

FEASIBILITY STUDY OF HYBRID; SOLAR AND BIOMASS POWER PLANT

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ABSTRACT

The thesis is the study of combined solar and biomass hybrid arrangement for the generation of electric power. In developing country like India, the electricity demand is rising continuously but the coal reserves for electricity generation are at the verge of depletion. So there is a need of paying attention towards the alternative sources of energy generation. Renewable energy sources are the best choice as they provide clean energy and overcome global warming. But there are certain problems in operating these sources as stand-alone systems. So it will be highly beneficial if both stand-alone systems work together as hybrid system because hybrid system will provide reliable and continuous power without depending upon main system and support farmers financially by consuming biomass from their fields. The present study intends to fulfill high electricity demands by utilizing solar energy and biomass (agri-residue) potential available in different villages of Hoshiarpur. The objective of thesis is to investigate the feasibility of hybrid solar-biomass power plant in village Binjon in Hoshiarpur district of Punjab. On the basis of data collected from different organizations and dealers, the biomass potential, per unit cost of generation from hybrid system and payback period is analyzed using MATLAB. The proposed hybrid system is designed with per unit cost of Rs 8.39. Less per capita expenditure is an index of development of any nation and by using such hybrid systems we can get less per capita expenditure values.