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**Swami Keshvanand Institute of Technology,
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SCOPE OF RENEWABLE ENERGY UTILIZATION IN INDIA

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Abstract

India is emerging as a leading renewable energy harvester among developing countries. The use of renewable energy is critical in country's energy security and financial solidness. Renewable energy sector is upheld by government with monetary, institutional and instructive guides. Country's sustainable power strategy structure and procedures are huge for development of renewable energy sector. India has extremely enormous solar and wind energy potential which is geologically scattered. There is an expanding need to investigate sustainable power sources to meet manageability and ecological targets. This study is focusing on the historical development and present scenario of renewable energy utilization in India. The paper cover government agencies, policies and foundations of policy frame work, status of renewable energy potential, installed capacity and contribution of renewable sources. Finally the potential challenges of renewable energy integration and status of smart grid development in India is discussed.

Keywords: Renewable Energy Sources, Renewable Energy Agencies, Renewable Energy Policy, Smart Grid.

INTRODUCTION

In India, per capita electrical energy utilization is expanding quickly during ongoing years. Per capita energy utilization in 1992 was 347.5kWh. In 2016 it came to 1075 kWh [1] Growth of force area is basic for India's energy and monetary standpoint. The share of various sources as on 2016 is, Coal – 60.9 %, Hydro-12.1 %, Renewable Energy Sources(RES) – 12.1 %, Gas - 6.5 %, Nuclear-1.8 %; Diesel-0.1% [1]. India relies intensely upon coal for meeting its expanding energy interest. Coal is a primary source of air pollution and greenhouse gas emissions. This sort of energy utilization isn't advantageous for accomplishing a supportable energy stage for what's to come. Dependence on fossil fuels is to be reduced and utilization of RES should be promoted to reduce the environmental and ecological impacts [2]. Growing oil prices and oil import dependency is giving additional economic burden on the country. High dependency on import will result in greater energy insecurity in future. The country has to reduce dependence on both coal, oil and has to focus on RES to get a secure and stable energy system [2]. National demand for energy is growing in a rapid manner. The forecast of electrical energy requirement for year 2021-2022 is 174821 MU and for year 2026-27 is 2335987 MU [1]. To make the energy system efficient and sustainable to meet this demand with minimizing the environmental and ecological impacts is to efficiently exploit nation's RES potential. In this direction to achieve goal, GoI framed different policies with provisions for timely updates. This paper presents the Policies, opportunities and challenges in enhancement of RES for future energy demands of India.

GOVERNMENT INSTITUTES AND RESEARCH CENTERS

GoI established different institutes for research and development of RES technologies.

ICONRER-2021

Renewable energy and sustainable development are the key technologies to offer solutions to the ever-increasing environmental pollutions and depleting conventional fuel reserves. With an aim to discuss the state of art technologies pertaining to the renewable energy domain, RTU (ATU) TEQIP III Sponsored 3rd International Conference on New and Renewable Energy Resources for Sustainable Future (ICONRER-2021) was organized by the Department of Mechanical Engineering, Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur in collaboration with Rajasthan Technical University and Department of Mechanical Engineering, Assiut University, Assiut (Egypt) from February 11 to 13, 2021. ICONRER is a series of the conference started in 2017 and it was 3rd event of that series.



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