

LNG's maturing – but there are growing pains ahead



Still waters: The LNG industry looks towards the future:

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THE liquefied natural gas (LNG) industry celebrated its 50th birthday in 2014. While the sector has matured, it is still not short of surprises. So, what are the next few years likely to hold?

Last year production edged up 5 million tonnes to 246 million tonnes and overall trade was bolstered by more re-exports. But the big surprise was that Asian LNG demand was much lower than expected, analysts Wood Mackenzie said.

Demand in emerging markets, particularly China, failed to expand to the extent expected and fell considerably in the established South Korean market.

The outlook remains pretty subdued in Asia, Gavin Thompson, an Asian-based gas specialist at the energy research company told *Petroleum Economist*.

Weather has been a critical factor

with a mild summer and back-to-back mild winters pushing down demand growth.

Last year, South Korea, the world's second-largest LNG buyer, imported 9% less LNG than in 2013. The nation boosted its coal use as more transmission capacity into the grid was added, while seven out of eight nuclear power plants were returned to action quicker than expected. This has led to an overhang in LNG storage. The big uncertainty this year is China, said Thompson. Last year, China did not grow as quickly as expected with LNG demand expansion falling from 28% in 2011 to 17% in 2014.

Lower economic growth, evolving environmental policies, higher city gate prices, increased hydro output and infrastructure constraints all contributed to the slowdown.

"We really did not see China playing the spot market, despite weaker prices to the levels expected," said Thompson.

LNG spot prices crashed from over \$20 per million British thermal units (Btu) at the beginning of 2014 to under \$10/million Btu towards the end of the year as new supply from Papua New Guinea and reduced Asian demand left the Pacific basin awash with cargoes. And China's

2014 in numbers

1. Production hit 246 million tonnes per year (t/y)
2. Asian spot prices peaked at over \$20/million Btu but fell to under \$10/million Btu
3. South Korea imported 9% less in 2014 than 2013
4. PNG exported 3.7 million t/y in first seven months of operation. Operating at close to 90% of nameplate capacity
5. 67 new LNG ships were ordered

Source: Wood Mackenzie

appetite is unlikely to improve this year with plenty of gas under contract starting to arrive.

While the upside appears limited in Asia, a delay in planned Japanese nuclear restarts could spur demand. But at the same time there is a lot of renewables coming online, particularly solar, encouraged by Japanese policy, which will be the biggest variable, cautioned Thompson.

Meanwhile the pace of supply will continue to outpace demand as the coalbed methane-to-LNG plants start up in eastern Australia.

BG's Queensland Curtis scheme has already commissioned its first cargo and is expected to ramp up during the first half year, while Santos' Gladstone LNG and Origin's Australia Pacific LNG plants will come on stream in the second half.

There are conflicting messages from partners about the start-up of the Chevron-led Gorgon complex in Western Australia, which is fuelling speculation that the project may not come online in 2015. There's a lot of uncertainty, warned Thompson.

Still, the volume of supply looking for market, as well as lower oil prices tied to term deals, is really going to start putting a lot of pressure on spot prices by mid-year, expects Thompson.

It will get interesting by mid-year as lower oil prices are passed through to term deals tied to crude benchmarks. Term contract prices could come down to \$10-10.5/million Btu by June, he added.

In terms of new export projects proceeding the "US will be the story for final investment decisions this year", he said.

Green light

The energy research company expects Cheniere's Corpus Christi plant to get the green light, as well as a third train at Freeport, while it's possible BG could take a final investment decision on its Lake Charles liquefaction scheme by year-end. The UK gas group is seeking a long-term replacement for its waning Equatorial Guinea and Trinidad projects.

Some new floating liquefied natural gas (FLNG) schemes could also move forward. Last year, Petronas took a final investment decision on its second FLNG unit off Malaysia, while Golar signed a heads of agreement with Perenco for a near-shore project off Cameroon in December.

With the exception of Petronas' Pacific North West (PNW) LNG scheme in Canada, Wood Mackenzie does not expect any large-scale

Table 1: Top 10 contracted buyers 2014

1.	Kogas
2.	Tepco
3.	GDF Suez
4.	Chubu Electric
5.	Tokyo Gas
6.	CPC
7.	Cnooc
8.	Kansai Electric
9.	Petronet LNG
10.	Osaka Gas

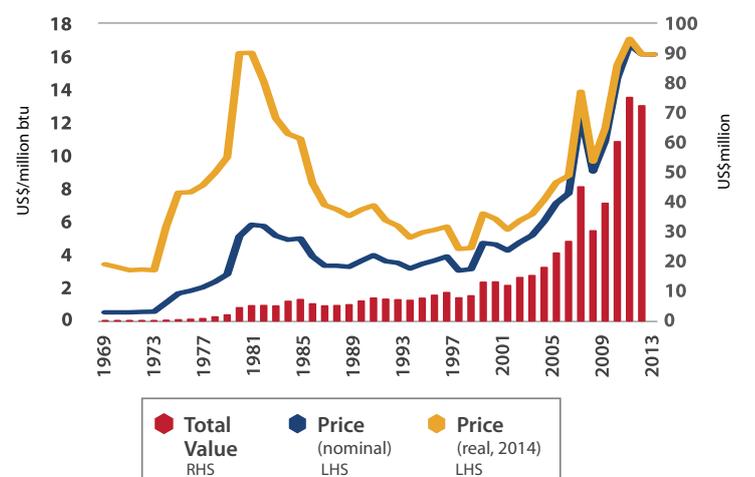
Source: Wood Mackenzie

Table 2: Regasification capacity 2014

1.	Kogas
2.	Tepco
3.	Chubu Electric
4.	Tokyo Gas
5.	GDF Suez
6.	Cnooc
7.	BG
8.	Qatar Petroleum
9.	Kansai Electric
10.	Shell

Source: Wood Mackenzie

Figure 1: Japanese LNG import price



Source: Japanese Customs Statistics

capital-intensive liquefaction projects to get flagged off this year.

Petronas certainly want to push the PNW plant forward, but it continues to face some major hurdles around siting, environmental approvals, as well as marketing, said Thompson.

Still, there is a lot of uncertainty around proposed major LNG projects, which face the risk of cost overruns and delays, but cannot really attract customers at the right prices to underpin them.

Buyers are still pushing for cheaper deals given the apparent plethora of supply options, which may or may not materialise. The hesitation

surrounding the more capital-intensive schemes in East Africa, Australia, Russia and Canada, creates more opportunity for US supply over the coming years, said Thompson.

Post-2015, smaller modular projects, offering better cost control, like FLNG and floating regasification units, have the potential to knock out oil in power generation markets in central America, the Caribbean, Vietnam and the Philippines.

Not on a huge scale, but the ability to get gas into these niche markets without huge infrastructure creates opportunities given the price volatility. ●