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**Proceedings of the One Day
INTERNATIONAL CONFERENCE ON
“Innovation for A Sustainable Future - Embracing the
Path to A Digital Green Deal“
(ICISF) – 2024**

13th December, 2024

Organized by

Department of B.Com - Accounting and Finance

Department of B.Com - Information Technology

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TASKS AND EXPECTATIONS FOR RENEWABLE ENERGY ADOPTION

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Abstract--- Protection of environment plays a major challenge for every nation. India being the second largest in population and rich in natural resources, have started to face a lot of environmental challenges. Hence there arises the need for the alternative source of energy – the renewable energy. Renewable energy sources like solar, wind, and hydropower have a smaller environmental footprint than fossil fuels. They produce fewer greenhouse gases, which cause climate change, and they pollute less. It also reduces reliance on fossil fuels improves air quality, which can reduce health risks like respiratory diseases and cardiovascular problems. In short, renewable energy is a sustainable energy source that can be used anywhere on the planet. India is marching towards the renewable energy adoption techniques in a rapid manner. Most of the state governments in India encourage the people to involve themselves towards the alternative sources of energy.

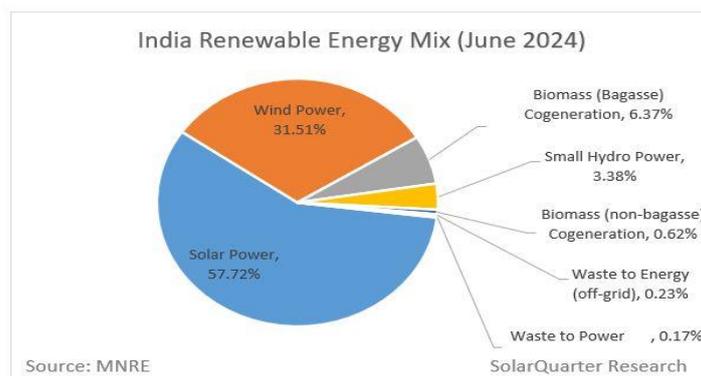
Keywords---Renewable Energy, Solar, Wind Mill, Pollution, Environment.

1. INTRODUCTION

Sustainable Development Goal 7 (SDG 7) is a United Nations goal to ensure that everyone has access to affordable, reliable, sustainable, and modern energy. This goal improves people's health and well-being, and protect them from environmental and social risks. Energy production and consumption are essential sources of growth for economies. Sustainable development is a concept that emerged in the 1980s, which seeks to balance economic, social and environmental aspects to ensure a better future for all. The idea is to create a world in which everyone has access to the resources they need to live a decent life, without harming the planet. It is about ensuring that the economic, social and environmental aspects of development are interdependent and mutually reinforcing.

India's need for energy is constantly surging to quench the country's current economic growth initiatives. A vital pre-requisite for a nation's economy to grow is the availability of growing amounts of energy. With the aim of providing energy across the nation, the National Electricity Plan [NEP] defined by the Ministry of Power (MoP) has created a thorough 10-year action plan.

It has developed a strategy to make sure that power is distributed to the public efficiently and affordably. However, the increased consumption of conventional energy leads to increased environmental degradation. Renewable energy is harnessed from sources including sunlight and wind to generate power used in transportation, heating, and lighting, among other applications. While renewable energy is not a new technology, there has been an increase in innovative ways to capture and produce renewable energies from solar and wind energy. Therefore, innovative technologies used in harnessing renewable energies have led to the increased use of clean energy in many parts of the world and on large scales.



2. ROLE OF EDUCATIONAL INSTITUTIONS

Educational Institutions play a vital role in giving awareness to the younger generation in implementing the sustainable goal of renewable energy. It creates awareness by organizing programs to the students, planting of tree saplings inside the campus and making the campus greenery, encouraging the usage of public transport, e-vehicles inside the campus, etc., Moreover, solar plants, windmills etc., are being implemented in the educational institutions, which in turn motivates the students to move towards a green environment. Most of the institutions go beyond the campus and they give awareness to the society regarding the protection of environment, saving of trees, energy, water and other natural resources.

Education also has a key role to play in promoting public awareness and understanding of renewable energy. As more and more people become aware of the need for clean energy, they are demanding more information about how renewable energy works and what they can do to support it. Education can help to provide this information, through initiatives such as public education campaigns, community outreach programs, and educational materials for schools and universities. By increasing public awareness and understanding of renewable energy, education can help to create a more supportive environment for the growth of renewable energy technologies and policies.

Finally, education can also play a key role in training the workforce needed to build, operate, and maintain renewable energy systems. As the demand for renewable energy continues to grow, there is a growing need for skilled workers who can design, install, and maintain these systems. Education can help to provide the training and skills needed to meet this demand, through programs such as vocational training, apprenticeships, and university degrees in fields such as renewable energy engineering and environmental science.

Transforming schools, colleges, and universities into solar-powered green solutions has wide-ranging impacts: Social: Raises environmental awareness, promotes eco-friendly practices, reduces air pollution, and engages the community. Solar energy offers a multitude of advantages for educational institutions. Firstly, it provides reduced energy costs and significant financial savings, allowing schools to allocate funds towards other educational endeavours. Moreover, solar energy promotes environmental sustainability by reducing carbon emissions and minimizing the institution's overall carbon footprint. This tangible commitment to sustainable practices sets a positive example for students and the wider community. Lastly, solar energy creates invaluable educational opportunities, enabling students to witness firsthand the power and potential of renewable energy sources



3. ROLE OF GOVERNMENT

India was world's first country to set up a ministry of non-conventional energy resources (Ministry of New and Renewable Energy (MNRE)) in early 1980s . Solar Energy Corporation of India (SECI), a public sector undertaking, is responsible for the development of solar energy industry in India. The Indian government has taken many steps to promote alternative sources of energy. The Government of India has undertaken several initiatives to promote renewable energy in the country. These initiatives reflect India's commitment to achieving its renewable energy targets, reducing greenhouse gas emissions, and transitioning towards a more sustainable and cleaner energy future.

- **National Solar Mission (NSM):** Launched in 2010, NSM aims to promote the development and use of solar energy for both grid-connected and off-grid applications. It sets ambitious targets for solar capacity addition and offers financial incentives, subsidies, and policy support to boost solar energy adoption.
- **Wind Energy Promotion:** India has one of the world's largest wind energy capacities. The government provides incentives such as generation-based incentives (GBIs) and accelerated depreciation benefits to encourage wind power development.
- **Bioenergy Promotion:** The government promotes the use of biofuels and biomass-based power generation. Initiatives include the Ethanol Blending Program, which mandates blending ethanol with petrol, and the National Policy on Biofuels.
- **Hydropower Development:** India aims to harness its hydropower potential while taking into consideration environmental concerns. Various policies and incentives support the development of small and large hydropower projects.
- **Geothermal and Ocean Energy:** While in the nascent stages, the government is exploring opportunities for geothermal and ocean energy projects. Research and development initiatives are underway to harness these resources.
- **Renewable Purchase Obligations (RPO):** Under the Electricity Act, 2003, state electricity regulatory commissions enforce RPOs on distribution companies and open access consumers. They are mandated to procure a specific percentage of their power from renewable sources.
- **Tax Incentives:** The government provides tax benefits, including accelerated depreciation and income tax exemptions, to promote investments in renewable energy projects.
- **Green Energy Corridors:** To improve the grid infrastructure and facilitate the integration of renewable energy into the grid, the government is developing Green Energy Corridors, which are dedicated transmission lines for renewable power.

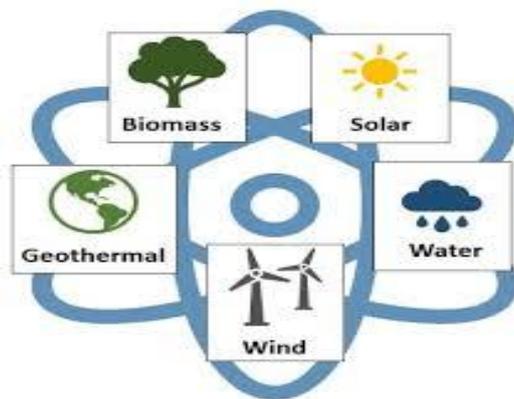
- **International Collaboration:** India collaborates with various countries and international organizations on renewable energy projects, technology transfer, and capacity building.
- **Research and Development:** The Ministry of New and Renewable Energy (MNRE) funds research and development initiatives to enhance renewable energy technologies and make them more cost-effective.
- **Net Metering and Feed-in Tariffs:** Various states have introduced net metering policies and feed-in tariffs to encourage rooftop solar installations, allowing consumers to sell excess electricity back to the grid.

The government has set goals to reduce carbon emissions, increase renewable energy capacity, and achieve net-zero carbon emissions:

- Reduce carbon emissions by 1 billion tonnes by 2030 and reduce carbon intensity by less than 45% by 2030
- Achieve net-zero carbon emissions by 2070 and reach 450 GW of renewable energy by 2030
- Achieve 40% renewable electricity capacity by 2030

The government has launched programs to:

- Boost renewable energy production, Enhance energy access, Empower farmers
- Reduce dependency on fossil fuels, Promote solar energy, Promote wind-solar hybrid systems and Promote floating PV projects



4. ROLE OF INDIVIDUALS IN PROMOTING RENEWABLE ENERGY

Every individual should take utmost care in utilizing the resources. Too much of utilization or wastage of the resources may lead to lack of resources in future. So, it is the responsibility of every citizen to adhere to the rules and regulations implemented by the government towards green nation. The reasons for less utilization of renewable energy may be because of

- The lack of awareness about the technologies is a significant obstacle in acquiring vast land for constructing the renewable plant. Moreover, people using agriculture lands are not prepared to give their land to construct power plants because most Indians cultivate plants.
- The renewable sector depends on the climate, and this varying climate also imposes less popularity of renewables among the people.
- The per capita income is low, and the people consider that the cost of renewables might be high and they might not be able to use renewables.

- The storage system increases the cost of renewables, and people believe it too costly and are not ready to use them.
- The environmental benefits of renewable technologies are not clearly understood by the people and negative perceptions are making renewable technologies less prevalent among them.

5. CONCLUSION

In 2022, the renewable energy- generating capacity in developing countries has increased by 58% in renewable capacity per capita. The progress towards SDG 7 has not been faster due to the world entering its third year of COVID-19 along with the highest number of violent conflicts and with the Russian invasion of Ukraine creating one of the largest refugee crises to happen. There are still over 700 million people without access to electricity and about 2.4 billion cooking with harmful fuels that also are polluting the environment. More efforts need to be exerted to improved use of renewable energy and energy efficiency faster. These events has had catastrophic effect the livelihoods of many people and though in 2021, as the global economy started to rebound, these chain of events and negative effects as caused the global economy and progress to SDG 7 and other SDGs to slow down.

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