PRESS RELEASE

WinGD and Envision Energy Study Shows Path to Green Ammonia Cost Parity

WINTERTHUR, SWITZERLAND (March 19, 2026)

WinGD, a Swiss marine power company and Envision, a world-leading green technology company have released a pioneering study analysing the operational costs of ships powered by renewable fuels. The findings reveal that under moderate global regulations, green ammonia could achieve cost parity with VLSFO and LNG at current prices, even before additional subsidies or rewards associated with zero-emission fuels.

The study, an operating expenses illustration of green-fuelled vessels on the container and bulk trades between China and Australia, uses verified lifecycle emissions factors and current estimated bunkering pricing along the coast of China. By 2050, green ammonia is projected to outperform LNG on a cost basis, with a predicted 5-6% lower lifecycle operating cost.

Envision Energy Senior Vice President Frank Yu said: “Through this joint study with WinGD, we have mapped a clear economic pathway for renewable fuels. By leveraging AI-driven optimisation at our Chifeng facility to harmonise renewable energy harvesting with fuel production, we have already reached a tipping point where green ammonia competes with VLSFO and LNG.

“Green ammonia can be fully electrified and using green ammonia as bunkering fuel creates more certainty. As we further scale and refine these intelligent technologies, green ammonia will become the most practical and cost-effective choice for the next generation of shipping. This is the certainty we bring to an uncertain market.”

Fuel consumption, use of consumables for emissions abatement and tank-to-wake emissions are based on real-life performance of engines in WinGD’s existing portfolio: ammonia-fuelled X-DF-A, methanol-fuelled X-DF-M and LNG-fuelled X-DF engines. For the vessel cases studied, the illustrations show how VLSFO and LNG are currently the most cost-competitive fuel options, with green ammonia reaching a similar and eventually lower net costs under a global regulatory regime.

WinGD CEO Dominik Schneiter said: “This shows what it means to lead with innovation and collaboration. Using real fuel pricing, engine performance and emissions data, we show how green fuels can become commercially viable options for ship operators. With global policy on pause, now is the time for the industry to show how it can overcome the obstacles to decarbonisation using the fuels and technologies that already exist today.”

The study finds that e-LNG and green methanol may have a longer path to viability, requiring the addition of higher rewards under a global regime—although the price evolution will depend on the speed at which producers can increase volumes. Further fuel candidates and power configurations will be modelled by WinGD in future studies.

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The collaboration between WinGD and Envision comes as both companies ramp up the introduction of green fuels and technologies to the shipping market. Envision's Chifeng green ammonia plant is already producing around 320,000 tonnes annually, with exports having commenced in Q4 2025. Envision offers a proprietary, full-stack technology package for green hydrogen and ammonia production. By 2028, the industrial park is projected to produce 1.5 million tons of green ammonia per year, serving as a replicable model for clean industrial hubs worldwide.

Meanwhile the first WinGD-designed X-DF-A ammonia engines enter service in the second half of this year, joining a clean-fuel capable installed base that includes nearly 1,000 LNG-fuelled X-DF engines in service, as well as nearly 100 X-DF-M methanol-fuelled engines delivered and on order.

With the first opex study based on real lifecycle emissions and real engine performance, WinGD and Envision hope to advance industry discussion of the role of ZNZ fuels in shipping's decarbonisation efforts.

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WinGD in brief
WinGD advances the decarbonisation of marine transportation through sustainable energy systems using the most advanced technologies in emissions reduction, fuel efficiency, hybridisation and digital optimisation. With their two-stroke low-speed engines at the heart of the power equation, WinGD sets the industry standard for reliability, safety, efficiency, and environmental design - supported by Global Service by WinGD, which delivers tailored 24X7 lifecycle engine support through Swiss engineering excellence, dependable maintenance, rapid global response, and genuine parts to keep engines performing at their best. Wärtsilä Services Switzerland Ltd remains an authorised global service provider.

Headquartered in Winterthur, Switzerland since its origin as the Sulzer Diesel Engine business in 1893, today it is powering the transformation to a sustainable future.

For more information visit: www.wingd.com
Follow WinGD on LinkedIn for the latest news and updates

Envision Energy in Brief
Envision is a global green technology leader known for its innovation which has completely reinvented the renewable energy system with its development of smart wind turbines, energy storage and green hydrogen, orchestrated by AI with the establishment of net zero industrial parks in various parts of the world. The company aims to accelerate the global green energy transition and has been recognized for its sustainability efforts, including being listed twice on Fortune's "Change the World" list and named a "Green Giant" in TIME's "2024Time 100 Most Influential Companies" list.

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