OMICSGROUP <u>Conferences</u> <u>Accelerating Scientific Discovery</u> World Congress on Petrochemistry and Chemical Engineering

November 18-20, 2013 Hilton San Antonio Airport, TX, USA

Particle swarm optimization for economic dispatch in power system of PT PLN Manokwari

Adelhard Beni Rehiara¹, Elias K. Bawan¹, Sabar Setiawidayat² and Pandung Sarungallo¹ ¹University of Papua, Indonesia ²University of Widyagama, Indonesia

Thermal power plants have to be operation in economic way in order to minimize fuel consumption and also carbondioxide emission. Economic dispatch of power plants in power systems has occupied important position in electrical power industry and it has been success for handling power plant operation. As a method of optimization in economic dispatch, a particle swarm optimization (PSO) with constriction factor has been used in this research to redesign optimal operation scheme of diesel power plant units of PT. PLN Manokwari. Matlab, a software tool for computation and simulation, had been choose to be the tools to implement the PSO method in this research. Result shows that incremental cost of calculation using PSO method is more effective than using Langrange method in the same schemes that has been designed in previous research. On the other hand the operation cost is not always decrease while the incremental cost is reduced.

adelhard.rehiara@fmipa.unipa.ac.id