

**IMPROVING FUEL EFFICIENCY AND ENVIRONMENTAL
IMPACT OF YOUR SHIP OPERATIONS**

Ship Energy Surveys



**LESS FUEL >
LESS EMISSIONS >
LOWER OPERATION COST**

*A Specialised Marine Service, Carried
Worldwide by
Specialised Marine Engineers*



TecnoVeritas
Services of Engineering & Systems Technology Ltd (Europe)



Energy Management & Fuel Consumption Reduction

Reduction of fuel cost by increasing the efficiency of vessel systems

Fuel accounts typically between 35 and 65% of ship's total operational costs. In the present market dominated by increasing fuel prices and environment awareness the energy optimisation is playing a vital role on the nowadays market competition. Effective reduction of fuel consumption is possible by in-service energy consumption monitoring and through the adoption of adequate design stage solutions.

Vessel performance monitoring as a whole, vessel operational management, and analysis of the various vessels processes are used to identify energy optimisation opportunities.

The identification of energy saving opportunities results not only in a decrease in fuel costs and emissions but in a reduction of vessel systems downtime, both planned and unplanned maintenance, therefore contributing for and increased vessel availability.

How can TecnoVeritas help you?

TecnoVeritas is a ISO 9001 certified company in the area of energy, environment and marine engineering. **TecnoVeritas** is offering you more than 20 years experience in performance analysis and condition monitoring of propulsion and auxiliary machinery, and a vast experience and knowledge in exhaust emissions testing and ship trials on all types of ships.

TecnoVeritas , has been involved in research and development programmes on ship energy optimisation making available tech-

niques to access Key Performance Indicators that are used to optimise your fleet in terms of energy consumption.

TecnoVeritas surveyors work during a first phase (on board energy audit) in close cooperation with the ship crew during the, and with the ship management team during the second phase (implementation of energy saving measures).

In this way **TecnoVeritas** offer a range of ship energy services that can be customised accordingly to your needs.

In-service and energy optimisation

Techniques used during the Energy Audit include:

First phase-Holistic investigation encompassing technical and non technical aspects of ships operation, involving data acquisition and analysis combined with shipboard audit.

Second Phase-Identification of energy savings opportunities. The identification of this opportunities is accompanied by a technical and economical calculations, to access the investment return of each energy saving measure.

Third Phase-Production of a report with the found energy saving opportunities their investment and rate of return.

Once the energy saving measures proposed are approved by the management, an Energy Rationalisation Plan is produced. This plan will work as a reference document for the implementation of the accepted energy saving measures, as well as to monitor the energy savings achieved on a time basis.

Ship Energy Services

Energy Management & Fuel Consumption Reduction

Fleet energy management support

TecnoVeritas can also help you with fleet related fuel management, for example

TecnoVeritas can advise you in terms of renewable available fuels, alternative energy efficient technologies. etc.

Design Optimisation Advise

In case you are preparing for a new construction, **TecnoVeritas** can access during the design phase how energy efficient your ship and ship systems will be. A simulation of energy consumption profiles is also available.

TecnoVeritas can also carryout an energy performance assessment during commissioning trials to ensure that it complies with the specification.

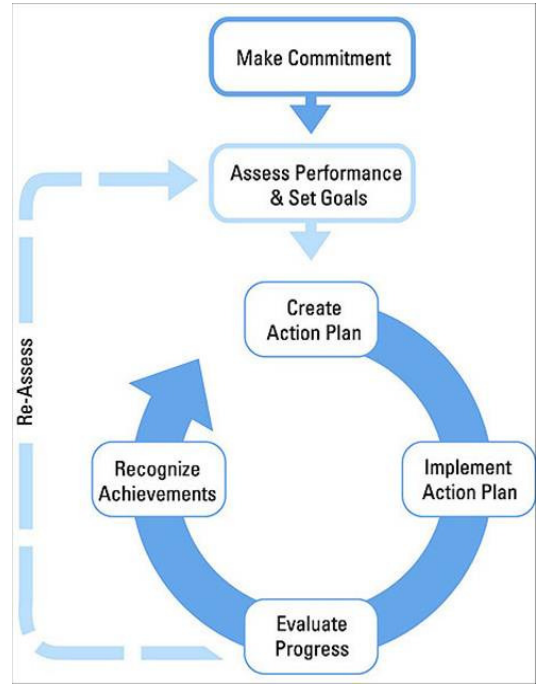
Alternative Technologies

TecnoVeritas as an extensive knowledge on renewable and alternative fuels and their environmental impacts. This knowledge can be made available to your organization

Qualifications

To meet the energy reduction goals,

TecnoVeritas employ licensed engineers who are Certified Energy Managers accredited by EU member states and recognised worldwide. Analysis of data and development of deliverables is carried out by **TecnoVeritas** using the most adequate analytical software particularly developed for ship energy management.



Energy Optimisation Cycle

TecnoVeritas is also making available to ship owners and shipyards, ship energy assessments at design stage, therefore warranting that the vessel will be optimised in terms of energy consumption, emissions and operation costs. **TecnoVeritas** expertise in **Natural Gas** technology as a fuel for marine engines allows your company to have a reliable partner for marine engine conversions to dual fuel or to access marine **Natural Gas** propulsion or auxiliary plants at an early design stage.

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