LNG for Shipping - Results and Recommendations to Stakeholders

European Maritime Day 2012

Workshop
Tuesday 22 May 2012
10:00 - 11:30
Eriksberg, Gothenburg
Today there is a global interest to introduce LNG, liquefied natural gas, as fuel for shipping. Upcoming regulations on emissions in the North Sea and Baltic Sea require efficient and sustainable solutions. LNG is now proven technology and has the potential to combine an attractive environmental performance with a competitive cost level. Several EU projects are studying different aspects of introducing LNG for shipping.

This workshop will discuss four interesting topics, highly relevant to many stakeholders.

Location:
Room 9, East Indian Company

Programme 10:00-11:30

Environmental and health aspects
Jörg Strössler, Baltic Energy Forum
Questions

Risk and safety aspects
Rikard Olsson / Henning Pewe, Germanischer Lloyd
Questions

Competence and education
Jacqueline Widström, Swedish Marine Technology Forum
Questions

Financial and economic instruments
Mogens Schrøder Bech, Danish Maritime Authority
Questions

Open discussion
Moderator: Johan Algell
Swedish Marine Technology Forum
Questions
This workshop is presented by the following projects

**CLEAN BALTIC SEA SHIPPING – CLEANSHIP**
Lead partner: Port of Trelleborg, SWEDEN; Baltic Energy Forum, GERMANY.
Participants: 20 formal partners.
Project website: www.clean-baltic-sea-shipping.eu
Time period: 2010-2013
EU support: Baltic Sea Region Programme 2007-2013
Goals: Reduce ship borne air pollution in the Baltic Sea in general and in ports and port cities of the Baltic Sea in particular. The project will result in solutions possible to apply directly in order to obtain less polluting shipping in the Baltic Sea.
Topics/Activities: LNG for shipping, shore-side electricity, Environmental Port Index, sewage reception.
LNG deliverables: Bio-LNG logistics from biogas plant to ships (by Port of Trelleborg), small-scale LNG infrastructure to ships from large LNG import terminal (by Port of Klaipeda), ship gas supply from local gas grid (by AIDA Cruises), LNG supply solutions for large cruise ships and ferries (by Port of Rostock).

**MARKIS – MARITIME COMPETENCE AND INNOVATION SKAGERRAK & Kattegat**
Lead partner: Region Västra Götaland, SWEDEN.
Participants: 16 partners.
Project website: www.markis.eu
Time period: 2010-2013
EU support: Öresund-Kattegat-Skagerrak Programme (INTERREG IVA).
Goals: The vision is to establish a maritime region with no harmful emissions to air and water from shipping and globally competitive maritime clusters. The project will support innovative solutions and competence building to reduce emissions and create new business opportunities for the Scandinavian maritime cluster.
Topics/Activities: Alternative marine fuels, cleaning technology, lightweight design, energy efficiency, etc.
LNG deliverables: Analysis of competence/educational needs with respect to the use and handling of LNG as ship fuel. The analysis will support the development of educational courses and programmes for different LNG stakeholders.

**CLEAN NORTH SEA SHIPPING (CNSS)**
Lead partner: Hordaland County Council, NORWAY.
Participants: 18 beneficiaries.
Project website: www.cnss.no
Time period: 2010-2013
EU support: North Sea Region Programme (INTERREG IVB).
Goals: Improve the environmental and health situation caused by air pollution and greenhouse gases from shipping along the North Sea coast and within North Sea ports.
Topics/Activities: Clean shipping technology survey including study of available technologies plus showcases on LNG and onshore power supply. Emission modelling and scenario development. Policy & Strategy Development including the development of joint recommendations for a Clean Shipping Strategy.
LNG deliverables: Definition of LNG supply chain, bunkering procedures, regulatory framework, safety issues, environmental impact, cost-benefit analysis, market and trend analysis, stakeholder demands. The results will be presented as a showcase.

**NORTH EUROPEAN LNG INFRASTRUCTURE PROJECT**
Lead partner: Danish Maritime Authority, DENMARK.
Participants: ÅF and SSPA (consultants), 14 in-kind contributors.
Project website: www.dma.dk/themes/LNGInfraStructureProject/
Time period: 2010-2013
EU support: Trans-European Transport Network (TEN-T) programme, Motorways of the Seas (MoS).
Goals: The project consists of an infrastructure part and a full scale pilot project. The aim of the infrastructure part is to set up recommendations on the establishment of a marine LNG infrastructure encompassing a “hard one” on filling stations and a “soft one” on regulations and industry standards, etc. The geographical scope is the Baltic Sea, the North Sea and the English Channel. The aim of the full scale pilot project is to convert two new cruise ferries to be fuelled by LNG and get operational experience in international Short Sea Shipping.
Topics/Activities: Feasibility study for an LNG filling station infrastructure. Deployment of LNG as ship fuel. The analysis will support the development of educational courses and programmes for different LNG stakeholders.
LNG deliverables: A feasibility report on an LNG infrastructure with recommendations and operational experience from use of LNG as fuel in international Short Sea Shipping. A baseline report and a draft feasibility report with recommendations are available at the DMA website. The final results of the feasibility study will be ready by May 2012.
Special topics of the workshop

Environmental and health aspects of LNG as ship fuel

Sulfur and particles do not belong in the lung; nitrogen does not belong in the water. Sulfur oxides and particulate matter create severe illness up to cancer in the respiratory system. Nitrogen oxides are considered one of the main sources of eutrophication of the Baltic Sea. According to HELCOM, shipping is with about 16% one of the largest single traceable emission sources of Nitrogen oxides in the Baltic Sea. The project Clean Baltic Sea Shipping intends to contribute to an improved environment in the Baltic Sea area by, among other measures, supporting the supply of cleaner ship fuels such as liquefied gas (LNG). LNG can offer a very large reduction of emissions compared to conventional shipping fuels.

Introduction by:
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Risk and safety aspects of LNG for shipping infrastructure

General regulations concerning the use of LNG as ship fuel are still under development. Today, there are interim guidelines addressing safety concepts for using gas as ship fuel, covering aspects such as ship arrangement, fire safety, engines, electrical systems, etc. Under the Clean North Sea Shipping project, Germanischer Lloyd has investigated LNG bunkering issues and carried out a hazard identification study (HAZID) to identify the main risks which can occur during the bunkering from a LNG bunker vessel to a receiving vessel. A number of recommendations for technical and procedural measures have been identified.

Introduction by:
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Competence and education for handling LNG as ship fuel

As gas propulsion becomes a more interesting alternative in shipping, the need for education and training is increasing to ensure safe and competent handling and decision-making concerning the use of LNG as ship fuel. Within the Markis project, the Swedish Marine Technology Forum is now developing together with educational institutions a structure for specialized LNG training courses for different categories of users.

Introduction by:
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Financial and economic instruments for introducing LNG for shipping

In order to develop an infrastructure, the supply and demand from stakeholders must be materialized. Developers of the supply infrastructure want to be sure that there will be enough demand, a demand that users can only fully show if adequate supply exists. The North European LNG Infrastructure Project by the Danish Maritime Authority has its focus on the LNG supply chain, spanning from LNG import terminals in Europe to the use of LNG in ships. The financial and economic conditions for investments in the LNG marine infrastructure have been analyzed as part of this study.

Introduction by:
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Today there is a global interest to introduce LNG, liquified natural gas, as fuel for shipping. Upcoming regulations on emissions in the North Sea and Baltic Sea require efficient and sustainable solutions.

Eriksberg, Gothenburg

Organisers of this workshop:

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