



Liquefied Natural Gas and gas storage will boost EU's energy security

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The EU has a major opportunity to improve its energy security and its competitiveness thanks to the positive development of the global LNG market.

Ensuring that all Member States have access to liquid gas markets and diversified sources of supply is therefore a key objective of the EU's Energy Union.

What is liquefied natural gas (LNG)?

LNG is natural gas (predominantly methane) that has been converted to liquid form for ease of storage or transport. The liquefaction process involves cooling the gas to around $-162\text{ }^{\circ}\text{C}$ and removing certain impurities, such as dust and carbon dioxide. As a liquid, LNG takes up around 600 times less volume than gas at standard atmospheric pressure. This makes it possible to transport gas over long distances, without the need of pipelines, typically in specially designed ships or road tankers. When it reaches its final destination it is usually re-gasified and distributed through gas networks – just like gas from pipelines. LNG is also increasingly used as an alternative fuel for ships and lorries.

Why is LNG important for the EU's security of supply?

The EU is the biggest importer of natural gas in the world. Diversification of supply sources is therefore paramount both for energy security as well as for competitiveness. Ensuring that all Member States have access to liquid gas markets is a key objective of the EU's Energy Union. Cargoes of LNG are available from a wide variety of different supplier countries worldwide, LNG can give a real boost to the EU's diversity of gas supply and hence greatly improve energy security. Today, the countries in western Europe that have access to LNG import terminals and liquid gas markets are far more resilient to possible supply interruptions than those that are dependent on a single gas supplier. The global LNG market is undergoing a dynamic development with the entrance of new suppliers such as the US or Australia.

What role does natural gas play in the EU's energy mix? What is the current and the expected future gas demand?

Natural gas currently represents around a quarter of the EU's overall energy consumption. Today, about 26% of that gas is used in the power generation sector (including in combined heat and power plants) and around 23% in industry. Most of the rest is used in the residential and services sectors (mainly for heat in buildings).

The EU's gas demand today is around 400 billion cubic metres (bcm) and based on currently adopted policies is projected to remain relatively stable in the coming years. It has to be noted that the expected decline in domestic gas production also has an impact on gas imports. However further policies designed to achieve 2030 energy and climate targets may lead to a reduction in gas usage, particularly due to energy efficiency improvements in heating and industry.

Where does the EU get its gas from and how much of it is LNG?

Less than half of the EU's gas needs are currently met by domestic production. The rest is imported, mainly from Norway (30%), Russia (39%) and Algeria (13%). In recent years LNG has accounted for around 10% of imports, with most of that coming from Qatar, Algeria and Nigeria.

Which countries are the main world producers of LNG?

Qatar is currently by far the world's largest supplier of LNG, at around 100 bcm. Other large (>20 bcm) suppliers include Nigeria, Malaysia, Indonesia and Australia. However, global liquefaction is set to increase dramatically as new plants in the US and Australia come on stream over the next few years.

How can the EU reap the full benefits of LNG? What are the next steps?

In order to improve the access of all Member States to LNG and storage as an alternative source of gas, the EU needs to:

- **build the necessary infrastructure** to complete the internal market, allowing all Member States to access international LNG markets, either directly or via other Member States. While in the

North-West of Europe markets are competitive and well-connected, with access to several sources of gas – including a number of terminals with substantial capacity to import LNG – gas markets in the Baltic, central-eastern, south-eastern and south-western regions are less developed

- **complete the internal gas market** so that it sends the right price signals – to attract LNG to where it is needed and to facilitate necessary infrastructure investments;
- **use storage facilities more efficiently.** The Commission will improve the operational rules on the cross-border use of storage. It is also important that Member States optimise the use of gas storage across borders by creating regional preventive action and emergency plans.
- **work closely with international partners,** to promote free, liquid and transparent **global LNG markets.** This means engaging with current and future suppliers and with other major consuming countries to ensure that LNG can be traded freely on global markets, both under normal market conditions and in the event of external shocks.

Can LNG prices compete with pipeline gas prices?

LNG already plays a significant role in EU gas supplies, and could become more important over the coming years as the global LNG market grows and EU import dependency rises. The competitiveness of LNG with respect to other sources (and therefore how much LNG actually gets imported to the EU by market participants) will depend on a range of different factors, including for example the cost of liquefaction and transport, currency exchange rates and of course the global LNG supply and demand balance (for example, high demand in Asia can drive prices up elsewhere).

With so many existing LNG terminals do we really need more infrastructure?

The EU's overall LNG import capacity is significant – enough to meet around 43% of total current gas demand (2015). However, in the region of south-east of Europe, central-eastern Europe and the Baltic, many countries do not have access to LNG and/or are heavily dependent on a single gas supplier, and would therefore be hardest hit in a supply crisis. It is important to make sure that such countries have access to a regional gas hub with a diverse range of supply sources, including LNG. Based on the list of EU ['projects of common interest'](#) the LNG strategy includes a list of key infrastructure projects which are essential for ensuring that all Member States of the EU can benefit from LNG.

Who will pay for the new infrastructure needed for LNG?

With any new infrastructure, commercial viability is very important. For an LNG terminal, its utilisation across a whole region, or the choice of lower cost and more flexible technologies, such as floating storage and regasification units (FSRUs), may considerably improve its viability. In principle, LNG terminals, similarly to other energy infrastructure, should be financed through end-user tariffs (investment is paid for by all gas consumers as part of their monthly gas bill) or in some cases gas companies bear the costs of construction (the investment is borne by a number of companies in exchange for the right to use the terminal through long-term capacity booking). But even with a sound business case, financing may still be a challenge in some cases. For projects that are particularly important for security of supply, EU funds, such as [Connecting Europe Facility](#) could potentially help fill the financing gap. EIB loans, including under the European Fund for Strategic Investments, may be another source of long-term financing.

What role does storage play in ensuring the security of gas supply?

Storage of gas is needed to balance fluctuations in daily and seasonal demand, which vary in line with demand for heating, power generation or industrial use. Storage also plays a major role for securing the supply of gas in case of potential disruptions or particularly high demand (i.e. during a cold spell). The main advantage of stored gas is that it is available close to consumers and can be supplied without delay.

Is there enough stored gas available in the EU?

Storage capacity in the EU is unevenly distributed with large facilities in Italy, France, Germany and the Netherlands. For geological reasons, East and South-East Europe can only use small storage capacities to ensure a continuous gas supply. When well connected by pipelines Member States can benefit from stored gas in neighbouring countries.

The current level of capacity is considered adequate, even taking account of increasing EU import dependency over time. Furthermore, developing and optimising the rules of operation and inter-action between storage and transmission operators, suppliers and consumers, will enlarge the short-term availability of stored gas in and between Member States and regions.

More information:

Website DG Energy: <https://ec.europa.eu/energy/en/news/commission-proposes-new-rules-gas-and-heating-and-cooling-strategy>

[Press release](#): Towards Energy Union: the Commission presents sustainable energy security package

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Attachments

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