

## **ABSTRACT**

India has a vast supply of renewable energy resources, and it has one of the largest programs in the world for deploying renewable energy products and systems. But on the other side, there are several electricity issues faced by the agricultural sector like free and unreliable electricity supply to villages, large transmission and distribution losses, theft, etc. which is causing a huge loss to the economy. The study is about the promotion and adoption of renewable techniques to fulfill the energy requirements of the country and for receiving the benefits of renewable energy like energy security, decreased air pollution and its health effects, resource availability for future generation, sustainability of the planet, etc. This study explores the solar energy, with a focus on solar water pumping system and compare its cost and efficiency with the conventional pumping systems with the help of existing literatures which shows the increasing efficiency and decreasing costs of photovoltaic vis-à-vis increasing cost of fossil fuels and the difference between the life-cycle cost of solar pumps vis-à-vis conventional pumps including their initial, operating, maintenance and replacement costs.