

Featured Company

Ship Technology Excellence Awards 2025: Becker Marine Systems

Becker Marine Systems is a Dual Category Award Winner in the 2025 Ship Technology Excellence Awards

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Becker Marine Systems, a supplier of manoeuvring systems and energy-saving devices, has won Innovation and Environmental awards in the 2025 Ship Technology Excellence Awards for its anti-leeway fin daggerboard.

The company won the Innovation award in the Hydrodynamic Integration category for its novel approach to integrating wind-assisted propulsion systems with underwater vessel dynamics. It received the Environmental award in the Wind Propulsion Efficiency category for enhancing wind propulsion efficiency and supporting the industry's transition toward lower emissions.

The [Ship Technology Excellence Awards](#) honor the most significant achievements and innovations in the shipping industry. Powered by GlobalData's business intelligence, the Awards recognize the people and companies leading positive change and shaping the future of the industry.

Hydrodynamic integration: Addressing underwater challenges in wind-assisted propulsion

Becker Marine Systems was recognized for its approach to hydrodynamic integration, specifically addressing a gap in the adoption of wind-assisted propulsion systems (WAPS). While much of the maritime industry's focus has been on above-deck sail technologies—such as rotor sails and rigid sail structures—Becker identified a “blind spot” in the interaction between these systems and the vessel's underwater hull and rudder dynamics.

The company's research, including extensive computational fluid dynamics (CFD) studies, revealed that wind propulsion systems generate not only forward thrust but also significant side forces. These side forces can cause a vessel to drift off course, a phenomenon known as leeway. Traditionally, compensation for this drift has relied on constant rudder angles or modifications to the vessel's keel, both of which can introduce substantial hydrodynamic drag and diminish the energy-saving benefits of WAPS.

To address this, Becker developed the anti-leeway fin daggerboard—a novel underwater appendage designed to efficiently counteract side forces and reduce the leeway angle. This innovation allows vessels to maintain their intended course with minimal additional drag, thereby preserving the power-saving potential of wind propulsion systems. The daggerboard is available in two advanced configurations: a liftable version with a rotatable fin, which can be vertically retracted and adjusted up to $\pm 20^\circ$ for optimal alignment, and a foldable “jack-knife” version, which folds horizontally into the hull and can be positioned at the centerline or port/starboard as needed.



Both versions incorporate electro-hydraulic mechanisms, a new area of expertise for Becker, enabling operators to deploy or retract the daggerboard based on operational requirements—such as port manoeuvres, shallow water navigation, or when wind conditions do not favor WAPS use. The daggerboard's design is customized for each vessel, taking into account hull geometry and the specific side force compensation needed for the installed wind propulsion system.

The rapid progression from R&D to commercial deployment further distinguishes Becker's approach. The first installation of the liftable daggerboard was completed on a sailing cargo vessel in 2023, with subsequent orders placed for additional vessels, including a RORO cargo ship equipped with rotor sails. In total, daggerboards for 11 ships are on order, reflecting strong industry interest and the practical applicability of the solution.

Wind propulsion efficiency: Enhancing environmental performance

In the Environmental category, Becker Marine Systems was recognized for its contributions to wind propulsion efficiency and the decarbonization of shipping. The anti-leeway fin daggerboard plays a pivotal role in enabling vessels to fully utilize wind as a significant and environmentally friendly propulsion method, supporting the industry's transition toward lower emissions and compliance with increasingly stringent environmental regulations.



A key challenge with WAPS is that, without effective side force compensation, much of the energy savings from wind propulsion can be negated by the need for corrective steering or increased drag from the hull and rudder. Becker's daggerboard addresses this by providing efficient, targeted compensation for side forces, thereby reducing the leeway angle and aligning the vessel's heading with its intended course. This minimizes

the power penalties typically associated with traditional compensation methods and ensures that the full power-saving and emissions-reducing potential of WAPS is realized.

Becker's track record in environmental innovation is well established, as demonstrated by the global adoption of the Becker Mewis Duct®, which has contributed to reducing CO₂ emissions by over 21 million tons. The anti-leeway fin daggerboard builds on this legacy by extending the company's expertise below the waterline, an area often overlooked in the context of wind propulsion. By highlighting the importance of underwater solutions, Becker is raising industry awareness of the need for holistic vessel design to achieve meaningful environmental benefits.

The market response to the daggerboard has been positive, with installations already completed and further projects in the pipeline. The company's efforts to promote the integration of below-waterline solutions with WAPS are contributing to the broader adoption of sustainable technologies across various vessel types, including bulk carriers, tankers, container ships, and RORO vessels. By facilitating more efficient use of wind energy, Becker's daggerboard supports the shipping industry's broader goals of reducing greenhouse gas emissions and moving toward zero-emission operations.

Furthermore, Becker Marine Systems continues to engage with shipyards, operators, and WAPS providers to emphasize the operational and environmental advantages of comprehensive hydrodynamic solutions. This ongoing dialogue is helping to shape industry best practices and drive the adoption of technologies that can deliver tangible power reductions and environmental improvements.



“We are honored to receive these awards, which recognize our ongoing commitment to developing innovative solutions that reduce the environmental impact of shipping. This achievement reflects the dedication of our entire team and our close collaboration with industry partners as we work towards a more sustainable future for maritime transport.”

– Henning Kuhlmann, Managing Director, Becker Marine Systems

Company Profile



Becker Marine Systems is a leading supplier of manoeuvring systems and energy-saving devices. The company's products are globally established and are considered the preferred choice for a variety of vessel types, such as bulk carriers, supertankers, container ships, passenger ferries, large cruise ships, and luxury yachts.

With over 75 years of experience in collaboration with the global maritime industry and the shipbuilding sector, Becker Marine Systems' products have been installed on more than 9,000 ships worldwide. The global installations of the Becker Mewis Duct® have contributed to reducing CO₂ emissions by more than 21 million tons.

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