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COMBINED SOLAR-WIND-FUEL CELL ENERGY GENERATION AND INTEGRATION FOR SMART SITES

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ABSTRACT

Integration of different energy sources and power converters is required to meet the load demands. Hybrid plants can help in improving the economic and environmental sustainability of renewable energy systems to fulfill the energy demand. The integrated model representing a hybrid energy generation system connected to the grid is developed. It consists of PV modules, wind turbine and fuel cell. Smart grid will provide highly consistent and reliable services, efficient energy management practices, smart metering integration, automation and precision decision support systems and self healing facilities. Smart grid will also bring benefits of seamless integration of renewable energy sources to the power networks. Finally, this study explores the prospects and characteristics of renewable energy sources with possible deployment integration issues to develop a clean energy smart grid technology for an intelligent power system.

KEYWORDS: Smart Grid, Renewable Energy, Grid Integration, Wind Energy, Solar Energy, Fuel Cell

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