

# Empowering Rural India through Solar Energy

M. K. Mohanty, A. K. Pradhan

## Abstract

Solar energy is the abundant renewable resource which can be used easily in rural India. Solar energy can be used in a number of ways, saving money, increasing self-reliance, and reducing pollution. There are primary two solar technologies i.e, namely (i) solar photovoltaic (PV) technology which converts solar energy directly into electrical energy using solar PV cells and (ii) Solar thermal technology that converts solar energy into heat energy. This paper discusses the applications of the two technologies. It is important for the public at large to be educated on several aspects of solar energy, i.e., the techno-economics of its applications, government policies and their implications, and social, environmental, health and employment benefits. Solar water heaters can provide hot water for diary operations, cleaning, and domestic purposes. Solar Photo-voltaic can generate power to help in farm operations and remote water pumps, light, and electric fences. About 25% of villages in India are not connected to the grid. This is where small decentralised solar applications can help with access to clean energy for everyday needs like lighting and cooking. The overall goal of the off-grid guidelines of the JNNSM (Jawaharlal Nehru National solar Mission) is to achieve wider dissemination of solar technology. In this regard a generous capital subsidy of up to 90% is offered for rural applications.

**Keywords:** Agriculture, photovoltaic, renewable energy, solar.