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Role Of Renewable Energy In Service Sector

RABINDRA BHARATI PATRIKA
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ROLE OF RENEWABLE ENERGY IN SERVICE SECTOR

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Abstract:

In India, the main goals of the use of renewable energy are to reduce climate change, enhance economic development, and enhance energy security and accessibility. Utilising sustainable energy and ensuring that all residents have access to modern, affordable, dependable, and sustainable energy are necessary for sustainable development. India is already among the top leaders in the most desirable renewable energy sectors in the world because of strong government support and an increasingly favourable economic environment. The government has created regulations, initiatives, and a welcoming atmosphere to draw in foreign capital and quickly expand the nation's presence in the renewable energy market, particularly in the service industry.

Over the coming years, it is projected that the renewable energy industry can provide a significant number of jobs in the country. The objective of this paper is to showcase noteworthy accomplishments, outlooks, forecasts, electricity production, obstacles, and job and investment opportunities resulting from India's growth in renewable energy. The different challenges that the renewable industry faces have been noted in this review. Policymakers, innovators, project developers, investors, industries, related stakeholders and departments, researchers, and scientists will find valuable information in the suggestions based on the review conclusions.

Keywords: India, Sustainable, Renewable energy, Achievements, Initiatives, Barriers, Recommendations, Investment, Employment, Developers, Policymakers, Investors.

Introduction:

Any nation's citizens are becoming more conscious of and concerned about the growing importance of the output from the service industries to that nation's economy. Specifically, the service industry is a crucial domain wherever the swift changes occurring throughout the world are exchanged with the focus on the service sector and the issue of service industries' efficiency being addressed. Furthermore, it is anticipated that the service sector would be one of the main engines of future growth. H.T. Keh, J. Wirtz, and C.K. Lovelock. In addition to producing goods that satisfy consumers' demands for superior quality at a reduced cost, these manufacturing companies are also expected to offer environmental solutions that benefit society and the general public. Manufacturing companies prioritise their clients by providing superior product, service, support, expertise, and/or self-service packages, or by combining them to enhance their core product offers. (Vandermerwe, S. and Rada, J. 1988)

Offering an additional service to enhance the value of the products is a common solution. Services are commercial endeavours that do not culminate in the acquisition of a material possession. According to T.S. Baines, H.W. Lightfoot, O. Benedettini, J.M. Kay, and sterilisation, manufacturing companies provide value that goes above and beyond conventional commercial practises. The end consumers should receive the solution from E&E enterprises in the service economy. The sustainability solution was one of the connected challenges. The majority of the energy used in product manufacturing originated from

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fossil fuels. The energy consumption of the E&E sector is regarded as enormous. The E&E sector is the second-biggest energy consumer in Malaysia. In 2005, it accounted for 40.5% of the total final demand for commercial energy. The United Nations Environment Programme (UNEP) projects that the industrial sector will continue to expand and become the primary energy consumer of the entire energy demand in the future.

The Importance of Renewable Energy:

Renewable energy sources are clean, limitless, and getting more and more competitive. Their main differences from fossil fuels are their diversity, abundance, and global use, but most importantly, they don't emit any polluting or greenhouse gases, which are the main cause of climate change. Despite their current volatility, the overall cost trend for fossil fuels is declining, while their costs are likewise declining at a sustainable rate.

The International Energy Agency (IEA) releases statistics every year that demonstrate the unstoppable growth of clean energy. The IEA projects that the share of renewable energy in the world's electricity supply will rise from 28.7% in 2021 to 43% in 2030, and that these sources will supply two thirds of the increase in electricity demand observed during that time, primarily due to the use of wind and photovoltaic technologies.

By 2040, the IEA projects that global electricity consumption would have grown by 70%, with emerging economies primarily in China, India, Africa, the Middle East, and South-East Asia accounting for a rise in the demand from 18 to 24% of total energy used.

Service Sector:

The economic sector that creates and provides services is known as the service sector. The primary, secondary, and tertiary are the three main economic sectors, according to the tri-sector macroeconomic theory.

Primary Sector: The industries in the primary sector are those that are involved in the procurement of raw materials. In addition to the fishing and farming sectors, it includes mining, timber and oil drilling firms.

Secondary Sector: All companies that create and sell items, such as automakers, furniture sellers, and clothes manufacturers, are considered to be part of the secondary sector.

Tertiary Sector: The service sector is known as the tertiary sector. Industry sectors covered by it include internet technology (IT), financial services, healthcare, and entertainment.

A fourth sector, known as the quaternary sector, is recognised by some economists as encompassing research, information technology, education, consultancy, and other aspects of the economy that have come to be referred to as the "knowledge-based economy."

"The knowledge-based economy is centred on using communications and information, including social media, to offer products and services that are especially catered to the requirements and preferences of certain consumers or clients. A store like Amazon or Walmart sending you customised advertisements for products or services based on your past purchases or searches is an example of the knowledge-based

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economy in action.

Role of Renewable Energy in Service Sector:

The global economy heavily depends on the service sector, which includes businesses in the banking, healthcare, education, hospitality, and other sectors. In the service industry, renewable energy plays a complex function that touches on many areas of operations, sustainability, and overarching corporate strategy. The following are some salient points emphasising the function of renewable energy in the service industry:

Savings and Gains in the Economy: Reduction of Operational Costs: Long-term energy expenses can be decreased and enterprises in the service sector can become less dependent on traditional energy sources by implementing renewable energy sources like wind or solar power.

Sustainability and Corporate Social Responsibility (CSR): Environmental Impact: Through energy consumption, the service sector, like all others, adds to carbon emissions. Making the switch to renewable energy is a commitment to environmental sustainability and fits with corporate social responsibility goals.

Brand Image: Customers are becoming more aware of the environmental policies used by companies. Using renewable energy can improve a business's reputation and brand image while drawing in eco-aware clients.

Energy Security and Reliability: Diversification of Energy Sources: Including renewable energy sources can increase energy security by lowering reliance on fossil fuel price swings and supply disruptions and diversifying power sources.

Partnerships & Cooperation: Supply Chain Sustainability Businesses in the service industry can promote the use of renewable energy across their supply chains. This could entail working together with partners and suppliers to encourage sustainable practises and lower the total carbon footprint.

Literature Review:

Energy resources have always been essential to the growth and health of an economy. It is evident that energy consumption is the primary driver of greenhouse gas (GHG) emissions, especially CO₂, and that energy consumption is the primary driver of economic growth (Gabr and Mohamed, 2020).

Beginning with this overall environmental framework caused by non-renewable resources, a number of national economies have attempted to implement structural changes in energy consumption and production practises in the wake of several disasters. Some nations have mostly moved away from fossil fuels and towards renewable energy sources, making them less dependent on non-renewable energy source (Irfan et al., 2021).

The United States, China, and India are the three largest economies that have been vying for these spots for a while now as the countries with the greatest potential for investments in renewable energy, according to the EY Company's Renewable Energy Country Attractiveness Index (RECAI), which incorporates new global trends. (RECAI, 2020).

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Although it is imperative, several European countries continue to face obstacles in the implementation of renewable energy sources (RES). RES perception and awareness are the primary obstacles in nations like Montenegro (Djurisic et al., 2020).

In certain nations, the utilisation and production of renewable energy do not impede economic progress; conversely, it significantly impedes it. Thus, income development has both good and negative effects on the consumption of renewable and non-renewable energy.

Regretfully, some industrialised nations remain steadfast in their reliance on the use of fossil fuels in an attempt to achieve faster and more remarkable economic growth, even in the face of revolutionary attempts to embrace renewable energy technologies. While renewable energy sources have a positive impact on the environment, non-renewable energy sources can lead to economic tranquilly that benefits individual economies and their citizens' lifestyles but not the environment (Doytch and Narayan, 2016).

The threshold level of renewable energy consumption occasionally has little bearing on developed nations' economic progress. In many EU countries, there may be no correlation between metrics of economic development and renewable energy (RE). The proportion of renewable energy (RE) in total energy consumption in EU countries has been steadily increasing and has not been significantly impacted by economic reasons, despite considerable disagreement and uncertain economic conditions (Ogonowski 2021).

The promise of renewable energy technologies to create jobs is a major economic force behind their advancement. Five million people are thought to be employed in the renewable energy sector. The current global recession and policy changes have resulted to a drop-in employment in certain nations, such as Germany and Spain, despite the fact that overall employment in these industries has continued to rise. (Martinot and Sawin, 2012).

Ragwitz et al. (2009) examined both the direct and indirect consequences of EU renewable energy policy. They specifically examined how policies promoting renewable energy have affected employment and the economy as a whole as well as individual members in the past, present, and future. They discovered that, "in order to reach the agreed target of 20 percent renewable energies in Europe by 2020," the current economic benefits of the renewable energy sectors may and should be improved in the future by strengthening the current laws.

Research Methodology:

The research has been based on conceptual research work. A depth study was carried out. This paper discusses the role of renewable energy in service sector to understand the depth of the concept behind role of renewable energy in service sector values that renewable energy holds and to understand the role of renewable energy in service sector

Secondary data has been used and studies from the previous researchers to identify various aspects related to the topic. Literature review and introduction has been preparing with the help of research paper publications, article, and other internet sources.

Objectives of the Study:

- To study the role of renewable energy in service sector
- To understand the importance of renewable energy.

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- To highlight the scope of renewable energy in service sector.

Findings & Conclusion:

- The price of renewable energy technologies, particularly wind and solar, has been declining. As a result, in many areas, renewable energy is now more affordable than conventional fossil fuels.
- The development of novel materials and enhancements in efficiency were two aspects of solar technology advancements that were driving up adoption. There was an increase in the installation of massive solar farms and the incorporation of solar energy into pre-existing infrastructure.
- Significant expansion was observed in wind energy, both offshore and onshore. In particular, offshore wind farms were becoming more prevalent as costs dropped and technology advanced.
- The grid's ability to include intermittent renewable energy sources like solar and wind power depends on the development of reliable and affordable energy storage technologies, such as sophisticated batteries. Technologies for storing data were developing quickly.
- The growing number of electric vehicles (EVs) and the electrification of transportation were having an impact on the demand for renewable energy. Numerous nations were attempting to incorporate renewable energy sources into their infrastructure related to transportation.

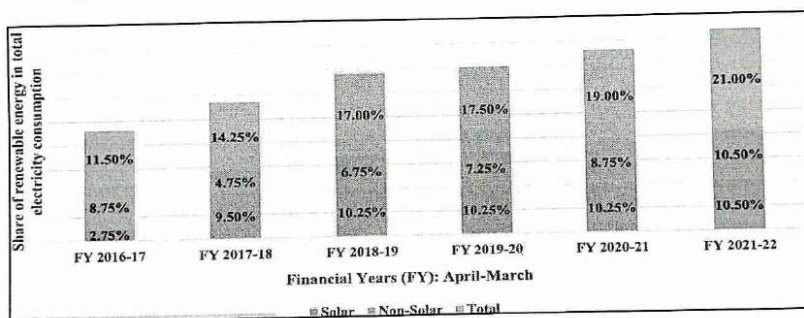


Figure 1: Estimated renewable energy potential in India

Source: <https://energysustainsoc.biomedcentral.com/article>

They lower pollution and serve as fossil fuel replacements. Certain renewable technologies might not be as cost-effective as conventional fuels in the short run when it comes to production and transportation, but they might be if we take into account the positive externalities that come with them, such the effects they have on society and the environment. It should be mentioned that economies of scale may be a significant factor in bringing down the production cost per unit.


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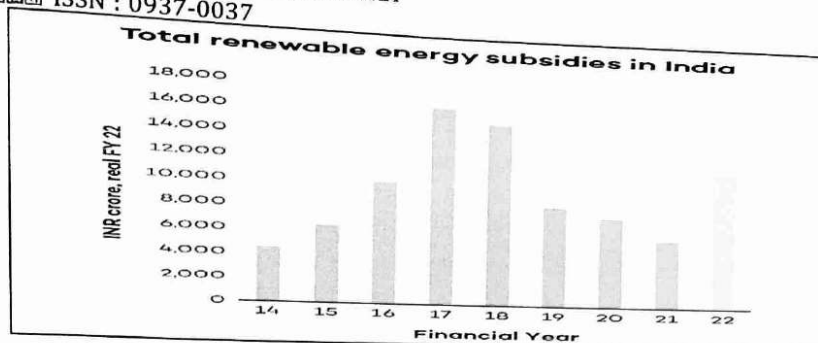


Figure 2: Total renewable energy subsidies in India

Source: <https://www.iisd.org/story/mapping-india-energy-policy-2022-update>

The government of India supports the use of renewable energy, as the graph above demonstrates. The use of renewable energy technology is motivated by the reduction of CO₂ emissions, economic benefits, and energy security. Furthermore, the price of fuel imports may have an impact on economic expansion. These nations might increase their ability to invest in other areas and lower their balance of payments by generating their own renewable energy to lessen their reliance on fossil fuels. When renewable energy technologies take the place of fossil fuels in the transportation and power generation sectors, carbon dioxide emissions could be decreased. Compared to fossil fuels, renewable energy systems have substantially lower life-cycle CO₂ emissions.

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