Shell LNG Outlook 2018

OVERVIEW

External environment creating more opportunities for gas and LNG

- Multiple levels of policy support gas and LNG demand
- Gas supports renewable power generation and provides cleaner non-power energy supply

Strong LNG fundamentals exceeded expectations in 2017

- 11% increase in LNG imports led by Asia
- Physical and financial liquidity increases as the market evolves

Supply investment required to meet long-term demand growth

EXTERNAL ENVIRONMENT CREATING MORE OPPORTUNITIES FOR GAS AND LNG

Powering progress

Meeting increasing global energy demand while reducing impact on the planet and the air people breathe is one of the greatest challenges of the 21st century.

Even assuming significant future gains in efficiency, the world’s demand for energy is expected to grow by 30% between 2015 and 2040. This will be driven by an increasing global population, economic growth, and more people moving to cities. Rising demand is expected to be concentrated in China, India, Africa, the Middle East and South-East Asia.

Today’s energy mix is responsible for two-thirds of global greenhouse gas emissions, and has a significant impact on air quality, particularly in densely populated urban areas.

The UN’s sustainable development goals and the Paris Agreement on climate change catalysed the global drive to cut greenhouse gas emissions and improve air quality, while providing energy to everyone.

To do this, a transformation of the global energy system is required across power generation, industry, transport, and the heating and cooling of buildings.

More and cleaner energy

Natural gas is helping to provide more and cleaner energy around the world. Gas emits between 45% and 55% lower greenhouse gas emissions than coal when used to generate electricity. Compared to coal plants, modern natural gas-fired power plants also emit less than one tenth of the pollutants. It is one of the few energy sources that can be used to generate power, provide heat for both homes and essential industrial processes and fuel the transport of people and goods.

Natural gas – both piped and LNG – also supports the integration of variable renewable power generation because it can quickly compensate for dips in solar or wind power supply and rapidly respond to sudden increases in demand. The rapid growth of LNG is helping increase energy supply, security, diversity and flexibility.
In 2016, natural gas overtook coal as the single largest source of power generation in the OECD. A combination of factors led to this continued rise in demand for gas, including the implementation of robust government policies that place a cost on carbon emissions and the US shale gas revolution.

Between now and 2035, natural gas demand is expected to grow at an average of 2% per year; twice the rate of total global energy demand. Demand for LNG is set to increase at an average of 4% per year.

Gas is expected to make up over 40% of energy demand growth over the next two decades. While gas will continue to be used to generate power, the bulk of future demand growth – led by rapidly growing economies in Asia – will come from sectors that are more difficult to electrify, such as the production of steel and cement.

Domestic natural gas production is expected to continue being the dominant source of gas supply – especially in North America and parts of Europe where well-connected pipelines are already in place. In regions such as Asia and the Middle East, where cross-border pipelines are limited, LNG is expected to play a more significant role.

Floating storage and regasification units (FSRUs) continue to enable fast, flexible and economically competitive options for countries looking to import LNG. These vessels can be docked in a port to regasify LNG and feed gas into a transmission or distribution network.

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G20 endorses the role of natural gas in energy transition

In Europe, more than ten countries announced coal-phase out ambitions.

In addition to regional and country-wide policies, measures were also taken in many cities around the world to curb local pollution. Mayors from nine major European cities demanded tougher air pollution rules for vehicles; and in Berlin, local coal plants were closed to improve air quality.

The total length of the world’s natural gas pipelines would stretch to the moon and back eight times

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Rise in spot cargoes

Last year, for the first time, the number of LNG spot cargoes reached more than 1,100, around three cargoes a day.

Historically, about half of all spot cargoes are supplied to North East Asia, where one cargo a day is traded. With LNG demand outpacing contracted supply, there was an increase of spot cargoes into China.

While the number of spot cargoes in the region has been around 400 in recent years, the use of the Japan Korea Marker (JKM) LNG benchmark price assessment has increased. Exponential growth of JKM futures contracts in 2017 reflects demand from the industry for price risk management.

Traders’ activities also increased in 2017, with a focus on intermediary services to the industry from price risk management to spot liquidity, credit services and infrastructure development.

1100 Spot cargoes delivered

17% increase over last year

IN FOCUS: CHINA IN 2017

- Gas demand grew by 31 billion cubic metres – up 15% from 2016.
- Total demand for LNG reached 38 million tonnes, making China the world’s second largest importer.
- Although contracted LNG supply doubled between 2014 and 2017, spot LNG buying occurred during winter to help meet strong demand.
- Growth in demand for piped gas and LNG is the result of policies to reduce air pollution through coal to gas switching and continued economic expansion.
- Gas demand also increased in the industrial sector and in transport, with LNG being used to fuel trucks. In 2017, over 70,000 new LNG fueled trucks were added.

SUPPLY INVESTMENT REQUIRED TO MEET LONG-TERM DEMAND GROWTH

Following the wave of investment from 2011 to 2015, final investment decisions on LNG projects have nearly stopped. As LNG projects generally take more than four years to start production, new supply will not be ready until well into the next decade.

Meanwhile, the underlying market drivers and even the buyers are changing. This is due to increasing levels of deregulation and competition in the downstream gas and power markets. Typically, this introduces greater uncertainty around demand for individual buyers. It has resulted in the buyers finding it increasingly difficult to buy LNG volumes on a traditional long-term, fixed volume basis.

With regards to LNG contracts, buyers continue to sign shorter and smaller contracts. 2017 average contract length was less than 7 years. Some new LNG buyers have more challenging credit ratings than is the case with traditional buyers.

A mismatch in requirements between buyers and suppliers has emerged that needs to be resolved to enable project developers to make final investment decisions needed to ensure enough future supply of this cleaner-burning fuel. Most suppliers are still seeking long-term LNG sales to secure financing. But LNG buyers increasingly want shorter, smaller and more flexible contracts to remain competitive in the downstream power and gas markets in which they operate.
2017 FACTS

- Continued strong growth in demand for LNG
- LNG trade reached 293 million tonnes – Enough to power 575 million homes
- LNG imports grew by 29 million tonnes - 30% more than expected
- China overtook South Korea to become second largest LNG importer
- Australia, US and Africa dominated increase in LNG exports
- 1100 Spot cargoes delivered - 17% increase over last year

FUTURE TRENDS

- Natural gas is expected to grow at an average of 2% per year over the next couple of decades; twice the rate of total global energy demand. Demand for LNG is set to increase at an average of 4% per year
- Gas is expected to account for over 40% of total energy demand growth over the next two decades
- Final investment decisions on new LNG supply projects are required soon to avoid a supply shortage in the 2020's