

A typical design benchmarking study includes the following steps:

## ABS DESIGN BENCHMARKING

When starting a newbuild project, purchasing a second-hand vessel or upgrading an existing vessel, it is important for the shipowner to have an indication of the vessel's performance to ensure it will be fit for the intended operation.

The ABS Energy Efficiency team offers an initial design evaluation service where a given vessel is benchmarked against a pool of similar vessels utilizing public domain data such as IHS Fairplay (SeaWeb) and data from other public sources. Upon request from the client, ABS can provide a more detailed analysis of the vessel's performance using Computational Fluid Dynamics (CFD) simulations (ABS Hydrodynamic Evaluation).

This service is primarily directed towards commercial vessels such as container carriers, tanker vessels, bulk carriers, LNG carriers and RO-RO vessels.

The ABS defined Propulsion Performance Index (PPI) is defined as:

$$PPI = \frac{P}{(DWT * V_s)}$$

Where P is power, DWT is deadweight and  $V_s$  is ship speed at corresponding draft.

The ABS methodology is unique in the way each vessel's PPI is calculated at the same speed, and provides a clear picture of the vessel's performance for comparison purposes. The PPI is calculated for

### STEP 01

Review and discuss the vessel's design and intended operation with the client to understand possible hard points.

### STEP 02

Establish data for the relevant type and size of vessel.

### STEP 03

Validate the data extracted to isolate extreme outliers and erroneous data points.

### STEP 04

Prepare main characteristics and parameter trends overview.

### STEP 05

Prepare benchmarking analysis based on the ABS Propulsion Performance Index (PPI).

### STEP 06

Provide short presentation and report on the comparative study and benchmarking analysis results.



one speed/draft combination and if data are available, the PPI can be determined at multiple points over a vessel's operational profile.

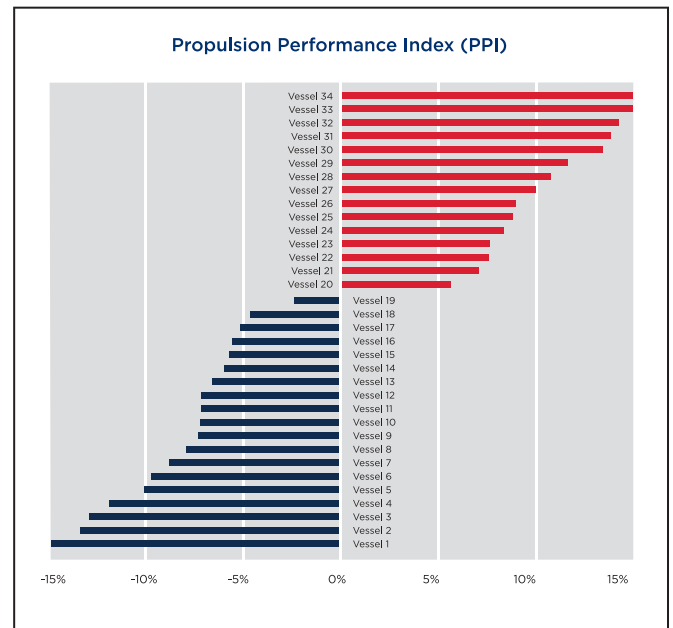
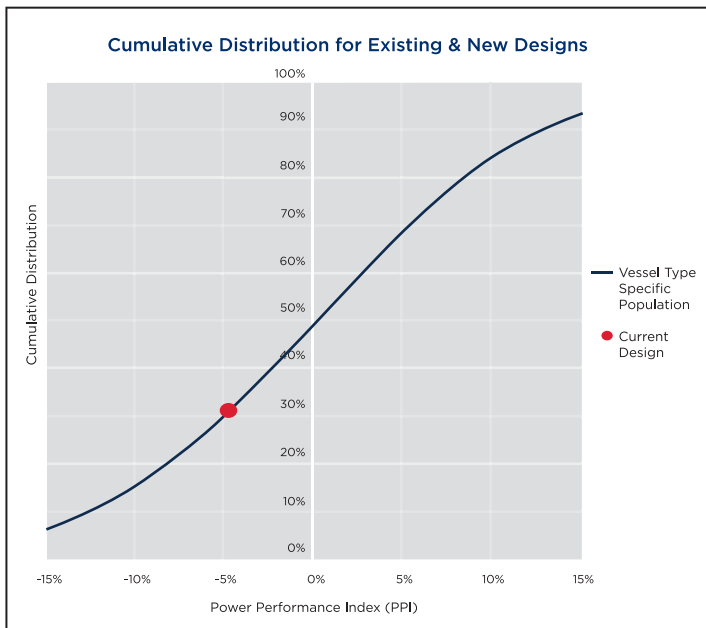
To benefit most from the design benchmarking study, it is important to engage ABS early in the design phase of a newbuild or retrofit project. At the early stages of newbuild or conversion projects there are usually less design restrictions and costs, related to any eventual design changes.

The ABS Design Benchmarking Service leverages ABS, knowledge of regulations, experience with many different types of vessel designs and the ABS mission to help maintain safe vessel operations with the need to quickly and fairly evaluate the best set of available solutions for a vessel or fleet.

The ABS Energy Efficiency team is multi-disciplinary, with extensive experience in ship hydrodynamics, numerical modeling, model testing,

full scale measurements, design, ship management and operations and regulatory compliance. Each service builds upon the ABS position as a leading provider of classification and regulatory compliance services, and seeks to further its mission of protecting life, property and the

environment. Leveraging extensive experience and knowledge enables ABS to provide detailed and in-depth recommendations supported by advanced tools to help owners and operators meet their operational and regulatory needs.



For additional information on ABS' Energy Efficiency services, please contact us at: [energyefficiency@eagle.org](mailto:energyefficiency@eagle.org)



#### WORLD HEADQUARTERS

16855 Northchase Drive | Houston, TX 77060 USA

P 1-281-877-5800 | F 1-281-877-5803

[ABS-WorldHQ@eagle.org](mailto:ABS-WorldHQ@eagle.org) | [www.eagle.org](http://www.eagle.org)

© 2016 American Bureau of Shipping. All rights reserved.