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PLENARY TALK : Innovative Dual-Fuel Engines for Maritime Decarbonization—Challenges and Solutions

Tuesday 21 October 2025 16:10 (30 minutes)

Low-speed two-stroke engines have powered marine transportation for over a century and remain the standard propulsion system for marine transport due to their high efficiency and reliability. Today, as the maritime industry aims to reduce greenhouse gas (GHG) emissions to zero by about mid of the century, technological innovation is key to achieving a sustainable future.

As a leading developer of low-speed two-stroke engines, WinGD is committed to advancing the decarbonization of marine transportation by improving fuel efficiency, reducing emissions, and incorporating hybrid power technologies. Furthermore, WinGD develops dual-fuel (DF) engines capable of operating on alternative fuels, such as methanol and ammonia. These alternative fuels are expected to gain increasing relevance in the comingdecades, given their potential to significantly reduce or even eliminate CO2 emissions from internal combustion engines. However, their adoption requires the development of new designs and processes to ensure continued safety, performance, and durability.

This presentation will outline WinGD's approach to decarbonization, with a focus on overcoming challenges related to the application of alternative fuels, such as ammonia's corrosive nature and its effects on lubrication.

Author: Dr ARCIFA, Andrea (WinGD Ltd., tribology expert)

Presenter: Dr ARCIFA, Andrea (WinGD Ltd., tribology expert)

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