



# Analysis of Rohtak District Urban Planning with Reference to Renewable Resources and its Impact

---

**Sonia**

Research Scholar Bhagwant University

Ajmer, Rajasthan

**Dr.L.C Verma**

Associate Professor Bhagwant University

Ajmer, Rajasthan

**Dr. Nagendra Kumar Sharm**

Principal of Subhash Education Group

Sikar, Rajasthan

---

## Abstract

In this research paper we have described about Analysis of Rohtak district urban planning with reference to renewable resources and its impact. Urban planning plays an important role in promoting and integrating renewable energy resources into cities. Renewable energy sources such as solar, wind, and geothermal can be integrated into urban design through the use of building-integrated photovoltaics, wind turbines, and geothermal heating and cooling systems. Additionally, urban planners can promote renewable energy by creating policies and plans that incentivize the use of renewable energy, as well as by improving energy efficiency in buildings and transportation systems. Green spaces, such as parks and green roofs, can also play a role in reducing the urban heat island effect, improving air quality, and promoting renewable energy. By integrating renewable energy into urban planning, cities can reduce their dependence on fossil fuels, decrease their carbon footprint, and promote a more sustainable future.

The purpose of this study is to assess the degree of renewable energy integration in the Rohtak district and to suggest areas where additional integration may be possible. Furthermore, it will evaluate the efficacy of current policies and activities pertaining to renewable energy in driving up renewable energy adoption. Insights into the advantages and disadvantages of the Rohtak district's approach to renewable energy, as well as recommendations for expanding the usage of renewable energy, will be provided by this study.

**Keywords:** promoting, integrating, geothermal, transportation, promoting renewable energy, sustainable future etc..

## **Introduction**

In this research paper we have described about Town and Country Planning in the Rohtak District with a Focus on Renewable Resources . The integration of renewable energy sources into urban planning is becoming increasingly important as cities around the world strive to become more sustainable and environmentally-friendly. The analysis of Rohtak district's urban planning with reference to renewable resources is a crucial step towards understanding the district's current state of renewable energy integration and identifying areas for improvement.

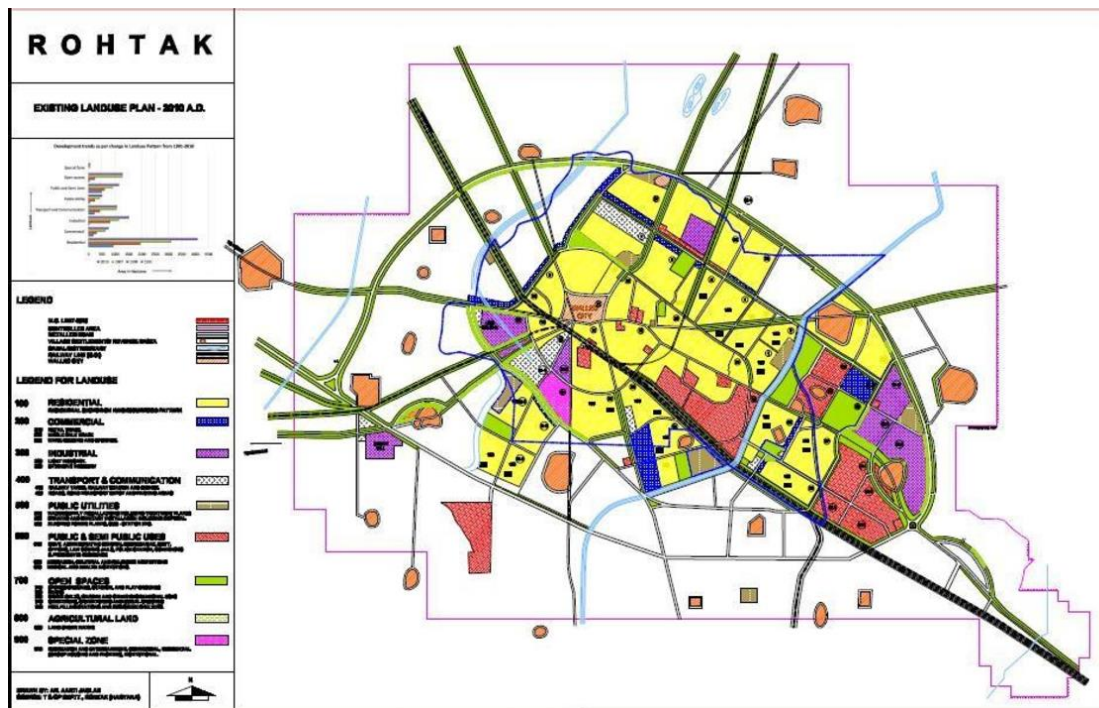
This research will focus on evaluating the current state of renewable energy integration in Rohtak district and identifying the potential for further integration. It will also analyze existing policies and initiatives related to renewable energy and assess their effectiveness in promoting the use of renewable energy. The findings of this research will provide insights into the strengths and weaknesses of Rohtak district's approach to renewable energy and suggest ways to increase the use of renewable energy in the district. This research will contribute to the understanding of the role of urban planning in promoting renewable energy and will provide valuable information for policy makers, urban planners, and other stakeholders in Rohtak district and beyond.

## **Objective -**

The objective of this research paper is to analyze the urban planning of Rohtak district in India with a focus on renewable resources and its impact. The study aims to assess the current state of urban planning in the district and evaluate the utilization of renewable resources in the planning process. The research will examine the role of renewable resources in shaping the urban landscape and determine their impact on the sustainability and quality of life in the city. The paper will also identify the challenges and opportunities for further integration of renewable resources in urban planning and provide recommendations for improvement. The ultimate goal is to provide valuable insights and information that can inform future urban planning efforts in Rohtak district and other similar cities.

**Study Area -** The study area for this research paper is Rohtak district in the Indian state of Haryana. Rohtak is one of the rapidly growing cities in India, facing increasing pressure on its resources and infrastructure. The district is an appropriate case study for exploring the integration of renewable resources in urban planning, as it has a rich potential for renewable energy sources such as solar, wind, and biogas. The research will focus on the urban planning practices and policies in district, and their impact on the utilization and implementation of renewable resources in the city. The study will include a comprehensive analysis of the current state of

urban planning, renewable energy utilization, and sustainable development in Rohtak district, and provide a comprehensive understanding of the challenges and opportunities in integrating renewable resources in urban planning.



**Study Area – District Rohtak, Haryana**

## **DEVELOPMENT OF RENEWABLE RESOURCES IN ROHTAK DISTRICT**

Due to growing concerns over energy security and environmental sustainability, the development of renewable resources in Rohtak district has been an increasing area of focus in recent years. In line with the efforts of the government to promote the use of renewable energy, several initiatives have been taken in the district to harness the potential of renewable resources. Some of the major developments in the renewable resources sector in Rohtak district include:

**Solar energy:** Rohtak has significant potential for solar energy, and several large-scale solar energy projects have been set up in the district.

**Wind Power:** The district has also seen the development of wind power projects, with wind turbines being installed in many areas.

**Biogas:** Biogas plants have been set up in the district, which uses waste generated from livestock and agricultural activities to produce energy.

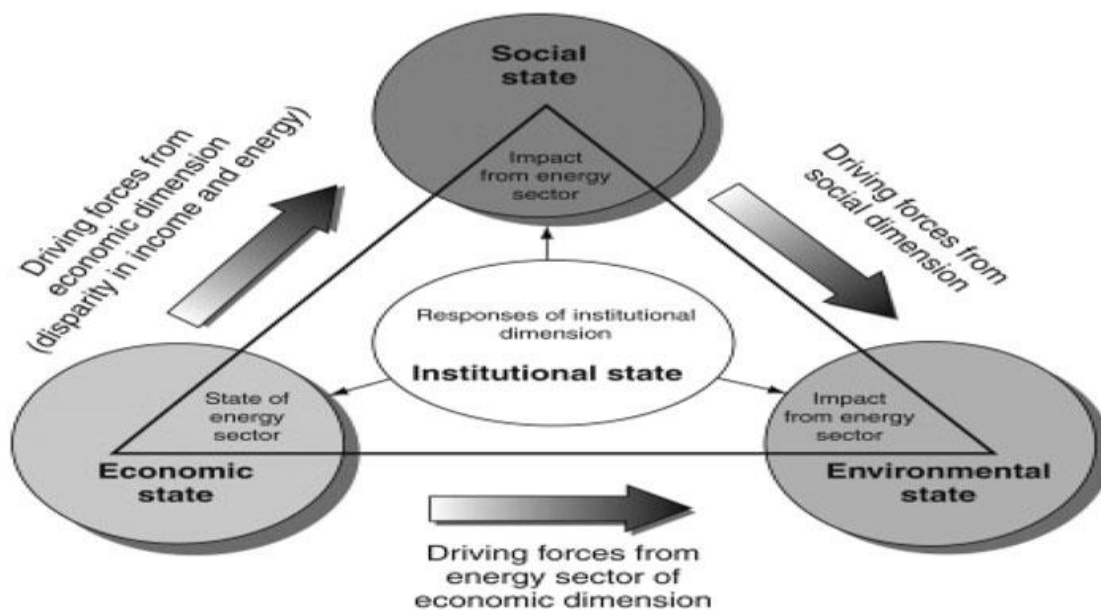
**Energy Efficiency:** Efforts are being made to increase energy efficiency in the district including implementation of energy efficient technologies and practices in buildings, transportation and other sectors.

**Policy Framework:** The government has put in place a comprehensive policy framework to support the development of renewable resources, including financial incentives and tax exemptions for renewable energy projects.

## Role of renewable resources in sustainable urban development

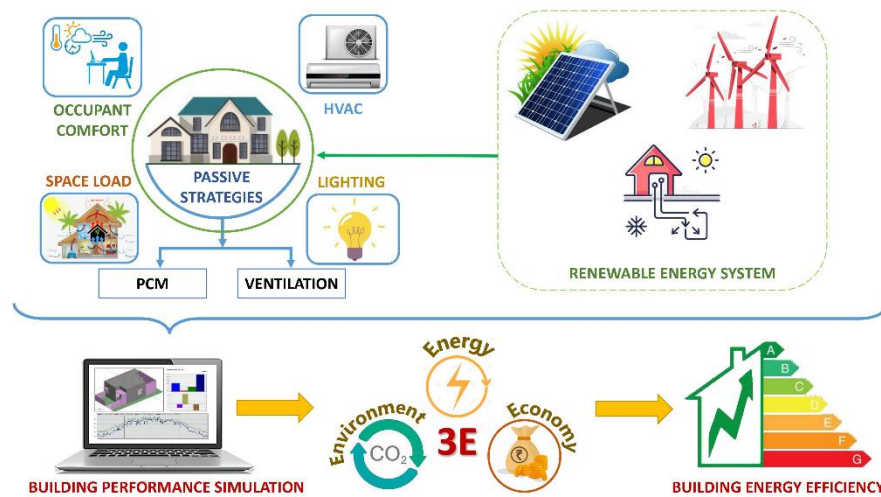
Renewable resources play a crucial role in sustainable urban development by providing clean and sustainable energy sources, reducing environmental impacts, and promoting resilience in cities. Here are some key roles of renewable resources in sustainable urban development:

1. **Clean and Sustainable Energy:** Renewable resources, such as solar, wind, biomass, and hydropower, offer a cleaner alternative to fossil fuels for meeting the energy demands of urban areas. They produce minimal or zero greenhouse gas emissions during operation, reducing air pollution and mitigating climate change.



### Clean and Sustainable Energy

2. **Energy Efficiency:** Renewable resources often go hand in hand with energy-efficient technologies and practices. Integrating renewable energy systems, such as solar panels or wind turbines, into buildings and infrastructure can optimize energy use and reduce energy consumption in urban areas.



### Energy Efficiency

3. **Reduced Dependence on Fossil Fuels:** By diversifying the energy mix and reducing reliance on fossil fuels, renewable resources help cities become less vulnerable to energy price volatility and supply disruptions. This enhances energy security and promotes long-term stability in urban energy systems.
4. **Environmental Benefits:** Renewable resources contribute to environmental sustainability in urban areas by reducing carbon emissions, air and water pollution, and the depletion of natural resources. They help conserve biodiversity and ecosystems by minimizing habitat destruction associated with traditional energy sources.
5. **Economic Opportunities:** The deployment of renewable resources in urban development creates economic opportunities, including job creation, local investments, and technological innovation. The renewable energy sector offers employment opportunities across various stages, such as manufacturing, installation, operation, and maintenance.

### Impact of Renewable Resources on Urban Planning

The impact of renewable resources in urban planning refers to the effects and outcomes that arise from the integration and utilization of renewable energy sources and sustainable practices in the planning and development of urban areas. It involves assessing how the incorporation of renewable resources influences various aspects of urban planning, including environmental sustainability, energy efficiency, economic development, and quality of life for residents.

#### 1. Environmental Impact:

- Reduction of greenhouse gas emissions: The use of renewable resources such as solar and wind energy helps to decrease reliance on fossil fuels, leading to lower carbon emissions and improved air quality.
- Conservation of natural resources: Renewable resources promote the efficient use of natural resources, reducing the strain on finite resources like fossil fuels, water, and land.
- Mitigation of climate change: By transitioning to renewable energy sources, urban areas can contribute to global efforts to combat climate change and achieve carbon neutrality.

## 2. **Economic Impact:**

- Job creation: The development and implementation of renewable energy projects in urban areas can generate employment opportunities, especially in the renewable energy sector.
- Cost savings: Utilizing renewable resources can lead to long-term cost savings in energy consumption and reduce dependence on fluctuating energy prices.
- Economic growth and investment: A focus on renewable resources can attract investments in sustainable infrastructure and technologies, stimulating economic growth and attracting green industries.

## 3. **Social Impact:**

- Improved energy access: Renewable resources can enhance access to affordable and clean energy, particularly for underserved communities in urban areas.
- Enhanced resilience: Integrating renewable resources in urban planning can enhance the resilience of cities by reducing vulnerability to energy supply disruptions and strengthening the overall infrastructure.
- Health benefits: The reduction in air pollution resulting from renewable energy use can lead to improved public health outcomes, including lower rates of respiratory diseases.

## 4. **Urban Design and Livability:**

- Sustainable building design: Renewable resources can influence urban design practices, promoting energy-efficient buildings and incorporating renewable energy systems in architecture and infrastructure.
- Enhanced quality of life: The integration of renewable resources can contribute to a healthier and more sustainable urban environment, improving the overall livability and well-being of residents.
- Community engagement and empowerment: The adoption of renewable resources in urban planning can foster community involvement, participation, and empowerment in decision-making processes related to energy and sustainability.

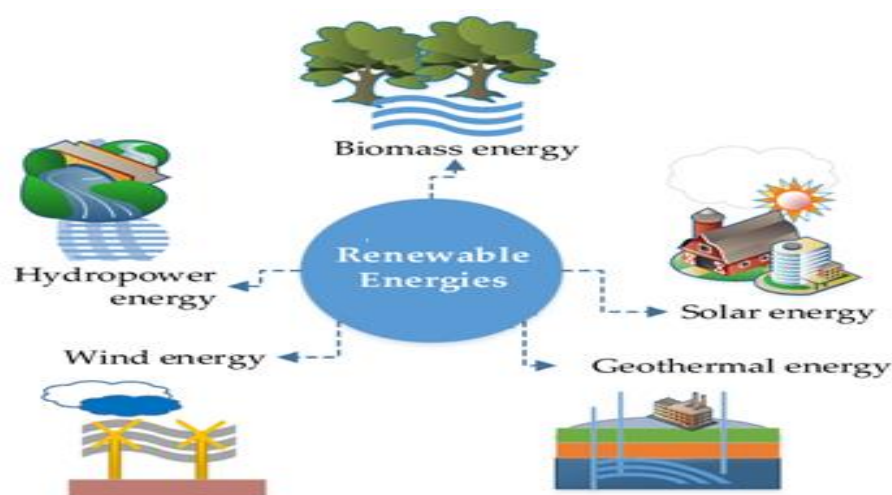
## Renewable resources and their implications for urban planning in Rohtak district

Urban planning in Rohtak district can greatly benefit from the incorporation of renewable resources. Renewable resources, such as solar, wind, and geothermal, can provide a clean, sustainable, and cost-effective source of energy. This can help reduce dependence on non-renewable sources, such as fossil fuels, and contribute to a more sustainable future. Incorporating renewable resources into urban planning can also provide job opportunities in the development, installation, and maintenance of these systems. Additionally, it can improve air quality and reduce greenhouse gas emissions, leading to a healthier environment for residents. Urban planning in Rohtak district could consider using renewable resources for public buildings, streetlights, and traffic signals. The district can also encourage private developers to incorporate renewable energy systems into new construction projects. The incorporation of renewable resources into urban planning in Rohtak district can bring numerous benefits and help the district transition towards a more sustainable future.

### Result-

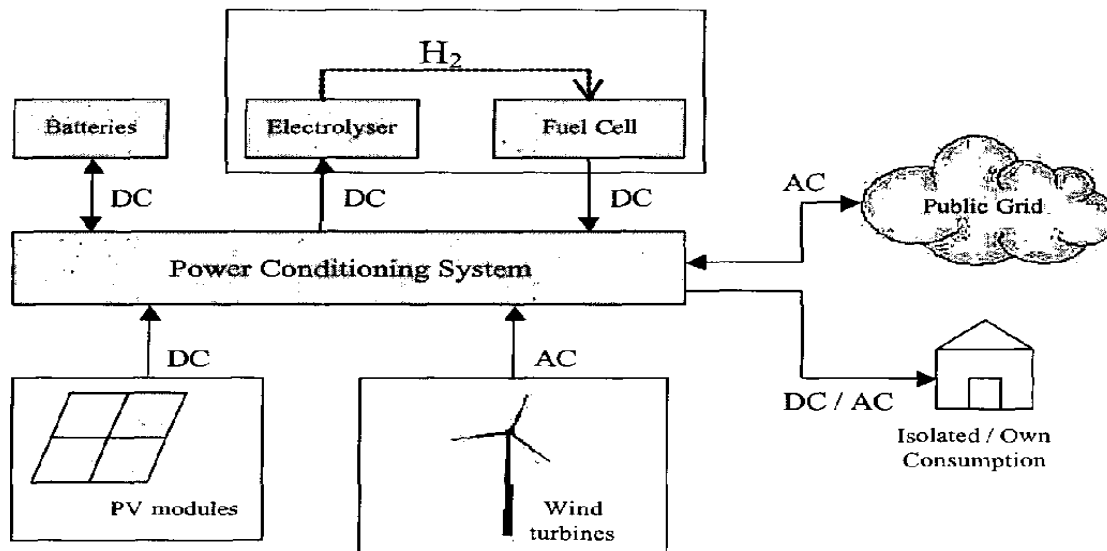
The analysis of Rohtak District urban planning with reference to renewable resources and its impact revealed several key findings:

1. **Availability of Renewable Resources:** The study identified that Rohtak District has significant potential for renewable resources, including solar and wind energy. The region experiences ample sunlight and has favorable wind conditions, making it suitable for renewable energy generation.



**Availability of Renewable Resources**

2. **Integration of Renewable Resources:** The analysis highlighted the current status of renewable resource integration in urban planning in Rohtak District. It was observed that while some efforts have been made to incorporate renewable energy systems in a few public buildings and street lighting, overall integration is still limited.



Integration of Renewable Resources

3. **Environmental Impact:** The study examined the environmental impact of renewable resource utilization in urban planning. It found that increased adoption of renewable energy sources can significantly reduce carbon emissions and air pollution, leading to improved environmental quality in the district.
4. **Economic Benefits:** The analysis revealed that the integration of renewable resources in urban planning can generate economic benefits for Rohtak District. The deployment of renewable energy systems can create job opportunities, attract investments, and reduce long-term energy costs for the local community.
5. **Community Engagement and Awareness:** The study highlighted the importance of community engagement and awareness in promoting renewable resource utilization. It identified the need for awareness campaigns, educational programs, and community involvement to encourage the adoption of renewable energy practices among residents and local stakeholders.

Based on these findings, the study concludes that there is a significant opportunity for Rohtak District to enhance its urban planning by integrating renewable resources. The adoption of renewable energy systems can lead to positive environmental impacts, economic benefits, and community empowerment. However,



addressing barriers and challenges, along with the formulation of supportive policies, are crucial for the successful implementation of renewable resource integration in urban planning in Rohtak District.

It is important to note that these results are based on the analysis conducted in the study and should be considered as a preliminary assessment. Further research and detailed evaluation may be required to validate and refine these findings.

## **Conclusion–**

The conclusion of a study analyzing Rohtak district's urban planning with reference to renewable resources and its impact would summarize the key findings of the study and provide insights on the use of renewable resources in urban planning in the district. The conclusion would draw upon the analysis of current practices, challenges, and opportunities, as well as the impact of renewable resources utilization on the environment, economy, and society.

Some possible conclusions could include:

1. Renewable resource utilization in urban planning practices in Rohtak district is limited, but there is potential for increased utilization in the future.
2. The use of renewable resources in urban planning practices in Rohtak district has a positive impact on the environment and the local economy, but there are also challenges that need to be addressed.
3. There is a need for improved policies and regulations to promote the integration of renewable resources into urban planning practices in Rohtak district.
4. The study provides valuable insights for decision-makers and stakeholders in Rohtak district, as well as for researchers and practitioners interested in sustainable urban development.

The conclusion would aim to provide a clear and concise summary of the study's findings and offer recommendations for future action to promote sustainable urban development in Rohtak district through the use of renewable resources.

## **REFERENCES**

1. "Musokotwane Environment Resource Centre for Southern Africa CEP Factsheet". Archived from the original on 2013-02-13. Retrieved 2013-01-06.

2. "What is Urban Planning". School of Urban Planning, McGill University. Archived from the original on 8 January 2008.
3. Taylor, Nigel (1998). *Urban Planning Theory Since 1945*. Los Angeles: Sage. pp. 3–4. ISBN 978-0-7619-6093-5.
4. Midgley, James (1999). *Social Development: The Developmental Perspective in Social Welfare*. Sage. p. 50. ISBN 978-0-8039-7773-0.
5. Caves, R. W. (2004). *Encyclopedia of the City*. Routledge. p. 704. ISBN 978-0415862875.
6. "3 urban planning trends that are changing how our cities will look in the future". *Building Design + Construction*. Retrieved 25 September 2020.
7. Van Assche, K., Beunen, R., Duineveld, M., & de Jong, H. (2013). Co-evolutions of planning and design: Risks and benefits of design perspectives in planning systems. *Planning Theory*, 12(2), 177-198.
8. "What Is Planning?". American Planning Association. Archived from the original on 10 March 2015.
9. Rural Science Graduates Association (2002). "In Memorium — Former Staff and Students of Rural Science at UNE". Archived from 6 June 2013. Retrieved 21 October 2012.
10. Gold, M. (July 2009). *What is Sustainable Agriculture?*. United States Department of Agriculture, Alternative Farming Systems Information Center.
11. "FAO World Agriculture towards 2015/2030". Food and Agriculture Organization. 2003. Retrieved 2013-01-06.
12. Committee on 21st Century Systems Agriculture (2010). *Toward Sustainable Agricultural Systems in the 21st Century*. National Academies Press.