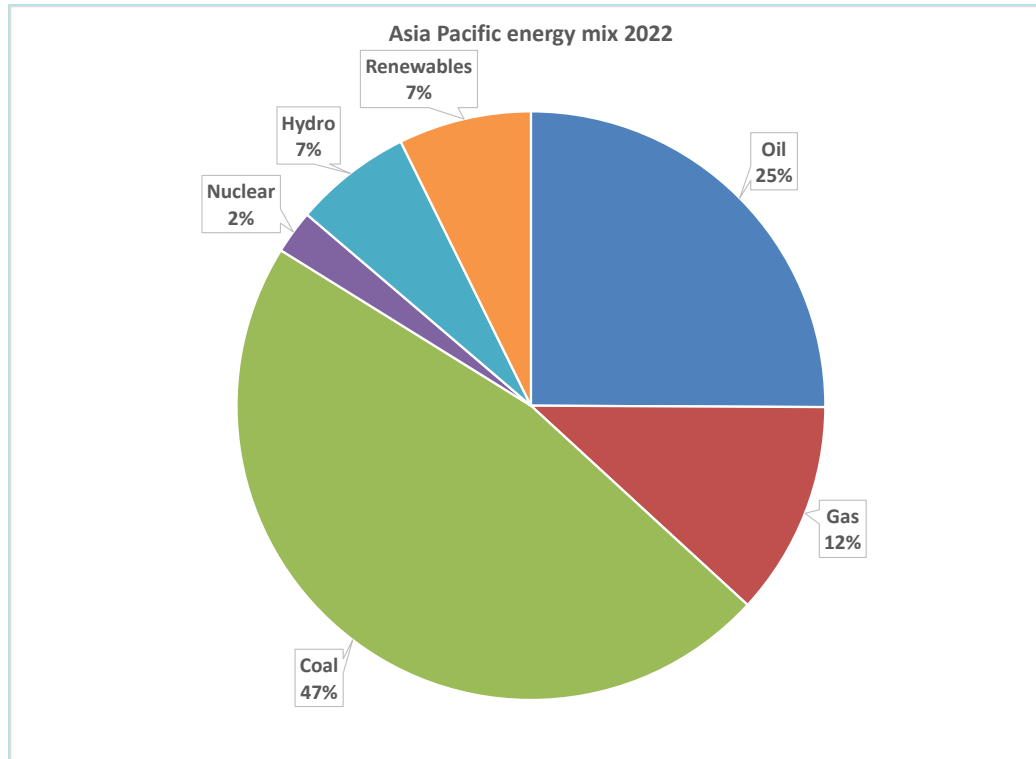
Net natural gas trade
trillion cubic feet



Source: EIA

- In particular Asian demand for gas is expected to grow to replace coal (blue line and blue shaded area).

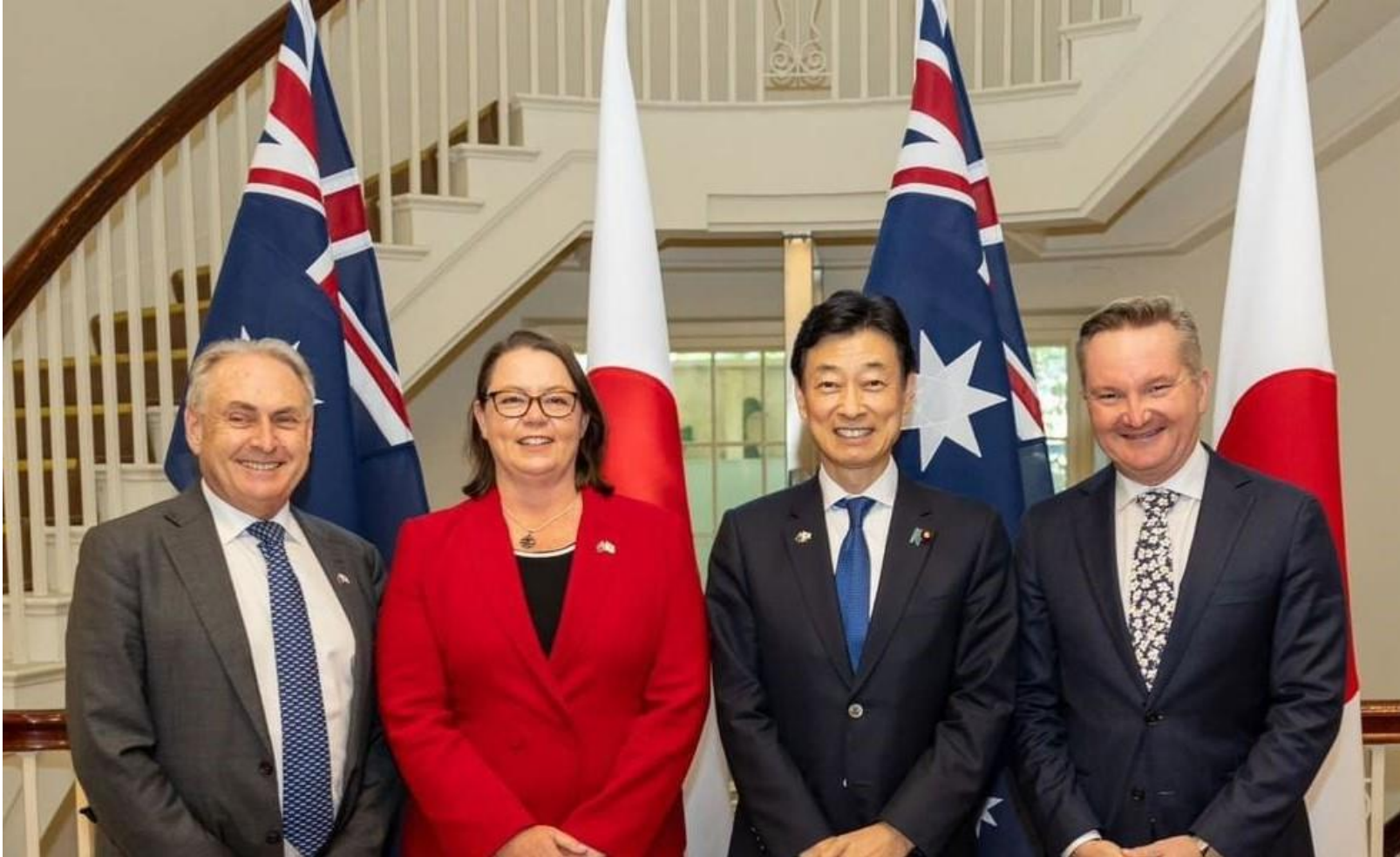
Asia still reliant on coal



Source: Energy Institute

- Coal is 47% of Asian energy mix. Increasing gas and renewables are key to reducing emissions and improving air quality.
- Australian LNG exports to Asia already make a major contribution. Will Australia maintain this?

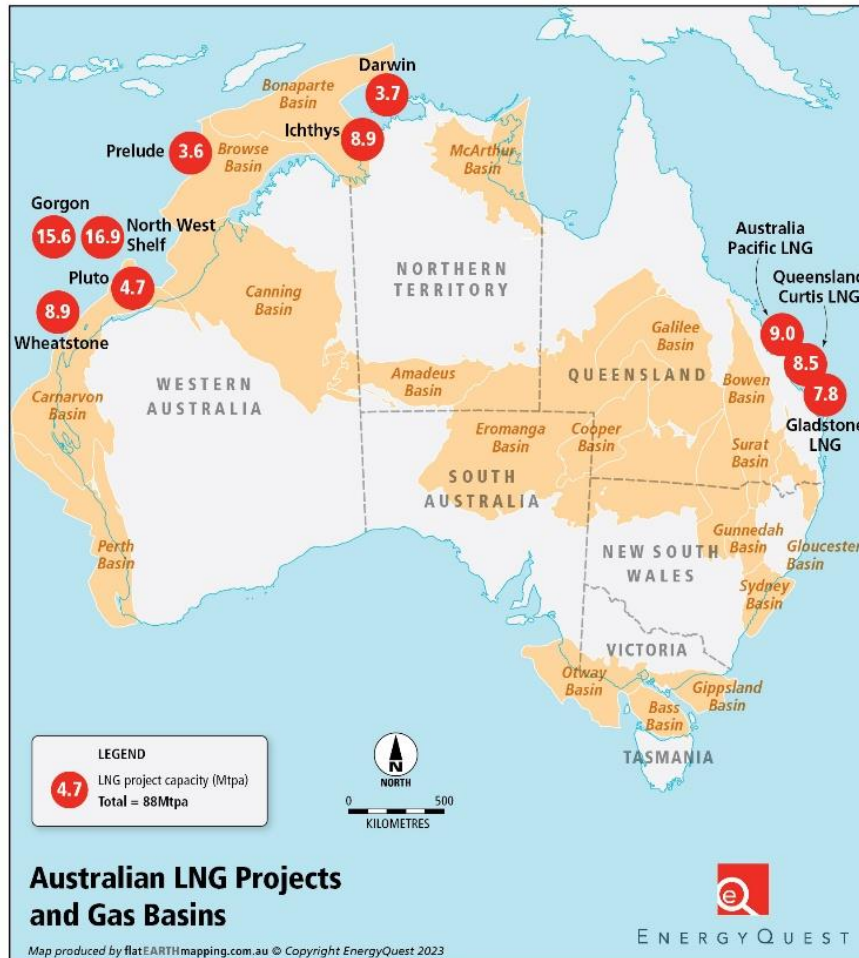
You can rely on us



- Strong interest by Asian buyers in continuing Australian LNG supply.
- Australian government reassures Asian buyers that Australia will remain a reliable LNG supplier.
- However buyers have well-founded doubts.



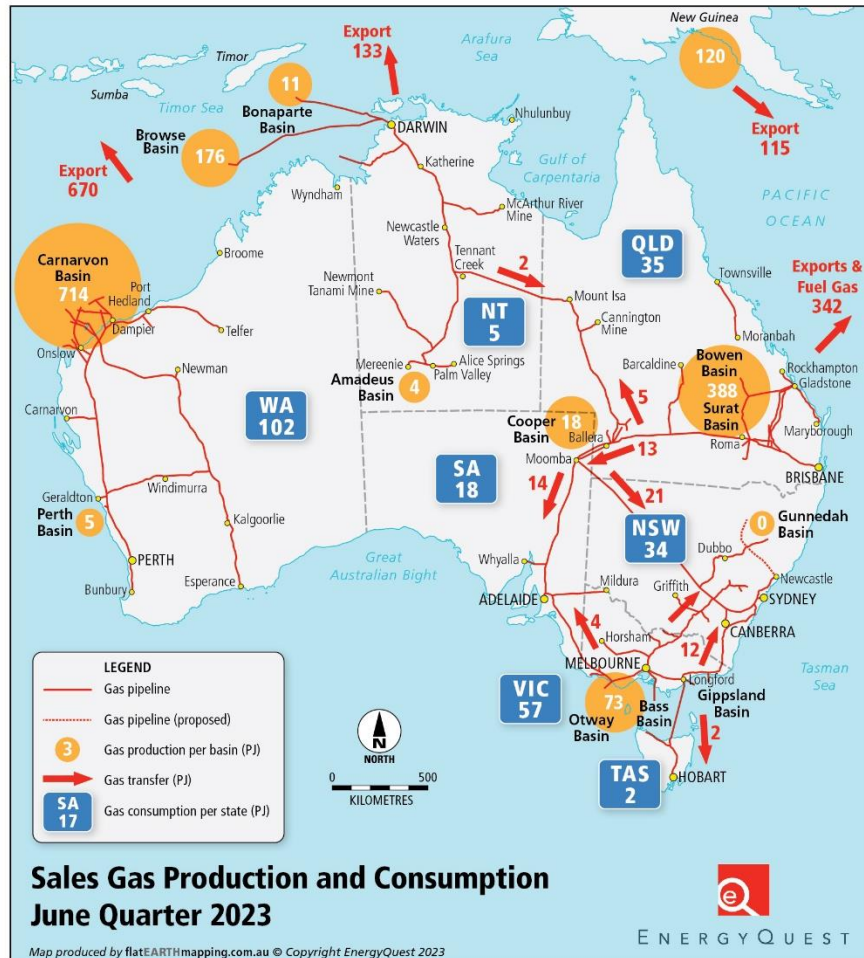
Australia peak LNG?



Source: EnergyQuest

- LNG is Australia's third biggest export, valued at \$90.3 billion in 2022.
- However LNG production most likely peaked in 2022.
- Darwin LNG has ceased production. Backfill is subject to continuing litigation.
- NWS declining to zero by 2033.
- Wheatstone to start declining within 3 years.
- Ichthys now also diverting small volumes to supply Darwin domestic gas.
- QCLNG set to decline.
- Pluto T2 the only new LNG project.
- See "Is Australia Quietly Quitting the LNG Business?" Oxford Institute for Energy Studies www.oxfordenergy.org

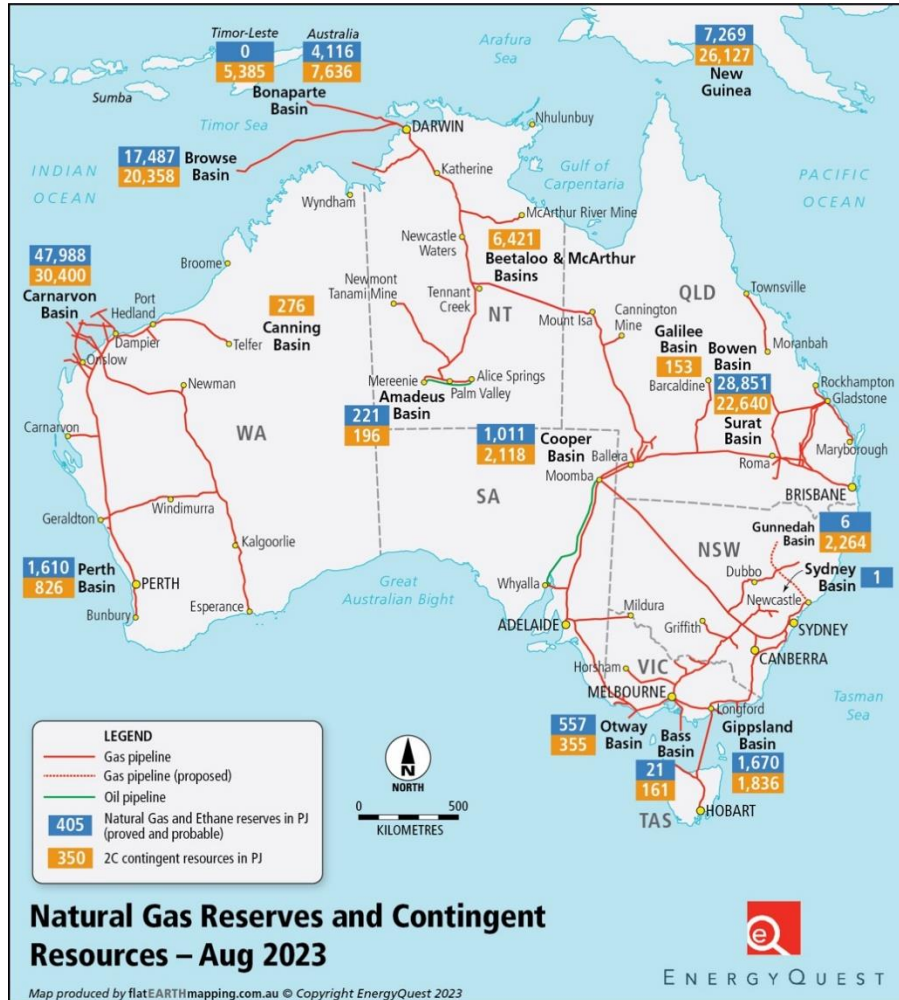
Legacy domestic fields declining



Source: EnergyQuest

- Legacy domestic fields are also declining:
 - Blacktip supplying the NT and Queensland.
 - Reindeer, John Brookes and Macedon supplying WA.
 - Bass Strait supplying Victoria and NSW.
 - Otway supplying Victoria and SA.

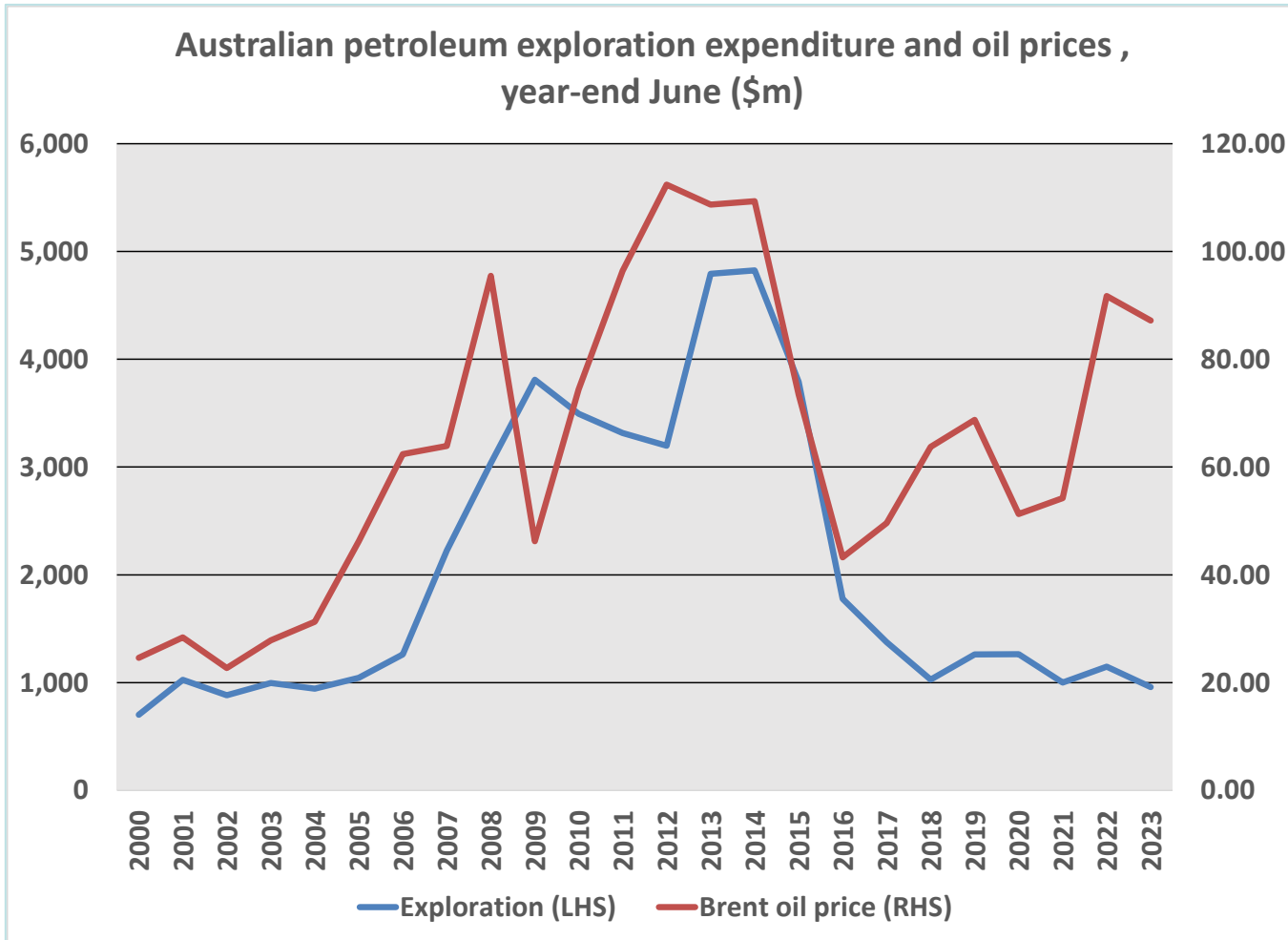
Abundant Contingent Resources



Source: EnergyQuest

- Does Australia have a shortage of gas resources?
- No. Australia has around 100,000 PJ of 2P gas reserves and another 100,000 PJ of Contingent Resources (volumes of gas discovered but not yet developed for technical or commercial reasons).
- Browse LNG is back on Woodside's agenda but CO2 needs to be managed.
- Beetaloo in the NT is subject to continuing opposition.
- Continuing opposition to Narrabri in the NSW Gunnedah basin.
- Australia has abundant discovered gas but significant and increasing barriers to development.

Exploration in the doldrums



Source: EIA, ABS

- Australia also has significant remaining exploration potential but current spending is about the same as 20 years ago.
- Until 2016 exploration spending followed oil prices but not since 2016.
- Hampered by exploration restrictions and uncertainty about future demand for oil and gas.

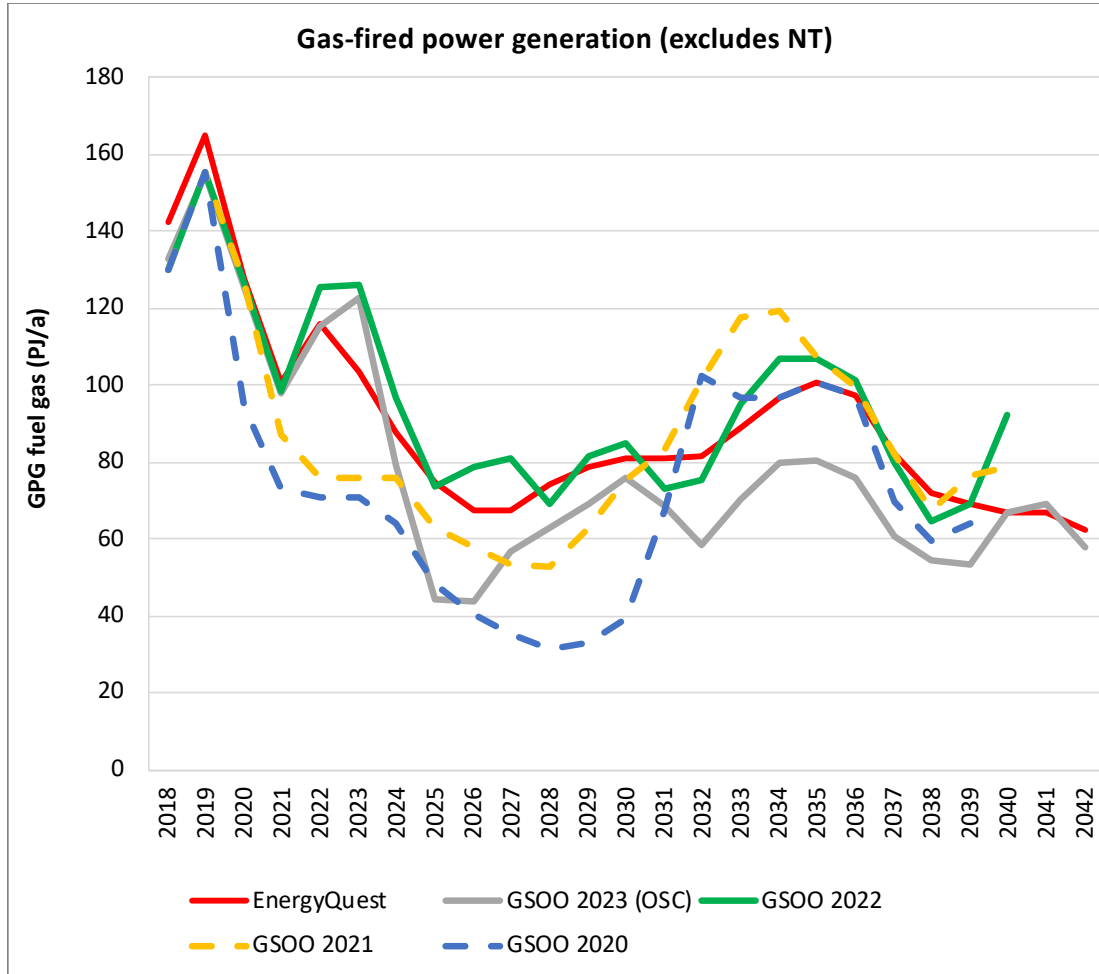
Future of Australian LNG?



- So what is the outlook for Australian gas production?
- Production from major WA LNG fields set to decline by 40% within a decade.
- Declining Australian LNG production provides a free kick for competitors such as Qatar.



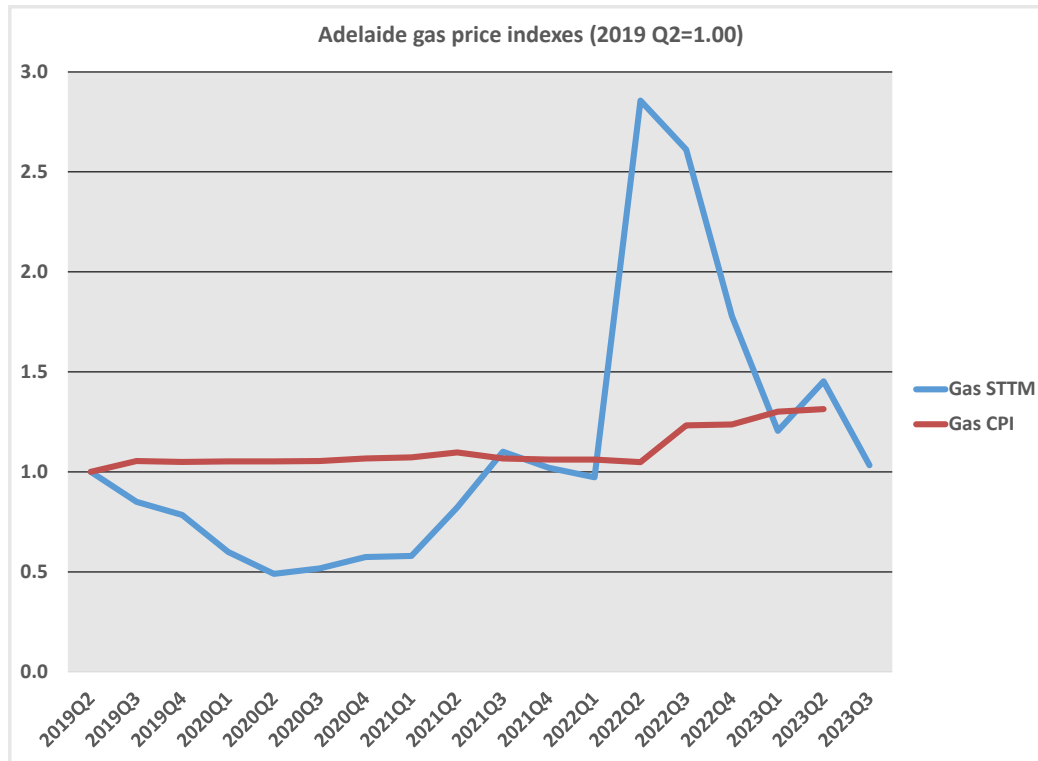
GPG demand stronger



Source: EnergyQuest

- Domestic demand is falling but stronger than forecast.
- The chart shows the huge variation in AEMO forecasts for NEM GPG over the last four years.
- Demand for GPG is falling but has been stronger than forecast.
- The red line is the current EQ forecast.

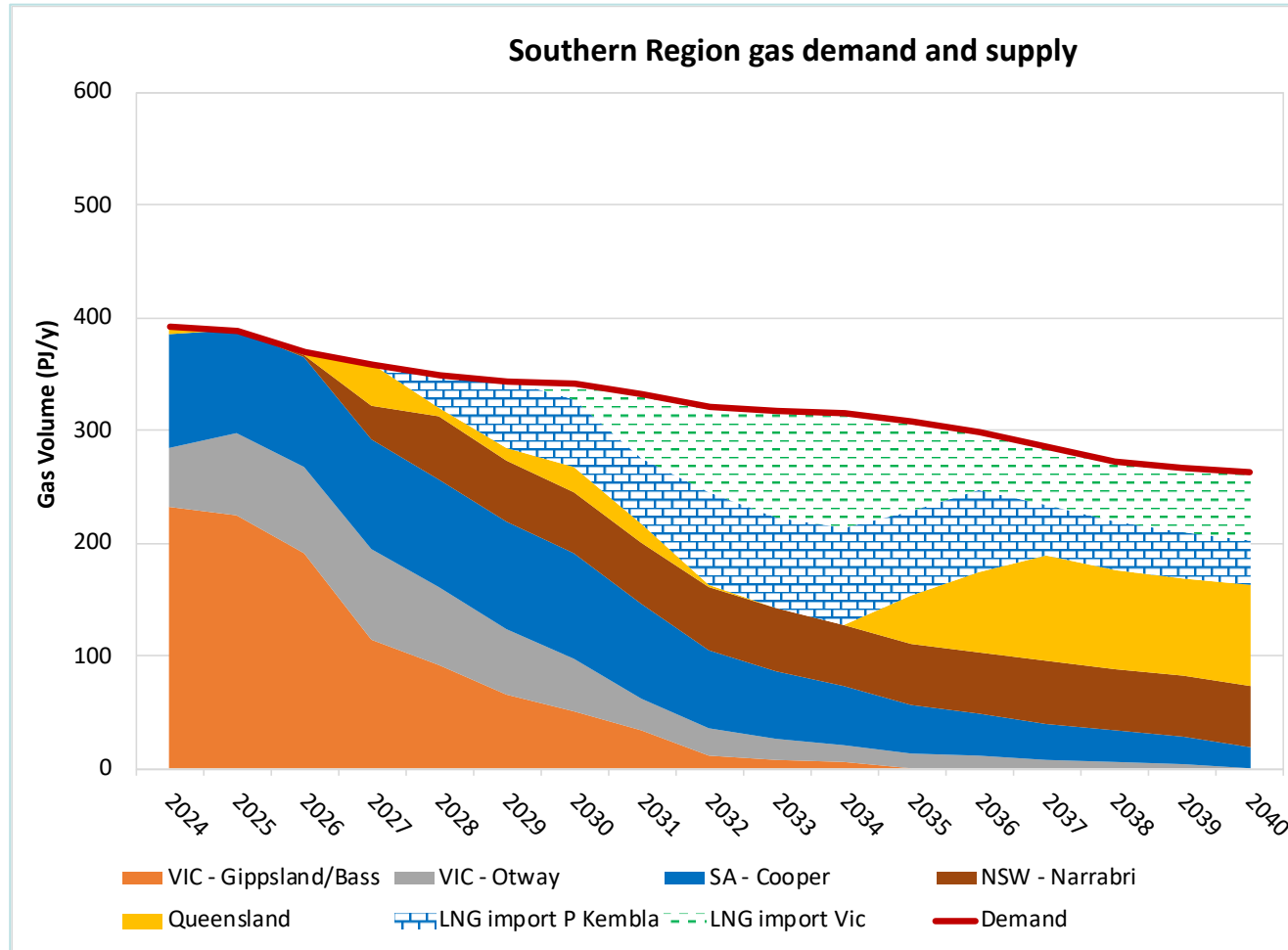
2022 gas crisis



Source: ABS

- Uncertainty leads to under-investment, higher prices and supply disruptions.
- In June 2022 a combination of cold weather, flooding, low renewables and coal generation outages meant gas suddenly went from supplying 5% of NEM power to 10%, with resulting spikes in prices.

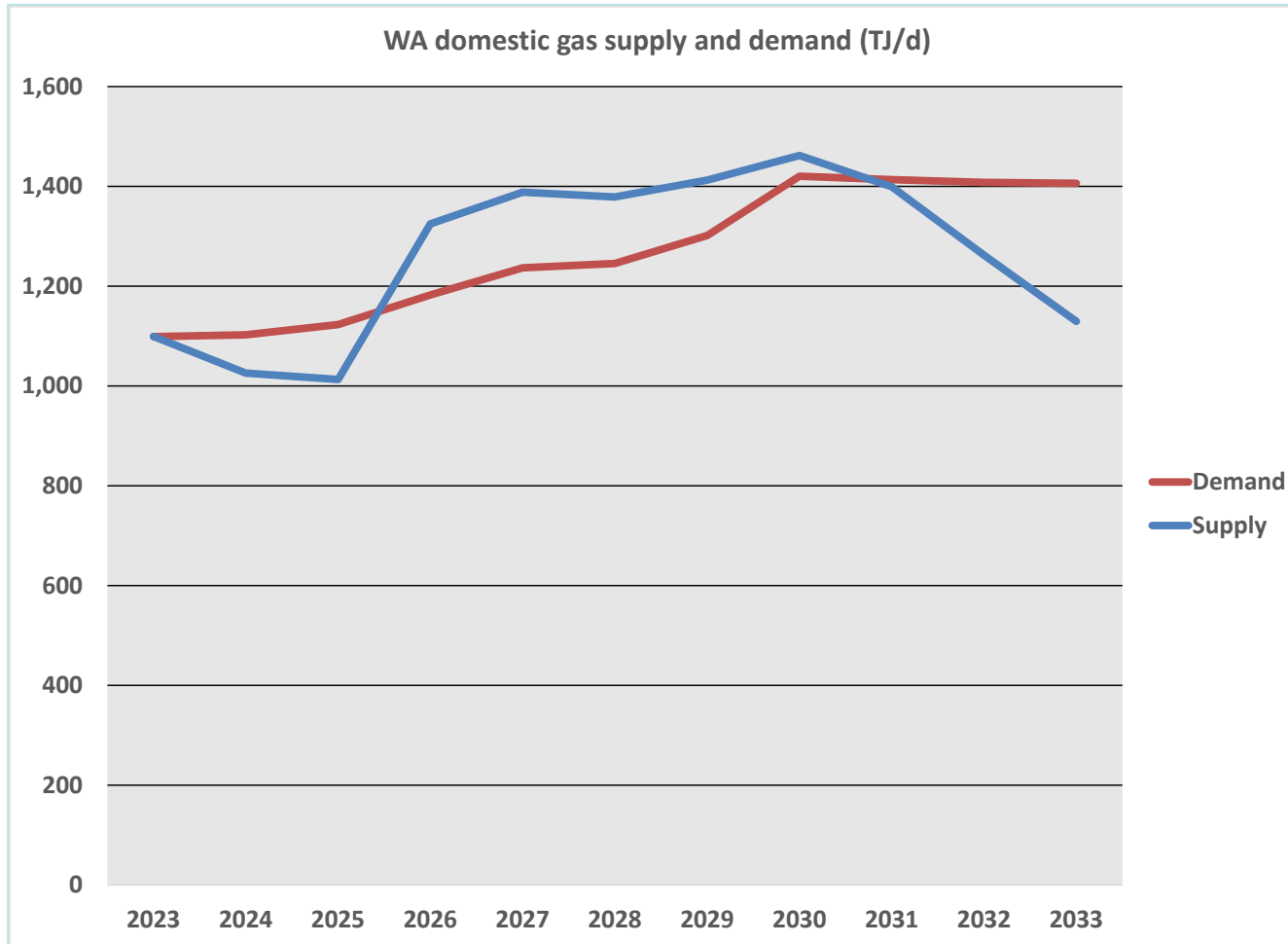
Southern supply challenges



Source: EnergyQuest 2023 East Coast Gas Outlook report.

- While demand is falling, supply is falling faster.
- One region affected by declining legacy domestic gas fields is the southern states: Victoria, NSW, SA and Tasmania, with decline in Bass Strait and Otway fields.
- This is addressed in the 2023 EnergyQuest East Coast Gas Outlook report.
- Over the next decade two LNG import projects are expected to be needed plus Narrabri development to meet even declining demand. All of these are uncertain.
- There is also uncertainty about Queensland volumes in the 2030s after the end of LNG contracts.

WA Gas Update



- Another region affected by declining legacy domestic gas fields is Western Australia, where supply is unlikely to meet demand from around the end of the decade.
- Western Australian domestic gas will also be affected by the decline in LNG production.
- This is analysed in EnergyQuest's 2023 WA Gas Outlook report.

Source: EnergyQuest 2023 WA Gas Outlook report.

Conclusion

- Australia is at peak gas production.
- Legacy fields are starting to decline and are not being replaced.
- Australia has already reached peak LNG production, with volumes starting to decline, creating concerns for the Japanese and other buyers.
- Declining Australian LNG volumes provide an opportunity for other producers like Qatar which is likely to get a free kick as Australia shuts down its gas industry.
- As domestic gas fields begin to decline it is increasingly likely that gas volumes will need to be diverted from LNG projects to the domestic market, not only on the East Coast but also in WA and as they already are in the NT.
- There remain significant uncertainties on domestic supply, with an increased chance of high prices and supply disruptions.



Thank you



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