

Hapag-Lloyd cuts emissions and costs through proactive hull cleaning solution

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Hapag-Lloyd container vessel Barzan

Hapag-Lloyd has successfully reduced both emissions and operational costs by adopting Shipshave's In Transit Cleaning of Hull (ITCH) solution.

The effectiveness of this proactive hull-cleaning approach was independently verified through an analysis conducted by the classification society DNV.

To assess the benefits of proactive fouling removal, Hapag-Lloyd and Ships have commissioned DNV to evaluate operational performance data from two of the company's container ships equipped with the ITCH technology. These vessels, with capacities of 8,750 TEU and 18,800 TEU, differed in age and trading profiles, providing a broad basis for analysis.

Over a 17-month period, data collected from both ships enabled a detailed examination of performance trends over time. DNV's report confirmed that the ITCH solution delivered notable improvements in energy efficiency, resulting in significant fuel savings and emission reductions for both vessels.

The study revealed that fuel and emissions savings varied due to the ships' differing dimensions and operating patterns, but the results were positive. One vessel recorded a 16% performance

improvement, translating to a daily fuel savings of approximately 8.4 tons—equivalent to eliminating the emissions of over 4,900 fossil-fuel vehicles during the same period.

The second ship, while already performing efficiently, achieved nearly a 5% reduction in fuel consumption. These results were consistently maintained through regular use of the ITCH system.

“We are very pleased that this analysis from DNV confirms our internal assessment of the result achieved by the implementation of ITCH. This method reflects our proactive approach to reducing emissions caused by biofouling,” stated Nikhilesh Bhatia, Director of Fleet Energy Efficiency, responsible for the ITCH project at Hapag-Lloyd.

During the assessment period, the ITCH system effectively controlled hull biofouling by initially reducing resistance. Without regular cleaning, additional fouling would have accumulated over time, impacting vessel performance. Proactive grooming prevents this degradation by addressing fouling re-growth. However, this long-term benefit was not included in the analysis, likely underestimating the overall economic advantage of using the ITCH system.

Despite this, the Return on Investment (ROI) for the ITCH system on the two vessels was achieved in less than three months of operation at sea.

Dr. Uwe Hollenbach, Senior Principal Consultant at DNV Maritime Advisory, Ship Performance Center, Hamburg commented: “The findings of this case study emphasize the critical role of minimizing biofouling in reducing greenhouse gas emissions from shipping. As outlined in our recent Maritime Forecast to 2050 report, regular or proactive hull cleaning remains one of the most effective strategies to achieve this goal.”