Reducing fuel costs is one of the most effective actions you can take to improve your bottom line. Backed by DNV GL’s Maritime Advisory, you can benefit from the lowest possible fuel consumption “built into” an optimum hull design.

Building the most fuel-efficient vessel is a challenge
Hull design is the most significant factor affecting overall fuel efficiency – for any type and size of vessel. In today’s highly competitive shipping market with stricter regulatory requirements and high fuel prices, a best-in-class fuel-efficient vessel is the key ingredient to ensure your business performs among the best. Equally, a proven fuel-efficient ship is a commitment to the protection of our global environment through a reduced carbon footprint.

ECO Lines is the logical answer
With ECO Lines, you achieve the best possible design suiting the individual operational profile of your vessel – perfectly matching your needs. ECO Lines provides a truly optimised hull form that typically delivers several percentage points of improvement in fuel efficiency and delivers maximum value for your investment. Consequently, you are able to maximise the earnings of your ship and strengthen your competitive advantage.

DNV GL’s experts work hand-in-hand with your technical staff, your design team and/or the shipyard to ensure that all constraints are reflected in the optimised design. We ensure that you understand the impact of the different design options, and we support the technical transfer of the analysis results. Furthermore, you participate in a process that gives unique insights and total transparency.

Leading technology ensures best results
The unique approach developed by DNV GL’s team goes beyond standard computational fluid dynamics (CFD) and model tests to find the optimal hull shape for your requirements. It combines parametric modelling, advanced CFD and genetic optimisation strategies that take hull line optimisation to a new level. Our experts in these disciplines support you in maximising the overall performance of your new vessel.
Our ECO Lines solution offers:

- Mutual discussion of targets and design constraints between you, the design team and the shipyard
- Consideration of your operating parameters, such as speed and draught, to define the most suited operating profile
- Full evaluation of typically some 20,000 hull design variations to find the one which matches your operational profile best
- Aft body variation for best possible hull-propeller interaction
- Detailed analysis and optimisation via fully viscous RANS analysis
- Mutual discussion to select the most attractive design for your service, and expert support for your model testing programme

Your benefits with ECO Lines:

- Independent, highest standard expert advice to meet your business’ specific requirements
- Maximum fuel efficiency and hence minimum fuel costs over the lifetime of your vessel
- Increased economic value and higher vessel attractiveness on the market, offering a sustainable competitive advantage
- Outstanding quality and recognition thanks to our world-leading combination of knowledge, software tools and computational capacity
- Great transparency and insight into considerations made during a fast, efficient and unique service that leads to your optimised ship

The ship owner, shipyard and DNV GL signed a third-party agreement to mutually develop a Feeder vessel design optimised for a specific operational pattern. The yard delivered the hard points and constraints of the base line design. The owner produced the target matrix as a combination of speed and draught (3 x 3). The target was to optimise the overall efficiency of the vessel’s hull and propulsion.

The result of DNV GL’s optimisation is impressive:

- The overall performance was boosted by 10 percent across the target operational profile
- The shipping company expected annual fuel savings of about USD 486,000

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.