# DECENTRALISATION OF ELECTRICITY: A POSITIVE IMPACT ON CLIMATE AND ENVIRONMENT

**Raghavendra Vemuri**
Department of Physics,
Sri Venkateswara College, University of Delhi, New Delhi 110021
Corresponding author E-mail: raghavendra.vemuri@gmail.com

**Abstract**

The major disadvantages of centralised electricity involve transmission losses, single point failure, high investment and environmental impact. The most important benefit for climate and environment is reduction of non-renewable energy. This transformation is driven by an urgent need for decarbonisation, rapid technological advancements. Change of climate is not completely depend on decentralisation of energy. But reducing a portion is possible by implementing decentralisation energy like Solar, wind energy and biomass will benefits quality of air. India has crossed 30.74GW of grid connected roof top solar capacity. The long-term significance of rooftop solar is not simply the number of solar panels installed.PM Surya Ghar: Mufti Bijli Yojana launched in 2024.

## 1. Introduction

Energy security and environmental sustainability are facing serious challenges due to India's fast rising energy demand, urbanization, industrialization, and electrification. Large, centralized power plants, especially coal-based thermal power plants, have historically been a major source of electricity in India. Centralized generation is linked to greenhouse gas emissions, air pollution, transmission losses, land needs, and other environmental effects even though it offers economies of scale and dependable bulk electricity. An alternate strategy is decentralized energy generation (DEG) [1] which generates power near the point of consumption. Rooftop solar photovoltaic systems, solar mini-grids, biomass-based generation, biogas plants, micro-hydropower, small wind systems, and hybrid renewable energy systems are examples.

The major disadvantages of centralised electricity involve transmission losses, single point failure, high investment and environmental impact. Indias peak electricity demand is approximately 1000 Gigawatts. This article explores all possibilities to transform India into developed economy. Decentralisation of power generation produces electricity closes to where the public lives [2]. The localized systems are also known as distributed energy resources. Roof top solar power, micro grids, small wind turbines are the examples. When power travels shorter distances the transmission and distribution losses are reduced to greater extent. Clean energy support and energy independence are the advantages. Consumers would become as producers.