

## ABSTRACT

*Abstract*– Based on the Paris Agreement, which aims to reduce carbon emissions and withstand rising global temperatures by 1.5°C, through Ministerial Regulation Number P.15/MENLHK/SETJEN/KUM.1/4/2019 About Emission Quality Standards for Thermal Power Plants, the Indonesian government implemented several policies to reduce emissions. This regulation was made because Indonesia uses fossil fuels as the primary energy requirement, which produces SO<sub>2</sub>, CO<sub>2</sub>, and NO<sub>x</sub>. These emissions increasing effects of global warming and disease. As many 70% of fossil raw materials dominate their use in Indonesia, with 30% coming from coal for power generation needs. Coal produce produces electricity at meager prices. Second, there is a lack of awareness to comply with regulations that drive changes towards Renewable Energy (RE).

Economic Emission Dispatch (EED) using Whale Optimization Algorithm (WOA) and Weighted Sum is a programming that has the potential to reduce emissions expenditure in Java-Bali electricity so that government programs can be successful in lowering earth emissions. Many studies have been conducted to reduce the use of fossil-based power plants, such as Indonesia conducts EED research using multistage optimization. Lebanon has already implemented the integration of RE in power plants. With this step, at least can reduce the impact of damage and pollution generated by coal power plants.

Keywords: Renewable Energy (RE), Economic Emission Dispatch (EED), Optimization of Whale Algorithm (WOA), Weighted Sum, Java Bali 500kV