



DSME GreenShip – 18,000 TEU Container Carrier

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As the industry developed, the scale of maritime transportation becomes bigger and bigger with the accordingly increased fuel consumption.

In every field of industry, “green” and “efficiency” are the most frequently referred two words nowadays.

Especially in the shipbuilding business, this new trend makes emission regulations more strict and the Vessels more efficient. The demand on the efficiency in the market can be easily described as “more cargo with less fuel”, and this simple phrase drives ship designers to be more innovative and aggressive.

Recently, IMO has adopted CO2 emission regulation as Annex VI to MARPOL with periodical tightening of allowable criteria. This is visible step forward to greener shipping as international legislation. Now that regulation has been introduced, technical improvement to more efficient Vessel is not just indoor innovation matter but obligatory matter to the Shipyards.

In response to the current market environment, DSME has been focused on the greener ship design named “Econology” which implies “Ecology”, “Economy” and “Technology”.

The target of DSME’s Econology is to reduce Vessel’s emission levels of NOx, SOx and CO2 upto 90%, 90% and 50%, respectively comparing with pre-EEDI ordinary design, until the year of 2020.

To achieve that target, DSME categorizes the Econology in five different aspects as Design, Device, Material, Energy and Operation. Most of them are already existing technology in the market without being integrated or applied in the real Vessel, some others are assistant technique to operation, and some of them are awaiting the market to be more matured.

Design aspect refers optimized hull form & propeller design, optimum main engine & power selection, enhanced hull structure, etc.

Device aspect refers propulsion aid devices such as Pre-Swirl stator, rudder bulb fin, air cavity system, and operating cost reduction aid equipments such as waste heat recovery system, shaft generator, and environment protection aid devices.

Material aspect refers non-corrosive material, HSE friendly painting system, advance anti-fouling paint, etc.

Energy aspect refers practical LNG fueled propulsion system and usage of renewable energy.

Finally operation aspect refers trim optimization, slow steaming, optimum weather routing, etc.

In the presentation, typical technical aspects of each of the category are introduced in more detail and demonstrate the effect of those technologies in the real projects.

Odin Kwon is today Director at Daewoo Shipbuilding & Marine Engineering (DSME). He was born in Korea in 1959 and studied Naval Architecture & Ocean Engineering at Seoul National University. After his graduation in 1982 he joined Daewoo Shipbuilding & Marine Engineering Co, Ltd in Okpo where he was appointed Director in 1986. He is heading the Basic Design Team in Seoul HQ.