Abstract

A large proportion of the world’s population lives in remote rural areas that are geographically isolated and sparsely populated. This paper discussed the efficient system of sustainable renewable energy for domestic use and its total cost for the off-grid area; taking Sandip-para as model which is in Raujan upzila of Chittagong district. Method of this paper is collecting the basic data of solar radiation, wind speed and other required input data, and then hybrid optimization. Simulation model was developed using the HOMER energy modeling software. Simulation model has been used to find out the best technically viable renewable based energy efficient system for different numbers of household. Results have been presented as the most efficient economic way for electrifying the area.

References

Optimum Planning of Hybrid Energy System using HOMER for Rural Electrification

(Zeinab Abdallah M. Elhassan, Muhammad Fauzi Mohd Zain, Kamaruzzaman Sopian, and A. A. Abass) Design and performance of photovoltaic power system as a renewable energy source for residential in Khartoum; International Journal of the Physical Sciences Vol. 7(25), pp. 4036-4042, 29 June, 2012


(Mohammad Nasirul Hoque, Sanjoy Kumar Nandi, Himangshu Ranjan Ghosh) Wind resource assessment for southern part of Bangladesh; ISSN 1513-4121 Available: www.asian-energy-journal.info


(M. Kay and N. Hatcho) Small scale pumped irrigation: Energy and cost; Food and agricultural organization of united nations, Rome 1992.


(Cost analysis for pollution prevention) Ecology Information Document Publication Number 95-400 Revised, October 2002

Index Terms

Computer Science

Power Systems
Keywords
Hybrid optimization model of renewable energy (Homer)  Sandip-para  Domestic and agricultural power consumption

Cost analysis

Payback