Gas market update

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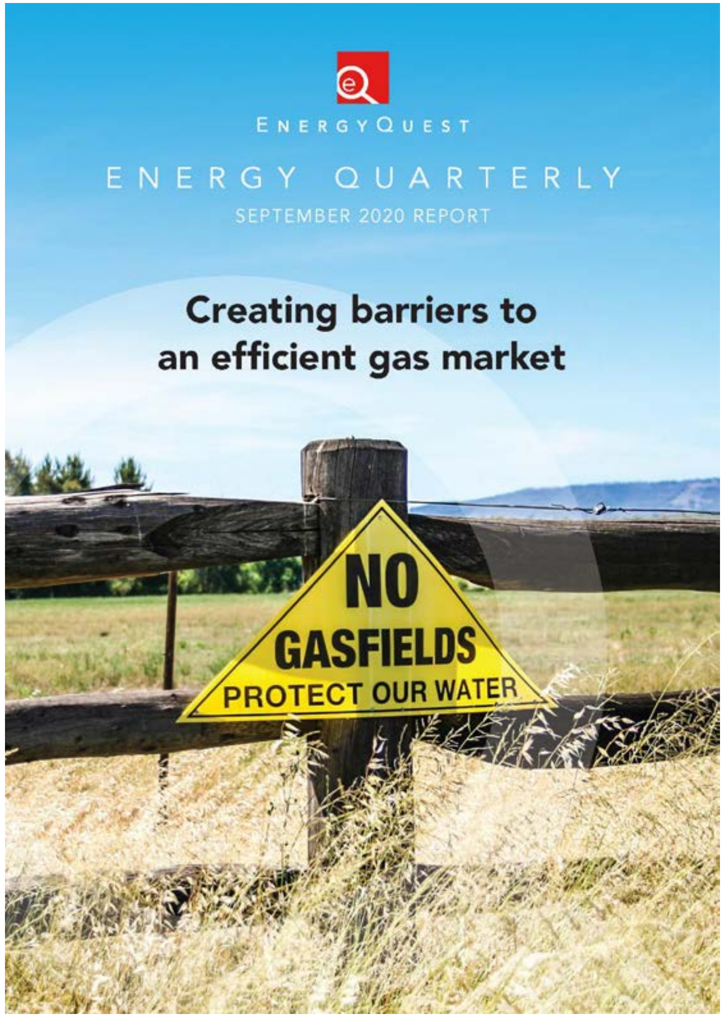
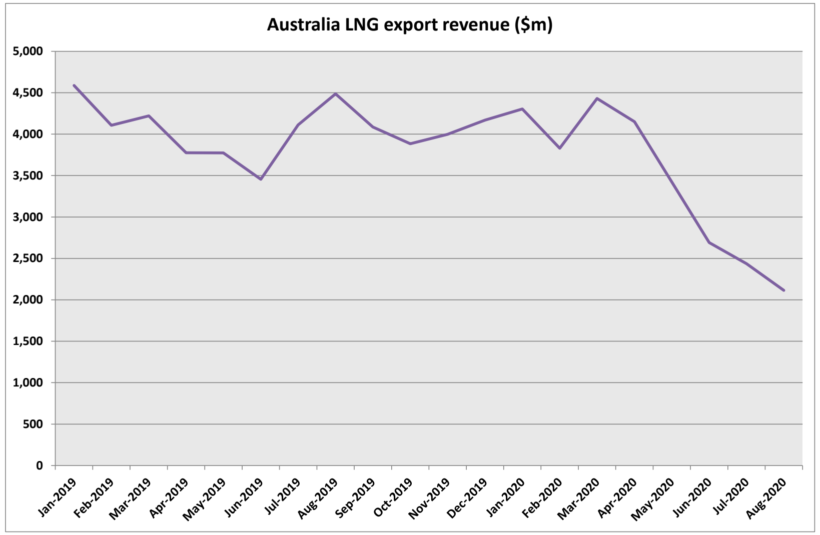
EnergyQuest

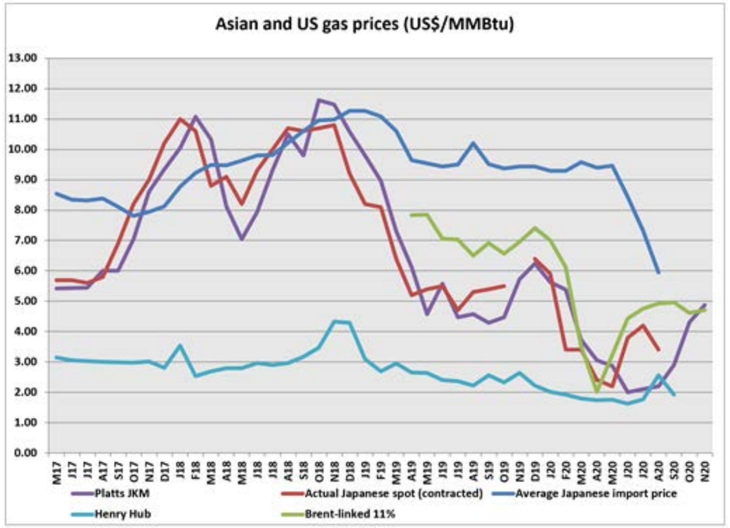
- Energy advisory firm, providing independent energy market analysis and strategy. Founded in 2005 by Graeme and Susan Bethune
- EnergyQuarterly, Australian LNG Monthly and East Coast Gas Outlook reports
- Recent consulting: WA gas, NT gas, Qld gas, Vic offshore gas, LNG imports, domgas reservation
- Graeme is also Chair of the Australian Gas Industry Trust, member of the Executive Committee of the International Gas Union



LNG post-COVID

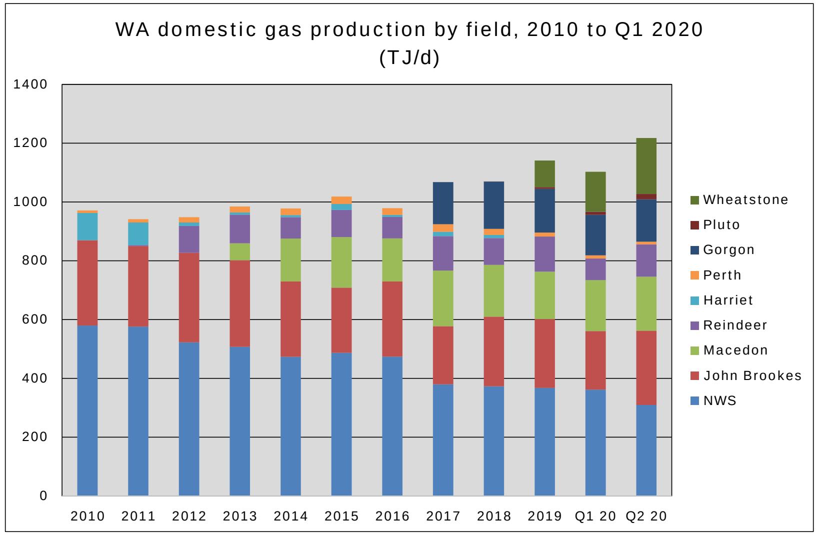
- LNG export volumes holding up. Q2 exports down less than 1% from Q2 2019
- But revenue has more than halved since March 2020
- Likely strengthening with higher oil prices and spot LNG
- Deferral of Darwin LNG backfill and Scarborough projects
- Looming fall in NWS production
- Prelude delays

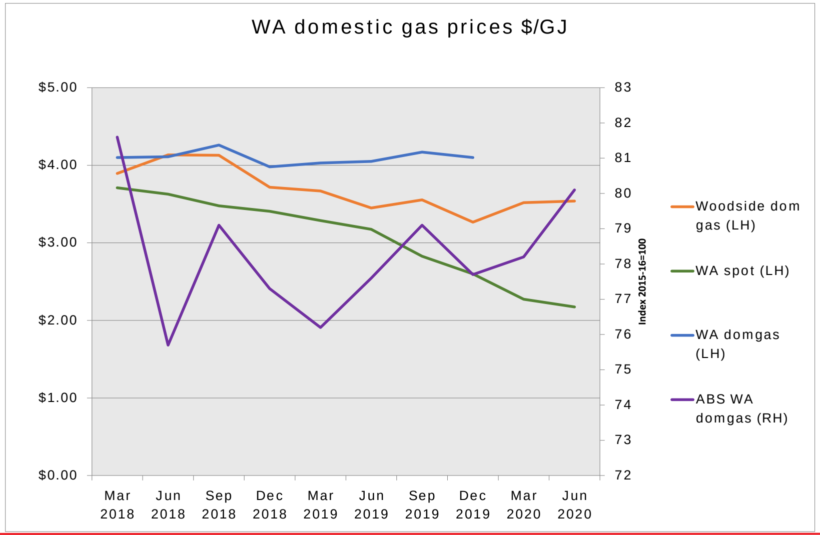




WA gas post COVID

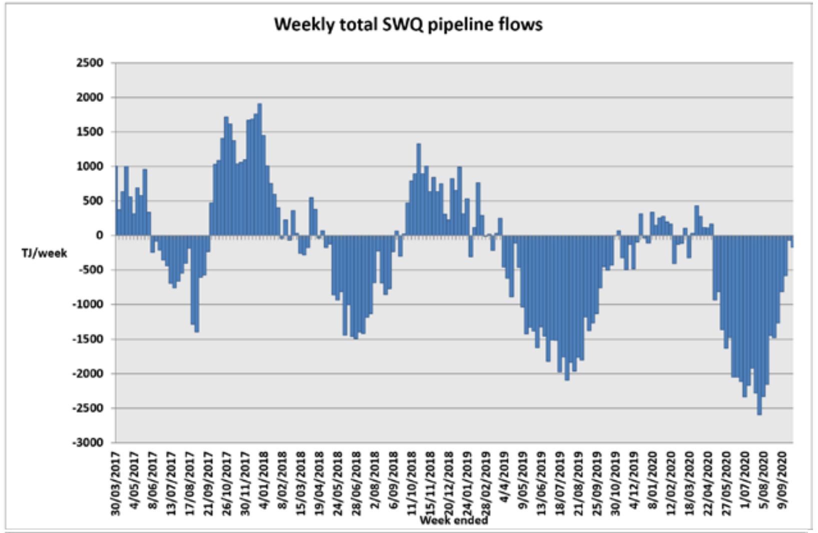
- Good geology offshore and onshore
- Supportive government
- Domgas production currently in excess of demand, storage filling quickly, low domestic prices
- Potential supply of onshore gas to NWS
- Forget any west-east pipeline, but LNG to east coast OK
- Attempting to attract energy-intensive industry
- Medium to long-term supply challenges





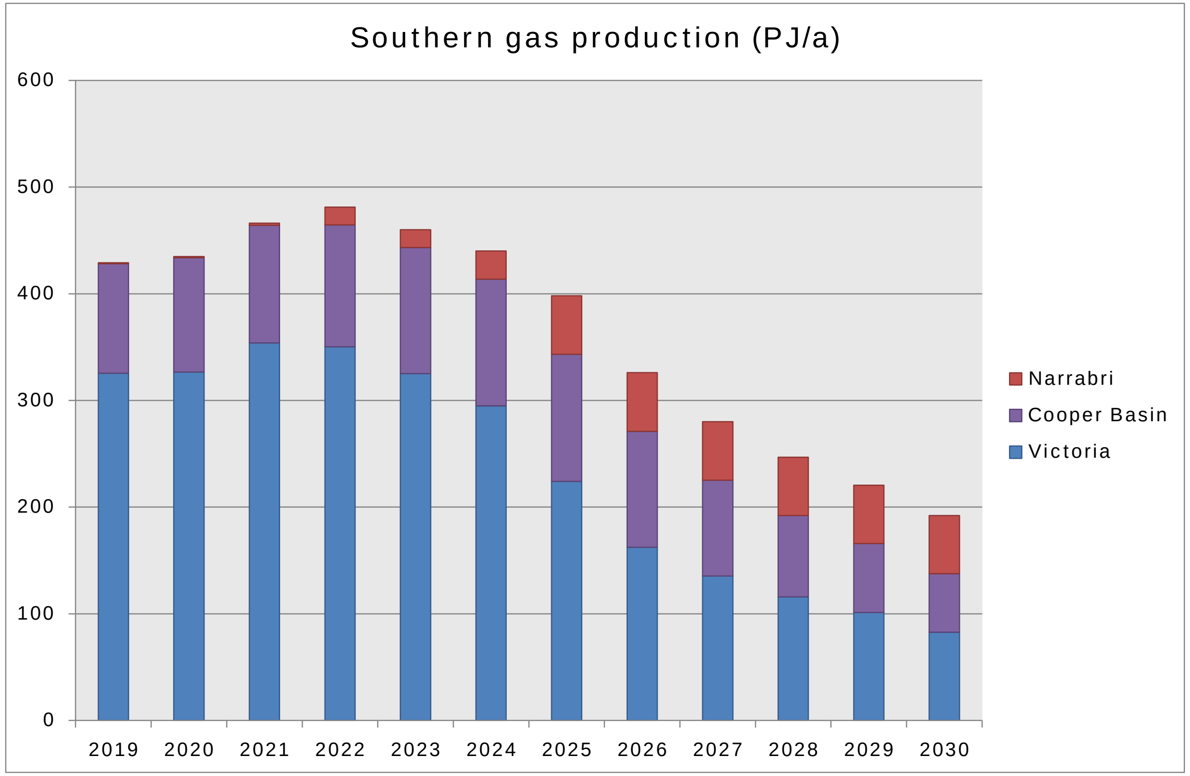
East coast gas post-COVID

- Poorer geology, lots of politics, patchy govt support for gas
- Surviving COVID, Q2 2.8% increase domgas consumption, LNG only down 1.4%
- Queensland and NT production meet Qld LNG exports, Qld domgas demand and contributes to southern supply
- Short-term gas prices have fallen significantly with lower international prices and higher production



Looming southern supply cliff

- Victorian gas production expected to commence decline from around 2023. Challenge of meeting winter peak demand
- Cooper Basin also set to decline
- Consensus view of AEMO and ACCC but continuing strong opposition to gas development
- Narrabri NSW govt environmental approval welcome but development still not certain and nowhere sufficient to fill the gap. Potential for a 460 km pipeline
- SA implications



Source: EnergyQuest

East Coast Gas Outlook to 2040

Can Queensland gas solve the southern problem? Is it simply a matter of transporting more Qld gas south and augmenting the infrastructure as necessary?

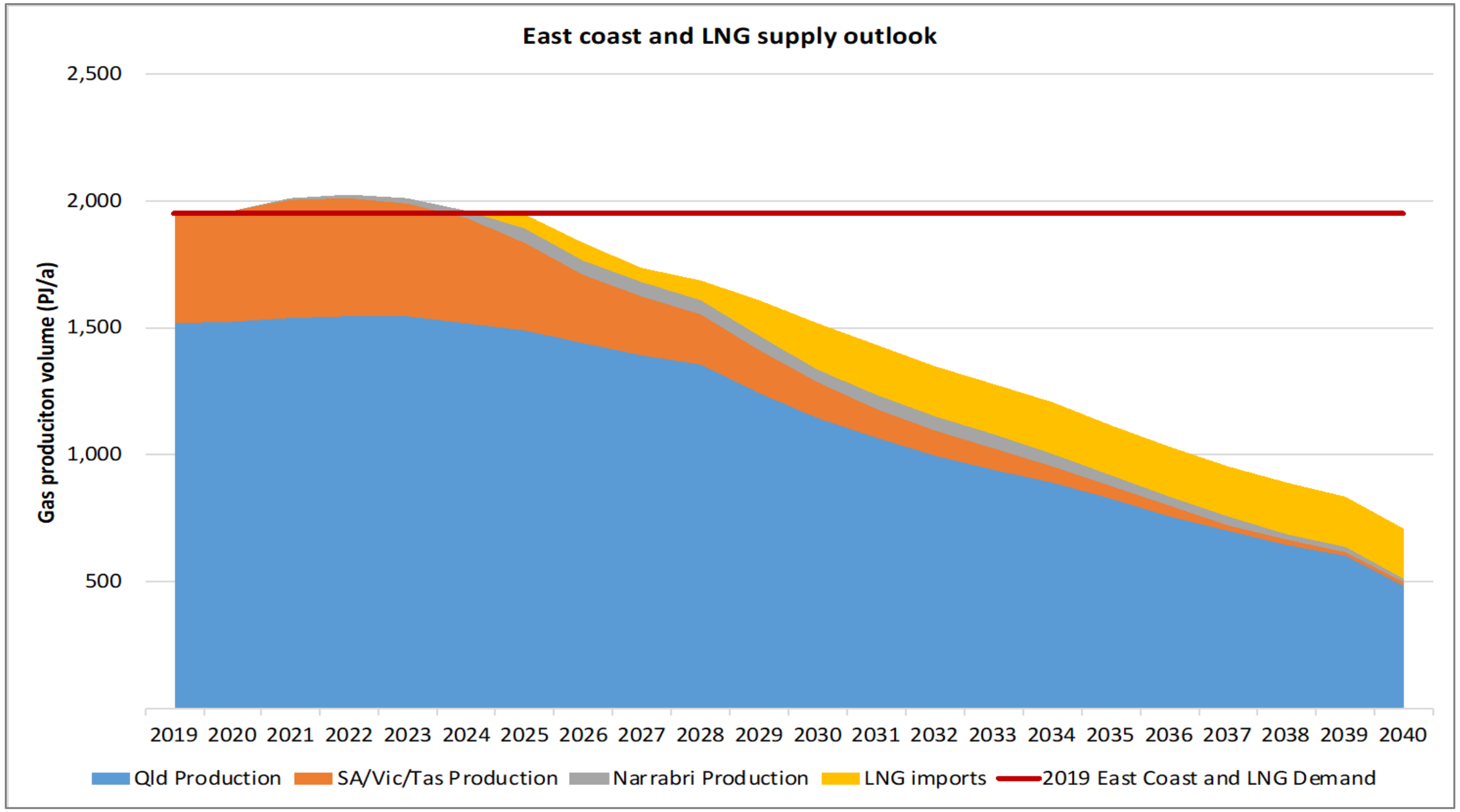
To answer this EnergyQuest has undertaken a detailed update of east coast reserves, production costs, field production profiles, demand and the pricing outlook.

- How robust are proven and probable reserves estimates to meet this demand?
- What are the likely 20-year production profiles for major fields and basins?

ECGO team of experienced professionals: Rick Wilkinson, Denis Dare, Marie-louise Lees, Leslie Atkinson.

Queensland production expected to decline too

East coast gas supply shortfalls are expected…



… without more gas production, imports and/or demand destruction

Source: EnergyQuest analysis; East Coast Gas Outlook Report

C’wealth gas supply measures

- **Setting new gas supply targets with states and territories:** good idea. NSW a good start. Victoria??
- **Enforce potential “use-it or lose it” requirements on gas licenses:** no obvious evidence of warehousing. More evidence of poor acreage being over-promoted.
- **Unlock five key gas basins starting with the Beetaloo Basin in the NT and the North Bowen and Galilee Basin in Queensland:** challenges of geology and timing.
- **New agreements with the three east coast LNG exporters that will also strengthen price commitments:** could threaten contracts and discourage investment.
- **Natural Gas Infrastructure Plan:** no missing link. Find the gas and the pipeline will come.
- **Exploring options for a prospective gas reservation scheme:** depends on successful exploration. Applies already in Qld.

LNG imports the only short-term option

- Production offshore Victoria forecast to start significant decline within three years
- Lack of support for onshore gas development in NSW and Victoria
- Limits on scope for diverting much larger Queensland volumes south
- LNG imports the only guaranteed way of quickly increasing supply
- Start of work on Port Kembla welcome
- Victorian projects challenged
- SA Venice project?

Immediate outlook

- The fundamental problem of the east coast gas market is not an imperfect market or a lack of infrastructure. Rather a shortage of new commercial gas resources close to markets.
- Partly due to geology. The US has better geology, liquids-rich shale gas close to demand centres. East coast gas development costs $6-8/GJ, not $4/GJ. Greater distance to markets adds further costs.
- Shortage also due to development restrictions in NSW and Victoria.
- No shortage of potential pipeline investors. Find, appraise and develop the gas and the infrastructure will come.
- Measures to increase indigenous supply are welcome and should be encouraged but will take 5-10 years.
- LNG import terminals essential to meet looming short-term needs.

Thank you

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