

3 MAY 2011

EDF confirms its investment in Dunkirk methane terminal project

EDF, via its subsidiary Dunkerque LNG, has confirmed its investment in the Dunkirk methane terminal project, at the Le Clipon site in Loon-Plage. The announcement follows the decision by the *Grand Port Maritime de Dunkerque* (Dunkirk port) to approve the project in May 2010.

The Dunkirk methane terminal, expected to come into service by the end of 2015, will have an annual regasification capacity of 13 billion m³ of gas (Gm³) boosting France's capacity to import natural gas by 20%.

The new terminal will give EDF a balanced and diverse portfolio of sources for the supply of natural gas, allowing the Group to better meet the needs of its final customers with dual energy offerings (electricity + gas) and optimizing supplies to its gas-fired power stations. The facility is strategically located to serve all the markets of North-West Europe.

Within the Dunkirk region the project will have a formative impact on employment, recruiting up to 1850 people during construction work on the terminal between 2012 and 2015. Once in operation, the facility will create around 250 jobs in either direct operation of the terminal or other port professions.

Total investment in this national and European scale project will be € 1.5 billion. Three project managers will be jointly responsible for carrying out the project: the *Grand Port Maritime de Dunkerque* will build the port infrastructure, EDF the industrial installations and GRTgaz the connections to the gas transport network.

EDF will be in partnership with several European gas companies in this project. These will now be invited to confirm their participation, following EDF's commitment. EDF will submit the detailed project to its Board of Directors in the near future.

The EDF Group, one of the leaders in the European energy market, is an integrated energy company active in all areas of the business: generation, transmission, distribution, energy supply and trading. The Group is the leading electricity producer in Europe. In France, it has mainly nuclear and hydraulic production facilities where 95% of the electricity output is CO2-free. EDF's transmission and distribution subsidiaries in France operate 1,285,000 km of low and medium voltage overhead and underground electricity lines and around 100,000 km of high and very high voltage networks. The Group is involved in supplying energy and services to approximately 28 million customers in France. The Group generated consolidated sales of € 65.2 billion in 2010, of which 44.5% was achieved outside of France. EDF is listed on the Paris Stock Exchange and is a member of the CAC 40 index.



Help the environment
Don't print this message unless you need to.

Press service
75382 Paris cedex 08
www.edf.com
EDF SA au capital 924 433 331 euros - 552 081 317 R.C.S. Paris

CONTACTS :

Press: Carole Trivi +33 (1) 40 42 44 19

Analysts and investors:

Carine de Boissezon +33 (1) 40 42 45 53

US investors:

David Newhouse +33 (1) 40 42 32 45



Appendix I: technical features of the project

Since 2006, EDF and Dunkirk port have been jointly developing the project for a methane terminal, a facility for the regasification of liquefied natural gas (LNG) in Dunkirk, that would enable the world's largest methane tankers to dock in France at the West Port's outer harbour.

The Dunkirk methane terminal is made up of the following installations:

- An entry point for around 80 methane tankers a year, with capacity of up to 270,000 m³,
- A liquefied natural gas (LNG) unloading system,
- Three LNG storage tanks holding 190,000 m³ each (each tank is around 50m high and 90m in diameter),
- A regasification unit,
- A sea water intake for heating the LNG. For this project, part of the cooling waters from the Gravelines nuclear plant will be used to reheat the LNG.
- A pipeline to the gas transport network.



Photomontage of the terminal facility at Le Clipon site
© Hopi Productions

Three project managers will be involved in the project:

- **The Grand Port Maritime de Dunkerque will build the port infrastructure** consisting of a dock, unloading quay and a platform for the industrial installations covering around 50 hectares part-reclaimed from the sea.
- **EDF will, via its subsidiary Dunkerque LNG, build the industrial installation** for unloading, storage and regasification of LNG as well as the roadways and facilities needed for the terminal's operations.
- **GRTgaz will lay the pipes** that will carry the revaporised gas to the gas transport network.



Appendix II: How a methane terminal works

I - Liquefaction and transport of liquefied natural gas (LNG)

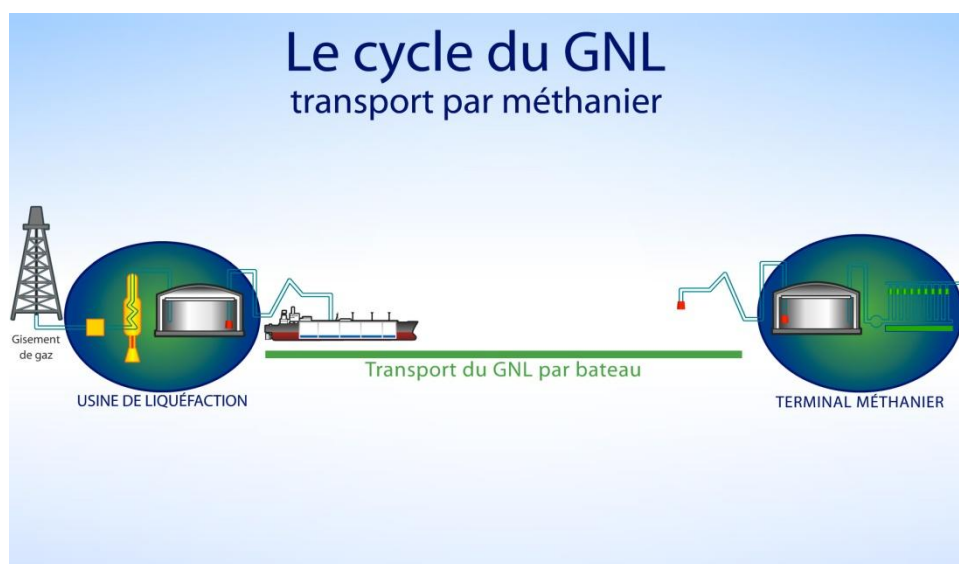
Once the gas has been extracted it can be transported in two ways: in gaseous form through a gas pipeline, or in liquid form. In the latter case, gas is turned into a liquid by cooling it to very low temperatures (-160°C), which massively reduces its volume (takes up 600 times less space than in gaseous form). LNG in methane tankers and storage tanks is stored at close to atmospheric pressure. This liquefaction process allows companies to diversify their sources of gas supply.

Three stages in the LNG chain:

- Liquefaction of gas,
- transport in methane tankers,
- reception at methane terminals where the LNG is stored before being regasified for transport and distribution.

The upstream stage of liquefaction is the most sensitive but this is carried out close to gas production sites and so of no concern to the project for a methane terminal at Dunkirk.

Methane tankers, 200m to 350m in length have double hulls. The internal bays are fitted with an insulating inner lining. The capacity of most methane tankers ranges from 70,000 m³ to 155,000 m³. Vessels capable of carrying up to 270,000 m³ are currently under construction.



The LNG cycle transport by tanker

Gas well -> LIQUEFACTION PLANT -> LNG transported by boat -> METHANE TERMINAL



II - How a methane terminal works

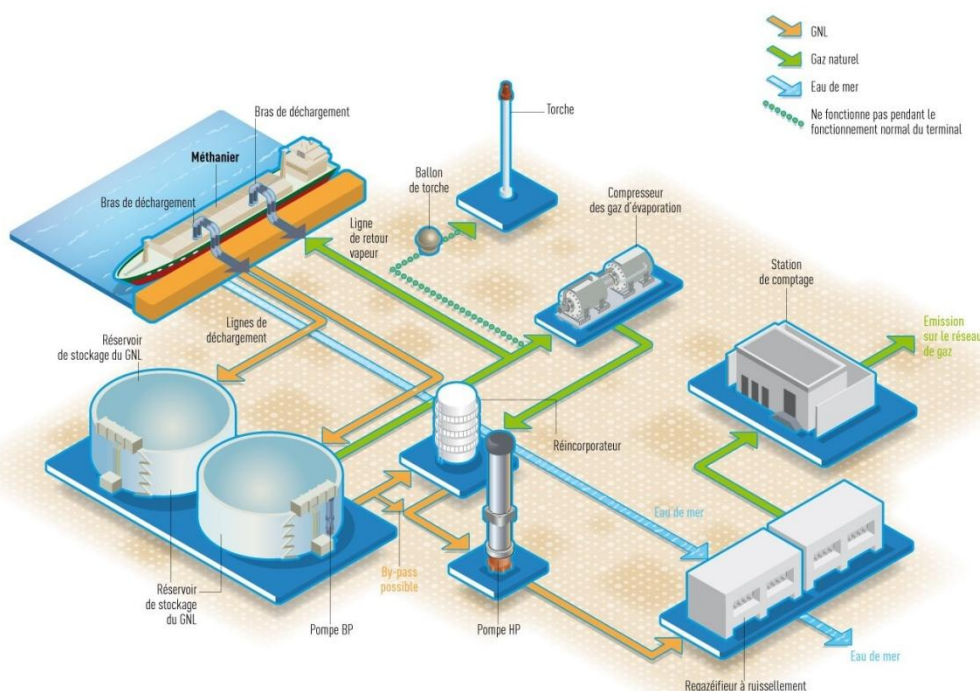
A methane terminal is a port installation capable of receiving and unloading methane tankers.

It is made up of the following elements:

- unloading facilities (wharf with articulated unloading arms),
- storage facilities: LNG is transferred to cryogenic tanks (kept at a temperature of -160°C at atmospheric pressure),
- regasification installations: LNG is drawn out from below the tanks is heated to return it to gaseous form.

Once regasified, the natural gas is injected into the transport pipeline network from the methane terminal.

To date, 17 methane terminals **are in service in Europe***, including three in France (one at Montoir-de-Bretagne, two at Fos-sur-Mer).



* Source : ENTSOG

