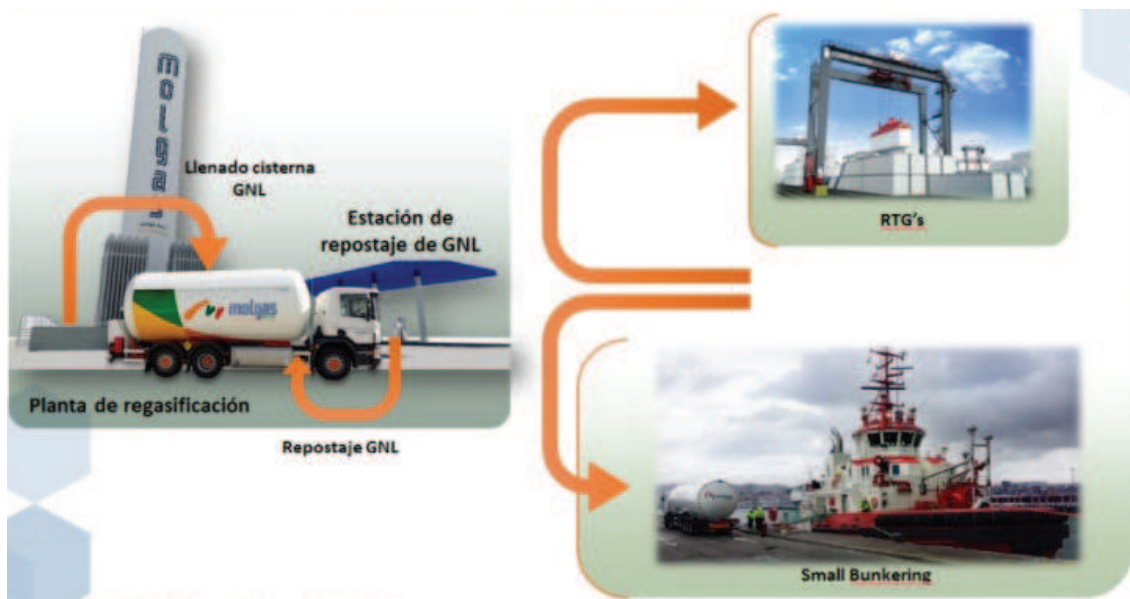


Valencia-LNG/CNG mixed station for vehicles and small boats

EPM5

EPM5 aims at building a mixed station (land-maritime vehicles) within the port domain, contributing to LNG penetration in Valencia Port activities.

The station will include an innovative system for increasing the methane number, meeting the knocking requirements of alternative engines.



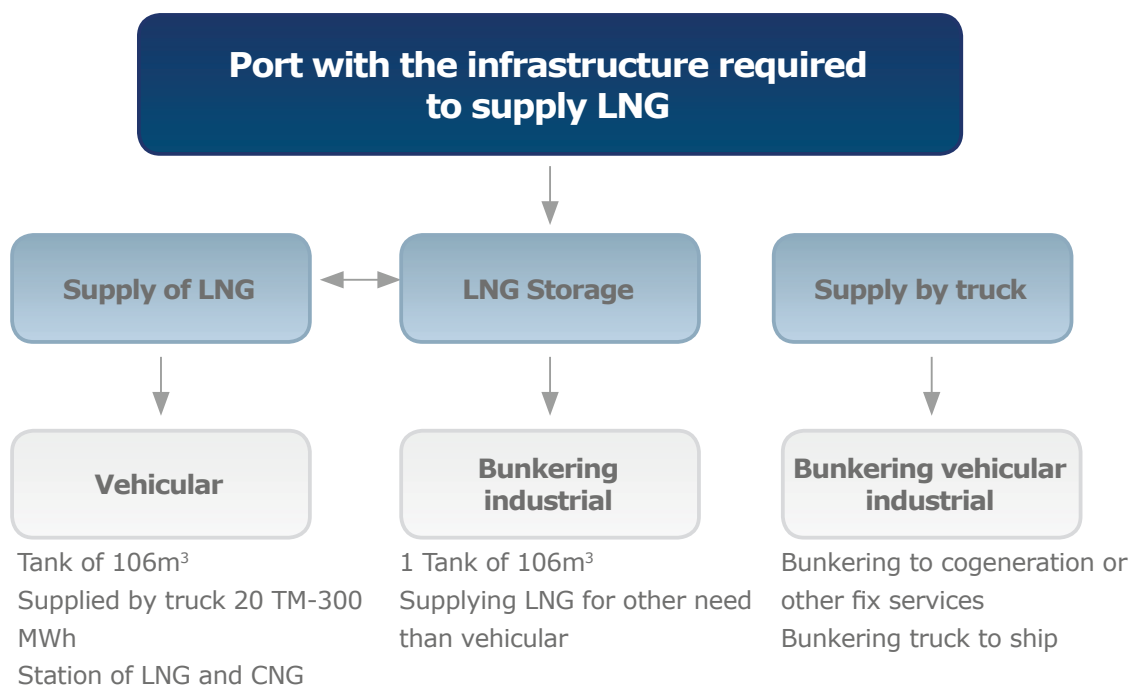
Partners involved



- EPM5:** This IPS aims consist on an innovative approach to LNG/CNG supply by the development of a mixed station for vehicles and small boats within the port service, contributing to the LNG penetration in the port activities. The trial aims at gaining the experience on this type of solutions and creating the market conditions for its deployment on a larger scale. Moreover, the station will include an innovative system to produce natural gas with higher methane number, meeting the knocking requirements of alternative engines.

The objective of EPM5 is to propose an innovative approach for small scale LNG terminals with solutions, both on technical and economical point of views.

A small scale LNG logistics chain normally refers to LNG distribution to local users. In practice this means truck transportation to end user local LNG tanks, which are typically tens of m3 in size. The scheme of the installation can be represented as follow:



LNG can be stored in cylindrical metal tanks designed to typically resist pressures of up to 10 bar. The benefit of having pressurized tanks is that the boil-off gas, which is inevitable no matter how good the thermal insulation is, can remain in the tank and act as a pressure source for gas feed. When the excess pressure is controlled by releasing gas through a control valve, the evaporation inside the container lowers the temperature and keeps the container in equilibrium.

As a result, the tank arrangement is extremely simple, having no compressors or rotating equipment of any kind. It simply consists of the tank, an emergency pressure relief valve, regasification heat exchangers, and an outgoing gas pressure stabilisation valve.

On one hand, the small scale LNG terminal basically consists of a tank of 106 m³ for refuelling heavy vehicles running on LNG by a gas pump. Additionally, LNG will be regasified in a process plant for a later pressurization up to 200 bars for supplying vehicles running on CNG.

On the other hand, the terminal will have an extra storage tank of 106 m³ for refuelling by truck industrial services and port machinery. A cryogenic pipe will be installed for bunkering small vessels in the future. It is highlighted that this small scale terminal will be equipped with a decantation system able to separate the LNG according to quality, assuring LNG with a high number of methane will be available for ships.

WP3.2: Integrated Pilot Studies in the Atlantic corridor:

This work package tests different LNG applications in the scope of the Spanish sections of the Atlantic corridor. Same as WP3.1, this work package has been splitted into sub-activities concerning each of the pilots (four in this case).