

# Implementation

Some examples of how LNG can be used:

- Supplying natural gas to final customers. LNG is used as an alternative to gas supplied via traditional gas pipelines. In some countries, this is a method for the diversification of gas supply sources and ensuring energy independence.
- Covering short-term peak demand for gas for 3 to 4 weeks during a year with the aid of facilities liquefying natural gas from pipelines or facilities supplied by external sources, e.g. from the LNG facility to the low-methane natural gas conversion facility, or from transportable complex facilities. European countries that have implemented such solutions include Germany, Great Britain, the Netherlands and Belgium. This solution is also widely used in the USA where several dozen facilities are in operation for the liquefaction of natural gas and re-gasification, as well as LNG storage.
- Supplying gas to customers previously unconnected to the gas network (distribution) – so called ‘white spots’. Usually one or several large industrial customers are connected to an LNG station, while the remainder constitutes smaller communal customers.
- Supplying gas to small and medium towns to which fuel is delivered from ‘LNG satellite facilities’, which in turn obtain the liquefied natural gas from larger liquefaction facilities. Examples of such solutions can be found in Germany and Great Britain.
- Fuel for driving vehicles: buses, railway engines, helicopters, and supersonic planes. Interest in liquefied natural gas as a fuel for engines is particularly high in countries with a large population density. This results from the need to protect the environment from the toxic components of car exhaust emissions. This solution has been implemented in France, Great Britain and Japan.
- Fuel for power plants. Supplying energy to power plants with the use of LNG is widely applied throughout Japan - the power plant in Jokohama is fuelled by liquefied natural gas supplied from tankers from Alaskan deposits.
- Supplying gas to customers that are temporarily cut off from pipeline gas supplies, for example, due to the necessity of conducting repair works or conservation of the transmission network. The use of LNG enables customers to be supplied with gas on an uninterrupted basis. The solution is implemented in France, among others.
- Source of cold - LNG is also used for cooling purposes and for rarefying the air, for instance, in megeto-gasodynamic generators for cooling magnets or in the refinery and petrochemical industry in low-temperature facilities for fractionation of hydrocarbon gases. The cold emitted during the LNG re-gasification process is frequently used in low-temperature facilities like those for the production of

oxygen by fractional distillation of liquefied air. The facility in Fos-sur-Mer in France operates in this way.

- Supplying fuel cells generating electricity and/or heat. Examples of such use can be found in France.