

**UNIVERSITI TEKNOLOGI MARA**

**MULTI CRITERIA DECISION  
MAKING FOR THE TECHNOLOGY  
SELECTION OF INTERNATIONAL  
MARITIME ORGANIZATION TIER  
III SULPHUR EMISSION  
REGULATION**

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## **ABSTRACT**

The Annex VI emission regulation by the International Maritime Organization was introduced and started being enforced by the year of 2012. The regulation stricken by phases and the last segment of enforcement will require the vessel to comply with the less than 0.5% Sulphur emission worldwide and 0.1% for the SECA area. The vessel owner is currently undergone a regime technology selection study in choosing the best solution in which may be apply to face the upcoming directive. Three major technology are available in the market namely the fuel compliance with the sulphur content less than 0.5%, scrubber with the application of high sulphur content HFO and the utilization of LNG as a fuel. The multi criteria decision making (MCDM) tools are greatly benefited for the equipment or technology selection. The selection criteria been selected with the solicitation of weightage to prioritize the criteria for the decision making. The MCDM tools in which to be used for the analysis is the Analytical Hierarchy Process (AHP) and TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) calculation. The weightage decided by the input from the professional in related industry. Fuel compliance (Marine Gas Oil) technology emerged to become the best technology in comparison to the utilization of Scrubber or LNG technology. The research should be able to serve not only for the reference nevertheless as well as the selection process guidance prior any business decision making by the ship owner.

## ACKNOWLEDGEMENT

Read, in the name of your Lord who created. [Quran 96:1]

May the Almighty Allah bless all of us Jannah and His wisdom for all to be successful in here and hereafter. All the praises to the Rabbul Alamin. Without with His mercy and rahmah, this masters journey never could have been completed.

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