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Drake / ENERGY & MARITIME CONSULTING

The evolving gas market

Manufacturing businesses in Eastern Australia that use gas are at risk of closing or moving offshore. This is due to uncertainty concerning their ability to secure gas at prices that enables these businesses to continue to operate.

The political resistance to developing onshore gas resources in New South Wales, Victoria and the Northern Territory could result in gas shortages. Several companies are investigating projects to address the shortage with LNG imports.

The potential role of LNG imports in the gas supply mix to address shortages is discussed below. This is followed by a review of some of the major milestones in the development of the gas industry in Eastern Australia over the last two decades.

Floating LNG import terminals

LNG import terminals have typically consisted of onshore storage and regasification facilities. A development over the last decade has been the Floating Storage Regasification Unit (FSRU).

FSRUs are moored at a wharf and LNG is regasified on board the FSRU and the gas piped ashore for delivery to customers.

According to the International Gas Union in early 2018 there were 22 LNG import terminals that are based on an FSRU. This represents 82 million tonnes of regasification capacity or 18% of global capacity.

A further eight LNG import terminals based on an FSRU were under construction in 2018.

LNG imports into Australia

Despite Australia being the largest global LNG exporter, the importation of LNG is actively being pursued in South Eastern Australia.

In late 2016 AGL announced that it would undertake a study into the development of an LNG import terminal in Victoria. AGL announced in late 2018 that it had signed a contract with Hoegh LNG for the supply of an FSRU for the proposed Crib Point import terminal.

If this project proceeds it will have the capacity to supply 100 PJ per year to the domestic market.

Australian Industrial Energy is seeking regulatory approval to build an LNG import terminal at Port Kembla in New South Wales. Hoegh LNG is also contracted to provide an FSRU for this project.

There are two other import terminals being assessed for South Eastern Australia.

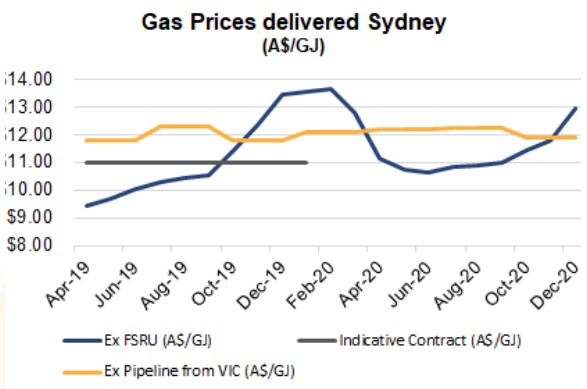
Within the Asia Pacific region there are 16 export terminals, including five in North Eastern Australia.

The proposed LNG import terminals could contract LNG for a fixed term from an export terminal with spare capacity or on a spot basis.

LNG carriers and FSRUs are typically contracted under a time charter agreement, a form of agreement widely used in the global shipping industry.

Imported and domestic gas prices compared

The chart below compares gas delivered to Sydney from an FSRU, via pipeline from Victoria and indicative contract pricing (based on discussions with gas buyers). The price delivered from an FSRU is based on the ICE LNG Japan/Korea Marker (JKM) futures contract prices for forward LNG prices, daily time charter rates for an LNG carrier, daily time charter rates for an FSRU and the investment in a wharf.



Source: Drake Energy Consulting analysis

The price delivered to Sydney from domestic sources is based on a published pipeline tariff and the ASX Victorian three month gas futures prices. Although, the ASX gas futures contracts are thinly traded.

The analysis of prices indicates that imported LNG pricing is in the order of that for gas sourced from domestic sources.

The current practise of producers is to typically contract for one year terms. If the import terminal operator offers contracts for longer terms on the basis of a linkage in the underlying commodity price to JKM, then this creates an opportunity for price risk management through the ICE JKM futures contracts.

With new large scale gas fields unlikely to be developed then an import terminal may offer buyers the security of being able to contract for terms longer than that offered for domestic gas.

The journey to the current gas market

Supply of gas in Eastern Australia was, until the 1990s, dominated by the Cooper Basin and Bass Strait. Historically wholesale gas prices in Eastern Australia were approximately A$3/GJ, compared to current contract prices of A$10-11/GJ.

In the late 1990s Chevron and Oil Search proposed the Papua New Guinea gas project which would have delivered gas to major demand centres in Queensland via a pipeline.

This project was ultimately uneconomic due to the costs, level of demand and the historical prices at which end users were seeking to buy gas.

In an effort to establish a source of demand for the Papua New Guinea gas project the proponents lobbied the Queensland Government to implement a policy to support demand for gas.

In response to this the Government introduced the Gas Electricity Certificate Scheme. This initially required that 13% of electricity sold in Queensland be generated using gas.

During this time the coal seam gas industry had started to take shape.

There had been small scale development of coal seam gas at Moura from 1996 in the form of coal mine drainage.

Tri-Star Petroleum, a United States based gas explorer, acquired tenements in South West Queensland in the early 1990s and commenced production later in that decade.

Santos, Origin Energy, with each of these acquiring interests in the Tri-Star Petroleum tenements, Queensland Gas Company and Arrow Energy commenced developing fields.

The demand created by the Gas Electricity Certificate Scheme was not sufficient to support the Papua New Guinea gas project, however it supported the fledgling coal seam gas industry.

Early sales of coal seam gas by producers were to power stations in South Eastern Queensland and the Incitec fertiliser plant in Brisbane.

Linking Eastern Australia to the global LNG market

As the coal seam gas fields were developed it became apparent that the size of the Queensland resource was greater than that required to supply the domestic market.

This led to interest in the development of LNG export projects. The potential for a new world scale gas province and the opportunity to integrate this into their global LNG supply chains led to interest from international oil and gas companies.

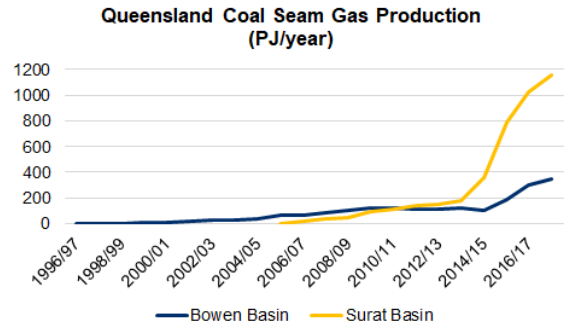
These companies brought experience in developing LNG plants, a presence in the global LNG supply chain and the access to the funding required for the multi-billion dollar investments in the LNG plants and associated field developments.

Curtis Island LNG projects

Each of the three joint ventures led by Origin Energy (APLNG), Shell (QCLNG) and Santos (GLNG) made multi-billion dollar investments in the LNG plants on Curtis Island and the associated gas field developments.

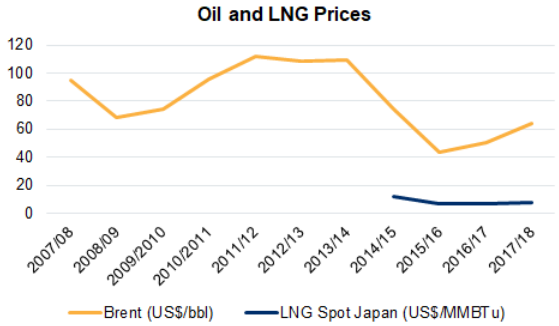
The Final Investment Decisions for the three projects were made in late 2010 to early 2011 when oil prices were between US$80 and US$100 per barrel.

Production was increased rapidly to meet the export commitments of the LNG projects.



Source: Department of Natural Resources, Mines and Energy, Queensland

The first of the three Curtis Island LNG plants began commercial operation in early 2015. However, by then the oil price and the price of LNG delivered to Asia had fallen by about 50% compared to only a few years earlier.



Source: Office of the Chief Economist, Australia and Ministry of Economy Trade and Industry, Japan

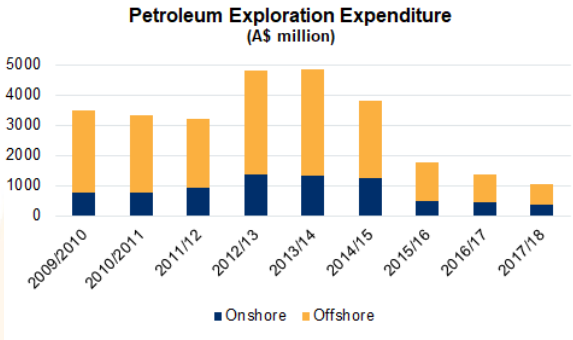
Eastern Australia - gas supply

There has been concern amongst gas users since 2009 about the potential for a shortage of gas in Eastern Australia.

The Prospective Gas Production Land Reserve (PGPLR) was enacted in legislation by the Queensland Government in 2011. This provides that the State Government may, when granting a production license over an area, require that any gas produced from that area be only for supply to the Australian domestic market. The PGPLR was applied for the first time in 2017.

The Commonwealth Government's Australian Domestic Gas Security Mechanism was introduced in 2017 to give the Commonwealth the ability to place controls over the export of LNG from Eastern Australia if a domestic gas shortfall is forecast.

Petroleum exploration expenditure in Australia remains low. This is due to gas producers being capital constrained and the scope for exploration stymied by political resistance in New South Wales, Victoria and the Northern Territory to the development of onshore gas resources.



Source: Office of the Chief Economist

Onshore exploration expenditure in 2017/18 was a quarter of the average annual expenditure across the period 2012/13 to 2014/15.

The political resistance to onshore development and the lead time from an increase in exploration expenditure to first gas from new fields makes it unlikely that potential frontier resources will come into production before late in the next decade.

Conclusion

An ironic development in the evolving Eastern Australian gas market is that LNG produced at one of the Curtis Island LNG projects could be delivered to South Eastern Australia through one of the proposed import terminals.

Swaps of LNG cargoes are being used globally to reduce the freight costs incurred in supplying LNG.

LNG cargoes contracted from a Papua New Guinea or Asian export terminal for supply to an Australian import terminal could be swapped with cargoes originally destined for export from Curtis Island to North Asia.

About the author

Rod Johannessen has over 20 years experience in the energy sector including working for mid-stream, upstream and downstream companies. During his career he has held roles in business development, commercial management, strategy, and risk management with pipeline, upstream oil and gas, power generation and electricity retail companies. Rod advises governments and companies on energy issues.

Rod's early career was in the seaborne grain and oilseed trade where he managed futures positions for exports to customers in Japan, Mexico and India.

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