Abstract

Off-grid has several complimentary functional applications and succinctly it has been regarded to be important technology to realize as its reliability, sustainability and techno-economic solution of energy. Among various decentralized generation techniques, hybrid renewable energy source (HRES) is one of the promising techniques in terms of sustainability, simplicity of operation and commissioning. The most common hybrid systems preferably used are PV/Wind/Battery and PV/Diesel/Battery according to feasibility of these sources. In the recent years, HRES have been developed as new age technology for the faster meeting the load demand for the remote area with superior combinations. For all experimental investigations done by the researchers using hybrid optimization model for electric renewable (HOMER) involved (a) study area characterization (b) resource assessment (c) load demand for the domestic, agricultural, community and commercial (d) expected different combination of RES and (e) optimization analyses in order to achieve objective function by attempting a number of combination of RES. Based on the optimization technique the result have been evaluated by the
help of different parameters as decision variables, sensitivity variable. The optimization aim was carried out in different cases regarding minimization of per unit energy cost (PUEC) and emission of greenhouse gases (GHGs).

References


Index Terms

Computer Science Power Systems
Keywords

PUEC, HRES, DE, CHP (Combined Heat and Power), GHGs, HOMER