42 PARTNERS



nagas Puertos del Estado

GOALS

Regulation and normative development Implementation of the National Policy Framework, the needed specific regulation and normative for the development of LNG Bunkering activities according with the Directive 2014/94/ EU on the deployment of alternative fuels infrastructure (Clean Power for Transport).

Infrastructure development

Infrastructure pilot development for the provision of LNG for transport services in the maritime and port sector, and roadmap for an investment plan to scale up the results.

Breaking the egg-chicken dilemma, adapting the existing infrastructure (marginal investments) for the supply of LNG bunker and small scale services.

• **Developing** a safety, robust and secure logistic chain.

- **Boosting** the development of the normative needed around LNG bunker to adequately attend the demand.
- **Enabling** the Iberian Peninsula to offer holistic solutions to the new requirements of the shipping sector.

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LNG bunkering and small scale services in Spain & Portugal



Co-financed by the European Union Connecting Europe Facility

COORDINATOR

LEADERSHIP







GOBIERNO MINISTERIO DE ESPAÑA DE FOMENTO



Adaptation of LNG terminals for bunkering

- 1 Adaptation for LNG small scale services in big scale jetty in **Bilbao** LNG terminal
- 2 Dedicated LNG flexible hoses for bunkering in Barcelona LNG terminal 3 Adaptation for LNG bunkering/small scale services in Sagunto LNG terminal plant
- 4 Dedicated LNG mooring jetty ifor small scale services in Cartagena LNG terminal
- 5 Multimodal LNG bunker berth in port of Huelva 6
 - Engineering for new dedicated LNG jetty in Mugardos LNG terminal. Adaptation for LNG mixed bunker/big/ small scale services in existing jetty

LNG utilization in ports

- 1 New tugboat powered by LNG in Bilbao port
- 2 Straddle carrier retrofit in Barcelona port
- Design of a tugboat powered by LNG in Barcelona port
- Retrofit study of a port locomotive powered by LNG in Tarragona port
- 5 Construction of a LNG/CNG mixed station for vehicles and small boats in Valencia port
- 6 Design of a tugboat powered by LNG in Valencia port
 - EU Atlantic Corridor

to LNG

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- Iberian Peninsula main pipelines

EU Mediterranean Corridor

CORE LNGas hive activities

Bunkering barges and multimodal logistic

(1) Barge retrofit for LNG bunkering in the

supply chain (rail/road/train)

Multimodal transport for LNG logistics

Barge retrofit for LNG bunkering within

Retrofit study of a rescue boat powered

LNG powered electricity generator

Cantabrian coast

the port of Barcelona

mobile unit for OPS

SCOPE

Regulation, normative, market

- · National Policy Framework
- · Studies of demand and
- development of the logistic chain
- · Safety, environmental and
- technical standards
- · Social acceptance of LNG
- · Training needs

TRANSVERSAL STUDIES

LNG advance training requirements

Technical, safety environmental specifications

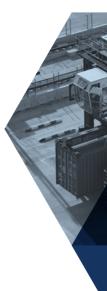
National policy framework · Observatory

LNG social acceptance

MARKETING ANALYSIS

LNG demand and supply chain Atlantic corridor, Gibraltar strait & peripheral regions, and Mediterranean corridor

- · To foresee LNG demand along the Iberian façades of the corridors
- · To analyze different business models
- · To define the most suitable logistic solution depending on distance and demand



- to offer small-scale services and LNG bunker · Developments on LNG logistic chain · Use of LNG in maritime sector
- and port environment

Infrastructure equipments

· Adaptation of LNG Terminals