**The economic and cost analysis of Ro-Ro ships used LNG as propulsion fuel**

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Cause of environmental and economic concerns, shipping companies was forced to use more environmentalist fuels including less rate of sulfur oxides (SOx), nitrogen oxides (NOx) and particulate matter (PM). International Maritime Organization (IMO) announced that the Regulation-14, which organizes the limits of SOx, NOx and PM onboard. According to the Regulation -14, sulfur limit of outside an Emission Control Area (ECA) zone will have to be maximum 0.50% m/m from 1 January 2020. Therefore, there are some ways in order to decrease level of SOx, NOx and PM, such as selective catalytic reduction (SCR) using bunker oil. But, this SCR system has an extra cost for ships. So, detailed cost evaluation is necessary to chose LNG as fuel or with SCR system.

This paper presents concepts and economic analysis of 11636 deadweight (DWT) roll on roll off (Ro-Ro) ship fueled by liquefied natural gas (LNG), sailing between Adriatic Sea and Aegean Sea. A model Ro-Ro ship data, fueled by bunker oil, was used to determine whether using LNG onboard is more attractive or not. Economic analysis parameters of this paper include market research and the general information: initial shipbuilding cost, freight revenue, operation expenditure, and fuel cost.

Keywords: LNG, Ro-Ro ship, Fuel oil, Fuel cost, Ship emission

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