

CHAPTER FOUR



Solar Powered Study Lamp For Scarcely Electrified Area

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This research aims to save energy by designing and developing a Solar Powered Study Lamp for different rural areas of India in general and Odisha in particular. Solar energy is a renewable source of energy, which is long-lasting and environment friendly. It can be easily utilized and also a cost effective in long term. The is different from conventional Study Lamp not only in the sense that it uses solar energy, but more importantly, it is a stand-alone device with in the Solar Photovoltaic "PV" system of OFF-Grid type. It is very essential to automate the system, then it is easy to conserve energy as well as to maximize the efficiency of the system.

Over half a billion children is suffering from lack of adequate lighting and they rely on dim, smoky, and dangerous kerosene-based lighting for their evening studies. This paper is on how we can provide our rural students a brighter, clean, safe, and zero-marginal-cost light of solar lamps enhances children's learning outcomes. The solar lamp can provide continuous light of 150 lux for studying properly around 5 to 6 hours; this may be due to flickering from lack of full charge that lowered their productivity. These solar lamps likely have insignificant effect on educational attainment.

Introduction

With the development of economy, urbanization and intensification of light, all countries are looking for the way to solve this serious problem. One way is to search the new energy and take advantage of the renewable energy. Another way is to exploit the new energy-saving technologies to reduce energy consumption, and improve utilization efficiency of energy. Solar energy is the most direct, common, and clean energy on our planet we have already found until now. Total solar energy absorbed by the Earth is