FINAL YEAR PROJECT REPORT

OPTIMAL ENERGY SOLUTION FOR RURAL HOUSEHOLD

Submitted by

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SEPTEMBER 2014

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in partial fulfillment of the requirements for the award of degree of

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APPROVED

Project Advisor_____ Director Projects _____

DEPARTMENT OF ELECTRICAL ENGINEERING
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Abstract

Electric short fall is at a critical point and is considered as one of the major issues of Pakistan. Most of the population approximately 62% resides in the rural development. The major crisis of electricity exists in rural areas. Therefore, it is essential to provide a viable solution to the rural development to overcome the short fall of electricity. Electricity crisis in rural development is a major issue. Rural development is facing almost 15-20 hours of load shedding therefore there it is important to provide an optimal energy solution for rural household to meet the demands of the electricity.

The cheapest and most suitable solution for rural environment is the biogas which is decentralized and does not require any extra effort for the production of biogas. Available resources in rural environment are enough to provide the energy needs and end up the crisis of the rural electricity needs as well as other energy issues. Almost 159 million animals are present in Pakistan's rural development whose manure can be utilized for the purpose of biogas production if utilized properly. Surveys show that there are almost 35.2 million cattle and buffalo whose dung can be used solely for this purpose.

Biogas production is not the only purpose of this research as it is produced before. The main issue is the generation of electricity. Therefore, the generation of electricity is estimated to be done through the use of turbines whose main fuel will be biogas which will be utilized in turbines for the production of electricity and provide a decentralized solution of electricity for the rural development. If every village is to be provided with decentralized power plants then in this way, the energy crisis for the rural development can come to an end. Secondly, it will also reduce the load on power houses to provide electricity to remote areas of the rural development.

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