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PRODUCING ELECTRICITY POWER FROM SHIP EXHAUST GASES: AN APPLICATION ON A RO-ROR CARGO SHIP

This paper presents the availability of producing electricity power from ship main engine's waste exhaust gases. Hot exhaust gases reveals from ship main engines during sailing periods. After using waste exhaust gases at turbocharger and exhaust gas boiler, respectively, those gases discard through funnel to atmosphere in spite of still consisting of respectable energy. Therefore, recycling waste exhaust gases in order to produce electricity power have important benefits in both aspects: economical and environmental. Making use of waste exhaust gases for electricity power provides less fuel consumption and as a matter of course less greenhouse gases (GHG) to atmosphere. Producing electricity power works on the principle that Organic Rankine Cycle (ORC). In this paper, this electricity generator system application on a model Ro-Ro cargo ship cost analysis was carried out. Underlying parameters including initial cost and operation cost of system, reduction amount of fuel consumption, ship sailing time were used to determine whether this system is profitable or not.

Key Words: Exhaust Gases, Organic Rankine Cycle, Fuel Consumption, Cost Analysis.

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