LNG INFRASTRUCTURE IN THE BALTIC SEAPORTS

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PRESENTATION TOPICS

- Presentation of HEKLA project
- HEKLA on-the-road campaign and LNG market development
LNG IN THE BALTIC SEAPORTS PROJECTS

- BPO is a regional ports association
- Non-Profit & Networking
- 45 of the most significant ports in nine countries
- Promoting environmental management in the ports
- Contributing to the clean and sustainable development of the BSR
**LNG IN THE BALTIC SEAPORTS PROJECTS**

- BPO has initiated the development of LNG bunkering infrastructure in 7 ports within the Baltic Sea Region

- Focus on pre-investment studies: environmental impact assessments, feasibility analyses for LNG terminals or bunkering vessels, project designs, market studies, safety manuals, etc.

- Activities include a ‘stakeholder platform’ – harmonised discussions among port authorities, shipowners, gas infrastructure providers, energy traders and bunkering companies.

- Project Budget – apr. € 2.5 mln.  
LNG IN THE BALTIC SEAPORTS PROJECTS

- Final Conference held on 3rd Dec 2014 on MS Viking Grace

- Project concluded with the publication of ‘LNG Handbook’ that highlights Baltic Sea Region as a benchmark for implementation of LNG infrastructure.

- The Handbook is based on the experiences gained from the participating ports in the project, as well as other ports in the area with experience from establishing LNG terminals and LNG as ship fuel.

- Representatives from the seven ports have signed declaration stating their aim to ‘continue the development of LNG small scale bunkering infrastructure facilities at their Ports and will aim to offer LNG as a fuel for vessels by 2025 in line with Clean Fuel Directive’
LNG IN THE BALTIC SEAPORTS PROJECTS

- The sequel initiative developed by the BPO is an extension of a well-established ‘LNG in the Baltic Sea Ports’ – TEN-T, MoS Project

- Global Project was focused on the harmonised pre-investment works and development of facilities for LNG bunkering infrastructure in Baltic Sea ports

- Project Budget – approx. € 1.5 mln.

LNG IN THE BALTIC SEAPORTS PROJECTS

LNG in Baltic Sea Ports II

GLOBAL PROJECT
Development of an LNG bunkering network in the seaports of the Baltic Sea region as an element of the Baltic Motorways of the Sea Programme

PHASE I
Pre-investments studies & analysis

PHASE II
Real investments

PHASE III
LNG market availability

Added value
- Harmonisation
- Best Practice sharing
- Stakeholder Platform
- LNG Handbook
- LNG training scheme
- Baltic Ports
- LNG Forum

Construction of infrastructure and facilities for LNG bunkering fleet

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# LNG IN THE BALTIC SEAPORTS PROJECTS

## LNG in Baltic Sea Ports II

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>ACTIVITY 1</strong>&lt;br&gt;Project Management &amp; Coordination</td>
<td></td>
</tr>
</tbody>
</table>
| **ACTIVITY 2**<br>LNG in Helsingborg
  - **SUB-ACTIVITY 2.1**<br>Develop a design for a multi-purpose LNG bunker ship in the area |
| **ACTIVITY 3**<br>LNG in Trelleborg
  - **SUB-ACTIVITY 3.1**<br>LNG Berth Project Design |
| **ACTIVITY 4**<br>LNG in Sundsvall
  - **SUB-ACTIVITY 4.1**<br>Technical design of berth due to new location |
| **ACTIVITY 5**<br>LNG in Helsingborg
  - **SUB-ACTIVITY 5.1**<br>Obtaining all permits related to the LNG bunkering procedure |
| **ACTIVITY 6**<br>LNG in Klaipėda
  - **SUB-ACTIVITY 6.1**<br>Technological design study |
| **ACTIVITY 7**<br>Harmonisation, LNG know-how transfer & training
  - **SUB-ACTIVITY 7.1**<br>Harmonisation
  - **SUB-ACTIVITY 7.2**<br>LNG know-how transfer
  - **SUB-ACTIVITY 7.3**<br>LNG training scheme |

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LNG IN THE BALTIC SEAPORTS PROJECTS

- LNG in Baltic Sea Ports II – Final Conference

- Final conference held on 3rd December in Trelleborg.

- A sequel ‘LNG Handbook’ summarising the studies and experienced gained has been distributed.

- Update on the latest from the first LNG Project as well as other ports in the area with experience from planning, designing and establishing LNG terminals and LNG as ship fuel.
HELSINGBORG & KLAIPEDA LNG INFRASTRUCTURE FACILITY DEPLOYMENT

HEKLA is an infrastructure deployment project that is a part of final phase of the global mission of the 'LNG in the Baltic Sea Ports Projects'.

GLOBAL PROJECT
Development of an LNG bunkering network in the seaports of the Baltic Sea region as an element of the Baltic Motorways of the Sea Programme

- LNG in Baltic Sea Ports I & II
- HEKLA – Helsingborg & Klaipeda LNG Infrastructure Facility Deployment
- Future projects

PHASE I
Pre-investment studies & analyses

PHASE II
Real investments

PHASE III
LNG market availability

Facility deployment activities

- Helsingborg: construction of LNG liquefaction plant
- Klaipeda: construction of on-shore LNG reloading station

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PROJECT OBJECTIVES

HEKLA objectives:

- Development of the LNG bunkering infrastructure at the ports of Helsingborg and Klaipeda – strategic locations at the Baltic in terms of the LNG market development

- Support for widespread use of LNG as a marine fuel in the Baltic Sea motorways, and enforcement of MARPOL Directive at the Baltic Sea

- Maintenance of high economic and environmental efficiency of maritime shipping and seaports

- Ensuring the competitiveness of maritime transport towards other modes of transport,

- Enforcement of the EU energy security through upstreaming LNG for on-shore transport and other on-shore purposes
PROJECT ACTIVITIES

ACTIVITY 1
LNG liquefaction plant in the Port of Helsingborg

ACTIVITY 2
LNG Reloading Station by Klaipedos Nafta

ACTIVITY 3
LNG campaign and LNG Baltic market development

ACTIVITY 4
Project coordination

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ACTIVITY 1: LNG LIQUEFACTION PLANT IN THE PORT OF HELSINGBORG

The Activity comprises of investments into a new liquefaction plant, a storage horizontal pressure steel tank of 430 m³ and a filling station for tank trucks.

A special filling area station will be constructed to enable the loading and unloading of LNG trucks and semi-trailers which will allow for the wider distribution of LNG to heavy vehicles and to smaller ships.
ACTIVITY 2: LNG RELOADING STATION BY KLAIPEDOS NAFTA
**ACTIVITY 2: LNG RELOADING STATION BY KLAIPEDOS NAFTA**

LNG terminal in Klaipėda allows for the reception and the subsequent regasification of stored LNG, however, there are currently no bunkering possibilities for vessels.

- LNG reloading station which will be connected to the Klaipėda's large scale LNG terminal via a mobile multifunctional refuelling station
- The LNG reloading station approx. 5,000 m³ of LNG storage
- Two truck loading bays to reload LNG into auto trucks

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ACTIVITY 3: LNG CAMPAIGN AND BALTIC MARKET DEVELOPMENT

The HEKLA on-the-road campaign

The LNG campaign will be provided by permanent distribution of relevant information to all stakeholders having an interest in utilising LNG technology of Helsingborg and Klaipėda.

West Baltic
HEKLA on-the-road campaign:
Aarhus →
Trelleborg/Ystad →
Copenhagen/Malmö →
Helsingborg

East South Baltic
HEKLA on-the-road campaign:
Gdańsk →
Gdynia →
Riga →
Ventspils →
Klaipeda
**ACTIVITY 3: LNG CAMPAIGN AND BALTIC MARKET DEVELOPMENT**

- The HEKLA on-the-road campaign

- Planned schedule of the campaign events:

<table>
<thead>
<tr>
<th>EAST SOUTH BALTIC</th>
<th>WESTERN BALTIC</th>
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<tbody>
<tr>
<td>Gdańsk (PL)</td>
<td>Aarhus</td>
</tr>
<tr>
<td>Riga (LV)</td>
<td>Spring 2017</td>
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<tr>
<td>April/May 2016</td>
<td>Trelleborg/Ystad</td>
</tr>
<tr>
<td>April/May 2016</td>
<td>Spring/summer 2017</td>
</tr>
<tr>
<td>Ventspils (LV)</td>
<td>Copenhagen/Malmö</td>
</tr>
<tr>
<td>April/May 2016</td>
<td>Spring/summer 2017</td>
</tr>
<tr>
<td>Vilnius (LT)</td>
<td><em>LNG Baltic Transport Forum</em> - Klaipeda (LT)</td>
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<tr>
<td>June 2016</td>
<td><em>LNG Baltic Transport Forum</em> - Helsingborg</td>
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ACTIVITY 3: LNG CAMPAIGN AND BALTIC MARKET DEVELOPMENT

- Addressees of the HEKLA on-the-road campaign

- Ship owners and operators of shipping lines (using LNG as a marine fuel),
- The shipyard and shipbuilding industry (implementation of LNG technology on-board),
- Seaport terminals and the transhipment industry (LNG as a fuel for port equipment),
- Road transport companies, including road haulage and public transport companies (LNG as a land transport fuel),
- The transport and transhipment equipment industry (implementation of LNG technology for vehicles),
- Industry and enterprises (LNG as an energy source especially for off-grid locations),
- Household energy suppliers (LNG for off-grid urban areas),
- Public authorities issuing permits for investments and procedures related to the LNG bunkering.
HEKLA activities in Port of Klaipėda demonstrate synergies amongst two sectors covered by CEF-Transport and Energy, namely through increasing the security of energy supply in Lithuania.
DEPLOYMENT OF LNG INFRASTRUCTURE AND POSSIBLE SYNERGIES

- LNG Bunkering Stations

- Existing and planned LNG bunkering stations within the Baltic Sea
DEPLOYMENT OF LNG INFRASTRUCTURE AND POSSIBLE SYNERGIES

Key Baltic Sea regions identified as areas for a possible development of a common LNG bunkering projects:

- Turku, Naantali, Pori, Rauma (FI)
- Gulf of Finland (FI&EE)
- Gulf of Riga and Ventspils (LV)
- Gdansk Bay & Klaipeda (PL&LT)
- Szczecin/Świnoujście (PL)
- Rostock & Lübeck (DE)
- Aarhus, Helsingborg, Trelleborg & Copenhagen-Malmö (SE&DK)
- Gothenburg (SE)
SUMMARY

- A dozen ports planning LNG infrastructure in BSR
- More mature projects with real infrastructure deployment
- More bunkering ports coming
- LNG synergies among industries are vital
- Challenges and opportunities remain
THANK YOU!

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