BLUE CORRIDOR STRATEGY FOR THE BALTIC SEA REGION

LNG Value Chain Conference
GASNETZ HAMBURG
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Asst. Prof. Lawrence Henesey

School of Computing
Blekinge Institute of Technology, www.bth.se
Biblioteksgatan 4, Karlshamn, Sweden
Bringing LNG out of the “Dark Side”

Fear is the path to the dark side. Fear leads to anger. Anger leads to hate. Hate leads to... suffering

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…Or attend a GO LNG meeting to see how misinformed people are?
SCOPE

18 Partners - 50 Associated organizations – 400+ Contacts - 3 year project (04/19)
Project content structure

- BSR Blue corridor strategy
- Integrated value chain study
- LNG fuel distribution strategy
- LNG Standard and regulation toolbox
- LNG shipping index
- LBG business concept

- BSR LNG Business Cluster
  - Functioning business network
  - International conference
  - Study visits
  - B To B meetings
  - Business plans and pilot projects

- BSR LNG competence center
  - Training programs
  - Training and research infrastructure
  - Service package
  - Network of training institutions

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LNG as A Blue & Green Business Opportunity

- Building critical mass for LNG
- Secure energy supply
- Ensure competition
- Blue & green growth and innovation
Theory based and practice related research have been applied and built upon ...

Qualitative expert interviews

MarTech LNG

Marine Competence, Technology and Knowledge Transfer for LNG in the South Baltic Sea Region

INTERREG IV A South Baltic Program

EU Clean Fuel Strategy

Surveys

Go LNG

LNG Value Chain for Clean Shipping, Green Ports and Blue Growth in Baltic Sea Region

INTERREG V B Baltic Sea Region Program

EU Directive on Deployment of Alternative Fuel Infrastructure

Practical findings

Primary empirical data sources were gained in form of:

- Evidence-based observations (here: case studies),
- Empirical data from quantitative surveys and qualitative expert interviews
- Observations gained from project activities

Findings have been validated & verified by the project target groups:

- Policy makers
- Ports’ & terminals’ operators
- International associations & corporations
- Shipping companies & ship building yards
- Academic & research institutions
- Regional industries

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Strategic ecosystem approach for macro-regional and cross-sectoral LNG value chain integration

- LNG knowledge basis & skills development
  - Education & Training
  - Research tools & infrastructure
  - Accessibility to knowledge & skills
  - Cross-sectorial and multidisciplinary capacity building
  - Organisational culture & learning

- Availability of LNG technology & resources
  - Cross-industrial LNG applications
  - Macro-regional infrastructure development
  - Shared technology & infrastructure
  - Digitalisation & advanced IT toolkits

- Macro-regional governance
  - Strategic future foresight
  - Harmonisation of regions' framework conditions
  - Sustainability compliance
  - Social responsibility

- Access to finances & LNG infrastructure funding schemes
  - Co-funding & crowd funding opportunities
  - Shared ownership and joint projects
  - Open innovation
  - Cross-sectorial collaboration and internationalisation

Source: Gerlitz, 2017
WWW.GO LNG. EU
The Blue Corridor Strategy that is defined in this report provides a road map for promoting LNG use as a fuel for transport and energy, linking LNG infrastructure development, transport flows, business models, and government policies into one cohesive and efficient LNG infrastructure development plan, which could lead to stronger “Blue transport corridors” in the BSR.
Executive Summary

LNG stakeholders will meet onboard Fjord Line’s LNG powered ferry M/S Stavangerfjord. Bringing together businesses and organizations, this will be an ideal platform to get the latest news on LNG projects and become a part of the current LNG market.

On 10-12 April, Interreg Baltic Sea Region is hosting an event about LNG development, to review LNG as sustainable and reliable energy solution and part of the Go LNG project that has brought together 18 partners from Denmark, Finland, Lithuania, Latvia, Sweden, and Estonia to work on LNG solutions for the Baltic Sea region.

The event features presentations from representatives of the delegations of the international companies Bureau Veritas Marine & Offshore, Kusan Crispin, Nauticor, and Sørensen & Partner, as well as research institutions, such as World Maritime University, established by the International Maritime Organisation (IMO), and Maritime University of Denmark. The presentations will be complemented by the reports and conclusions of their presentations.

Formal sessions will be complemented by informal matchmaking meetings, possibility to experience the bunkering of M/S Stavangerfjord and guided tour “LNG from the Engine room to the Bridge” – the opportunity to meet and exchange ideas with other attendees were given meaningful time and outstanding networking opportunities.

Organisers of the upcoming conference highlight that new investments are required worldwide to meet the growing LNG demand: “It is time for the Baltic Sea Region LNG Cluster companies and businesses to demonstrate their vast knowledge, cutting edge technologies and newest innovations to the world”. The global demand for LNG is expected to increase 4-5% per year between 2015 and 2030. Most of the future LNG growth is anticipated to be created by further floating storage regasification units (FSRUs), the declining domestic gas production, small scale LNG and the transport sector.

Registration

Upcoming Events

Helpful Links

Part-Financed By

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Blue Corridor Strategy

The aim of the Strategy is to establish strategic approach of LNG infrastructure development and mobilize the critical mass of technology, business partnerships, and regulative authorities to implement LNG powered transport networks in BSR.

We will provide a model on how LNG infrastructure should be deployed in order to establish LNG powered transport corridors for Maritime; Road; Rail; Port equipment.
BSR Blue corridor strategy will provide the following content:

1. LNG Stakeholder analysis: policies and regulations; policy makers; industry-value chain.
2. LNG as a fuel for intermodal transport means- economic and environmental benefits, LBG perspective.
3. Technological standards and regulations to apply LNG as a fuel/market harmonization analysis
4. Technological solutions and business models for LNG distribution in BSR
5. Intermodal approach to LNG as a fuel transport networks, cargo flow and environmental impact analysis from LNG as a fuel perspective. Blue corridor concept
6. LNG infrastructure development plan for BSR in order to enable Blue corridors in the region

The purpose of the strategy is to provide the strategic approach towards LNG infrastructure development in BSR. Strategy will provide a concept of LNG use as a fuel for transport linking LNG infrastructure development, transport flows, business models and policies in to the efficient structure to enable Blue corridors in BSR

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Existing LNG infrastructure

Heine, N. LNG fuel distribution strategy for the BSR v5. 2018

WWW.GOLNG.EU
Other LNG infrastructure

- LNG infrastructure for heavy duty road vehicles

Heine, N. LNG fuel distribution strategy for the BSR v5. 2018

WWW.GOLNG.EU
Factors influencing the success of LNG in the BSR.

- Government Funding: 8%
- Cost: 7%
- Environmental Impact: 9%
- Demand: 12%
- Geographic Location: 12%
- Infrastructure Capability: 11%
- Intermodal Connectors: 11%
- Congestion: 9%
- Financing: 8%
- Economic Development: 7%
- Labour: 4%
- Culture: 2%
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<tr>
<th><strong>STRENGTHS</strong></th>
<th><strong>WEAKNESSES</strong></th>
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<tbody>
<tr>
<td>✓ Comply with EU regulations</td>
<td>✓ Differences (geographical, socio economic etc) between BSR countries</td>
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<td>✓ Gas characteristics: large quantities available, competitive costs etc.</td>
<td>✓ High capital costs</td>
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<td>✓ Less polluting than petroleum, eco friendly</td>
<td>✓ Needed implementation of joint actions</td>
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<td>✓ Greater energy independence for BSR countries</td>
<td>✓ Public consciousness on safety and environmental risks</td>
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<td>✓ Important Role in BSR Energy Mix</td>
<td>✓ Oversupply risk due to total size of global LNG small market</td>
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<td>✓ Strong gas demand and supply growth in the BSR countries</td>
<td>✓</td>
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<td>✓ Best practices on LNG in the BSR (Norway, Sweden etc.)</td>
<td>✓</td>
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<tr>
<td>✓ Increasing of the liquefaction and regasification capacity of the LNG markets in the Baltic Sea countries</td>
<td>✓</td>
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<tr>
<td>✓ Good scientific knowledge in the BSR countries</td>
<td>✓</td>
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<tr>
<td>✓ Accomplished safety record along supply chain</td>
<td>✓</td>
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<td>✓ Viable in different areas not reached by pipeline (for example Norwegian fjords)</td>
<td>✓</td>
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<td>✓ Regas/storage sites planned to increase the supply on BSR market</td>
<td>✓</td>
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<td>✓ Forescast Subisies and/or Tax cut in the BSR</td>
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<tr>
<th><strong>OPPORTUNITIES</strong></th>
<th><strong>THREATS</strong></th>
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<td>✓ Stricter regulations come in place</td>
<td>✓ Uncertainty over gas price, unsure about the market situation</td>
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<td>✓ More jobs for the people living in the area</td>
<td>✓ Security aspects: terrorism, cyber security attacks etc.</td>
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<td>✓ Improving LNG education in BSR countries to increase awareness and future innovations within the area: skilled personnel will be able to sustain rapid growth</td>
<td>✓ Accidents: increasing on public perception of LNG safety</td>
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<td>✓ Economic development in the area</td>
<td>✓ The development of alternative technologies</td>
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<td>✓ Sharing risk and reducing the risk level</td>
<td>✓</td>
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<td>✓ Good conditions for new competitive LNG cluster development</td>
<td>✓</td>
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<td>✓ Attraction element of human, industrial and financial resources to be allocated to technical innovations</td>
<td>✓</td>
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<td>✓ Supply in new markets</td>
<td>✓</td>
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<tr>
<td>✓ Implementation of economies of scale</td>
<td>✓</td>
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<tr>
<td>✓ Improving operating, procurement and contracting procedures</td>
<td>✓</td>
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<tr>
<td>✓ Increasing price competitiveness</td>
<td>✓</td>
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Examples of Blue Corridors

LNG coverage in the BSR using existing facilities, 30 August 2017

LNG coverage in the BSR using planned facilities, 30 August 2017
Infrastructure Developments

- Klaipeda FSRU Independence LNG terminal

- Świnoujście LNG terminal
Future Blue Corridors

Map adapted from: Heine, N. LNG fuel distribution strategy for the BSR v5. 2018

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• LNG is a necessity for the BSR in meeting policies on alternative fuel deployment and emissions regulation.

• Minimum infrastructure requirements are largely met by existing infrastructure.

• Incentive schemes such as Clean Shipping Index or the Norwegian NOx fund are expected to be useful in assisting the development of LNG in the BSR.

• The BSR is well placed in terms of LNG business development.

• Outlook for LNG in the BSR is promising until 2040.
QUESTIONS?
Thank you

Dr. Lawrence Henesey
Asst. Professor Faculty of Computing
Blekinge Institute of Technology
Biblioteksgatan 4
Karlshamn, Sweden S-37424

Office / Mobile Telephone: +46 454 385902 / +46 706 009809
Email: lhe@bth.se
Homepage: http://www.bth.se/faculty/lhe/

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