Effective Microgrid Synchronization in Islanded Mode: Controlled Input/output PI-Fuzzy-PI Algorithm

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Abstract

This paper describes a feasible operation of microgrid. The microgrid is the combination of multiple distributed generators to solve global warming problems by reducing carbon dioxide emission in the electricity generation field, which has led to increasing interest in microgrids (MGs), particularly those containing renewable sources such as solar and wind generation, which are widely used in practice due to easy availability of renewable sources of energy. A Microgrid model, simulated on Matlab/Simulink software, is analyzed due to wide use of these in isolated microgrid. This paper describes the new method of microgrid controlling strategy introduced using Fuzzy-PI controller Algorithm using this technique the Islanded microgrid overcomes fluctuation problems. The controller aims to optimize the better operation of microgrid central controller during the Islanded mode, i.e., maximize the performance of microgrid. The developed operational algorithms are applied to the microgrid similarly the controller increases the performance of active power, variable frequency, phase angle, better synchronization the practical results are provided to validate the control scheme using PI-fuzzy-PI controller algorithm.

References
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Index Terms

Computer Science

Electronics

Keywords

BESS DG Micro grid MCC IED/STS EPS