

# **“Efficient Utilization of Renewable Energy for Multiple Utilities by Buck-Boost Converter”**

A Project Report

Submitted In Partial Fulfillment Of The Requirements  
For The Award Of The Degree Of Bachelor Of  
Engineering In Electrical And Electronics Engineering  
Of The Visvesvaraya Technological University, Belgaum



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## ***ABSTRACT***

*In the present world, nearly 1.5 billion people i.e. more than 1/4<sup>th</sup> of world's population have no access to the electricity. About 85% of the world's population lives in the villages. As said by the international energy agency the need for energy would increase by 50% more than the present. India being highly populated, the requirement of power is increasing continuously and is expected to be the 2<sup>nd</sup> largest energy consumer by 2025. Existing demand supply gap is more than 10% and more than 25000 villages are still unconnected with grid. With this rapid increase in the gap between demand and supply the need for development of new ways for generation of power has gained a lot of importance. At present the source for 70% of the power generation is coal. Non renewable sources like coal, oil, and nuclear fuel are costly and also lead to pollution and global warming and tapping and utilization of renewable resources could be a viable option hence harnessing of renewable energy using solar PV is gaining great importance.*

*Energy generated from Solar PV is DC. Conventional systems use ac hence inverter, step up circuits are essential. Some of the loads at the utilization level like Radios, Mobiles etc are dc. Direct utilization of PV energy using buck boost converter is implemented which reduces number of stages of power conversion and hence improves efficiency. These circuits provide a wide range of output voltages i.e stepped up as well as stepped down voltages that can be utilized for huge number of applications. Thus thereby reducing the transmission and distribution costs especially for isolated and unconnected villages.*