



UNIVERSITY OF MONTENEGRO  
*Faculty of Maritime Studies Kotor*



1<sup>st</sup> Kotor International Maritime Conference  
November 26–27, 2021 | Kotor, Montenegro

Book of Abstracts

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## Exploring an Effect of Novel IMO Policies on Energy Efficiency of Existing Ships

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### ABSTRACT

Energy efficiency policy has been evolving in the shipping industry over the past decade since the decarbonization has become the main goal. After the energy efficiency design index (EEDI) is introduced in 2011 by International Maritime Organization (IMO) to propel the emission reduction for new ships, the same has been pursued in case of existing ships by presenting the energy efficiency of existing ship index (EEXI), that will enter into force on 1st of January 2023. Thus, existing ships are already being adapted in that regard, through the speed and power reduction, finer design hull optimization and application of energy saving devices (ESD). Therefore, this paper presents the EEXI calculation for four specific ship types: general cargo ship, container ship, bulk carrier and oil tanker. EEXI calculation is performed in two ways here. In the first case, input parameters are obtained from available sea trials data and technical files already used for EEDI calculation; and in other case, all input parameters are acquired solely according to the latest IMO regulations and guidelines. The difference of using these two input approaches and their effect on EEXI are outlined. Further adaptation measures are described in case of these four ship representatives. Moreover, since some of the ships can be potentially classified for more than one purpose, also a short discussion is given considering such effect on EEXI performance.

**KEYWORDS:** *energy efficiency, EEXI, EEDI & ship design*