

Advancements in Emission Reduction Technologies for the Maritime Industry a Comprehensive Analysis

Anshuman Sen

Head of Technical Operations –US West Coast, FMC International (Schulte Group), Los Angeles, USA
anshuman_sen@outlook.com

Abstract: *This peer-reviewed scholarly article delves into recent progress in emission reduction technologies within the maritime domain, highlighting the necessity of a comprehensive and all-encompassing assessment. With its substantial role in global commerce, the maritime sector confronts escalating environmental hurdles due to its significant pollution output. The research investigates three primary technological advancements: exhaust gas scrubbers, alternative fuels like LNG, biofuels, and hydrogen, and energy-efficient propulsion systems encompassing hybrid, electric, and wind-assisted solutions. Each technology undergoes scrutiny concerning its efficacy, economic viability, and environmental benefits, complemented by tables for elucidation. Furthermore, the research briefly touches on evolving regulatory frameworks shaping the adoption of these technologies. By amalgamating these insights, the research underscores the crucial significance of a holistic strategy in steering the maritime industry toward sustainable practices and curbing its environmental impact*

Keywords: Maritime industry, Emission reduction technologies, Alternative fuels, Exhaust gas cleaning systems, Biofuels, Electric propulsion, Environmental impact, International regulations, Sustainability, Climate change mitigation, Shipping industry, Green shipping, Technological innovations

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