



## A Study on Role of Green Energy Environment Conservation

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### ABSTRACT

Amidst growing global concerns about environmental sustainability, the adoption of green energy technologies has become imperative for mitigating climate change and preserving natural ecosystems. This study investigates the pivotal role of green energy in environmental conservation. It explores the benefits of renewable energy sources such as solar, wind, hydroelectric, and geothermal power in reducing greenhouse gas emissions, improving air quality, and fostering biodiversity. The study employs a mixed-methods approach, utilizing primary data collected through surveys and secondary data from various literature sources. It examines public perceptions and attitudes towards green energy initiatives in Medchal, focusing on a sample size of 100 respondents from a population of 200.

**Keywords:** Green energy, environmental conservation, renewable energy, climate change mitigation, biodiversity.

### INTRODUCTION

As the global community confronts the urgent need for environmental conservation, the role of green energy has gained prominence as a critical solution to mitigate the adverse impacts of climate change and preserve our planet for future generations. This abstract provides a concise overview of the key themes and findings explored in the full paper. The transition to green energy sources, such as solar, wind, hydropower, and biomass, has become a focal point in the battle against environmental degradation.

Green energy technologies reduce greenhouse gas emissions, decrease dependence on finite fossil fuel resources, and foster sustainable development. This paper highlights the multifaceted ways in which green energy contributes to environmental conservation.

Firstly, the adoption of green energy sources significantly reduces carbon emissions and air pollution, leading to improved air quality and decreased health risks.

By replacing conventional fossil fuels with clean and renewable alternatives, we can combat climate change and its associated consequences, such as more frequent and severe natural disasters. Secondly, the shift toward green energy promotes biodiversity and habitat.

In an era marked by climate change and environmental degradation, the transition to green energy is no longer just a matter of technological innovation or economic opportunity—it is a vital step toward preserving our planet's ecosystems and ensuring a sustainable future. Green energy, encompassing sources like solar, wind, hydro, and geothermal power, represents a cleaner, more sustainable alternative to fossil fuels, which have been the primary source of global energy for decades.

The environmental impacts of traditional energy sources are well-documented: air and water pollution, deforestation, loss of biodiversity, and, most critically, the emission of greenhouse gases that contribute to global warming. These issues not only harm the environment but also pose significant risks to human health and well-being. In contrast, green energy offers a path forward that reduces these adverse effects. By harnessing renewable resources, green energy technologies produce little to no emissions, have a smaller carbon footprint, and rely on resources that are naturally replenished. Moreover, they can stimulate local economies, create new jobs, and reduce reliance on energy imports, contributing to greater energy security. This shift toward green energy is not without its challenges.

It requires substantial investment in infrastructure, a rethinking of energy policies, and the development of technologies that are both efficient and scalable. Additionally, integrating these renewable sources into existing energy grids and managing their variable output are technical hurdles that must be overcome. Despite these challenges, the potential benefits of green energy in promoting environmental conservation are profound. By reducing our dependence on fossil fuels, we can mitigate the impacts of climate change, protect natural habitats, and pave the way

for a healthier planet for future generations. As governments, businesses, and individuals increasingly recognize the urgency of environmental conservation, the role of green energy becomes central to achieving a sustainable and resilient world.

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## REVIEW OF LITERATURE

**Vijay Laxmi Kalyani (2015):** Energy is the property of objects which can be converted into different forms or can be transferred to other objects but cannot be created or destroyed. Green energy is the energy that is produced in such a way as to minimize its negative impact on the environment. It is a renewable source of energy. Sources of green energy such as solar, wind, geothermal and hydro energy are developed and promoted as alternative source that make little or no contribution to climate change. In this paper the author seeks to explore how green energy is useful for the future aspect of the world. And current application of this emerging technology, like generating electricity for various purposes, heating and cooling of water and more.

**Sonal Meena , Dr. Shyam Kumar Meena ( May 5 2020 )**

Renewable technologies are considered as clean sources of energy and optimal use of these resources minimize environmental impacts, produce minimum secondary wastes and are sustainable based on current and future economic and social societal needs. Sun is the source of all energies. The primary forms of solar energy are heat and light. Sunlight and heat are transformed and absorbed by the environment in a multitude of ways. Some of these transformations result in renewable energy flows such as biomass and wind energy. Renewable energy technologies provide an excellent opportunity for mitigation of greenhouse gas emission and reducing global warming through substituting conventional energy sources.

**N.L Panwar , S.C Kaushik , Surendra Kothari ( April 2011)**

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## OBJECTIVES OF THE STUDY

To analyze the impact of green energy on environmental conservatism

To analyze public perceptions and attitudes toward green energy

**H0:** There is no significant relationship between the adoption of green energy technologies and public attitudes towards environmental conservation

**H1:** There is a significant positive relationship between the adoption of green energy technologies and public attitudes towards environmental conservation.

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## RESEARCH DESIGN

The research design for a study on the role of green energy in environmental conservatism involves a combination of quantitative and qualitative approaches. The study will collect data on the impact of green energy sources (such as solar, wind, and hydroelectric) on reducing carbon emissions and promoting environmental sustainability. Quantitative data will be gathered from governmental and industry reports to measure emission reductions and energy efficiency gains. Qualitative data will come from interviews with experts and surveys of public attitudes to assess how green energy contributes to environmental awareness and conservation efforts. The analysis will focus on identifying trends and correlations between green energy adoption and positive environmental outcomes, offering insights into how green energy can drive broader environmental conservatism.

### Procedures:

Primary Data are those that have been personally collected. Primary data for the study were mostly gathered utilizing the survey technique and the tool questionnaire.

Secondary data refers to information that has already been gathered and subjected to statistical analysis by another party. Here is where the secondary data came from. Different dictionaries, registries, publications, and journals. Publications, etc. websites for the Company.

**Participants:**200

**Sample size:** 100

**Sample unit:** Medchal

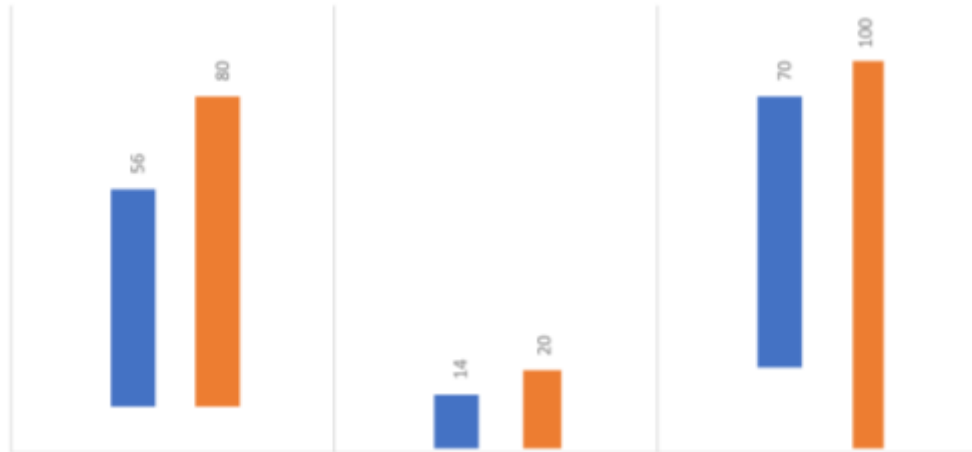
### Questionnaire:

A well-structured questionnaire with straightforward questions is employed for data gathering. Closed-ended, Likert-scale, and multiple-choice items are all included in the survey.

**Tools used:** Chi square, bar graphs, Percentages.

**DATA ANALYSIS**

Does the promotion of green energy influence individuals to adopt more environmentally conservative behaviour	Yes	No	Total
Response	56	14	70
Percentage	80	20	100

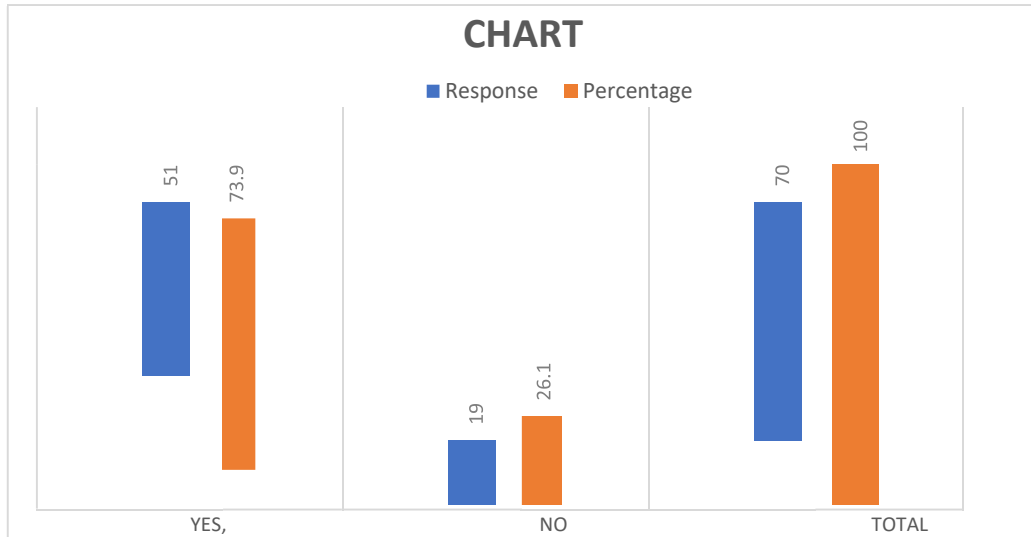


**Interpretation:** The table suggest that the promotion of green energy influences individuals environmentally conservative behaviour positively, with 80% responding “Yes” and 20% responding “No” out of the total 70 responses.

What is the primary motivation for individuals to support green energy	Economic Benefits	Environmental conservation	Social Responsibility	Political Ideology	Total
Response	16	22	18	14	70
Percentage	22.9	31.4	25.7	20	100

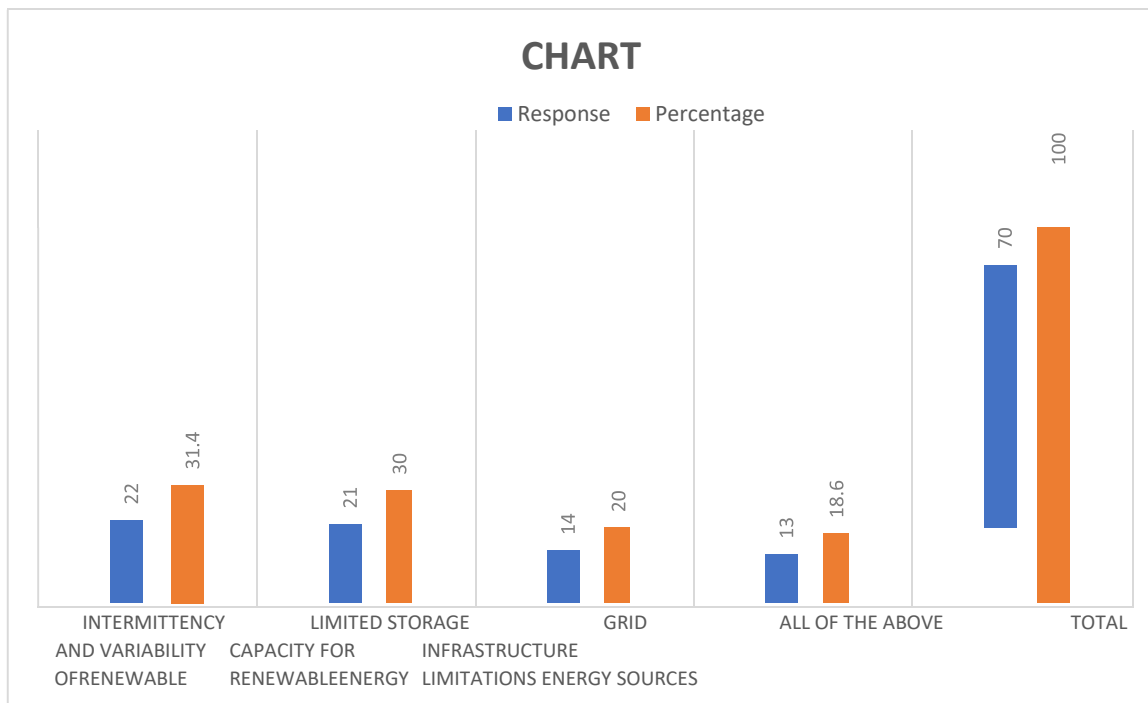
**Interpretation:** with the majority of 31.4% respondents were answered that the environmental conservation is the primary motion for individuals to support green energy and with the least majority 20% of the people opted for political ideology.

Do individuals who support green energy typically prioritize environmental conservation	Yes	No	Total
Response	51	19	70
Percentage	73.9	26.1	100



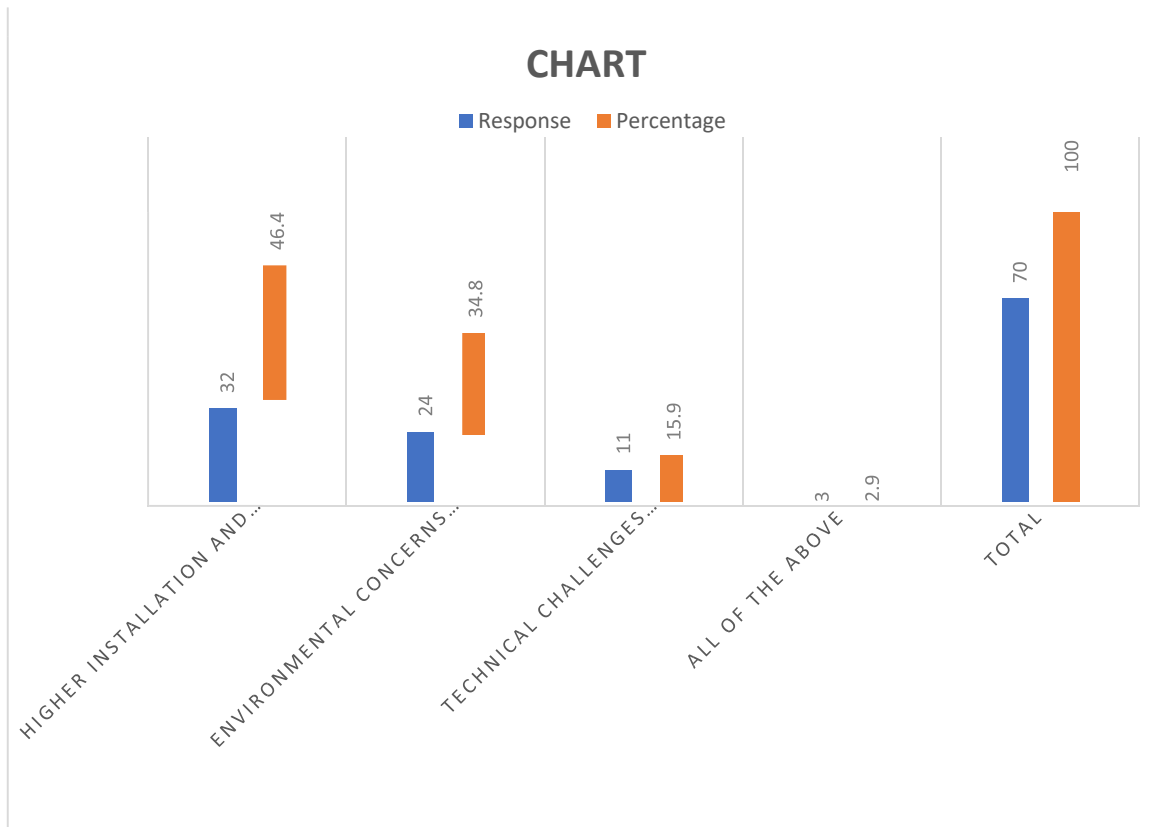
**Interpretation:** The majority of individuals who support green energy typically prioritize environmental, with (73.9 %) responding “Yes” out of the total 70 responses.

What are the primary challenges facing the integration of renewable energy into existing energy grids	Intermittency and variability of renewable energy sources	Limited storage capacity for renewable energy	Grid infrastructure limitations	All of the above	Total
<b>Response</b>	22	21	14	13	70
<b>Percentage</b>	31.4	30	20	18.6	100



**Interpretation:** Primary challenges in integrating renewable energy into existing grids include: intermittency and variability of sources 31.4% ,limited storage capacity 30%, and grid infrastructure limitations 20%, with 18.6% acknowledging “ All of the above ”.

What are the key challenges associated with the development of offshore wind energy projects	Higher installation and maintenance costs compared to onshore wind farms	Environmental concerns such as impacts on marine ecosystems and wildlife	Technical challenges related to deep-water construction and transmission infrastructure	All of the above	Total
Response	32	24	11	3	70
Percentage	46.4	34.8	15.9	2.9	100



**Interpretation:** the main challenges off shore wind energy projects are higher cost 46.4%, environmental concerns 34.8%, and technical difficulties 15.9% with small percentage 2.9% of these issues.

**STATISTICAL TOOLS FOR ANALYSIS**

**H0:** There is no significant relationship between the adoption of green energy Technologies and public attitudes towards environmental conservation.

**H1:** There is a significant positive relationship between the adoption of green energy technologies and public attitudes towards environmental conservation.

	High Impact	Low Impact	Margin Row Totals
Female	15 (15.56) [0.02]	18 (17.44) [0.02]	33
Male	18 (17.44) [0.02]	19 (19.56) [0.02]	37
Marginal Column Totals	33	37	70 (Grand Total)

The chi-square statistic is 0.0714. The p-value is .789286. The result is not significant at  $p < .05$

Since p value is less than 0.05, H<sub>0</sub> Rejected and Accepted H<sub>1</sub>. So, there is an impact of Green Energy on the Environment Conservation in company

<b>RESULT</b>			
	<b>High Impact</b>	<b>Low Impact</b>	<b>Row Totals</b>
20-25	20 (19.50) [0.01]	15 (15.50) [0.02]	35
26-30	12 (12.26) [0.01]	10 (9.74) [0.01]	22
31-35	7 (7.24) [0.01]	6 (5.76) [0.01]	13
Column Totals	39	31	70 (Grand Total)

The chi-square statistic is 0.0595. The p-value is .970679. The result is not significant at  $p < .05$

## **FINDINGS**

The majority of 31.4% respondents were answered that the environmental conservation is the primary motion for individuals to support green energy and with the least majority 20% of the people opted for political ideology.

In this survey, solar power is the renewable energy source most commonly associated with environmental conservation efforts, with 30.9% of respondents selecting it. This is followed closely by wind energy at 27.9%, hydroelectricity at 25%, and geothermal energy at 16.2%.

The use of green energy aids biodiversity conservation by reducing habitat destruction 47.1% and minimizing ecosystem – harming pollution (29.4%), as per respondents.

Primary challenges in integrating renewable energy into existing grids include: intermittency and variability of sources 31.4%, Limited storage capacity 30%, and grid infrastructure limitations 20%, with 18.6% acknowledging “All of the above”.

The main challenges off shore wind energy projects are higher cost 46.4%, environmental concerns 34.8%, and technical difficulties 15.9% with small percentage 2.9% of these issues.

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