



Ship Benchmarking

How does your ship benchmark on performance, cost and environment?

Purpose

We benchmark your ships, designs and projects on technical aspects, energy efficiency and environmental performance in a transport system setting.

Benefits

DNV offers services to assist you in identifying the strengths and weaknesses of your vessel. Your chosen design may be benchmarked against any given set of reference ships on:

- Ship particulars and performance data
- Transport capacity
- Total operational fuel efficiency
- Environmental performance

Fuel- and environmental efficiency is calculated in a transport system context using either standard Operating Profiles or profiles matching the (intended) trade of the vessel.

The IMO Energy Efficiency Design Index (EEDI) for new ships leads to increased attention to balancing speed and energy consumption with ship capacity. DNV may also provide you with the EEDI for your design based on actual or indicated values.

Owners seeking to be market leaders and promote an environmental profile need to heighten their awareness of ship design performance, environmental performance and carbon footprint. DNV's expertise will help you identify potential under performance and improvement opportunities.

Our approach

Vital for any statistical calculation or benchmarking is valid background material. Co-operating with your company on technical and operational data for your ship, DNV can benchmark it against any IMO-registered ship data. Our teams consisting of naval architects and logistics experts will provide you with the benchmarks reflecting the capacity performance of your ship concept and the analyses to help you improve the performance even more.

Design benchmarking

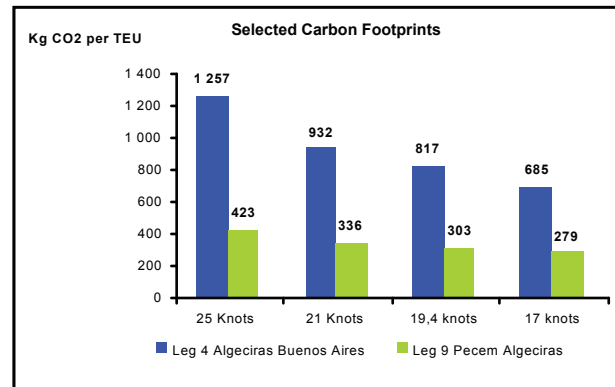
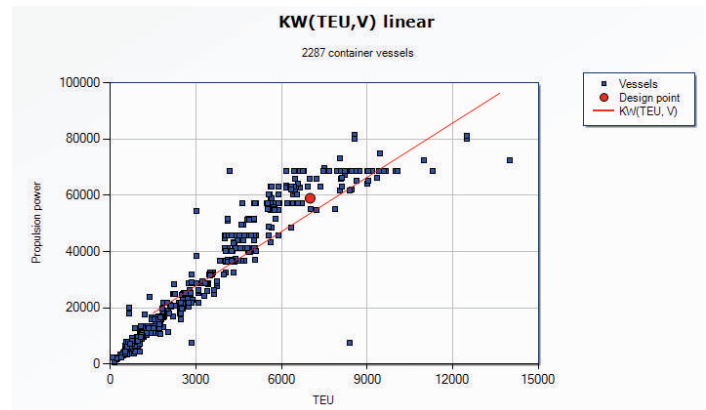
Benchmarking of a design is performed with the customer needs in mind. The discovery and presentation of technical design parameters that indicate substantial deviations from reference vessels will be emphasised and the causes explored.

Your design is benchmarked against comparable ship designs found in our databases covering the world fleet. Findings are compared, visualised, analysed and presented in a technical report.

Calculating IMO EEDI

Environmental awareness is increasing, and as a consequence, so is the need to demonstrate that vessels and operations are environmentally friendly.

We measure your CO₂ emissions in the perspective of your transport operation, both in terms of the EEDI and actual emissions per year or per transported unit.



Case: New containership design

When benchmarking possible designs for a future containership design, the following approach was adopted:

- For the design evaluation problem at hand, a representative trade route between the East-Coast South-America (ECSA) and Europe was selected
- An existing vessel was used to create a vessel design basis for further calculations and variations
- Available market data was used to estimate trade volumes on each leg on the trade route and to identify the trade imbalance between the northbound and southbound route.
- The weight of containers and the distribution between empty/full containers for the different legs of the trade was identified
- The designed model system (a, b) with the identified trade data (c, d) was used to find a variety of potential design parameters
- Two scenarios introduced based on different design speed of vessels
- Resulting performance data (output parameters) used to compare the different scenarios based on cost and emission

