Gas

Resources and Energy Quarterly December 2019

Australia exported 75 million tonnes of LNG in 2018–19, valued at **$50 billion**

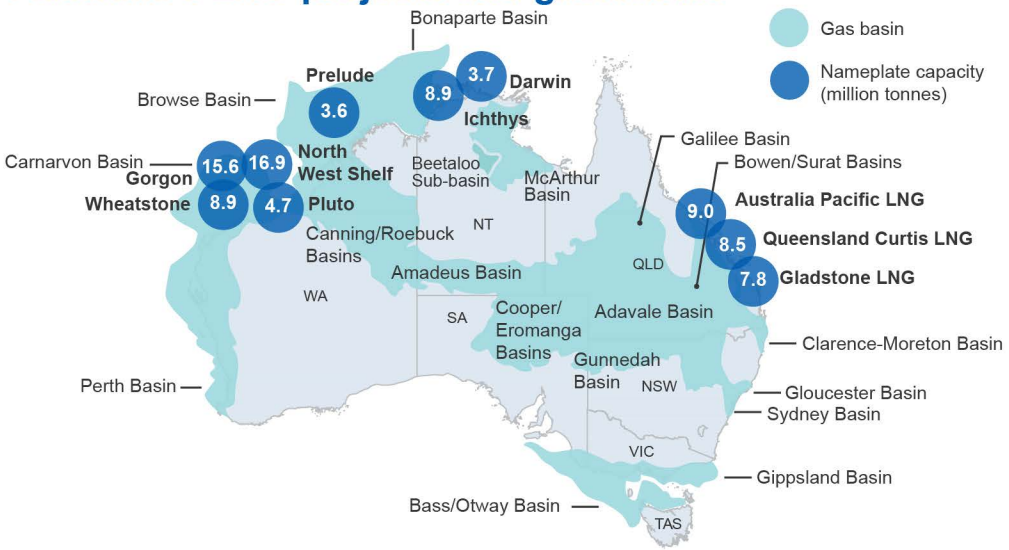
2nd

Australia was the second largest LNG exporter in the world in 2018

Most Australian LNG is sold at oil-linked contract prices

The combined nameplate capacity of Australia's 10 LNG projects is **88** million tonnes per annum

Australia's LNG projects and gas basins



Australia's LNG export earnings by destination, 2018–19

43%	35%	11%	5%	2%	5%
Japan	China	South Korea	Taiwan	India	Rest of the world

Share of world LNG exports in 2018

25%	21%	7%	7%	6%	34%
Qatar	Australia	Malaysia	United States	Nigeria	Rest of the world

Share of world LNG imports in 2018

26%	16%	13%	7%	5%	32%
Japan	China	South Korea	India	Taiwan	Rest of the world

7.1 Summary

- Australian LNG export prices are forecast to decline slightly in 2019–20 and 2020–21, due to an easing of oil-linked contract prices (at which most Australian LNG is sold).
- Australia's LNG export volumes are forecast to increase from 75 million tonnes in 2018–19 to 81 million tonnes in 2019–20, as the last two projects in Australia's recent wave of LNG investment ramp up. Export volumes are forecast to hold steady at 81 million tonnes in 2020–21.
- The value of Australia's LNG exports is forecast to decline from $50 billion in 2018–19 to $49 billion in 2019–20, and fall back further to $47 billion in 2020–21, driven by declining oil-linked contract prices.

Asian LNG spot prices have picked up, but remain at multi-year lows

Asian spot prices for LNG have recovered from the record lows seen in the September 2019 quarter (Figure 7.1). The Asian LNG spot price averaged an estimated US$5.70 per million British thermal units (MMbtu) or A$8.80 a gigajoule (GJ) in the December 2019 quarter, 25 per cent higher than the September quarter, but 40 per cent lower year-on-year. The modest price increase in recent months has been driven by stronger demand, in the lead up to winter in the northern hemisphere. Minor disruptions to supply in Australia, the US and Qatar have also supported prices.

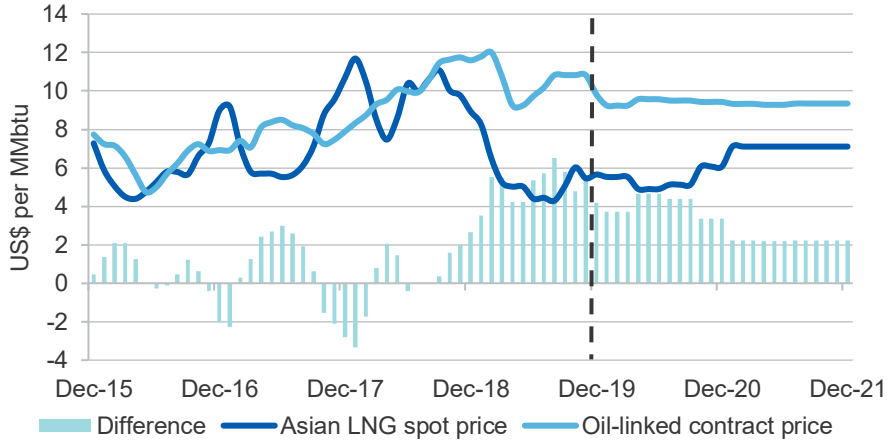
Nevertheless, the overarching narrative for LNG markets remains unchanged: the long-anticipated overcapacity in LNG markets has arrived, placing downwards pressure on LNG spot prices, which remain at multi-year lows. New capacity in the US, Australia and Russia are ramping up operations. Meanwhile, growth in China's LNG imports (the world's second largest importer) has slowed, and imports from Japan and South Korea — the world's largest and third largest LNG importers, respectively — have declined.

Despite low LNG spot prices, there has been a relatively weak demand response, as most of the LNG traded in Asia is sold on long-term contracts (70 per cent in 2018). The price of LNG in these contracts is linked to the price of oil — commonly the Japan customs-cleared crude oil price (also known as the JCC) — by a time lag of several months.

There is no single oil-linked contract price in Asia, with a patchwork of different contractual pricing arrangements agreed at different points in time. The indicative oil-linked contract price is estimated to be around US$10.50 per MMbtu (A$16.29/GJ) in the December quarter, down slightly from US$10.60 per MMbtu in the September quarter.

Although the differential between spot and long-term contract prices has narrowed in recent months, it is still very large in historical terms. There are potential implications for long-term contracts if this gap persists for a sustained period of time. Buyers are reportedly reducing purchases on long-term contracts — and increasing purchases of spot cargoes — where their contractual flexibility permits, and pushing to have contract prices lowered during the periodic price reviews that are built into long-term supply agreements. In the longer term, low spot prices relative to oil-linked prices may encourage buyers to push for shorter, more flexible contracts and gas-based pricing (as opposed to oil-linked pricing).

Figure 7.1: LNG prices, monthly



Notes: The Argus Northeast Asian spot price is shown. LNG prices are DES (Delivered Ex Ship). DES prices include shipping and insurance. The long-term oil-linked contract price is indicative only, and is estimated at 14 per cent of the 3-month lagged Japan Customs-cleared crude oil price plus shipping.

Source: Argus (2019); Bloomberg (2019); Department of Industry, Innovation and Science (2019)

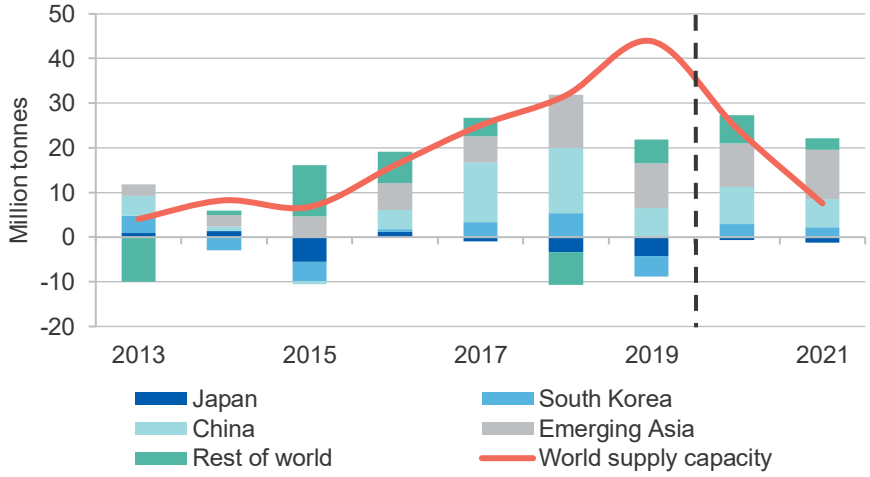
Spot prices forecast to rise, in contrast to falling contract prices

The differential between LNG spot prices and oil-linked contract prices is expected to narrow from current levels. LNG contract prices in Asia are forecast to decline over the outlook period, tracking the decline in forecast oil prices with a lag (see the *oil* chapter).

LNG spot prices — which are driven by supply-demand fundamentals rather than oil prices — are expected to recover modestly towards the end of the outlook period as the market rebalances. Average LNG spot prices in 2020 are forecast to be similar to 2019 levels, at an estimated average of US$5.40 per MMbtu (A$7.40/GJ). LNG spot prices are then forecast to increase to US$7.10 per MMbtu (A$9.20/GJ) in 2021.

Supply growth is expected to slow dramatically in the early 2020s, as the ramp up of new capacity in the US, Australia and Russia draws to a close. Demand is consequently expected to begin closing the gap on global production capacity in 2021, driving spot prices higher.

Figure 7.2: Annual change in LNG demand and world supply capacity



Source: Department of Industry, Innovation and Science (2019); Nexant (2019). 2019 data is an estimate.

7.2 World trade

LNG trade has grown rapidly over the last few years, driven by the ramp up of new projects in Australia and the US, and surging demand in Asia. In 2019, LNG trade will total an estimated 322 million tonnes, up from 309 million tonnes in 2018. Growth in global supply capacity has rapidly outpaced demand growth, and the supply glut will likely persist in 2020. Growth in supply capacity is forecast to slow dramatically towards the end of the outlook period in 2021. From 2021, the global LNG market is expected to begin rebalancing, as demand growth absorbs the available capacity (Figure 7.2).

7.3 World imports

Nuclear restarts and shutdowns to be a key driver of Japan's LNG imports

Japan — the world's largest LNG buyer — imported 81 million tonnes of LNG in 2018. Japan's LNG imports have subsequently declined, falling by 7.6 per cent year-on-year in the first nine months of 2019. The ongoing return of nuclear power generation and relatively mild winter and summer seasons — reducing energy demand for heating and cooling — have reduced Japan's LNG imports.

Japan's LNG imports are forecast to fall by 6 million tonnes over the outlook period to 75 million tonnes in 2021 (Figure 7.3), driven by two key factors. First, overall energy demand in Japan is expected to fall slightly, due to increased energy efficiency and subdued economic growth. Second, LNG is expected to face increased competition in the electricity generation sector from nuclear and renewable power sources. The pace of nuclear restarts and the potential for new shutdowns will be a key driver of Japan's LNG imports over the next two years.

At the time of writing, nine of Japan's 42 nuclear reactors had gained approval to restart and seven were in operation. Further nuclear restarts appear likely over the next five years. Eighteen reactors have applications to restart with the Nuclear Regulation Authority. Although there is no firm schedule for restarts, the Institute of Energy Economics (a Japanese government-affiliated think tank) expects five reactors to restart by March 2021.

The outlook for nuclear generation in Japan has been complicated by new security measures announced by Japan's nuclear regulator in April 2019. Operations that miss deadlines to implement counterterrorism upgrades will be halted. In October, Kyushu Electric Power announced that operations at two of its reactors — Sendai 1 and 2 — would be taken offline in 2020 to complete the necessary upgrades.

Both thermal coal and gas are expected to fill the gap left by the closures. The forecast for Japanese imports of LNG for 2020 has thus been revised up slightly from the September 2019 *Resources and Energy Quarterly*. The potential for a further two nuclear reactors — Kansai Electric Power's Takahama 3 and 4 — to be closed to complete upgrades could further boost Japan's LNG imports over the outlook period to 2021.

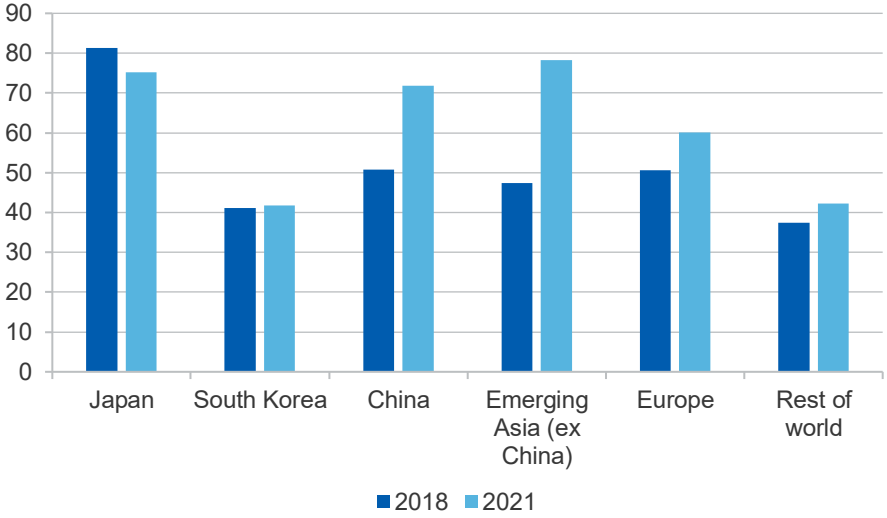
China's LNG imports expected to grow, but at a slower pace

China was the second largest LNG buyer in the world in 2018, importing 51 million tonnes of LNG, or 69 billion cubic metres (bcm). China's LNG imports continued to grow in the first ten months of 2019, rising by 14 per cent on the same period a year earlier.

However, the pace of growth has slowed considerably from previous years (Figure 7.4), due to a range of factors. The Jiangsu Rudong LNG terminal, one of China's largest, was offline for more than a month from late September, after it was damaged during a typhoon. Growth in gas demand has also moderated in recent months. Authorities are reportedly relaxing the coal-to-gas switching policy to allow more flexibility in the choice of fuel, against a backdrop of slowing economic growth and low coal prices. China's gas stockpiles are also higher than usual, due to a relatively mild summer. Combined with improved storage infrastructure, it appears unlikely that there will be a substantial surge in LNG imports to meet winter demand, in contrast to previous years.

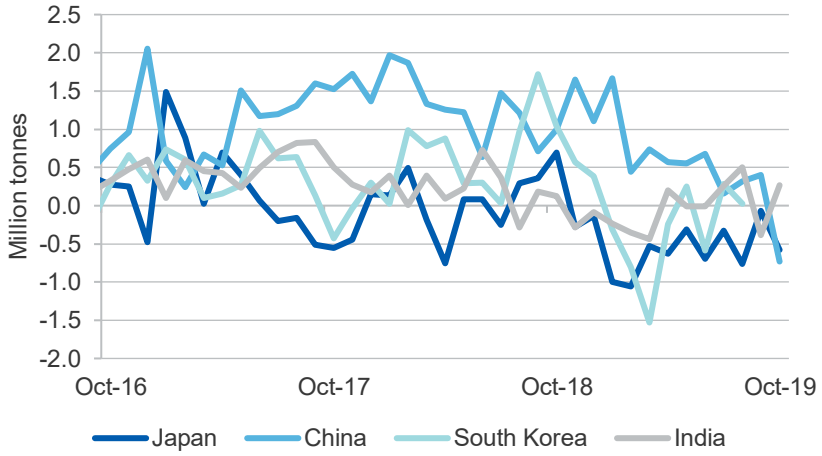
Despite the slowing pace of growth, China's gas consumption is expected to rise over the outlook period, driven by China's efforts to reduce air pollution and raise the share of gas in the overall energy mix from 7.0 per cent in 2017 to 8.3–10 per cent in 2020. In 2021, China's gas consumption is forecast to reach 364 bcm, up from an estimated 280 bcm in 2018.

Figure 7.3: LNG import forecasts



Source: Department of Industry, Innovation and Science (2019); Nexant (2019)

Figure 7.4: Year-on-year change in LNG imports

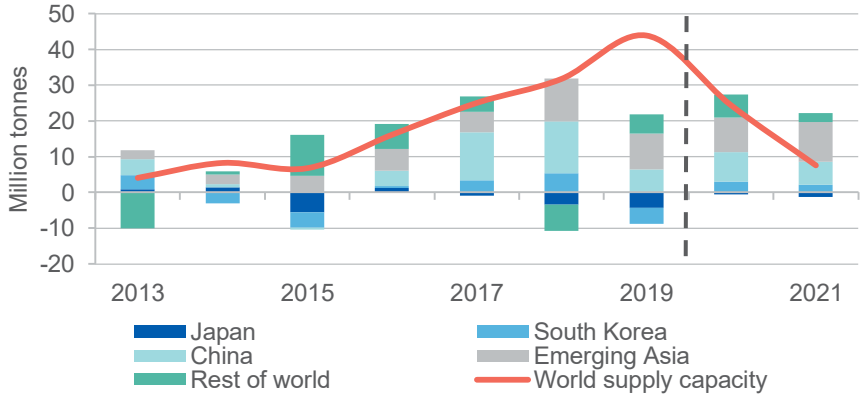


Source: Bloomberg (2019); Argus (2019)

Rising gas demand in China is expected to be met by growth in domestic gas production, pipeline imports and LNG imports (Figure 7.5). While domestic gas production and pipeline imports are the lowest cost source of gas, they are not expected to keep pace with rising domestic demand. LNG imports are thus expected to grow to service rising Chinese gas demand. China's LNG imports are forecast to rise from an estimated 57 million tonnes in 2019 to 72 million tonnes (98 bcm) in 2021. Beyond the outlook period, China's LNG import capacity could more than double from current levels by the mid-2020s, based on project development plans, and China is likely overtake Japan as the world's largest importer of LNG.

China is targeting domestic gas production of 207 bcm in 2020, up 30 per cent from around 160 bcm in 2018. However, the country faces difficulties in lifting domestic output, including challenging geology and the fact that gas resources are located in heavily populated or cultivated areas. As a result, China's gas production could fall short of its production target, requiring higher imports to meet demand. China's pipeline gas imports are also expected to rise over the next few years. Russia's Power of Siberia pipeline to north-eastern China opened on 2 December 2019, and is expected to deliver 10 bcm by 2021 as it ramps up towards full capacity of 38 bcm by 2025. The Central Asia–China Gas Pipeline expansion is also on track for completion by 2020.

Figure 7.5: China's gas consumption by source



Source: Nexant (2019) World Gas Model

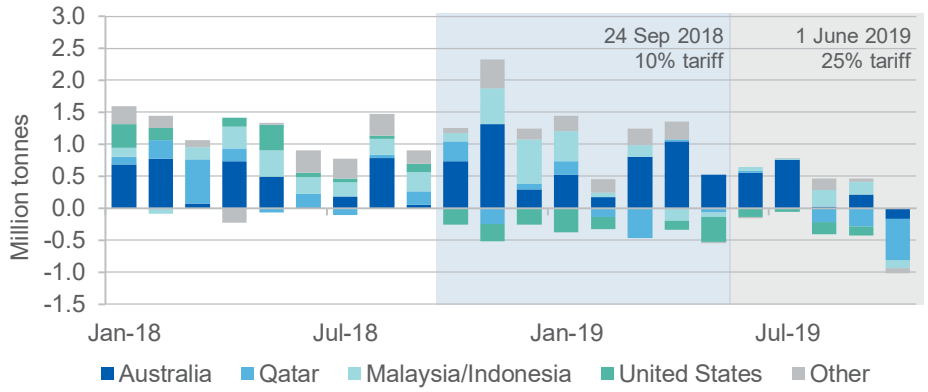
Box 7.1: US-China trade tensions impact on global LNG trade flows

On 24 September 2018, a 10 per cent tariff was imposed on Chinese LNG imports from the US. The tariff was increased to 25 per cent from 1 June 2019, as part of China's response to the US raising tariffs on US$200 billion of Chinese goods. The tariffs have reduced the competitiveness of US LNG in China relative to other sources. As a result, China has purchased more LNG from other countries (Figure 7.6), and US LNG exports have been directed to other markets.

Australia has accounted for the majority of the increase in China's imports since September 2018. However, it is difficult to attribute this increase directly to the effect of tariffs, given China's rapidly growing LNG demand and the ramp up of new Australian projects over the same period.

LNG trade flows will likely continue to be influenced by any resolution or escalation of US-China trade tensions. The Phase One trade deal announced in mid-December includes commitments from China to import an additional $200 billion of US goods and services over the next two years, although it remains unclear if LNG will be a part of the deal. If LNG continues to be caught up in trade tensions, this may discourage or delay final investment decisions for a second wave of US LNG projects.

Figure 7.6: China's monthly LNG imports, year-on-year change



Source: Bloomberg (2019) National Bureau of Statistics of China

South Korea's imports increased rapidly last year

South Korea was the world's third largest buyer of LNG in 2018, with LNG imports reaching an all-time high of 41 million tonnes. Imports have since fallen by 14 per cent in the year to September compared to a year ago. The decline is being driven by the return of nuclear generation capacity, after reactors were closed in 2018 for both regular maintenance and unexpected downtime. A milder than usual winter and summer season has also reduced overall energy demand.

After 2019, LNG imports are expected to increase again, reaching 42 million tonnes in 2021. The South Korean government has a long-term plan to shift its energy mix towards renewables and gas, and away from nuclear and coal. To support this shift, the South Korean government lowered taxes on LNG imports and raised taxes on thermal coal imports on 1 April 2019, and plans to close several more aging coal-fired power stations before 2022.

LNG demand to increase amongst emerging Asian economies

LNG demand in other emerging Asian economies, such as India, Pakistan, Bangladesh, Indonesia, Malaysia and Thailand, is expected to grow over the outlook period. While these countries are relatively small importers of LNG individually, collectively they are expected make a substantial contribution to rising global LNG demand. As a group, emerging Asian economies are expected to surpass China as the world's second largest importer of LNG by 2021.

India is expected to account for a large share of the growth in emerging Asian demand, with LNG imports forecast to increase from an estimated 22 million tonnes in 2019 to 28 million tonnes in 2021. The Indian government is aiming to lift the share of gas in the energy mix from just under 6 per cent currently to 15 per cent by 2030, although the target is considered ambitious. The increase in gas consumption will be supported by policy and price reforms, and by investment in pipeline and port infrastructure. While India's domestic gas production is also forecast to grow, it is not expected to keep pace with demand, with the gas sector constrained by a range of challenges.

Europe expected to increase LNG imports but challenges are looming

Europe — the 'destination of last resort' for LNG due to its extensive storage capacity — has absorbed much of the increase in LNG production over 2019 to date. However, with storage quickly filling up and the potential for a milder-than-usual winter, a growing glut of LNG in Europe is raising questions over how much more LNG can absorbed in the coming months.

Over the outlook period, Europe's LNG imports are forecast to climb from 51 million tonnes in 2018 to 60 million tonnes in 2021. While overall European gas consumption is expected to remain relatively flat, rising LNG imports are expected to be driven by declining gas production in the region. Resource depletion in the North Sea and efforts to reduce seismic activity at the Groningen gas field in the Netherlands, are both expected to reduce European gas production.

Partially offsetting the impacts of declining domestic production, LNG imports are expected to face increasing competition in Europe from pipeline gas. The Nord Stream II gas pipeline, with a capacity of 55 bcm per annum (equivalent to around 40 million tonnes of LNG), will connect Russian gas fields to the EU pipeline network at Germany's Baltic coast. With several hurdles remaining, it is unlikely that the project will commence operations until the June quarter of 2020.

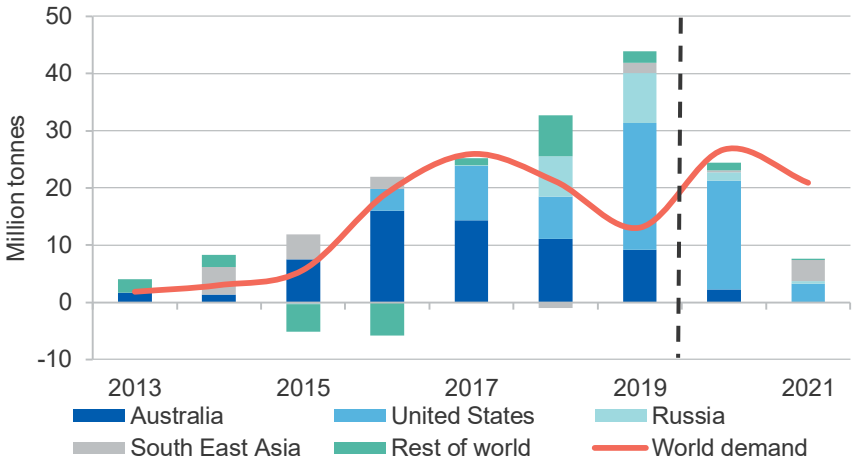
7.4 World exports

A major expansion in global LNG production capacity is underway

The rapid growth in global LNG supply capacity seen over the last few years is expected to continue in 2020, although at a slower pace (Figure 7.7). The growth will be driven by the continued ramp up of new operations in the US and, to a lesser extent, Australia.

Growth in global LNG capacity is set to slow dramatically in 2021, as these projects finish ramping up. Growth in global supply capacity is expected to drop to its lowest level since 2013, with the only additions to capacity likely to be from new trains at existing projects in the US and Indonesia.

Figure 7.7: Annual change in LNG supply capacity and demand



Notes: Nameplate capacity is the maximum annual production capacity of an LNG plant. 2019 data is an estimate.

Source: Department of Industry, Innovation and Science (2019); Nexant (2019)

US LNG capacity to drive supply growth out to 2021

US LNG exports continued to rise sharply in 2019, underpinned by the ramp up of new LNG projects. Three new liquefaction facilities commissioned their first trains in 2019, and production is expected to continue to ramp up in 2020 and 2021. The combined nameplate capacity of US LNG projects is on track to reach around 70 million tonnes per annum (mtpa) in 2020.

This expansion in LNG infrastructure is expected to make the US the world's third largest LNG exporter by 2021 (Figure 7.8), behind Australia (where nameplate capacity should soon reach 88 mtpa) and Qatar (where nameplate capacity is expected to remain at around 77 mtpa for the next few years).

Qatar's LNG exports are projected to remain largely unchanged

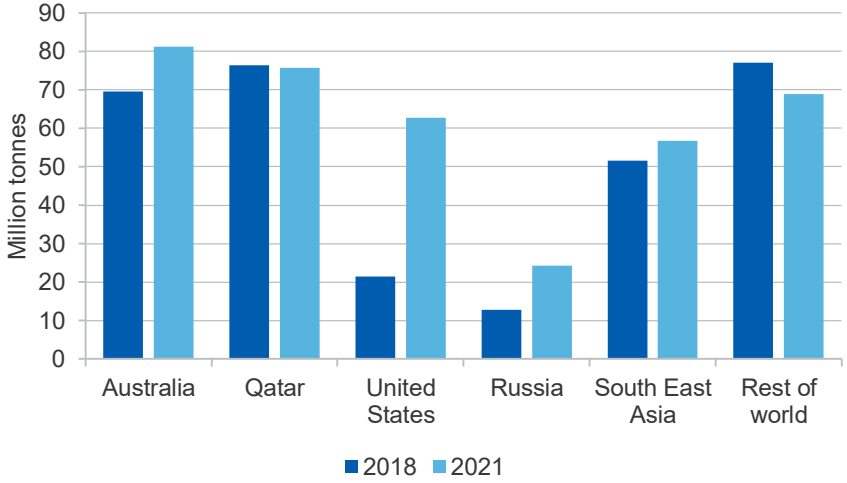
Qatar was the world's largest LNG exporter in 2018, exporting 76 million tonnes of the liquefied fuel. Qatar's LNG exports were flat in the year to September, before declining by 13 per cent year-on-year in October, due to maintenance on two trains. Qatar's LNG exports are forecast to be steady at around 76 million tonnes through to 2021 (Figure 7.8).

The world's largest LNG exporter

Over the course of 2019, Australia and Qatar have competed for the title of the world's largest LNG exporter. On current estimates, Australia is expected to marginally edge past Qatar as the world's largest LNG exporter in 2019, shipping an estimated 78 million tonnes of LNG compared with an estimated 75 million tonnes from Qatar.

The title is not certain however, with a lack of clarity around the precise level of Qatar's LNG exports (see Box 7.1 in the September 2019 *Resources and Energy Quarterly*). Whatever the case, Australia's LNG exports are expected to be surpassed by both Qatar and the US during the mid-2020s. In November, Qatar Petroleum announced plans to construct another two LNG 'mega trains', which would increase Qatar's LNG production capacity by 64 per cent to 126 million tonnes by 2027. These plans are expected to solidify Qatar's position as the world's top LNG exporter by the late-2020s.

Figure 7.8: LNG export forecasts

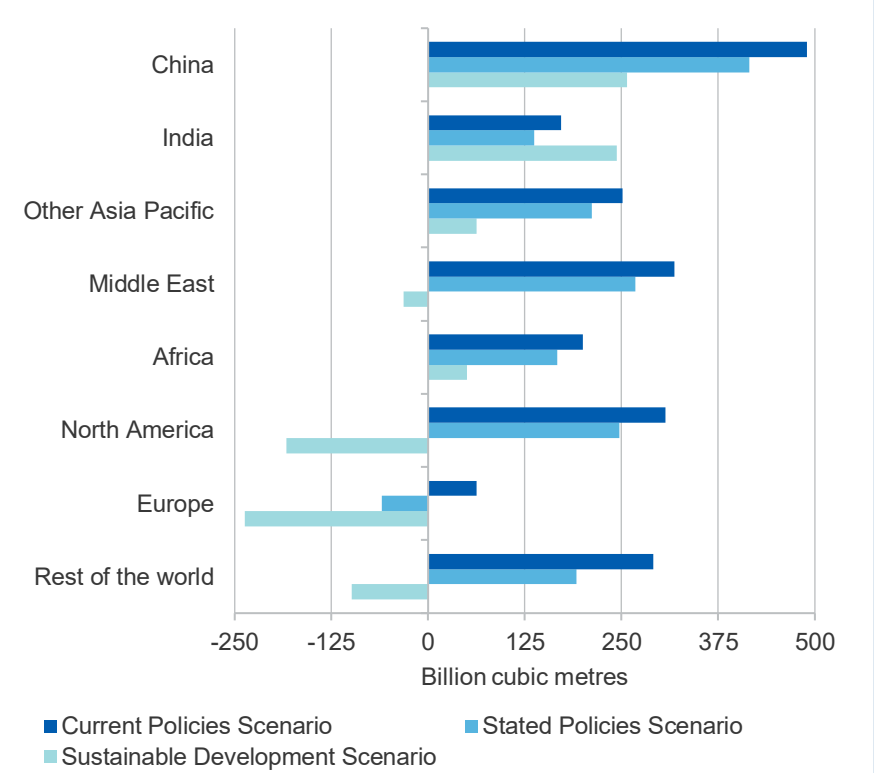


Source: Department of Industry, Innovation and Science (2019); Nexant (2019)

Box 7.2: The long-term outlook for natural gas

Natural gas consumption increased by 4.6 per cent in 2018, accounting for nearly half the increase in global energy demand. Global gas demand continues to grow in all three scenarios modelled in the International Energy Agency's (IEA) 2019 World Energy Outlook. However, there are substantial variations to the outlook by region and scenario (Figure 7.9).

Figure 7.9: Change in gas demand by scenario and region, 2018–2040



Note: The Current Policies Scenario considers the impact of policies and measures that are firmly enshrined in legislation as of mid-2019. The Stated Policies Scenario (previously known as the New Policies Scenario) incorporates the likely effects of current and announced policies, including official targets. The Sustainable Development Scenario entails a pathway consistent with the Sustainable Development Goals and Paris Agreement.

Source: IEA (2019) World Energy Outlook 2019

In the central Stated Policies Scenario, natural gas demand grows by nearly 40 per cent between 2018 and 2040, accounting for a quarter of global primary energy demand by 2040. Developing Asian economies account for more than half of the global growth in natural gas demand. Natural gas demand more than doubles in China over the next two decades. While natural gas use also rises in India and South East Asia, prospects are constrained by affordability and infrastructure issues.

Rising demand for natural gas is expected to be met by growing supply from the continued ramping up of shale gas in the US to 2025, and accelerating production growth in the Middle East and emerging exporters in Africa between 2025 and 2040.

Australia's production almost doubles to 200 bcm by 2040 in the Stated Policies Scenario, but the IEA notes that this requires significant additional investment and an alignment of federal and state government policies. The IEA also notes that resource depletion could bring challenges in maintaining supply for both domestic consumption and LNG exports.

LNG overtakes pipeline gas as the main way to trade gas over long distances by the late 2020s. However, as a relatively high-cost fuel, LNG is expected to continue to face challenges, despite its relative advantages to coal and oil in terms of flexibility and air pollution. Competition from other fuels and technologies — particularly coal and renewables — raises substantial uncertainty regarding the scale and durability of demand in developing markets.

In the Sustainable Development Scenario, natural gas demand grows at a more moderate pace to 2030, before reverting to present levels by 2040. Renewables, energy efficiency, biomethane and hydrogen all reduce gas consumption in order to meet the Paris Agreement targets.

The exception to this trend is India, where natural use demand grows even faster in the Sustainable Development Scenario. This outcome reflects the potential role for gas as a transition fuel in India to meet both the Sustainable Development Goals and Paris Agreement targets.

7.5 Australia

Australia's LNG exports to stabilise after a period of rapid growth

Australia exported $50 billion of LNG in 2018–19, up from $31 billion in 2017–18. Higher export earnings have been driven by the recovery in oil prices (relative to 2017–18), and growing export volumes, particularly from the Wheatstone (which began producing at full capacity in the second half of 2018) and Ichthys LNG projects.

The value of Australia's LNG exports is forecast to decline to $49 billion in 2019–20 and fall back further to $47 billion in 2020–21, driven by declining oil-linked contract prices (at which most Australian LNG is sold) and an appreciating exchange rate.

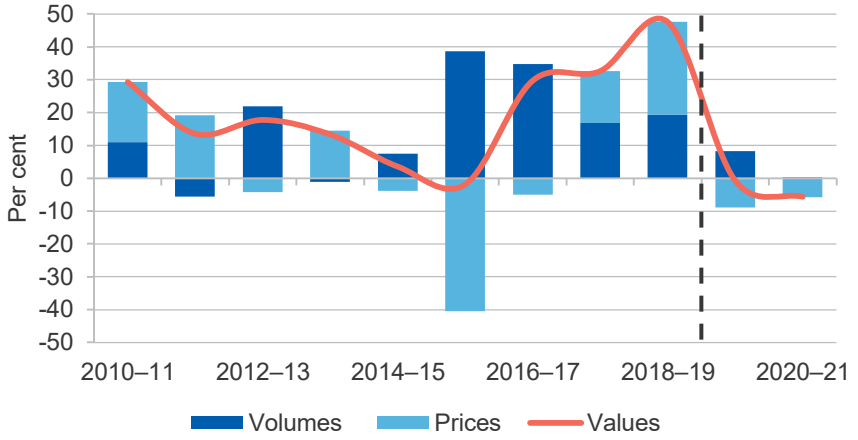
In 2019–20, growth in export volumes is expected to partially offset the impact of lower oil-linked contract prices, as the Prelude and Ichthys projects continue to ramp up production (Figure 7.10 and 7.11). The Prelude project — which shipped its first LNG cargo in June — is expected to ramp up production over the course of 2019–20. Production at Ichthys has ramped up ahead of schedule, reaching around 95 per cent of nameplate capacity during the September 2019 quarter, up from around 80 per cent in the June quarter. Partially offsetting export growth from new projects, maintenance works at Train 1 at Gorgon LNG is expected to reduce export volumes in the December 2019 quarter.

Prelude and Ichthys are the last two remaining projects that are ramping up production following Australia's recent wave of LNG investment. LNG export volumes are thus forecast to flatten out 2020–21. Tapering production at Darwin LNG — as gas from the Bayu-Undan field is exhausted — is expected to see a reduction in export volumes towards the end of the outlook period.

Export earnings have been revised down

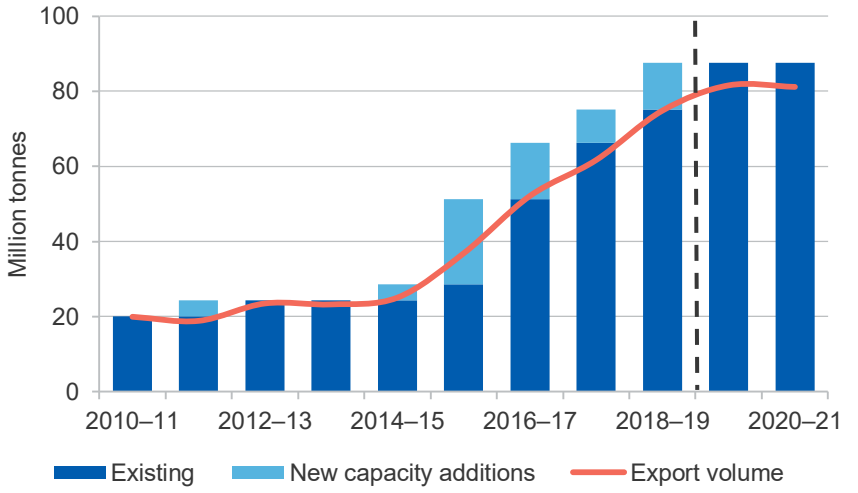
The forecast for Australian LNG export earnings has been revised down from the September 2019 *Resources and Energy Quarterly*, by $2.7 billion and $2.2 billion in 2019–20 and 2020–21, respectively. Lower forecast export earnings reflect a lower oil price forecast (see the *oil* chapter).

Figure 7.10: Growth in Australia's LNG export earnings, contributions from volumes and prices



Source: ABS (2019); Department of Industry, Innovation and Science (2019)

Figure 7.11: Australia's LNG exports and export capacity



Source: ABS (2019); Department of Industry, Innovation and Science (2019)

Table 7.1: World gas outlook

	Unit	2018	2019[s]	2020[f]	2021[f]	Annual percentage change 2019[f]	2020[f]	2021[f]
JCC oil price[a]								
– nominal	US$/bbl	72.9	65.9	63.7	62.9	-9.6	-3.4	-1.3
– real[h]	US$/bbl	74.2	65.9	62.4	60.3	-11.2	-5.4	-3.3
Asian LNG spot price[bg]								
– nominal	US$/MMbtu	9.8	5.4	5.4	7.1	-44.6	-0.5	31.5
– real[h]	US$/MMbtu	10.0	5.4	5.3	6.8	-45.5	-2.5	28.8
LNG trade	Mt[c]	308.7	321.7	348.5	369.3	4.2	8.3	6.0
Gas production	Bcm	3,801	3,885	3,955	4,016	2.2	1.8	1.5
Gas consumption	Bcm	3,815	3,895	3,966	4,046	2.1	1.8	2.0

Notes: **a** JCC stands for Japan Customs-cleared Crude; **b** Historical data is the North Asia SLInG weekly spot price; **c** 1 million tonnes of LNG is equivalent to approximately 1.36 billion cubic metres (bcm) of gas; **f** Forecast; **g** 1 MMBtu is equivalent to 1.055 GJ; **h** In 2019 US dollars; **s** estimate.

Source: ABS (2019) International Trade in Goods and Services, Australia, 5368.0; Department of Industry, Innovation and Science (2019); Company reports; Nexant World Gas Model (2019)

Table 7.2: Australian gas outlook

	Unit	2017–18	2018–19	2019–20[f]	2020–21[f]	Annual percentage change 2018–19	2019–20[f]	2020–21[f]
Production[d]	Bcm	120.3	145.2	156.9	158.6	20.7	8.1	1.1
– Eastern market	Bcm	55.0	55.3	56.4	56.0	0.5	2.0	-0.8
– Western market	Bcm	63.8	82.3	86.5	88.4	28.9	5.1	2.3
– Northern market[k]	Bcm	1.4	7.6	14.0	14.2	439.3	84.9	1.2
LNG export volume	Mt[c]	61.7	74.8	81.2	81.3	21.3	8.5	0.1
– nominal value	A$m	30,907	49,727	49,371	46,660	60.9	-0.7	-5.5
– real value[e]	A$m	31,959	50,587	49,371	45,793	58.3	-2.4	-7.2
LNG export unit value[g]								
– nominal value	A$/GJ	9.5	12.6	11.5	10.9	32.7	-8.5	-5.6
– real value[e]	A$/GJ	9.8	12.8	11.5	10.7	30.5	-10.1	-7.4
– nominal value	US$/MMBtu	7.8	9.5	8.3	8.3	22.4	-12.5	-0.3
– real value[e]	US$/MMBtu	8.0	9.7	8.3	8.1	20.4	-14.0	-2.1

Notes: **c** 1 million tonnes of LNG is equivalent to approximately 1.36 billion cubic metres (bcm) of gas; **d** Production includes both sales gas and gas used in the production process (i.e. plant use) and ethane. Historical gas production data was revised in the June quarter 2017 to align with Australian Petroleum Statistics published by the Department of Environment and Energy; **e** In 2019–20 Australian dollars; **f** Forecast; **g** 1 MMBtu is equivalent to 1.055 GJ; **h** In 2019 US dollars; is classified as Northern market.

Source: ABS (2019) International Trade in Goods and Services, Australia, 5368.0; Department of Industry, Innovation and Science (2019); Company reports; Nexant World Gas Model (2019)