Design and Simulate the Solar-Wind-Diesel Stand-Alone Systems for an Institutional Area

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Abstract

Hybrid energy source is becoming general because it is composed from two or more energy sources. This combination of two or more energy sources is a competent way of generating energy. The amount of the conventional energy sources is reducing day by day. To avoid energy inaccessibility, the use of renewable energy sources is extremely essential. Hybrid operation raises the reliability of stand-alone system, reduces the production cost and guarantees the availability of power. A new technological energy solution delivered by solar-wind and diesel standalone system is facing a high growth rate in recent days. In this paper we are designing the solar-wind & diesel generator for an Institutional area for providing green energy generation as much as possible. The hybrid system consist solar, wind, diesel generator and batteries with converter. Hybrid Optimization Model for Electric Renewable (HOMER) software is used to design the proposed hybrid renewable energy power system model. The sensitivity analysis was supported out using Homer program. The results are presented to verify the system performance and it has been found that renewable energy
sources will replace the conventional energy sources.

References


Index Terms

Computer Science  Power Systems

Keywords

Renewable energy systems, photovoltaic, wind turbine, diesel generator.