



PRESS RELEASE

RINA unveils Mermaid, a future-ready ship design for an uncertain decarbonisation future

Hamburg, 27 August 2026 - RINA has unveiled Mermaid, a future-ready ship propulsion concept designed to help shipowners reduce fuel consumption, lower emissions, improve operational resilience and protect long-term asset value while remaining flexible as the maritime industry's decarbonisation pathway evolves.

Mermaid expands the role of a vessel's highly efficient two-stroke main engine beyond propulsion, enabling it to become the primary source of onboard power while reducing reliance on less efficient auxiliary engines. The concept combines a shaft generator, propeller shaft clutch and battery energy storage in a new propulsion architecture that improves efficiency without committing owners to a particular fuel pathway.

When a vessel arrives in port, the propeller is disconnected while the main engine continues generating electrical power. Rather than relying on auxiliary engines to meet onboard demand, Mermaid enables the main engine to supply electrical power directly or charge the batteries. Once charged, the batteries provide onboard power, allowing the main engine to operate more efficiently while reducing fuel consumption, emissions and operating costs.

Mermaid also supports a more optimised propulsion system. As slow steaming becomes more common, many vessels spend much of their operating life operating well below the speeds they were originally designed to achieve. By combining aux engines with battery energy storage in a hybrid propulsion scheme, the concept enables propulsion power to be better matched to real operating conditions while maintaining operational flexibility and safety. This reduces the need to install excess engine capacity while providing an additional source of electrical power that enhances resilience during critical operations.

The benefits are significant. RINA's analysis indicates that Mermaid can reduce fuel consumption by more than 1,000 tonnes per year in some applications. By lowering fuel use and emissions, the concept also reduces future compliance costs while helping shipowners protect long-term asset value. Mermaid is fuel agnostic, giving owners greater flexibility as future regulations and technologies continue to evolve. Thanks to the batteries, the concept may also deliver important safety benefits by enhancing onboard power resilience and reducing the risk of power loss, both for propulsion and electric, during critical operations.

"The challenge facing shipowners today is not simply choosing a fuel, particularly as future solutions may emerge that we are not even considering today - said **Antonios Trakakis, Energy Transition Solutions Technical Director at RINA** -. It is preparing a vessel for a future that nobody can predict with certainty. Ships being ordered today will still be operating well into the 2050s, so today's decisions need to remain commercially and technically sound for decades.



The Mermaid concept delivers immediate operational and commercial benefits while reducing the need for costly modifications in the future. Instead of optimising vessels for a single decarbonisation scenario, it provides a flexible platform that can adapt as technologies, fuels and regulations evolve.

Importantly, Mermaid delivers value regardless of how the maritime energy transition unfolds.

"Today there is no consensus on which fuels will dominate the future of shipping - said **Trakakis** -. Owners are being presented with multiple possible pathways, each carrying different risks and uncertainties. Mermaid was designed to work whatever the future brings. If the world changes, the ship is ready. If it does not, the economics still work."

The concept is applicable across a wide range of vessel types, including tankers, bulk carriers and container ships, and is currently being developed into a fully detailed design following encouraging feedback from both shipowners and shipyards.

By focusing on adaptability rather than a single fuel pathway, Mermaid demonstrates how ship design can help owners reduce costs today while preparing confidently for the uncertainties of tomorrow. The concept reflects RINA's commitment to developing practical engineering solutions that enable shipowners to balance commercial performance with long-term decarbonisation objectives.

***RINA**, a leading certification and engineering company, provides a wide range of services across the Energy, Marine, Infrastructure & Mobility, Certification, Industry and Real Estate sectors. In December 2023, alongside the majority shareholder Registro Italiano Navale, Fondo Italiano d'Investimento SGR entered the shareholding structure guiding a pool of co-investors. With revenues in 2025 of over 1 billion euros, over 7,000 employees and 200 offices in 70 countries worldwide, RINA is a member of key international organizations and an important contributor to the development of new legislative standards. www.rina.org*

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