

Gas 2019 **Executive Summary**

Analysis and forecast to 2024



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After another record year, gas demand is set to keep growing to 2024

2018 was another golden year for natural gas. Demand grew 4.6%, its fastest annual pace since 2010, with gas accounting for 45% of the total increase in primary energy consumption worldwide. The United States and the People's Republic of China ("China") were the two main contributors to this increase, owing to a combination of economic growth, moves to switch from coal to gas, and above average weather-related energy needs.

Natural gas consumption is expected to grow at an average annual rate of 1.6% to 2024, returning to the pre-2017 trend. 2018's strong growth is unlikely to be the norm in the future because of slowing economic growth, declining potential for switching from coal to gas, and a return to average weather conditions after last year's exceptionally hot summer in the northern hemisphere. By 2024, gas consumption is forecast to exceed 4.3 trillion cubic metres (tcm) – compared with 3.9 tcm in 2018.

Industry remains the principal driver of the increase in gas demand. Industrial use of natural gas, both as a fuel and a feedstock, is set to grow at an average annual rate of 3% and represent 46% of the rise in global consumption to 2024. Gas in power generation is expected to increase at a slower rate because of strong competition from renewables and coal. But power generation will remain the largest consumer of natural gas, accounting for almost 40% of total demand by 2024.

Asia is the key to demand growth, driven by China's push for gas

Gas consumption is forecast to grow in almost all regions, led by China and gas producing countries. China is expected to account for more than 40% of global gas demand growth to 2024, propelled by the government's goal to improve air quality. The United States, the Middle East and North Africa will account for most of the rest of global demand growth, thanks to their access to abundant and competitive domestic resources, which encourages further use of gas for industrial applications and power generation. Gas demand in Europe will benefit from closures of coal and nuclear plants, but its gains will be limited by the expansion of renewables and decreasing consumption for the heating of buildings.

Rapid demand growth in China is set to ease. The country's natural gas consumption grew by 14.5% in 2017 and 18.1% in 2018. But it is expected to slow to an average annual rate of 8% to 2024 as a result of lower economic growth.

South Asian countries are expected to lead growth elsewhere in Asia. In Bangladesh, India and Pakistan, the industrial sector is the main contributor to growth, especially for fertilisers to meet the needs of growing populations. Demand growth in South Asian markets depends on both the development of sufficient supply capacity and access to competitive sources in price-sensitive markets.

The United States leads global growth in natural gas supply and exports

Gas production in the United States jumped by 11.5% in 2018, its highest growth rate since 1951, making the country the largest contributor to global gas production growth. Other major producers – such as China, Australia, the Russian Federation (“Russia”) and Islamic Republic of Iran (“Iran”) – also experienced record output. Egypt and Argentina were among the countries that closed the gap between their domestic demand and supply in 2018 due to strong production recovery.

Shale production keeps on expanding. The United States will continue to lead global gas supply growth and its annual production is expected to exceed 1 tcm by 2024. This is driven by contributions from both wet (oil-associated) and dry shale gas resources.

Gas from the United States will remain the biggest contributor to growth in international trade. Output by the other main producer countries – such as China, Iran and Egypt – will increase mainly to meet domestic market needs. The United States, Australia and Russia are set to be the largest sources of incremental gas exports to 2024.

The global gas trade’s expansion is mainly driven by LNG

US liquefied natural gas (LNG) is the single largest contributor to trade growth. In the absence of confirmed investment plans from Qatar, the United States will become the world’s largest LNG exporter with 113 billion cubic meters (bcm) in 2024. New US capacity combined with the ramping up of Australian and Russian infrastructure is expected to account for almost 90% of additional exports.

China is set to become the world’s largest LNG importer by 2024 – and the largest pipeline gas importer by 2022. In spite of strong investment, Chinese domestic production will be unable to keep up with demand growth. Pipeline imports are forecast to double to 100 bcm by 2024 thanks to capacity increases from Russia and Central Asia, while LNG imports reach 109 bcm.

Other emerging Asian markets are also helping to drive LNG trade growth. This is due to the absence of strong domestic production increases and regional pipeline networks. LNG imports in the region are expected to almost double from 81 bcm to 155 bcm between 2018 and 2024.

Europe’s gas supply deficit will increase as domestic production continues to decline. The phasing out of the Dutch Groningen field and depletion in the North Sea will create an additional gap of almost 50 bcm per year. It is expected to be bridged by a combination of LNG and pipeline imports from both traditional and new sources.

LNG investment is increasing, but more will be needed

Investment in LNG export projects rebounded in 2018 after several years of decline. More investment in liquefaction will be necessary, as spare capacity margins will otherwise shrink after 2020 and could lead to a tighter market. Final investment decisions are due to be announced for a large number of projects in 2019 that could together increase export capacity by almost 150 bcm per year. This includes a second wave of US projects, Qatar’s expansion and projects in Russia and Mozambique.

Recent investment decisions highlighted an evolution in LNG financing models. Several projects – LNG Canada, Tortue LNG and Golden Pass LNG – went ahead without the support of long-term contracts. Global oil majors and utilities are using their own balance sheets to finance the investment and add the volumes to their supply portfolios, creating an alternative to traditional development approach of using project finance.

More ships are needed for LNG, and more LNG for ships. The recent volatility in rates for charter vessels prompted orders for new LNG carriers. However, additional orders will be needed to keep the LNG shipping market balanced beyond 2022. LNG is expected to emerge as a fast-growing fuel for marine traffic, supported by stricter maritime rules on sulphur content starting in January 2020 and infrastructure developments in major ports around the world. But LNG for shipping will remain a niche market in the medium term.

Towards a global convergence of natural gas prices?

Prices of gas markets in major regions are converging. Differences in regional prices have sharply decreased since the final quarter of 2018 (especially between Asia and Europe) thanks to well-supplied markets. But the Asian spot market still faces a higher degree of price volatility because of stronger seasonal patterns. The expansion of the LNG trade is likely to encourage greater price convergence.

Natural gas price reforms in major markets are sending encouraging signals. Countries with strong natural gas consumption and import growth – such as China, India and Pakistan – are reforming their domestic markets. They have carried out several price revisions in 2018 and 2019 with the objectives of greater convergence with international market prices and fostering investment in domestic production. Similar reforms are also being enacted in several producing countries.

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Natural gas demand grew at a remarkable clip last year, increasing by 4.6%, its highest growth rate since the beginning of the decade. Future growth will be more measured, supported by economic expansion in emerging markets – especially in Asia – and sustained policy support in the People’s Republic of China to battle air pollution.

The supplies to meet that new growth will come from both new domestic production in these fast-growing economies but also increasingly from major exporting countries, led by the development of the abundant shale gas resources in the United States. International trade, supported by the strong growth in liquefied natural gas export capacity, will play a growing role in the development of natural gas markets as they move further towards globalisation. The recent convergence in market prices in major regions provides an indication of this increasing integration. However, establishing market-driven pricing mechanisms in fast-growing countries remains a challenge – albeit one that is being addressed by pricing reforms in several leading emerging economies around the world.