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Modeling and Optimization of Micro-Grid Using Genetic Algorithm

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Abstract : This paper proposes an operating and cost optimization model for micro-grid (MG). This model takes into account emission costs of NOx, SO2, and CO2, together with the operation and maintenance costs. Wind turbines (WT), photovoltaic (PV) arrays, micro turbines (MT), fuel cells (FC), diesel engine generators (DEG) with different capacities are considered in this model. The aim of the optimization is minimizing operation cost according to constraints, supply demand and safety of the system. The proposed genetic algorithm (GA), with the ability to fine-tune its own settings, is used to optimize the micro-grid operation.

Keywords : micro-grid, optimization, genetic algorithm, MG
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