



How GL supports LNG as future clean fuel for shipping

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Overview on current GL activities on LNG as ship fuel

Concepts for LNG-fuelled ships

- 13.000 TEU container vessel (IHIMU)
- mobile LNG containers (IPP)
- passenger ship applications (GasPax)

Vessels using LNG

- product tanker Bit Viking
- future OSV for Finnish Ministry of Interior



LNG supply and bunkering

- Supply chain options
- Navigational safety for bunker vessel (CNSS)
- Regulatory framework study (BMVBS)
- Technical requirements (BunGas)

Cost benefit for LNG on container vessels

- joint study with MAN
- extension to container feeder vessels



Approval in principle for LNG tank container system on IPP STREAM with 4200 TEU



In 2011, GL approved in principle the LNG supply system for the IPP CV STREAM with a fixed LNG tank with 1000 m3.

Additional approval in principle has now been performed for a LNG tank volume extension based on mobile tank containers delivering 1200 m3.

Mobile LNG tank containers are seen as technology suitable for short sea shipping and as range extender.



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LNG supply and bunkering in ports – safe operation



GL performed safety assessment for LNG bunker vessel operation in ports within EUfunded R&D project clean North Sea Shipping (CNSS).

- highest probability for collision during transit of bunker vessel
- collision of the laden bunker vessel may lead to large LNG spill with fire
- traffic guidance system and restricted bunkering areas as possible risk control

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Regulatory framework for LNG bunkering

GL performed study on behalf of German Ministry of Transport to develop draft safety guidance for ports.

GL performs study for EMSA on LNG bunkering.

GL contributes to ISO TC 67 work on LNG bunkering standards.







Cost and benefits of LNG as fuel for container feeders extension of joint GL-MAN joint study

Container feeder vessels are seen as early adopters of LNG as fuel.

A new study documents rapid payback for LNG technology

- when operating within ECAs
- with LNG expected to be delivered to the ship below MGO price levels



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Outlook for LNG as ship fuel

Technologies

- concepts and systems are available
 Regulatory framework
- IMO to continue working on IGF code
- local regulations for bunkering expected

Supply

- big suppliers will deliver
- price level near HFO expected
 Cost-benefit
- attractive payback for vessels in ECAs





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Thank you for your kind attention.

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