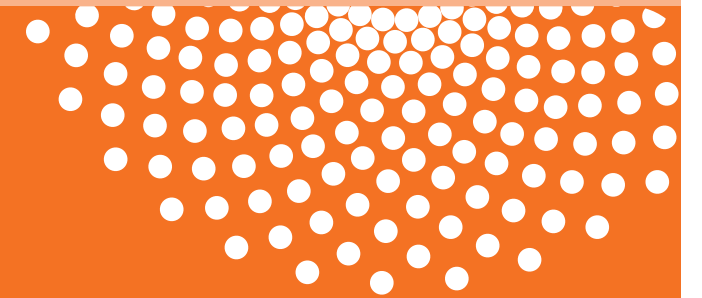


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[Indonesia EBTKE-CONEX 2013]**

**Guest Editors: Praptiningsih Gamawati Adinurani,
Anggi Nindita, Agus Setyo Yudhanto and Andi Sasmito**

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Preliminary Research of Using Ocean Currents and Wind Energy to Support Lighthouse in Small Island, Indonesia

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Abstract

This study was aimed to get preliminary result, which review potential of utilizing ocean surface current and wind energy as energy source of lighthouse in Small Island. The data was acquired from field observation and from satellite. Ocean current speed in Berhala, Anambas, and Biawak island have their mean on 0.135 m/s, 0.055 m/s, and 0.272 m/s, meanwhile the ocean surface wind speed has its mean on 0.220 m/s and 3.032 m/s. Three years satellite data showed that Miangas island has the highest mean speed (0.835 m/s) of ocean current and Biawak island has the smallest one (0.154 m/s), whereas the highest mean speed (4.848 m/s) of ocean surface wind was in Rondo island and the smallest one (1.438 m/s) was in Berhala island.

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Keywords: wind; currents; energy conversion; lighthouse; pattern

1. Introduction

Growing of energy demand, prompting the government to implement the blueprint in which the composition of renewable energy by 2025 is expected to reach 17%. One of energy source to substitute fossil fuel is to exploit the potential of the sea [1]. Early identification says that the important parameters are the wind, currents, waves, tides, and water column temperature differences. In some countries such as Britain and America have developed

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