

Keynote Speaker

S0103



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Institute of Maritime
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Smart is green - Use of smart technology to
decarbonise shipping

TALK TITLE

Smart is green - Use of smart technology to decarbonise shipping

ABOUT

Prof. D.Sc. (Tech.) Sören Ehlers studied mechanical engineering at the University of Rostock, specializing in shipbuilding and marine technology. He received his doctorate from the Helsinki University of Technology in 2009 and worked there as a post-doctoral researcher. He also co-founded an engineering office that is still in operation today. In 2011, he became a professor at NTNU in Trondheim and focused on Arctic Sea transportation and ship design under ice loads. Since 2014, he held the position of professor of design and strength of ships and offshore structures at Hamburg University of Technology and lead the corresponding institute until his leave of absence to work for DLR from 2022 as a director of the institute of maritime energy systems.

ABSTRACT

Despite the efficiency of maritime transportation, it remains a highly carbon-intensive mode of transport, with significant efforts to be made to decarbonise or even achieve emission-free operations. The current regulatory framework is seeking to effect a change in this

situation from 2050 onwards. In light of the 25-year design life of an operating vessel, the necessity for technologies capable of meeting this requirement is evident. This encompasses solutions that facilitate continuous retrofitting, both for the existing operational fleet and for new buildings with varying technology readiness levels. At present, any carbon- or emission-free technical solution is contingent upon the availability of the corresponding fuels, which, due to their low demand and availability, are subject to elevated prices and price fluctuations until a state of equilibrium is reached. Consequently, the potential for optimising the maritime energy system onboard through the utilisation of efficient and reliable technologies must be addressed. A selection of such technologies suitable for retrofitting or newbuilding will be presented in conjunction with the challenges associated with alternative fuels for waterborne transportation.

