REPORT



Asia Pacific LNG Overview of LNG in the Asia Pacific region



ASIA PACIFIC LNG MARKET

The purpose of this report is to illustrate the present state of the LNG market in the Asia Pacific region, identifying the key drivers of supply and demand. Stirling LNG is committed to providing high-level insights into the LNG market in key regions and countries and our analysts are constantly monitoring the evolution of the medium to long-term market, providing analysis and evaluating investment risks and opportunities in the region.

We advise on developing a portfolio strategy for the purchase of LNG contracts and identify the risks and opportunities on the purchase of such contracts by region.

INTER-BASIN TRADE, 2000 vs 2018



INTRODUCTION

The Asia Pacific region is the leading LNG import and export market in the world. In 2018, the region featured the top three countries for incremental growth in LNG imports: respectively, China, South Korea and India. Asia Pacific also included the largest country for incremental growth in exports, Australia. Moreover, intra-Pacific trade in 2018 accounted for over 40% of global LNG trade. Indeed, such is the region's relevance to the global LNG market that the Japan Korea Marker (JKM) has become recognized as the pre-eminent price benchmark for LNG trade globally, and JKM derivatives cleared through the ICE and CME exchanges have increased from only a few thousand in all of 2016 to monthly values in excess of 30,000 during 2019.

ASIA PACIFIC TRADEFLOWS 2018 (MT)

		From					
		Australia	Qatar	Malaysia	USA	Rest of World	Total Imports
Ъ	Japan	28.8	9.9	11.1	2.5	30.8	83.1
	China	23.6	9.3	5.8	2.2	13.0	53.9
	South Korea	7.9	14.4	3.8	4.8	13.4	44.3
	India	1.5	10.9	0.3	1.0	8.9	22.6
	Taiwan	2.6	4.9	2.8	0.3	6.3	16.9
	Rest of World	3.2	27.6	0.7	10.1		
	Total Exports	67.6	77.0	24.5	20.9		

Source: BP Statistical Review of World Energy 2019

CHINA

China's rising demand for energy, and its desire to improve air quality by reducing coal generation, has made gas its fastest-growing imported fuel. In 2018, China was the world's largest natural gas importer with 121 billion cubic meters (bcm) delivered through pipeline and by LNG. In the same year, China surpassed South Korea to become the world's second largest LNG importer, with 54 million tonnes (mt) of deliveries. The single largest suppliers of LNG to China in 2018 were Australia and Qatar accounting for 44% and 17% of total imports respectively. China's rising demand for natural gas was driven by increasing use in the industrial (+44% YOY) and commercial (+38% YOY) sectors and more than 50% of this demand growth was met by LNG imports. Additional reforms targeting cleaner air will support a further coal-togas energy transition and will strengthen LNG as the fastest growing fuel source in China for some years to come. Consequently, Stirling LNG expects China to overtake Japan as the world's largest LNG importer during the 2020s.

While China's total LNG import capacity of approx. 75 million tonnes per annum (mtpa) is, on paper, able to cope with its total annual import requirements, constraints are already appearing such as northern import terminals reaching full utilization during periods in the past two winters. With a view to addressing these constraints and greater national import requirements in the coming years, China is undertaking an ambitious import terminal build out program which will see a further 19 mt of import capacity added by 2022 (table below).

NEW CHINA IMPORT FACILITIES

Project	Status	Start-up Date	Import Capacity (mtpa)
Shenzhen (CNPC)	Construction	2020	3.0
Jiaxing	Construction	2020	1.0
Binhai	Construction	2021	3.0
Wenzhou	Construction	2022	3.0
Longkou	Construction	2022	6.0
Zhangzhou	Construction	2022	3.0

JAPAN

In 2018, Japan imported 83.1 mt of LNG, remaining the largest LNG importer in the world. While broadly flat year-on-year, Japanese imports have declined by 6.5 mt from their peak of 89.6 mt in 2014 as some of Japan's nuclear reactors have begun to restart following the Fukushima disaster. Japan's LNG is mostly imported under long-term contracts and sourced from Australia (which accounted for 35% of deliveries in 2018) and traditional suppliers, such as Malaysia (13%) and Qatar (12%). With around 190 mtpa of total import capacity in Japan, well in excess of projected demand, no new import terminals are currently planned.

Stirling LNG foresees the possibility of an increase in spot LNG supplies and short-term contracts as many long-term contracts expire, the global LNG market commodifies, and new liquefaction capacity is brought online in Australia and the US. In terms of the trend in overall future demand for LNG in Japan, this will be impacted by overall electricity demand and factors such as energy efficiency measures. But the single biggest driver in the short to medium term will be the rate at which the remaining nuclear reactors are restarted. As of the end of 2019, nine reactors had restarted with a further 17 in the process of restart approval.

SOUTH KOREA

South Korean imports of LNG amounted to 44.3 mt in 2018, an increase of 6.5 mt YOY. This made South Korea the third largest importer of LNG globally in 2018 and the second largest country for YOY growth in LNG imports after China. Due to political and geographical reasons, the country must import natural gas through LNG tankers. South Korea currently has six regasification terminals accounting for 138 mtpa of import capacity with the four vast terminals at Pyeongtaek, Incheon, Tongyeong and Samcheok accounting for 96% of this total. As with Japan, more than half of South Korea's LNG in 2018 originated in Qatar, Australia and Malaysia.

The South Korean government has confirmed the central role of LNG in the country's energy mix in the long-term. Plans to liberalise the market could break the effective monopoly of KOGAS (Korea Gas Corporation), enhancing competition in the LNG market. Thus, Stirling LNG expects the growth in LNG imports to continue, confirming South Korea's position as a dominant LNG importer in the new decade.

TAIWAN

Taiwan imported 16.9 mt of LNG in 2018, broadly flat YOY, but an increase of 1.8 mt (12%) on 2016 and an increase of 5.8 mt (53%) since 2010. The Taiwanese government aims to increase to 50% the share of LNG in the country's energy mix and this will be supported by the development of new infrastructure such as the new 3 mtpa Taoyouan regasification terminal which is expected to start operations in 2023. In 2018, the largest LNG suppliers to Taiwan were Qatar (29% of total imports), Malaysia (17%) and Australia (15%), mostly under long term contract arrangements. Stirling LNG expects that, from 2021, Taiwan will start ramping up its share of LNG from the US (which in 2018 accounted for only 2% of imports), in line with the country's strategy to diversify its LNG supplies.

INDIA

India's limited natural gas resources and its rising demand for energy has driven up LNG imports under long and short term contracts and on a spot basis. In 2018, India imported 22.6 mt of natural gas and witnessed the third largest absolute increase in LNG imports worldwide (+4 mt). The share of LNG in India's gas supply exceeded 50% for the first time in 2018. The development of supporting LNG infrastructure, the environmental benefits associated with LNG and plans to increase to 20% the share of natural gas in the national energy mix have all underpinned a period of growth for the LNG industry in India. The country's regasification capacity currently stands at 32 mtpa but a pipeline of new projects will bring total capacity to 51 mtpa by 2022 (table below). Stirling LNG expects Indian LNG imports to increase in the period up to 2025 to meet rising energy demands.

NEW INDIA IMPORT FACILITIES

Project	Status	Start-up Date	Import Capacity (mtpa)
Ennore	Completed	2019	5.0
Jaigarh	Construction	2020	4.0
Mundra	Construction	2020	5.0
Jafrabad	Construction	2020	5.0
Dharma Port	Construction	2021	5.0

AUSTRALIA

In contrast to the markets discussed above, Australia is an LNG exporter and, in 2018, it exported 67.6 mt of LNG, a YOY increase of 11.2 mt, the largest incremental export growth of any country. Australia primarily serves the large import markets of Asia with China, Japan and South Korea accounting for 89% of Australian exports in 2018.



Source: ABS (2018); Department of Industry, Innovation and Science (2018)

AUSTRALIA'S LNG EXPORT EARNINGS AND VOLUMES

Stirling LNG expects Australia to further strengthen its dominant position as the major LNG supplier in the Asia Pacific region as recently commissioned projects ramp up to full capacity over the coming months. Australia's total export capacity now stands at close to 90 mtpa which includes the recently completed Prelude FLNG which, at 3.6 mtpa export capacity is the world's largest floating LNG platform, and Ichthys LNG T2 (4.5 mtpa). Most of Australia's exports are currently sold under long-term oil-indexed contracts linked to the Japan Custom Crude (JCC) although as these reach maturity, some Australian suppliers may be pressured towards adopting shorter term, more flexible contract arrangements in line with wider global trends. Australia's Department of Industry, Innovation and Science sees total exports of 83 mtpa in 2020-21 which would, if achieved, see Australia overtake Qatar as the world's largest LNG exporter.

MALAYSIA

Malaysia is the Asia Pacific region's second largest exporter of LNG and, in 2018, its exports totalled 24.5 mt with most cargoes going to Japan, China and South Korea. Malaysia's 2018 export total was down 8.5% YOY on pipeline maintenance issues which plagued feed gas deliveries for much of the year. Malaysia currently has approx. 30 mtpa of export capacity but is in the process of commissioning the new 1.5 mtpa FLNG Dua. Assuming the country can effectively resolve its pipeline reliability issues, Stirling LNG sees modest export growth potential for the country in the medium term.

CONCLUSION

Despite recent significant developments in other parts of the world, the Asia Pacific region remains the hub of the global LNG market. On the demand side, China leads the way in terms of growth but we also see strong growth potential in India, South Korea and Taiwan. Japan remains something of a wildcard and its appetite for LNG going forward will be heavily dependent on progress with its nuclear restart program.

On the supply side, Australia has rapidly become a dominant player in the global export market, exploiting its favourable position close to the key Asian demand centres. It could conceivably become the world's largest LNG exporter in just a very few years.

In addition to Asia Pacific, we also provide detailed LNG analysis in other key regions including the Americas, Europe, Sub-Saharan Africa and MENA.

In addition to advising on the portfolio construction for the purchase of medium to long term LNG contracts for off-takers, the firm also advises on project finance on oil and gas infrastructure projects. For further information, please visit www.stirlinglng.com.

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ABOUT STIRLING INFRASTRUCTURE

Stirling LNG is a division of Stirling Infrastructure Partners. Stirling LNG performs three key functions:

Buying and selling LNG on behalf of off-takers and LNG suppliers on short, medium and long-term contracts. The firm provides purchase and sales solutions to finance these contracts.

Arranging capital for gas infrastructure and advising on the acquisition and disposal of upstream, midstream, and downstream oil and gas assets.

Arranging capital for major oil & gas companies and project sponsors. The firm specialises in financing the development of new and existing gas power plants and gas infrastructure. This includes both floating and on-land assets.

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