MAGALOG
LNG a clean fuel for ships

We believe that in 5-10 years time the majority of ships contracted for short sea trades will use LNG as a fuel.

Comment at the MAGALOG conference
at Bergen, Norway, on 17th January 2007

In response to increasing demand from customers, authorities and the public:

- SECA (Sulphur Emission Control Area) in the Baltic Sea (2006) and the North Sea (2007) permit a maximum content of 1.5% sulphur in ships' fuels. Other areas, such as the Mediterranean, are set to follow.
- Norway charges a NOX levy of 15Kr/kg. The levy is scheduled to increase.
- Swedish ports such as Stockholm and Gothenburg charge harbour dues by environmental performance.
- Emission cleaning technologies need to meet future environmental demand.
- Shipping and aviation will have to contribute to slowing the pace of climate change beyond 2012.

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Project Partners

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HOG
HORDALAND OLJE & GASS

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Świnoujście

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http://www.swinoujscie.pl

STADTWERKE LÜBECK

Stadtwerke Lübeck GmbH, Lübeck, Germany
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A new era in clean shipping

MAGALOG
LNG a clean fuel for ships

Introducing Liquid Natural Gas as a clean fuel for ships

http://www.eu-magalog.eu

MAGALOG is financially supported by the European Union under the programme

Intelligent Energy Europe

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Liquid Natural Gas (LNG) as a fuel?

Internal combustion engines have been operated on gas right from their early beginnings. Even today such engines still need carburettors or injectors to gasify fuel.

Cars can also be powered by Auto Gas or by Compressed Natural Gas (CNG). LPG consists of Propane and/or Butane, and CNG of Methane.

Both gases are known as a „green fuels" because they reduce the CO2 emission load by 20-25%. Both gases are stored at high pressure to reduce transport and storage volumes.

Natural gas can also be reduced in volume by a factor of about 600 by cooling it down to -163°C at atmospheric pressure. It is then named LNG or Liquefied Natural Gas. LNG is not inflammable when in a liquid state. The liquefaction process removes impurities such as water, dust and heavy hydrocarbons that may Increase the environmental load. LNG is therefore, much cleaner than normal natural gas.

The shipping industry has known LNG for decades as a bulk commodity transported by large LNG-tankers around the world. Until recently, only a few LNG-tankers used to burn boil-off gas for fuel and combustion purposes.

For some years now a number of forwardlooking companies in Norway have been paving the way by pioneering the use of LNG as a fuel for ships have been engaged in regular coastal or short sea shipping services. Engine manufacturers are prepared for the challenge of LNG fuelled engines. LNG engines and dual fuel engines are on the market.

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LNG fuelled ships in service

2 „Viking Energy" model vessels

2 „Viking Adavant" model vessels

5 „Bergensfjord" model vessels

LNG Ro-Ro vessels on the drawing board

Photos courtesy of Eidesvik AS, Bømlo, Norway, Fjord1 Nordvestlandske, Florø, Norway, Marintek, Trondheim, Norway

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Marine Fuel Gas Logistics

A new fuel – the chicken and egg problem? Therefore, it is MAGALOG's objective to create a small scale LNG supply network in the Baltic Sea Region and to promote the development of LNG as a clean fuel for ships.

The first small-scale LNG terminals for shipping will be established in MAGALOG's twin city Lübeck in Germany. Investment research will be conducted in Świnoujście, Poland, and three other Baltic Sea Region port cities.

Benefits of LNG as a fuel for ships

- 100% less particle emissions
- 100% less sulphur oxide emissions
- 80% less nitrogen oxide emissions
- 25% less greenhouse gas emissions
- No particle filters
- No NOx reduction technology required