Abstract

The power interruption in factories, hospitals, and airports is a critical problem that should be avoided. The solution is uninterruptible power supply (ups) system. Such problem may be solved by introducing solar photovoltaic (PV) or diesel generators (DG) in the ups system. Knowing that the economic problem of providing electrical energy to factories, hospitals, workshops, etc. may be solved if renewable energy sources are used[1]. In remote areas that have Strong sunlight, where electric utility is not available, photovoltaic (PV) stand-alone system using a lot of batteries is a good solution but it is costly[2]. The system may be a hybrid stand-alone system and a diesel generator combined with PV to supply all critical loads if there is no strong sunlight all over the year in these remote areas. In urban areas, grid connected PV system is a good economical solution. In such a system, during sunshine hours PV system provide a part of its energy to the load and the rest to grid utility, and during the night the load is supplied by grid. The economics of different system will be optimized as follow.
References


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Index Terms

Computer Science Power Systems

Keywords

Photovoltaic (PV), Batteries, Standby System, Hybrid System, UPS, State of Charge (SOC), Array Factor.