

# Ferrol: adaptation for LNG mixed bunker/big/small scale services in existing jetty

## EPA4

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## Partners involved



The objective is to adapt the existing LNG big-scale jetty in Ferrol to enable it to supply LNG for small scale and bunkering applications (<math><15,000\text{ m}^3</math>) through flexible elements, while keeping its big scale supply function.

● **EPA4:** This IPS will deploy, looking for market conditions, a LNG technology in the port of Ferrol in order to adapt an existing jetty for LNG big scale applications to a jetty which could be capable to supply LNG small scale and bunkering applications ranging under 15000 m<sup>3</sup> by using flexible elements while keeping it big scale supply capabilities. The feasibility and suitability of the new jetty will be tested with the LNG barge at EPA2 coming from the port of Bilbao. Relating two ports within the scope of the maritime dimension of the Atlantic corridor will give also an idea for possible business models to be further implemented with regards to LNG maritime bunkering in the corridor.

The Northwest of the Iberian Peninsula has a geostrategic position on the shipping routes and specifically regarding to the Atlantic Maritime Corridor, which belongs to the Motorway of the Sea of Western Europe. In addition, it constitutes the gateway to the ECA areas in Northern Europe.

Every year approximately 40,000 ships that pass through this corridor, navigate on its coasts. Additionally to them, there are 38,541 vessels based in ports in the region.

Moreover, this geographical area has a remarkable infrastructure. Thus, in this area there is a port belonging to the Basic Network, the port of A Coruña, and two belonging to the Global Network, the ports of Vigo and Ferrol. In addition, the ports of A Coruña and Ferrol have both external ports, with depths of 24 and 20 meters, respectively. Regarding to Liquefied Natural Gas (LNG), the Mugaros LNG terminal, operated by Reganosa, and the European leader shipyard in repairing gas carriers, owned by Navantia, are situated in the Ría of Ferrol.

In view of these capabilities, the LNG Hub project was launched in 2013, which initial studies have been co-financed by the TEN-T program in the Annual Call 2012 under the consortium led by Reganosa and in which are involved Navantia, the Port Authority of Ferrol-San Cibrao, the University of Santiago de Compostela, and the local government, Xunta de Galicia, through Instituto Enerxético de Galicia.

In June 2014 the first deliverable of this project, entitled "Definition and analysis of the different scenarios of LNG demand" was completed. In this study of the potential demand of LNG in the northwest of the Iberian Peninsula, it is estimated that by 2030 a demand of 2.2 million cubic meters will be reached.

Given this opportunity, it is necessary to establish an action plan to promote the use of LNG as fuel, while the logistics chain that allows supply to consumers is developed. In this sense, within this study, it has been

developed a roadmap where actions that are essential for meeting both objectives are proposed, being one of the key points the establishment of a minimum infrastructure for the supply of LNG. This is the starting point for development, while allowing the increasing demand and, at a longer term, reducing the costs associated with both the technology and the fuel itself. In order to do this, one of the priority measures set out in the roadmap is the adaptation of the infrastructures of the Port of Ferrol to complete the development of the logistics chain that enables loading LNG from a supply vessel to other vessels (ship to ship bunkering).

The studies for the adaptation of these infrastructures are the subject of the EV1 activity. Moreover, while this adaptation is under development, it is necessary to adopt solutions to ensure the supply of LNG in the short term. The study of a solution that allows small scale LNG supply during this period from the terminal of Mugardos is the target of this activity.

Specifically, within this EPA4 sub-activity it is proposed the adaptation of the jetty of the terminal, designed to supply large scale LNG ships up to 260,000 m<sup>3</sup>, in order to allow the loading of vessels with less than 15,000 m<sup>3</sup> capacity. The proposed solution consists of a loading system using flexible hoses that allow to supply LNG barges. Thus, the consumers in the Atlantic Corridor will be ensured access to this fuel until the development of the definitive infrastructure for this purpose is completed.

The first part of the activity is the development of the adaptation project whose results will define the scope of the actions to be developed in the second part, among which the following are envisaged:

- Making the necessary connections to existing process piping.
- Installing a loading system with flexible hoses that allows the loading of ships with a capacity of between 0 and 15,000 m<sup>3</sup>.
- Installing fast connections that allow an easy handling of the hoses.
- Installing security elements, such as emergency shutdown systems.
- Necessary modifications in auxiliary and shared facilities.
- Upgrading of existing facilities to moor small vessels in safe conditions.

Specifically, the necessary modifications to adapt a ship for LNG supply will be made, including a flexible loading system for stocking up on any LNG terminal, even if the terminal is not adapted to loading small ship. The ship considered for this modification is based at present at the Port of

Ferrol, belonging to the Global Network, and it operates in this port and in A Coruña, which is part of the Core Network.

As for the expected results of the implementation of this activity, it should be highlighted the contribution of these to the objective of developing the basic transport network, which should be completed in 2030, promoting the effectiveness and visibility of the trans-European transport network. In particular, the implementation of the proposed action will contribute to the development of the core network corridors, namely the Atlantic Corridor CNC-7, thus supporting an efficient transport system, while the utilization of the capacity in existing infrastructures is optimised.

Moreover, the considered measures are a way to fight climate change and achieve the targets set in European strategies, as they are geared to the development of a European network of an alternative fuel, LNG, which will significantly reduce emissions and decarbonisation of transport.

The leadership of this activity is assumed by Reganosa, a TSO certified company that operates, maintains and manages Mugardos LNG terminal and its associated pipeline network. Therefore, Reganosa has a wide experience in the design and operation of systems identified in the proposed activities. In the same way, it has experience in adapting the access to the terminal depending on the evolution of the fleet of gas carriers.

Meanwhile, the Port Authority of Ferrol-San Cibrao (APFSC) is the public company responsible for the management of the Port of Ferrol, which is part of the Global transport network. This public administration, in addition to its knowledge of the ships' targeted activities, is responsible for developing the concessions associated with the development of the proposed infrastructure.

Finally, the Port Authority of A Coruña has joined the project as a stakeholder, which is, in addition, one of the main ports of the region and is part of the Basic trans-European transport network.