

DESIGN, PERFORMANCE EVALUATION AND COST ANALYSIS OF SOLAR PV-SYSTEM WITH DIESEL GENERATOR IN HYBRID POWER SYSTEM

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ABSTRACT

The Solar PV-Grid-Diesel Hybrid Power System can be used to overcome the inconvenience due to unavailability of power to a great extent. Integration of solar PV systems with the diesel plants is being disseminated worldwide to reduce diesel fuel consumption and to minimize atmospheric pollution and the proposed simulation has been done to assure that the solar PV- Diesel hybrid system is economically and technically feasible for rural places in India. Photovoltaic hybrid systems are used for improving reliability and energy services, reducing emissions and pollution, providing continuous power supply, increasing operational life, reducing cost and more efficient use of power. The objective of the present study is that the performance evaluation of the solar PV system, diesel generator in hybrid power system. The present work discusses design of the solar PV-grid-diesel hybrid power system and also explains the parameters that will affect the performance of the system. In this study, measurements are taken at the site for obtaining performance solar PV system and compared with diesel generator and also explained the predicting performance of the same PV system in other locations of India.

KEYWORDS: Photovoltaic (PV), Diesel Generator, Power, Performance, Radiation, Fill Factor