

# Analisis Komparasi Persebaran Nilai Energy Efficiency Design Index Pada Kapal Jenis Bulk Carrier, Oil Tanker, Container, General Kargo, dan Chemical Tanker. = Comparative Analysis Of Energy Efficiency Design Index Distribution Value On Bulk Carrier, Oil Tanker, Container, General Cargo And Chemical Tanker Ship

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## Abstrak

Secara global, emisi gas rumah kaca dari kapal yang berlayar ini dapat menghasilkan emisi CO<sub>2</sub> yang setara 940 juta metrik ton emisi CO<sub>2</sub> rumah kaca pertahun. International Maritime Organization (IMO) mengembangkan strategi awal untuk mengurangi tingkat emisi green house gas (GHG) dari kapal yaitu IMO GHG Strategy, untuk mengukur ketercapaian tersebut diukur melalui nilai Energy Efficiency Design Index yang dilakukan dalam penelitian ini. Penelitian ini dilakukan untuk melakukan komparasi antara besarnya tingkat emisi CO<sub>2</sub> dari kapal jenis bulk carrier, oil tanker, container, general kargo, dan chemical tanker berbendera Indonesia dan tingkat emisi CO<sub>2</sub> dari kapal berbendera Singapura dengan jenis kapal yang sama. Dari penelitian ini didapat bahwa pada baseline existing condition Kapal Indonesia persentase terbesar dicapai oleh kapal kontainer sebesar 31,85%. Sedangkan untuk Kapal Singapura, persentase terbesar dicapai oleh kapal General Kargo sebesar 29.17%. Sementara itu, dampak terbesar pengurangan emisi dicapai oleh keadaan penggunaan bahan bakar Methanol dengan penambahan instalasi Scrubber yang mampu menciptakan GHG Rating Score A pada 18% kapal Indonesia dan 34% Kapal Singapura. Sebagaimana yang dilakukan Singapura, optimalisasi pengurangan emisi dapat didukung oleh kebijakan pemerintah seperti pemberlakuan pajak karbon

.....Globally, greenhouse gas emissions from sailing ships can produce CO<sub>2</sub> emissions equivalent to 940 million metric tons of greenhouse gas emissions per year. The International Maritime Organization (IMO) developed an initial strategy to reduce the level of green house gas (GHG) emissions from ships (IMO GHG Strategy), to measure this achievement through the value of the Energy Efficiency Design Index carried out in this study. This study was conducted to make comparisons between the levels of CO<sub>2</sub> emissions from bulk carriers, oil tankers, containers, general cargo, and chemical tankers with Indonesian flagged and the level of CO<sub>2</sub> emission from Singapore flagged vessels with the same type of vessels. From this study, it was found that in the baseline existing condition of Indonesian ships, the largest percentage was achieved by container ships (at 31.85%). Meanwhile, for Singapore Ships, the largest percentage was achieved by General Cargo ships (at 29.17%). The greatest impact of reducing emissions was achieved by the condition of using Methanol fuel with the addition of Scrubber installations which were able to create a GHG Rating Score A on 18% of Indonesian ships and 34% of Singaporean ships. Beside that, as it was done by Singapore, optimizing emission reductions can be supported by government policies with the implementation of a carbon tax