Developing the Go LNG Blue Corridor Strategy

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Outline

• Background to the Go LNG project and strategy
• Summary: why LNG for the Baltic Sea Region?
• Remaining and new challenges
• The Go LNG project
• The Go LNG Blue Corridor Aim
  – Safety and legal instruments
  – Education
  – LNG value chain
  – Infrastructure, country-specific needs
  – Suggestion of blue corridors
  – Future of LNG in BSR?
Some background about the region...

BSR is a maritime centre, economies connected to shipping

Baltic Sea ecologically unique – IMO SECA and soon NECA region

Region of high innovation capacity and technological achievements
Shipping in the Baltic Sea

Energy and resources

Climate

Legal framework (international and national)

LNG in BSR is a good option for the maritime industry
Why LNG for the BSR?

Complies with SECA and NECA regulations

Good safety records

Major business opportunities – “early birds”

Possible to blend with liquefied biogas
Challenges?

- Continue working on safety during transportation and when stored
- Harmonization of legislations and standards?
- Education of people working along the whole LNG value chain
- Promoting LNG outside of the maritime sphere – pressing the price
- How much LNG infrastructure is needed?
- Increase environmental performance (climate) and make sure the new infrastructure can be used for other future fuels
- Different countries have different interests in LNG
BSR Blue Corridor Strategy

... links transport flows, LNG infrastructure development, and business models into an **efficient LNG distribution strategy for the BSR**

... maps **development patterns** of LNG-related activities and capabilities

**Online:** Toolbox with **regulations and guidelines**
LNG **bunkering map**

*Discuss how challenges faced by the maritime industry in the BSR can be turned into opportunities*

*and how to ensure the sustainability of LNG infrastructure and economic growth in the BSR coastal communities*
Challenge 1 & 2 – safety and legal instruments

- List of important international legislative instruments and standards (including road and rail) – *also online*

- List of national instruments and administrations and agencies in charge of safety and permissions (including road and rail) – *also online*

- Discuss potential of harmonization of standards
Most important driving forces...

- International convention for the prevention of pollution from ships (MARPOL) – Annex VI SECA (BSR 2015) and NECA (BSR 2021)

- EU directive on the deployment of alternative fuels infrastructure, 2014/94/EU

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<td>LNG for heavy-duty vehicles</td>
<td>Appropriate number of points along the TEN-T core network</td>
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Challenge 3 - education

Mapping of:
- higher education universities and institutes
- training and capacity building

To be used when forming another major output of the Go LNG project:

The Go LNG BSR Competence Centre
Challenge 4 – promoting LNG

Widening the LNG VALUE CHAIN → sharing the costs and having more than one user

- Visualize the existing LNG value chain
- Describes the possibility for a wider value chain:
  - incorporating other modalities and industries
  - incorporating biogas into the gas grids
Main LNG players per country

bunkering / storage / distribution / end-user
   technologies / shipbuilding and repair /
   classification / consultancies – economic,
   environmental, risk / safety and security /
associations and organizations / LNG in the industry
Challenge 5-7 – infrastructure, environment, country needs

- Mapping LNG infrastructure – both fixed and other

- National strategies and specific needs

- Link national strategies with the value chain and available and planned infrastructure
LNG liquefaction and export terminal
Liquefaction plant (B = biogas)
Planned: liquefaction and export terminal
Planned: liquefaction plant (B = biogas)

LNG import terminal
Small scale LNG terminal
Planned: small scale LNG terminal
Small scale LNG bunkering facility
Planned: small scale LNG bunkering facility (2025 = EU Core Ports Network)

Regasification plant

LNG bunkering stations
ROAD

EU transport corridors that include the BSR region

Major heavy industries that use LNG as main energy source

Potential industries using LNG
EU transport corridors that include the BSR region.
List of other LNG infrastructure

Country wise:

- LNG vessels
- LNG trucks
- LNG in rail
LNG strategies of BSR countries differ

Denmark – EU directive

Germany – EU directive

Lithuania – EU directive, EU LNG strategy, energy security/independence

Norway – export (gas, technology and knowledge), LBG

Poland – EU directive, energy security/independence from Russia

Sweden - EU directive, industry needs (stepping stone), fossil-free domestic transport sector 2030
Future Blue Corridors?

- Point out hubs – are there enough around the BSR?

Distances

- Intermodal possibilities
  (350 km by road with LNG)

- Where are the natural gas pipelines?

- Where is heavy industry that could use LNG?

- Green corridors?
  (where is there biogas in the pipes?)

- Most economic routes?
Existing terminals

Existing and planned terminals

$r = 350$ km
Future of LNG in the BSR?

How long will LNG be the best available option (climate perspective?)

How can we reassure the sustainability of built and planned infrastructure?

LBG?

Batteries?
BSR BLUE CORRIDOR STRATEGY

LNG infrastructure development and mobilization the critical mass of technology, business partnerships, and regulative implement LNG powered transport networks in BALTIC SEA REGION.

Interreg
Baltic Sea Region

EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND