

Nr. 3 Standard Modular LNG System for Fishing and Shortsea Vessels

Background:

Liquefied natural gas (LNG) is seen as a future-oriented fuel for ships. The positioning of the tank on board must be considered in conjunction with the location of the engine, as this has a significant impact on the peripheral equipment of the system. Furthermore an appropriate LNG bunker infrastructure is not yet sufficiently available and LNG propulsion systems are simply too expensive for many shipping companies and ship owners.

Content:

One possibility for reducing the costs of LNG systems is the application of standardized components that can be installed modularly on board.

By matching the requirements of different ships, it is possible to develop a standardized configuration for the LNG propulsion systems. This was developed on the basis of existing components and on a modular basis in order to offer the necessary flexibility. The construction costs are drastically limited, modules can be produced in larger series and additionally the installation costs are reduced. On basis of a fleet analysis, six vessels were selected as representative for fishing, inland navigation and shortsea. Such standard modules, from which a complete system can be built, do not yet exist on the market. When determining the standard modules, the specific characteristics and the operational profile of the six representative ships were taken into account so that, in addition to optimum safety, a minimum loss of cargo capacity can be achieved.



Leadpartner:



Co-partner:



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Results:

A prototype (Standard Modular LNG System) was built with the following specifications*:

- Standard ISO steel frame dimension
- Double-walled vacuum insulated 20 ft LNG type C tank container, 10 bar g
- Docking station (evaporators, gas handling equipment)
- Glyco/water skid
- Bunkerconnections
- Designed according to IMO and classification rules and regulations: 20 ft UN T75 tank container 18 bar g
- Same safety and operational requirements as stationary fixed type C fuel tanks
- Fulfills rules and regulations for road, rail and sea transportation

*all details with reservation



This kind of standardized modular construction of an LNG system onboard is currently a novelty, which can make the use of LNG as fuel even more attractive and efficient.

Advantages:

- Cost reduction
- Bunkering can take place by replacing an empty tank container by a filled one
- Investment of the LNG-system can be split in the (flexible) tank container part and the fixed part of the LNG-system
- Tank container can be rented, which reduces the total investment

Partners:



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