



## What is LNG?

LNG (Liquefied Natural Gas) is natural gas that is transformed into liquid by cooling down to  $-162^{\circ}\text{C}$ . In this state, it is compressed to 1/600th of its original volume. This makes it easier to transport and store than natural gas in the gaseous aggregate state. LNG is not pressurised and is non-toxic, colourless and odourless, and in its liquid (and therefore cryogenic) form, it is non-flammable. It is mainly composed of methane (approx. 98%) as well as ethane, butane, propane and nitrogen. LNG can be used as a marine and HGV fuel and as a source of energy. In the latter case, LNG is heated and transformed back to the gaseous aggregate state. It can then be fed in the gas transmission network.

## Why LNG?

- As LNG is easier to transport, it supports the diversification of natural gas supply countries and offers an important alternative to pipeline gas.
- It provides a low-emission fuel for shipping and heavy goods transport, with virtually no fine particles, no sulphur dioxide (SO<sub>x</sub>) and up to 85% less nitrogen oxide (NO<sub>x</sub>).
- It makes a significant contribution to improving air quality in seaports, coastal regions and along inland waterways.
- It also helps reduce greenhouse gas emissions by up to 20% (with an optimised supply chain).
- It enables a significant reduction of noise emissions, as LNG-operated engines are much quieter.
- In the long term it can also be produced in a climate-neutral way as synthetic LNG based on renewable energy and using the power-to-X process



## Approval procedure

The approval process for the terminal consists of a planning approval process and an immission control approval process in accordance with the German Federal Immission Control Act (BImSchG) for waterside facilities as well as for facilities on land.

The “scoping” procedure was already carried out and concluded by the authorities in 2019. During this procedure, the authorities and public interest groups discuss lines of action or the scope of the environmental impact assessment for complex processes and projects.

Important steps in the approval process include the involvement of public interest groups and the public. To this end, the approval documents are displayed publicly for four weeks. Any objections can be raised during this time, and for up to two weeks afterwards. These objections are discussed during a subsequent discussion meeting in the presence of the approving authorities, the project developer, the authorities concerned, the party affected and any other parties who may have submitted written objections.

## Shaping the future

Liquid and gaseous energy sources are increasingly produced on a renewable and/or biogenic basis (e.g. bio-LNG or synthetic LNG). They then become carbon neutral and represent an important pillar in the energy revolution and the shift to sustainable transport. Research, the energy sector and politics assume that a large part of these climate-friendly energy sources and fuels, particularly synthetic ones, will be imported. They justify this with the cost advantages of renewable energy production sites in windy and sunny regions outside Europe and with growing acceptance problems for the expansion of such production sites in Europe. Thus, the role of LNG will remain significant in the long term beyond 2040, with the fossil share being increasingly replaced by bio LNG or synthetic LNG, initially in the form of blends. The terminal can be used for both fossil and green LNG without extensive technical modifications.

In addition, German LNG Terminal is exploring the extent to which the LNG terminal represents a building block in the expansion of an infrastructure for importing “green” hydrogen.



## Who are we?

German LNG Terminal GmbH is a joint venture of the companies Gasunie LNG Holding B.V., Oiltanking GmbH and Vopak LNG Holding B.V with headquarters in Brunsbüttel, Germany. The company's aim is to build and operate a multifunctional LNG terminal in Brunsbüttel.

The equal shareholders of German LNG Terminal are:

- N.V. Nederlandse Gasunie (Gasunie) [www.gasunie.com](http://www.gasunie.com)
- Oiltanking GmbH [www.oiltanking.com](http://www.oiltanking.com)
- Royal Vopak N.V. (Vopak) [www.vopak.com](http://www.vopak.com)

German LNG Terminal benefits from the wealth of expertise and experience of its world-renowned joint venture partners in implementing the highest standards in the areas of health, safety and environmental protection.

## An overview of the plans for the terminal

- Ideal location for the further distribution of LNG on the river Elbe, at the entrance to the Kiel Canal and in the immediate vicinity of ChemCoast Park, Schleswig-Holstein's largest continuous industrial zone, and Germany's largest seaport in Hamburg
- Two tanks for temporary storage of LNG
- Jetty with two berthing facilities for LNG carriers (up to Qmax size) and smaller LNG bunker vessels as well as unloading and loading facilities
- Facilities for converting LNG back into the gaseous aggregate state and subsequently for feeding it into the German high-pressure natural gas network
- Facilities for loading LNG onto tank trucks, rail tank cars and LNG bunker ships for distribution
- Feeding into the gas transmission network. To this end, LNG applied for a connection to the transmission system operator, Gasunie Deutschland.



## Summary: the terminal for the region

- Enhances the commercial appeal of the region
- Maintains and creates direct and indirect jobs
- Contributes to a reliable and efficient supply of energy for local energy-sector companies at ChemCoast Park
- Provides a future-proof infrastructure for increasingly climate-friendly energy sources (e.g. synthetic LNG) and therefore contributes to decarbonisation
- Is essential for achieving an increasingly climate-friendly energy supply and is therefore a relevant factor in the establishment of Brunsbüttel and the region as a location for the energy supply of the future
- Investigations are already being made into the possibility of importing hydrogen at the terminal

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