



## MARITIME

# ECO ASSISTANT 4

## An ECO Solution for improved energy efficiency

There is no better time than now to start reducing your fuel costs. Backed by support from DNV GL's Maritime Advisory, you can reduce consumption by leveraging smart, award-winning trim optimisation software.

### Fuel consumption transparency is a challenge

With bunker fuel costs anticipated to continue rising, the pressure to control and reduce fuel consumption is stronger today than ever before. Optimal trim is one of the most significant levers for fuel efficiency, improving performance by up to 6 percent. However, valid consumption benchmarks are needed to substantiate the performance assessment for a given ship under all sailing conditions. Therefore, the key challenge is knowing the fuel consumption and optimal trim for any possible operating condition, based on factors such as speed, draft, trim angle and water depth.

### Award-winning ECO Assistant is the answer

**Lloyd's List Awards**  
Asia | 2012



**Winner**  
Environment Award

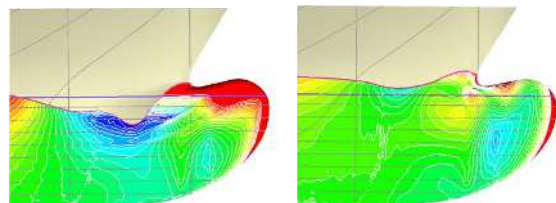
ECO Assistant combines trim optimisation and the indication of fuel consumption in one easy-to-use, stand-alone software tool applicable

to all types of ships. The ship's individualised system provides optimum trim along with benchmark consumption, based on as few as two operational parameters. Without any modifica-

tions to your ship and independent of maintenance, the full benefit of fuel and carbon emission savings can be reaped from day one.

### Cutting-edge technology ensuring effectiveness

ECO Assistant leverages a comprehensive database of ship-specific resistance and power-demand data calculated for hundreds of different potential operating conditions. These data, generated using DNV GL's leading-edge RANSE Computational Fluid Dynamics (CFD) tools, ensure ECO Assistant's effectiveness, as confirmed in multiple sea trials and by in-service measurements.

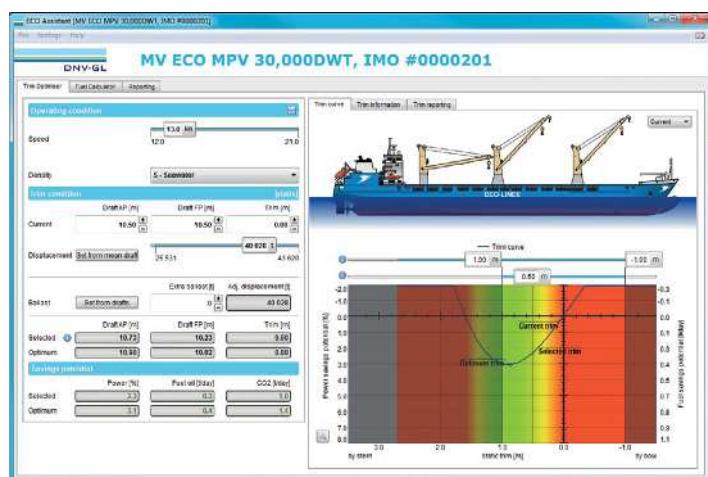


Inefficient trim compared to optimised trim from ECO Assistant

To address current users and specific market needs that come with progressing IMO regulations, such as the SEEMP, the new ECO Assistant not only covers all aspects of trim optimisation, it also advances fuel consumption benchmarking. To achieve this, ECO Assistant features five key functionalities:

### Trim Optimiser ensuring instant fuel savings

Immediately after installation, the Trim Optimiser provides optimum trim and also indicates the expected savings upon entering the ship's speed and drafts. Two unique features safeguard proper decision-making: For ships operating in shallow waters, which impact the trim recommendation, the water depth option can be selected. And, as changing ballast impacts fuel consumption, the Trim Optimiser quantifies consumption changes due to varying ballast.



Main user interface

### Fuel Calculator illustrating fuel consumption

Many ship owners and operators require figures for fuel consumption, for instance as a baseline for performance monitoring. With the Fuel Calculator, the user can retrieve the expected fuel consumption for a calm-water benchmark situation as well as corrected for specific service conditions. On demand, DNV GL experts can amend the display with a consumption curve based on data "as reported" on board.

### Report function documenting trim performance

After an investment in any energy-saving initiative, one expects to see fuel savings based on data from actual daily operation. Along with a reporting history and performance display, ECO Assistant features a one-page trim performance and achieved savings summary. At a single glance, the energy manager sees the quantified offset between sailed versus recommended optimum trim together with the bunker savings obtained. The integration of trim as a top measure into your SEEMP is thereby enabled.

### E-learning providing fast and easy crew qualification

Fuel savings can only be achieved if the ship's crew actually adopts all the saving measures. Taking into account the diversity of users in international shipping, DNV GL has developed an easy-to-use e-learning tool. It allows new users to familiarise themselves with ECO Assistant - anytime, anywhere, at their own speed, whether for an initial introduction or for refreshing knowledge about a certain feature.

### Interfacing capability allowing seamless integration

The stand-alone nature of ECO Assistant makes it independent of a ship's IT infrastructure, yet it can be interfaced with any loading computer and cargo planning system. Typical applications range from automatic input data transfer between ECO Assistant and a loading computer to fuel-efficient cargo planning that considers optimal trim without interrupting established cargo planning processes.

### The benefits are clear

- Optimum trim and fuel consumption indication for any operating condition resulting in real savings
- SEEMP-ready monitoring and reporting of trim performance
- Interfacing capability with all loading computer suppliers
- Quick familiarisation with the program thanks to easy e-learning
- Proven and effective state-of-the-art tool with more than 700 installations on board and ashore

### SAVING FUEL WITH ECO ASSISTANT

Take, for example, a container vessel operated under the following conditions:

- Capacity: 7,500 TEU
- Days at sea: 250
- Sailing regime: Slow steaming
- HFO price: USD 600 per ton

A 5 percent reduction in required power, made possible by ECO Assistant, saves the ship's owner, manager or operator more than USD 550,000 per year on fuel. Additionally, CO<sub>2</sub> emissions are reduced by 3,000 tons per year and ship.

### Greener shipping from the experts

DNV GL's Maritime Advisory is specialised in impartial maritime consultancy and advanced engineering services, with a focus on enhancing energy efficiency both in design and operation. Our experienced staff has leading technological expertise across all ship segments and helps ship owners, operators, yards and designers globally to improve fuel efficiency, minimise environmental impact and increase profitability. We are the largest Maritime Advisory company with a global presence: more than 300 experts support the industry in the key challenges of today.