

Shell LNG

Outlook 2020



Overview

- Gas continues to provide more and cleaner energy solutions
- 2019 was a year of record LNG supply growth
- Record supply investment due to confidence in long-term LNG demand growth

Gas continues to provide more and cleaner energy solutions

The last decade has seen the global population grow by over 700 million, causing rapid growth in energy demand and corresponding greenhouse gas emissions. In that time, global energy demand has grown at a compound annual growth rate (CAGR) of 1.54%, with emissions rising at a similar rate (1.46% CAGR). Inevitably, a rising population and improving living standards is generating a greater need for more energy from cleaner sources, in an effort to reduce emissions and improve air quality.

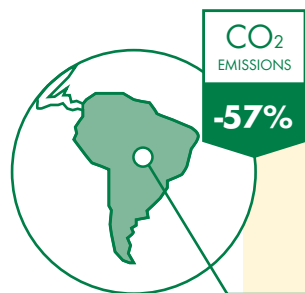
Add to this the rate of urbanisation, which during the last decade has spurred the combined demand for heating, cooling, lighting, power and transportation. Today, cities consume about two thirds of global

primary energy and emit more than half of the world's total greenhouse gases.

In recent years, use of natural gas has been gathering pace. It emits between 45 and 55% fewer greenhouse gas emissions and less than one-tenth of the air pollutants than coal when used to generate electricity. That is why Shell believes gas has a major role to play, particularly in hard-to-electrify sectors such as transport and industry.

Recognition of the advantages of natural gas has led to an increasing trend of coal-to-gas switching. Over the last nine years, global cumulative CO₂ savings generated by switching energy sources from coal to gas stands at around 600 million tonnes, equivalent to 57% of annual CO₂ emissions of South America. In 2019, the number of coal plant phase-out announcements more than trebled compared to 2018, a major acceleration.

Projections to 2040 show an increasing role for natural gas and liquefied natural gas (LNG). According to estimates, gas is expected to supply 43% of the world's additional demand for energy with renewable energy sources supplying 37%. In other words, it is estimated the combination of gas and renewables will together



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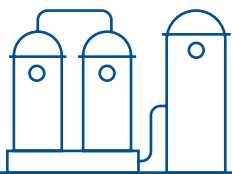
supply 80% of the growth in demand. Over half of the growth in natural gas use is expected to come from non-power sectors – such as industry, residential and commercial and transport – as more carbon intensive options are replaced.

LNG continues to be the fastest-growing gas supply source, with expected growth of 4% CAGR a year between now and 2040. Asia is expected to absorb over 70% of this growth.

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2019 was a year of record LNG supply growth



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Global demand for LNG grew by 12.5% to 359 million tonnes in 2019. An industry record of 40 million tonnes of additional supply became available and was consumed by the market as the bulk of new liquefaction projects from the investment wave in 2014 and 2015 came online.

Europe absorbed the majority of 2019 supply growth – imports increasing by 74% – as competitively-priced LNG furthered coal-to-gas switching in the power sector, replacing declining domestic gas production and pipeline imports.

There was a modest rise in imports to Asia in 2019, compared to the previous two years, a result of mild weather and rising electricity generation from nuclear power in Japan and South Korea, two of the three largest global importers.

China was once again among the top three LNG importing countries, demand increasing by 14% in 2019, as efforts continued to improve urban air quality. Growing demand for gas and declining domestic gas

production in South and South-east Asia increased imports by 21% over 2018.



~1,600 spot cargo deliveries in 2019.

The abundant supply led to a softening of global gas prices. Nearly 1,600 spot cargoes were delivered in 2019 and new spot-trading mechanisms and a wider variety of indices were used for long-term contracts. The more liquid and transparent global LNG market indicates LNG becoming an increasingly flexible commodity.

In the short-term, supply growth is expected to slow down as the last of the new LNG liquefaction projects under construction will be completed by 2021 and equilibrium is expected to be restored as new supply comes to a halt until the mid-2020s.

Record supply investment due to confidence in long-term LNG demand growth

Announcements of some 71 million tonnes of new liquefaction capacity were made in 2019, making it a year of record LNG supply investments. Some 40% of the new projects will be in the US. This investment surge will help meet the expected cross-sector growth in LNG demand.

Over the longer-term, global LNG demand is expected to double to 700 million tonnes by 2040, according to forecasts, as natural gas plays a growing role in shaping a lower-carbon energy system. Asia is expected to remain the dominant region in the decades to come, with South and South-east Asia generating more than half of the increased demand.

It is estimated that demand for LNG as a marine fuel could reach over 30 million tonnes a year by 2040, as infrastructure develops and more LNG ships are ordered.



LNG as a marine fuel could reach over

30 MT a year by 2040.