

**GOOD PRACTICE EXAMPLES - APPENDIX C
TEN-T PROJECT FACT SHEETS**

TEN-T Annual Programme

Member States involved:

The Netherlands, United Kingdom

Implementation schedule

Start date: March 2014

End date: December 2015

Budget:

Project promoter: €3,812,443

**Total project cost covered
by this Decision:** €7,624,886

EU contribution: €3,812,443

Percentage of EU support:

Studies: 50%

Additional information:

European Commission, DG MOVE
<http://ec.europa.eu/transport>

Innovation and Networks Executive
Agency (INEA)
<http://inea.ec.europa.eu>

Beneficiary & Implementing body:

SABIC Petrochemicals UK Ltd
www.sabic-europe.com

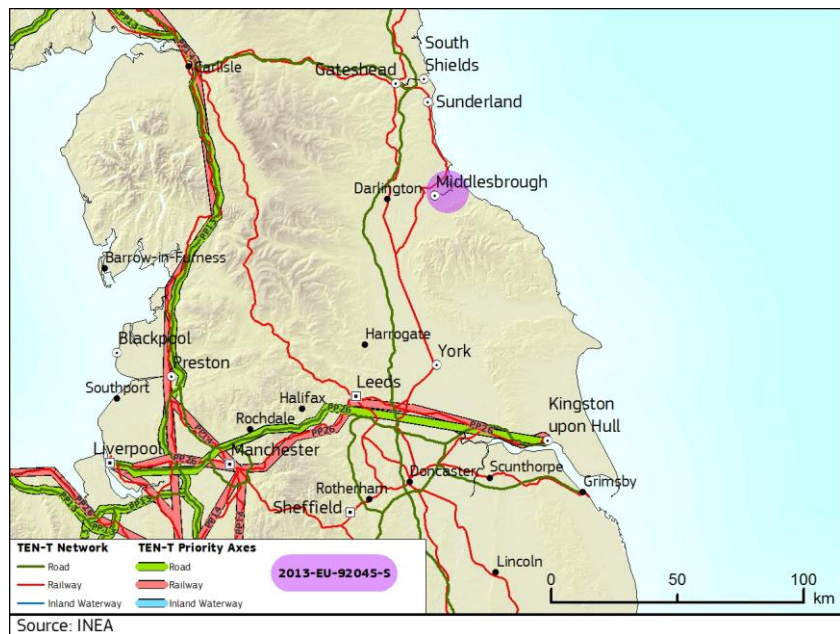
Anthony Veder Group N.V.
www.anthonyveder.com

Seal Sands Storage Ltd
simonstorage.com

Associated British Ports
www.abports.co.uk

LNG uptake in the UK: a real-life trial with the first small scale bunkering infrastructure in Teesport and innovative LNG vessels

2013-EU-92045-S



The aim of this project is to realise a breakthrough in the application of LNG (liquefied natural gas) for short sea shipping through a dedicated LNG supply and demand chain in the UK. It will show the viability of LNG as a significantly environmental sound alternative to present marine fuels and its potential for short sea shipping in the UK and the North Sea.

It will deploy a LNG bunkering facility in the port of Teesport and carry out a real-life trial in two vessels (ethylene carriers) propelled with an innovative LNG fuel system.

It will also demonstrate the potential of LNG in UK marine and road transport through technical and market studies, in order to help advance the roll-out of LNG technology in the UK.

The results of these studies will be widely disseminated at local, national and European levels.

State of progress on 31 December 2014:

The two vessels are equipped with the innovative LNG propulsion systems. The construction of the LNG bunkering facilities (permanent and temporary solution) is ongoing. Studies are under elaboration as well, according to plan.

TEN-T Multi-Annual Programme

Costa II East - Poseidon Med

Member States involved:

Croatia, Cyprus, Greece, Italy, Slovenia

2013-EU-21019-S

Part of Priority Project 21

Implementation schedule

Start date: December 2013

End date: December 2015

Budget:

Project promoter: €2,563,125

Total project cost covered by this Decision: €5,126,250

EU contribution: €2,563,125

Percentage of EU support:

Studies: 50%

Additional information:

Coordinator's Report of the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

<http://ec.europa.eu/transport>

Innovation and Networks Executive Agency (INEA)

<http://inea.ec.europa.eu>

Beneficiary & Implementing body:

QE Energy Europe Ltd.

www.qe-energy.com

OceanFinance Ltd.

www.oceanfinance.gr

Environmental Protection Engineering S.A.

www.epe.gr

Naval Architecture Progress Ultd.

www.nap.gr

Hellenic Lloyd's SA

www.lr.org

Minoan Lines Shipping S.A.

www.minoan.gr

Superfast Ferries S.A.

www.superfast.com

Shipping company of Crete S.A.

www.anek.gr

Neptune Lines Shipping & Managing Enterprises S.A.

www.neptunelines.com

Hellenic Seaways Maritime S.A.

www.hellenicseaways.gr

Hellenic Shortsea Shipowners Association

www.shortsea.gr

Piraeus Port Authority S.A.

www.olp.gr

Contship Italia Spa S.A.

www.contshipitalia.com

Autorità Portuale della Spezia

www.porto.laspezia.it

Venice Port Authority

www.port.venice.it

Port of Rijeka Authority

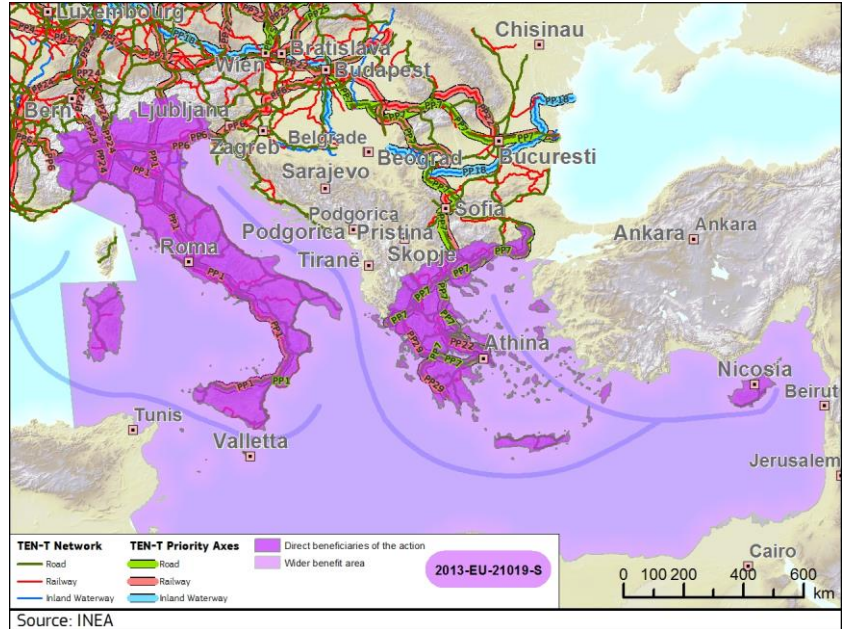
www.portauthority.hr

Trieste Port Authority

www.porto.trieste.it

Port of Koper

www.luka-kp.si



This project, part of TEN-T Priority Project 21 (Motorways of the Sea), is direct continuation of the COSTA project (2011-EU-21007-S) that aimed at developing a global strategy for the promotion of LNG (liquefied natural gas) as marine fuel. It also looked at how LNG could be an efficient and effective solution to the problem of emissions abatement in the Mediterranean, which enters into force on 1 January 2020.

COSTA II focuses on the eastern Mediterranean region/sea with five Member States (Greece, Cyprus, Italy, Croatia, Slovenia) in order to prepare a detailed infrastructure development plan promoting the adoption of LNG as marine fuel for shipping operations. It will design a LNG transport, distribution, and supply (including bunkering) network and infrastructure and define the framework for a well-functioning and sustainable relative market (vessels) for its demand. It has the following four objectives, namely to:

1. Study the establishment of a comprehensive LNG network (sources and destinations) in the East Mediterranean area (including the Adriatic)
2. Investigate all of the necessary activities to develop a sustainable market for LNG as marine fuel in the aforementioned Member States
3. Revive shipping in the area and increase fleet competitiveness, efficiency, and sustainability
4. Serve and satisfy EU/TEN-T objectives with respect to emission reduction, increased efficiency and competitiveness of EU shipping, in order to ensure and strengthen the accessibility to all areas of the Comprehensive Network, diversify EU energy supply sources, create new employment opportunities, and promote the mobility of people and goods in a safe and socially responsible way.

State of progress on 31 December 2014:

All activities have started but there are delays in the implementation of the Action. However as the activities are not interdependent those delays will not affect the in time completion of the Action.

Update: September 2014

TEN-T Multi-Annual Programme

Member States involved:

Germany, Netherlands

Implementation schedule

Start date: January 2013

End date: December 2015

Budget:

Project promoter: €3,070,000

**Total project cost covered
by this Decision: €6,140,000**

EU contribution: €3,070,000

Percentage of EU support:
Studies: 50%

Additional information:

Coordinator's Report of
the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE
<http://ec.europa.eu/transport>

Innovation and Networks Executive
Agency (INEA)
<http://ec.europa.eu/inea>

Beneficiary & Implementing body:
AG "Ems" & Co Schiffahrts-
Kommanditgesellschaft
www.ag-ems.de

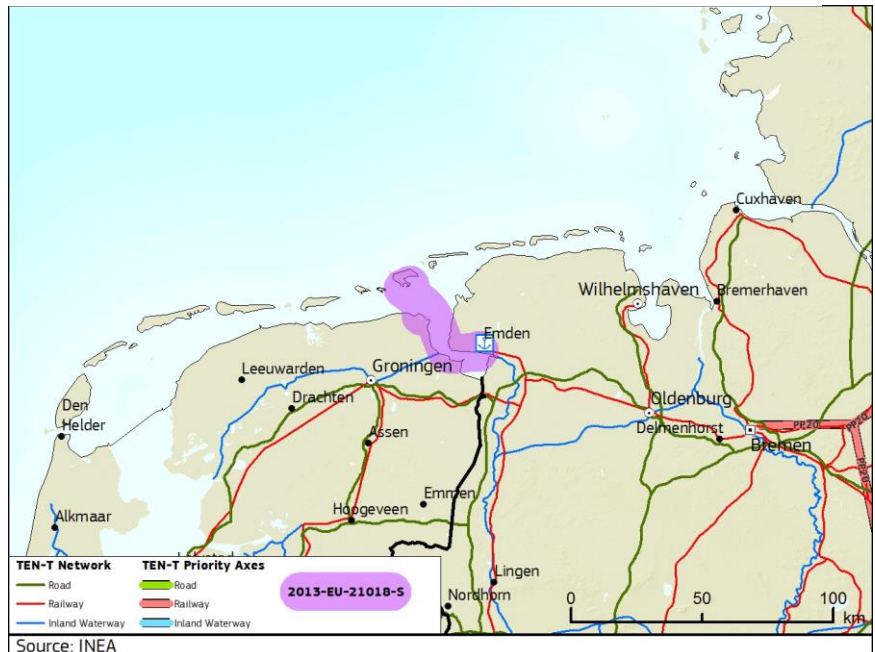
Niedersachsen Ports GmbH & Co. KG
www.niedersachsenports.de

Groningen Seaports NV
www.groningen-seaports.com

Energy Valley Foundation
www.energyvalley.nl

Pilot Implementation of a LNG-Propulsion System on a MoS Test Track in the Environmental Model Region 'Wadden Sea'

2013-EU-21018-S
Part of Priority Project 21



The specific objective of this Motorways of the Sea project is to deliver the pilot development and testing of the innovative methodology for LNG retrofitting. One of the vessels that are operating the Borkum service will be converted to LNG by retrofitting its propulsion system in an innovative manner. The project constitutes the continuation (Phase 2) of a previous action "MarITIM" implemented under INTEREG IV which is an R&D project with feasibility study.

Based on the findings of this R&D project, the first vessel under German flag is being retrofitted and equipped with LNG propulsion. The pilot project takes the function of the demonstration project in the framework of the LNG Master Plan in the Wadden Sea and will aim to drive the development of the accelerated introduction of LNG in the Wadden Sea. The installation of the LNG propulsion system has started already and is progressing as planned. Inauguration of the retrofitted vessels is expected to be organised by mid July 2015.

This in turn will contribute to the realisation of the general objective that is to establish the Wadden Sea as an environmental model region for both, the accelerated introduction of LNG as alternative fuel for ships.

The project will also contribute to achieving the objective of the Sulphur Emission Control Area, to reduce the SO_x to 0.10% as of January 2015.

State of progress on 31 December 2014:

The project is progressing very well, with basic design and construction plans carried out. The retrofitting of the LNG vessel started and is on track and the LNG related studies are advanced. All activities will be implemented during the timeline of the Action and all the objectives of the Decision will be achieved.

Update: June 2015

TEN-T Multi-Annual Programme

Member States involved:

Sweden, Germany, Lithuania

Implementation schedule

Start date: January 2014

End date: December 2015

Budget:

Project promoter: €832,323

Total project cost covered by this Decision: €1,664,646

EU contribution: €832,323

Percentage of EU support:

Studies: 50%

Additional information:

Coordinator's Report of the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

<http://ec.europa.eu/transport>

Innovation and Networks Executive Agency (INEA)

<http://inea.ec.europa.eu>

Beneficiaries & Implementing bodies:

Helsingborg Hamn AB
www.port.helsingborg.se

Trelleborgs Hamn AB
www.trelleborgshamn.se

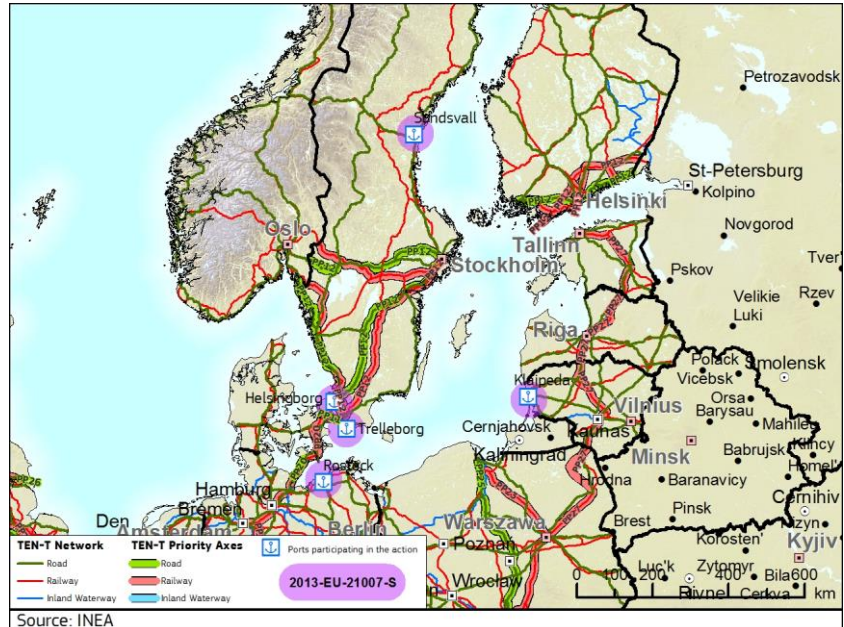
Sundsvall Logistikpark AB
www.sundsvalllogistikpark.se

Hafen-Entwicklungsgesellschaft Rostock mbH
www.rostock-port.de

AB Klaipėdos nafta
www.oil.lt

LNG in Baltic Sea Ports II

2013-EU-21007-S
Part of Priority Project 21



The main objective of this project, part of TEN-T Priority Project 21 (Motorways of the Sea), is to minimise maritime transport pollution in the Baltic region by supporting the widespread use of LNG (liquefied natural gas) while maintaining the competitiveness of maritime transport.

The project encompasses pre-investment studies, related technical design, associated permits and risk assessment procedures for LNG bunkering infrastructure (land based and floating) in partner ports in a harmonised manner.

It builds on and extends the on-going "LNG in the Baltic Sea Ports" project, and contributes to the Global Project "Development of an LNG bunkering network in the seaports of the Baltic Sea region" as part of the Baltic Motorways of the Sea programme.

The extension includes roll-out of the network to four new Baltic ports (Trelleborg, Sundsvall, Rostock and Klaipėda) and a further development of the know-how (alignment of LNG facilities between ports, training schemes).

The next (second) phase of the Global Project will be the construction and launching of LNG bunker terminals within the Baltic Sea region. These activities will be developed at a later stage.

State of progress on 31 December 2014:

The Action is progressing with a slight delay. Preparations were done and activities for LNG studies and design in Helsingborg, Trelleborg, Sundsvall and Klaipėda are ongoing. The activity in Rostock is currently on hold, but investigations are ongoing to find an investor for LNG infrastructure. In principle all activities are expected to be completed during the project lifetime.

Update: June 2015

TEN-T Multi-Annual Programme**Member States involved:**

Belgium, France, United Kingdom

Implementation schedule

Start date: January 2013

End date: December 2015

Budget:

Project promoter: €21,316,944

Total project cost covered by this Decision: €26,646,180**EU contribution:** €5,329,236**Percentage of EU support:**

Works: 20%

Additional information:

Coordinator's Report of the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

<http://ec.europa.eu/transport>

Innovation and Networks Executive Agency (INEA)

<http://inea.ec.europa.eu>

Beneficiaries & Implementing bodies:

Fluxys LNG SA

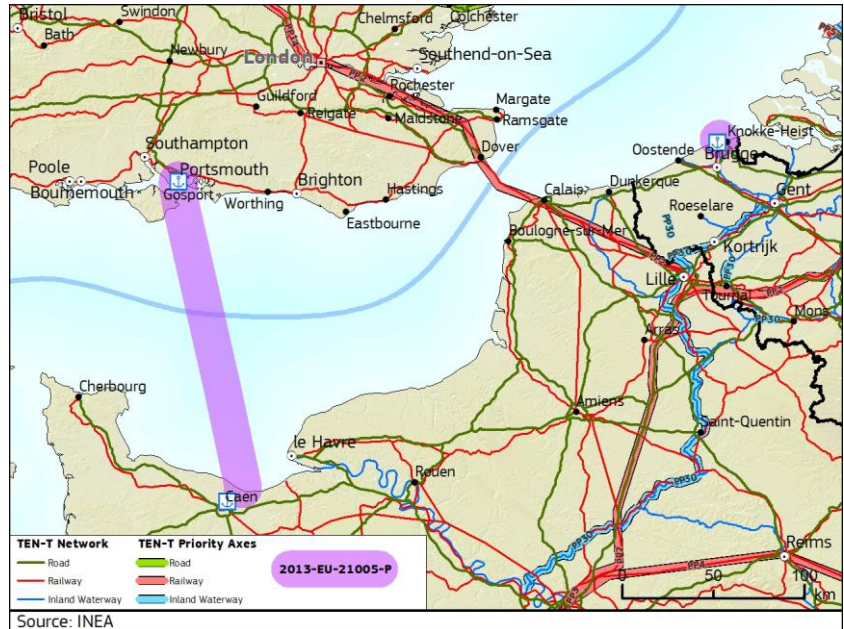
www.fluxys.com

Chambre de Commerce et d'Industrie de Caen Normandie

www.cci.fr

Portsmouth International Port

www.portsmouth-port.co.uk

Channel LNG**2013-EU-21005-P**
Part of Priority Project 21

The main objective of the Global Project is to enable a gradual but rapid transition towards the viable supply of LNG (liquefied natural gas) for a fleet of vessels operating in the SECA and within EU.

This project, part of Priority Project 21 (Motorways of the Sea), covers three main objectives, namely the:

1. Installation of small scale equipment for LNG bunkering in the Zeebrugge terminal (Belgium) to break down large quantities of LNG into smaller ones for further distribution in the North Sea and the Channel region. Zeebrugge would become the first European terminal open to the public for this kind of operation.
2. Equipment of three ferry berths with automatic quick release mooring hooks, two at the Port of Portsmouth (UK) and one in the Port of Caen/Ouistreham (France).
3. Establishment of an optimal logistic chain to LNG in order to deliver LNG to ports and ships remote from the main European gas import terminals and therefore encourage the rapid growth in the number of vessels using LNG.

State of progress on 31 December 2014:

The project is ongoing. Works have started on the installation of small scale equipment in the Zeebrugge terminal. The equipping of ferry berths with automatic quick release mooring hooks has been completed in the Port of Portsmouth.

TEN-T Annual Programme

Member States involved:

Greece

Implementation schedule

Start date: October 2014

End date: December 2015

Budget:

Project Promoters: €573,090

Total project cost covered by this Decision: €1,146,180

EU contribution: €573,090

Percentage of EU support:
Studies: 50%

Additional information:

European Commission, DG MOVE
http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency (INEA)
<http://ec.europa.eu/inea>

Beneficiaries & Implementing bodies:

Region of South Aegean
www.notioaigaio.gr

Centre for Research & Technology Hellas
www.certh.gr

Public Gas Corporation
www.depa.gr

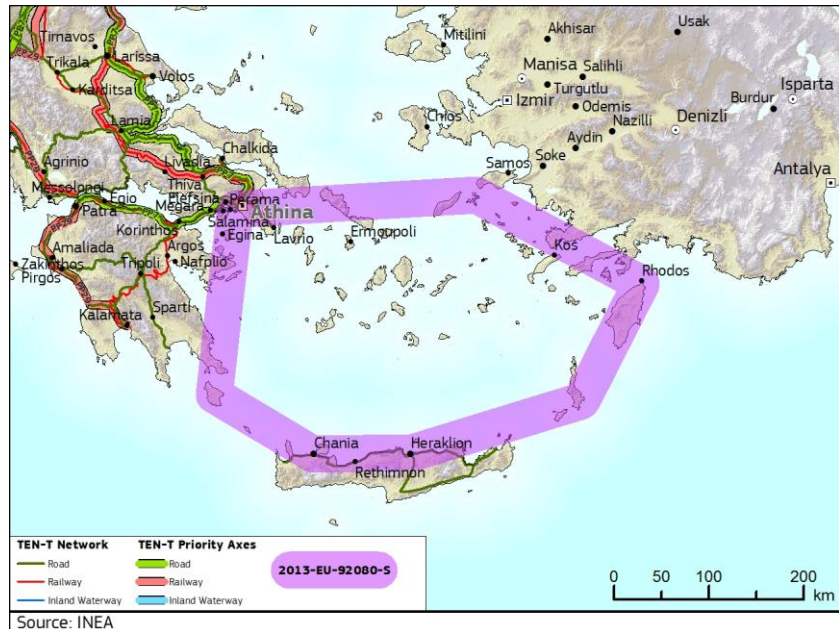
Shipping company of Crete S.A.
<http://web.aneke.gr>

Pacifae shipping company

Syros Shipbuilding & Industrial Enterprises "Neorion"
www.neorion-shipyards.gr

Sustainable Maritime Transport with LNG between Greek mainland and islands in the Archipelago (ARCHIPELAGO-LNG)

2013-EL-92080-S



The Action comprises a study which aims to promote the use of LNG (Liquefied Natural Gas) as a marine vehicles fuel in the passenger and shipping sectors of the Greek islands, in order to reduce supply costs and the environmental impact that the hitherto use of heavy oil derivatives causes. The main objective of the action is to motivate and to provide the Greek Authorities with the necessary tools in order to adopt a regulatory framework for the bunkering of gas-fuelled (LNG) ships in the region by:

- Identifying the key technical and economic framework of the small scale LNG as marine fuel value chain in South Aegean, e.g. main supply chain options, required retrofits and infrastructure in ports, ships and shipyards, business plans for each operator, and;
- subsequently, making recommendations of a legislative nature to the Greek Authorities with regard to both the technical and financial aspects of the LNG supply chain in the island regions, using as a reference the Region of South Aegean.

In view of achieving these objectives, the Action will bring together a series of key Greek stakeholders representing a cross-section of the LNG as marine fuel supply chain, including national ministerial and administrative regions' authorities, LNG suppliers, ship owners/operators and shipyards, supported by academic/research institutes.

State of progress on 31 December 2014:

Activity 1 is ongoing.

Update: July 2015

TEN-T Annual Programme

Member States involved:

Germany

Implementation schedule

Start date: March 2014

End date: December 2015

Budget:

Project Promoter: €2,475,000

Total project cost covered by this Decision: €4,950,000

EU contribution: €2,475,000

Percentage of EU support:

Studies: 50%

Additional information:

European Commission, DG MOVE

<http://ec.europa.eu/transport>

Innovation and Networks Executive Agency (INEA)

<http://inea.ec.europa.eu>

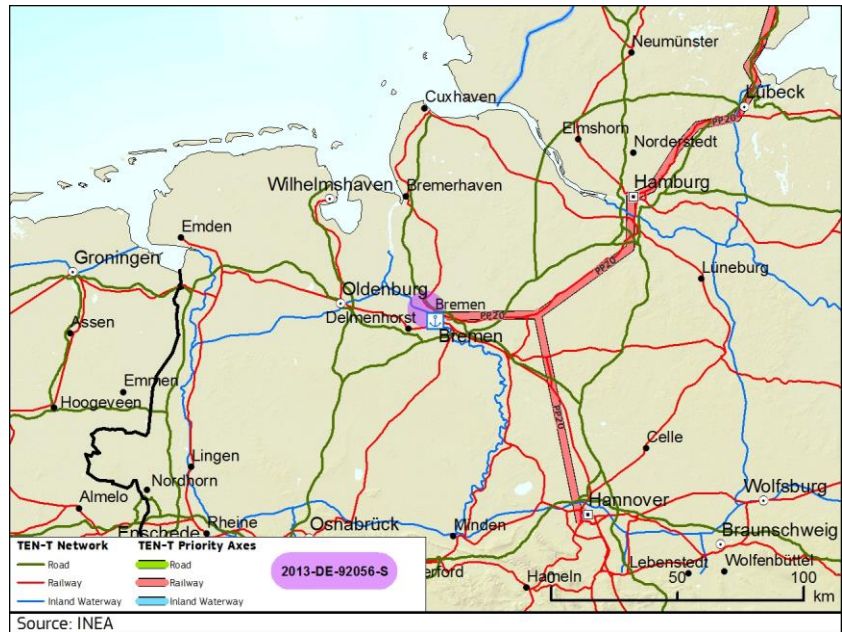
Beneficiary & Implementing body:

HGM Energy GmbH

www.hgm-energy.com

Realising real-life demonstration and market introduction of a scalable, multi-modal LNG-terminal in the seaport of Bremen for the reliable supply of LNG as alternative fuel to all transport modes

2013-DE-92056-S



The project features a study with pilot deployment concerning on the construction of a flexible, multi-modal LNG terminal to provide a reliable supply of LNG for different modes of transport.

Activities include planning, design and engineering, as well as the definition, construction and operation of a LNG filling station of 400m³. While the initial size will be relatively small the flexible approach ensures that effective market demand can be accommodated by enlarging the facility at a later stage.

The pilot study will make a contribution towards a more widespread use of LNG propulsion and offer alternative fuels supply facilities. The LNG terminal aims to stimulate LNG use by maritime, road and potentially also rail users in a geographical area of around 300-400 km.

State of progress on 31 December 2014

The project has overall been implemented as planned. Actual operation and real life demonstrations of the LNG supply facilities were started.

TEN-T Multi-Annual Programme

Member States involved:

Sweden, France, The Netherlands, United Kingdom

Implementation schedule

Start date: January 2012
End date: December 2015

Budget:

Action promoter: €51,454,500

Total project cost covered by this Decision: €74,557,500

EU contribution: €23,103,000

Percentage of EU support:

Studies: 50%
Works: 20%

Additional information:

European Commission, DG MOVE
http://ec.europa.eu/transport/index_en.html

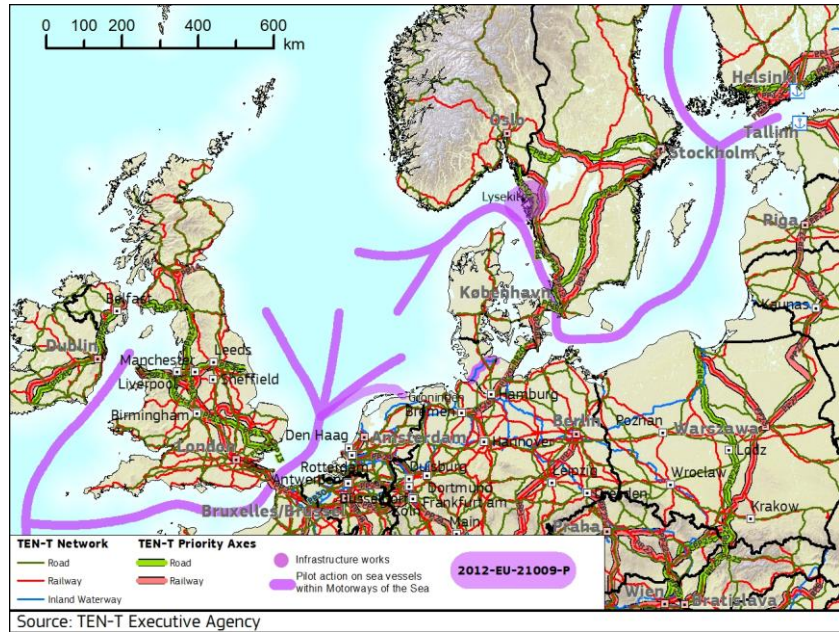
Innovation and Networks Executive Agency (INEA)
<http://inea.ec.europa.eu>

Beneficiaries & Implementing bodies:

- Preem AB
www.preem.se
- Skangass AB
www.skangass.com
- Rederi AB Donsötank AB
www.donsotank.se/foretaget.htm
- Sirius Rederi AB
siriusshipping.eu
- Erik Thun AB
www.thun.se
- Scheepswerf Ferus Smit
www.ferus-smit.nl
- Lloyds Register EMEA
<http://www.lr.org>
- Furetank Rederi AB
www.furetank.se
- Bureau Veritas
<http://finance.bureauveritas.fr>
- Öresund Drydocks AB
www.oddab.eu
- SSPA Sweden AB
www.sspa.se
- Fartygskonstruktioner AB
www.fkab.com
- Sveriges Rederiservice AB
www.solidinfo.se

LNG Bunkering Infrastructure Solution and Pilot actions for Ships operating on the Motorway of the Baltic Sea

2012-EU-21009-M
Part of Priority Project 21



The aim of the Global Project is implementing three pilot actions for LNG, methanol and the use of scrubbers. These pilots look at meeting the sulphur legislation in 2015 in the Sulphur Emission Control Area and support the development of a competitive and environmentally sustainable shipping sector in the Baltic Sea.

The Action is composed of works and studies. The works aim at the implementation of an LNG bunker supply infrastructure for the use of LNG at the Port of Brofjorden in Sweden. The technical studies aim at the deployment of new LNG technologies in full scale Pilot Actions in vessels in the Baltic Sea and in the North Sea.

The Action will establish LNG bunkering infrastructure including the components required from the terminal to bunker vessel, and from the bunker vessel to the LNG fuelled vessels.

The deployment of new LNG technologies will result in demonstration of full scale solutions of vessels in commercial operation in the Baltic Sea and in the North Sea, as well as design recommendations, recommended best practices for operation, and suggestions for development of rules and regulations. The Action will additionally investigate financial mechanisms to support ship-owners/operators in converting their fleets to new technology.

State of progress on 31 December 2014:

The Action is ongoing. The Brofjorden LNG bunker terminal was inaugurated in fall 2014. The approvals in principle from Classification Society for the feeder vessel with innovative cargo tank design, the dry cargo vessel using LNG as fuel source and the conversion of tanker vessels using LNG as fuel source are completed. The contractual arrangements for construction of the bunker vessel operating from Brofjorden LNG terminal are completed.

Update: July 2014

TEN-T Multi-Annual Programme

Member States involved:

France, Spain

Implementation schedule

Start date: January 2012

End date: December 2015

Budget:

Action promoter: €1,041,000

**Total project cost covered
by this Decision: €2,082,000**

EU contribution: €1,041,000

Percentage of EU support:

Studies: 50%

Additional information:

Coordinator's Report of
the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

<http://ec.europa.eu/transport>

Innovation and Networks Executive
Agency (INEA)

<http://inea.ec.europa.eu>

Beneficiaries and Implementing bodies:

B.A.I. Bretagne Angleterre Irlande SA
(Brittany Ferries)

www.brittanyferries.com

Chambre de Commerce et d'Industrie
de Morlaix

www.morlaix.cci.fr

Autoridad Portuaria de Santander

www.puertasantander.es

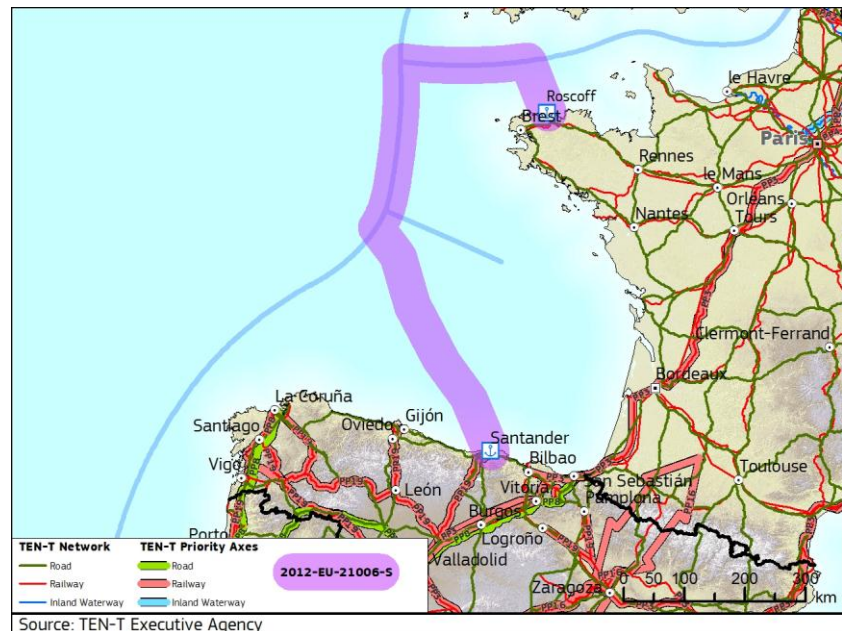
Fundación Centro tecnológico en
Logística Integral Cantabria

www.ctlcantabria.org

Update: July 2014

SEAGAS

2012-EU-21006-S Part of Priority Project 21



The Action aims at determining the feasibility of implementing LNG bunkering facilities in the Port of Roscoff (north-west of France) and the Port of Santander (north of Spain). The studies will take into account the conformity of the infrastructures and the equipment with the standards for risk prevention (SEVESO Directive), and the eventual constraints, to be revealed by the environmental impact assessments studies and the public inquiries.

The findings of these studies will be an essential decision making tool a) for the ferry operator, to start the construction and the retrofit of LNG vessels; b) for port authorities in Roscoff and Santander that will be able to plan the design and the implementation of LNG bunkering stations; and c) for the authorities in charge of the public passenger transport in Cantabria.

The project will contribute to the development of the Atlantic Motorway of the Sea as a wider benefit action, serving all the shipowners operating in the region and looking into synergies of different transport modes.

State of progress on 31 December 2013:

The project is ongoing, though slightly delayed. Activity 1: Cost/Capacity Analysis of Marine fuel Oil as Compared to LNG has been completed.

TEN-T Multi-Annual Programme

Member States involved:

The Netherlands, Sweden

Implementation schedule

Start date: January 2012

End date: December 2015

Budget:

Action promoter: €137,088,000

**Total project cost covered
by this Decision:** €171,360,000

EU contribution: €34,272,000

Percentage of EU support:

Works: 20%

Additional information:

Coordinator's Report of
the Priority Project:

http://ec.europa.eu/transport/themes/infra-structure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency
(INEA)

<http://ec.europa.eu/inea>

Beneficiaries and Implementing bodies:

Havenbedrijf Rotterdam N.V.
www.portofrotterdam.com

Vopak LNG Holding B.V.
www.vopaklng.com

Port of Gothenburg AB
www.portofgothenburg.com

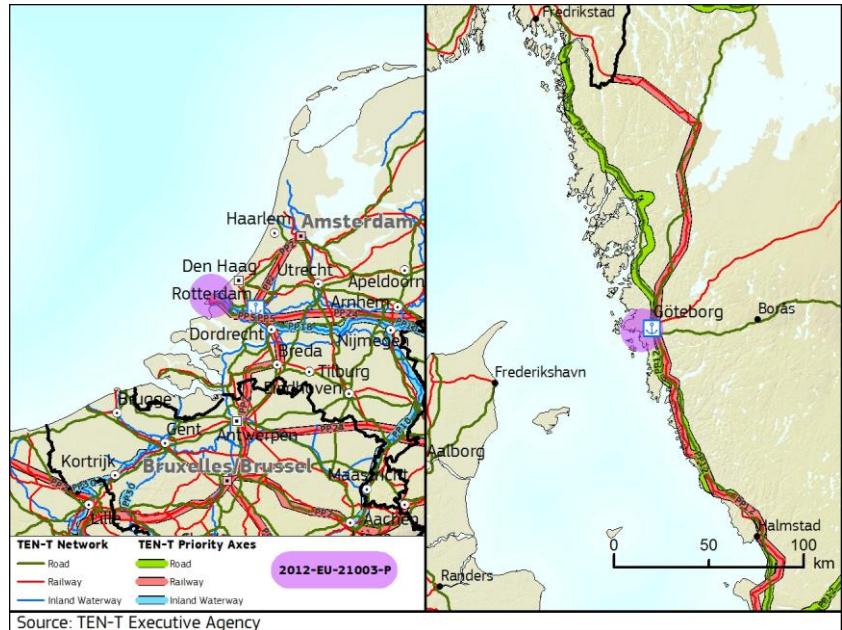
Swedegas
www.swedegas.com

LNG Break Bulk Rotterdam CV
www.vopak.com

LNG Rotterdam Gothenburg

2012-EU-21003-P

Part of Priority Project 21



At present, the European market for LNG fuel for maritime transport is limited and infrastructure is almost inexistent for small-scale supply of LNG. The market requires the ports to have LNG bunkering infrastructure, while the ports expect sufficient LNG demand to build infrastructure.

To solve this situation and develop the maritime LNG sector, the present Action will create break bulk infrastructure for small-scale LNG supply in the Ports of Rotterdam and Gothenburg. These large ports combined have a critical mass to assist in the market transition to maritime LNG in northern Europe.

The facilities in Rotterdam will distribute stored LNG in the Gas Access To Europe terminal in smaller quantities. From this new break bulk facility other LNG infrastructure facilities can be supplied with LNG, like smaller terminals in other ports or fuelling infrastructure for ships. The LNG break bulk facility in Rotterdam will additionally provide a truck loading bay, which enables ships to bunker LNG in the port using trucks.

The facility in Gothenburg will be the first satellite terminal to be supplied from the Rotterdam break bulk facility. It serves as a proof of concept as well as a means to serve the Scandinavian LNG bunkering market. The combined facilities for fuelling ships and trucks in both ports will create a synergy effect to address the importance of providing alternative fuel solutions for transport.

State of progress on 31 December 2014:

The project is ongoing, yet faces some delays. The operating permit for Rotterdam terminal was granted and a terminal use agreement was signed in July 2014. Construction of the Rotterdam harbour basin has started. The truck loading facility for bunkering purposes was further completed in February 2014 and is currently operational. Negotiations to sign a terminal use agreement are on-going in the port of Gothenburg.

TEN-T Multi-Annual Programme

Member States involved:

Austria, Belgium, Bulgaria, Czech Republic, France, Germany, Italy, Luxembourg, the Netherlands, Romania, Slovakia, Cyprus

Implementation schedule

Start date: January 2013
End date: December 2015

Budget:

Action promoter: €40,260,000

Total project cost covered by this Decision: €80,520,000

EU contribution: €40,260,000

Percentage of EU support:

Studies: 50%

Additional information:

Coordinator's Report of the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency (INEA)

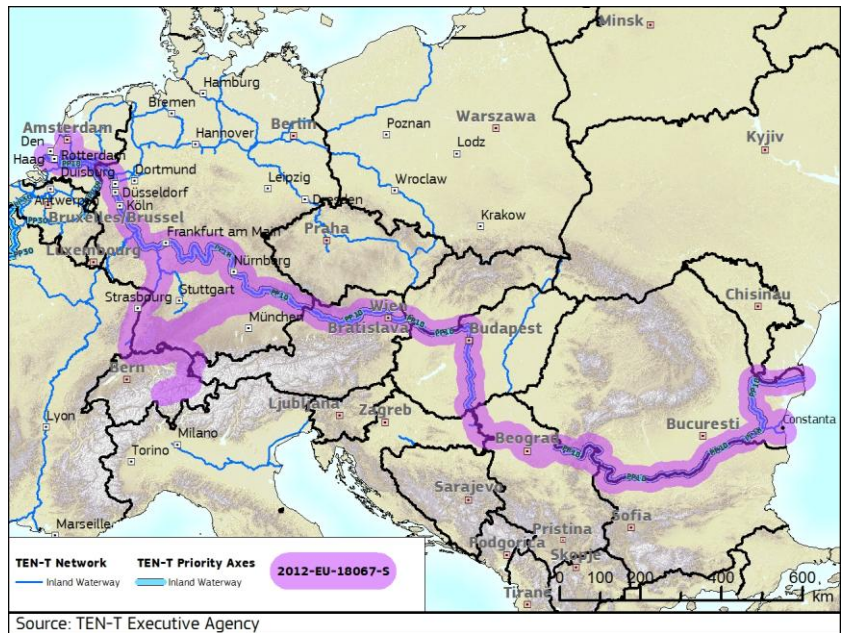
<http://inea.ec.europa.eu>

Beneficiary and Implementing body:

Pro Danube Management GmbH
www.prodanube.eu

LNG Masterplan for Rhine-Main-Danube

2012-EU-18067-S
Part of Priority Project 18



The Action's overall objective is to prepare and to launch the full-scale deployment of LNG as environmental friendly and efficient fuel in the inland navigation sector within the Priority Project 18 Rhine/Meuse-Main-Danube axis. It is a combined effort from sea and inland ports, authorities and barge and terminal operators, as well as logistic service providers, which will remove market barriers and take the first steps in realising a new LNG supply chain.

The Action is a multi-partner involvement of 33 companies and organisations from 12 EU Member States. It will specifically elaborate a comprehensive strategy –a Masterplan- with a detailed roadmap and appropriate guidelines and recommendations for the implementation of LNG as a fuel and cargo on the Rhine-Main-Danube axis. The Masterplan will follow an integrated approach and encompass the full LNG logistic chain from the supplier through the carriers and distribution network to the end user.

The Masterplan will also build on the results and lessons learned from pilot deployments of LNG vessels and terminals. The pilot deployments will be performed by barge and terminal operators, logistics service providers as well as shipyards together with their commercial partners and suppliers. All pilots will cover parts of an entire LNG supply chain from the LNG import terminal to the end-client.

The Masterplan will be published and widely disseminated at local, national and European levels of decision and policy makers.

State of progress on 31 December 2013:

Despite unexpected adverse challenges, the Action should reach the set objectives and the expected results as planned.

TEN-T Annual Programme**Member States involved:**

Spain

Implementation schedule

Start date: April 2013

End date: December 2015

Budget:

Action promoter: €602,000

Total project cost covered by this Decision: €1,204,000**EU contribution:** €602,000**Percentage of EU support:**

Studies: 50%

Additional information:

European Commission, DG MOVE

http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency (INEA)

<http://ec.europa.eu/inea>**Beneficiaries and Implementing bodies:**

Regasificadora del Noroeste S.A. (Coordinator)

www.reganosa.com

Navantia S.A.

www.navantia.es

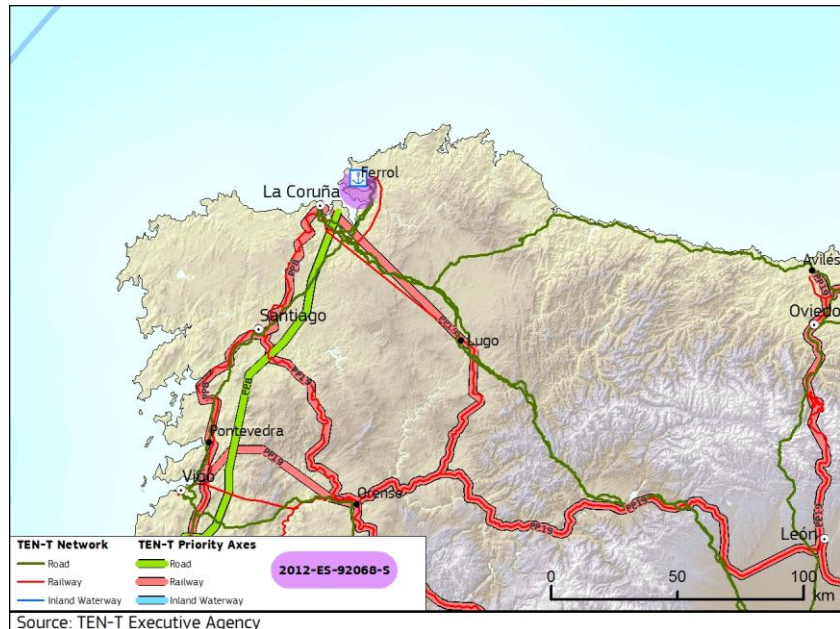
Instituto Enerxético de Galicia

www.inega.es

Universidade de Santiago de Compostela

www.usc.es

Autoridad Portuaria de Ferrol-San Cibrao

www.apfsc.com**LNG hub in the north-western Iberian Peninsula****2012-ES-92068-S**

The objective of the Action is to develop a hub for LNG as fuel for the Port of Ferrol in the northwest of the Iberian Peninsula.

It focuses on the design of the necessary facilities, infrastructure and procedures in order to supply LNG as fuel along the entire port logistics chain: from the port services to ships navigating on the Atlantic and on the Motorway of the Sea Western Europe.

LNG is rapidly emerging as a more environmentally friendly fuel for the shipping sector and its uptake is encouraged by the European Union.

The studies contribute to climate change mitigation and to the reduction of the impact of transport on the environment. The results are going to be disseminated among stakeholders and the project will be also used as an example for the promotion and for policy making in the field of sustainable transport.

State of play on 31 December 2014:

The study regarding different demand scenarios for LNG at the Port of Ferrol and on the configurations of the LNG bunkering supply chain have been concluded. All other studies, including communication activities are ongoing and will be completed in 2015.

More information is available on the project website: <http://lng-hub.eu>

Update: June 2015

TEN-T Annual Programme

Member States involved:

Spain

Implementation schedule

Start date: September 2013
End date: December 2014

Budget:

Action promoter: €1,044,000

Total project cost covered by this Decision: €2,088,000

EU contribution: €1,044,000

Percentage of EU support:
Studies: 50%

Additional information:

European Commission, DG MOVE
http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency (INEA)
<http://inea.ec.europa.eu>

Beneficiaries & Implementing bodies:

Repsol Exploración
www.repsolenergy.com

Ros Roca Indox Cryo Energy
www.indox.com

Port Authority of Cartagena
www.apc.es

Fundación de la Comunidad Valenciana para la Investigación, Promoción y Estudios Comerciales de Valenciaport
www.fundacion.valenciaport.com

Flexible LNG bunkering value chain on the Spanish Mediterranean coast

2012-ES-92034-S



The project looks at overcoming the existing barriers to establish an LNG bunkering supply chain in the Mediterranean basin of Spain.

The transition towards an LNG bunkering supply network requires a double-axis action. On one side, the existing and future maritime fleet needs to be adapted in terms of technology of engines and storage. On the other, terminals and other facilities at ports need to be upgraded or developed in order to deploy a full supply chain providing enough security of supply.

The Action will consist of studies to address both maritime fleet and port facilities transition simultaneously, reducing the time-to-market of the LNG Bunkering Service in the Spanish Mediterranean ports.

To meet the objective, a study will be conducted to analyse the technical, operative, economic and legal aspects of LNG bunkering vessel operations enabling medium term deployment (2015-2020). It will include a detailed evaluation and design of an optimised LNG supply chain in key Spanish ports of the Mediterranean Sea (the ports of Barcelona, Valencia and Cartagena), based on existing onshore infrastructure and a LNG bunkering vessel aiming to offer a flexible supply to a set of nearby locations.

State of progress on 31 December 2013:

Market tests are on-going and studies for the interaction of the supply vessel with the existing LNG terminals and ports infrastructures have been completed

Update: May 2014

TEN-T Annual Programme

Member States involved:

France

Implementation schedule

Start date: September 2012

End date: December 2014

Budget:

Action promoter: €1,150,000

Total project cost covered by this Decision: €2,300,000

EU contribution: €1,150,000

Percentage of EU support:

Studies: 50%

Additional information:

European Commission, DG MOVE

http://ec.europa.eu/transport/index_en.html

Trans-European Transport Network Executive Agency (TEN-T EA)

<http://ec.europa.eu/tentea>

Beneficiary and implementing body:

Grand Port Maritime de Dunkerque

www.dunkerque-port.fr

Technical and design studies concerning the implementation of a LNG bunkering station at the port of Dunkirk

2011-FR-92026-S



The Global Project is the construction of a Liquefied Natural Gas (LNG) bunkering station at the Port of Dunkirk. The station will fuel vessels coming from and to the North Europe SECA and passing through the Dover Strait and inland transportation. LNG will be provided to the bunkering facilities through a pipe from an adjacent LNG import terminal being constructed in Dunkirk. The Global Project will enable the completion of a missing bunkering gap for ships on the southern border of North European SECA.

The Action consists in the preparation of feasibility and design studies for the construction of a LNG bunkering station infrastructure in the Port of Dunkirk (GPMD), located in the south of the North European SECA (Sulphur Emission Control Areas) area.

The Action implementation will involve consultation with a group of technical partners including Voies Navigables de France, relevant ports and the Dunkirk LNG terminal operator (DK LNG) and some shipowners. The final general results will be disseminated among the maritime community to raise awareness of LNG bunkering opportunities.

This project has been completed.

TEN-T Annual Programme

Member States involved:

Spain, Italy, Slovenia

Implementation schedule

Start date: August 2012

End date: May 2014

Budget:

State budget: €636,810

Total project cost covered by this Decision: €3,688,000

EU contribution: €1,844,000

Percentage of EU support:

Studies: 50%

Additional information:

Coordinator's Report of the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

<http://ec.europa.eu/transport>

Innovation and Networks Executive Agency (INEA)

<http://inea.ec.europa.eu>

Beneficiaries & Implementing bodies:

Fundación de la Comunidad Valenciana para la Investigación, promoción y Estudios comerciales de Valenciaport

www.fundación.valenciaport.com

Autoridad Portuaria de Valencia

www.valenciaport.com

Noatum Ports

www.noatum.com

Konecranes Ausio

www.konecranes.com

Asea Brown Boveri SA

www.es.abb.com

Luka Koper, port and logistic system, d.d.

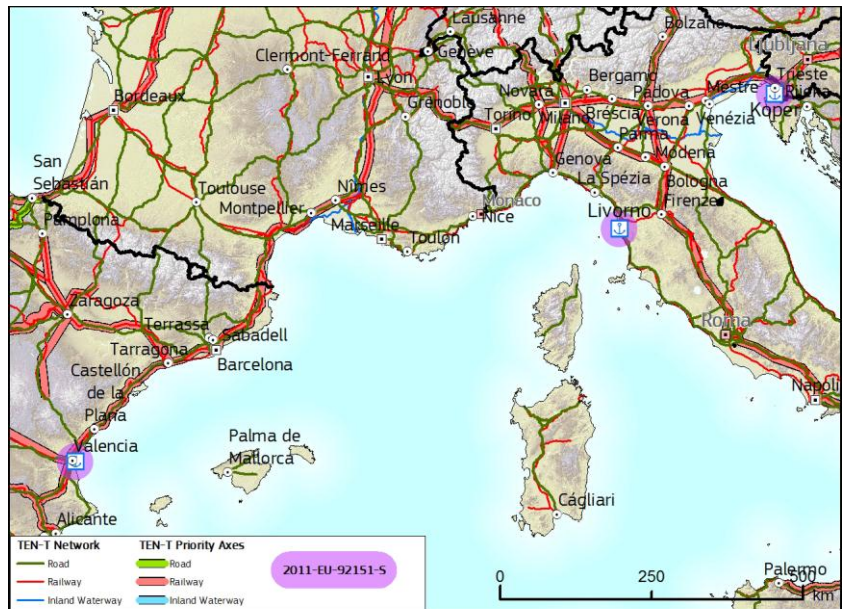
www.luka-kp.si

Ministero delle Infrastrutture e dei Trasporti

www.mit.gov.it

Green technologies and eco-efficient alternatives for cranes & operations at port container terminals (GREENCRANES)

2011-EU-92151-S



Source: TEN-T Executive Agency

The Action's objective is to test new technologies and alternative fuels (i.e. LNG, Hydrogen, Diesel TIER 4 and other ecofuels) including pilot deployment in existing port container terminals (PCTs), thereby contributing to mitigating climate change and reducing GHG emissions.

The final objective is to enable PCTs' managers and investors, EU policy-makers, citizens and industry to understand and decide which technologies generate the best socio-economic value and have the highest potential for rapid deployment across the EU. Intending to enable quick deployment at EU level, particular attention will be given to the definition of best practices that support the swift creation of critical mass in the EU.

For this purpose, the proposed Action will develop three prototypes and will pilot them based on complementary approaches:

- Evaluation of LNG versus Diesel TIER 4 fuel alternatives for PCT yard equipment, to be developed at Noatum Container Terminal Valencia (NCTV), Port of Valencia, Spain.
- Implementation of a real time energy monitoring system to control energy consumption associated to port container operations, to be developed at the Port of Koper, Slovenia. This prototype will take advantage of the requirements and procedures of the international standard ISO 50001 about energy management systems.
- Adaptation of a Reach Stacker vehicle to a different motorisation such as LNG, hydrogen or bio-fuels for reducing the environmental impact and energy consumption, to be developed at the Port of Livorno, Italy.

State of play on 31 December 2013:

All three prototypes have been piloted and the results disseminated at Public Demonstration Days and Info Days in Spain, Italy, Slovenia and Belgium. More information is available on the Action website: www.greencranes.eu.

Update: July 2014

TEN-T Annual Programme

Member States involved:

Sweden, Finland

Implementation schedule

Start date: June 2012
End date: December 2014

Budget:

Action promoters: €1,247,000

Total project cost covered by this Decision: €2,494,000

EU contribution: €1,247,000

Percentage of EU support:

Studies: 50%

Additional information:

European Commission, DG MOVE
http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency (INEA)
<http://inea.ec.europa.eu>

Beneficiaries and implementing bodies:

SSPA Sweden AB
www.sspa.se

Sirius Rederi AB
<http://siriusshipping.eu>

Preem AB
www.preem.se

Fartygskonstruktioner AB
www.fkab.com

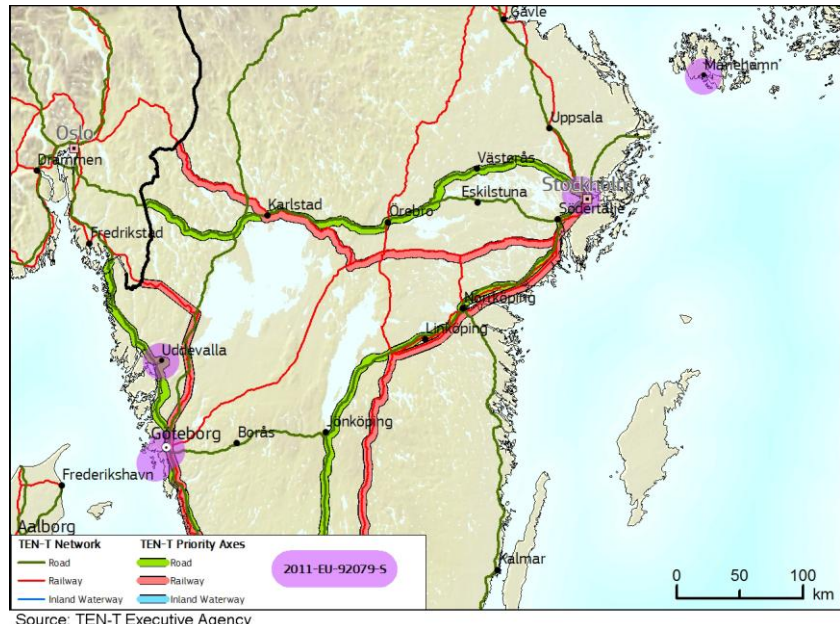
Svensk Rederiservice AB
www.sweship.se

Det Norske Veritas AB
www.dnv.com

Viking Line Abp
www.vikingline.fi

Make a difference

2011-EU-92079-S



The Action aims to identify and minimise the barriers when building and operating a Liquefied Natural Gas (LNG) fuelled vessel. This will be achieved by analysing the technical requirements and issues regarding regulations and environmental operation permits that need to be resolved in the shift from traditionally fuelled engines to LNG.

This Action will find solutions to the operational issues from the ship-owner perspective. Concretely, the Action will:

- prepare for the LNG certification process for vessels and operators
- harmonise land-based and sea-based regulations and bunkering requirements
- select and demonstrate vessel environmentally efficient solutions
- identify logistic solutions for energy efficiency
- develop safe and efficient technologies for LNG bunkering and fuelled vessels
- assess safety issues
- coordinate with other initiatives and disseminate results

The results of parallel studies will be used. It will coordinate with the relevant ongoing LNG projects and the European Maritime Safety Agency.

State of progress on 31 December 2013:

The project is on-going with slight delay, project completion expected on schedule. LNG certification process resulted in conducted HAZID's on tank vessel and passenger ferry and related bunkering with identifying gaps in existing regulations. Risks and safety issues were analysed, as well as commercial solutions for sea transport, and surveys on solutions for LNG fuel vessels are on-going. Workshop 2 presented preliminary results from statistical analysis of commercial solutions for sea transport.

Update: June 2014

TEN-T Multi-Annual Programme

COSTA

Member States involved:

Spain, Portugal, Italy, Greece

2011-EU-21007-S
Part of Priority Project 21

Implementation schedule

Start date: February 2012

End date: April 2014

Budget:

Action promoter: €1,521,291

Total project cost covered by this Decision: €3,042,582

EU contribution: €1,521,291

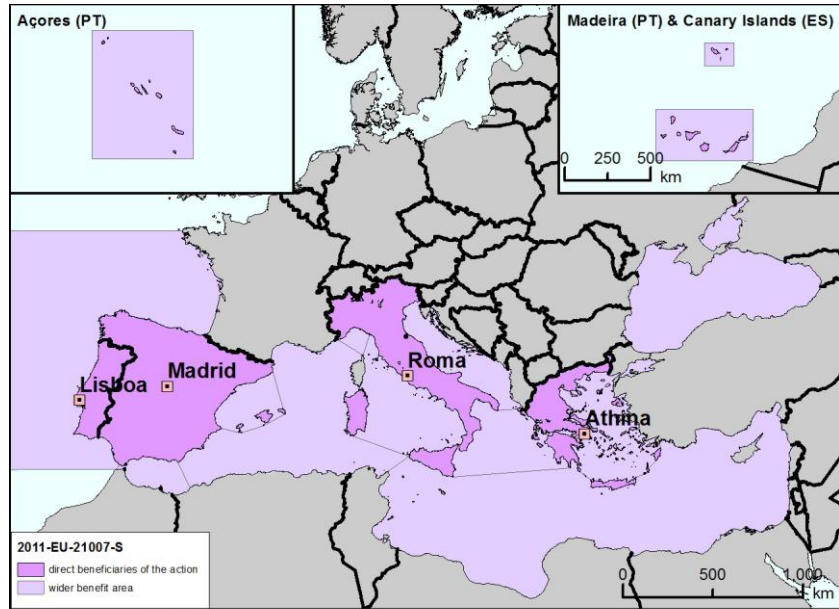
Percentage of EU support:

Studies: 50%

Additional information:

Coordinator's Report of the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm



Source: TEN-T Executive Agency

European Commission, DG MOVE

http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency (INEA)

<http://inea.ec.europa.eu>

Beneficiaries:

Ministry of Infrastructure and Transport

www.mit.gov.it

Liguria Region

www.regione.liguria.it

Instituto Português e dos Transportes Marítimos

www.imarpor.pt

Almazán Ingenieros

www.almazan-ingenieros.es

Fundacion Valenciaport

www.fundacion.valenciaport.com

Ocean Finance

www.oceanfinance.gr

The COSTA Action aims at developing framework conditions for the use of LNG for ships in the Mediterranean, Atlantic Ocean and Black Sea areas. It will result in preparing an LNG Masterplan for short sea shipping between the Mediterranean Sea and North Atlantic Ocean as well as the Deep Sea cruising in the North Atlantic Ocean towards the Azores and the Madeira Island.

The feasibility study results will promote Motorways of the Sea sustainability, contributing to the common effort addressing climate change, in particular in view of the forthcoming requirements with respect to the implementation of the requirements of Annex VI of the MARPOL Convention.

The project will complement the results of the on-going LNG North Sea and Baltic project 2010-EU-21112-S. This will all increase the potential of Motorways of the Sea by lowering transport costs and reducing CO₂, NO_x and SO_x emissions, in conjunction with greening the transport corridors and using of LNG as an alternative to marine bunker. If COSTA's policy recommendations are implemented, it is expected that CO₂ emissions from shipping could drop by 25% in 2020 and by 50% in 2050. For the air pollutants the use of LNG would eliminate SO_x and reduce NO_x by 90%.

Implementing bodies:

RINA

www.rina.org

Grimaldi Group

www.grimaldi.napoli.it

Grandi Navi Veloci

www2.gnv.it

Portos dos Açores

www.portosdosacores.pt

Portos da Madeira

www.portosdamadeira.com

This project has been completed.

Update: March 2014

TEN-T Multi-Annual Programme

LNG in Baltic Sea Ports

Member States involved:

Denmark, Sweden, Finland, Estonia

2011-EU-21005-S
Part of Priority Project 21

Implementation schedule

Start date: January 2012
End date: December 2014

Budget:

Action promoter: €1,697,020

Total project cost covered by this Decision: €3,394,040

EU contribution: €1,697,020

Percentage of EU support:
Studies: 50%

Additional information:

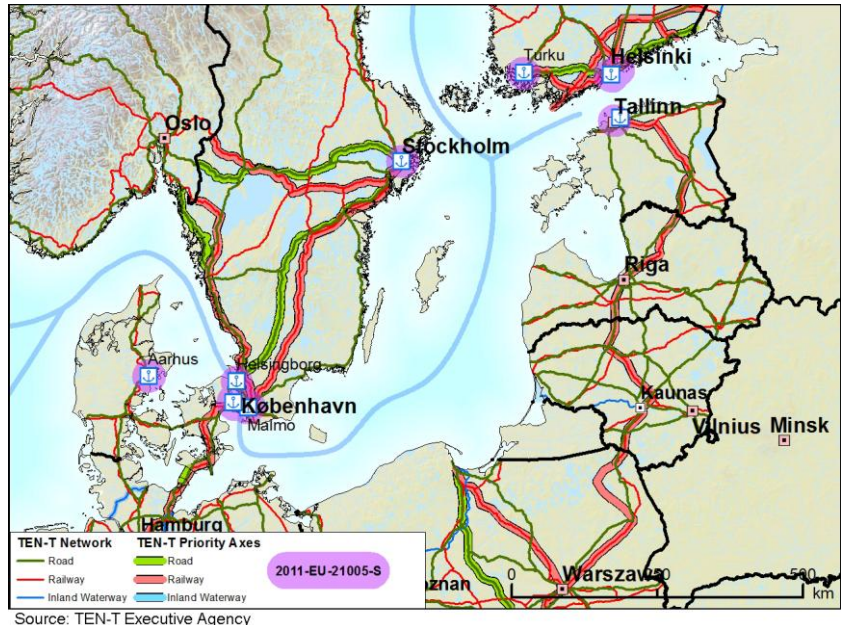
Coordinator's Report of the Priority Project:
http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE
http://ec.europa.eu/transport/index_en.html

Innovation and Networks Executive Agency (INEA)
<http://inea.ec.europa.eu>

Beneficiaries & Implementing bodies:

- Port of Aarhus
www.aarhushavn.dk
- Port of Copenhagen-Malmö
www.cmport.com
- Port of Helsingborg
www.port.helsingborg.se
- Port of Helsinki
www.portofhelsinki.fi
- Port of Stockholm
www.stockholmshamn.se
- Port of Tallinn
www.portoftallinn.com
- Port of Turku
www.port.turku.fi



The aim of the proposed action is to develop a harmonised approach towards LNG bunker filling infrastructure in the Baltic Sea region. By sharing knowledge between 7 Baltic partner ports (Aarhus, Helsingborg, Helsinki, Malmö-Copenhagen, Tallinn, Turku, Stockholm) from 4 countries and their stakeholders, a more standardised process for planning and constructing LNG infrastructure shall be achieved.

The proposed action builds on previous activities and foresees pre-investment studies directly preparing for investments in LNG bunkering infrastructure in the ports. The actual infrastructure investments will be made at a later stage.

In addition, a stakeholder platform will be initiated to gather the key actors from the Baltic Sea but also from the North Sea around the same table and secure dissemination of the project process and results. The participating ports will build on existing knowledge in the field and will share their experience and findings. The practical outcome of this cooperation will be a guidebook that will function as a benchmark for other ports and stakeholders and for other regions in Europe.

The project is expected to contribute significantly to the implementation of the Baltic Sea Strategy (COM(2009)248) which underlines that the Baltic Sea region should turn into a model region for 'clean shipping' and a range of measures should be aimed at reducing the environmental impact of maritime transport.

State of progress on 31 December 2013:

The project is ongoing and will be finalised in December 2014. The activity taking place is Helsinki, Stockholm and Copenhagen-Malmö have been completed. The activities in Turku and Tallinn will most probably be completed with a limited scope due to delays in procurement and other administrative reasons.

Update: June 2014

TEN-T Multi-Annual Programme

Member States involved:

Denmark, Belgium

Implementation schedule

Start date: January 2010

End date: December 2013

Budget:

Action promoter: €17,219,500

Total project cost covered by this Decision: €26,789,000

EU contribution: €9,569,500

Percentage of EU support:

Studies: 35.72%

Additional information:

Coordinator's Report of the Priority Project:

http://ec.europa.eu/transport/themes/infrastructure/ten-t-policy/priority-projects/european-coordinators_en.htm

European Commission, DG MOVE

<http://ec.europa.eu/transport>

Innovation and Networks Executive Agency (INEA)

<http://inea.ec.europa.eu>

Beneficiaries & Implementing bodies:

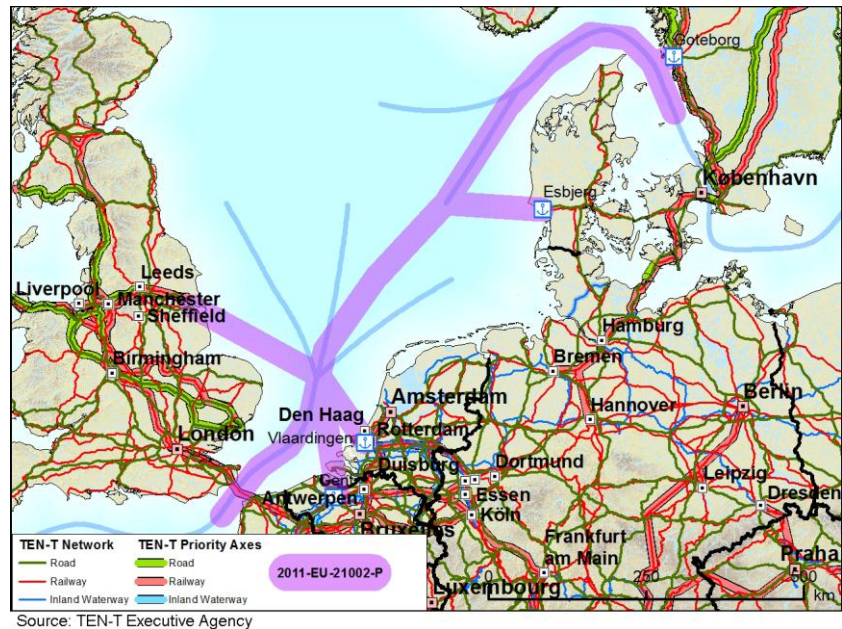
Danish Maritime Authority
www.dma.dk

Flemish Ministry of Mobility and Public Works
www.mobielvlaanderen.be

Fjord Line Danmark A/S
<http://fjordline.dk>

LNG infrastructure of filling stations and deployment in ships

2010-EU-21112-S
Part of Priority Project 21



The project is a strategic study taking the form of a pilot action in relation to the implementation of the Motorways of the Sea. It emerged as a project under the EU Strategy for the Baltic Sea Region, but its geographical scope has been expanded to the North Sea and the English Channel due to the trading between these areas as well as the Emission Control Area provisions setting more restrictive limits on sulphur and nitrogen oxides emissions from 2010, 2015 and 2016. The project consists of feasibility studies on LNG (Liquefied Natural Gas) filling station infrastructure and a full scale pilot action. The study part of project will create a strategic decision paper relevant for central stakeholders, aiming at developing framework conditions for the use of LNG for ships. It will validate a full scale pilot action aiming at demonstrating the LNG option as competitive fuel from the shipping and LNG supply chain points of view. The project further aims at harvesting positive environmental and climate effects. The aim of the full scale pilot project is to modify the design of two new build vessels to a LNG propulsion system. This will be the first time that a Ro/Pax vessel of this size (1,350 lane metre for trucks) will be built with LNG propulsion. The pilot action will be followed by an extensive measurement programme for validating its environmental and climate benefits as LNG contains no sulphur and emits 90% less NOx than traditional fuels and CO2 can be reduced by up to 25%. The lessons learnt from the project are foreseen to have a wider benefit also for other geographical areas within the EU, demonstrating that LNG propulsion is achievable for a larger Ro/Pax vessel and could play an important role in further implementation of LNG in similar vessels throughout Europe on short international routes, as well as for domestic traffic.

This project has been completed.

Update: July 2014

TEN-T Annual Programme

Member States involved:

Spain

Implementation schedule

Start date: April 2012
End date: December 2014

Budget:

Action promoter: €1,936,000

Total project cost covered by this Decision: €3,872,000

EU contribution: €1,936,000

Percentage of EU support:

Studies: 50%

Additional information:

European Commission, DG MOVE
http://ec.europa.eu/transport/index_en.html

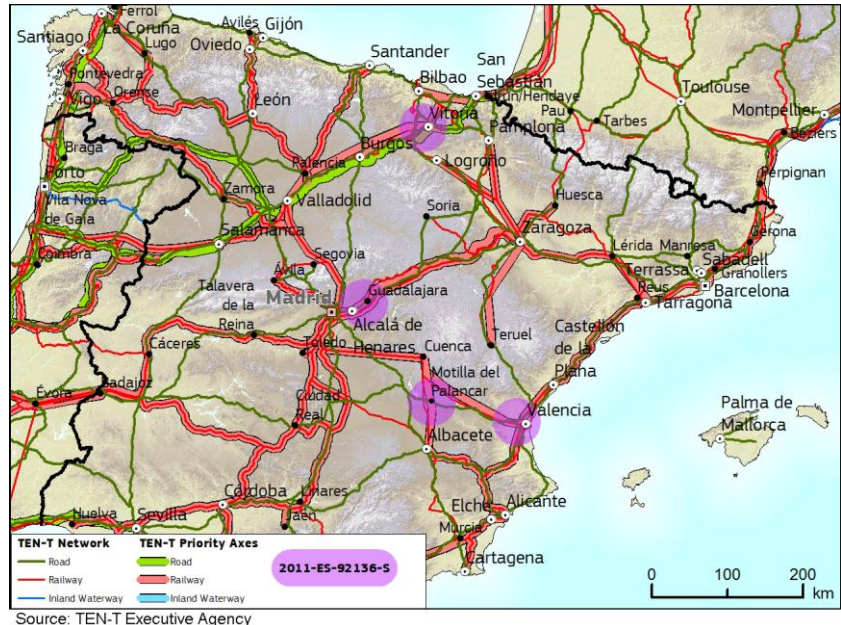
Innovation and Networks Executive Agency (INEA)
<http://inea.ec.europa.eu>

Beneficiary & Implementing body:

Gas Natural Fenosa
www.gasnaturalfenosa.com

Gas as an Alternative for Road Transport - GARNET

2011-ES-92136-S



In this Action, Gas Natural Fenosa and Ham Criogénica will undertake a study to determine the required steps to integrate state of the art Liquid Natural Gas (LNG) refuelling technologies to demonstrate, promote and accelerate the wide scale use of LNG as an alternative environmentally friendly and cost effective transport fuel for heavy goods vehicle (HGV) transport within a Clean Transport System. This Action will then contribute to achieving a future 'low carbon' transport solution desired in the EU. To undertake this study, seven different LNG refuelling stations trials testing four different technologies are proposed in Spain. The sites proposed have been selected, as they are aligned both with some of the trans-European transport network priority routes and with the principal Iberian LNG terminals. Smart communication technologies will be integrated within the LNG refuelling stations and vehicles that could incorporate technologies such as intelligent routing, station monitoring, pricing policy and payment methods.

The Action will specifically:

- Implement seven LNG refuelling stations trials, including three mobile units, on some of the prioritised trans-European transport network routes to validate four different state of the art LNG refuelling plant designs;
- Investigate the logistics to supply LNG to the stations. This will also include evaluating the use of existing infrastructure of natural gas pipelines to supply the LNG;
- Define business models based on the experience of this project to supply LNG across Europe at an economically attractive price;
- Identify requirements in regulatory standards across the Member States and propose recommendations to achieve cohesion and consistency across the European Union.

State of progress on 31 December 2013:

The Action is on track and should reach the set objectives and the expected results as planned.

Update: May 2014