Project Forward

The shipping market has always been subject to cyclical variations, a situation that is likely to continue in future. Probably the most significant challenge is not the condition of the market, but the need to adjust in order to meet the new trends which are imposed by the global environmental concerns.

By incorporating a range of innovative solutions, Project Forward will succeed in delivering a technically and financially feasible solution for meeting the new requirements, employing LNG as fuel. In the process, it will become the first truly deep-sea LNG-fuelled ship design applicable to various sizes of bulk carriers.

The new design brings a substantial discontinuity to traditional ship design and ship performance, positioning this new vessel concept as a winner in a highly competitive market.

Project Forward is the first practical and achievable design concept for an LNG-fuelled ocean-going bulk carrier. While other LNG-fuelled bulk carrier designs generally are for smaller ranges (short sea shipping) and fixed routes, Project Forward envisions a sailing range of 40 days.

The project brings LNG as fuel out of the ECA zones and into deep-sea trading, with refuelling of LNG necessary at major ports only. The LNG infrastructure required to serve Project Forward is developing, and local gas supply is increasing.

The design (by Deltamarin) is suitable for scaling for smaller and larger bulk carrier designs and may also serve as the basis for an LNG-powered tanker design.

Principal design criteria have created numerous technical challenges, as the ship is required to load a large volume of LNG (2,500 cu m), which corresponds to 40 days of autonomy in a type of a cargoship where the available space is limited.

The use of membrane-type tanks for the LNG containment system (designed by GTT), also is considered a novelty in this design, as this type of tank has been used rarely on previous LNG-fuelled ship designs.

The membrane system was selected to optimize the use of space for the higher volumes associated with deep-sea ranges and higher associated fuel volumes compared to diesel.

Another novel component is the use of a 4-stroke medium speed Wartsila engine featuring twin stage turbocharging with Power Take Off and Controllable Pitch Propeller, without auxiliary generator engines. Previous designs have favored high-pressure two-stroke engines which add operational complexity and significant extra capital expenditure. The use of a four-stroke engine makes the difference to the concept and supports its use on other ship types as well.

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Project Forward comprises a unique combination of factors that make it attractive to shipyards, including the experience of the participants in developing real-world LNG as fuel projects and long-standing contacts with Asian shipyards building conventional and LNG powered tonnage.

Approval in Principle by ABS is expected in the coming weeks, after which Arista will be able to pursue opportunities to select a shipyard partner.

Ends

This artist's rendering shows the Project Forward LNG-fuelled bulk carrier. (Image credit: Deltamarin. High resolution version available on request.)