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**Transporte**  
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# Spanish Ports 2017

logistics made in Spain



Liquefied Natural Gas | The New Marine Fuel

# OPERATORS AND PORTS GET SET FOR THE FUTURE

New innovations in shipping like bunkering to a ferry with an auxiliary LNG engine are coming into existence

Liquefied natural gas (LNG) as a marine fuel is a future business in which the Spanish port system wants to be well placed. Proof of this is that 42 partners from Spain and Portugal are participating in the 'Core LNGas Hive' project, led by Spain's state-run ports entity Puertos del Estado, which was selected last year by the European Commission under the framework of the "Connect Europe" grants. The aim of this initiative is to develop an integrated logistics chain that is safe and efficient for the supply of liquefied natural gas as fuel in the transport sector, particularly shipping, in the Iberian Peninsula, which has eight regasification plants and a suitable geostrategic position.

The 'Core LNGas Hive' programme involves carrying out 25 studies, launched by the partners, to adapt infrastructures and logistics and business development, which will enable both small scale and bunkering services to be provided.

The project is valued at €33 million, of which half, €16.5 million, are European funds, and it is planned to last until 2020.

**13 PORTS AND 21 INDUSTRIAL PARTNERS PARTICIPATE IN A EUROPEAN PROGRAMME OF PILOT PROJECTS**

**THE FIRST BARGE TO SUPPLY LNG, PROMOTED BY CEPSA AND FLOTA SUARDIAZ, WILL BE OPERATIONAL IN 2018**



Enagás coordinates the European project CoreLNGas Hive in its terminal of the port of Huelva.



LNG Facilities at the port of Bilbao.

Eight institutional partners are taking part, 13 port authorities and 21 industrial partners, along with port operators, LNG operators and ship owners.

The port authorities of Algeciras, Barcelona, Bilbao, Cartagena, Ferrol-San Cibrao, Gijón, Huelva, Melilla, Santander, Taragona, Tenerife, Valencia

and Vigo are all involved. In addition, Astilleros Armón, Boluda Corporación Marítima, Bureau Veritas, Cepsa, Flota Suardiaz, Gas Natural Fenosa, Reganosa, Remolcadores Ibaizabal and the two container terminals in the port of Barcelona are participating, amongst other leading industry companies.

Under the umbrella of this European project and other initiatives, the initial experiences have begun to come into existence.

#### BUNKERING OPERATION

Recently, Gas Natural Fenosa and Baleària successfully completed the first bunkering operation of liquefied natural gas for the "Abel Matutes" ferry in the port of Barcelona, through a tanker truck. The initiative consisted of installing an auxiliary engine that operates with natural gas, as well as a tank of LNG. Once the relevant tests have been carried out, the boat will be able to begin operating with the auxiliary engine powered with natural gas during operations, both at Barcelona and in Palma de Mallorca; port cities that



have daily services with the "Abel Matutes". The application of this technology to the boat translates into an annual saving of around 4,000 tonnes of carbon emissions, over 60 tonnes of nitrogen oxide and six tonnes of sulphur oxide. Apart from this initiative, at the beginning of the year Baleària announced an agreement with the Italian shipyard Cantiere Navale Visentini to construct two twin ferries with dual engines.

#### SANTANDER AND BRITANNY

The Santander Port Authority is another facility that has committed to liquefied natural gas via a partnership with the Morlaix Chamber of Commerce, concessionary company of the port of Roscoff (France) and the ferry operator Brittany Ferries, which is coordinating the Seagas project. The aim is to carry out a viability study on the construction of LNG storage facilities in the ports of Roscoff and

Santander for bunkering to ships, as well as to lorries in the Cantabrian port. At the end of last year, the French shipping line announced an agreement with the German shipyard German Flensburger Schiffbau to build a boat powered by liquefied natural gas.

#### LNG BARGE IN 2018

Another initiative being unrolled within the 'Core LNGas Hive' programme is a multiproduct barge that Cepsa is developing in partnership with Flota Suardiaz. The barge will cover the whole spectrum of marine fuels, from the traditional (fuel oil and diesel) types to the most innovative like LNG. The vessel, which will operate in the port of Barcelona, is expected to be operational in 2018.

#### STOPOVER OF A RO-RO SHIP

Although there are still few ships powered by LNG in the world, the largest ro-ro powered by liquefied

#### THE MOTORWAY OF THE SEA BETWEEN VIGO AND NANTES SAINT-NAZAIRE WILL TEST THE POTENTIAL OF USING LNG AS A PROPULSION

natural gas, to date, stopped off in the ports of Santander and Vigo on its inaugural journey at the end of last year. This was the shipping line UECC's "Auto Eco", which also has a diesel engine. Furthermore, the Vigo Port Authority is going to carry out a study on the potential of supplying LNG to a ro-ro ship of the Suardiaz group that operates the motorway of the sea between the Galician port and the French port of Nantes Saint-Nazaire.

#### HUELVA TAKES THE FIRST STEPS FOR THE TRADE SERVICE OF SUPPLYING LNG

#### HUELVA TOO

The board of administration of Huelva Port Authority has also recently approved the terms of conditions of the trade service of LNG supply by barge.

These are just some examples of the initiatives that operators and port facilities are developing faced with the huge possibilities that the new alternative fuel to the traditional fuel is opening.

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## Liquefied Natural Gas | The New Marine Fuel

# A FUEL FOR ALL KINDS OF SHIPS

Projects for cruise ships, container ships and bulk carriers powered by liquefied natural gas are proliferating throughout the world

In the light of future international legislation to limit polluting emissions from ships, projects for ships of all types powered by liquefied natural gas (LNG) are proliferating throughout the world.

Initiatives include a project backed by the German Ministry of Transport, the conversion of the container ship "Wes Amelie", belonging to the German company

Wessels Reederei, into a double engine so that it is also powered by LNG. With this alternative fuel, the ship will reduce its sulphur oxide emissions by 99 percent, nitrogen oxide emissions by 90 percent and carbon dioxide emissions by approximately 20 percent. This container ship was built in 2011, with capacity for 1,036 TEUs, and operates in the North Sea and

**THE 'WES AMELIE' IS CONVERTED TO HAVE A DOUBLE ENGINE TO OPERATE IN NORTHERN EUROPE**



Ships of all types powered by liquefied natural gas (LNG) are proliferating throughout the world.

## CORE LNGAS HIVE A PROJECT TO IMPROVE THE AIR QUALITY IN PORTS ENVIRONMENT

CORE LNGas hive project, co-financed by the European Commission, is coordinated by Enagás with the leadership of Puertos del Estado (Spanish State Ports), and involves more than 40 partners from Spain and Portugal: 8 public institutions, 13 port authorities and 21 industrial partners. The aim of the project is to develop a safe and efficient, integrated logistics and supply chain for LNG in the transport industry (small scale and bunkering), particularly for maritime transport of the Iberian Peninsula.

CORE LNGas hive contributes to the decarbonisation of the European corridors of the Mediterranean and the Atlantic and is a step in the career of reduced emissions, the promotion of clean energy for transportation. LNG is an environmentally friendly fuel, given that it generates about 30% fewer emissions of CO<sub>2</sub> than other fuels. Moreover, it cuts out emissions of sulphur oxides (SO<sub>x</sub>), particulate matter (PM) and reduces substantially the emissions of Nitrogen oxides (NO<sub>x</sub>), which will allow complying with increasingly tight environmental regulation, particularly improving the air quality of port environments.

The Iberian Peninsula has a geostrategic position in the world and possesses gas infrastructures and LNG logistics know-how to consolidate as a European benchmark leader in LNG and an international hub.

It involves 25 studies, to be conducted by the partner companies for adaptation of infrastructure and logistical – commercial development in order to offer small-scale supply services and bunkering.



Bunkering operation of Molgas, partner of the project.

### Pilot projects

- Infrastructure developments of small-scale and bunkering services.
- Development of barges of distribution of LNG in Barcelona and Northern Spain.
- Transformation of LNG to be used as LNG for ships, tugboats and port cranes.
- Multimodal transport for LNG logistic (rail/road transport).

### Studies

- Study on the LNG Demand and supply chain.
- Development of technical standards and security.
- LNG Social acceptance.
- LNG certified training scheme.

In addition, the project CORE LNGas hive offers the know-how to other European countries for the development of procedures and regulation and the establishment of training activities, promotes the international expansion of the LNG sector, and it integrates initiatives within a coherent and project global through the combination of public and private efforts. ■

## SPANISH PORTS



Baltic Sea. Last Autumn, Carnival Corporation signed a memorandum of understanding with the shipyards Meyer Werft and Meyer Turku for the construction of two new cruise ships for Carnival Cruise Line and a third for P&O Cruises UK, its subsidiaries. The ships will be the future image of the green cruising company, and will be the first of a new generation of cruise ships powered by liquefied natural gas. The company has several agreements underway for the construction of a total of seven cruise ships powered by LNG for four of its 10 subsidiaries. Its first ship will be delivered in 2019.

Another shipping line that is designing four new ships powered by the new fuel is MSC; the first of them will be delivered to the company in 2022.

## A BULK CARRIER

A consortium formed by the shipping lines Arista Shipping and Deltamarin,

### CARNIVAL AND MSC DESIGN CRUISE LINERS POWERED BY THE NEW FUEL

### LIQUEFIED NATURAL GAS GAINS A FOOTHOLD IN OTHER TRANSPORT METHODS

the classification company ABS, the consultancy firm Ingeniería GTT and the engine manufacturer Wärtsilä, is working to develop a bulk carrier powered by LNG. The ship is 225 metres in length, 32.2 in width with 82,000 tonnes DWT. One of the most important technical challenges to overcome is the need to carry enough LNG on board for 40 days of power.

More recently, a group of mining companies, shipping lines, consultancy firms and other institutions have signed an agreement in Singapore to carry out a viability study on a bulk carrier powered by LNG, which will operate between Australia and China.

This initiative will analyse the advantages and disadvantages of constructing a new ship powered by LNG, compared with a ship powered by traditional fuel, and a third already in existence being converted to use LNG.

The multinational mining companies Rio Tinto and

BHP Billiton, the Australian oil company Woodside, the Japanese shipping line Mitsui OSK Lines, the classification company DNV GL and the Shanghai Merchant Ship Design and Research Institute are participating in this project.

## OTHER METHODS

During 2016, a total of 1,088 vehicles that use natural gas as a fuel were registered in Spain, which is 133 percent more than the 466 units registered in 2015. Currently, this fleet has 6,144 vehicles, most of them heavy vehicles for intensive use, according to Gasnam. Furthermore, Renfe, Gas Natural and Enagás are working on a pilot test for rail traction with LNG.

The test will be carried out on a self-propelled train from the diesel fleet of Ferrocarriles Españoles de Vía Estrecha (Feve). It will consist of replacing the diesel engine of one of the two automotive units with another that will be powered by LNG.

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