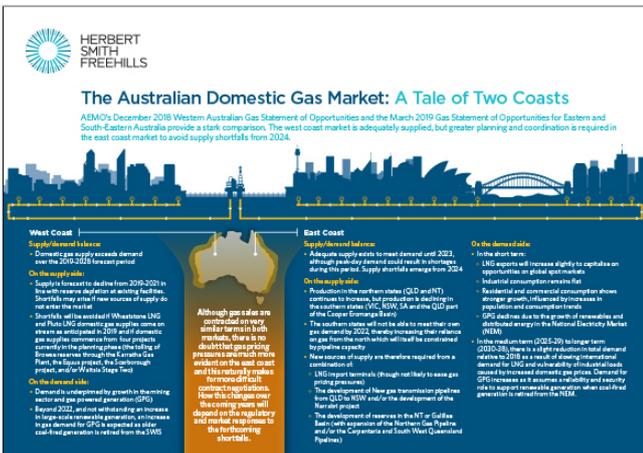


THE AUSTRALIAN DOMESTIC GAS MARKET - A TALE OF TWO COASTS

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Legal Briefings - By **Robert Merrick**

The Australian Energy Market Operator's (**AEMO**) December 2018 Western Australian Gas Statement of Opportunities and the March 2019 Gas Statement of Opportunities for Eastern and South-Eastern Australia provides a stark comparison between either side of the country.

While it might be easy to point to Western Australia's abundant gas reserves, smaller population and favourable governmental policies as the reasons for WA's apparent good fortunes, the reality is more complicated than that. What is clear, as AEMO points out, is the need for much greater planning and coordination in the east coast market to avoid the supply shortfalls that are expected from 2024.



HERBERT SMITH FREEHILLS

The Australian Domestic Gas Market: A Tale of Two Coasts

AEMO's December 2018 Western Australian Gas Statement of Opportunities and the March 2019 Gas Statement of Opportunities for Eastern and South-Eastern Australia provide a stark comparison. The west coast market is adequately supplied, but greater planning and coordination is required in the east coast market to avoid supply shortfalls from 2024.

West Coast

- Supply demand balance:**
 - Domestic gas supply exceeds demand over the 2019-2024 forecast period.
- On the supply side:**
 - Supply forecasts decline from 2019-2021 in the mid-term due to gas supply curtailment. Shortfalls may arise if new sources of supply do not enter the market.
 - Shortfalls will be avoided if Whittlesea LNG and Pacific LNG domestic gas supply areas are anticipated in 2019 and if domestic gas supply curtailed from that projects currently in the planning phase (the filling of Browse marine storage tanks, Liquefied Gas Plant, the Gorgon project, the Scarborough project, and the Wabarra-Deep Sea).
- On the demand side:**
 - Demand is expected to remain relatively stable and gas prices will remain low (GPI).
 - Beyond 2022, and not withstanding an increase in gas supply, increasing generation, increases in gas demand for GI is expected as other coal-fired generation is retired from the LNG.

East Coast

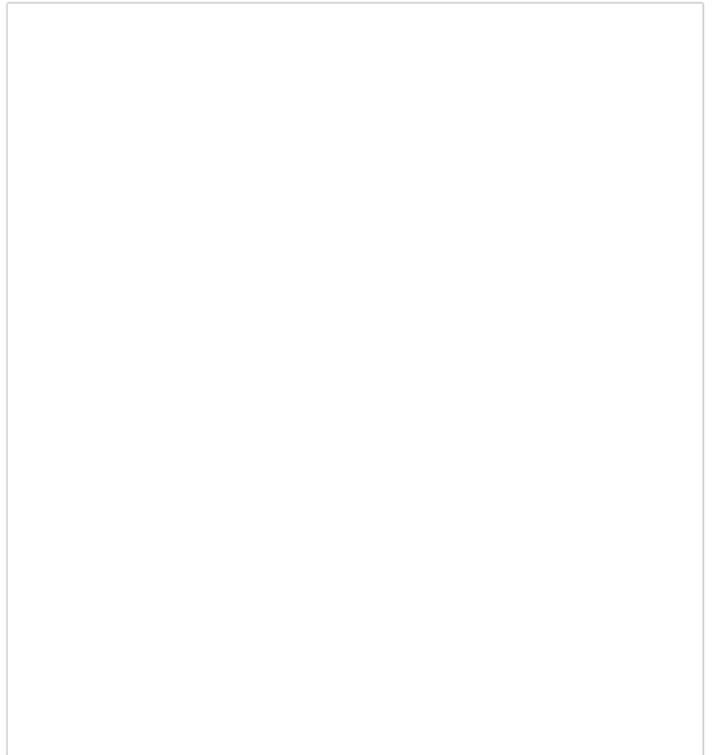
- Supply demand balance:**
 - Adequate supply exists to meet demand until 2023, although peak-day demand could result in shortages during this period. Supply shortfalls emerge from 2024.
- On the supply side:**
 - Production in the northern states (QLD and NT) continues to increase, but production is declining in the southern states (VIC, NSW, SA and the QLD part of the Cooper-Eromanga Basin).
 - The southern states will not be able to meet their own gas demand by 2023, thereby increasing their reliance on gas from the north which will be constrained by pipeline capacity.
 - New capacity supply are therefore required from a combination of:
 - LNG export terminals through north-to-south gas pricing pressures;
 - The development of new gas transmission pipelines from QLD to NSW and/or the development of the North West;
 - The development of reserves in the NT or Galilee Basin (both dependent on the Northern, Central, Western and/or the Cooperian and South West Queensland Pipelines).
- On the demand side:**
 - In the short term:
 - LNG exports will increase slightly to capitalise on opportunities on global spot markets;
 - Industrial consumption remains flat;
 - Residential and commercial consumption shows stronger growth, influenced by increases in population and consumption trends.
 - GI declines due to the growth of renewables and distributed energy in the National Electricity Market (NEM).
 - In the medium term (2023-20) in longer term (2020-35), there is a slight reduction in total demand relative to 2018 as a result of peaking commercial demand for LNG and an increase in distributed loads, caused by increased demand for gas prices. Overall, the GPI increases as it assumes a reliability and security risk in light of increasing gas prices, when coal-fired generation is retired from the NEM.

Although gas prices are considered on very similar terms in both markets, there is no doubt that gas pricing pressures are much more evident on the east coast and if this results in more cost-effective gas pricing, this will have a significant impact on the east coast market.

AEMO'S DECEMBER 2018 WESTERN AUSTRALIAN GAS STATEMENT OF OPPORTUNITIES AND THE MARCH

**2019 GAS
STATEMENT OF
OPPORTUNITIES
FOR EASTERN AND
SOUTH-EASTERN
AUSTRALIA
PROVIDE A STARK
COMPARISON.**

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	Western Australian Gas Market	Eastern and South-East Australian Gas Markets
Supply – demand balance	Gas available for supply exceeds forecast WA domestic gas demand over the 10 year outlook period (2019-28).	Gas available for supply from existing and committed developments is forecast to provide adequate supply until 2023, although peak-day demand could result in shortages during that period. Supply shortfalls emerge from 2024.
Supply	<p>Gas supply will decline from 2019-2021 in line with reserve depletion at existing production facilities. There will be a tightening of the market around 2022 when gas supply will exceed demand by only 17TJ/day (in the base case scenario), presenting an opportunity for new sources of gas supply to economically enter the market at that time. If these new sources of supply do not enter the market, then a supply shortfall may emerge in 2021 (in the high case scenario) and 2022 (in the low and base case scenarios). There are four projects currently in the planning phase which could add as much as 485TJ/day in incremental gas supply:</p> <ul style="list-style-type: none"> the proposal to toll Browse reserves through the North West Shelf's Karratha Gas Plant (KGP); the proposed development of the Equus Project by Western Gas comprising a 'base case' 2mtpa LNG facility and onshore gas processing; the proposed development of the Scarborough gas field by Woodside and BHP by way of a second LNG train at the Pluto LNG Project or with domestic gas deliveries via an interconnector between Pluto and the KGP; Waitsia Stage Two (owned by Mitsui and Beach Energy) comprising an expanded 100TJ/d domestic gas production facility. <p>If these projects are developed in line with the proponents' reported commissioning dates, then supply will exceed demand over the entire outlook period.</p> <p>These proposed projects are supplemented by two committed projects which are intended to commence operation in 2019 – the Chevron-operated Wheatstone production facility (200TJ/day) and the Woodside-operated Pluto LNG project (25TJ/day of pipeline gas and 15TJ/day of trucked LNG). AEMO's gas supply modelling assumed that output from Beharra Springs, Devil Creek, Gorgon (tranche one), Macedon, Varanus Island and Xyris will decline over the forecast period.</p>	<p>Production forecasts to 2022 are very similar to those provided in 2018. Declines in production from older fields in the southern states (VIC, NSW, SA and the QLD part of the Cooper Eromanga Basin) are off-set by new production from Cooper Energy's Sole Project and Esso-BHP's West Barracouta Project that are expected to come on line in 2019 and 2021 respectively. Production in the northern states (QLD and NT) continues to increase.</p> <p>The declines in the south will lead to the southern states being unable to meet their own gas demands by 2022. This will increase the south's reliance on gas from the north, which will itself be constrained by available pipeline capacity. This will lead to supply shortfalls from 2024 unless new resources or infrastructure can be developed. The absence of new projects will also lead to shortfalls in Queensland LNG exports by 2029.</p> <p>AEMO's analysis indicates that no single project is likely to fill the gap. Instead, a combination of developments are required. Those developments could include:</p> <ul style="list-style-type: none"> LNG import terminals (noting that a terminal in Victoria could reduce shortfalls over the longer term by up to 290 PJ/annum while a terminal in South Australia or New South Wales may reduce longer term shortfalls by 194-354PJ/annum assuming increases in capacity to the Moomba to Adelaide, Moomba to Sydney and/or Eastern Gas Pipeline). The development of gas reserves in the Northern Territory or Galilee Basin, in conjunction with the expansion/extension of the Northern Gas Pipeline and/or the Carpentaria and South West Queensland Pipelines in order to ship gas to southern demand centres. New gas transmission pipelines that would allow transportation of gas from Queensland to New South Wales and/or the development of Santos' Narrabri Project in New South Wales and a new transmission pipeline. <p>In relation to LNG import, AEMO notes that while it has a role to play in reducing shortfalls, it is unlikely to ease gas pricing pressures.</p>
Demand	<p>The demand side of the equation is underpinned by growth in the mining sector and in gas powered generation (GPG).</p> <p>New mining and minerals processing projects are forecast to increase demand over the entire outlook period. The following committed projects are expected to add 50TJ/day to demand (in the low, base and high case scenarios):</p> <ul style="list-style-type: none"> Robe Valley and West Angelas iron ore deposits by Rio Tinto, Mitsui, Nippon Steel and Sumitomo AngloGold Ashanti's Tropicana gold mine and Sunrise Dam gold mine expansions Tianqi Lithium's lithium processing facility at Kwinana Gold Road Resources' and Gold Fields' Gruyere gold mine BHP Nickel West's expansion of its Kwinana processing facility Fortescue's Eliwana iron ore processing and rail project BHP Iron Ore's South Flank project Rio Tinto's Koodaideri iron ore project. <p>10 year consensus forecast mineral production and prices have also improved, particularly for iron ore, gold, nickel, zinc, copper and lithium, resulting in an additional 57TJ/day (in the high case scenario) from 13 prospective mining and mineral processing projects. This demand falls in the low case if these projects install solar photovoltaics to supplement their electricity requirements.</p> <p>Demand from GPG is influenced by renewable generation entering the WA market. The introduction of new renewables generation in the South West Interconnected System (SWIS) between 2019-2022 will result in a slight decrease in gas demand for GPG as gas-fired generators are dispatched for fewer hours. However, beyond 2022, and notwithstanding an increase in large-scale renewable generation, an increase in gas demand for GPG is expected as some older coal-fired generation is retired from the SWIS. Gas demand is expected to increase if, in-line with federal Labor Party policy, WA seeks to achieve a 26% emissions reduction on 2005 levels in the SWIS.</p>	<p>Demand in the east coast gas market is attributable to consumption by LNG export facilities, industrial customers, residential and commercial customers and GPG. The biggest consumer of gas in Victoria is the residential/commercial sector (primarily for heating); the LNG export facilities in Queensland; GPGs in South Australia; and the industrial and residential/commercial sectors in New South Wales.</p> <p>In the short-term (2019-2024), relative to the 2018 forecast:</p> <ul style="list-style-type: none"> LNG exports, the largest driver of total demand across the market, increase slightly to capitalise on opportunities on global spot markets. Industrial consumption remains flat in the face of increased economic challenges. Residential and commercial consumption shows stronger growth, influenced by increases in population and consumption trends (although is a relatively small component of overall demand). GPG declines due to the growth of renewables and distributed energy in the National Electricity Market (NEM). <p>In the medium (2025-29) to longer (2030-38) term, there is slight reduction in total demand relative to 2018 as a result of slowing international demand for LNG and increased vulnerability of industrial loads caused by increased domestic gas prices. Demand for GPG increases, however, as it assumes a reliability and security role to support renewable generation when coal-fired generation is retired from the NEM.</p>
Other factors influencing the supply-demand balance	<p>Consistent with previous GS00s for the west coast, the 2018 GS00 seeks to identify government and industry initiatives that may affect the WA gas market. Initiatives possibly affecting gas supply include:</p> <ul style="list-style-type: none"> the WA Government's recently announced ban on fracking in over 98% of onshore WA; the National Offshore Petroleum Titles Administrator's (NOPTAs) re-evaluation of the commercial viability of 10 retention leases offshore Western Australia and their ability to be produced through the Karratha Gas Plant; whether the COAG Energy Council recommends any changes to Australia's offshore petroleum licensing regulations following a review commenced in 2017; changes to the Petroleum Resource Rent Tax (PRRT) regime for oil and gas projects, including lower uplift rates, the removal of onshore project from the PRRT regime and the review of the net-back mechanism to determine the price of gas produced by integrated LNG projects; the potential development of a West-East Gas Pipeline, as proposed in a March 2018 pre-feasibility report prepared by GHD Group and ACIL Allen Consulting on behalf of the Commonwealth Government (as a means of alleviating the tightness in east coast gas markets); the Australian Domestic Gas Security Mechanism initiated by the Commonwealth Government in 2017 to address projected gas supply shortfalls in east coast gas markets. <p>Initiatives possibly affecting gas demand include:</p> <ul style="list-style-type: none"> the prevalence of hard rock (spodumene ore) deposits in Western Australia, and government and industry lead initiatives to develop secondary lithium processing in Western Australia to support global demand for lithium batteries; the use of LNG as a marine fuel and industry lead initiatives to assess the viability of LNG-fuelled very large iron ore carriers and support vessels. <p>Initiatives with market-wide impacts include:</p> <ul style="list-style-type: none"> the implementation of rule changes relating to the economic regulation of gas transmission pipelines following the COAG Energy Council accepting most of the recommendations contained in the Australian Energy Market Commission's review that was tabled in July 2018; the WA Government's electricity industry reform program which focuses on system security, and particularly the ability of GPG's suitability to participate in a reformed market which require them to ramp-up quickly to meet demand; the Security of Critical Infrastructure Act 2018 (Cth), particularly the additional steps that are now involved in transferring the ownership and operation of gas processing, storage and transmission infrastructure. 	<p>The GS00 for the east coast only identifies short term uncertainties that may affect the supply-demand balance (although many of the factors identified in the west coast GS00 also have application on the east coast). These include:</p> <ul style="list-style-type: none"> variable drivers of GPG demand, including the impact of reduced wind and solar output caused by weather volatility, reduced rainfall affecting hydro generation, extended unavailability of ageing coal-fired generation, reduced availability of coal volumes, the return to service of the Tamar Valley gas-fired power station, delays in the commissioning of committed renewables generation and the use of the Gas Supply Guarantee to address peak demand in the NEM; residential, commercial and industrial consumption being affected by weather variations (eg an unusually cold winter in Victoria) or economic shocks affecting trade exposed businesses; the performance of coal seam gas wells in Queensland being lower than expected; a faster than expected decline in southern production; and an unexpected failure of gas critical infrastructure.

Despite the differences between the two markets, the two markets contract on very similar terms and conditions. It was not that long ago that a tight market existed in Western Australia (indeed, this was partly the impetus for the Carpenter Labor government's introduction of the WA domestic gas reservation policy) that ushered in contractual terms that are now witnessed on the east coast, such as:

- much shorter contractual terms, which has inevitably lead to larger gas buyers buying gas on a portfolio basis which might include a mix of firm and interruptible term contracts and spot market trading
- less flexibility in load factors, seasonal variances, take-or-pay obligations and gas banking rights, which need to be managed through portfolios, utilisation of gas storage, gas transportation delivery point flexibility and in-pipe trades
- limited seller liability for delivery failures

While oil-linked pricing is still evident on both sides of the country, particularly on the east coast where there is much greater linkage of domestic gas prices to the LNG export price as evidenced by regulatory attempts to publish net-back prices at Wallumbilla, the volatility of the oil price in recent years has seen CPI-indexed prices return to prominence in some domestic gas contracts.

There is no doubt that gas pricing pressures are much more evident on the east coast and this naturally makes for more difficult contract negotiations. How this changes over the coming years will depend on the regulatory and market responses to the forthcoming shortfalls.

KEY CONTACTS

If you have any questions, or would like to know how this might affect your business, phone, or email these key contacts.



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